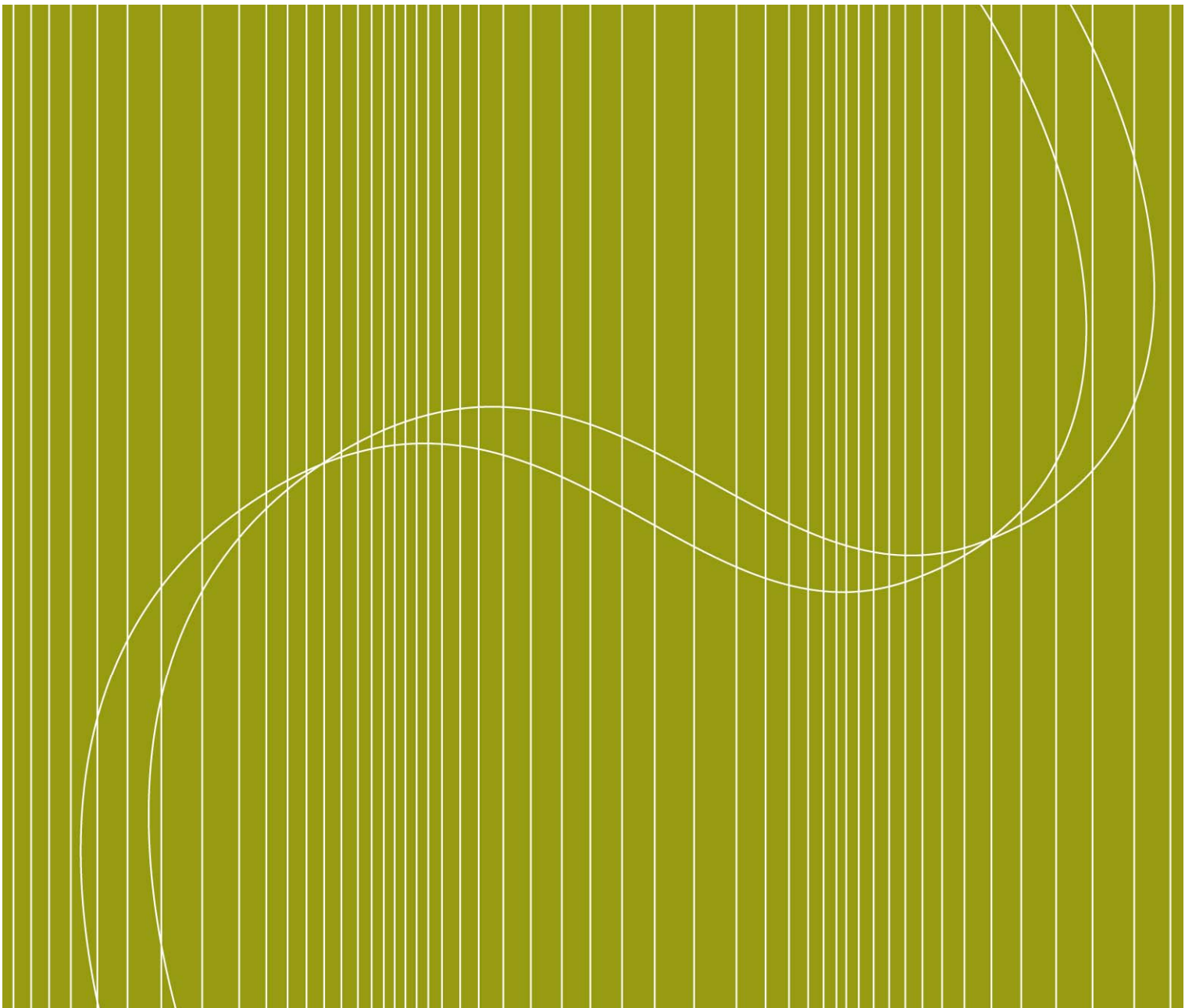2006:5

Swedish National Guidelines for Public Sector Websites

This is an English translation of "Vägledningen 24-timmarswebben", the Swedish National Guidelines for Public Sector Websites.The Guidelines are available in PDF-format at:
www.verva.se/english/guidelines/public-sector-websites.

Foreword

The Swedish National Guidelines for Public Sector Websites offers advice on how to develop user-centric and accessible websites and web based services. The Guidelines support public administrations to procure, develop and maintain their websites. The overall purpose of the Guidelines is to promote equal opportunity usage for all citizens and increase the benefits of investing in web based services.

As a result of continuous involvement of the users of the Guidelines in the development, marketing and support, the Guidelines have reached a widespread adoption in Sweden.

The purpose of translating the Guidelines into English is to show an example of how several aspects of web development can be incorporated into a single collection of guidelines. International guidelines, standards and best practice on web accessibility, usability and web development have been incorporated together with national guidelines on e.g. language, privacy issues and emergency information. Our work has also attracted interest from our colleagues from other countries and thus by communicating in English we hope to encourage dialogue and joint development.

We hope other countries, organisations and individuals will be inspired by this work in their efforts to build websites and web based services in an efficient manner and with equal opportunity usage for all citizens.

Lena Jönsson
Director-General, Swedish Administrative Development Agency

April 2008

Verva, the Swedish Administrative Development Agency, coordinates the development of central government in Sweden and is one of the Government's central advisory agencies. www.verva.se

Notes on this edition

This is an English translation of "Vägledningen 24-timmarswebben". The Swedish National Guidelines for Public Sector Websites (from here on referred to as the Guidelines) reflect local conditions in Sweden, and as such, certain aspects may not be so readily applicable in other countries.

The Guidelines were written by a working group consisting of experts from Verva (the Swedish Administrative Development Agency) and consultants who specialize in web development, accessibility and usability. For further details see **Acknowledgements** at:
www.verva.se/english/guidelines/public-sector-websites/acknowledgements.

Improvements and further developments to the Guidelines have been made based largely on user feedback, changes in public sector policies and technological developments. The goal is to update the guidelines every second year, or whenever necessary.

The Guidelines were first published in 2002. The most recent version of the Guidelines (produced here in English) was published in November 2006. Specific clarifications relating to web standards, web accessibility guidelines and measurements were made in this version. Additional usability guidelines were also added.

The Guidelines were developed in collaboration with the Swedish Agency for Disability Policy Coordination (www.handisam.se), the Swedish branch organisation for the IT and Telecom Industries (www.itforetagen.se), the Swedish W3C office (www.w3c.se) and the Swedish Association of Local Authorities and Regions (www.skl.se).

License

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Obtaining the Guidelines

The Guidelines are available in several formats:

- PDF (English Version) - www.verva.se/english/guidelines/public-sector-websites.
- HTML (Swedish Version) - www.verva.se/24-timmarswebben
- PDF (Swedish Version) - www.verva.se/24-timmarswebben
- Paperback (Swedish Version) – For purchase at www.verva.se/24-timmarswebben/bestall, price SEK 190.

Supporting Material

In addition to the Guidelines, Verva also provides checklists, practical examples and requirement templates.

- **The checklists** can be used to prioritize tasks required during the development of a website, in addition to aspects of everyday work.

- **The practical examples** relate to writing, design and coding. They provide assistance to a user looking to implement the guidelines.

- **The requirement templates** can be used to formulate clear and measurable requirements for the website and for the Content Management System (CMS) / authoring tool. The templates can be used to ensure the on-going quality of the website.

All documents and examples are freely available on Verva's website, www.verva.se. At the moment the documents are only available in Swedish.

Obtaining assistance

If you are responsible for implementing aspects of the Guidelines, there are several avenues for obtaining assistance or contributing feedback.

Guidelines Network (hosted by Verva): Seminars and educational activities are arranged three to four times per year, as part of the Network's on-going activities. The members select the topics for consideration during the seminars. Some examples of earlier topics are: User-centred methods, How to evaluate usability and accessibility, Procuring usable systems, How to argue for user-centric activitites. The members also take an active role in developing and keeping the guidelines updated. Members of the network receive a newsletter once a month and membership is free of charge.

Local outreach: To further expand the knowledge contained in the guidelines, Verva frequently hosts local outreach activities to inform target groups of the benefits associated with complying with the Guidelines.

E-mail and phone contact: Verva have a dedicated team to answer questions on the topics included in the Guidelines, and collect feedback from readers. In addition, the team can also help to put organisations with similar needs in contact with each other.

- e-mail: 24-timmarswebben@verva.se

- phone: +46 8 5505 57 00

Version management

Changes made to this document since the first release in April 2008.

Date	Description
2008-04-28	First version released in PDF format.

Table of contents

Scope

The Guidelines are maintained by Verva, as part of its goal to ensure that all communications between citizens and public administrations (Government authorities, municipalities and county councils) are perceived as simple, efficient and suitable for their purpose.

The purpose of the Guidelines is to support the procurement, development, and maintenance of a website by a public administration so that it offers equal opportunity usage for all citizens.

Adoption of Web Accessibility Content Guidelines

By the end of 2001, the Web Content Accessibility Guidelines 1.0 (WCAG 1.0), produced by the Web Accessibility Initiative (WAI), had been adopted by all European Union Member States in order to increase the accessibility of their public administration websites. More recently, as part of Europe's i2010 strategy to promote an inclusive European information society, all European Member States have pledged that their public administration websites will comply with the WCAG 1.0 by 2010.

As such, checkpoints from WCAG 1.0 have been integrated into the Guidelines under criteria relating to web accessibility. Over time several of these criteria have been updated, with special consideration being given to new checkpoints, and guidance made available through the working drafts of the next version of WCAG (WCAG 2.0).

A mapping between the Guidelines and WCAG 1.0 is shown *Appendix A: WCAG 1.0 Reference*.

Readership and content

The primary audience for the Guidelines are those people in Swedish public administrations with responsibility for the procurement, development and maintenance of websites. There are approximately 1,000 public administration websites in Sweden; 300 of these websites belong to Government authorities.

However, it is fair to say that the Guidelines can also be applied by any organisation (Public or Private sector alike) that wants to improve the quality of its website for its users.

The Guidelines contain criteria which cover the entire lifecycle of a website; from its conception to the publication of 'live' web content. These criteria address several areas which should be considered, including:

- accessibility
- usability
- web standards
- privacy issues
- information architecture
- developing content for the web

- Content Management Systems (CMS)[1]/ authoring tools selection
- development of web content for mobile devices[2].

In addition, the Guidelines cover strategic planning, website design, development and administration. The guiding principles are based on research, best practice and recommendations given by experts.

The Guidelines are divided into chapters which can be read separately depending on the reader's role and responsibilities. The order of the chapters is intended to mirror the lifecycle of a website.

Chapter 1 covers the overall communications objectives of a website, which should be used as the basis for its development.

Chapter 2 presents the development process as steps towards a defined objective.

Chapter 3 shows methods for website design and web page coding, along with web standards.

Chapters 4 & 5 describe the basic content and services a website should provide, giving additional information on how to write for web-based media as well as methods for keeping the website up to date.

Chapters 6, 7 & 8 cover the development of web content for mobile devices, Content Management Systems (CMS) / authoring tools, and assistive technologies (AT).

The Guidelines do not rely upon a specific project model or system development process and should be applicable in any organization. The Guidelines do, however, recommend general steps for involving users throughout the development process.

Each criterion in the Guidelines is based on the following structure:

1. **Action(s):** Any actions that need to be taken in order to conform to the criterion.

2. **Priority level (1-3)**: Indicating the priority associated with implementing the criterion. Priority 1 criteria are most critical. Note: Criteria in Chapters 1, 2, 6 & 8 are not given a priority level.

3. **Relevancy**: A description of the relevancy of the criterion to certain users (e.g. "what", "why" and "for whom").

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[1] Based on W3C ATAG

[2] Based on W3C Mobile Web Initiative Best Practices

4. **How to**. Practical solutions and **examples** for implementing the criterion.

5. **Further reading**. Links to further information / references.

6. **Testing techniques**. Practical advice on determining if the criterion has been met.

Conventions used in this document

- Code examples are formatted in 'Courier New' font e.g. `font-size:1.8em`.

- Specific names for web pages or sections in a website are placed in quotation marks e.g. the "About the website" web page.

- Box brackets, which contain generic place-holder texts, are used when values should be tailored to a specific organisation e.g. "About [the authority]".

- References to place markers within this document, and other guidelines / reports, are highlighted with *italics*.

- Unified Resource Locations (URLs) are written out in full to support printing.

- All links to web pages written in a language other than English are presented next to text which specifies their language e.g. "In Swedish".

- A dummy domain "www.authority.se" is used in all relevant examples.

- When mentioned Internet Explorer refers to version 6 of Internet Explorer for Windows. It was the most recent version when the Guidelines were published in Novemeber 2006.

Executive Summary

The Swedish Government has a goal of making all public administration websites accessible to its citizens by 2010, in line with Europe's i2010 initiative[3].

This goal is to be achieved through Sweden's disability policy of inclusion and equality, which is designed to create:

"A working social community based on diversity; a society designed to allow people with disabilities of all ages full participation in the life of the community; equal opportunities in life for people coping with disabilities."

Two main pieces of legislation, which have been introduced, are:

- Swedish Ordinance SFS 2001:526, which states that Government agencies must make a special effort to ensure that their premises, activities, and information are accessible to people with disabilities.

- Swedish Local Government Act (1991:900), which stipulates that municipalities and county councils should give their members equal treatment, unless there are legitimate reasons for not doing so.

In order to realise a society that caters to the needs of all individuals, public administrations have been asked to set a good example and lead the way.

The support that the Guidelines provide to public administrations in achieving this goal can be seen by their widespread adoption in Sweden. To date 15,000 electronic copies of the most recent version of the Guidelines have been downloaded and over 1,300 printed books sold.

A survey carried out in February 2007 showed that over 90% of those responsible for public administration websites in Sweden were aware of the Guidelines, with 80% or more actively using them.

Verva regularly performs automated testing on over 900 public administration websites, checking specific pages against various criteria from the Guidelines. The most recent benchmarking study was performed in April 2008 and clearly showed that the Guidelines were also being applied.

Of the large number of websites tested:

- 22% had valid code, a 100% increase on the previous year.

- 44% had a correct heading structure.

- 41% were using style sheet-based layout – decreasing the number of websites using frames or tables for layout.

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[3] http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm.

The key factors believed to be responsible for the success of the Guidelines are that:

- Through the Guidelines, Web accessibility is presented as an integral part of the overall development process and not as a separate issue.

- The users of the Guidelines have been involved in the development of the Guidelines. As such, the quality increases, the material becomes more targeted to the users' needs and the Guidelines become easier to adopt as the users view the Guidelines as partly 'theirs'.

- Regular open 'two-way' dialogue with target groups, through the Guidelines Network (with over 1,900 registered members), regular seminars (to date over 60 have been held), dedicated e-mail and phone contact.

With momentum building everyday behind the adoption and application of the Guidelines by public administrations in Sweden, it is clear that the reality of making all Swedish public administration websites accessible is drawing ever nearer.

Contact information

If you have any questions or suggestions concerning the Guidelines, please contact us:

- e-mail: 24-timmarswebben@verva.se

- phone: +46 8 5505 57 00

1 Better and more efficient service

These guidelines help Swedish authorities utilize the Internet as a channel for making their tasks and processes more efficient. Adhering to the guidelines ensures that authorities work in line with the demands that exist in the public sector.

In Sweden, it is possible to file taxes, apply for jobs and apply for parental benefit via the Internet. There is a great deal of potential for the future. Making work processes and service more efficient enables citizens to perform tasks flexibly and cost efficiently. Information technology offers major opportunities for improving service to citizens and companies. It also makes it easier for the general public to gain insight into and to influence the activities of authorities.

Expectations for service from the public sector are increasing at the same rate that information technology is being developed and disseminated. The aim is to simplify life for citizens and companies. The public sector must offer adequate and efficient service. How tasks are distributed among authorities and various elements of the public sector is of little interest to citizens. Distribution of responsibility between actors must be clear from a legal point of view, but citizens must be able to obtain information and services without needing to consider organizational boundaries. Completing the task at hand is the only issue of relevance.

Prerequisites for providing more efficient and better service:

- **Clarify** the **objectives and effects** that the invested funds are expected to provide.

- Consider information technology as a tool to **make business processes more efficient.**

- Improved **collaboration** among authorities, county councils and municipalities.

- **Active leadership** practiced on all levels in the public sector.

- **Joint and open standards** are used for an efficient exchange of information between authorities. Established standards create the conditions necessary for a cost-efficient exchange of information. Individual organizations avoid the necessity of allocating resources to produce their own solutions, and efforts to integrate services are simplified.

The guidelines in this chapter present the areas and requirements that every authority should prioritize and pursue. This chapter is primarily intended for director-generals, managers and different types of decision makers.

1.1 Common demands for all authorities

In Sweden, there are a number of rules and regulations that guide the work of authorities. A number of guidelines that help us provide improved and more efficient service to citizens and companies are presented below.

1.1.1   Offer the same service to everyone

One fundamental democratic principle in Sweden is that the prerequisites for fulfilling one's public obligations and exercising one's public rights are the same for everyone. Thus, each individual authority is obligated to ensure that the electronic services offered do not exclude any groups of citizens. The service should be designed to encourage and enable all citizens and companies to use it.

Citizens will not be inclined to use services that are complicated and difficult to understand. Service is not only a matter of what is offered, it is also a matter of how it is offered. Public websites must be accessible to everyone and offer the same or equivalent information regardless of factors such as age, sex, disability and ethnic and cultural background. This is an important democratic issue; however, it is also important that authorities are able to assimilate the gains that arise as a result of their investments in websites and electronic services. Poorly designed services that do not follow standards run the risk of excluding citizens from the services to which they are entitled.

Adhering to the National Guidelines for Public Sector Websites ensures that services offered on websites can be utilized by everyone, and that they are accessible to as many channels, platforms (mobile phones, handheld device, various web browsers, etc.) and assistive technologies as possible, both now and in the future. Read more about assistive technologies in *Chapter 8*.

Rules, regulations and standards

Some of the sources that formed the basis for the National Guidelines for Public Sector Websites are presented below.

WCAG

EU Member States have agreed that public websites should follow the guidelines from the World Wide Web Consortium (W3C). In collaboration with other groups and standardization bodies, W3C has produced guidelines for creating and interpreting web-based content. Websites that are based on these guidelines will continue to function correctly with new web browsers and new types of Internet units.

Swedish Government bill 2004/05:175

The Government bill entitled *From an IT policy for Society to a Policy for the Information Society (Government bill 2004/05:175)* says the following (the information is paraphrased): IT must be accessible to everyone. Infrastructure and being able to utilize the technology are important factors and necessary for success.

The EU's i2010 Action Plan

Sweden supports the EU i2010 Action Plan – the European Information Society for growth and employment. It says (the information is paraphrased): IT must benefit all citizens by improving public services and making them more cost efficient and accessible in addition to improving the quality of life.

Swedish Ordinance 2001:526

Ordinance (2001:526), which concerns the responsibility of national authorities for the implementation of disability policy, states that government agencies are responsible for ensuring that their activities, premises and information are accessible to citizens with disabilities.

It is important that disabilities are not viewed upon as something that exists among a delimited group of individuals in society. Many of us have disabilities to a greater or lesser extent – poor hearing or sight for example. Our physical, sensory and cognitive capabilities vary over the course of our lives. Many people will experience disability at some point in their lives. Disability refers to enduring limitations to an individual's physical, mental or aptitudinal functional capability. Limitations may be the result of an illness or injury present at birth, may arise later in life or be expected to arise. Disability is permanent for some people; however, the obstacles that arise depend to a large extent upon how well we manage to create an accessible society.

According to the Swedish Handicap Institute, around 1,200,000 people in Sweden have some sort of disability. Around 37 million people in Europe, roughly 10%, have some sort of disability according to the EU.

1.1.2   Transparency in the organization

The Internet is increasingly becoming an important tool in terms of contact with authorities, municipalities and county councils. Information technology can be used to increase public insight into the activities of authorities as well as the public's ability to influence those activities. The Internet can be regarded as a tool to make organizations more transparent. The Internet allows citizens and companies to access authorities' journals and to obtain information regarding how different tasks are managed and assessed by authorities. It is important that the authority's assignment is described in language appropriate for individuals who are not familiar with the authority's specific area of expertise.

Read more under *4.6 Involvement and transparency*.

Further reading

Verva's guidelines for user dialogue called *Vägledning för brukardialog* address various methods for creating dialogue with citizens and companies. See www.verva.se/publikationer/brukardialog (only in Swedish).

Refer to the results of roughly twenty authorities that took part in an experiment to develop authority service and increase citizen and company transparency and involvement. See www.verva.se/publikationer/servicedialog (only in Swedish).

1.1.3   Collaborate with other authorities to deal with matters more efficiently

Authorities, municipalities and county councils need to collaborate and survey how tasks can be managed in the most efficient manner possible in order to provide adequate and coherent service and case management to

citizens and companies. Make sure to consider the task from the citizen's perspective from start to finish, rather than only the segment that concerns the individual authority. It is important to ensure that the entire chain is coherent to the final user. This may entail the necessity of your organization collaborating with other authorities to determine if other benefits can be realized.

Before every project, determine what other organizations might be interested in and can contribute to the project. Aim to clarify what the points of common interest are before the project begins and define how each party will contribute and influence the project.

Further reading

Read more about the potential that exists for improving process efficiency in Verva's report on increased efficiency through automated case management. The report *Effektivisera genom att automatisera ärendehanteringen* is available in Swedish at: www.verva.se/potential.

1.1.4 Provide information through channels requested by citizens

Computers connected to the Internet via broadband constitute the dominate channel for gaining access to services offered by the public sector. The number of citizens who have access to computers and the Internet is increasing in Sweden and within the EU, but access will most likely never reach 100%. Thus, authorities should look into what opportunities exist for supplying their service through several different channels in order to provide equivalent service to all citizens.

Access to traditional and mobile telephony is greater than access to computers and the Internet. Most mobile phones sold today are able to show web content. Other examples of channels that may become more common in the future are digital television, TV via the Internet and public service terminals.

Look into the possibility of allowing various channels to supplement one another within the framework of the same task. SMS can be a suitable way to send reminders. Dental patients in several county councils receive a SMS the same day or the day before their appointment with a dentist. The national dental service in Blekinge reduced the number of missed appointments by 13% the first year it sent SMS reminders.

1.1.5 Use the Internet as a communication tool in the event of an emergency

The Swedish Government has assigned relevant authorities[4] and all county administrative boards with supplying information via their websites to the public, companies and the mass media in the event of an emergency. Furthermore, the Government has decided that the Swedish Emergency Management Agency will work to ensure that municipalities and county councils provide information to the public and mass media on an emergency information page prior to peacetime emergency management and high alert.

Organizational and technical preparedness is required in order to meet the demands made by the Swedish Government. Emergency management is facilitated when functioning web organizations and web platforms that follow the standards described in the National Guidelines for Public Sector Websites are in place. At the same time, opportunities for providing information to affected individuals, the media and for other news coverage increase. The Internet supplements telephone, radio and other channels as well as efficiently reduces the number of incoming calls.

More information is available about how the Internet and web organization can be efficiently organized and utilized in the event of an emergency in *5.3 Emergency information on the website*. The strategies for ensuring civil security found in the Government bill entitled *Cooperation in crisis – for a more secure society (Government bill 2005/06:133)* and the Swedish Emergency Management Agency's task to develop a national emergency portal are presented below.

Government bill - Cooperation in crisis for a more secure society

Strategies for ensuring civil security are presented in the Government bill entitled *Cooperation in crisis – for a more secure society (2005/06:133)*[5]. Information provided during an emergency is treated in a specific manner (translated):

> "Confidence in authorities is put to the test in the event of an emergency. Effective and reliable management of emergencies is increasingly dependent upon the manner in which operations managers communicate with and provide information to the general public and media. While working under great pressure and uncertain conditions, quality must be reviewed, information must be compiled and communicated and information from various sources such as individuals, organizations and the business world must be received. Managing information in the event of an emergency may not merely be reduced to a technical function. Public organizations must also possess the expertise required to receive individuals who are

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[4] The Swedish Emergency Agency's list of actors in the emergency management system: http://www.krisberedskapsmyndigheten.se/aktorer

[5] Available in English at http:///www.sweden.gov.se/sb/d/574/a/64750

experiencing a crisis. They must also ensure that staff members are trained and ready to receive and communicate problematic, uncertain and difficult information in a respectful manner as well as adapt the information to various target groups, for example children and young people. Furthermore, authorities should be able to monitor the news and meet the media's demands for information."

The bill specifically emphasizes:

- The importance of authorities collaborating and contributing information to one another.

- That a functioning information flow needs to be in place to enable coordination of relevant segments of information to the public and media.

- That web portals and websites should be seen as support in terms of distributing and coordinating emergency information via the Internet.

- That the Internet and other communication tools such as SMS place significant demands on authorities in terms of quickly being able to communicate with and provide information to the media and general public.

The bill also highlights the responsibility of individuals (translated):

"Individuals must keep themselves informed of risks and threats and take safety precautions that are relevant and feasible. Improved capability on the part of individuals in terms of managing emergencies facilitates operative initiatives in emergency situations."

This requires Swedish municipalities, government agencies and other public institutions to communicate the risks that exist in the community. To the greatest extent possible, individual citizens should inform themselves of the risks that exist and what safety precautions have been planned by public bodies and individual organizations as well as what they can do themselves to increase their own level of safety.

Information must be formulated to suit individual need in order for citizens to assimilate the information provided by municipalities, the Government and other public institutions; doing so gives everyone with the opportunity to get acquainted with and form an opinion of the issues involved. All citizens should be given access to the information regardless of age, sex, disability or language knowledge, for example.

The Swedish Emergency Management Agency's task

The Swedish Emergency Management Agency has been tasked by the Swedish Government to develop a national web portal for emergency information to the public and media. The national portal has several aims.

The general public and media should be informed of how emergency management functions in Sweden **before** an emergency. Distribution of responsibility should be described **during** an emergency, and those responsible for emergency management should be named. The Swedish

Emergency Management Agency may summarize and describe events **after** the emergency.

Most public actors including municipalities have web pages that have been prepared with emergency information. The Government's website has a particularly important role since many citizens can be expected to look there first for information in the event of a national emergency situation.

Further reading

The specific responsibility and obligations of Swedish government agencies are regulated by the Ordinance (2002:472) regarding the responsibility for peacetime emergency management and high alert.

Swedish municipal and county council responsibility falls under the Act (2006:544) dealing with the measures taken by municipal authorities and county councils prior to and in conjunction with extraordinary events in peacetime and in times of high alert.

1.1.6 User confidence in public service websites

Trust is an important factor in terms of adequate distribution and frequent utilization of public sector services. Individuals who utilize the Internet must believe that personal information is managed in a secure manner. Web service utilization may not result in security risks such as computer viruses and illegal misuse of computer information. It is thus important that security issues are taken into consideration when developing a web service. High quality security is important in terms of ensuring the profitability of the large investment that web service development often entails.

2 Development process

Usability is an indicator of quality. A website with good usability fulfils the aims of both its organization and target groups. According to ISO 9241-11, usability is the "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". It is important to have a good idea of the existing needs and expectations of target groups in order to create websites that provide their users with the support they require and to reach as many users as possible. Other important aspects include clarifying the desired effects of the web initiative at an early stage and ensuring that the supplied service has value for the organization and follows the prevailing standards of the public sector.

This chapter describes the most important elements of a development process in terms of ensuring that the developed services are useful and accessible and that they obtain the desired effect in the organization.

This chapter is intended for:

- operations and website managers
- interaction designers, usability experts, designers and programmers.

2.1 User-centred system development

Studies show that 80% of all changes that need to be implemented in the administration phase are the result of insufficient knowledge about users and the usage situation. Only 20% are bugs[6]. One prerequisite for developing a website with a high level of usage and adequate quality of use is to involve the website's target groups in its development.

User-centred system development[7] means that the goals of the organization and the needs of the target group form the basis for developing IT-based products and services. Outlines and prototypes that visualize the user interface are produced based on existing objectives and needs. The prototypes are tested and reviewed in collaboration with users. Testing prototypes in use helps uncover most usability problems as well as helps additional user requirements to be discovered at an early stage. Working in cycles in this manner helps the service that is finally launched fulfil the organization's objectives and the user's needs.

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[6] Pressman, 1992 Software Engineering: A Practitioner's Approach

[7] ISO 13407 provides guidelines for user-oriented activities through an interactive computer-based system.

2.1.1 Define the desired effects of web initiatives

Traditional requirement specifications and development projects typically have requirements in terms of which functions and services should exist on the website. For example, "There must be a search function" or "There must be a case management system". A great deal of effort is often invested in producing detailed documents that describe specific functions instead of focusing on the effects and benefits that the functions should provide. Another common mistake is deciding upon functions without verifying with the target groups that will use them.

The result of not verifying with target groups is that services are introduced that users did not ask for and that services are designed that are not adapted to and optimized for the needs and expectations of intended users.

Decide at an early stage what the web initiative should achieve and let that govern how various functions and services are prioritized. Examples of web initiative objectives are to manage more cases per administrator and to reduce the number of phone calls. Determine concrete measurement points to indicate how far you have come in terms of reaching the desired effect.

One important step in creating objectives for the initiative involves learning about the target group for which the service is intended and to survey the organization's processes to determine what the potential for efficiency improvement is. Prior to the project being initiated, a preliminary study should be performed to obtain background data for the system development project. Survey the process/processes in the preliminary study that the intended system should support and describe the desired effects of the project.

2.1.2 Make the authority's processes more efficient

Information technology not only offers the opportunity to make administration more effective, it also helps renew how we work. Process thinking forms the basis. It is primarily a matter of thinking and working based on a belief that it is possible to make the organization more effective. Since the task of authorities to a large extent involves communication and providing information, there are many areas in which information technology and the Internet can be utilized to make activities more efficient.

Surveying processes and work routines in the organization provides information about which processes can be modified for increased efficiency. Identifying relevant processes often provides a better basis for describing internal and external benefit at the same time that information related to concrete and beneficial functionality for users is obtained.

Some hints

Some issues that should be considered when surveying existing processes and designing new ones:

- Question why a process is structured as it is. Is it necessary? Can it be simplified for citizens and companies? Simply translating an existing process to the Internet does not necessarily lead to the desired effect.

- Make sure to consider the task from start to finish, not only the segment that concerns the individual authority. Make sure that the entire chain is coherent to the final user.

- Do not suboptimize the new process. The entire process must function, not only "your" specific part.

Further reading

Five case processes are surveyed in Verva's report on increased efficiency through automated case management. The report is called *Effektivisera genom att automatisera ärendehanteringen*; and the survey shows what the existing potential for increased efficiency is. The study indicates that there is a great deal of potential for increased efficiency in all five of the case processes that were analyzed. An estimated annual savings of up to SEK 56 million is possible for the most extensive process. See www.verva.se/potential (only in Swedish)

There is information available about how to calculate profitability for authority activities in the *Räkna på lönsamheten* guidelines. See http://www.esv.se/publikationer/trycksaker/publikationer/raknapalonsamhete nvagledningiexempletsform.5.95b8a100ff8c8b1c8000851.html (only in Swedish)

2.1.3 Use target group needs as the starting point

Visitors to websites almost always have a reason for their visit. Find out who the website's users are and what their needs are when they visit it. What do users want to do? What needs do users have and what do they expect from the website? What should the website communicate to users?

