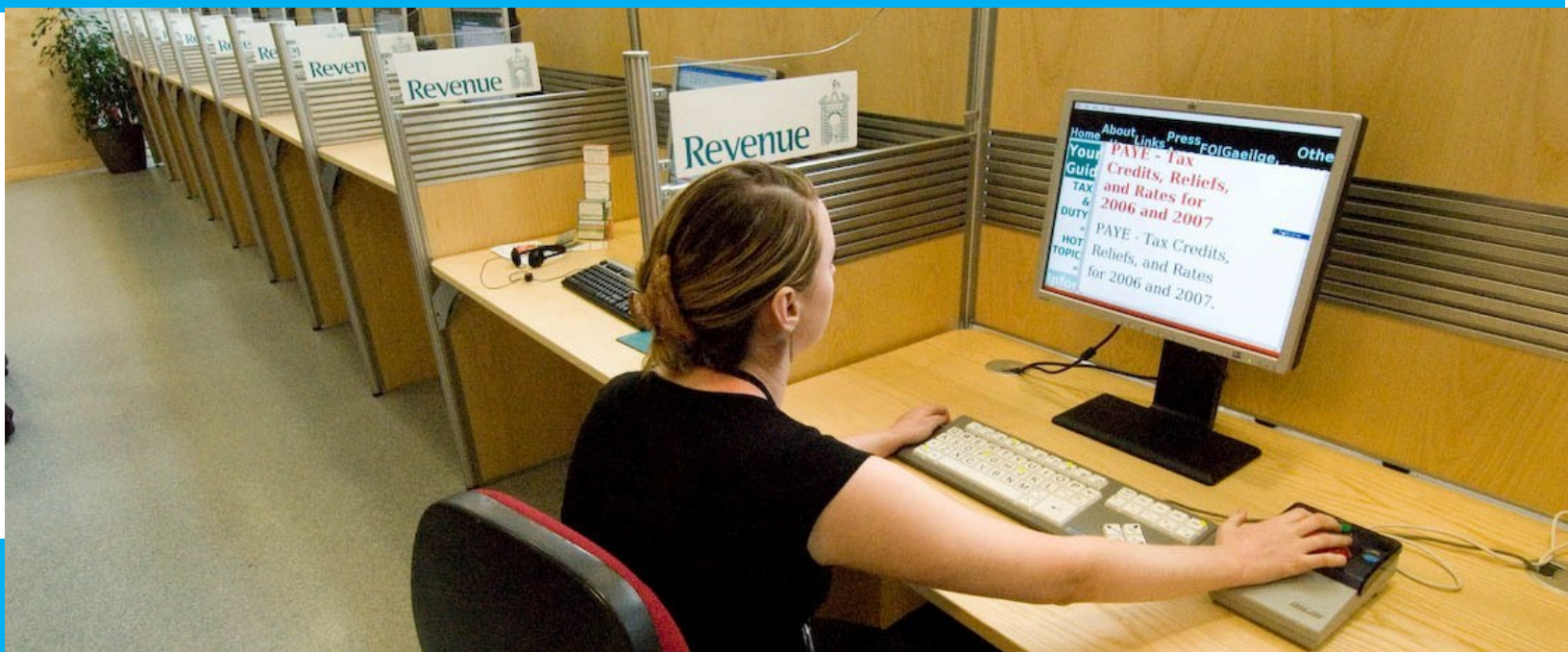




Údarás Náisiúnta Míchumais  
National Disability Authority

# Measures to Improve Accessibility of Public Websites in Europe

## Executive Summary



## Centre for Excellence in Universal Design

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## **Cover photo**

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## Executive summary

This report presents the outcomes of a study conducted for the Centre for Excellence in Universal Design at the National Disability Authority, and the Department of Communications, Energy and Natural Resources in Ireland focusing on the accessibility of key public services for citizens in the EU Member States. The research was commissioned as an initiative under the Irish Presidency of the EU and as an action under Ireland's National Digital Strategy<sup>1</sup>.