Survey and describe the target groups that the website will support and how it will support them. The term "target groups" refers to groups of users that have similar behaviour, expectations and objectives when they use a service. It is important to decide which target groups to prioritize at an early stage. Priority is determined based on which group/groups will contribute the most to fulfilling the desired effects of the organization.

Prioritizing target groups and having sound knowledge of their behaviour are prerequisites for:

- Being able to select functions and solutions for overall website design.

- Creating a logical information structure and choosing an appropriate design.

- Obtaining the greatest possible benefit from the IT investment.

It is important that target group analyses are based on true knowledge of the users and not only on assumptions that have been made by the project group, for example. Observations and interviews with users and focus groups are some examples of methods that can help produce an awareness of target group needs. However, project group assumptions about users and statistics that indicate demographic distribution can be used as the survey's point of departure. The scope of the survey should be adapted to each development

project. A rule of thumb is that the more functions and services the website has, the greater the need for the survey.

Further reading

It is easier to understand target groups and users by indicating a user profile to represent one group. For example, the discussion can be based on a user named Kerstin: How will Kerstin use the service? Will she choose one or more entry points? Does Kerstin use these terms? This is known as creating personas, and it is a way to produce user profiles that describe target group needs.

Example

See www.verva.se/24-timmarswebben/exempel for an example of a persona (in Swedish).

2.1.4   Work with prototypes and scenarios

Concrete descriptions of the website or service are necessary during development. There are always many ways to design a function, but not all of them result in the expected utilization benefit or meet user needs.

A prototype always provides a better idea of functions and services than do mere written descriptions; prototypes also help ensure the right questions are posed. Problems related to website usage can be discovered early on and be quickly remedied. Use prototypes to ensure efficient communication among the people involved in the project such as members of the project group, the entity or person that placed the order, users and user reference groups.

Prototypes are an excellent aid for communicating about individual functions while scenarios are an aid for carrying on a dialogue with users about work flow.

Some hints when working with prototypes

- Begin by producing sketches that can be easily modified. Hold off on producing graphics, logotypes and the like. It is important that the prototype does not become a bottleneck that impedes development.

- Work with the prototype iteratively. This entails developing the prototype alternately, checking off with affected individuals within the organization and reviewing it with users.

- If the prototype is in HTML, decide at an early stage if it should follow the existing guidelines for accessibility. Accessibility problems can be discovered at the prototype stage if prototype code adheres to the same coding principles as the completed website. The situation determines if the prototype will be used to review accessibility or be limited to communicating function and design.

- Review the prototype with users. Depending on the prototype's design, it can also be used to review language, terms and concepts in the navigation menu and other interface elements. Also see *5.2.3 Evaluate how the website is used*.

See www.verva.se/24-timmarswebben/exempel for examples of prototypes (in Swedish). One of the prototype illustrates how emergency information can be structured and presented on authority websites.

2.1.5   Perform tests and reviews continuously

Performing tests and reviews is an important aspect of developing websites. There are a number of different review methods available depending on the complexity of the website and the point in the development process that has been reached. All types of testing must be planned and performed in a structured manner.

Most modern system development environments offer the opportunity of working with automated test cases in various ways. The tests can check basic technical functionality as well as function and work flow. Automated tests are an excellent way of ensuring the quality of the system, and they also facilitate future maintenance of and modifications to the system. When introducing new functionality, it is possible to ensure right away that it does not affect other parts of the system. Make sure your supplier uses automated testing in its development methodology.

Review with users

In addition to technical testing, performing tests with users is also important. This enables early access to information about potential difficulties in work flow and navigation, for example. Tests with users should also be performed after the system has been launched in order to obtain a basis for deciding how the service can be improved.

Further reading

Read more in *5.2 Usage and content follow-up*.

2.1.6   Coordinate web initiatives

Coordinating web initiatives may entail major time and cost savings. The time needed for development can often be decreased, as can costs for licences and operations Web initiatives can be coordinated within individual authorities as well as between different authorities.

It is easy to initiate a new website in conjunction with a campaign or current topic. This is justifiable, but it is also confusing for users if the issues that concern the organization are spread out over several websites – especially if the websites are different in appearance and in terms of navigation. Thus, start new websites restrictively.

Some hints

- If the authority is going to build an intranet, take advantage of this by looking for common areas that can be utilized on both the intranet and the external website. For example, double publication can be avoided by recycling content on the websites. Templates and functions can also be reused to save on development costs.

- Apply joint principles for navigation, terminology and appearance.

- It should be clear who the sender is for all web initiatives; see *4.2.6 Indicate the organization responsible for publishing the website on every page*.

2.1.7 Define security requirements

These guidelines do not comprise all the security aspects that may apply to an organization that offers internal and external web services. One important prerequisite, of course, is that the organization's technical and administrative infrastructure manages the organization's requirements for information security in a sensible manner. Swedish guidelines for information security can be obtained from the Swedish Emergency Management Agency (www.kbm-sema.se) and Sitic (www.sitic.se), for example.

In addition to gains in efficiency and other additional value, utilizing information technology, in particular the Internet, entails risk for the organization that supplies the information as well as for website users. Since security defects are typically difficult and expensive to remedy after the fact, it is important that security issues be dealt with during the development process.

Define security requirements and suitable safety precautions by forming an idea of the consequences of conceivable threats and risks. Try to assess the consequences for your organization and for the people who use the services should the threats or risks be realized.

Make an assessment of the "value" of the information based on the following aspects:

- Requirements for confidentiality/secrecy.

- Requirements for accuracy.

- Requirements for traceability.

- Requirements for non-repudiation – that a person who performs an act cannot deny having performed it after the fact.

- User needs in terms of service accessibility.

Safety precautions should include identification, access and authorization control as well as protection of information that is transferred over the data network and when it is stored on computers.

Take the requirements for basic protection of the organization into consideration. All types of connection to the organization's own data network always entail potential risk for misuse of computer information and unauthorized access to information.

It is important that the security functions that are defined during the development process are also included in testing prior to operation.

3 Website standards

It is important to follow standards to ensure that websites are as uniform, useful and accessible as possible. "Standards" refers not only to technical standards; it also refers to standards that affect the website in terms of structure, navigation and design.

A website that follows standards:

- Increases the possibility of meeting citizens and companies in the manner they prefer in that the same content can be more simply presented via different channels, platforms and assistive technologies.

- Reduces differences in terms of how information is presented in different web browsers.

- Increases the level of usage since a consistent, uniform and well-structured website is easier to use.

- Reduces the risk of becoming dependent upon one supplier's solutions.

Use the guidelines and the available checklists and requirement documents that supplement the chapter to place demands on suppliers. Pursuing development together will help us develop services in the public sector that offer the greatest possible benefit to citizens and companies.

The guidelines in *3.1 Structure and navigation*, *3.2 Colour, contrast and typography and 3.3 Basic design* can be used to place demands on website design. Supplementary requirement documents that can be used as support are available in Swedish at: www.verva.se/24-timmarswebben/checklistor.

This chapter is intended for:

- web managagement teams and operations managers

- procurers - buyers and entities/individuals that place orders

- programmers, designers, usability experts and interaction designers

- suppliers of IT solutions to the public sector.

3.1 Structure and navigation

Creating comprehensible and well-functioning navigation and structure is one of the most difficult elements of building a website. Beyond what is shown on the website's "Home" page, navigation and the website's structure constitute the user's primary means of support in terms of locating the desired information or service. The importance of the structure increases as the number of services and amount of information increase on the website. A website that has consistent design including menus, links and important functions that are always placed in the same location and that function in the same manner is easier to use. Consistency and predictability enable the user to save time in that it is not necessary to ponder how the website functions for each new accessed page.

There is information below regarding how websites should be designed and structured to enable information and services to be easily located and used.

3.1.1 Help users recognize their location on the website

Priority 1

The user needs to understand and learn how navigation works in order to find information on the entire website easily.

One way to help users understand where they are on the website is to clarify navigation levels. This can be achieved visually as a presentation on the screen as well as technically for users who utilize assistive technologies. Visual presentation can be achieved with indentation, colour variations, shapes or contrast. Do not use colour on it own. If a menu selection has been made, it should be marked; see the example in the image below.

The menu choice "Handisam's assignments" is bold to help users locate where they are.

Technical design for navigation levels

One way to design navigation menus is with bullet lists. Levels are sometimes best presented by assistive technologies if the user is supported by a hierarchical overview of the website, for example.

- Do not build navigation that is dependent on JavaScript; see *3.3.7*.

- Do not build navigation by using images. Menu texts must be treated as text and any images should be treated as background.

- If symbols are used next to menu text to clarify navigation structure, place the symbol as a background image via the style sheet. Use style sheets to insert symbols.

- Do not link to the page that the user is already visiting.

Breadcrumb trails

Breadcrumb trails are another method that can be used to show the user his or her location on the website; see image below.

The breadcrumb trail "Home/The government Offices including ministries/Ministry of Finance" indicates where the user is located in the information structure.

Breadcrumb trails might be a suitable choice if there are large amounts of information to present and if the information can be organized hierarchically.

- Separate posts in breadcrumb trails with slashes or background images, for example.

- Conclude the breadcrumb trail with the name of the relevant page. However, the page which concludes the breadcrumb trail should not be made into a link.

- Avoid abbreviating breadcrumb trail posts even if they are long. Wrap the breadcrumb trail instead.

3.1.2   Help users find what they are looking for

Priority 1

A logical information structure that is designed based on user perspective helps users find their way around the website. The most important tasks involve naming headings and links and grouping information and menus. Remember that users often switch among different searching strategies in order to find information on the website. In addition to using menus to look for information, the user can use the search function, index or a site map. Thus, it is important to offer the user several options to find information on the website as well as to make switching between the different ways easy. Also refer to *3.1.7 Outline the content of the website*.

Card sorting as a means to produce an information structure

Card sorting is a simple and common method used to produce a logical information structure for users. When preparing for the card sorting test, the website's content and menu alternatives are written on pieces of paper – cards. A number of participants then categorize and structure the different cards based on their understanding of how they are related to one another. Five to eight participants is a suitable number. Participants can work individually or in groups of about three people.

In most instances, the most interesting information is what the participants say, what terms they use and which products/services are easy/difficult to group, rather than the actual results of the card sorting test.

Some hints when using card sorting

- Select card sorting participants from different types of occupational categories, but do not mix managers and non-managers in the card sorting groups.

- The number of cards should be between 30 and 150. Too few cards will not provide a sufficient foundation and too many cards will cause the task to be experienced as intimidating and confusing.

- Make sure to provide blank cards on which participants can write new categories or change the names of existing ones.

- Listen and make a note of what participants say, but do not allow your own opinions or the existing website structure to influence them.

- Always give card sorting participants feedback and try to use them in reference groups as website work progresses.

Further reading
Introduction to card sorting:
http://www.boxesandarrows.com/view/card_sorting_a_definitive_guide

Testing techniques

It is particularly important that users represent the website's target groups when they evaluate the structure.

3.1.3 Be consistent in navigation, structure and design
Priority 1
A consistent presentation is very important for users to understand how the website functions and where different types of objects are placed.

- Use external style sheets to control presentation.

- Make it easy for the user to understand what areas contain navigation and which ones present content.

- Make sure the placement and function of the menu is the same throughout the website.

- Avoid placing important content to the far right on the page since doing so reduces the possibility that it will be read.

Intentional breaches to consistency and predictability

At times, there are good reasons for having part of the website deviate from ordinary structure or style. It can be a good idea to allow the deviation if a performed analysis indicates the website will function better for users if the deviation is implemented.

3.1.4 Name the first page on the website "Home"
Priority 1
Several concepts are used in the public sector to designate the first page that users access. "Start page", "First page", "Home" and "Home page" are some of the most common. However, the name rarely has a functional meaning, so a joint name such as "Home" is preferable.

In the Swedish version of the guidelines "Home" is called "Startsida", which is more similar to the English "Start page".

3.1.5 Use the "Home" page to introduce the website

Priority 1

The "Home" page must clearly indicate which organization is responsible for the website as well as guide the visitor to its different parts. It is important that visitors quickly understand what they have accessed when the website appears. Make room on the "Home" page for a short text consisting of no more than a few sentences that describes the authority's activities to people who have never previously been in contact with it. Do not show animation and unnecessary introduction pages before the website's "Home" page appears.

Information regarding how the brief text should be formulated is available in *4.2.1 Use the "Home" page to clarify the purpose of the website*. Metadata text can also be used on the website; see *3.3.8*.

3.1.6 Each page should have links to the "Home" page and to other pages that are important for orientation

Priority 1

It is impossible to foresee on which page a visitor will begin or if he or she will require assistance when searching for information. For this reason, it is important that all pages have links to the "Home" page as well as to other pages that are important for orientation. Examples are content outlines, "About the website", search options and other languages. Place these links in the website's header and footer. The logotype should always be linked to the "Home" page. If the logotype is an image, alternative text should indicate that the link leads to the "Home" page.

Verva has produced a proposal for placing and naming basic elements on public sector websites so that they give a uniform appearance and so that citizens and companies can more easily find basic information. The proposal is avaible in Swedish at: www.verva.se/24-timmarswebben/exempel.

Testing techniques

Test a representative number of pages on the website or all of the page templates to ensure that it is possible to navigate to the "Home" page and to other pages that are important for orientation.

3.1.7 Outline the content of the website

Priority 2

A website user often switches among different strategies to find information on the website. For this reason, it might be a good idea to supplement the search function and ordinary navigation (menus, sub-menus and links between pages) with a content outline. A content outline may vary depending on the amount of website content and what is to be emphasized.

Examples of content outlines:

- **The site map** presents the hierarchical structure of the website and provides an overview of how information on the website is structured.

- **A-Z** often presents a selection of the website's content in alphabetical order. An A-Z index is one way to emphasize some of the most important elements of the website. Also add words that can be used as synonyms in the A-Z index; for example, "daycare", "preschool" and "child care". The words are placed under the appropriate letter, but link to the same page. This will make it easier for users to find information who do not use the same words used at authorities.

Other forms of navigation support are:

- A compilation of common queries including answers and references ("FAQ")
- Drop down menus that list the most popular pages.

Content outlines must follow existing guidelines for usability and accessibility.

Technical solution

The site map cannot consist of a single image since this would prevent assistive technologies from interpreting displayed content. Use hierarchical lists in combination with headings.

Testing techniques

It is not possible to say exactly which types of alternative support should exist on a website. The more complex and comprehensive the website, the more important supplementary support is. Statistics and usability test follow-ups are examples of methods that can be used to determine how pages are used.

3.1.8 Transit pages should guide users to content

Priority 2

If clicking in navigation always causes a new page to be displayed when a sub-menu appears, the new page is called a transit page. The new page, thus, does not correspond to any of the alternatives that appear in the sub-menu; rather, it is most often an overview page. Use transit pages to guide users through possible menu options and to pages further down in the structure.

3.1.9 Make links and clickable areas easy to use for everyone

Priority 2

A web page often contains clickable areas such as text links, images and buttons. Users may on occasion have difficulty recognising what is clickable. This pertains in particular to images that are also links as well as text links that are not underlined.

It can also be difficult at times to click on certain elements if the clickable area is too small – user precision and fine motor skills vary. Avoid placing links too close to one another.

Links should (with certain exceptions) be underlined

Underlining links is a strong convention on the Internet. Links that are not underlined force users to stop and figure out how links are marked before they can use the website. Colours used for links must be clearly distinguishable from colours used for non-linked text. Links in running text must be underlined, preferably in blue.

Exceptions may be made for links in menus and the like provided it is clear what is clickable, and if underlining would result in readability being impaired. Graphic design can help clarify what is clickable.

The image shows an example from the website sverige.se where links are not underlined. The listed links are blue and have an icon that clarifies that the text is clickable.

Use different colours for visited and unvisited links.

Being able to see if a link leads to a page that the user has already visited can be very valuable for inexperienced users and users with certain types of

cognitive disabilities. The two colours should be different variations or shades of the same colour. The colour used for unvisited links should be more prominent and bright than that used for visited links.

It is not necessary to distinguish between visited and unvisited links in menus.

Clearly indicate which link is active

Active links can be more clearly marked by changing their background colour, for example. This helps users who use their keyboard to navigate. A link becomes active when a user tabs to it, and the moment it is clicked. Specify a background colour for active links in the style sheet with :focus (:active for Internet Explorer). Remember to create a clear contrast between link text and background colour. Read more about contrasts in *3.2.2*.

Background colour code examples for active links can be found at www.verva.se/24-timmarswebben/exempel (in Swedish).

See section *5.7 Links and documents* for information on how to write link texts.

Enlarge clickable areas

- Include padding around the clickable area. This allows users with reduced fine motor skills to activate links more easily.

- Make icons in navigation elements clickable. If text and images are combined in, for example, menu options, make sure it is possible to click on both the text and the images. However, avoid making separate links for icons and texts.

It must be possible for the user to change text size in menus and other navigation areas by using the web browser's built-in functionality.

Example
It is possible to click inside the entire framed-in menu option below.

The link covers the entire area including the arrow icon by utilising the padding around the link element in combination with a background image. The arrow icon clarifies that the element is clickable.

Style sheet examples for the menu can be found at www.verva.se/24-timmarswebben/exempel (in Swedish).

Testing techniques
Testing requires review and possibly usability tests. Ensure that only linked text is underlined.

Test enlarged clickable areas by:

- Clicking on the icon to ensure the link is activated.

- Clicking just outside the relevant link text to ensure the link is activated.

- Adjusting text size in Internet Explorer 6 to ensure that menu option text is enlarged.

3.2 Colour, contrast and typography

Giving the website colours, contrasts and typography that result in good readability makes it easier for users to understand the content.

3.2.1 Important characteristics and functions should not be dependant upon users' ability to perceive certain colours

Priority 2

Colour is an important element of design and should naturally be used. However, problems may arise when a colour signals something important that the user needs to understand in order to use the website.

One example is when an error is marked solely by turning the incorrect text red. People who have difficulty perceiving differences in colour may find discovering the error very difficult. Colours used to indicate errors must be combined with another element that a colour-blind user can perceive. Outlines, bold text, icons and larger text are some examples of options that can be used to emphasize important information.

Testing techniques

Usability tests that include visually impaired and colour-blind individuals can be used, or the website can be in black and white during testing.

3.2.2 Use adequate contrast

Priority 1

Parts of content sometimes need to be emphasized or reinforced. With regard to text this can most easily be done by changing the text or background colour. Make sure that the contrast between the background and text is adequate. If the contrast is too small, the text and background can flow into one another so that the text disappears or becomes difficult to read. It can be difficult to see the difference between two colours if they have a similar nuance, especially for colour-blind users.

Do not use colour combinations such as red text on a green background or blue text on a black background; rather, attempt to achieve as much contrast as possible between the background and text. The difference between the brightness of text and background colour must be at least 50 percentage units.

Examples of good contrast

Black, dark blue or green against a white background as well as yellow against a black background are examples of good contrast.

Testing techniques

Check the contrast on pages by using tools such as:

- Snooks Colour Contrast Check

- Web Accessibility Toolbar

- Web Developer Toolbar

Links to the tools can be found at
www.verva.se/24-timmarswebben/verktyg.

3.2.3 Give the website good readability

Priority 1

Font and space in the text influence the website's readability. Text on the website should be large enough to be comfortable to read. Text that is too small, large amounts of text and too many fonts make texts difficult to read. Limit the number of fonts on the website and always use relative units such as em or % so that text size can be changed; see *3.3.6 Use relative units*.

Fonts

Fonts such as Verdana, Georgia and Trebuchet were specially designed to be read on a screen, but not all users have these installed on their computer. Users most likely have Arial and Verdana. Thus, indicate fonts with several alternatives. Verdana can, for example, have Geneva and Arial as alternatives. It is important that the alternatives are always concluded with a general type of font (`serif` or `sans-serif`) such as in the example below. Remember that it can sometimes be necessary to relinquish the graphic profile in terms of font usage on the Internet since the Internet places other demands on readability.

Indicate in the style sheets which font is to be used for different objects.

```
Font family: Verdana, Arial, Helvetica, sans-serif;
```

Menus

Write menu posts and headings with a capital initial letter. Words written in capitals are more difficult to recognize, and thus impair readability. If left menus or other vertical menus are used, line up text on the left. This makes skimming menu posts easier since the user's eye is able to wander along the left edge of the menu.

Spacing

Basic browser settings display text with spacing that is 120% of font size. The wider the columns are that are used for body text, the greater spacing must be. This helps the eye more easily find the beginning of the next row. Spacing may need to be increased to 130-150% of row height. This can be done by setting line height for the relevant object in the style sheet code.

The distance between bullets in bullet lists should be greater than spacing. This makes it easier to see the difference between what is a new bullet and what is a bullet that stretches over several rows.

Paragraphs

Always allow running text to have an uneven right edge since this facilitates reading. Many users find paragraphs with a straight right edge difficult to read.

Column width

Many users need to be able to increase text size. Larger text size results in broader layout and thus longer row lengths. Since long row lengths impair readability, it is important to create a design that adjusts itself to the browser text size selected by the user. This can be achieved by using the em unit for column width. Em allows row length to be maintained no matter text size.

In order to avoid long rows and horizontal scroll lists that force the user to browse sideways, it is a good idea to indicate maximum column width when wide browser windows are used. A suitable column width is 70 characters including spaces. The maximum column width this corresponds to in a specific style sheet unit varies depending on layout, font and spacing. Also refer to *3.3.3 Create a design that works regardless of window and screen size* and *3.3.6 Use relative units*.

Testing techniques

Font and size are often determined in the layout and graphic profile, but it is also a good idea to check the website with other common fonts and then make sure that readability is good for users who access these instead.

3.3 Basic design

It is important that the website be built according to standards to ensure that its content and services reach as many people as possible and to ensure that it can be used regardless of technical equipment. Clients and developers/suppliers of websites can use the guidelines in this section to ensure that the websites being developed follow the standards agreed upon by EU Member States. A document regarding the requirements for basic design and the development process called *Krav på grundkonstruktion och utvecklingsprocessen* supports these efforts. It is available in Swedish at: www.verva.se/24-timmarswebben/checklistor.

This section illuminates basic aspects that may be relevant in conjunction with coding. There are different types of training material available from W3C's website, www.w3c.org, if more detailed information in the area is desired.

If the website is designed according to the guidelines, its appearance will offer good readability for most users. Some users need to alter appearance in order to obtain optimal readability. This primarily concerns individuals with reduced eyesight, reading disabilities or cognitive disabilities. Physically disabled individuals also need to make changes in some cases.

If guidelines for basic design are followed, the user can change settings in his or her own browser; examples are character size and font. It is easier for users to determine text, colours and distance themselves when the website functions even when style sheets are turned off (see *3.3.5*).

The basic principle is to use the browser's built-in functions for adapting website appearance to the extent possible, rather than developing special functions to adapt the appearance of an individual website.

3.3.1 Follow standards

Priority 1

Make a decision during the initial stages regarding upon which standards the website will be designed. It is then a matter of implementing the standards. There are underlying ideas for each standard, and the selected standard should therefore be respected and followed to the extent possible.

Follow standards for:

- **Markup code**. Follow XHTML 1.0 or HTML 4.01; see *3.3.2 Develop the website according to a standard rather than for a specific browser*.

- **Presentation and layout** with style sheets. See *3.3.4 Separate content from design – use external style sheets to define presentation and layout*.

If it is possible to subscribe to content on the website via RSS channels, ensure that the RSS channel code follows standards; see *4.5.1 Allow users to subscribe to information*.

Some hints

- An internal analysis may be required before it is possible to decide what standard to use. Among other things, it is important to ensure that the publishing tool is supported for the proposed standard. This is also true of other types of systems, for example case management systems that include web-based interfaces in the solution.

- Ascertain how to ensure that selected standards are followed as well as which tools can be used for verification and quality control.

- If older material is going to be reused, it should be analyzed to ensure that it does not contain markup codes that are not supported by the standard. Reused material may need to be reviewed so that incorrect or old markup codes can be removed.

- If several systems are to be integrated into the same interface, it is important to ensure that they will be able to work together under a common interface standard.

- Be particularly aware when tools automatically convert material to HTML. For example, automatic conversions from word processing programs to HTML often create incorrect markup codes.

3.3.2 Develop the website according to a standard rather than for a specific browser

Priority 1

Browser development is moving towards better conformity with existing standards. Thus, choosing to follow web standards ensures that code will function in future versions of the browser. Doing so also facilitates usage for users who use the website with other tools.

The basic principle is that no one may be excluded from accessing the presented information. To do this, design (layout, colours, font) must be separated from content (informative text, images and sound), and correct

semantic markup must be used. This allows recipients of information to transform content into the most suitable format themselves.

Making a choice is more important than what is chosen

Note that *which* standard is chosen is often of minor importance. The important issue is that a standard *is* chosen, since doing so allows delivered templates to be checked.

The choice of what standard to use is often influenced by the opportunities offered by the publishing tool being used, which is why it is important to evaluate the possibilities that exist for following various standards when selecting a publishing tool.

However there are a few issues that need to be considered when selecting a markup standard. The choice is often between using XHTML 1.0 and HTML 4.01.

XHTML 1.0

XHTML has different rules for how the markup code must be specified, and it is simple to interpret mechanically (like XML). This can be relevant if the website contains information that users, or you, wish to use in their own systems.

If XHTML is selected, be aware of the following:

- Prerequisites for usability and accessibility are not affected if XHTML is chosen.

- If the correct MIME type is used[8] for XHTML, it will not possible to show pages in existing versions of Internet Explorer[9]. This is why the standard allows usage of the MIME type that applies to HTML; another option is to read if the browser can cope with `application/xhtml+xml` and then transmit the correct MIME type.

- If XHTML is sent with the text/html MIME type, the guidelines in Appendix C in the XHTML 1.0 specification[10] should be followed.

- If the correct MIME type is used, the consequences of incorrect markup code in editorial material will be greater. Pages that have incorrect markup code will not be shown in the browser, rather an error message will appear.

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[8] MIME types are used to indicate with which content format a document will be sent. The correct MIME type needs to be indicated to enable the browser to present the content of a website correctly.

[9] At least not in versions available in November 2006.

[10] Appendix C in XHTML 1.0 specification: http://www.w3.org/TR/xhtml1/guidelines.html

HTML 4.01

HTML 4.01 provides exactly the same opportunities as XHTML in terms of developing usable and accessible web pages. The majority of browsers are able to interpret HTML 4.01 in the manner intended by the standard.

Strict or transitional?

XHTML and HTML 4.01 each have two subvarieties: "strict" and "transitional".

- "Strict" means that none of the elements that previously enabled mixing content and presentation information may be used. If HTML templates are ordered from an external supplier, it is important to request that the templates be validated against the "Strict" sub-type. Doing so will ensure that the templates do not mix content with presentation information.

- "Transitional" allows certain elements for presentation. This makes testing whether the website mixes content with presentation more difficult. However, this need not affect accessibility if presentation elements have not been used.

Backward compatibility

There is no obligation to support browsers that substantially deviate from the standard. This primarily applies to older browsers. They will still be able to show content, but layout and formatting may not be displayed as intended. It is seldom cost-efficient to make adaptations for these browsers or to supply special versions of content for them.

Testing techniques

It is possible to use W3C's validation tool in order to check if a page follows the selected standard for markup code: http://validator.w3.org. The tool can proceed from links to pages or uploaded HTML code for pages that are not yet publicly accessible. There is a corresponding tool from W3C that can be used to check if there are style sheets:
http://jigsaw.w3.org/css-validator/

Testing the website's development should primarily be done in a browser that best supports the standards; adaptations to other browsers can be done afterwards. It might at times be necessary to forego design and layout to enable the website's information and services to be accessible to all users.

The browsers that most commonly appear in browser statistics today are the most recent versions of Internet Explorer and Firefox. Others that appear are versions of Netscape, Mozilla, Opera and Safari.

New browsers are constantly appearing, which means it is even more important to develop according to a standard. There are still differences in terms of how well browsers support and interpret the different standards, so the website should generally be tested in as many browsers as possible.

Further reading

- About XHTML and MIME types:
  http://www.w3.org/International/articles/serving-xhtml/

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- General browser statistics:
  http://www.upsdell.com/BrowserNews/stat.htm

- Prioritization of browser support:
  http://developer.yahoo.com/yui/articles/gbs/gbs_browser-chart.html

3.3.3 Create a design that works regardless of window and screen size

Priority 1

Since variation in terms of user screen and window size is increasing, the best solution is to create layout that is flexible and that can be adapted to the needs and wishes of users. Avoid producing a website with fixed layout.

If statistics are used to determine distribution among users, it is important to be aware that many statistics programs only report screen resolution, which is not the same thing as window size. Statistics are often based on an average of all Internet users; the website's target users may not necessarily correspond to the average.

In order to create a website with flexible width, it is possible to use fluid or elastic layout, for example.

Fluid layout

Fluid layout uses column widths in % to allow adaptation to the width of the browser window. In order to avoid excessively long rows, % can also be used for margins and space between columns to allow for expansion when the window is wide. When choosing fluid layout, be aware that users with large screens may get very long rows of text that are difficult to read. However, fluid layout is always preferable to fixed layout.

Elastic layout

Elastic layout is similar to fluid layout, but it uses em to indicate maximum width so that layout is able to adapt itself to the browser's text size. If the user increases text size, maximum row length also increases, which means that the row of text consists of the same number of characters regardless of text size. This also prevents rows from growing to the point that readability is impaired when the browser window is wide.

Also refer to *3.3.6 Use relative units*.

Further reading

A more detailed description of fluid and elastic layout can be found at:
www.456bereastreet.com/archive/200504/fixed_or_fluid_width_elastic/

3.3.4 Separate content from design – use external style sheets to define presentation and layout

Priority 1

Cascading Style Sheets (CSS) provide one way to determine rules for the website's appearance. This pertains both to how text elements will appear and where on the page objects will be placed.

Style sheets must be defined in external style sheet documents to the greatest extent possible. Using style attributes to define style sheets directly in HTML code should be avoided since this means that semantic and presentation markup will be mixed.

Style sheets must be used to govern how texts, headings and links will appear in the visual presentation. There is a connection between visual and structural presentation. If headings are taken as an example, the document's structure is defined by using correct heading elements (`h1`, `h2`, etc.), and heading appearance is specified by defining the various elements' appearance in style sheets. The heading elements (`h1-h6`) creates a structural and hierarchical heading division while the style sheets specify how different headings will appear. Both elements are equally important. Sometimes, headings that are structurally `h1` are needed, but they need to appear differently from a visual point of view. This can be resolved by using several `h` element categories in the style sheets.

Example

Bolagsverket's (www.bolagsverket.se) and Stockholm South General Hospital's websites (www.sodersjukhuset.se) are examples of Swedish websites that use layout-based style sheets.

Testing techniques

Style sheet usage can generally be validated with W3C's validation tool. A manual review of style sheet code in combination with validation is required in order to evaluate how successfully style sheets are used for presentation and layout.

3.3.5 It should be possible to use the website even when style sheets cannot be interpreted

Priority 1

If the user's equipment does not support style sheets, it should still be possible to gain access to information on the website. Older browsers that do not support current standards as well as text-based browsers may lack support for style sheets. Browsers in many mobile phones also have poor support for style sheets. Note that the most relevant issue for these users is to be able to access information, which means that there are no demands on presentation being the same as for users whose equipment supports style sheets. It suffices if the user is able to read and navigate in menus and texts.

Style sheets must be able to manage all types of semantic elements such as h headings, lists and block quotes. Also create a style sheet for mobile devices such as handheld devices and mobile phones. Doing so will improve the user's experience with mobile devices that support style sheets. See *Chapter 6 Web content for mobile devices*.