This study aims to make a new contribution to the existing evidence base on Web accessibility in order to support the current dialogues in the European Parliament and Council of Ministers around the European Commission's recent proposal for a Directive in this area<sup>2</sup>. The proposal defines web accessibility as the principles and techniques to be observed when constructing websites, in order to render the content of these websites accessible to all users.<sup>3</sup> It aims to harmonise the measures which Member States use to make the content of public sector websites accessible. It includes a description of the scope, required level of accessibility with the relevant standard (Web Content Accessibility Guidelines 2.0) and timelines to be contained in the Directive.<sup>4</sup>

The study applies a new perspective by looking at accessibility issues both from the 'outside' (through direct examination of the accessibility features in the public services listed in the Directive) and from the 'inside' (through interviews with web managers of these public services to gain insight into their activities, experiences and the challenges they may be facing).

In all, 37 web services in 7 different countries were evaluated, and a total of 327 individual tests were conducted. In addition, in-depth interviews involving 19 people from 13 public sector organisations were conducted in three countries (Germany, Ireland and Sweden).

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<sup>1</sup> Ireland's National Digital Strategy. <http://www.dcenr.gov.ie/Communications/NDS/>

<sup>2</sup> European Commission. Proposal for a Directive of the European Parliament and of the Council on the accessibility of public sector bodies' websites. <http://ec.europa.eu/digital-agenda/en/news/proposal-directive-european-parliament-and-council-accessibility-public-sector-bodies-websites>

<http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2012/0340%28COD%29&l=en>

<sup>3</sup> Ibid, page 2

<sup>4</sup> Web Content Accessibility Guidelines 2.0, <http://www.w3.org/TR/WCAG20/>

Themes examined in the study were:

- Current levels of web accessibility among the selected Member States
- The types and levels of efforts potentially required by Member States to ensure their online public websites comply with the levels of accessibility listed within the proposed Directive.
- Web accessibility perceptions among web managers in public services

Based on these findings the report discusses implications for web accessibility policies at national and EU levels.

### **Summary of headline findings and recommendations**

The following are the key findings and recommendations drawn from the web accessibility assessment and interviews conducted.

#### **Implications for web accessibility policies at EU level**

- EU-level web accessibility monitoring efforts should consider how operationally useful feedback can be provided to website managers and their organisations. Many of the websites examined were found to contain few, relatively minor errors that could have been uncovered if regular monitoring of the website's accessibility was in place.
- A prioritised and phased approach to implementing accessibility is practical.

#### **Implications for web accessibility policies and practices at national level**

- National web accessibility policies tend to be in place but there are significant variances in the level of practical supports and tools provided. The centralised supports and tools for web development and management available within the public sector in Germany, for example, would seem to have a positive impact on levels of accessibility.
- Public procurement remains an underutilised tool in ensuring public website development and maintenance results in a high level of accessibility.

#### **Key findings from the web accessibility assessments**

- Current levels of web accessibility remain low. None of the 37 public service websites that were assessed across the 7 countries currently comply fully with the WCAG 2.0 AA requirements. However many of the errors detected were of a relatively minor nature.
- The efforts required by the public services to fully comply with WCAG 2.0 vary depending on technical as well as operational factors within the public sector organisation.

- The most striking accessibility barriers relate to documents, forms and multimedia.
- Web teams that manage public sector website need to have specific skills and knowledge related to accessibility. More generally, training and capacity building is necessary for all staff that have a role in producing or commissioning content and documents published to the website

### **General web accessibility perceptions among web managers**

- The focus on achieving accessibility remains more on a technical level than as a core aspect of how the service delivered to all citizens. According to one web manager interviewed, “Frequently accessibility is only associated with requirements that blind people have.”
- Organisational web policies and processes often do not consider accessibility as a ongoing issue but rather as a once off activity.

### **Cost and benefits of web accessibility**

- The potential costs and efforts required by the public services to fully comply with WCAG 2.0 vary. Key factors include the age of the website and technology used. The frequency with which accessibility is checked has a significant impact on managing compliance with accessibility standards over time. The routine publication of inaccessible content and documents to public sector websites seriously degrades their level of accessibility.
- Costs related to achieving accessibility to date are not perceived by the public sector organisations to be onerous or problematic. Many of the efforts required to improve accessibility relate to capacity building and training of internal staff, both technical and non-technical.

### **Implications for web accessibility policies at EU level**

From the results obtained, there would appear to be a strong rationale for reinforcing the EU policy approach to web accessibility in order to encourage a more harmonised approach to accessibility by public sector bodies and a better end user experience by citizens in Member States.

- Approaches towards national or EU-level monitoring should consider providing operationally useful feedback to website managers and their organisations

Regular and systematic monitoring of the levels of accessibility of public websites, either internally or by external parties was not commonly reported by the web managers in the three countries. The lack of systematic monitoring and remediation results in many, relatively minor accessibility issues prevailing on many of the websites assessed in the study.

Expectations by the public sector web managers vary quite a lot on the impacts that might be achieved from national and EU monitoring activities related to the Directive. While many of the interviewees did not have considered views on the issues involved, they could generally see that monitoring could be a useful tool for promoting web accessibility. While some believe that impacts would primarily be indirect in nature (e.g. in terms of increased awareness) if at all, others would expect to be able to directly use the feedback received. There were also fears that a monitoring regime might ultimately become a bureaucratic exercise with low value for the web managers' day-to-day operations and high requirements being placed on the web management teams.

Therefore monitoring activities should provide information on the performance of a website against WCAG 2.0 that can be easily interpreted and used by these teams. Providing comparable scores for all or certain categories could be a useful motivational and awareness raising tool. In addition, providing the detailed results of the monitoring exercise of a website performance against WCAG 2.0 would be of operational use to web management teams in precisely identifying and improving the level of accessibility over time.

### **A prioritised and phased approach in implementing accessibility is practical**

The results of the web accessibility assessments in this and other studies shows that much work needs to be undertaken within Member States before the public sector websites listed in the annex of the proposed Directive meet the requirements of WCAG 2.0 level AA. There remains a myriad of websites and public services at national, regional and municipal level that are of key interest for people with disabilities. The Directive proposes that the set of websites covered are likely to have a knock-on effect and help foster best practices in accessibility of websites across the wider public sector. Nevertheless, from the perspective of the end user, it is important that EU initiatives cover all public websites at different administrative levels, even websites in public-private partnerships, websites developed with public funding and even commercial websites of public interest. The list of 12 online services can be a starting point to develop good practices in the field, but global accessibility of most European public online services remains key for end users.

The Web Accessibility Assessment portion of the study showed that the large amount of information contained in documents on some public sector websites is a substantial barrier to improving the site's level of accessibility. This issue in particular may require a prioritised and phased approach to gradually realising the desired level of accessibility. Policy approaches should therefore differentiate between existing websites and documents and new website developments and

documents. At European level, it may be prudent to provide incremental and feasible deadlines for public websites to meet the requirements of WCAG 2.0 level AA.

### **Implications for web accessibility policies at national level**

No public service website was found to be fully compliant with WCAG 2.0 guidelines in any of the countries examined in the web accessibility assessment. While some countries and/or services show better results than others, all countries would benefit from reinforcing their policy approaches to web accessibility.