Testing techniques

Make sure the website is readable and useful even if references to style sheet code are removed or ignored.

- Style sheets can easily be disabled in the Mozilla Firefox and Opera browsers. Go to the View menu and select Page Style/Style.

- Plug-in programs such as Web Accessibility Toolbar can be used in Internet Explorer; see www.verva.se/24-timmarswebben/verktyg.

- Text-based browsers such as Lynx ignore style sheets.

3.3.6   Use relative units

Priority 1

One of the fundamental ideas for a high level of accessibility is that the user should be able to adapt the way content is presented based on personal preferences and capability. An example is a user who might have difficulty reading text and would thus like to enlarge it. Websites that use relative units make it easier for users to adapt the way content is presented. This applies to both text size and layout.

The units of measure that should be used are em, ex or %. Text size can also be specified with keywords; see: http://www.w3.org/TR/CSS21/fonts.html#propdef-font-size.

Px and pt are examples of units that should be avoided, in particular when specifying text size. The main reason these units should be avoided is that Internet Explorer 6 for Windows, which is currently the most widely used browser, is unable to enlarge text specified in these units in a simple manner.

Choosing text size is something of a dilemma. There is no easy way to specify text size that suits every user of a website; that is, it is possible to choose and specify a size that is suitable for most, but not all, users. For this reason, it is very important that users are able to enlarge (or more rarely, decrease) text size by utilising their web browser's built-in functionality for doing so.

Some hints

- The point of departure should be to construct as much as possible using relative units. This also applies to layout areas that may need to expand as text size increases. Since some content (for example images) has a fixed size, the final result in most instances will be a combination of fixed and flexible measures. Also refer to *3.3.3 Create a design that works regardless of window and screen size*.

- Some type of boundary fixing is necessary, of course, to prevent text from being enlarged to the point that layout falls into disarray or content begins to overlap. A minimum of 150% is absolutely necessary, but the more the text can be enlarged, the better.

- There is helpful information on various values and how they function in different web browsers available in an article called Sane CSS Typography at http://www.thenoodleincident.com/tutorials/typography/. Based on the information in the article and related documents, the following basis can be used:

```
body {
    font:76%/1.6 Verdana, Arial, Helvetica, sans-serif;
}
```

76% provides basically the same results in any web browser set to default size. It is then a matter of adjusting the text (generally upwards) by using em units:

```
h1 {
    margin:0 0 0.5em;
    font-size:1.8em;
    line-height:1.1;
}
h2 {
    margin:0;
    font-size:1.3em;
}
```

If smaller text is desired, it is not recommended that anything below 0.94em be used as text smaller tends to be difficult to read.

Testing techniques

Web browsers such as Firefox and Opera can enlarge text no matter which unit is used. Use Internet Explorer 6 for Windows for testing to ensure that all users are able to enlarge text-based content on the website. In the View menu change the settings for Text Size and make sure that:

- All types of text are enlarged – including headings, labels and text in form controls.

- Text does not become illegible or disappear when enlarged, which can occur if parts of the layout do not adapt to the increased text size.

3.3.7   The website should not be dependent on JavaScript
Priority 1

JavaScript can improve a website's usability. It can make the website faster, more interactive, easier to find information and navigate in and easier to manage.

However, there is a basic requirement for all such increased functionality: the website must also function for users who do not have JavaScript. JavaScript can cause problems for people who use a screen reader or surf on mobile phones. For this reason, first build the website so that it functions well without JavaScript. More advanced functionality can then be added for users who have JavaScript.

JavaScript should be used in the right way to avoid excluding users from the website. This may require greater effort during testing.

Issues to consider when using script on websites/in applications

Remember to allow functions to be used even if script cannot be accessed. It should be possible to use functions without script, even if this must be done a more basic manner. Users who do not have support for script in their equipment may need to be informed that the website/function does not work as well without script. This information is most suitably presented in conjunction with the function or under the "About the website" section.

- Avoid using script for functions that already exist in the browser or that function just as well without script. Some examples:
  - Navigation links (most easily made as normal links).
  - Printing function (use the browser's built-in functions for printing in combination with a printing style sheet).
- If script is used for visual effects that communicate information to users, remember to communicate the same information to users who cannot see the content.
- Avoid making functions that require a specific type of input device. One example is functions that require the user to drag and drop objects with a mouse. Functions must be designed so that it is possible to use them with several types of input devices.
- Do not rely entirely upon script-based validation functions in forms. It must be possible to submit forms without script. Information submitted by users that for various reasons cannot use script must be validated on the server page. Information validation on the server page also helps prevent attacks on databases.
- Avoid browser-specific functionality. Use established standards such as W3C's document object model (DOM). A good way to avoid problems is to use any of the existing libraries. Many of these are open source code, and have already been tested on a large number of browsers.
- Enable links to be created to information on your website. If script is used to update the page with information dynamically, it should be possible to refer to the script in other contexts through normal links, for example.

Provided that what is stated above has been fulfilled, JavaScript can do a great deal to improve the user experience. This is particularly true with the new technology called Ajax, which includes JavaScript as one component. Ajax stands for Asynchronous JavaScript and XML. It is an umbrella term for a number of different technologies that can be used to build web applications that have better interactivity than traditional web applications do.

Some distinguishing characteristics of Ajax:

- Quicker websites where only information that is shown at a particular moment needs to be downloaded.
- Forms that propose continuations of what the user has begun to write and that react immediately when something is incorrect (instead of the user needing to submit the form and then subsequently get it back with an error message).
- Zooming in from overview images to details – useful for maps and making statistics pedagogical.

Testing techniques

Test functionality after JavaScript has been turned off in the browser. Plug-in programs in the browser make it easy to turn JavaScript on and off; see www.verva.se/24-timmarswebben/verktyg.

3.3.8   Use metadata on as many pages as possible

Priority 2

Metadata helps search engines and users use information on the website in the best manner possible. This applies both to your own search engine and external search engines. It is often a good idea to indicate key words or other information that is not shown on the page, but which can be used by a search engine to direct the user to the correct page on the website.

Metadata is indicated in the `head` element on the page and should be specified on as many pages as possible, but at the very least on the website's "Home" page.

A) Metadata according to Dublin Core (DC)

Dublin Core is an attempt to create a vocabulary with which to specify metadata in a more structured manner than was possible with earlier technology. Doing so makes it easier to catalogue information from different websites. DC offers a large number of possibilities to specify information.

Example of metadata according to Dublin Core

Below is an example of how metadata can be used to describe a website's content.

```
<link rel= "schema.DC" href="http://purl.org/DC/elements/1.0/"
/>

<meta name="DC.Publisher" content="Swedish Agency for Public
Management" />

<meta name="DC.Description" content="Swedish Agency for Public
Management supports the Government in evaluating and
following-up state and state-financed activities" />
```

There is a basic set of information for Dublin Core that should be considered as an absolute minimum at www.verva.se/24-timmarswebben/exempel. Use this information as the point of departure when using metadata on your website.

Examples of Dublin Core usage

- Karolinska Institutet has metadata according to Dublin Core; see http://www.ki.se.

- The Swedish Research Council's search engine uses Dublin Core to categorize search hits; see http://www.vr.se

Further reading
A list of the elements in Dublin Core and valid values for these:

- http://dublincore.org/documents/dcmi-terms/
- http://dublincore.org/documents/dcq-html/

B) Metadata according to W3C

Even though Dublin Core has existed for a while as an established standard for metadata, there are still many search engines that ignore the information provided in this manner. Thus, metadata should also be specified according to W3C's standard to ensure that your information is accessible in the most common search engines.

If a publishing tool is used, it should be possible to generate content automatically for many of the metadata elements.

When relevant, it is possible to specify options for all metadata elements in different languages by using the `lang` attribute:

```
<meta name="description" content="Text in the main language of
the website" />
```

```
<meta name="description" lang="fr" content="Text in a foreign
language, in this case French" />
```

The following metadata characteristics should be indicated:

Description
This value should contain a brief description of the website's content. Many search engines present the text in conjunction with search hits, but ignore it if it is too long. A meta element with a description value should appear on all websites, e.g.

- `<meta name="description" content="The Swedish Agency for Public Management supports the Government in evaluating and following up state and state-financed activities." />`

Keywords
The keywords value should contain alternative terms and concepts that simplify finding information even if the user did not enter the exact search term used by the authority itself. For example, a list for a page that describes childcare might contain keywords such as "daycare", "play school" and "childminder".

Terms that define the page geographically should also be included if several other websites are likely to describe similar concepts. Doing so will help users find correct information more quickly. For example, the county or municipality that the information pertains to should be indicated.

Keywords with alternative spellings should be added if the page contains words that might be difficult to spell. For example, a page with information about the Sachsska children's hospital might recognize the following spellings for the keyword "Sachsska": Sacska, Saxka, Sackska and Sachska.

It can be difficult to ascertain how users might misspell words. A good source for this information might be search logs from the website.

Expires

This value specifies the period of validity for pages that have a limited lifetime. It helps search engines purge their index so that users are not faced with hits on pages that no longer exist on the website.

The period of validity is specified in the following format:

```
<meta name="expires" content="Sun, 01 Nov 2004 23:00:00 GMT"
/>
```

Note that the date format is indicated according to RFC 1123, which means that time should be indicated in Greenwich Mean Time (GMT) in the format shown above. It is also important to make sure that your web server sends the correct values for expired material in the HTTP header so that material that has expired from the website is not stored on its way to the user.

3.3.9 Use metadata to instruct search engines

Priority 3

Most search engines respect instructions regarding specific pages that should not be indexed. There are two options for giving a search engine information about which pages should not be indexed:

Search engine instructions in a text file

Search engine instructions should be supplemented with a robots.txt file that specifies which parts of the website are not to be indexed. The search engine's instructions are placed in a "robots.txt" text file in the website's root directory. Pages that do not contain specific information for users, such as login pages, should be specified in this file. File structure is indicated below:

```
User-agent: *
Disallow: /login/
Disallow: /error.htm
```

These instructions say that none of the files in the login directory are to be indexed and that the error.htm file should also be excluded from indexing.

Search engine instructions on individual pages

The element below can be used in metadata on individual pages to prevent indexing.

```
<meta name="ROBOTS" content="NOINDEX, NOFOLLOW" />
```

Example

W3C's robots.txt file: http://www.w3.org/robots.txt

Further reading

Metadata for external search engines:
http://www.w3.org/TR/REC-html40/appendix/notes.html#h-B.4

3.3.10 Do not use frames

Priority 1

Using frames when designing a website is not a good solution since frames cause a number of usability and accessibility problems. Some consequences of using frames:

- Difficult or impossible to save bookmarks in many browsers.

- Difficult or impossible to send a link to a page via e-mail.

- More difficult to create a website that is indexed and found by search engines in an optimal manner.

- More difficult to manage visitors that come to the website via search engines.

- More difficult for users with screen readers or text browsers to use the website.

- More difficult for users to print out content from the website.

Use style sheets instead of frames to govern presentation and layout; see *3.3.4*.

If frames are used

- **Describe the purpose of each frame.** Each `frame` element's purpose should be described with the assistance of a `title` attribute. On websites that use one frame to show navigation and another to show document content, the frames should each receive their own `title` attribute with "Navigation" respectively "Content" values.

- **Manage links to individual frames.** Frames must be implemented so that the entire website is displayed to visitors who followed a link to a document that is meant to be displayed in an individual frame. A common solution is to use JavaScript, but a text link or another solution must exist for visitors who do not have JavaScript.

- **Provide an alternative.** Use the `noframes` element at the end of each frame set in order to provide alternative information to users whose browser cannot manage frames. This alternative content should include information that exists in other frames to enable users whose browser does not support frames to use the website.

Testing techniques

To ascertain whether frames are used on a website, search for the word "frameset" in the website's code. The page's layout probably uses frames if the word occurs as an HTML element.

3.3.11 Do not use tables for layout

Priority 1

Tables may not be used for layout. As a rule, there is no reason to use tables for the website's basic design.

An underlying concept of HTML is that tables are used to present structured data. If tables are used for design, conflicts are created between the user's

assistive technologies and the website's construction. Depending on how complex the table structures are, there is a risk that information will be presented in the wrong order or not at all. Even if table structure functions, some assistive technologies will read information about the tables, which impedes understanding of the content.

It may be difficult to avoid using tables altogether on old and incorrectly designed websites. A positive first step can be to simplify table structure and to avoid tables within tables. If a website is rebuilt from the foundation, for example in the event of a publishing tool being replaced, all layout tables must be removed. Discontinuing the use of tables for layout and instead designing with the assistance of style sheets (CSSs) will make the website more reliable for the future as well as more flexible. Using tables is quite simply an inferior way of designing websites.

Use style sheets instead of tables to govern presentation and layout; see *3.3.4*.

Testing techniques

A code analysis and review are necessary in order to ensure that the website functions if tables are used for layout. Ensure that information is also presented logically for users who use assistive technologies. Review can be done, for example, with:

- plug-in programs for browsers or text-based browsers such as Lynx; see www.verva.se/24-timmarswebben/verktyg.

- screen reader programs.

3.3.12 It should be possible to bookmark web addresses (URLs) in the browser

Priority 2

Web addresses (URLs) should not contain session information. If the user decides to bookmark a page, it must be possible to use the bookmark to return to the correct page in the future.

3.3.13 Use the browser's built-in function for printing

Priority 1

The website should not provide special printout versions of pages; rather, there should be a style sheet for printouts. This allows the user to preview the printout via the browser's built-in function (see the File menu, Print Preview) and check page-break for tables, text and other elements on the page. Avoid using specific icons for printing.

Technical solution

Use the `media` attribute on the `link` element to specify a style sheet file to adapt pages for printing. Indicate value as `print` to specify the file that the browser should use when printing. An example of how this can be done:

```
<link href="print.css" rel="stylesheet" type="text/css"
media="print" />
```

Printout design

The printout style sheet should conceal irrelevant design elements such as menus. However, the printout should contain information about:

- The responsible organization.

- Where the printed page can be found in the website's structure, for example by printing out the breadcrumb trail. Doing so will help the user find his or her way back.

- How current the information on the page is. Most browsers automatically print the date and web address.

- If a font that is adapted for screens is used on the website, it should be changed to a font that is suitable for reading in print. This is changed in the printing style sheet. Century Schoolbook and Georgia are examples of fonts that are appropriate for printing.

- Many users can only print in black and white. Make sure that diagrams and other information are legible in black and white.

- If the website has a fixed page width specified in pixels, page layout may need to be modified for printing. This is not problematic provided that the website uses fluid or elastic layout; see *3.3.3*.

- The user may want to print background images and colours. Ensure that this does not affect information on the page.

Example

Verva.se uses a printing style sheet and fluid layout. Try to print a page from Verva's website at www.verva.se

Further reading

Article on style sheets for printing:
http://www.alistapart.com/articles/goingtoprint/

Testing techniques

Ensure that pages appear as they should when printed.

3.3.14 Important functionality should not be based on Flash or other formats that require plug-ins

Priority 1

Not all users have a plug-in program that is able to manage Flash-based content in their browser, even if most do. Some users disable Flash support in order to avoid receiving advertising or because it uses too much broadband capacity. Other users utilize a browser or a platform that does not support the right type of plug-in, for example many mobile phones.

Even if the user's browser has a plug-in that can accommodate Flash, problems often arise for users who utilize some sort of assistive technology or who are unable to use a mouse. It is also important to be aware that even if the settings and functions for accessibility that exist in the development environment for Flash are used, only certain assistive technologies will be able to benefit and only on certain platforms.

Thus, do not use Flash for functionality that is critical to the website, for example navigation and managing forms.

Flash and other multimedia formats, however, can be used to facilitate understanding of certain information. An example is using animation to describe a course of events. It is also possible to use Flash for decorative purposes, just as images can be used to improve the appearance of a website. It is important that using Flash in this manner does not prevent anyone from using the website.

There must be clear and equivalent alternatives for presenting information and supplying functionality when Flash or other multimedia formats are used. For example, animation that describes a course of events can be replaced by a still image accompanied by descriptive text.

If alternative content significantly deviates from animated content, the user should receive clarification for the difference as well as why the alternative content is being shown. It is also appropriate to explain where the user can find the plug-ins, browser and operating system needed to view the multimedia presentation.

Some hints

- Use Flash or other multimedia formats only if doing so is well justified. First investigate the possibility of using more accessible formats.

- Imagine what will happen if Flash is not available. Disable Flash and attempt to use the website without a mouse.

- Remember that Flash files that are several megabytes large can take a long time to load for users with a low bandwidth.

- When using Flash, insert it in an accessible manner, for example by using SWFObjects. See http://blog.deconcept.com/swfobject/

3.3.15 The back button should always work

Priority 1

The back button is one of the most utilized functions for navigating on the Internet, both within a website and between websites. A non-functioning back button disrupts the possibility of going back, for example to undo or check something on a previously visited page. Thus make sure that the back button always functions.

However, there are exceptions in which the back button should not function:

- To prevent the user from going back to pages that contain information of a sensitive nature for reasons of security after he or she has logged out.

- When the user has reached a point in the process after which it is no longer possible to make changes, for example after providing an electronic signature.

The error message that is displayed when the back button does not function must clearly explain why it was not possible to go back as well as what the user needs to do in order to access the most recently shown page.

How and if the back button functions is dependent on the basic technology. Thus, it is important to ensure that this requirement is included at procurement or at an early stage of development.

In order for the back button to function, forwarding may not be done with the `<meta>` element on the website, rather it must be done by the server.

Avoid opening new windows – in particular windows that cover the entire screen – since these windows disrupt the back button's function. The problem is particularly serious since the only way to "go back" from a new window is to close it. User tests indicate that there is a great risk that users on this type of website will mix up back and close buttons and accidentally close the original window when the intention was to go back. Also refer to *5.7.3 Inform users when a link is opened in a new window*.

Testing techniques

Test by:

- Navigating to your website from a different website. Make sure it is possible to go back to the original website by clicking on the back button.

- Wander around on the website and make sure it is always possible to go back except for the exceptions mentioned above.

- Make sure it is not possible to go back to pages to which the back button should not work and that the error message is comprehensible to users.

3.3.16 It should be possible to use the website regardless of input device

Priority 2

It is never possible to be certain how a user controls his or her computer. There are many users who have difficulty using a mouse or who cannot use one at all. It must be possible to use a website by utilizing nothing more than the keyboard; this is a basic condition. The website can then be supplemented so that a mouse can be used to control the interface.

This requirement pertains to website navigation as a whole including, for example, menus, links and other individual elements such as drop down boxes and buttons.

If a drop down box is used to navigate by collecting links to different pages, a submit button must be located next to the drop down box. Do not use JavaScript to change pages automatically when the user selects something in a drop down box.

Technology

- Use concepts in the code that are independent of the input device.

- Do not use onchange to modify what is displayed on the page.

- Hover and focus can be used in style sheets to achieve visual effects in links and menus, for example.

- Make sure that the same changes to content that occur when the user runs the mouse pointer over or clicks on an object can also be achieved with the keyboard.

Further reading

For a list of events than can be activated by the mouse pointer and keyboard, see: http://www.w3.org/TR/html4/interact/scripts.html#h-18.2.3.

Testing techniques

Put the mouse away and use your website with the sole assistance of the keyboard. The code must be analyzed in order to correct any errors that may arise.

3.3.17 Provide access keys for important functions

Priority 3

A great deal of software has access keys in order to speed up use. It is also possible to do this in the web interface by linking access keys to objects such as to a specific page, section of a page or a function. Access keys enable quicker navigation on the website, in particular for users who do not use a mouse or who have difficulty gaining a visual overview of web pages.

In order to take advantage of the full potential offered by the technology, it is important that objects that exist on several websites use the same access

keys. This removes the necessity of the user needing to learn different access keys for different websites. Thus, the access keys below must be used for the most common objects on a website:

Access key[11]	Object (page)	Comment
S	Skip navigation, go directly to text content	
0	"About the website", accessibility information	Provided details on access keys
1	"Home" page	
2	News	Collection of news
3	Content outline	A site map, or perhaps A-Z
4	Search	Should be connected to the search field that searches the entire website
5	Frequently Asked Questions (FAQ)	
6	Help	For example, about a specific service.
7	Contact us	Page with contact details to important functions within the government agency.
8	Legal information	Page that describe the website's privacy policy and how legal information such as cookies are handled, see 4.2.4

Provide information regarding the access keys used on the website in the "About the website" section as well as how they are used in different browsers and operating systems. The access keys must function on all of the website's pages.

If the website lacks any of the content in the list above, do not link an access key to the corresponding figure.

Use access keys sparingly since the characters are often used by the browser or other programs. Several browsers use letters for access keys. For example, S is used for the View menu alternative in the Swedish version of Internet Explorer version 6 for Windows. However, the user can use S both for the View menu alternative and to link directly to content. To access View, the user first presses the Alt key, releases it and then presses S. To jump to content, the user presses Alt + S (simultaneously) and then activates the selection by pressing the Enter key.

---

[11] The choices of access keys are inspired by the UK Government access keys.

Technical solution

In order to assign an access key, add the `accesskey` attribute, for example to a link or to a form field.

```
<a href="contact.html" accesskey="7">Contact us</a>
```

Example

The National Board for Consumer Complaints (ARN) uses access keys; see www.arn.se. Press Alt-S in Windows and Crtl-S in Mac OS to test the access key. It is necessary to press the Enter key to activate the selection in several browsers.

Testing techniques

Ensure that all access keys go to the relevant objects.

3.3.18 Provide a logical tab order for the website

Priority 2

A user who does not utilize a mouse navigates the website via the keyboard. Navigating to move between links, buttons and form fields is done by using the tab key and in some instances the arrow keys.

Website content that is presented in an illogical order can make understanding how the website functions very difficult for users who do not use a mouse. Tab order in forms is particularly important; see *3.5.3 Group the form's fields*.

Tabbing through content places focus on various objects such as links and fields. Clarify to the user which link is in focus; see *3.1.9 Make links and clickable areas easy to use for everyone.*

In principle, tab order follows the order found in the website's code. If this order is illogical, tab order can be determined by using the tab index. First attempt to create a logical order in the code. This should in principle be sufficient. Use tab indexes very restrictively since there is a risk that they will not correspond to the tab order visitors expect.

Tab index technology

Add the attribute `tabindex="value"` for every object you would like give a tab index, for example a link or a form field. The value becomes the object's number of priority in the tab order. In the example below, the text field receives priority 1 and comes before all the objects on the same page with priority 2 or lower.

```
<label for="telephone">Telephone number (include national
dialling code): </label> <input id="telephone" type="text"
tabindex="1" name="telephone"/>
```

If several elements provide the same tab index, the website will navigate between them in the order they appear in the code.

Testing techniques

Put the mouse away and navigate around the website by using the keyboard. Make sure that tab order corresponds to how you expect users to acquaint themselves with the website.

Different browsers use different keys for keyboard navigation:

- Internet Explorer 6 and Firefox: tab key (shift + tab key to tab backwards)

- Opera: A and Q keys for links and the tab key for fields and buttons.

- Keyboard navigation may need to be activated when using other browsers.

3.3.19 Group content and make it possible to by-pass sections of a page

Priority 3

It can take a long time to access different parts of a document when navigating with a keyboard since it is normally necessary to tab by every link. Websites with an extensive and complex menu system that includes many links can make navigation difficult for many users. One way to prevent the problem is to build shortcuts into the structure.

Using shortcuts allows the user to skip an entire menu group or skip all navigation and access the website's content right away. A website that has many different menu groups and information blocks may need several alternative shortcuts. On simpler websites, it may suffice to offer users the opportunity of skipping all navigation in order to gain access to the content. Another solution is to place content in HTML code first and supply a shortcut to navigation.

Shortcuts not only facilitate utilization for users who navigate with keyboards, rather they are also very helpful to users who visit the website with a mobile phone or handheld device. Read more about web content in mobile devices in Chapter 6.

Shortcuts should primarily be visible in order to help users who need them understand they exist. If circumstances make fitting shortcuts into the website's design difficult, they can be concealed by using style sheets. In this case, shortcuts should become visible when they are tabbed to and thus become active; see *3.1.9 Make links and clickable areas easy to use for everyone*.

The page structure should be specified with heading elements. This primarily assists users who have a screen reader. Labels that sighted users do not need can be concealed (for example when context and appearance clarify the function of the page element).

Example

The Swedish Companies Registration Office uses a concealed shortcut to navigation; see the source for www.bolagsverket.se. Disable style sheet

usage in your browser. A link that allows the user to skip navigation will appear at the top of the page.

A code example for concealed shortcuts and labels can be found in Swedish at www.verva.se/24-timmarswebben/exempel

Testing techniques

Make sure that visible shortcuts function by following them. Begin navigating the page by using the keyboard if there are no visible shortcuts. Any existing shortcuts should then become visible as they become active.

Remove the style sheets and make sure that the page's heading structure is reasonable and that it identifies all the different parts of the page. A code analysis may be necessary.

3.3.20 Do not use motion in the interface
Priority 1

Examples of motion in the interface are animation or a text message rolling by on the screen. Most users are distracted by moving objects, which disturbs their reading. This is particularly true for users who have disabilities which affects reading. Motion also creates problems if the user does not have time to read and understand the message.

There are different ways to deal with this:

- Avoid motion.

- Enable users to control when motion will start and stop. In some instances, it might also be appropriate to control motion speed.

- Allow motion to turn itself off after a period of time. If, for example, there is a banner that changes content at a certain interval of time, it can be designed to stop doing so after a while.

If motion consists of rolling text or text that changes after a certain interval of time, the same message can be supplied in still form, for example as alternative text or a link to a page with a description via a `longdesc` attribute. Remember that the alternative text must contain all the messages included in the moving text. See *5.6.1 Use alt text to describe all significant images and graphic objects.*

Testing techniques

Check if pages have moving elements on them.

3.3.21 Do not use flickering or blinking
Priority 1

Flickering is very bothersome and can create major problems for users. It can even be harmful for some users. Blinking is less serious than flickering, but can still be experienced as very bothersome. If flickering or blinking objects are used nevertheless, the user must be able to turn the effect on and off. If this is not possible:

- The user must be warned before the effect starts

- The effect must turn itself off after a period of time

Testing techniques

Make sure it is possible turn blinking and flickering on and off.

3.3.22 Test code quality

Priority 1

Opportunities increase for all users to access the information and services found on the website no matter what tools are used if the website has page templates and style sheets that follow standards and that have a sufficiently high level of code quality. Thus, make sure that templates for functions and services such as style sheets validate in accordance with the selected standard. Also make sure that templates have a set of metadata.

As customer, you can require suppliers to attach the validation report for all of the templates upon delivery. Templates that do not validate should not be approved for delivery unless the supplier has acceptable arguments for *all* of the validation errors.

A website that validates and is accessible is not automatically usable nor does it necessarily satisfy user expectations and needs. An accessible website is a prerequisite for information on the website reaching as many users as possible.

Accessibility refers in part to how accessible a website is to users with disabilities, and in part to how accessible it is to users in different technical environments such as a person who has an older browser or who surfs via a mobile phone. Good code quality that follows standards and validates helps make the website accessible to users no matter their disability or technical environment. However, access to the website does not guarantee that the user understands or can benefit from the website's information and services. Thus basic accessibility testing must be supplemented with usability tests.

Further reading

- Technical reports on the most recent W3C standards:
  http://www.w3.org/TR/

- Lists of accepted W3C standards:
  http://validator.w3.org/sgml-lib/catalog

- Differences between HTML 4.01 and XHTML 1.0:
  http://www.w3.org/TR/xhtml1/#diffs

- The Web Standards Project
  http://www.webstandards.org/

Testing techniques

Use the W3C's validation tool for existing standards to check code.

- W3C's markup language validation:
  http://validator.w3.org/

- W3C's style sheet validation (CSS validation):
  http://jigsaw.w3.org/css-validator/

- Also refer to www.verva.se/24-timmarswebben/verktyg to find free plug-in programs for browsers that can be used to check code quality.

3.4   Data tables

Allowing users to see a table in its entirety offers them a quick overview of content and allows them to associate row and column headings with data cells. Blind or severely visually impaired users are unable to do this.

Thus, it is important that tables are designed correctly to make it easier for screen readers and other non-graphic browsers to interpret data tables correctly.

There are several elements and attributes in HTML that facilitate data table interpretation. Marking up extensive and complex tables correctly can be complicated, but only a few of the available elements and attributes need to be used for simple tables.

Some hints

- Use one of the table templates found in the guidelines; see www.verva.se/24-timmarswebben/exempel (in Swedish). The tables there satisfy the requirements for basic tables and can be used to publish information in table form.
- Do not convert tables automatically from Word or Excel to HTML, for example. Codes that are created from this type of automatic conversion do not follow the guidelines for accessibility, and they often contain errors.

- If a web publishing tool is used to create tables, you need to look into what type of code the system generates. If the system is supposed to have support for creating accessible data tables, you need to ascertain how this functionality can be used.

- If tables are automatically generated from content that is stored in a database, for example, you need to check which code is created and if it is possible to influence presentation.

Testing techniques

Testing with assistive technologies is primarily necessary for large and complex tables. Complex Table Inspector can also be used to check accessibility-related attributes; this is a JavaScript-based tool that also displays the attributes in graphic browsers. See www.verva.se/24-timmarswebben/verktyg.

3.4.1   Use headers for rows and columns and use graphics to draw attention to them

Priority 2

The easiest way to make a data table more accessible is to use the `th` element to indicate which cells are row and column headers.

All types of data tables benefit when they are designed to enable easy content interpretation. Row and column headers must be emphasized graphically so

that the user can distinguish them from the data information presented in the table.

If the table contains many columns and rows, you can facilitate reading by clarifying column and row boundaries by, for example, alternating background colour for odd and even rows. Tables of this kind also print better if the elements `thead`, `tbody` and `tfoot` are used.

Example

See www.verva.se/24-timmarswebben/exempel for an example of a table with column headers and rows that are graphically emphasized (in Swedish).

3.4.2   Shorten long headers for rows and columns

Priority 2

When necessary, use the `abbr` attribute to indicate abbreviations for row and column header content.

When a screen reader reads a table, it can also read relevant row and column headers before reading the content in each data cell. If headers are long, it can be time consuming if they need to be read repeatedly. Using the `abbr` attribute enables an abbreviated version of long row and column headers to be specified that the screen reader can use.

In general, however, row and column headers should be short. The `abbr` attribute only needs to be used when it is not possible or appropriate to formulate the headers briefly enough.

Example

See www.verva.se/24-timmarswebben/exempel for an example of a table with abbreviated row and column headers (in Swedish).

3.4.3   Connect data cells to header cells

Priority 2

Header cells in complicated data tables that have two or more logical levels of row and column headers must be linked together with the correct data cells. This can be done by using the `scope`, `id` and `header` attributes.

The easiest method is to create a `scope` attribute for all the header cells. The attribute can identify if the header cell applies to a row, a column or a group of rows or columns. The `scope` attribute can have the following values:

- `row`: header for the row the cell is in
- `col`: header for the column the cell is in
- `colgroup`: header for the rest of the group of columns (colgroup) the cell is in.

`Tbody` can be used to group table rows.

Example

See www.verva.se/24-timmarswebben/exempel for an example of tables that have `scope` attributes respectively `header` attributes (in Swedish).

3.4.4   Use table caption to give a concise description of the table's content

Priority 2

When necessary, use the `caption` element to create a table caption that briefly describes the content of the table. This can be compared to a caption for an image.

When the `caption` element is used, it must be the first element inside the `table` element.

Example

See www.verva.se/24-timmarswebben/exempel for an example of a table with a table caption (in Swedish).

3.4.5   Explain the meaning of a table in text

Priority 2

A sighted person can quickly determine if a table is interesting by looking more closely at it. A quick overview reveals how large the table is and approximately what it contains. A person using a screen reader is generally informed of the number of rows and columns in the table, but has difficulty gaining a quick overview. Thus, it is important that you provide a summary of the table's content.

The summary can be made in normal running text next to the table or with a `summary` attribute or both.

It might be a good idea to use the `summary` attribute for complex tables. For example, the `summary` might include the conclusion/conclusions that a person who can see the table would draw. This information is not used by the graphic browser, so the `summary` can be more detailed than what is suitable for the table caption.

Example

See www.verva.se/24-timmarswebben/exempel for an example of a table that is summarized with a `summary` attribute (in Swedish).

3.5   Forms

Forms are a central element of many of the services offered by the public sector via the Internet. It is important that forms are quick and easy to fill in so that as many people as possible want to and are able to use the services. The form's design must help the user understand how it should be filled in. Consistent placement of headings, input fields, buttons and explanatory text provide all users with good support. Remember that forms and their presentation should follow the same principles throughout the entire website.

If the guidelines for designing forms are consistently followed by all parties, the forms used by authorities will be more uniform and the number of incorrectly filled in forms will decrease.

Examples that clarify the guidelines in this section are available in Swedish at www.verva.se/24-timmarswebben/exempel.

3.5.1 Minimize the number of fields and required fields in forms

Priority 1

Do not waste users' time by asking them to fill in information that the authority does not need, already has or that can be obtained in a more efficient manner. Also minimize the number of required fields.

Four questions should be posed for each part of the form as it is created.

1. Is this information of value to us?

2. Can the information be obtained in a more efficient manner within the relevant authority or from another authority? An example is by using the person's national ID number.

3. Does the authority's usage of the information require it to be collected in several parts, for example that first names and last names are collected separately?

4. Is the information important to the extent that the user should be denied use of the service if it is not provided?

Information must be provided in the form if the response to question 1 is "yes" and the response to question 2 "no". A "no" response to question 3 means that information can be collected in one common field instead of being spread out over several fields. A "yes" response to question four means that the information field is required.

Offer the user the possibility of viewing previously collected information that is automatically retrieved. This offers the user the opportunity to indicate if information is outdated or incorrect. If personal data is retrieved and displayed, the logged in user must have the right to view the information.

Further reading

For information on sharing information among different authorities and systems, see guideline *4.5.3 Allow others to use the content of the website.*

3.5.2 Clearly mark required fields

Priority 1

Offer the user support when the form is filled in to avoid wasting time rectifying incorrectly or incompletely filled in forms.

Use the * character to mark which fields are required. Place the character in front of the input field. Also provide information in the beginning of the form about what is required by writing "Fields marked with * are required and must be filled in".

Technical solution

The * character must be placed inside the `label` element.

Example

For an example of how required fields can be marked, see www.verva.se/24-timmarwebben/exempel (in Swedish).

Testing techniques

Assess the form with users.

3.5.3   Group the form's fields

Priority 2

In the same way that texts are easier to read when they are divided into paragraphs, comprehensive forms are more clear and easier to understand if they are divided into several sections. The different parts can either be presented in different sections on the same page or be distributed over several separate pages. An example of this type of grouping is "Postal address" with fields for Address/Box number, Postcode and City.

What primarily determines if an extensive form should be distributed over several pages is how dependent the different pieces of information are on one another. If the form requests information that the user can use when filling in other fields, it should be provided on the same page. Information that is required to make a decision should be filled in on the same page.

It is also important to organize the sections of a form so that they are presented in a logical order for users who navigate by keyboard. The tab order in a form must be from left to right, top to bottom. See *3.3.18* for information on tab order.

Some hints

- List all the data that must be collected in the form and try to divide the list into groups.

- If the list is long, try to merge the alternatives or create subheadings that divide the list into logical groups.

- When the form stretches over several pages, display which step the user is on as well as how many steps are left. For example "Step 1 of 3: Your contact data".

- If certain information controls what other information needs to be filled in, it must exist on its own page. When this information has been filled in, only the relevant form fields should be presented in the next step.

- In order to more clearly signal that the form is one part of a page on which the user needs to do something, give the form a coloured background that distinguishes it from the rest of the page.

Technical solution

Use the `fieldset` element to group input fields on one page. Give the group a clear description with the `legend` element. Groups of radio buttons and check boxes can be appropriately grouped with `fieldset`.

Example of fieldset

An example of a form where fieldset is used to group the content.

Testing techniques

Check the form by reviewing or assessing it with users.

3.5.4 Use the fields that are best suited for the requested information

Priority 2

Forms consist of a number of elements with different areas of usage. Below we describe the most common elements and how they should be used to help users more easily predict what choices need to be made and what information must be provided.

Text input fields

Text fields can be used when there are too many alternatives to list and when spelling is not decisive in terms of post-processing information.

There are three variants of text input fields:

- `text` element: Used when the amount of text that the user should fill in is limited to one row.

- `textarea` element. Used for long texts and responses to open-ended questions.

- `password` element. For passwords and personal codes.

Using check boxes, radio buttons and drop down boxes

The following are available for fixed options in forms:

- **Check boxes**: Input element `checkbox`
  Check boxes must be used when zero, one or several options are possible. Check boxes are also appropriate when offering a pre-selected option might be considered as sensitive or "politically incorrect".

- **Radio buttons**: input element `radio`
  Radio buttons are appropriate for lists with two to five options when only one of them can be selected. Radio buttons show all the options simultaneously and thus provide a better overview than do drop down boxes. Radio buttons must always have one pre-selected option.

- **Drop down box**: lists created with `select` elements
  Drop down boxes are suitable for lists where a selection must be made from five or more options. Always ensure that the user can return to a position where no choices have been made so that incorrect selections to be corrected.

If the options are yes/no, on/off or a confirmation request, use **one** check box instead of two radio buttons.

Placement and activation of check boxes and radio buttons

Radio buttons and check boxes must be placed vertically rather than horizontally since this enables quicker reading at the same time it is easier to see which labels belongs to which option. If horizontal rows of radio buttons are used, the distance between options must be large enough to allow them to be easily distinguished from one another.

Enable the user to activate check boxes and radio buttons by clicking on the check box and the radio button as well as their labels. Do this by using the `label` element in HTML; see *3.5.5 Make field labels clear and clickable.*

Fields for telephone numbers

Allow users with text telephones to indicate next to the field for telephone numbers that the specified number is to a text telephone. This is most easily done by providing a "Text telephone" check box next to the field for telephone number.

Example

For examples of different types of input fields and telephone number fields with relevant text telephone options (in Swedish) see:
www.verva.se/24-timmarswebben/exempel.

Further reading

- "Checkboxes vs. Radio Buttons" from Jakob Nielsen's Alertbox:
  http://www.useit.com/alertbox/20040927.html

- More information on text telephony is available in Handisam's (Swedish Agency for Disability Policy Coordination) guidelines for accessible public administration. Available in English at:
  http://www.handisam.se/Tpl/NewsPage_____935.aspx

Testing techniques

Usability tests on paper prototypes of the form offer an easy and inexpensive way to determine if input field selections function.

3.5.5 Create clear and clickable field labels

Priority 1

Each input field must have a field label that explains the field's function. Formulate the label to enable easy understanding of how and what information should be entered. Indicate, for example, how detailed requested information should be. Left align the field label.

The label becomes clickable in most web browsers by linking field labels and fields. This involves the cursor being placed in the field when the user clicks on the label. This makes the field's clickable area larger, which makes usage simpler for all users. This also enables assistive technologies to link the correct label to the relevant field.

Avoid writing instructions between field labels and fields or after the field. Should more detailed instructions be necessary, write them before the form. `Title` elements for input fields are difficult to discover for users who tab their way through the site.

Field label placement

- Text field: Place the field label above or to the left of the field.

- Radio buttons and check boxes: Place the field label to the right of each button/box

Field labels for individual check boxes

Formulate field labels for individual check boxes so that it is clear what it means if the check box is filled in or empty. Write in the affirmative, for example "Yes, I would like to receive the newsletter by e-mail". Avoid check boxes where the user must choose not to receive something, for example "No thank you, I do not want to receive the newsletter by e-mail".

Technical solution

Use the `label` element to link each label to the input field it describes. This is done by specifying the id of the field in the `for` attribute of the `label`.

Example

See www.verva.se/24-timmarswebben/exempel for examples of how to place field labels for input fields (in Swedish).

Testing techniques

Usability tests on paper prototypes are an easy and inexpensive way to determine if field labels are clear.

3.5.6 Make sure that users can fill in information in the way they prefer

Priority 1

Even if clear instructions are given to the user, it is still possible for the correct information to be filled in but with incorrect formatting. Telephone numbers, national ID numbers and dates are examples of information that can be entered in various ways. Sending an error message back to the user stating that the form was incorrectly filled in is not a good solution in this situation. Even if clear instructions are given to the user, it is still possible for

the correct information to be filled in but with incorrect formatting. Programming enables, for example, undesired spaces, dashes and other punctuation marks that the user may have entered to be removed through formatting.

Testing techniques

Try entering information into the field in different formats to ensure that the form accepts information without an error message needing to be sent back to the user.

3.5.7   Adjust the size of text fields to the expected input

Priority 2

Make it easier for the user to see how much information should be filled in by adjusting the size of the text field. For example, the postcode field should be shorter than the e-mail address field.

The size of the field should be adapted to the information the user needs to enter. Also give the user the chance to see what has been written.

Recommended text field sizes

Text field sizes should be **at least** the number of characters indicated in the list below. Note that it is possible to allow more characters to be entered. Consider the form's layout as a whole. The form may be perceived as confusing if several different field sizes are used.

- Name: 50 characters

- First name: 20 characters

- Last name: 20 characters

- National ID number: 13 characters in Sweden (for example 20060101-1010). The Swedish Personal identity number describes year, month and day of birth followed by a three digit birth number and a control digit)

- E-mail address: 50 characters

- Postcode: 10 characters (for example SE-115 45)

- City: 25 characters

- Street/post address: 25 characters

- Telephone number: 20 characters

- Website: 40 characters (with pre-entered text when necessary "http://")

- Link: 70 characters (with pre-entered text when necessary "http://")

Enable users to read what they have written in `text area` input fields by making fields at least 50 characters wide and at least 5 rows high.

Testing techniques

Try to fill in the form with information that contains a great many characters.

3.5.8 Support automatic form fill by naming text fields consistently

Priority 2

Modern browsers can store what the user has entered into the text field. If the text field has the same name as a previously completed field, the browser can offer proposals based on what has previously been entered. This allows the user to fill in the same form more quickly on repeated occasions or to enter repeated information on many forms, for example e-mail addresses. We can save our users a great deal of time if all authorities use the same names for similar fields.

Give text fields for contact information name elements according to the following list:

- name
- firstname
- lastname
- title
- organisation
- street
- postcode
- city
- email
- phone
- mobile

Exceptions to the list can be made when:

- The form requests information on several people.
- It must be possible for field names to be managed by the underlying systems that process the collected information. This can be appropriate during a period of transition when the form is used to send data to an existing system.

3.5.9 Do not change the appearance of form elements with style sheets

Priority 2

There are several reasons why it is best not to make any major adjustments in the form element's appearance by using style sheets (CSS). It may be more difficult for the user to recognize that it is the form element since it looks differently than it normally does, and there are major differences in what various browsers allow in terms of changing the appearance of form elements. This means that a change that looks good in one browser can be entirely illegible in a different one.

Some minor adjustments such as foreground and background colours rarely cause problems provided there is enough contrast and that colours are different enough from one another.

3.5.10 Using buttons in forms

Priority 2

Try to use as few buttons as possible in forms and make sure to mark the button that takes the user forward (action button) especially clearly. The name of the button should be selected so that it communicates to the user what happens when it is clicked; for example, "Calculate retirement benefit" or "Add new income".

Also offer the user the chance to save what has been entered when necessary. There must be a Cancel button if the form consists of several pages. Cancel must interrupt the entire flow, not just go back to the previous page of the form. Avoid using Clear buttons in the form. The risk that users will mistakenly clear all fields is greater than the need for being able to clear them.

Button placement

Button placement is affected by the form's design and how many buttons there are. Buttons that logically belong together should be grouped. Place Cancel and Clear buttons to the right of the action button. If horizontal rows of buttons are used, the distance between the buttons must be large enough to allow them to be easily distinguished from one another.

Avoid buttons that are based on images

Avoid using buttons based on images in forms since it is not possible to enlarge the text on buttons of this type. However, image-based buttons might increase usability in some situations. One example is action buttons that clearly show the main flow through a web application. If image-based buttons are used in this type of situation, the text must be 12 px or larger. Image-based buttons must be given alternative text. The `value` attribute is not used if the browser does not display images.

3.5.11 Do not make forms dependant on JavaScript

Priority 2

Remember not to make forms dependent on JavaScript. Assistive technologies may have difficulty informing the user that changes have been made on the page by using JavaScript. Text-based browsers often entirely lack support for JavaScript. It is entirely possible to use JavaScript for form validation, for example, but error handling must also be introduced to the server since it cannot be assumed that the visitor's browser supports JavaScript.

Testing techniques

Make sure the form can be used when JavaScript is disabled. Also try to submit an incorrectly filled in form to ensure that error handling works without JavaScript.

3.6   Web applications

To an increasing extent, the Internet is used for more than just presenting information. It is also used as an interface for computer programs – which are also called web applications. There are a great many different definitions for exactly where the boundary goes between a web application and a "normal" website, but most important is that the web application is a tool with which users achieve something. Typical examples are a parent reporting to the Swedish Social Insurance Agency via the Internet that he or she will stay home to care for an ill child or checking how far a child has come in the childcare queue via the Internet.

Since web applications partially deviate from normal information pages, all the information in these guidelines is not always applicable. Some points on which a web application may deviate from the stated advice:

- **Web address (URL).** Pages that are made based on previous user activity and for which there is no reason to visit right away need not have a comprehensible or short web address. Neither do they need to be searchable (for example by having metadata).

- **Date and the party responsible for the page.** However, it might be a good idea to provide contact information to technical support should difficulties arise.

- **Different colours for visited and unvisited links** are not always useful to web application users.

- **Printable pages.** Printing a web application's interface may not be of interest, but being able to print its produced results easily is important.

Naturally, determining which advice is not relevant varies from case to case.

It should be especially emphasized that the rules for JavaScript apply both to web applications and to other pages. It may be used to simplify and support, but it must be possible to use the application even if the user does not have JavaScript. See *3.3.7 The website should not be dependent on JavaScript.*

3.6.1   Protect users against accidentally losing work
Priority 2
A specific problem associated with web applications is that users are not "locked into" the interface in the same way as with a normal application. On the contrary, on the web it is easy to unintentionally leave input that has been initiated without concluding or expressly cancelling it.

Web applications can use tunnels and safety nets to counteract this occurrence. A tunnel functions in the same manner as a road tunnel – it is impossible to leave the road once the tunnel has been entered; the road must be followed to the other side of the tunnel. This is achieved by the web application being cleared of all links and buttons other than those needed to control the application.

There must also be a Cancel link (or button) that allows the user to exit the tunnel, since the aim is to prevent him or her from inadvertently losing entered text rather than locking him or her in.

A more sophisticated option is to hang up a safety net around the user. A safety net consists of JavaScript that notices if the user is about to leave initiated work and then subsequently displays a dialog box asking the user if he or she really wants to cancel.

Safety nets do not deviate from the advice to avoid JavaScript dependency since they are a help function.

3.6.2   Always show valid information

Priority 1

Websites generally show a specific moment in time – that which was relevant when the page was loaded in the browser. The page can then remain unchanged a long period of time which means the information on it grows old.

This is not usually problematic on normal websites, but it can be in some web applications.

The normal – and most reliable – way to update a website is to reload it. This method should generally be used. However, reloading a page must be a reaction to something the user does. Spontaneous reloading results in many assistive technologies losing their way, which forces the user to start over.

If the aim is to keep the page as updated as possible and it is not necessary for the user to be aware that the page has been updated, JavaScript (for example Ajax technology) can sometimes be used to update information on the page without needing to reload it.

3.6.3   Identify the user before sending or receiving personal information

Priority 1

One characteristic of web applications at authorities is that they often manage personal data. There is thus a pattern for how the flow can progress through an authority's web application:

1. Identification
2. [the user performs his or her task]
3. Review
4. Sign
5. Send

Steps 4 "Sign" and 5 "Send" can often be merged.

1. Identify. Many web applications show user information that is sensitive from an integrity point of view – for example salary or how far in a process the user's case has progressed. Before the application shows data of this nature, it must ensure that the person at the computer really is who he or she

says. The user must identify him or herself to prove that he or she has the requisite authorization to access the information. For more information on electronic identification in Swedish see: www.verva.se/e-legitimation.

2. Perform. The user performs his or her task.

3. Review. When the user has finished filling in the information and wants to submit it, it is a good idea to display a summary to enable the information's accuracy to be checked by the user.

4. Sign. When the user has reviewed the information and is satisfied, he or she "signs" it. This is naturally not a real signature; rather, the user must once again identify him or herself so that the application can ensure that he or she is the right person.

5. Send. Finally, the user submits the information. "Sign" and "Send" can often be merged into the same step. Only the symbol for "Sign" is used in that case.

Further reading

For more information on the different steps described above, see the guidelines for user interfaces that fulfil legal requirements: www.verva.se/e-legitimation/granssnitt (only in Swedish).

3.7   Error handling

A website must never make a user feel stupid since this diminishes his or her willingness to use the website. For this reason, it is important to take care of the user even if things go wrong. The guidelines below offer hints and advice regarding how error messages should be designed and formulated to ensure that they offer user support.

3.7.1   Provide comprehensible error messages

Priority 1

If the instructions in *3.5 Forms* have been followed, the user's task will have been simplified. However, it is important to take care of the user if things go wrong nevertheless. Helping the user fill in data reduces the risk for extra work that can otherwise arise if the collected data contains incorrect or incomplete information.

Error messages must:

- Be **clearly visible** and inform the user that something has gone wrong. Place the error message next to the field in which the error occurred. Use layout that distinctly deviates in order to differentiate the error message from the rest of the website's design. Indicate that an error has occurred in the `title` element.

- Be **easily located**. Place error messages at the beginning of the page. This helps the user gain an overview of what needs to be done to correct the error. If several errors have occurred, a text message should state how many of them must be rectified before the user can proceed.

- Be **comprehensible** to the user. Do not use concepts that are difficult to understand. Concepts in the error message must correspond to concepts in the form.

- Be **polite**, and not accuse the user of having done anything stupid or wrong. Remember that input errors are often the result of the demands placed on users due to requirements/deficiencies in the technical platform.

- **Simplify the process for users and offer concrete advice** regarding how the problem can be resolved or avoided. If an error is discovered, make resolving it easier by, for example, saving as much of the entered information as possible so that only the incorrect information needs to be re-entered. User frustration is avoided by removing the necessity of entering the same information again. Briefly explain what the user needs to do to rectify a specific error.

- **Guide the user** to the section of the form where the error needs to be rectified. Use links in error message text to help simplify navigation from the error message to the related input field. If the error is due to the impossibility of interpreting the entered information, allow the user to make a selection from a list of possible interpretations.

Examples of error messages

An example of how to address users in error messages and how to describe and link to the fields that not have been filled in correctly.

The code for this type of error message is available via the "Felmeddelanden som ger stöd till användaren" link at: www.verva.se/24-timmarswebben/exempel.

Further reading

More information on appropriate ways to communicate error messages:

- http://webaim.org/techniques/formvalidation/

- http://www.standards-schmandards.com/2005/accessible-errors/

Testing techniques

Testing requires review based on the guidelines above and usability tests.

3.7.2   Provide the opportunity to undo an action

Priority 2

Try to allow the possibility for all actions to be undone. This is preferable to asking the user to confirm actions repeatedly with dialog boxes such as "Are you certain you want to…" as these questions result in irritation in the long run.

Programs that are not web-based, such as many word processing programs, offer the Cancel and Undo functions when the user wants to undo an action. The browser's back button is commonly used on the Internet to undo an action. Thus, the back button must to the greatest extent possible function in forms and during registration processes that include several steps (see *3.3.15* for exceptions). Avoid having the back button send the user back to the very beginning. The most common scenario involves the user wanting to undo something that he or she has just entered.

More time for development may be required in order for the back button to function satisfactorily since previously registered information must be processed in a specific manner. For example, duplicates of registered information should not be created.

If the form or registration process has several steps, a Cancel button can increase the user's sense of security and control. Warn the user if cancelling can lead to information being lost or the user being transferred back to the very beginning.

Testing techniques

Tests performed together with users are particularly important for actions that are performed in several sequences so that any errors and discrepancies in design can be revealed.

3.7.3   Create a specific page that appears when a desired page is not found

Priority 3

The most common error message on the web is "404 – File not found", which is displayed if the user tries to access a web address that does not exist. The error message that appears as standard does not help the user continue to the page he or she was looking for. Your website should have a special 404 page since this is such a common error. This page should be simple as well as clearly deviate from the rest of the website's appearance so that it is perfectly clear that something unusual has taken place.

The error page should contain:

- The entity responsible for the website; a logotype at the very least.

- A brief text explaining that the page cannot be found.

- Links to the website's "Home" page, content outline and search function.

The page can be supplemented with the website's search function and links to popular sections on the website.

Technical solution

You can activate your own 404 page in various ways depending on which web server is used. More information is available at 404 Research Lab: http://www.plinko.net/404/custom.asp

Example

The Swedish National Tax Board has a website-specific 404 page. Try entering the following incorrect address in your browser: http://www.skatteverket.se/testing-one-two. Doing so will cause the website's error page to appear.

Further reading

More ideas on how to improve your 404 page can be found at: http://www.alistapart.com/articles/perfect404/

Testing techniques

Make sure the website's error page appears when an incorrect web address is entered under the website's domain.

3.8　System-initiated events

There is a risk of great confusion arising if something takes place automatically without the user stipulating that it should happen, that is if something suddenly happens outside the user's control. Thus, use system-initiated events with care.

3.8.1　Avoid automatic forwarding and signing out

Priority 1

The existence of built-in, time-determined tasks are not unusual when logging in is required to perform a service or when the user has initiated an order via a web service. Most common is that the user is logged out or loses contact with the server after a specific period of inactivity.

Try to allow users more time when necessary. For example, the user may read/interpret a page so slowly that the period allowed for inactivity expires before the user is finished with the page. Some users work slowly and need to take breaks to gather new energy. Other users may discover that information needs to be looked up elsewhere for the desired service.

Technical solution

Use automatic forwarding on the server page.

3.8.2　Allow the user to check automatic reloads of pages

Priority 2

Screen readers interpret automatic updates of parts of a page as if the entire page has been updated, and thus begin reading from the beginning of the page again. This can be very confusing for a person who uses a screen reader or a screen magnifier since the page is loaded without the user having done anything.

Thus, it might be appropriate to offer the user the option of disabling automatic updates.

Give the user control

- Warn the user that the page is going to be updated by providing a descriptive text at the beginning of the page.

- Allow the user to disable/enable the update with an on/off button.

- Make sure there is an OK button or the equivalent next to drop down box menus. The page will automatically reload when the user leaves the drop down box menu if there is no OK button. This means that screen reader users run the risk of accessing a page that he or she had no intention of visiting.

4 Basic content and services

The quality of a website's content and services is decisive in terms of how many users will want to visit and use the website. Users must believe that the content and services are beneficial if they are to return to the website. A sense of participation and insight into the authority's activities can also be created through the website.

This chapter describes the minimum requirements for what content should contain and which services should be offered on an authority's website. Examples are emergency information, contact data, legal information, Easy-to-Read and sign language. You must personally decide what content is relevant for your website.

No matter what content exists on the website, it is important that you to the greatest extent possible present it in standard format and from the visitor's perspective rather than from the organization's perspective.

This chapter is intended for organization and website managers as well as information officers and editors.

4.1 About the authority

Place the guidelines presented below in a section called "About [the authority]". The section is equivalent to the English "About us" section.

4.1.1 Provide information about the authority's responsibilities

Priority 1

Describe the authority's assignment with concepts and terms that are clear and comprehensible to the authority's prioritized target groups. Also present formal aspects such as letters of regulation and governmental decisions that concern the authority.

When presenting the assignment:

- Begin with what assistance or services the citizen is able to receive as well as what rights and obligations he or she has.

- Briefly describe and link to other authorities that have similar assignments.

- Present annual reports, supporting documents for budgets, activity plans, board minutes and important decisions made by the authority.

- Present the plans that the authority is required to have such as plans for equal opportunity and diversity.

- Present letters of regulation and other governmental decisions further down in the structure as most users do not to look for these right away.

Emphasize the most important elements and refer to more detailed information on the website if the authority has several sub-activities that make separate statements of account.

4.1.2 Provide information about the authority's responsibilities in the event of an emergency

Priority 1

Swedish Government agencies that are in direct contact with citizens and companies must have information regarding the agency's role and area of responsibility in the event of a crisis. In order to reach uniformity and consistency among agencies, this type of information should be placed in an "Emergency and security" section. Depending on the agency's area of responsibility, focus and target groups, the "Emergency and security" section can either be placed directly in main navigation or as a sub-category to the "About the website" section.

Information regarding emergencies and security must be available during normal conditions, that is before the occurrence of an emergency.

Examples of content during normal conditions in the "Emergency and security" section

- **The agency's areas of responsibility** during different emergency situations. Explain what the agency's role is and how it will react in the event of an emergency as well as what support it will offer.

- **Practical advice** and information regarding what action to take in the event of an emergency.

- **Contact data:** Telephone numbers and e-mail addresses to the agency's emergency management coordinator or other functions that the agency deems relevant.

- **Links to other relevant contacts.** The agency's area of responsibility and other actors that will be involved in the event of an emergency determine which other links should be available. Use the Swedish Emergency Management Agency's list of actors as the basis when linking to various agencies: http://www.krisberedskapsmyndigheten.se/aktorer (the list is only available in Swedish).

- **Information to the press**

Refer to *5.3 Emergency information on the website* for additional information on how emergency communication can be managed.

4.1.3 Publish the authority's comments on a proposal circulated for consideration

Priority 3

Publish the authority's comments on proposals circulated for consideration to help increase the insight citizens and companies have into the authority.

When presenting comments to a proposal circulated for consideration, state:

- Title and number of the comments

- Department affiliation (if applicable)
- Date
- Link to the proposal that was circulated (if possible).

Preferably describe the content of the proposal briefly so that individuals who are not well acquainted with the topic or the authority's areas of activity have a chance to understand what the authority has responded to.

File previous comments on proposals that were circulated for consideration. Offer the opportunity to search among comments on proposals that were circulated for consideration when there are so many that it is difficult to gain an overview.

4.1.4 Provide information about the authority's participation in EU-related work

Priority 2

Presenting the authority's participation in EU-related work must be lucid and provide citizens, consumers and organizations information about which elements of the authority's activities that:

- Are influenced by EU-related decisions, for example issues related to food, the environment and child safety.
- Take part in EU-related projects.
- Are financed by funds from the EU.

4.1.5 Provide contact information and an outline of the authority's activities

Priority 1

The description should help users understand where they should turn to receive the desired type of assistance. Also try to provide a good idea of where the different types of cases are prepared and what opportunities exist for staying informed and stating one's opinions as well what rules and regulations apply.

As a rule, contact information should include telephone numbers, e-mail addresses, positions and other work-related information for managers and employees who are responsible for different areas. Names and contact information should only be published if the authority's policy allows this and if the authority has obtained the relevant individuals' consent in accordance with the Swedish Personal Data Act. Also refer to *4.6.2 Use function-oriented e-mail boxes*.

Make it easy to find and use the authority's contact data

One of the ways that the Internet is most commonly used is to find addresses and telephone numbers.

The website's "Home" page must present the following important information:

- name of the organization

- mailing address

- telephone number to the switchboard

- e-mail address to the authority's registrar.

If relevant, also publish the information below on a separate "Contact us" page.

- Telephone, opening and visiting hours.

- Street address, map, directions (by car and public transportation) and a photograph of the visitor's entrance to the building.

- Telephone numbers and e-mail addresses to the people responsible for functions and departments; also refer to *5.5.3 Make it possible to call linked telephone numbers*.

- List the relevant function-oriented e-mail boxes that exist (e.g. for a certain working group) and briefly describe which issues each function-oriented mailbox manages.

- Information about who is responsible for information and who is responsible for the press.

Publish this information in text format rather than as images.

If a "Contact us" page is used, the "Home" page must link to it.

You can also allow the user to download address information, for example, to import it to other programs such as a personal address book. In this case, use an established standard such as vCard.

Further reading
- Introduction to vCard: http://en.wikipedia.org/wiki/VCard

- Specification for the vCard standard: http://www.ietf.org/rfc/rfc2426.txt

4.2   Basic information

In addition to the information presented in the "About [the authority]" section, basic information on the entity responsible for the website must be presented. Trust is an important factor in terms of the website being used. It is important that the user understands who is responsible for the website, and that he or she perceives the content as correct and current. This section presents the guidelines that contribute to increasing user trust in the website.

4.2.1   Use the "Home" page to clarify the purpose of the website

Priority 1

The "Home" page should function as an entryway both for returning and first-time visitors. It is important that visitors understand as quickly as possible which website they have accessed.

The "Home" page must clearly:

- Show which organization is responsible for the website.

- Guide the visitor to the different parts of the website.

Preferably provide concrete examples of what the visitor can expect to find on the website, for example a couple of the authority's most important services or the most recent news. Using a statement text is another way to clarify the content of the website.

Statement text

Write a brief text (one or a few sentences) at the beginning of the "Home" page to describe the authority's activities. The text should say what the authority does. Avoid difficult words and concepts even if the authority solely focuses on a professional or very limited group. Everyone who visits the website must be able to gain a basic understanding of why the authority exists.

The text can also be placed in metadata; see guideline *3.3.6*. The statement text should indicate if the website is a collaboration between several organizations or another type of campaign/theme website.

4.2.2 Give all pages a clear title

Priority 2

The page's title is indicated in the HTML `title` element. The title is displayed in the browser window, and is the first thing the user sees when accessing the page. Thus, it is important that the title describes the page's content.

Example of how the title is presented in the browser (framed in). If the specific information is not placed first, it will be more difficult to distinguish different pages.

The title's functionality and design

- The page title is presented in search results, and influences how the side is ranked by search services.

- The page title is proposed as a name when the page is saved as a bookmark or a favourite.

- The title must consist of one part that describes the relevant page and one part that provides the name of the responsible organization. It can also contain the names of the departments to which the page belongs.

- The title must be formulated so that the most specific information (the description of the relevant page) comes first, and is then followed by other information such as name of the department and the organization. The reason is that bookmark lists often only show the

first part of the title; it is difficult to distinguish between different pages if the most specific information does not come first.

- Information in the page's title must be consistent with link text and headings for the page.

- If the page is part of a process in an e-service, its title should describe the relevant process step in combination with the name of the e-service. The title might be "Provide personal data – Apply for parental benefit" for e-services with which the user can apply for parental benefit.