### **National web accessibility policies need to be backed up with practical support**

**Table: Summary of policies and approaches**

	<b>Policy scope – all public sector websites</b>	<b>Support measure / resources</b>	<b>Monitoring</b>	<b>Public procurement</b>
<b>Sweden</b>	Regulation	Guidelines and advisory documents	Self-declaration by public bodies	Provisions in legislation, not systematically monitored
<b>Ireland</b>	Disability act and code of practice	Guidelines and advisory documents	Self-declaration by public bodies	Provisions in legislation, not systematically monitored
<b>Germany</b>	Equality legislation	Guidelines supported by development and monitoring tools	Methodology defined for monitoring compliance	Provisions in legislation, not systematically monitored

The table above shows that Ireland, Sweden and Germany all have policies in place that address website accessibility, including provisions in public procurement. Support measures and approaches to monitoring differ, with Germany taking a more systematic approach backed-up by the provision of web development tools. The availability of a centralised, national-level support/competence structure within the public sector as available in Germany would appear to be effective in achieving a consistent approach to accessibility,



even if some smaller issues were still found to persist. All countries could consider the development of centralised support structures and processes, including skills development and the provision of guidance materials, evaluation procedures and development tools to support the development and ongoing maintenance of accessible websites.

A first step for all Member States to undertake is to assess these websites current levels of conformance with WCAG 2.0. Based on this assessment, a prioritised action plan will need to consider the best national approach to improving these levels, assuming that the same variance in the level of accessibility in the 7 countries examined in this study exists in other Member States. Section 4.2 on “Indicative costs and benefits to web accessibility” provides some guidance on identifying the likely extent of the effort required to improve the accessibility of public sector websites.

Based on the web accessibility assessments and the interviews with website managers, it would appear that accessibility problems often arise not because of a lack of effort, but because of structural barriers that constrain public sector organisations in taking a more systematic approach to web accessibility in their day-to-day operations. For example, in organisations where multiple members of staff have the capability to publish to the web, clear and easy to follow accessibility protocols need to be in place so that new content published to the site does not degrade the level of accessibility of the website as a whole over time. This phenomenon of accessibility “churn”, whereby the level of accessibility degrades over time due to updates and changes to the content and services, was identified as a major contributing factor to the persistence of accessibility errors in the content of some of the websites assessed that otherwise exhibited a high level of accessibility.

### **Public procurement remains under utilised as a means of achieving higher levels of accessibility**

Accessibility policies are not always formal and this may lead to accessibility efforts becoming once-off activities related to specific events such as the development of new websites. Most web managers reported that their procurement policies included requirements on the accessibility of websites. The level of specificity of these requirements varied somewhat, but most referred to WCAG standards. Procurement policies do not tend to include provisions in relation to systematically monitoring or controlling whether accessibility requirements have actually been met at the end of the procurement process. In addition there appears to be little in-house competence available to monitor whether accessibility requirements have been met. In fact, there was little evidence of accessibility testing being undertaken on a regular basis.

To ensure a higher level of accessibility, website managers need to specify clear requirements when procuring related services such as content management systems, web applications and desktop publishing and to check that these requirements are met in the procured product or service. Some of these systems have automatic features that need to be specified in terms of the level of accessibility they deliver. For more general web development, procurements procedures need to contain accessibility requirements and the means to confirm whether these requirements have been met.

Public organisations should ensure that publicly procured web services and applications are fully accessible.

During the stages of procurement of web applications and services, public sector organisations should ensure that:

- Accessibility is defined as a criterion in the Call for Tender
- appropriate standards are specified
- accessibility requirements specified in the Call for Tender are verified in suppliers' tenders
- accessibility is dealt with in contract clauses and contract management.

Web services and applications include content management systems (CMS) and web applications, as well as services such as web design and desktop publishing.

## **Discussion on key findings from the web accessibility assessments**

### **Current levels of web accessibility remain low**

The results of the web accessibility assessments are consistent with previous studies showing that there is still much progress needed across the Member States to ensure they meet the level of accessibility stated in the proposed Directive, namely conformance rating AA with the Web Content Accessibility Guidelines (WCAG) 2.0, from the W3C<sup>5</sup>. None of the 37 public service websites that were assessed across the 7 countries currently comply fully with the WCAG 2.0 AA requirements. (see Table I below for summary of scores per Success Criterion)

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<sup>5</sup> W3C. Web Content Accessibility Guidelines 2.0. <http://www.w3.org/TR/WCAG20/>