- Do not use decorative characters or unnecessary spaces in the title of the page. Example: ":: Title :: Website" or "Welcome to the A U T H O R I T Y" or (because it can cause some assistive technologies to read): "colon colon title colon colon website" or "…a, u, t, h, o, r, i, t..."

Testing techniques

- Make sure that the page's title (text that is displayed above the browser's menus) briefly and specifically provides information about the content of the website and which organization is responsible for it.

- Make sure that the title of the page correlates to the page's heading, and links to the page.

4.2.3 Create a section called "About the website" with information on content, functionality, privacy statement and terms of use

Priority 1
The "About the website" section is equivalent to the English "Terms/Conditions of use" pages. In the Swedish version of the guidelines "About the website" is called "Om webbplatsen".

Make sure that the "About the website" page is accessible from all the pages on the website.

The aim of the "About the website" page is to provide the website's visitor with an integrated view of:

- what the content of the website is

- how the website functions

- what is required technically and what applies from a legal point of view in terms of using the website.

Present the following on the "About the website" page:

- Overall aim of the website.

- Brief description of the structure and functionality found on the website.

- Legal information on an integrated page located under "About the website"; see *4.2.4 Provide information about how legal information and cookies are handled.*

- Which web standards the website follows.

- Which support for accessibility the website provides, for example how to modify the website's appearance (see below), and which access keys the website has, as well as how they are used in different browsers and operating systems; see *3.3.17 Provide access keys for important functions*.

- How and from where software that is needed to use the website can be downloaded and what the user can do if difficulties should arise. For example, if and how script is used, and what the consequences might be if the user has disabled script in his or her browser. Note that it is not possible to require the user to have support for JavaScript and/or Flash.

- How the user can forward viewpoints related to the website.

Provide information about how the website's appearance can be modified

Many users are not aware that they can modify the settings in their browser. Many are hesitant to make changes as they are worried about "ruining something" which would make it more difficult or impossible to use the program.

Using flexible measures enables users to change text size on the website with the functions that are built into the browser; see *3.3.6 Use relative units*. Provide information on the "About the website" page regarding how text size can be changed. Text size can be changed in most modern browsers by pressing the Ctrl button and turning the mouse wheel. Other alternatives for changing text size can be found in the View menu.

Example

See www.verva.se/24-timmarswebben/exempel for examples in Swedish of texts and structure for the "About the website" page.

4.2.4 Provide information about how legal information and cookies are handled

Priority 1

By law, Swedish authorities are required to provide certain information on their website such as how personal data and cookies are managed.

The information that must, by law, be provided is described in detail in Verva's guidelines called *Vägledning för information som enligt lag ska lämnas på webbplatser* (only available in Swedish); the document also describes how the information can be simply and clearly presented on the website. There are sample texts available to use as a basis when information of this kind is being produced. All of the sample texts have been reviewed and approved by lawyers.

The legal information section described here is equivalent to English pages as "Privacy policy", "Your privacy", "Legal conditions", etc.

Information needs to be provided when:

- User consent or declaration of intention is required (when processing personal data), for example when the user enters an agreement.

- The authority supplies an e-service.

- The website uses cookies.

- Electronic bulletin boards, for example chat or discussion forums, are used.

- Personal data is collected or processed on the website, for example for applications.

- The authority has permission to publish, or publishes publications or radio programs.

- The visitor can enter agreements or order goods/services on the website.

It is also possible to use P3P to give the user control over how personal data is used and stored on the website. P3P stands for Platform for Privacy Preferences Project. The standard was developed by W3C, which stands for World Wide Web Consortium. Providing information in machine-readable format allows users to receive information about how cookies and personal data are managed.

If cookies are used on the website

Cookies are small text files that are stored on the user's computer; they are used to keep track of what the user does on the website. One of their functions is to help users avoid having to enter the same information twice. Cookies can be used to provide better service, but they can also entail personal data being stored.

There are two types of cookies:

- Cookies that remain on the visitor's computer until removed.

- Session cookies that are temporarily stored in the computer's memory while the person is visiting the website. Session cookies are deleted when the browser is closed.

In addition to the information mentioned above that must be provided by law, provide information regarding:

- Which parts of the website use cookies and what the cookies do, for example save information about visitor statistics or personal settings such as fonts and text colours.

- What can happen if the user prevents cookies from being used in the browser's settings. Present this in conjunction with the information or service so that the user is made aware of the consequences before he or she begins using the service.

Example

Standard texts that can be used as the basis for describing how the website uses cookies are available in Swedish at: http://www.verva.se/juridisk-info/checklista.

Further reading

- Swedish guidelines for information that by law must be provided on the website: http://www.verva.se/juridisk-info (only in Swedish).

- The Swedish Data Inspection Board is an authority with the task to protect the individual's privacy in the information society without unnecessarily preventing or complicating the use of new technology: http://www.datainspektionen.se/in_english/

- W3C's website for P3P, http://www.w3.org/p3p, provides information about and examples of how P3P information can be created for your website. There are also tools available that you can use to produce P3P profiles.

Testing techniques

Make sure there is an "About the website" section and that legal information and information on cookies are provided.

Use the following to ensure that P3P information is correctly provided on your website:

- W3C's validation tool: http://www.w3.org/P3P/validator.html

- Manual review by opening the website in a browser (such as Internet Explorer 6 or later) and selecting the function for privacy reports. In Internet Explorer, this function can be found under "Privacy Report" in the View menu. Select a link in the list and click on "Summary".

4.2.5 State who the information manager is

Priority 1

It should be clear who has overall responsibility for the website. This information is suitably located on the "Contact us" page; see *4.1.5 Provide contact information and an outline of the authority's activities*. If the website does not have a "Contact us" page, state who the responsible party is in conjunction with contact information.

The information manager of a website is not the same thing as the responsible publisher of a publication. The information manager is the person/function who can be contacted in the event of incorrect information on the website and who has the authority to correct the information.

4.2.6 State the organization responsible for publishing the website on every page

Priority 1

State which organization is responsible for publishing the website on every page.

The responsible organization should be introduced in text and with a logotype and code:

- **Text content**. Write the name of the organization next to contact information.

- **Logotype**. The logotype must be supplemented with alternative text that contains the name of the organization. Also state in the alternative text that the link leads to the "Home" page.

- **Code**. State the name of the organization in the title of the page and in metadata; see *4.2.2 Give all pages a clear title* and *3.3.8 Use metadata on as many pages as possible*.

4.2.7 State when the information was updated

Priority 1

State when information on a page was last updated or reviewed. This is particularly important when information is continuously updated. Doing so makes it easier for users to ascertain how current information on the page is.

It is not relevant to state the time the page was updated for the following types of pages:

- The primary aim of the page is not to communicate information; an example is a step in a web application.

- When parts of the page already indicate times, for example news bills, news archives and news pages.

Also state the page's metadata when the page has changed; see *3.3.8 Use metadata on as many pages as possible*.

Only date

Stating the date suffices in most instances, for example:

Updated on 2006-10-01

Date and time

When updates are made often or when traceability is important, for example on pages that contain emergency information, it might be relevant to state the time:

Updated on 2004-06-01 at 13:58

The time does not need to be updated if the update is of minor importance.

In the Swedish version of the Guidelines hours and minutes are separated by a full stop, e.g. 13.58.

4.2.8 Clarify if the information is out of date

Priority 2

The user must be informed if the date of validity for supplied information has expired. An example is if you supply guidelines or legal information as reference which is then replaced by more recent material.

This applies whether you present material as a web page or in a document.

Images and colours are not sufficient to indicate that information is out of date; this must also be communicated in writing.

Information stating that something is out of date should appear early in the material. Refer to more current information if any is available.

If out-of-date material is distributed to several pages (for example on a website), it is important to indicate this on all the pages. This is particularly important for information such as laws and regulations that only apply under special circumstances or to a specific group, for example as an interim regulation. Users do not always follow navigation on a website; rather, they may arrive to a page on the website via links on other websites. Warnings on other pages can be difficult to discover.

Out-of-date material and search engines

- If your material is public, it can be stored by search engines and locally on user computers. Ensure that your web server and publishing tool are correctly configured to deliver the right cache instructions in accordance with the HTTP specification (refer to the Further Reading heading below). This ensures that material can be automatically cleared.

- It is also possible to prevent certain pages from being indexed by search engines; see *3.3.9 Use metadata to instruct search engines*. This may be relevant for material for which using incorrect content can have serious consequences.

- Make sure it is clear which posts are out of date in search results if a search function is provided. This can be achieved through written information or by offering the user the chance to decide whether out-of-date information should be included in search results.

Examples that clarify a page is out of date

Screen dump from the web site avropa.nu where users are informed that the information is out of date (red box with red text): "This agreement has expired. For more information, contact the person responsible for the agreement."

Further reading

- Specification for the HTTP/1.1 protocol, section on cache instructions:
  http://www.w3.org/Protocols/rfc2616/rfc2616-sec13.html#sec13

4.3 Other languages

The section below presents information about what other languages may be relevant to have on the website. Each authority must decide individually which languages are relevant for the website's target groups and if offering other languages is justified and possible from a financial point of view. As is always true when adapting information material, the target group and information content determine how material should be adapted.

4.3.1 Provide basic information in Easy-to-Read

Priority 2

The style of language used on public sector websites is often difficult for many groups of citizens to understand. If the texts on the website follow the guidelines in section *5.4 Writing for the web*, it will be easier for all users to understand the website's content. Clear, easily comprehensible language benefits everyone. Providing clear information summaries is especially important for people who have difficulty understanding written Swedish. Some parts of the website should be available in Easy-to-Read, which is a special way to write for people who require a high level of simplicity. People who write using the Easy-to-Read concept may require special training. Which texts need to be written in Easy-to-Read should be determined together with the users who require this type of text.

Provide at least the following information in Easy-to-Read:

- A brief description of what the authority does.

- Interesting information from a general societal point of view. An example is what rights and obligations citizens have in terms of the authority's areas of activity.

- Information about how to contact the authority.

Clearly mark what parts of the website are available in Easy-to-Read and link to the relevant page's corresponding Easy-to-Read page.

Use the reader's requirements and circumstances as the starting point

It is important to use the reader's requirements and circumstances as the starting point when writing with the Easy-to-Read concept. Formulate the text so that both content and design follow the Easy-to-Read concept.

- Avoid using difficult words when writing using Easy-to-Read, but include and explain central concepts.

- Provide concrete examples for topics addressed by the text.

- Avoid introducing texts in Easy-to-Read by explaining what this style of writing entails and that what follows is written using the Easy-to-Read concept.

- Supplement the text with images and film sequences that clarify the message.

- Provide brief background information for the topic when necessary.

Further reading

- Centre for Easy-to-Read in Sweden (Centrum för lättläst): http://www.lattlast.se/?page=162 (in English)

- Handisam (Swedish Agency for Disability Policy Coordination) has a list of suppliers that translate texts into Easy-to-Read in Sweden. See http://www.handisam.se/Tpl/NormalPage____652.aspx (only in Swedish).

Testing techniques

Evaluate pages written using the Easy-to-Read concept with user groups that will benefit from having information provided in this manner.

4.3.2 Provide basic information in sign language

Priority 2

Many deaf people have sign language as their first language and Swedish as their second language. Deaf people who have sign language as their first language need to receive information in sign language in the same manner that hearing people need to receive information in their native language.

Provide at least the following information in sign language:

- A brief description of what the authority does.

- Interesting information from a general societal point of view. An example is what rights and obligations citizens have in terms of the authority's areas of activity.
- Information about how to contact the authority.

Some hints

- Remember to make information timeless and fairly general since a sign language movie clip is more difficult to update than normal text is.

- If the information in sign language describes a complicated topic area with a lot of abstract concepts, the information should be combined with images for the sake of clarity.

- Use a sign language symbol to indicate which parts of the website have been translated to sign language.

- Provide a page that outlines which parts of the website have been translated to sign language. This will enable users to find information written in sign language on the website quickly.

- Sign language movie clips should be presented next to the relevant text content on the website. Doing so enables deaf users who need to see both text and sign language gain an overview of all of the available material.

Video format

A sign language movie clip on the Internet must meet several requirements. Readability depends, for example, on image resolution and flicker rate.

It is possible to choose between the Quicktime (.mov) or Windows Media Video (.wmv) video formats. The formats are equally good and can be played on different platforms. It is important that movie clips have good image quality and are not too compressed. Clearly indicate which video format is being used and what program is required to view the movie clips. Also state from where the programs can be downloaded.

Examples of websites that have been translated into sign language

Parts of Region Skåne's website have been translated into sign language: www.skane.se (in Swedish).

The county council in Örebro County has translated its catalogue: www.dovinfo.nu/landstinget (in Swedish).

Further reading

Read more about why normal text is not always sufficient for deaf people at: www.dov.nu/skane (in Swedish).

Refer to the *Guidelines for making information accessible through sign language on the web* for more detailed information about what the requirements are for a sign language movie clip: ftp://cenftp1.cenorm.be/PUBLIC/CWAs/e-Europe/DFA/cwa14835-00-2003-Sep.pdf

Consult with your sign language translation supplier regarding image quality and how movie clips should be implemented on the website's pages and your server. Handisam (Swedish Agency for Disability Policy Coordination) has a list of suppliers that translate texts into sign language in Sweden. See http://www.handisam.se/Tpl/NormalPage____652.aspx (only in Swedish).

4.3.3 Provide basic information in languages commonly used by immigrants, English, and Swedish minority languages

Priority 1

Clear, comprehensible Swedish best contributes to the website's content reaching as many people as possible. Parts of the website can be translated if some of the target group users have a language other than Swedish as their mother tongue. Select what information needs to be translated based on the authority's assignment and the tasks target group users need to complete on the website. Also refer to *5.4.1 Use plain and straightforward language.*

Deciding which languages need to be on the website

One way to choose languages is to use a quantitative calculation of the number of inhabitants who were born abroad and then translate material to the languages spoken by the four largest groups, for example. If the decision is made to translate information to a large number of languages, it might be a good idea to set a quantitative minimum boundary, for example that the language must be spoken by at least 50,000 inhabitants born abroad.

What is translated should be selected in collaboration with the website's target group to reduce the risk of resources being placed inappropriately. It is important that information is kept updated in all the languages that are produced.

Make sure text is adapted, not just translated. Users from other language areas may have needs that differ from Swedish speaking users. It cannot be assumed that different groups have the same basic knowledge of the Swedish society and its institutions. It may be necessary to explain things that seem obvious for Swedes in the Swedish material.

Some hints

- Ascertain if other related organizations have translated relevant material that can be reused or linked to.

- When linking to pages in other languages, write link text in the language that is being linked to; for example, write "Deutsch" and "Français" instead of "German" and "French".

- Do not use flags on their own to indicate language. Flags symbolize a country, not a language. For example, many countries can share one language and several languages can be spoken in one single country. Flags can be misleading and thus misunderstood depending on with which country/language the visitor identifies.

- If you link to a page that allows users to select several languages, use a globe icon and add "Other languages" link text.

If the website's other language is Swedish, the code will be:

```
<a href="/languages" lang="en" class="languages">Other
Languages</a>
```

The "languages" style class indicates a globe background image.

4.4   Search

If a search function is available, many users will use it to try and find what they are looking for. However, search functions often fail to work satisfactorily. One problem is that search functions work very differently. For example, different "grammars" are used to combine different search terms or search results are presented in different ways. Unfortunately, it is all too common that the search function is not based on the terms and concepts users are accustomed to. For example, the user may search for "daycare" when the municipality only has information on "pre-school"

The guidelines below indicate what is important to consider when designing search functions. Searching on the website will be simplified if the guidelines below are followed, and services such as Google, Yahoo and Windows Live Search will find and link to relevant content on your website.

Measures that will improve the website's position in most search engines:

- Use correct HTML/XHTML markup. If the website uses correct HTML/XHTML that contains information about structure such as title, `h1` and `h2`, the search results will be assessed as more relevant and the likelihood increases that the website will be more prioritized in result lists. Search engines use information regarding where on the page a word is located in order to determine how great the likelihood is that the word describes the page's content. If the phrase "study abroad" is found at the top of a website in the `title` or `h1` element, for example, it is very likely that the page is about that phrase. See *3.3.1* and *5.5*.

- Preferably use HTML or XHTML to present information; see *5.7.4*.

- Present the most important information first; see *5.4.2*.

- Create a unique title for all pages; see *4.2.2*.

- Explain abbreviations the first time they are used; see *5.5.5*.

- Use metadata correctly; see *3.3.8* and *3.3.9*.

Services that optimize search engines

There is a great deal of marketing for search engine optimization services. Many of these promise better positioning in large search engine results lists. However, there is a great deal of risk involved with the method used by some search engine optimization companies. The method is sometimes based on creating pages with concealed information or linking from fictitious websites. Many search engines want to prevent cheating and punish websites

by excluding them from the search engine's index if the types of pages or links mentioned above are found.

Ascertain the following before engaging a supplier:

- Is using search engine optimization services relevant for your organization? Does your content compete with content on a large number of other websites? If not, there is no reason to use search engine optimization.

- Search engines continuously change the algorithm that calculates the position a website receives in search results. This means that any investment you make in search engine optimization services today may prove worthless tomorrow.

If you opt to use search engine optimization services nevertheless, ensure that your supplier does not use methods that will result in your website being excluded from the search engine's index.

For more information about how to avoid out-of-date material on the website, see *4.2.8 Clarify if the information is out of date* and *5.2.6 Do not allow web addresses (URLs) to stop working*.

4.4.1 The website should have a search function

Priority 1

The strategies used to find a website can be roughly divided into two groups:

- look through menus and lists of links

- use a search function.

An assessment must be made in order to determine whether a website should have a search function, and if so, what type of search function is suitable. The point of departure should be user needs and how much of the information on the website can be made searchable.

The basic principle is that all of the accessible content on the website should be made searchable, including publications and other documents. Use the following as the basis for assessing if searching in various directories, databases and information systems should be covered by the website's general search function:

- The cost of implementation in relation to user benefit.

- The possibility of providing clear search results that collect hits from all sources. This can be difficult to achieve with geographical information.

Link to separate search functions for each system unless all the information is covered by the general search function.

Search functions are often included as an integrated element of document management and publishing tool products. Remember that there may be special needs that are not covered by all search engines. An example is being able to search for issues of a publication that contain a colon. Neither should

search engines differentiate between large and small letters or between letters that have or do not have an accent mark (such as é and e).

Search field

Ensure that search field coding, including field labels and buttons, are designed in accordance with the guidelines for forms. Give the button that activates the search the label "Search". Read more in *3.5 Forms*.

If it is obvious that the field is a search field that contains information that is searched for, the field label may be concealed; see *3.3.19 Group content and make it possible to by-pass sections of a page*.

Advanced search

Since few people use more advanced search options, set the pre-selected search to simple.

It is not always necessary to offer an advanced search function on the website; for example, it may not be necessary on a delimited part of the website. Make an assessment based on the needs of the target group and the amount and type of information on the website.

Offer advanced searches by placing a link close to the search field or on the search results page. Call the link and the page "Advanced search". The majority of search services place the link to the right of the search field and the search button.

Search tips

If the search function's functionality is difficult to explain briefly, provide a separate page with search tips. Explain how to obtain better search results. For example, you can explain what characters and words can be used to direct the search function. Minus, plus and quotation marks are characters commonly used to direct searches.

Link to the page in conjunction with the search function and from the search results page. Place the "Search tips" page under the "About the website" section. In the Swedish version of the guidelines "Search tips" is called "Söktips".

Testing techniques

Ensure that the search function results in hits for relevant information on the website.

Analyzing search statistics and performing user tests are necessary elements of positive search function administration.

4.4.2 Make the search function accessible from all pages
Priority 1
The website's search function should be available on every page. Another option is for every page to have a clear link to the search function. An exception can be made for interactive sequences such as e-services. If a

search is made from pages that are included in an interactive sequence, it may be difficult to return and complete the sequence.

If part of the website contains other search functions, for example of publications only, clarify what the difference is between the different search fields shown on the page. One way to achieve this is by giving search fields clear field labels; see *3.5.5*.

4.4.3 Allow users to search with familiar terms
Priority 2
Users often have difficulty finding the information they are looking for because they use different terms than the authority does. This is a comprehensive problem. Language must be based on user perspective. Read more about this in *Chapter 5 Keeping the website up to date*.

Connecting a synonym list to the search engine makes it easier for users to find information. If a user searches for "application tax adjustment" when the correct concept is "application modified tax deducted from income at source", the synonym list will redirect the search to the correct result. The synonym list can also be used for common misspellings.

Some hints

- Enable searches to be made even if search terms are misspelled by offering a list of alternative search terms that the user can select.

- Regularly review the concepts used in searches on the website. Make sure that the concepts entered by users result in relevant hits.

4.4.4 Provide clear search results pages
Priority 2
Organizing search results in a comprehensible manner is necessary for the user to be able to interpret them. It is possible to adapt and design results pages for most search engines, but which of the guidelines below that are possible to follow must be determined from case to case.

- Allow the search string to remain in the search field when search results are displayed. Doing so makes it easier for the user to proceed and to modify his or her search.

- Display which search string was used at the beginning of the search results page as well as how many hits the search resulted in. Try to find an appropriate level of precision for the number of hits; see *5.4.7 Be precise enough*.

- If the search has been delimited, communicate what the delimitation is. It must be possible to redo searches without the set delimitations.

- Limit the number of hits displayed on the hit page to 50 of the most relevant hits, for example. Also make it possible to tab through other hits from the results page. Clearly mark which page the user is on by using bold text and deviating text size, for example. The user is on page 3 in the example below:

  Previous 1 2 **3** 4 5 6 7 Next

- The linked heading for the search hits should be the title of the located page. Only display the part of the title that is the page's label. Remove the name of the website and other extra information. Indicating the name of the website is relevant if the search includes several websites.

- Show the context in which the search term was found. This can most easily be done by showing an excerpt of the relevant text for each hit.

- State the section to which the hits belong or offer the possibility of sorting hit results by section. The sections should reflect the menu options found on the website.

Example of a search result page that shows the textual context in which the search term was found, marks the search terms with bold text and presents the date the page was updated.

- If the search also includes websites other than your own, the name of the website from which the hit originates should be indicated.

- State the date for each hit and indicate how current the information is. It is rarely necessary to indicate the time of the hit.

- If the hit is in a document that is not a web page (HTML), indicate what type of document the hit was in; see *5.7.1 Write clear links* and *5.7.3 Inform users when a link is opened in a new window*.

- Show the size of the document when it exceeds 1 MB.

- Do not display "unnecessary" information such how long the search took.

- If a search fails to result in any hits, briefly provide a number of hints that can help the user perform a new and better search.

- If sorting order is relevant, offer the user the opportunity to decide the order.

- Allow the user the possibility of using the tab key, for example, to go through search results. Also refer to *3.3.18 Provide a logical tab order for the website*.

- If the search is performed from the search results page or from a special search page, display the search results on that page. Do not present search results on a new page; rather, maintain the search possibilities that were displayed on the page.

Testing techniques

Evaluate the search results page with users.

4.5 Distributing the website's content and services

Distributing the website's content and services can be done in several ways. It is important that information is made available on several channels so that users can select the most appropriate one. It is also important that information is presented in a format that enables other systems to use the website's services.

One step towards the objective of achieving more efficient and better service is for authorities to be able to share and distribute information easily. By increasing automatic exchange of public information between public websites, we can reduce the risk of public sector resources being placed in reproducing the same content.

This section describes how information should be presented to make it legible on different channels. It also describes how information can be distributed efficiently between different systems.

4.5.1 Allow users to subscribe to information

Priority 2

Target groups can stay abreast of news within the authority's area of activity by subscribing to information.

Subscriptions can be divided into two categories:

1. Subscription to be informed if the website's content is updated.

2. Subscription to a newsletter, for example, that does not necessarily have a direct connection to the website.

Each subscription should be directed to a need that has been identified in the website's target groups. Survey what information the website's target groups are interested in subscribing to.

Examples of content that can be made available via subscriptions:

- news
- press releases
- new publications and reports
- calendar
- procurements
- job advertisements
- emergency information
- legal information
- content updates on the website.

Do not subject subscribers to unnecessary information. Each post that is published in a subscription should be relevant to the target group. The user should be allowed to indicate one or more delimited topic areas for his or her subscription. When delivering specialized content, it is important to live up to user expectation in terms of content not being too general. For example, when subscribing to procurement news, the user does not expect to receive job advertisements simply because there are no current procurements. Select a level of ambition that is in line with resources and future content.

In addition to the relevance of the topic, timing is also important in some instances. It is generally more difficult to reach readers the afternoon before a holiday and the morning after a holiday.

Many subscribers merely skim headings and the first few sentences. For this reason, it is especially important that headings are well formulated and that the most important information comes first. Try to capture the reader's attention and make him or her feel like the information is correct. Also refer to *5.4 Writing for the web*.

A subscription message should contain information about:

- **Responsible organization**. The name of the organization, web address and contact information. Note that the user may want to respond to the e-mail, so there should be a valid sender address.

- **Links to further information.** Provide links to relevant and updated pages on your or other organizations' websites.

Subscribe via e-mail

If the subscription is a newsletter, it should be designed so that it can be read by different types of e-mail clients. If the mailing is done in HTML-based

format, it must be possible to receive the newsletter in text format. If the message is created in HTML format, begin with a link to a website where the same content can be read.

Avoid attaching Word or PDF files. Content in the message should be limited to prevent the file from becoming too heavy for the recipient to manage.

Do not obtain more information than necessary about the subscriber. An e-mail address is often enough. State how contact data will be handled – will it only be used to manage the subscription or will it be used in other situations as well? See *4.2.4 Provide information about how legal information and cookies are handled.*

Subscription via RSS

RSS is another way to offer subscriptions. RSS is a technology for retrieving news headings and summaries from a website. This means that content from a website is republished in an RSS feed. This enables private individuals and organizations that wish to monitor an area or several websites to receive updates in a simple manner without needing to visit the different websites. When the website's editorial staff publishes material, it is automatically sent to the RSS feed's subscribers. This means information only needs to be published in one place.

RSS also helps some users who have mobile devices. RSS is an efficient way to access some of the news on a website without needing to load the entire page.

Technical solution for RSS

Many publishing tools have functionality for presenting content on websites in RSS format. An article called *RSS - A Primer for Publishers & Content Providers* lists other ways to create a RSS feed:
http://www.techxtra.ac.uk/rss_primer/#six

When creating a RSS feed:

- Preferably use RSS version 1.0 to create RSS feeds. This version is backward compatible with older versions and easy to expand with more detailed markup. RSS 2.0 and Atom are other formats that function in most RSS readers.
- State information according to the UTF-8 character encoding standard. This standard also allows information to be expressed using non-western characters.

- Make sure that the feed's code validates when using the RSS validator: http://www.feedvalidator.org

- Name the feed according to the following principle: <organization> <name of the feed> <possible topic area>
  Example: Verva – Public sector websites – Discussion forum

Several RSS feeds that originate from the same information are also possible, for example for recipients who are interested in different parts of the authority's activities. RSS can also be used to republish content on other websites; see *4.5.3 Allow others to use the content of the website.*

If the URL to a RSS feed is changed, redirect within the code in the same manner as for pages that are moved; see *5.2.6 Do not allow web addresses (URLs) to stop working*. Doing so will prevent subscribers from having to change their subscription manually.

Some RSS readers can update the URL to a RSS feed automatically if the following code is used when the feed has changed addresses.

```
<?xml version="1.0" encoding="UTF-8" ?>
<redirect>
<newLocation>http://www.authority.se/rssadress<newLocation>
</redirect>
```

Announce the RSS feed's existence
Inform the website's users that there are RSS feeds by ensuring that the relevant pages:

- Use the `link` element in the code. Doing so allows modern browsers to show that there is a RSS feed connected to the page.

  ```
  <link rel="alternate" type="application/rss+xml"
  title="organization – name of feed" href="URL to the
  page's RSS feed" />
  ```

  One page can have several RSS feeds. Indicate one `link` element for each feed in this case.

- Have the search term "rss" result in hits in the website's search function.

It is also possible to clarify to the user that the page contains a link to a RSS feed by using the RSS icon[12] (see below). The icon should be linked to the RSS feed. Provide a link to a description of how to begin subscribing next to the icon.

Create a page with a list of the website's RSS feeds with clickable URLs for each feed. Briefly describe the content of each feed and how the user can begin subscribing to them. Give the page the following abbreviated address: www.authority.se/rss. Locate the page under a "Subscribe" section; see *4.5.2 Provide information about subscriptions*.

In the Swedish version of the guidelines "Subscribe" is called "Prenumerera".

Examples of RSS
Swedish examples of authorities and municipalities that use RSS:
- Swedish Rescue Services Agency: www.raddningsverket.se/rss

- Eskilstuna Municipality: www.eskilstuna.se/rss

---

[12] Producers of the most common browsers have agreed to use this icon to indicate that the page has a RSS feed.

- Example of a RSS overview page in Swedish: www.verva.se/rss
- The Avropa.nu website on which twelve authorities summarize their news in a common RSS feed: www.avropa.se/templates/Page____724.aspx

Make creating and concluding subscriptions easy

It must be easy to create and conclude a subscription. The user can also be offered the possibility of concluding a newsletter subscription via e-mail by providing a link in the e-mail message.

Testing techniques

Test starting and concluding a subscription.

4.5.2   Provide information about subscriptions

Priority 2

Use an overview page to offer an overview of which subscriptions the authority offers, for example newsletters and RSS feeds.

Create a "Subscribe" section. Briefly describe what the content of each subscription is and explain how to start and conclude different subscriptions.

4.5.3   Allow others to use the content of the website

Priority 3

Services and information on the website can be made accessible to other systems, which enables the website's content to be reused by other authorities. There are different ways of doing this. For example, authorities can request extracts from each other's directories; see *4.6.3 Present the authority's directories and the rules for accessing them*.

Verva offers support to authorities that want to exchange information with:

- Guidelines for developing standard messages for simplified information exchange with electronic documents; see www.verva.se/standardmeddelanden (only in Swedish)
- *SHS* (a distribution and retrieval system), which is a platform for secure information exchange between organizations when communicating over the Internet. There are examples of SHS usage in Swedish on www.verva.se/shs as well as links to general agreements.

Other ways to help various websites reuse their content:

- Syndication – the website's content and services are made accessible to enable automatic republishing on other websites.

- Refinement – information is made available to others, and can then be reprocessed and reused to create new services.

Syndication

Syndication means that material from several sources is compiled into a presentation. A service on a website might be a compilation of different

information and calculations from several different authorities. A prerequisite is that the material be published in a machine-readable format so that it can be presented on other websites and intranets. One example of syndication is if several authorities publish their job advertisements as RSS. This would allow employment agencies to syndicate advertisements and present them together. Other examples of syndicating material from several authorities include compiling news, procurements, legal information and emergency information.

When deciding what content is suitable for syndication:

- Have user needs as your point of departure and take advantage of your own and other authorities' resources to satisfy these needs to the greatest extent possible. View the role of the authority from the user's perspective. Syndicated information should be presented to the user when the authority offers services for which information from other websites is relevant.

- Go through the website and select and group material that may be useful to syndicate for other actors. Inform other organizations of syndicated material that may be of interest for them to retrieve from your website.

- Investigate the possibilities and need for syndication in consultation with other related organizations or authorities.

Note that the organization that first published the content in the RSS feed owns and is responsible for it should it be presented on another website or intranet without being modified. However, the organization is not responsible for the contexts in which the RSS feed is republished.

Technical solutions for syndicating with RSS
The technical solution for RSS that is described in *4.5.1 Allow users to subscribe to information* is also possible to use for syndicating with RSS. Remember that RSS feeds that are intended to be syndicated should only contain structure code. If there are presentation elements, the recipient may have difficulty presenting information in a manner that corresponds to his or her graphic profile.

Further reading
An example of how the RSS 1.0 standard can be expanded with metadata information according to Dublin Core:
http://web.resource.org/rss/1.0/spec#s7.

Refining the authority's information
Information can be processed in order to satisfy a specific need or to offer a new product or service. An example of information refinement is connecting different types of information, for example statistics to geographical information.

One example might be to offer an interface for the website's search functions so that other organizations can compile search results from several sources.

Further reading

EU Member States are being encouraged to make as much information as possible available for reuse. "Information" refers to information in directories, official documents of a legislative nature and various administrative documents. If possible, this information should be made available electronically and in a format that is independent of any particular software.

This is described in Directive 2003/98/EC of the European Parliament and of the Council on the re-use of public sector information. The Directive is referred to as the PSI Directive. The Directive aims to promote growth and competition on the common information market. It is in line with Sweden's work to promote an increased level of openness and accessibility in administration. It offers private players the opportunity to create new services.

4.5.4   Inform search engines of the website's existence

Priority 2

Take advantage of the opportunity for registration that most search services offer in order to call their attention to new websites or to major changes that have been made on existing ones.

4.6   Involvement and transparency

An important element of an authority's development is offering citizens and the authority's specific target groups the opportunity to give their viewpoints regarding the authority's work. One step in this work is creating services that promote involvement and transparency. This section presents guidelines for offering citizens insight into the authority's activities as well as giving them the opportunity to forward their viewpoints and influence the authority.

4.6.1   Allow users to ask questions and carry on a dialogue with the authority

Priority 1

Offer users the chance to ask questions, give their viewpoints and complain about the authority's activities. Allow users to decide themselves how they would like to contact the authority and how they would like the authority to contact them. If the person prefers to remain anonymous, for example when forwarding an opinion or a complaint, provide information that no confirmation will be sent.

Confirm receipt of messages

Send a quick confirmation that the authority has received the message. Quick confirmations are easy to send by using function-oriented e-mail boxes and automatic reply messages; also refer to *4.6.2 Use function-oriented e-mail boxes*.

The confirmation should contain information regarding:

- How the issue will be handled.
- When the person can expect a response.

- Via which channel the authority will reply.

- How the authority handles received e-mails and personal data.

Also include the text from the received message. Doing so allows the person to save his or her message and go back to see what was written.

4.6.2　Use function-oriented e-mail boxes

Priority 1

Using function-oriented e-mail boxes may be suitable for functions that require the case to be handled quickly or by several people. These e-mail boxes use an alias address rather than a personal e-mail address, for example booking@authority.se. The e-mail can automatically be forwarded from the mailbox to one or several people. This also facilitates handling e-mail in the event of illness or holiday, for example, since several people can be set as responsible for the e-mail address.

4.6.3　Present the authority's directories and the rules for accessing them

Priority 2

In compliance with the Swedish Personal Data Act (1998:204) Section 26, information about the directory must describe what types of information are stored and for what reasons, areas of usage, from where information originates and under what circumstances information is linked and matched to other organizations' directories.

The website must provide information regarding how users can obtain information they are entitled to from the directories. Place the description next to the information about each directory. The description must also provide practical guidance for obtaining a directory excerpt and contain details about access rules, possible fees and where excerpts are sent.

Also refer to *4.2.4 Provide information about how legal information and cookies are handled.*

Example

An example of how a written request for a directory excerpt might look (in Swedish):
http://www.datainspektionen.se/fragor_svar/personuppgifter/pul4.shtml

Further reading

The Swedish Personal Data Act (1998:204) is available in English at:
http://www.datainspektionen.se/in_english/personal_data.shtml

4.6.4　Make public directories and databases searchable

Priority 2

The selection of material from databases is determined by what information may be provided and what the risks for abuse are in terms of individuals being affected. It is thus difficult to provide general guidelines for which information should be considered greatly beneficial to users.

Examples of searchable directories and databases

- The Swedish governmental personal address directory called SPAR allows companies to obtain information.

- Statistics Sweden (SCB) gives the general public access to its databases and tools to produce specific statistics.

- Anyone may freely search among the Swedish National Labour Market Board's job advertisements.

- The Swedish National Heritage Board's inventory of cultural historical buildings is public, but registration is required.

Also refer to *4.5.3 Allow others to use the content of the website*.

4.6.5 Make it possible to read and search in the authority's journal

Priority 3

Publishing their journal on the web is a big step in terms of making authorities more public. The issue of increasing transparency as opposed to protecting personal integrity must be addressed before publication. How authorities publish their journal on the web varies, but some of the issues that must be addressed are:

- How should confidential information be concealed when the journal is published on the web?

- To what extent should information about administrators at the authority be found in the journal?

- How long should information in the journal be accessible?

- How should information and opportunities for searching in the diary be designed so that they are comprehensible to users without impeding the internal workings of the authority?

- How should databases with the journal be handled when being transferred to a web-published journal?

Further reading

The document about publishing journals on the Internet called *Diarier på Internet – en vägledning för myndigheter* offers guidelines for designing journals so that they are easily accessible and in compliance with the Swedish Personal Data Act (1998:204). The information also contains a checklist for how individual posts must be entered into the web-published journal. See www.statskontoret.se/upload/Publikationer/2003/200301.pdf (only in Swedish).

5   Keeping the website up to date

The largest proportion of work begins the instant a website is launched. Maintaining a website and evaluating how it is used are time-consuming activities.

This chapter describes what know-how and competence an administration organization must have in order to achieve a successful website. The chapter describes how to evaluate website usage and how language and content can be addressed. The section on emergency communication offers advice on how to prepare your organization and website for an emergency.

The chapter is primarily intended for webmasters, editors, information officers and individuals who evaluate the website.

5.1   Administration

The know-how and competence found in administration are decisive in terms of the website's success. If several people author material, there must be a process in place for coordinating work. The more people who write and publish content for the website, the more important active development work is to improve the produced content.

5.1.1   Administration and related competence should be in proportion to the size and ambition of the website

Priority 1

Administrating the website is important and time consuming, and it requires planning and coordination.

Make sure that the organization has sufficient resources and requisite know-how and competence to work with the website's content and services.

Establish a plan early on for how the various sections of the website will be updated and who is responsible for each section.

Required know-how for web editors and information managers

It is important that all published material maintain a high level of usability and accessibility, no matter the type of website or if the website is created by many or a few people in the organization. To ensure that this is possible, the people who work with website content and administration must be knowledgeable about and understand:

- Patterns of use and behaviour on the web.

- The recommendations in these guidelines.

- Basic HTML.

- How to work with document structure and format.

- Managing images.

- What constitutes effective headings and clear links.

- How the web can be used as a part of task and work processes and what their role is in the process.

- The influence content and structure have on the website's usability and accessibility.

- Which supplementary channels the website can have.

Further reading

Sharing experiences and developing expertise within the areas above takes place in Verva's National Network for Design, Development and Publishing for Public Websites. For more details see the introduction chapter of these guidelines and www.verva.se/natverk/24h (in Swedish).

5.2   Usage and content follow-up

To obtain a well-functioning website, it is necessary to follow up how it is used and to ensure that content is correct and updated. There are several ways to ascertain how a good website functions: statistics, logs and usability tests are some of the methods described below. Following up the website should be linked to the goals that have been set for the organization; see *2.1.1 Define the desired effects of web initiatives*.

5.2.1   Measure against the specified goals of the website

Priority 1

Every website or web initiative has a goal. Examples of goals can be to change work routines in the organization and thus contribute to managing more tasks per administrator, or to reduce the number of phone calls.

It is important to continuously gauge and assess how far you have come in terms of reaching goals so that measures can be taken to promote the development of the website and the organization.

You should define a number of concrete measurement points in order to assess if work on the website has contributed to achieving the intended effects.

Examples of measurement points for a web initiative

- The website/e-service should have X number of visitors the first quarter, Y number of visitors the second quarter, and so on.

- It should be possible to perform X tasks via the web by XX-XX-200X.

- The number of phone calls to the switchboard should decrease by X%.

- X% of Y target group should feel that the website offers good or very good support to their work/everyday activities.

Indications of how well the web initiative has succeeded can be obtained by following up the measurement points. Follow-up will also provide a basis for making necessary changes to the website or to the organization in order to reach the set goals. Usability tests are a good way to determine what changes need to be made; see *5.2.3 Evaluate how the website is used*.

5.2.2 Regularly check visitor statistics and searching behaviour

Priority 2

Statistics of how the visitor moves and searches through pages can communicate a great deal about how the website is used. Ascertaining which parts of the website are visited the most and which parts of the website are visited less frequently offers a good indication of what parts of the website are the most popular and which parts need improvement.

Monitoring the terms users search for provides information about what the user expected to find on the website as well as what information should be moved to a more central place in the website's structure.

Analyze search term statistics on an ongoing basis and ensure that the most sought after information is easily obtainable. For example, add shortcuts in a highly visible location on the website to the most popular pages. These should be updated on a regular basis.

The website's visitor statistics can also be used to evaluate how successful various activities are, for example campaigns and courses.

Assess the entire website

Many visitors enter a website via pages other than the "Home" page. For example, they may enter by way of a hit in a search engine. For this reason, it can be misleading to solely assess visits to the "Home" page. Assess the entire website for more accurate results.

When choosing a statistics tool, you should select one that corresponds to the needs of the organization. Many tools compile statistics that are never used or that are too time consuming to analyze. Make sure that the statistics that are presented in tools are based on reliable sources, such as the number of unique visitors.

Exclude "misleading traffic"

Exclude or present the following traffic statistics separately:

- Internal visits; that is, visitors from the organization's own IP number. Examples are editors, developers and employees.

- Visits from search engine (for example Google, Yahoo, MSN); robots that continuously visit websites to update their index. Search engine robots were responsible for 15% of all visits to verva.se in March, 2006.

Visitor statistics are often based on three measurements

Within a given measurement period, the following can be assessed:

- **Unique visitors**. The number of unique browsers is either calculated via cookies or unique combinations of IP address + information on the browser. Simply put, this corresponds to the number of computers that are connected to the website.
- **Visits**. A series of one or more page viewings for a visitor that ceases when there are at least X minutes between two page viewings. The

number of set minutes can vary, but is normally 30 minutes. This is called "timeout".

- **Hits.** The number of data file requests that are made. This is primarily a technical measurement of how much web servers work and should not be used in visitor statistics

Unique visitors are tricky

A comparison of the number of unique visitors for all governmental agencies was made by the Swedish Agency for Public Management in 2004. See www.statskontoret.se/upload/Publikationer/2004/200411.pdf (in Swedish).

It is generally claimed that "unique visitors" is the best measurement; however, the measurement can also be misleading if it is based on IP number registration. Many organizations have set up their Internet connections to appear as if there is only one IP number, even though there might be many computers behind the number. Several hundred people's visits can thus be registered as a single visit. The opposite scenario can also arise. Some Internet providers assign a different IP number for each request. This means that one visitor who retrieves a single page with relevant style sheets, images and script can be registered as 20 different "visitors".

Many websites use cookies to register visitors in order to remedy this situation. The disadvantage of this method is that one person can use several different computers and/or browser programs and that some users disable cookies in their browsers. The statistics tool needs to be able to cope with this in order to use cookie statistics.

ExampleIf you visit at least one page on the Swedish Competition Authority's website, the visit will be registered. If you look at seven web pages, this will result in more than seven page viewings before you leave the website. Thirty minutes must pass (timeout) before a new visit from you can be registered. Someone else from your authority visiting the website is counted as a new visit, but not necessarily as a new unique visitor. If you were to enter the Swedish Competition Authority's website from another computer a little later the same day, you would probably be registered as a new unique visitor.

Compare websites

Comparisons that are made of websites in the media industry by, for example, SIFO and Tidningsstatistik AB (TS) compare all three measurements; see http://www.ts.se/TSNet/Public/CirculationNumbers/SiteCertificateList.aspx (in Swedish). Similar data (see the different measures above) should be used to compare websites.

The question can also be raised when it is of interest to compare different authorities or municipalities. The size and character of the target group can vary. Most important is that everyone in the target group has been reached. A small authority can have a low number of visits compared to other authorities, but reach a large number of members in its specific target group. Primarily use statistics to ascertain visitor behaviour on your own website.

Also remember that changing tools can make comparing statistics to earlier data more difficult.

Further reading

For further information on methods for obtaining statistics see http://www.verva.se/verksamhetsstod/webb/vl24/2006/5/2/2#webbstat (in Swedish).

5.2.3   Evaluate how the website is used

Priority 1

A prerequisite for maintaining a good website is evaluating how it is used. Website statistics offer information about the popularity of pages, but do not explain the reasons for visitor behaviour in any detail. A common method is to evaluate user behaviour with usability tests.

Usability tests are performed with real users and realistic tasks

Usability tests ensure that the website is designed to allow visitors easy access to its information and services, and that users are able to benefit from them. Users perform realistic tasks on the website in usability tests. Tests are often performed individually with each user. The test leader encourages the user to think aloud when completing tasks.

Usability tests should be performed on an ongoing basis while developing the website, but it may be a good idea to ensure that the most important services in the system function in practice and can be used efficiently by prioritized target groups prior to delivery of the final system. For example, test 6-8 of the most common services on the website with 4-6 users from each of the most prioritized target groups.

Define early on which tasks to test and what is required for delivery approval. For example, 4 out of 6 users succeed in filing their tax return or 5 out of 6 users are able to find contact information within 60 seconds. The tests can also be performed as evaluations prior to further developing the website.

The advantage of individual tests is that the test leader has the opportunity to observe how the user performs tasks and that the test leader and user can discuss problems that may arise. This method provides more reliable results than if the user had subsequently reported and discussed how he or she experienced the website and what problems were encountered.

Selecting participants for usability tests

A website's usability should be evaluated by representatives from the intended user groups. Individuals with different kinds of disabilities should be included in the test group. The number of suitable test participants depends on how many target groups there are. At least four people from each target group should be included. If there is only one target group or if user distribution is uncertain, eight individual tests are sufficient for achieving reliable results.

A limited test is better than no test at all. For example, it is better to evaluate usability with a small number of users than none at all. Should access to users be too limited, expert review can replace the usability tests.

Expert review performed by one or more experts

An expert review entails one or more people/experts reviewing the website or parts of the website in order to survey potential usability problems as well as to propose solutions to resolve the problems. Reviewers go through the website's content and design to ascertain how well it supports target groups and follows standards[13]. Reviewers perform the evaluation by posing questions they believe users will have as well as performing the most common tasks that the most common target groups will perform. An expert review results in a number of proposals.

5.2.4 Take advantage of suggested changes and opinions expressed on the website

Priority 2

One way to obtain user viewpoints about the website is to place an e-mail link to the responsible individuals on each page. This easily allows users to forward their proposals and report any errors they may discover. Establish routines so that errors can be quickly remedied. The e-mail address should be to a function-oriented e-mail box, and be named webeditorialstaff@authority.se, for example; see *4.6.2 Use function-oriented e-mail boxes*.

The e-mail address does not exist to help handle questions, viewpoints and complaints that concern the organization or specific tasks. However, it is important that routines are in place to ensure that questions of this type are responded to and forwarded to the appropriate recipient. The authority must clearly inform the user of how the task will be processed and when he or she can expect a reply.

5.2.5 Regularly update content and links on the website

Priority 1

The website must not contain any out-of-date information. Check on a regular basis to ensure that there is no out-of-date material on the website. An exception can be made for material that is kept in the archives or as reference, for example guidelines or legal information that has been replaced by more current material; see *4.2.8 Clarify if the information is out of date*.

Routines must be in place to ensure that the website is regularly reviewed. How often this needs to be done depends on the character of the content. A review should normally be performed at least once a year. Information that is

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[13] Studies show that systematic review of the interface in light of human cognitive capability leads to a 31% improvement of user efficiency and a 28% reduction to the number of errors. M.J Burns, D.L. Warren and M.Rudisill, Formatting space-related displays to optimize expert and nonexpert user performance, Conference proceedings on Human factors in computing systems April 13-17, 1986, Boston, MA USA.

often modified, such as the number of employees or specific details in the organization, should preferably be subjected to a set of searches that are performed on a regular basis.

When major changes are made, such as relocation or modifications to a directive, the website should be searched for information that has become out of date.

The authority is also responsible for any content that is provided by the general public or others if the website has an area to which individuals may contribute content. Examples of such areas include discussion pages and electronic bulletin boards. These pages must be reviewed on a regular basis, and inappropriate or illegal material must be removed. There should be rules in place for determining what type of material should be removed.

This also applies when a university, for example, provides a server on which students may publish their own web pages. However, this does not apply to pages and discussions that are inaccessible to the general public. It should be made clear on the website when the organization is not responsible for certain content.

Testing techniques

Many publishing tools have functions to ensure link functionality. W3C's "link checker" can also be used: http://validator.w3.org/checklink

Perform regular reviews of the website to ensure that undesired and out-of-date material is not included in search hits. This applies whether you present material as a web page or in a document.

5.2.6   Do not allow web addresses (URLs) to stop working
Priority 2
Links that lead to a website are very valuable. Do not squander this opportunity by allowing web addresses to stop working. Using status codes offers search engines and browsers the opportunity to change or eliminate web addresses.

If addresses must be changed, the web server should forward from the old address. Even if doing this demands a great deal of work, it is oftentimes better to do so as opposed to allowing existing links to stop functioning.

Inform the relevant website owners of the change if you know what the most common incoming links are to the changed address.

There are two situations that require this type of attention:

- **A page moves**, for example when the website changes its publishing tool.

- **A page is removed**, for example because information is out of date.

If the web address contains session information, it must function and provide reasonable results even if the session no longer exists[14]. However, you should avoid placing session information in web addresses since this may cause problems for users who want to make a bookmark or send a link via e-mail. Exceptions can be made on pages which the user has no reason to access right away or bookmark, for example a step in a flow.

Some hints

If web addresses have been created in a technically independent manner, it will be easier to change the technical platform without affecting the addresses. See *5.7.8 Avoid long and complicated web addresses (URLs)*.

Technical solution

If made possible by the website's technical platform, take advantage of the status codes offered by the HTTP protocol. Doing so will allow browsers and search engines to be informed of a page's new location or if it has been removed.

Use status code 301 Permanently Moved if you move a website to a new address. The user will then automatically be sent to the new web address. The status message for removed websites is 410 Gone.

Further reading

See the specification for the HTTP/1.1 protocol for more information about status codes:
http://www.w3.org/Protocols/rfc2616/rfc2616.html

5.3   Emergency information on the website

Managing information is fundamentally important in terms of being able to handle emergencies well. Studies performed by the National Board of Psychological Defence (SPF) [15] show that one third of Swedish citizens would turn to the Internet to find information in the event of an emergency.

A good level of preparedness in the areas of technology, information and organization is required in order for information on the website to be easily adapted to the nature of the emergency. The web increases opportunities for quick and coordinated emergency communication. Follow standards (see *3.3.1*) when designing the website to create the prerequisites necessary to do the following in an emergency situation:

- Modify the appearance of certain parts of the website by using various style sheets (CSS), see *3.3.4*.

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[14] In modern systems, it is rare that session information exists in the web address. However, this could occur as an alternative if the user does not accept cookies.

[15] The report about municipal websites can be obtained at
http://www.krisberedskapsmyndigheten.se/upload/5364/kommunens_hemsida_spf-2002.pdf

- Enable content to be exchanged with other websites and producers of information by ensuring it is well structured and separate from presentation/design. See *4.5*.

Presented below are the guidelines for building up basic preparedness on the web. As a supplement to the guidelines, there is a prototype available in PowerPoint that illustrates how the emergency instruction structure can be presented. Available in Swedish via: www.verva.se/24-timmarswebben/exempel.

Further reading

The Swedish Emergency Management Agency's report on handling emergency communication via the web (called *Kriskommunikation via webben*) offers three examples of how the Internet has been used during emergency situations. Available in Swedish at: http://www.krisberedskapsmyndigheten.se/krisinfo_webb

5.3.1   Write a policy for handling emergency information

Priority 1

It is important to formulate a policy for handling information in order to be well prepared when an emergency is at hand. The policy must describe how the emergency website is managed in relation to how ordinary material is handled. Also refer to 5.*3.4 Create and practice an organization for the emergency website that is independent of time or place*.

Some hints

- When deciding whether to provide information or not, remember that it is often better to publish something rather than nothing at all, even if the information is scanty.

- Use the emergency website to confirm or disclaim information that may be circulated in conjunction with the emergency.

- Also perform an analysis of what the frequency of visits to the website may be during an emergency. Analyze how to manage a situation in which the web server malfunctions. For example, the plan may include collaboration with other authorities and municipalities in terms of technical solutions such as producing the website's content on another server.

- The policy must also address issues that concern information security. It is important that this planning be done in close collaboration with relevant IT departments and preparedness/security managers.

What is perceived as an emergency can vary from person to person. For the relevant authorities, it is also important to determine how to provide support and information to people who are in a difficult situation, such as going through a divorce or experiencing a serious illness. Placement of such information depends on what type of support the authority can provide and how other information on the website is structured.

5.3.2   Make sure target groups are aware that the website provides information about handling emergencies

Priority 2

Ensuring that target groups as well as citizens, employees, the media, contractors, etc. are aware of the emergency website's existence increases the authority's opportunities of being able to reach out with information in the event of extraordinary circumstances. Take advantage of newsletters and the media to inform citizens. Prepare citizens and companies by providing information of what they can do themselves in the event of an emergency.

Remember that information needs to be well formulated for it to be understood. Reformulate information so that it suits the general public. Published and read information is not the same thing as understood or received information.

5.3.3 Create a page or website for information in the event of an emergency situation

Priority 1

It is especially important to be well prepared in the event of an emergency. The more you have thought through and prepared procedures and the website, the greater the possibility that emergency communication can be handled efficiently.

What constitutes an emergency is not always easy to determine in advance. The most important issue involves having developed a general ability to manage emergencies that is well prepared and practiced, and that can be adapted to the current situation and course of events.

Three steps for presenting emergency information on websites

There are three steps involved when presenting emergency information. Step 1- illustrate the situation **before** the emergency; steps 2-3 – illustrate the situation **during** the emergency.

No matter which step is relevant, it is important to prepare an area on the website for presenting emergency information. It is important that the website's "Home" page can be adapted to the requirement for information. It must be ascertained how many visitors the page needs cope with: does the page need to cope with 5, 10, 50, 100 times the normal number of visitors? Due to ethical aspects during an emergency situation, it is important to be able to clear the "Home" page of web advertising, unnecessary images and cheerful greetings. For example, allowing a "Home" page to be dominated by a big, happy cow in a flowering meadow with a cheerful summer greeting, and then providing information about a serious accident further down on the page is not appropriate.

For a more clear illustration of the steps involved in presenting emergency information, see the prototype at www.verva.se/24-timmarswebben/exempel (in Swedish).

The three steps are:

1. **Step 1 – normal situation – before the emergency**
   The authority presents its role and area of responsibility in the event of an emergency. This information must always be available under the "Emergency and security" section. Depending on the authority's area of responsibility, focus and target groups, the information can either be placed in main navigation or as a sub-category to the "About the website" section.

2. **Step 2 – a prepared structure is activated** under the "Emergency and security" section. A post in a news feed post that links to emergency information should also be placed on the website's "Home" page.

3. **Step 3 – a special "Home" page/website is activated**. One characteristic of a special "Home" page is that other elements on the website are toned down. A special "Home" page may also entail an entirely separate website being activated.

Deciding whether to use a **special "Home" page** or a **separate website** is determined by the character of the event and how it develops. The need the general public and the media have for information as well as how many visits the page will need to cope with in the event of an emergency can also be determining factors when deciding whether a separate website is preferable. If the choice is made to use a separate website, the authority's URL must lead there. An example of such a URL is www.authority.se. The "original website" can be linked back to from the separate website.

Example of content to offer during a crisis

- **Current situation**
  Provide relevant and ongoing information and analyses that help reflect the situation and that provide an overall view. As your point of departure, use what the general public needs to know, rather than only the authority's/municipality's perspective. Also collaborate with other organizations and provide links that help users form an overall view.

- **Frequently asked questions and answers**
  Satisfy the general public's need to have questions answered. Continuously publish answers and provide information that can help relieve the stream of telephone calls. Be honest, straightforward and open.

- **Practical advice**
  Offer concrete advice and recommendations. Supplement information with images and maps, for example.

- **Contact information**
  Offer information about where help and information can be obtained 24 hours a day. Be clear about where visitors can turn to receive answers to questions, receive more in-depth information and submit information.

- **Provide information**
  Enable dialogue with the general public. It should be possible for visitors to enter tips, reactions and questions as well as to receive quick replies. Handling information obtained from the general public requires planning on the part of the emergency website's organization. Discuss and plan which resources should be available to respond to and handle tips and questions. Se *5.3.4 Create and practice an organization for the emergency website that is independent of time or place*.

  Visitors must be made aware of who is responsible for published information if it comes from the general public, media or other external actor.

- **Press information**
  Adapt press information to the needs the media has for background information and facts.

- **When the most recent update was made – date and time**
  Indicate date and time for all information and updates on the emergency website.

- **Information in other languages and Easy-to-Read**
  Publish information summaries in other languages when necessary.

- **Handling personal data**
  Users must be informed according to *4.2.4 Provide information about how legal information and cookies are handled* if personal data is collected on the emergency website.

Designing a specific "Home" page/website in the event of an emergency

Consider the following when designing a separate emergency website:

- Design the emergency page/pages so that they are perceived as part of the ordinary website.

- Emphasize important emergency information by toning down other elements on the page that are not related to emergency information.

- Link to the ordinary "Home" page or the ordinary website.

5.3.4 Create and practice an organization for the emergency website that is independent of any specific time or place.

Priority 1

To the extent possible, the emergency website organization should be independent of time and place. It should be possible to publish information from other places and with different connections. It is also important that the group can manage issues of content and technology that are related to the emergency website.

Important factors to consider when creating an emergency organization

- Analyze the technical and organizational risks and weaknesses of the selected solutions.

- Clarify authorization and distribution of responsibility within the emergency website organization and between the different parts of emergency management.

- Define a delegation plan for how information should be exchanged between the group's and emergency organization's other segments.

- Clarify how the emergency website should collaborate with or support internal communication, information centres, media contacts, external world analyses and information to specific groups.

- Create routines for assembly in the event of an emergency and for informing the emergency website's organization of the emergency.

- In order to improve opportunities for achieving a well functioning emergency website, it is important that the emergency organization has practiced together.

- Develop writing skills so that clear texts based on the target groups' needs can be quickly written.

5.3.5 Take advantage of the possibility to exchange emergency information with other authorities and the media

Priority 1

A structured exchange of information between actors can contribute to better information to target groups and reduce the emergency organization's workload.

In order to provide emergency information more effectively, it is important to allow other organizations to subscribe to the website's content; see *4.5.3 Allow others to use the content of the website*. Using syndication to achieve this aim will help ensure that the information is the same no matter where it is published.

The same technology can be used to simplify monitoring and publishing content from other websites. Examples are more in-depth information from other authorities' areas of expertise, information that is compiled nationally and keeping track of the media.

In the event of an emergency, the media typically refers to the authority's website, while the authority refers to the media or to another authority's website. Make sure that the organizations to which you link do not cause confusion or a sense of inconsistency for the visitor. A common scenario involves the visitor being referred to a different website for more information. The other website may then refer the user back to the original website, without the user having received the information he or she was looking for.

5.3.6 Review the emergency website after it has been used

Priority 2

The way an organization handles emergencies can be developed by evaluating how previous emergencies were handled. Thus, it is important to evaluate usage of the emergency website in order to learn in preparation for future emergencies.

Some hints

- Save versions of the emergency website's pages when they are updated to enable the course of events to be monitored and information to be disseminated.

- Evaluate the target groups' usage of the emergency website as well as the groups' opinions.

- Evaluate the emergency website's organization.

Further reading

The Swedish Emergency Management Agency provides guidance and possible scenarios as support for planning and implementing exercises. Available in Swedish at: www.krisberedskapsmyndigheten.se/ovning

5.4 Writing for the web

The style of language and how information is structured on the website greatly affect how the user perceives the website and is able to understand information. Poorly written texts can make an otherwise good website difficult to use for some people as well as give a bad impression. Website visitors are also often in a hurry and want to take care of their business as quickly as possible. It is, thus, especially important that texts on the web are well organized, easy to understand and informative.

The aim of information and its target groups influence content and style. It is of decisive importance that words and concepts are adapted to the reader in order for him or her to feel welcome and to successfully do what he or she came to do. Existing user surveys are good to use when producing texts and other information.

This section describes what you need to consider when writing texts for the web. The user's eye will stop at anything that deviates – headings, bullets, emphasized words and links. Consider who the reader is and what he or she wants to do after having read the text. Begin with the most important information, be brief and use expressive headings, sub-headings and links. Emphasize important words in bold text in order to facilitate skimming. Always have someone else read texts you write before publishing them.

A checklist to help editors is available in Swedish at: www.verva.se/24-timmarswebben/checklistor.

5.4.1 Use plain and straightforward language

Priority 1

Adapt language to the reader. Authors of web texts must be able to write as simply and comprehensibly as possible to be understood by a very large number of readers. This need is particularly reinforced when user reading capability varies. This is basically always the case for texts that are published on public websites.

The challenge involves combining simplicity with a correct and comprehensive message. There is a risk of confusing the need to write simply with writing briefly; texts that are too brief can become "dense with information" or heavy. Writing as simply as possible is a matter of balancing a number of sometimes contradictory demands against each other.

Some hints

- Use personal address.

- Explain words that can have several meanings. Say which meaning is used.

- Avoid formulations that allow meaning to be interpreted in several different ways.

- If technical terms are used, explain their meaning by using more everyday language.

- If a text is difficult or long, a summary or introductory text may be necessary. Summaries can be emphasized by framing or by using a coloured background. Create a clear contrast between the text and the background; see *3.2.2 Use adequate contrast*. An example of a set-off summary is available via www.verva.se/24-timmarswebben/exempel (in Swedish).

- Avoid using idioms. For example: building castles in the air.

Further reading

- The Swedish Language Council: www.sprakradet.se/about_us

- Follow the advice offered in a publication on writing rules for authorities: www.regeringen.se/sb/d/253/a/33329 (in Swedish).

- Språka Loss, a project on readability for people suffering from dyslexia. Project summary is available in English at www.sprakaloss.se/engsummary.htm.

Testing techniques

This point requires manual text review and usability tests. When reviewing texts, use:

- Verva's checklist for editors is available in Swedish at: www.verva.se/24-timmarswebben/checklistor.

- The Swedish Language Council's plain language test; see www.sprakradet.se (in Swedish).

5.4.2 Write the most significant information first

Priority 1

A basic principle of writing is to place the most important information first. Begin with what is most important for the target group, and by offering a summary of the page's content. Doing so enables users to assess how much of the text they want to read. The user may not be able to or have the time to read the entire text. Some people are unable to survey texts and others do not have the energy to read in a concentrated manner longer than for short periods. These individuals must feel that they have received as much important information as possible even if they have not read the entire text.

Organize material so that the most important information comes first to enable users to decide quickly if they want to:

- read the text

- look for more information on other pages in the structure.

Further reading

See the references for *5.4.1 Use plain and straightforward language.*

Testing techniques

This point requires manual text review and usability tests.

5.4.3 Write clear and descriptive headings

Priority 1

Good headings help all readers find their way in a text, but they are especially important for people with disabilities which affects reading. Headings should be short and offer a fair idea of what the page or section is about. Short and unclear headings such as "Introduction" or "Activities" offer very little information to help the user.

Some hints

- Formulate headings based on keywords in the text.

- Place the most important words first in the heading.

- Use verbs in headings.

- Headings that consist of one word are rarely informative.

Further reading

A free handbook for web editors called *Webbredaktörens ABC* is available in Swedish at*:* www.wpr.se/radgivning/abc/

Testing techniques

Requires manual review. Try reading headings out of their context to determine if it is possible to understand what the relevant sections are about.

Screen readers compile a list of the headings found on a page. Well-formulated headings offer screen reader users the opportunity to gain an overview of content. Make a list of the heading structure by using a plug-in program for the browser to test if headings can be understood independently; see www.verva.se/24-timmarswebben/verktyg.

5.4.4   Divide long texts into paragraphs

Priority 1

Give each idea its own paragraph. Dividing long texts into paragraphs helps the reader gain an overview and understand how the text should be read. Uncrowded text is easier to read than compact text.

5.4.5   Divide enumerations in lists

Priority 2

Write enumerations that consist of more than four points as a list. This allows the text to be easily surveyed. Rank enumerations by placing the most important points first.

Some hints

- Lists of reports, conferences, etc. can be presented in chronological, alphabetical or numerical order. Be consistent. It is often appropriate to put the most recent posts on top.

- A numbered list should be used if points in the list have a set order, otherwise an unnumbered list should be used.

Also refer to *5.5.1 Use the proper HTML elements when creating lists*.

Testing techniques

This requires manual review. Go through the text and look for enumerations.

5.4.6   Be consistent when naming things

Priority 1

Before naming something, make sure it does not already have a name. This applies to terms related to the organization and words that are used for navigation and functions on the website.

This rarely poses problems for anyone who is familiar with activities, but an uninitiated user must attempt to ascertain if the words are synonyms or if the difference in word choice is significant. Inconsistent naming can confuse the user, which can result in unnecessary errors being made. This is especially important for functions for which the user must perform an action, such as in a web application.

Use the names recommended by these guidelines. Doing so will lead to increased uniformity on public sector websites. When relevant, look into what names similar organizations such as authorities within the same area of expertise have selected for their terms.

Verva has produced a proposal for placing and naming basic elements on public sector websites so that they give a uniform appearance and so that citizens and companies can more easily find basic information. The proposal is available in Swedish via: www.verva.se/24-timmarswebben/exempel.

5.4.7   Be precise enough

Priority 3

Too much detail can make understanding information difficult. It is rarely useful to have more than two digits of precision. Round off numbers in file

sizes and number of people, for example, to two significant digits. Show time in hours and minutes – but not seconds. Preferably round off to the next 5-minute segment.

The date without the time often suffices for events that have not taken place today. Show sums of money as full kronor - less than one krona is rarely necessary.

Exceptions can be made when greater precision is expected, but two digits should be the basic principle. This also applies to numbers generated from computer systems. Some examples of exceptions that may be appropriate: balance in an account, schedules and taxation rates.

5.4.8   Write date and time according to standards

Priority 2

Consistently use the same standard for presenting dates on the website. It can be confusing to the reader if the date is presented in different ways on the same website, especially for people who have content read aloud to them by assistive technology.

In running text, dates are preferably written according to the "29 December 2004" pattern. In other contexts, the date should be written according to the "2004-12-29" pattern. This is the international standard.

It is sometimes more important for readers to know how long something will last rather than the exact time, for example "in 7 months" or "autumn 2007". This also applies to points of time in the past. The further away a point of time is, the more imprecise the indicated time can be (day-week-month-season-year).

In Sweden a full stop is used to separate hours, minutes and seconds. The 24 hours time notation is used. Time should in Sweden be written according to the "kl. 9.00-15.30" pattern. Full hours can be written as "kl. 9-15".

Example

Date: 2004-12-29 (29 December 2004)

Time: 15:00 (three o'clock in the afternoon)

When relevant, indicate seconds: 22:43:10 (43 minutes and 10 seconds past 10 o'clock at night)

Further reading

Refer to the publication about writing rules for authorities called *Myndigheternas skrivregler*, which can be found in Swedish on the Government Offices of Sweden's website: www.regeringen.se.

Testing techniques

This requires manual review. Ensure that only one date format is used.

5.4.9 Avoid abbreviations

Priority 3

Avoid abbreviations in general. Doing so makes reading easier, and it does not take longer to read the entire word. In Swedish, abbreviations can either be written with a space (t ex) or with a full stop (t.ex.). Abbreviations with a full stop are preferable on the Internet since using a full stop prevents the word from being divided into two rows at the end of a line. Always explain abbreviations of concepts, organizations and groups the first time they are mentioned.

Acronyms are abbreviations that are read as individual words, for example UNESCO and FIFA.

Also refer to *5.5.5 Mark abbreviations with the abbr and acronym elements*.

5.5 Formatting for the web

In order to make the content we create on the web available to as many people as possible, we must ensure that paragraphs, headings and text are correctly formatted. A good publishing tool should help editors create correctly formatted content. However, we must format text content ourselves when the publishing tool lacks this type of support.

This section describes what you need to think about when formatting on the web.

5.5.1 Use the proper HTML elements when creating lists

Priority 1

Screen readers and other assistive technologies need correctly coded lists to tell the user that a list is a list. Thus, always use the appropriate HTML elements when creating lists. There is a risk of confusing presentation if tables or graphics are used to create lists.

There are three types of lists in HTML: numbered lists, unnumbered lists and definition lists.

Example

For an example of how to make lists with the correct HTML element, see www.verva.se/24-timmarswebben/exempel (in Swedish).

Testing techniques

Ensure that the correct HTML elements for bullet lists (ul and li) and numbered lists (ol and li) are used when the editor creates lists. When using XHTML, all of the li elements must be explicitly concluded.

5.5.2 Mark up headings with h-elements

Priority 1

Headings must be correctly formatted. h-elements are used in HTML for this purpose. The h1 element signals main headings, h2 signals sub-headings to a previous main heading and h3 signals a sub-heading to a sub-heading. Hierarchical order is important.

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Using headings correctly helps:

- Obtain uniform formatting on all the website's pages.

- Facilitate reading the document without style sheets.

- Search engines find relevant information on the pages. Search engines use a search term's location in a document to determine the document's relevance. If a word belongs to an `h1` or `h2` element, it is considered more relevant than if it is classified as main body text.

- The user gain an overview of the document. Assistive technologies need correct structure code to determine what is a heading. For example, documents should not begin with a heading marked with a `h2` element.

Use style sheets to format the appearance of headings

It is possible to have several headings that look differently, but still have the same heading level such as `h1` (main headings), see example below. Sub-headings can be handled in the same manner if they need to look differently on the "Home" page and underlying pages.

Example

In the example below, informative `h1` headings are blue and warnings red.

```
h1.informative {color:#00f}
h1.warning {color:f00}
```

Testing techniques

Make sure that the publishing tool creates correct heading code and that it is possible to create headings at different levels. Doing so allows the publisher to concentrate on writing well-formulated headings and marking the desired heading level.

Ensure that headings adhere to a hierarchical order, that an `h1` heading comes before `h2` headings and that an `h2` heading comes before `h3` headings. Make a list of the heading structure by using a plug-in program for the browser to test if headings have a hierarchical structure; see www.verva.se/24-timmarswebben/verktyg.

5.5.3 Make it possible to call linked telephone numbers

Priority 2

Telephones with browsers and telephony via computers (IP telephony) are becoming increasingly common. At the same time, more browsers support the possibility of calling telephone numbers directly from links on websites. Marking telephone numbers as telephone links in the code allows the number to be called directly. In the same way that e-mail links (mailto:) automatically offer the chance to send e-mails, telephone links (tel:) offer the opportunity to call a number directly.

Few publishing tools today have built-in support for formatting telephone links. See the example below for creating a telephone link in the code.

Telephone link example

A person who uses the website via his or her mobile phone can call the authority's switchboard by clicking on the telephone number if the code says:

```
<a class="phone" href="tel:+46855050000"> 08 – 55 05 00 00</a>
```

It is possible to determine the appearance of telephone links by using style sheets. The telephone link in the example has its own style sheet class.

Further reading

The URL scheme for telephones, faxes and modems:
http://www.rfc-editor.org/rfc/rfc3966.txt

Standards for URL: http://www.iana.org/assignments/uri-schemes.html

Testing techniques

Try calling a telephone number by clicking on a telephone link in a browser that supports the functionality, for example a browser in a modern mobile telephone.

5.5.4 Indicate when a page, or part of a page, is in another language

Priority 3

It is generally not difficult for users to determine visually if a website, or part of a website, is written in a language they do not master. However, when content is to be interpreted in a different way, it must be marked up with the language it is written in. Language markup is necessary so that:

- Assistive technologies that read aloud can switch languages.

- Search engines can more easily find information in a specific language.

For example, if a website in Swedish contains pages in English, the code must indicate that those pages are in English, or the assistive technology will read the English text with Swedish pronunciation.

The publishing tool should make it simple to mark up language on entire pages as well as on parts of pages; see *point 5 Managing language in 7.1.1 Basic design*.

The correct language code can be found in the following list:
http://www.loc.gov/standards/iso639-2/php/code_list.php

Manual markup of language changes

It is possible to mark up language changes manually by editing the code if the publishing tool does not help the editor do this.

Mark up part of a page
- XHTML 1.0: `<span xml:lang="en" lang="en"> text in English </span>`

- HTML 4.0: `<span lang="en"> text in English </span>`

The `blockquote` element can be used for quotes in another language, for example an English quote in a Swedish text:

```
<blockquote xml:lang="en">Text in English.</blockquote>
```

Mark up an entire page

- XHTML 1.0: `<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">`

- HTML 4.0: `<html lang="en">`

The two examples with XHTML 1.0 are written based on the pages being delivered as `text/html`. If pages written with XHTML 1.0 are delivered as `application/xhtml+xml`, `lang="en"` does not need to be indicated. Also refer to 3.3.2 *Develop the website according to a standard rather than for a specific browser*.

Testing techniques

It is possible to test language switches on a web page or website by listening to the text with a reading program. The reading program must have support for the relevant languages.

5.5.5   Mark abbreviations with the abbr and acronym elements

Priority 3

Abbreviations and acronyms must be marked with the `abbr` and `acronym` elements in the code. The presentation should be controlled by style sheets if, for example, bold text is desired instead of italics. See *5.4.9 Avoid abbreviations* for more information about acronyms.

The `abbr` element causes various assistive technologies to spell out abbreviations instead of reading the abbreviation as a word. Using the `abbr` element also makes it possible to show how an abbreviation should be read aloud. For example: "European Monetary Union" instead of "Eastern Mediterranean University" for the abbreviation EMU.

Some browsers allow the user to point to a word marked in the code for an explanation to be shown. Another way to show that there is an explanation for the word is to mark the word with a dotted underline. This type of formatting can be done with style sheets.

Examples of using the abbr and acronym elements

```
<p>Welcome to the official website of <acronym title="North Atlantic Treaty Organisation">NATO</acronym>!</p>

<p>Useful links to <abbr title="European Monetary Union">EMU</abbr> and euro websites</p>
```

Testing techniques

Make sure that the publishing tool creates correct code for the `abbr` and `acronym` elements. The appearance of the explanation can be formatted by using style sheets. This allows the publisher to concentrate on marking and explaining concepts and abbreviations instead of working with code.

Explain any abbreviations and concepts used on the website. Search in the code for the `abbr` and `acronym` elements on the pages you know there are abbreviations.

5.5.6 Never underline text that is not linked

Priority 1

Underlined text communicates that the text is clickable, so to avoid confusion, never underline unlinked text.

5.5.7 Clarify when a document is a part of a larger document

Priority 2

If material that is divided into several sections is published on the website, for example a report in which every chapter is published as an individual document, it is important that the user is informed that a specific section is part of a larger document. The `link` element should be used for information about related documents. It is also helpful to show chapter numbers and names in the header of each document or on every page of the document. Make navigating between the different parts of the document easy.

It is a good idea to gather all the relevant documents in one place if the document is published in a format other than HTML or XHTML.

Example

The `link` element must always be placed within the `head` element.

```
<head>
<title>Chapter 5</title>
<link rel="prev" href="chapter4.html">
<link rel="next" href="chapter6.html">
</head>
```

Testing techniques

Make sure the `link` element is used in the code.

5.5.8 Mark quotes in the code

Priority 3

Quotes must be marked up in code because:

- Assistive technologies may need correctly coded quotes to enable the user to distinguish quotes from other text.

- It becomes clearer what is a quote from a person and what is more neutral repetition of fact, for example.

Quotes are marked by the editor. The publishing tool's formatting should make marking up quotes easy. The editor can otherwise mark up quotes by editing the page's code manually.

Long quotes (entire paragraphs) are marked with the `blockquote` element. Short quotes are marked with the `q` element. The appearance of `blockquote` and `q` can be determined with style sheets. Quotation marks are inserted

automatically by modern browsers with the exception of Internet Explorer 6, which does not follow the standard in this case.

Example

See www.verva.se/24-timmarswebben/exempel for an example of `blockquote` and `q` (in Swedish).

Testing techniques

Make sure the publishing tool creates correct code for `blockquote` and `q`. This allows the publisher to concentrate on marking the relevant text segment as a quote instead of working with code.

Make sure that quotes are correctly formatted with `blockquote` or `q`. Search for `blockquote` and `q` in the code on pages you know there are quotes.

5.5.9   Separate thousands with a non-breaking space
Priority 3

Thousands should be separated with a non-breaking space to avoid inappropriate row breaks. Non-breaking spaces are made during editing in different ways in different programs.

Some examples:

- I Microsoft Word for PC, press SHIFT + CTRL + space.
- Several programs for Mac OS use ALT + space.

Use ` ` to indicate a non-breaking space in the code.

Example

"10 000 inhabitants" is written in the code as `10 000`

Testing techniques

This point requires manual control of the thousands place.

5.6   Images and graphic objects

Images and graphics can be used to explain connections and events as well as illustrate that which is sometimes difficult to describe in writing. Images also help make text content seem less dense and help differentiate specific pages on the website. Images help the user remember the page and to orient him or herself on the website.

Before publishing an image on the website, decide what the image should communicate and what type of image is most suitable for the context. Images should not be published simply because a page feels empty or because "it would be nice to have some pictures". The image must have a purpose and help communicate the written message. The authority should adopt a policy for using images on the web.

GIF and JPEG are the two dominant image formats used on the Internet. Some of the parameters that determine which image format is best are the image's qualities, size and number of colours. It may sometimes be more

appropriate to save an image in both formats in order to determine which one is best. GIF (Graphics Interchange Format) is generally appropriate for logotypes, small images and images that only have a few colours. JPEG (Joint Photographic Experts Group), also known as JPG, is a format for images that have great depth of colour and is most appropriate for colour photographs, landscapes and tinted images.

5.6.1 Use alt text to describe all significant images and graphic objects

Priority 1

Images and other graphic or multimedia objects must be supplemented with alt texts so that they can be interpreted by all users. For example, many people disable image viewing in their browser when using a modem, mobile phone or handheld device. Another reason for using alt texts for images is that assistive technologies that read text aloud, browsers that lack support for images and graphic browsers with disabled image viewing need text alternatives in order to interpret graphic objects.

Graphic object refers to:

- images
- icons
- graphic buttons
- animations
- image maps.

Significant graphic objects may need to be described in some detail. There are **three different attributes** that can be used in HTML/XHTML for this purpose:

- `alt` is used to indicate necessary information; used when the image cannot be shown

- `title` contains extra, non-critical information that many browsers show as a tooltip when the mouse pointer passes over the image

- `longdesc` contains a link to a separate document; suitable to use when an image needs to be described in detail

Note that alt text is not intended to create tooltips. Some graphic browsers show alt text in a small box when the mouse pointer passes over an image with alt text. This is incorrect behaviour since alt text should function as an alternative to the image; that is, it should be shown instead of the image, not in addition to it.

The `title` attribute should be used to indicate extra, non-critical information about an image. There are no rules for showing title text, but most graphic browsers show it as a tooltip.

Significant images

It is sometimes difficult to determine what constitutes a significant image, but a couple of questions can be posed:

- Does essential information disappear from the page if the image is not shown?

- If I were to read the page for someone over the phone, would I describe the image when I came to it?

If the answer to any of the questions is yes, the image is probably significant and should have an alt text.

Some hints
- Write brief and concise alt texts with a maximum of 100 characters that say what the image is or what its function is. Avoid writing that it is an image as the browser will do this.

- Text already contained in the image is often appropriate to be used as alt text.

- Images that are linked to another document should have an alt text that briefly describes where the link leads; this is the text that would normally be used as link text if the image did not exist.

- A graphic object that contains important information may need to be described in more detail than is suitable with alt and `title` attributes. In this case, use the `longdesc` attribute to refer the user to a separate document that describes the object.

- If your publishing tool does not support `longdesc`, one option might be to add a normal link next to the image that leads to a page with a description.

- Produce your own policy that briefly describes how different objects need to be described.

Use empty alt texts for images that are not significant

When writing alt text, a distinction needs to be made between graphic objects that are and that are not significant. Graphic objects that are not significant must have an empty alt text: `alt=""`. Note that there should not be a space between the quotation marks.

An empty alt text is generally given for lines, dots, etc. that are used to clarify the graphic design visually. The same is true of images that are primarily used as decoration and to make pages that otherwise contain a great deal of text seem less heavy. If empty alt texts are not provided for these types of images, a great deal of "noise" may result that the screen reader must listen its way through.

Examples

Example of an empty alt text
```
<img src="bullet.gif" alt="" />
```

Example of a descriptive alt text
```
<img src="like_grass.jpg" alt="Lars Gullin: Like Grass" />
```

Example of alt text that does not add value
Imagine an image of two toy cars crashing into one another. The image's alt text says "Toy cars crash". This information is followed by a heading that

reads "Risk assessment is an increasingly important element of supervision". The information obtained by a screen reader user will be the following: "Graphics Toy cars crash. Heading Risk assessment an increasingly important element of supervision".

The alt text does not add value in this case, rather there is a risk of confusion.

Example of alt and title text
```
<img src="like_grass.jpg" alt="Lars Gullin: Like Grass"
title="Lars Gullin: Like Grass, publication year 1973" />
```

Example of longdesc
```
<img src="like_grass.jpg" alt="Lars Gullin: Like Grass"
longdesc="like_grass.html" />
```

Testing techniques

A good way to check the importance of alt texts is to disable image viewing and test the website. Browser plug-in programs also have several good functions for testing alt texts. For a list of such programs see: www.verva.se/24-timmarswebben/verktyg.

Another way is to visit the website with a text-based browser such as Lynx.

5.6.2   Provide alternatives based on standards for all formats requiring plug-ins

Priority 1

When graphic formats are used that require plug-in programs such as Flash and Quicktime to present information, suitable alternatives must be available. For example, an alternative to Flash-based animation that describes a course of events could consist of an image that shows a box from the animation and a written account of the course of events or the conclusion that is drawn from the animation. If relevant, the image should have alt text. The same guidelines apply if the graphic object is simply decorative, which means an empty alt text must be given.

Also see *3.3.14 Important functionality should not be based on Flash or other formats that need plug-ins*.

5.6.3   Provide text alternatives for image maps

Priority 1

Image maps are graphic objects in which the object is divided into several clickable parts, for example different regions on a map. Like other significant graphic objects, image maps must have text alternatives.

There are two types of image maps: server-based and client-based. Always try to use a client-based image map.

When using client-based image maps:

- Describe the entire object with an alt text.
- Describe each link in the object with a title text.

Preferably supplement the image map with text links. Have text links lead to the same place as the clickable elements do.

When using a server-based image map, the browser can only present coordinates for each clickable part, which means it is not possible to indicate a text alternative for each clickable part. Thus, avoid using server-based image maps. If server-based image maps are used nevertheless, provide text links next to the image map that lead to the same content. State in the alt text where a text alternative can be found for the entire object.

Example

For an example of a client-based image map, see www.verva.se/24-timmarswebben/exempel (in Swedish).

5.6.4   Do not use characters to create images
Priority 3

Character images are images that are formed by characters. Examples of characters are figures, arrows and individually created lines using hyphens.

=> =>

It is confusing to the user when a screen reader tries to read each character, so never use characters. The `hr` element or background images should be used if dividing lines are needed. Background images and icons can be used for arrows and the like.

5.7   Links and documents

This section outlines guidelines for how links, documents and web addresses (URLs) need to be designed and handled.

5.7.1   Formulate clear links
Priority 1

A good basic rule is that it should be possible to understand where a link leads even when it is removed from its context. We often scan through information on the Internet, and our gaze stops at deviations such as headings, marked words and links. Thus, clear and informative links contribute to website visitors more quickly being able to find desired information instead of wasting time activating links that lead to pages to which they have no interest.

Links that are comprehensible even when removed from their context are especially important for users who utilize screen readers. It easier to navigate the page and gain an overview when the screen reader only reads out the links found on the page.

When formulating links:

- Only link words that communicate information about where the link leads. It is better to write "Information about network meetings" than

"For information about network meetings, click here". Avoid links such as "Read more".

- Place the most important information first in the link.

- Avoid introducing links with phrases such as "Read more about…", "Go to…" so that the reader is not exposed to unnecessary information. Ensure that links lead somewhere and that they provide more detailed information.

- Avoid having several links on the same page that are formulated in the same way lead to different pages. "Read more" links used repeatedly on the same page in lists of news are a common example of this. If this type of repetition is used nevertheless, each link must be clarified with a title text.

- If the page to which the text leads has a clear heading that fits into the context, the heading text can be used as the link text; this makes it easier for the user to determine if he or she has reached the correct page.

- Avoid using several differently formulated links that lead to the same target.

Create a common link if text and a close graphic object lead to the same target.

```
<a href="http://www.authority.se/page/"><img src="image.gif"
alt="description of image">Linked text</a>
```

Links to documents

When linking to documents that are not in HTML/XHTML format:

- Specify the document's format as this will clarify that the link does not lead to a HTML/XHTML page.

- The size of the file should be indicated if the document is larger than 1 megabyte. By specifying size, the user may more readily estimate how long downloading the document will take.

For example, a report called "Journals on the Internet – guidance for authorities" that was published with publication number 2003:3 as a Word document, and which is 2,945 kilobytes in size should have the following link text.

Journals on the Internet – guidance for authorities (Word 2.9 MB, new window)

Links to other websites

If you would like to indicate that a link leads to another website in the link text, it is possible to write out the name of the organization or website at the end of the link text. For example:

"Find out more about children's health at Sjukvårdsrådgivningen.se"

"Rules for inspecting food from the National Food Administration"

Note that links to other websites must open in the same window.

Testing techniques

Try reading each link when removed from its context. Is it possible to understand where each one leads?

A list of the links on a page can be easily obtained with the assistance of a plug-in program for the web browser; see www.verva.se/24-timmarswebben/verktyg.

5.7.2   Use "title" to provide more information
Priority 2

Links should preferably be clear enough to make title texts unnecessary. However, it may be necessary in some instances to clarify the link by using a title text. Content in title texts is concealed unless the mouse pointer is passed over the link.

The title text is often identical with the link text on many websites. Using title text in this manner is incorrect and completely unnecessary, and it is more confusing than beneficial to the user.

Example

Title texts can be useful for links such as Previous and Next that are used to browse through a certain category of pages. The link can be supplemented with a title text that communicates what the next or previous page is called in these instances in order to inform the user of what the other pages contain.

Testing techniques

Check how the links on a page use title by using a plug-in program for the browser; see www.verva.se/24-timmarswebben/verktyg (in Swedish).

5.7.3   Inform users when a link is opened in a new window
Priority 1

Links should open in the same window, no matter if they lead to pages on the same website or to another website.

Using new windows

Links that lead to documents in formats other than HTML/XHTML, for example PDF, Word or PowerPoint, should be opened in new windows. The same is true of links to applications such as time reporting systems.

Many users do not consider the document formats above to be web pages. They want to access the functions found in the applications that are generally used to read the document formats. Preferably open documents of this kind in their original application and not in the browser window.

Warn the user if a new window is going to open, for example by adding "new window" or "opens new window" in the link text. Also say what type of document or application it is. An introductory text suffices if there is a list of links that open in a new window, that is, it is not necessary to provide this information for every link.

Example

Link text: "Journals on the Internet – guidance for authorities (PDF 2.9 MB, new window)."

Also refer to *5.7.1 Write clear links* and *5.7.4 Primarily publish documents in HTML or XHTML.*

Further reading

Jakob Nielsen's article *Open New Windows for PDF and other Non-Web Documents*: http://www.useit.com/alertbox/open_new_windows.html

5.7.4   Primarily publish documents in HTML or XHTML.

Priority 1

Publish documents such as reports and investigations in the website's standard format (HTML 4.01 or XHTML 1.0). Using documents in formats other than HTML/XTML makes accessing information difficult since additional software is often needed.

Authority websites must be accessible with programs that can be obtained free of charge and that do not force the user to use a specific computer platform.

Documents in formats other than HTML/XHTML should have a summary in XTML/XHTML so that users can assess content before downloading the document.

Using document formats other than HTML/XHTML

PDF documents and documents created with various Office programs are used excessively within the public sector. For example, invitations, conference programmes, etc. are often created in PDF or Word format instead of in HTML/XHTML. Information in PDF or Word formats is much more difficult to access when surfing via a mobile phone or if the user does not have the specific software needed to read the document format. Carefully consider your selection of format when publishing material on the website. Most of the information presented in PDF format is more suitably presented directly in HTML/XHTML.

PDF should only be used for:

- Very long documents that are primarily intended to be read in a printout.

- Documents that rarely change such as legal texts, letters of regulation and instructions in which the document's layout, graphics and content are always presented in the same way.

- Presenting mathematical formulas.

- Documents that must appear a specific way by law.

- Documents that contain tables and many columns.

Information that does not fall within the framework of the descriptions above should be presented in HTML/XHTML.

PDFs that are used must be created to allow accessibility. For more information about when to use PDFs and how to create accessible PDFs, see: www.verva.se/24-timmarswebben/checklistor (in Swedish).

5.7.5   Give documents clear file names

Priority 1

When linking to a document, formulate the file name to reflect the document's content. Do not use internal working names and avoid naming the document based solely on journal numbers, form numbers, etc. If the form number is well recognized by the target group, it should be part of the file name.

Also make sure the file name, like web addresses:

- Does not contain underscores "_"
- Does not contain spaces
- Does not contain Swedish characters (å, ä and ö)
- Does not mix large and small letters.

For more detailed information, see the first points in *5.7.8 Avoid long and complicated web addresses (URLs)*.

Examples of a file name

For a report called "Journals on the Internet – guidance for authorities" with publication number 2003:3, a suitable file name would be:

2003-3-journals-on-internet.pdf

5.7.6   Separate links with at least one character

Priority 2

Users who have old equipment or who view the website without style sheets may have difficulty distinguishing links from one another. The problem may arise when several links are presented in a row. For this reason, it is important to separate links with at least one character, for example a comma.

If you want to show several links in a row, mark them as an HTML list; see *5.5.1*. Doing this will ensure that links are correctly separated.

Also avoid placing links in running text too close to each other, as this deteriorates readability and can make distinguishing clickable areas more difficult.

Example

See www.verva.se/24-timmarswebben/exempel for an example in Swedish of links that have been marked up as a list.

5.7.7   Create quick links for pages that will be distributed

Priority 2

If the address to a page is going to be distributed in printed material, for example, use quick links. Make quick links as short as possible and relate to

the information the user is looking for. Doing so makes the address easy to remember.

Example of a quick link

Website:
www.authority.se/theme/2006/rights/children-and-youths.html.

Quick link to the same page: www.authority.se/childrens-rights.

See *5.7.8 Avoid long and complicated web addresses (URLs)* for more information on creating clear web addresses. Also see *5.2.6 Do not allow web addresses (URLs) to stop working*.

5.7.8   Avoid long and complicated web addresses (URLs)

Priority 2

Web addresses are often used in communication, for example in e-letters and printed media. They should thus:

- Not contain underscores "_" since the underline is difficult to see when the address is published and many people do not know where the character is on the keyboard. However, hyphens "-" work well. This also helps improve placement in search engines.

- Not contain spaces. Spaces can be replaced by hyphens. If the user chooses to copy a web address that contains a space in order to include it in an e-letter, for example, there is a risk that the link will break and thus become more difficult for the recipient to use.

- Not contain Swedish characters. Á, à, å and ä should be replaced with a, ö with o and é with e.

- Avoid mixing large and small letters. These can be interpreted as different characters by the browser.

- Not be longer than 70 characters since some e-mail programs break them off after that point.

- Not contain terms that are needed for the sake of technology or the publishing system, for example ".jsp", ".aspx", ".html" or identification keys that are difficult for people to read.

- Be introduced with "www." since this has become a sure way to recognize web addresses. Using "www." makes using "http://" in printed matter unnecessary. However, the web address must work and lead to the same place even if the user does not enter "www.".

Design the web address so that it corresponds to the page's title; see *4.2.2 Give all pages a clear title*. This simplifies matters for users, and also increases the chance that the page will receive advantageous placement in Google and other search engines.

Pages that are often referred to can be given an extra, short address; see *5.7.7 Create quick links for pages that will be distributed*.

Example

An example of a web address to a page about legal information under the
"About the website" section can look like is:
http://www.authority.se/about-the-website /legal-information

6　Web content for mobile devices

Most websites today are primarily designed to present content on a desktop computer, but technological development has helped produce a large range of mobile devices that can display web content, and the number of citizens who have access to mobile phones is significantly greater than the number of people who have access to a desktop computer. On the whole, there are great opportunities for the public sector to reach more citizens and offer improved service.

Usage of mobile devices to access the Internet varies, but can be characterized by, for example:

- Being in an environment that is exposed to noise and changing lighting conditions.

- Using the Internet for short periods and there being more frequent interruptions during usage.

- Being able to access small amounts of information at a time due to small displays.

- Usage being more focused. For example, looking up specific information that is needed for a trip, rather than "surfing around" or shopping.

- Reading long documents to a lesser extent.

Many mobile devices also have technical limitations such as:

- Small displays which make presenting large amounts of content difficult. Since display size can vary in terms of pixels and physical size, text may be extremely small in the mobile's browser. There are displays that have fairly high resolution but which are very small (1.8 inches, for example). There are also displays that are just as large but which have much lower resolution.

- Limited opportunities to input information. The devices often lack the equivalent of a mouse pointer and normal keyboard.

- Slower and more expensive Internet connections.

- Less memory and storage space and slower processor. This limits opportunities to download pages with complex content.

- Lack support for script, plug-ins and cookies.

There are several ways to provide mobile web content:

1. Ensure that the website also functions without style sheets.
2. Provide a style sheet for mobile devices.
3. Design websites specifically for mobile devices.

Since many mobile devices still fail to follow standards and do not always present content correctly, it is difficult to provide a positive user experience for all mobile devices. That is why the National Guidelines for Public Sector Websites do not describe how to adapt web content for specific mobile

devices. Rather, the chapter focuses on the second option which entails providing style sheets for mobile devices. The chapter goes through the most relevant guidelines, and what specifically needs to be considered when producing content to be presented in mobile devices.

If the authority provides services that are greatly beneficial to target groups that use mobile devices, there may be reason to develop services and websites specifically for mobile usage. Use target group needs as the starting point.

Further reading
Mobile Web Best Practice contains W3C's recommendation for creating a web for mobile devices: http://www.w3.org/TR/mobile-bp/

More information about designing mobile web content: http://www.cameronmoll.com/archives/000398.html

6.1   Style sheet for mobile devices

It is easier to make the website's content accessible to mobile devices by keeping presentation separate from content by using style sheets; also see *3.3.4 Separate content from design – use external style sheets to define presentation and layout*. Content often needs to be presented in a manner that suits mobile usage, so create a style sheet for mobile devices. In its simplest form, this is a style sheet without design. The content is presented much as it would be if the style sheets were disabled.

Many mobile telephones can only present text with the pre-selected font. Thus, it is not possible to rely on texts and headings appearing as they are intended in all devices. The differences that exist between various mobile devices in terms of being able to present content makes it difficult to test the website on a sufficient number of devices.

Technical solution
Indicate style sheet for mobile devices (handheld):

```
<link rel="stylesheet" type="text/css" media="handheld"
href="handheld.css" />
```

Design style sheets for mobile devices that enable content to be obtained on a display width of 120 pixels or larger; see *3.3.3 Create a design that works regardless of window and screen size*.

The style sheet should only contain the styles that are actually used so that pages can be more quickly loaded. If you use `display:none` to conceal content with style sheets for handheld devices, remember that the device will still download the content.

Some mobile devices are unable to cope with GIF images that are interlaced, transparent or animated. Other devices are only able to display a limited number of colours.

Testing techniques

Deficiencies in and differences between modern mobile browsers make testing the website's function on all types of mobile devices difficult.

- The Opera browser makes it possible to see how a website will look in a mobile browser. Select Small screen under the View menu.

- Many mobile telephone manufacturers provide programs that simulate how their phones manage web content.

- Try using the website with a couple of different mobile devices.

- Make sure the website functions with disabled graphics and JavaScript.

Further reading

Open http://htmldog.com/test/handheld.html in the web browser of your mobile phone to test if it supports style sheets for handheld devices.

Style sheet elements that are supported by mobile browsers that can cope with style sheets for handheld devices: http://www.cameronmoll.com/archives/000577.html

W3C Mobile Web Best Practice offers examples of a typical mobile device's performance: http://www.w3.org/TR/mobile-bp/#ddc

6.1.1 Adjust navigation for small displays

Priority 2

If the logotype, header, breadcrumb trail and long navigation menus appear before the main content of a website, it is difficult for users with small displays to see if the requested page has been loaded.

When using style sheets for mobile devices:

- Only place basic navigation at the beginning of the page. Place it on its own row.

- If possible, place other navigation at the bottom of the page.

- Place the website's search function at the beginning of the page.

Example of layout for small displays. Navigation, search and content relevant for mobile usage is shown at the top.

Survey what part of the website's content is most relevant for mobile usage. In order to help users who need to visit the authority's office, it may be relevant to present the following early on:

- The authority's contact information, opening hours and directions on how to get there; see *4.1.5 Provide contact information and an outline of the authority's activities*.

- Information about events the authority is organizing.

- Linked telephone numbers; see *5.5.3 Make it possible to call linked telephone numbers.*

Devices that lack the equivalent of a mouse pointer often allow the user to scroll by browsing between links. For this reason, it is appropriate to:

- Give content a logical tab order; see *3.3.18 Provide a logical tab order for the website*.

- Give long pages a list of contents. Give the list of contents anchor links to the page's sections. There should be an "Up" link to the beginning of the page for each section.

Some hints
- If the website has a deep structure, make sure that content that is relevant for mobile users is placed at the top of the structure.

- Provide a shortcut to the page's main content; see *3.3.19 Group content and make it possible to by-pass sections of a page*.

6.1.2   Create a clear overview for small displays
Priority 2
Due to varying display sizes on mobile devices, it is especially important to indicate relative units in the style sheet; see *3.3.6 Use relative units*. It is difficult to gain the same type of overview on a small display that is possible

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on a large display. Many mobile devices only allow scrolling in one direction. Thus, the following should be done:

- Design layout in one column only.

- Write the most important information first (see *5.4.2*) and provide descriptive headings (see *5.4.3*).

- Be consistent in navigation, structure and design; see *3.1.3*.

- Avoid presenting information in tables when the information is relevant for mobile usage.

- If possible, give short and clear page titles that can be shown in their entirety on small displays.

6.1.3   Only present content that is requested by the user

Priority 2

Most mobile browsers can display images, but many users disable images to enable faster and less expensive usage. Text alternatives for significant graphic objects become even more important in this situation; see *5.6.1*. Slower and more expensive Internet connections mean it is especially important to reduce the risk of users accidentally downloading content they do not consider relevant. Make sure, thus to:

- Avoid pages with extensive content and content that users have not expressly requested by clicking on a link, for example news or hints.

- Formulate clear links that can be understood out of their context; see *5.7.1*.

- Include the file format and size for links and documents that are not in HTML/XHTML format; see *5.7.1*.

- Avoid image maps.

- Avoid large and high resolution images.

- Write short and efficient code. Avoid mixing style sheet rules with your HTML/XHTML.

6.1.4   Simplify text input

Priority 2

Since most mobile devices lack the equivalent of a mouse pointer and keyboard, it takes longer and is more difficult to enter information, for example web addresses and when completing forms. To help users avoid needing to write excessively:

- Primarily use set responses in forms.

- Avoid text input fields. If text input fields are used nevertheless, minimize the number of characters required for input.

7   Web publishing tools

Publishing tools have decisive importance in terms of allowing everyone to create and access content and services on the website. The tool's design determines and delimits who can work in it. The accessibility of websites created with the tool determines how many and which final users the information will reach. Unless the publishing tool creates code that follows standards and supports the publishing process correctly, many people will be excluded from the information and services to which they are entitled and that are offered by the public sector. It is thus important to carefully check the functionality of the existing publishing tool or when procuring or subordering a new one.

Examples of deficiencies in publishing tools:

- Automatically generated `alt` and `title` texts.

- Lack adequate support for writing and placing image texts.

- The editor is forced to edit code to be able to create pages with validating HTML/XHTML.

- The editor must perform extra steps in order to indicate information related to accessibility.

- Poor support when creating forms with correctly linked field labels.

- Sample templates do not follow standards.

- Structure and content are not separated from presentation.

- Built-in accessibility checks lacking for created pages.

The next section lists the criteria that should be considered when selecting a publishing tool.

7.1   Criteria for choosing a web publishing tool

Criteria for publishing tools can be used if you already have or are planning to invest in a publishing tool; they can also be used by publishing tool suppliers and producers who wish to improve their tools. Selecting a publishing tool is naturally determined by several different factors such as the number of editors that will work with it, which technical platform it will work from and which organizational changes need to be made in conjunction with its introduction. The criteria in this chapter only concern how well the tool follows standards and what opportunities it offers for creating accessible information. Criteria are based in part on W3C's criteria for publishing tools

in ATAG[16], and in part on the National Guidelines for Public Sector Websites.

Use the criteria as measurement points when checking the extent to which the publishing tool fulfils requirements, and look upon them as a means to improve the tool.

The criteria are divided into 5 areas:

1. Basic design
2. Forms and tables
3. Managing images and links
4. Formatting text
5. Support for the web editor

The aim should be to fulfil as many of the criteria as possible. The criteria are classified from 1 to 3 to facilitate prioritization. Priority 1 means that the guideline should be prioritized higher than a guideline with priority 2 or 3. Below is a presentation of all the criteria for each area. Instructions for testing the criteria are available in Swedish at www.verva.se/24-timmarswebben/checklistor.

7.1.1 Basic design

The following criteria are included for the area of basic design. Instructions for testing the criteria are available in Swedish at www.verva.se/24-timmarswebben/checklistor.

1. Checking content to be published
Priority 1
The tool should primarily use and encourage usage of document formats that are supported by WCAG. This currently pertains to HTML.

2. Independent of a specific platform
Priority 3
The tool must function in modern browsers no matter which client platform is used. The tool's basic functionality must not be dependent upon technologies other than those indicated by W3C, and it may not force the editor to use a specific browser.

3. Quality of included content
Priority 1
All web content (templates, images, sample pages, etc.) that comes with the tool must follow WCAG when the editor uses it.

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[16] W3C's Authoring Tool Accessibility Guidelines 2.0: http://www.w3.org/TR/ATAG20/. When these criteria were published in 2006 the latest draft of ATAG 2.0 was Working Draft from 23 November 2005: http://www.w3.org/TR/2005/WD-ATAG20-20051123/.

4. Style sheet usage

Priority 1

Content and structure must be separate from presentation.

5. URL design

Priority 1

URLs generated by the publishing tool must be clear and not contain any odd characters that are required for the sake of the technology

6. Layout

Priority 1

Tables may not be used for layout.

7. Language management

Priority 2

The tool must allow the editor to indicate what the main language on the website is. It must also indicate which language individual web pages have, for example the parts of the website that are translated into English or another language.

8. Validation support

Priority 2

There must be a function for checking basic accessibility on created pages. If automatic checking is not an option, the tool must ask control questions that enable manual assessment.

9. Page title

Priority 3

A page's title may not be set so that all the pages on a website receive the same title. The title should be set to contain the same or similar text as the page's heading.

7.1.2   Forms and tables

The following criteria are included for the area including forms and tables. Instructions for testing the criteria are available in Swedish at www.verva.se/24-timmarswebben/checklistor .

1. Forms, field labels

Priority 1

All fields must automatically receive or be given an explicitly linked field label.

2. Form submission

Priority 1

Form submission may not be dependent on JavaScript.

3. Form layout

Priority 2

Tables may not be used for form layout.

4. Forms, dependent on script

Priority 1

Validation and other functionality may not be dependent on script, for example JavaScript.

5. Tables and row and column headers

Priority 2

It must be possible to use the tool to create correct row and column headers. The correct HTML element (`th`) must be used to create headers.

6. Tables, summary text

Priority 3

The tool must allow editors to edit summary text for tables (`summary` element in HTML) Summary texts should not be created automatically, nor should it be mandatory.

7. Tables, captions

Priority 3

The tool must allow editors to provide captions for tables. The correct HTML element (`caption`) must be used for the text.

7.1.3 Managing images and links

The following criteria are included for the area of managing images and links. Instructions for testing the criteria are available in Swedish at www.verva.se/24-timmarswebben/checklistor.

1. Images, alt texts

Priority 1

It must be possible to indicate `alt` text, and the text may not be too long.

2. Images, alt text may not be created automatically

Priority 1

3. Images, alt texts and previously created alternative texts must not be reused without user confirmation.

Priority 2

4. Images, alt texts; alt texts must consist of pure text

Priority 1

5. Images, longdesc

Priority 2

It must be possible to indicate `longdesc`. If an image needs a more detailed description, alt text can be supplemented by a longer description.

6. Information about attached documents

Priority 2

When a document is attached, information regarding file size and type must be provided next to the link. Only applies to documents managed in the system.

7. Links, anchor links

Priority 1

It must be possible to create anchor links (internal bookmarks).

8. Title text for links

Priority 1

It must be possible to indicate a `title` text for links. The title text may not be mandatory or be created automatically.

7.1.4   Formatting text

The following criteria are included for the area of formatting text. Instructions for testing the criteria are available in Swedish at www.verva.se/24-timmarswebben/checklistor.

1. Headings

Priority 1

The tool must support creation of hierarchical headings. The first heading on the page must be marked up with a `h1` element, and underlying heading levels must be used so that the document's structure is evident from the heading structure.

2. Marking up paragraphs

Priority 1

The correct HTML element `<p>` must be used to mark up paragraphs.

3. Emphasis, bold text and italics

Priority 1

It must be possible to format text. The HTML elements strong and em, or b and i must be used for bold text and italics. Strong and em should be used if the aim is to emphasize text. The tool may not use font or span to format text.

4. Bullet lists

Priority 1

Correct HTML elements for bullet lists (`ul` and `li`) are used when the editor creates a bullet list with the tool.

5. Numbered lists

Priority 1

Correct HTML elements for numbered lists (`ol` and `li`) are used when the editor creates a numbered list with the tool.

6. Hierarchical lists

Priority 2

Correctly structured `ul` elements must be created when the editor creates a list inside another list.

7. Abbreviations

Priority 2

It must be possible to create abbreviations that include explanatory text. The correct HTML element and attribute (`abbr` and `title`) must be used to create abbreviations.

8. Acronyms

Priority 2

It must be possible to create acronyms with explanatory text. The correct element and attribute `acronym` must be used to create the abbreviation.

9. Quotes, inline
Priority 2
It must be possible to create inline quotes. The quote must use the correct element (`q`).

10. Block quotes
Priority 2
It must be possible to create quote blocks. The quote must use the correct element (`blockquote`). The text must be enclosed by the block level element, most appropriately the `p` element, if Strict doctype is used.

11. Quotes
Priority 2
Icons or text for the quote function must clearly show that the text is a quote, rather than text indentation.

7.1.5　Support for the web editor

The following criteria are included for the area including support for the editor. Instructions for testing the criteria are available in Swedish at www.verva.se/24-timmarswebben/checklistor.

1. Help function and manual
Priority 1
Checking and help functions and support for creating accessible information must be available in a format that does not require an external application and that is possible to select directly from the view that the user is "one click away from".

2. Possibilities for adaptation
Priority 2
The tool must allow changes to be made to the editing view's view settings. The user must be able to change text size, font, text colour and background colour in the editing view without affecting the content in the edited document.

3. Navigating without a mouse
Priority 3
When using only the keyboard, the user must be able to perform all types of editing that the user interface provides. Examples include navigating to, marking and editing content in editing views and controlling the user interface.

4. Glyphs
Priority 3
The publishing tool must help insert glyphs in accordance with Swedish typographical conventions. Some of the most common glyphs are quotation marks, dashes and apostrophes. They are listed under the section on punctuation and other written characters in the book *Svenska skrivregler*, which is published by the Language Council of Sweden. Also see www.sprakradet.se.

8 Assistive technologies for using websites

There are a large number of users who, in addition to computers and browsers, also need other aids to access content on a website. The most common assistive technologies are for people with reduced eyesight, but there are also aids available for people with repetitive strain injuries, physical disabilities and who are deaf or have a hearing disability. Some assistive technologies are tactile. This means they function by the person using his or her sense of touch. Other assistive technologies use sound or magnification.

This chapter offers an overview of assistive technologies and what should be considered when developing websites so they can be used by everyone and so assistive technologies can interpret them. The chapter does not contain any guidelines. For further reading see the Swedish Handicap Institute's information on surfing called *Surfa utan hinder*, available in Swedish at www.hi.se/surfautanhinder.

8.1 Clear pedagogical structure and high quality code simplify matters for everyone

Most citizens and companies want to spend as little time as possible carrying out their business at authorities. These guidelines intensify and clarify WAI's guidelines for accessibility, and following them increases the possibility for all users to take advantage of the website. No matter the disability or assistive technology, using the website is simplified if the interface is simple and clear. For example:

- Menus, links and buttons are designed and placed in a uniform and consistent manner.

- The website's structure is well considered and tested on people who will use the website.

- It is clear what happens if different links and objects are clicked upon.

- None of the pages contain too much information and short paragraphs and clear headings and subheadings are used.

- Colours, images or symbols clarify navigation and supplement texts.

- The website is coded to enable assistive technologies that read aloud to interpret the website.

The criteria listed above are especially important for people with cognitive disabilities since they may have reduced problem solving capability and difficulty remembering, so that they find orienting themselves on the website difficult.

8.2 Screen readers

People with disabilities basically use the same equipment that other users do when they surf on the Internet. Screen readers are commonly used by blind and visually impaired individuals and people who have a disability which

affects reading. A screen reader transforms text content on the website into speech and Braille.

Screen readers often run into problems if the website does not follow web standards and guidelines for accessibility. In addition to content, screen readers also interpret part of the website's structure, for example lists and tables. Thus it is important that text alternatives exist for all significant graphic content, for example images, films and buttons that are images. Actions such as separating content from design, avoiding table-based layout and writing brief and effective code reduce the risk of a user with a screen reader needing to spend time accessing anything other than content (he or she avoids having to access incorrect or superfluous code, for example).

Braille displays

Screen readers for blind users and users who have a severe visual impairment can interpret information presented on the computer's screen, and then transform text information into speech or Braille. A blind user listens to information or reads it with Braille. Speech synthesis enables information to be read to users, and a Braille display allows information to be presented in Braille.

Braille displays and speech synthesis are generally used together by people who can read Braille. Many people who have become blind or severely visually impaired as adults have not learned Braille, and instead listen to the website's content. People who have both a severe visual impairment and a severe hearing disability must read the Braille display.

People who have difficulty seeing the website use other strategies to gain an overview and navigate the content. For example, they may:

- Use content outlines.

- Produce a list of all the headings on one page. Thus, it is important that the entire website has clear headings and is formatted with a correct heading structure.

- Produce a list of all the links on one page. Thus, it is important to formulate clear links that can also be understood out of their context.

- Use access keys to reach important pages on the website.

Examples

Go to www.verva.se/24-timmarswebben/exempel to hear an example of a screen reader reading a web page aloud (only in Swedish).

Use Fangs, a Firefox plug-in to see what information a screen reader interprets from a web page; see www.verva.se/24-timmarswebben/verktyg.

Voice browsers

There is another type of screen reader for people with disabilities which affects reading. It functions in basically the same manner as screen readers for blind users and users who have a severe visual impairment do. The difference is that the user can mark certain paragraphs to be read aloud. The user may also sometimes need to copy text and place it in a view position

where it can be colour marked to show which words or sentences are being read aloud.

Using this type of assistive technology helps, for example, users with dyslexia access large amounts of text when it is read aloud instead of the user needing to read it. The actual combination of reading and listening at the same time provides the best support for many people.

In order to make reading easier for people with disabilities which affects reading, it is also important to:

- Follow the rules for writing for the web, for example by using simple, straightforward language and clear headings and paragraphing.

- Avoid distracting motion on the screen.

- Make sure the website's row spacing and column width facilitate reading.

- Provide graphic information that supplements and clarifies text content.

It is also important for many people with disabilities which affects reading to be able to make personal settings to determine the website's appearance. See the Swedish Dyslexia Association's website, www.fmls.nu, for an example of a website on which the user can make personal settings. To get to the settings page, click the image "Anpassa" in the top right corner.

Voice functions built into the website

There are also screen readers available that have the speech function built into the website. Users who need to hear information, but who do not have a personal assistive technology, are greatly benefited by the website automatically being able to transform text into speech. A speech function of this kind can be integrated into a website and does not require the user to have any specific software installed. Integration is relatively easy if the website follows the guidelines for basic design and accessibility found in this information.

A function of this kind is primarily intended for people who have difficulty with written Swedish.

Example
The Government Offices of Sweden's website uses a built-in speech function; see www.sweden.gov.se. Click on the "Listen" link to listen to the content.

8.3   Magnifying tools

People with reduced eyesight form a varied group. Some people may only need glasses, while some people may need to display content in colours which provide a higher contrast and other users may need to magnify content on the screen up to 32 times.

To facilitate reading for users who need to magnify the website:

- Use relative units on the website. Doing so makes it easier for users to magnify text on the website, no matter if screen magnifiers are installed or not.

- Avoid presenting text as images. Text of this kind becomes unclear and difficult to read when magnified.

- Use sufficient contrast on the website and make sure that the website functions even when style sheets are disabled so that users who prefer to use their own contrast settings can do so.

Screen magnifier

Users who require substantial magnification generally have a magnifying program installed on their computer, which often magnifies the entire screen. The degree of magnification can be set individually and may involve several hundred per cent magnification. Due to the high degree of magnification, many users with screen magnifiers can only read a limited part of the web page at a time. This means it often takes longer to gain an overview of a page. The user must scroll, often both vertically and horizontally, to access content.

Most people read a page left to right, top to bottom, even if it is magnified. Content that is placed to the far right or far down on a page takes longer to find. Some users follow vertical and horizontal lines on a page's layout to find content.

Several magnifying programs allow partial adjustment of the website's colours and contrast to make information easier to interpret for the user. The user often combines magnification with listening via a screen reader.

In order to help people using screen magnifiers obtain an overview, it is important to:

- Write the most important information first. This applies to text, headings, links and menus.

- Introduce long pages with a list of contents.

- Avoid empty spaces on the page that lack content.

- Offer orientation support by using lines.

- Avoid menus that drop down and only appear when the mouse pointer passes over the menu. Menus of this kind can be difficult to see due to magnification. Parts of the menu may appear outside the screen or be concealed by the mouse pointer. The menu disappears when the user moves the mouse pointer.

Examples

To gain an idea of what a website may look like when magnified and with modified contrast:

- To see an example of a website that has been magnified 8 times, see www.verva.se/24-timmarswebben/exempel (in Swedish).

- Test the built-in magnification program in Windows XP. The program also allows different contrasts to be selected. The screen magnifier Magnifier can be found in the Start menu under All Programs, Accessories, Accessibility.

- Try magnifying a website with the zoom functions found in browsers such as Opera or Firefox.

8.4 Alternative input devices

There are several assistive technologies available that enable users who have difficulty using traditional keyboards to control their computers

- **Speech control**. The computer is controlled by the user's voice

- **Keyboard on the screen.** Screen keyboards normally cover the lower third of the screen. The user clicks on different characters on the screen keyboard to write text. The screen keyboard requires the user to use a normal mouse or other pointing device.

- **Alternative pointing devices.** The mouse pointer can be controlled by body parts other than the user's hand, for example the user's eyes, mouth or feet. Assistive technologies of this kind basically function as a normal mouse does in that the pointer moves over the screen and the user clicks to activate different choices. Many users use a scanning mouse, which means the pointer jumps between clickable surfaces on the website.

- **Tactile mouse.** Blind users and users who have a severe visual impairment can use a tactile mouse. This device allows blind and severely visually impaired users to "feel" the web page. As the tactile mouse moves over the website, three small areas with metal spikes are raised and lowered to varying degrees depending on which colour or grey scales the website has. This enables the user to gain an idea of the website's contours. Information gained via a tactile mouse is very difficult to interpret. For this reason, do not count on this type of mouse functioning as anything other than a support to information that is obtained via speech synthesis and Braille displays.

Unaccustomed and elderly users can also experience difficulty using keyboards and mice with precision.

To facilitate for users who use alternative devices or who have difficulty using traditional keyboards and mice, it is important that the website:

- Is possible to use with a keyboard or a mouse independently.

- Not have too many clickable objects on one page, as it is time consuming to navigate through the page with the keyboard.

- Has clickable surfaces that are large and clear. This helps users who find precision difficult.

- Not have too much distance between clickable surfaces, for example between buttons in a form.

8.5   Search engine with built-in spell check

Search engines that have built-in spell checks for search terms help users who have a writing disability. The function helps users produce desired search results even if words are misspelled. The search engine corrects misspelled search terms by comparing them to a glossary and then proposing a correctly spelled word that can be read aloud. The website's own search engine searches for the term when the user has selected the correct word.

Example

The Swedish National Encyclopedia has a search engine that offers spelling suggestions; see www.ne.se. Try searching for the former British prime minister Churchill, but spell it "tchertchil".

Appendix A: WCAG 1.0 Reference

The table below shows how the guidelines in the Swedish National Guidelines for Public Sector Websites corresponds to WCAG 1.0 (Web Content Accessibility Guidelines), http://www.w3.org/TR/WCAG10.

WCAG 1.0	Swedish Guidelines
1.1 Provide a text equivalent for every non-text element (e.g., via "alt", "longdesc", or in element content). This includes: images, graphical representations of text (including symbols), image map regions, animations (e.g., animated GIFs), applets and programmatic objects, ascii art, frames, scripts, images used as list bullets, spacers, graphical buttons, sounds (played with or without user interaction), stand-alone audio files, audio tracks of video, and video.	3.5.10, 5.6.1, 5.6.2
1.2 Provide redundant text links for each active region of a server-side image map.	5.6.3
1.3 Until user agents can automatically read aloud the text equivalent of a visual track, provide an auditory description of the important information of the visual track of a multimedia presentation.	Not included.
1.4 For any time-based multimedia presentation (e.g., a movie or animation), synchronize equivalent alternatives (e.g., captions or auditory descriptions of the visual track) with the presentation.	Not included.
1.5 Until user agents render text equivalents for client-side image map links, provide redundant text links for each active region of a client-side image map.	5.6.3
2.1 Ensure that all information conveyed with color is also available without color, for example from context or markup.	3.2.1
2.2 Ensure that foreground and background color combinations provide sufficient contrast when viewed by someone having color deficits or when viewed on a black and white screen. [Priority 2 for images, Priority 3 for text].	3.2.2
3.1 When an appropriate markup language exists, use markup rather than images to convey information.	5.5.1, 5.6.1

WCAG 1.0	Swedish Guidelines
3.2 Create documents that validate to published formal grammars.	3.3.22
3.3 Use style sheets to control layout and presentation.	3.3.4
3.4 Use relative rather than absolute units in markup language attribute values and style sheet property values.	3.3.6
3.5 Use header elements to convey document structure and use them according to specification.	5.5.2
3.6 Mark up lists and list items properly.	5.5.1
3.7 Mark up quotations. Do not use quotation markup for formatting effects such as indentation.	5.5.8
4.1 Clearly identify changes in the natural language of a document's text and any text equivalents (e.g., captions).	5.5.4
4.2 Specify the expansion of each abbreviation or acronym in a document where it first occurs.	5.4.9, 5.5.5
4.3 Identify the primary natural language of a document.	5.5.4
5.1 For data tables, identify row and column headers.	3.4.1
5.2 For data tables that have two or more logical levels of row or column headers, use markup to associate data cells and header cells.	3.4.3
5.3 Do not use tables for layout unless the table makes sense when linearized. Otherwise, if the table does not make sense, provide an alternative equivalent (which may be a linearized version).	3.3.11
5.4 If a table is used for layout, do not use any structural markup for the purpose of visual formatting.	3.3.11
5.5 Provide summaries for tables.	3.4.1, 3.4.4, 3.4.5
5.6 Provide abbreviations for header labels.	3.4.2, 3.4.3
6.1 Organize documents so they may be read without style sheets. For example, when an HTML document is rendered without associated style sheets, it must still be possible to read the	3.3.5

WCAG 1.0	Swedish Guidelines
document.	
6.2 Ensure that equivalents for dynamic content are updated when the dynamic content changes.	3.3.14
6.3 Ensure that pages are usable when scripts, applets, or other programmatic objects are turned off or not supported. If this is not possible, provide equivalent information on an alternative accessible page.	3.3.7, 3.3.14, 3.5.11, 5.6.2
6.4 For scripts and applets, ensure that event handlers are input device-independent.	3.3.7, 3.3.16
6.5 Ensure that dynamic content is accessible or provide an alternative presentation or page.	3.3.10, 3.3.14
7.1 Until user agents allow users to control flickering, avoid causing the screen to flicker.	3.3.21
7.2 Until user agents allow users to control blinking, avoid causing content to blink (i.e., change presentation at a regular rate, such as turning on and off).	3.3.21
7.3 Until user agents allow users to freeze moving content, avoid movement in pages.	3.3.20
7.4 Until user agents provide the ability to stop the refresh, do not create periodically auto-refreshing pages.	3.8.1
7.5 Until user agents provide the ability to stop auto-redirect, do not use markup to redirect pages automatically. Instead, configure the server to perform redirects.	3.8.2
8.1 Make programmatic elements such as scripts and applets directly accessible or compatible with assistive technologies [Priority 1 if functionality is important and not presented elsewhere, otherwise Priority 2.]	3.3.7, 3.3.14
9.1 Provide client-side image maps instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	5.6.3
9.2 Ensure that any element that has its own interface can be operated in a device-independent manner.	3.3.16

WCAG 1.0	Swedish Guidelines
9.3 For scripts, specify logical event handlers rather than device-dependent event handlers.	3.3.7, 3.3.16
9.4 Create a logical tab order through links, form controls, and objects.	3.3.18
9.5 Provide keyboard shortcuts to important links (including those in client-side image maps), form controls, and groups of form controls.	3.3.17
10.1 Until user agents allow users to turn off spawned windows, do not cause pop-ups or other windows to appear and do not change the current window without informing the user.	3.3.15, 5.7.2, 5.7.3
10.2 Until user agents support explicit associations between labels and form controls, for all form controls with implicitly associated labels, ensure that the label is properly positioned.	3.5.5
10.3 Until user agents (including assistive technologies) render side-by-side text correctly, provide a linear text alternative (on the current page or some other) for all tables that lay out text in parallel, word-wrapped columns.	Not included. Table based layout is discouraged in 3.3.11
10.4 Until user agents handle empty controls correctly, include default, place-holding characters in edit boxes and text areas.	Not included. Current user-agents can handle empty controls.
10.5 Until user agents (including assistive technologies) render adjacent links distinctly, include non-link, printable characters (surrounded by spaces) between adjacent links.	5.7.6
11.1 Use W3C technologies when they are available and appropriate for a task and use the latest versions when supported.	3.3.1, 3.3.2
11.2 Avoid deprecated features of W3C technologies.	3.3.1, 3.3.2
11.3 Provide information so that users may receive documents according to their preferences (e.g., language, content type, etc.)	3.3.1, 3.3.2, 6.1.1, 6.1.2
11.4 If, after best efforts, you cannot create an accessible page, provide a link to an alternative page that uses W3C technologies, is accessible, has equivalent information (or functionality), and is	Not included.

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updated as often as the inaccessible (original) page.	
12.1 Title each frame to facilitate frame identification and navigation.	3.3.10
12.2 Describe the purpose of frames and how frames relate to each other if it is not obvious by frame titles alone.	3.3.10
12.3 Divide large blocks of information into more manageable groups where natural and appropriate.	3.5.3, 5.4.4, 5.4.5, 3.3.19
12.4 Associate labels explicitly with their controls.	3.5.5
13.1 Clearly identify the target of each link.	5.7.1, 5.7.7
13.2 Provide metadata to add semantic information to pages and sites.	3.3.8
13.3 Provide information about the general layout of a site (e.g., a site map or table of contents).	3.1.7
13.4 Use navigation mechanisms in a consistent manner.	3.1.1, 3.1.3
13.5 Provide navigation bars to highlight and give access to the navigation mechanism.	3.1.1, 3.1.3, 3.1.6
13.6 Group related links, identify the group (for user agents), and, until user agents do so, provide a way to bypass the group.	3.3.19
13.7 If search functions are provided, enable different types of searches for different skill levels and preferences.	4.4.1
13.8 Place distinguishing information at the beginning of headings, paragraphs, lists, etc.	5.4.2
13.9 Provide information about document collections (i.e., documents comprising multiple pages.).	5.5.7
13.10 Provide a means to skip over multi-line ASCII art.	5.6.4
14.1 Use the clearest and simplest language appropriate for a site's content.	5.4.1
14.2 Supplement text with graphic or auditory presentations where they will facilitate	8.1

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comprehension of the page.	
14.3 Create a style of presentation that is consistent across pages.	3.1.1, 3.1.3, 3.3.4, 5.4.8

Working drafts of WCAG version 2.0 published before November 2006 have been taken into consideration during the development of these guidelines.