**Table: Summary of test scores per Success Criterion**

TESTS	TEST SCORES (N = 327)		
	Pass	Marginal Fail	Fail
<b>Total Number of scores:</b>	151 (46%)	44 (13%)	132 (41%)
<b>Navigation:</b>			
<b>Test 1</b> , Multiple ways to locate a web page. N=37	34 (93%)	2 (5%)	1 (2%)
<b>Test 2</b> , Keyboard control. N=37	3 (8%)	16 (43%)	18 (49%)
<b>Accessibility of documents:</b>			
<i>Note: In 2 cases Word documents were evaluated instead of PDF document, as no PDF were available.</i>			
<b>Test 3</b> , The PDF document has correct headings. N=37	6 (16%)	0	31 (84%)
<b>Test 4</b> , Images are not used to present text in PDF documents. N=37	28 (76%)	1 (2%)	8 (22%)
<b>Accessibility of forms:</b>			
<i>Note: In five cases any forms with mandatory fields was found and therefore test 5 was completed on 32 websites only.</i>			
<b>Test 5</b> , Error messages in connection to mandatory fields. N=32	10 (31%)	14 (44%)	8 (25%)
<b>Test 6</b> , Using correct labels in forms. N=32	17 (53%)	2 (6%)	18 (56%)
<b>Construction quality:</b>			
<b>Test 7</b> , Using HTML/XHTML according to specification. N=37	5 (14%)	1 (3%)	31 (84%)

TESTS	TEST SCORES (N = 327)		
<b>Test 8</b> , Separating information and structure from presentation. N=37	30 (81%)	3 (8%)	4 (11%)
<b>Multimedia:</b> <i>Note: Twenty of the 37 websites tested contained multimedia, but in 4 cases the multimedia did not contain any audio information.</i>			
<b>Test 9</b> , Captioning of media. N=16	3 (19%)	4 (25%)	9 (56%)
<b>Test 10</b> , Keyboard control in the video player. N=20	15 (75%)	1 (5%)	4 (20%)

**The efforts required by the public services to fully comply with WCAG 2.0 vary**

In many cases, no evidence was found of systematic problems with the website. Instead, specific mistakes and isolated errors were uncovered that could have been fixed – or at least discovered - if sufficient accessibility checks had been conducted during the development and subsequent maintenance of the website.

Approximately 10-15 % of the online services tested appear to have been developed using older technologies and approaches to accessibility. These types of services generally have more fundamental accessibility problems that would likely require an entire website redesign and rebuild, rather than simply retrofitting a number of isolated fixes.

An example of such an issue is where online forms cannot be submitted online by the citizen, but must be downloaded, completed and posted to the relevant agency. These largely manual form submission processes contains significant accessibility barriers for very many people using Assistive Technology and may need to be upgraded in order to achieve the relevant level of conformance with the standards set out in the proposed Directive.

It is noteworthy that manual form submission processes are also much less efficient for the organisation than fully online services. Considerations by public bodies on moving to an online service should take into account the Return on Investment in terms of efficiency gains to be achieved. In general public sector bodies need to consider any investment required to ensure compliance with the accessibility standard in the context of other efficiency gains that potentially can be achieved.

## **The most striking accessibility barriers relate to documents, forms and multimedia**

A large disconnect was identified between the level of accessibility of the HTML pages of the websites and the stand-alone documents in formats such as MS Word and PDF contained in these pages. PDFs in particular are widely used in public sector websites but in many of the PDFs examined they were found not to have been developed with accessibility in mind. In many cases they contain detailed information or instructions about a particular public service or scheme. In addition, many application forms in PDF were found to be not web-enabled, but intended instead to be printed off, filled in and returned by mail to the public service organisation. This practice has serious implications for the levels of accessibility required by some groups of users, in particular users of Assistive Technology, as well as having implications for the efficiencies that can be achieved by public services in processing applications online.

A striking and emerging accessibility barrier was identified on those sites that provide audiovisual material such as videos online. While videos have an important role in assisting end users to understand a piece of complex information or to use an online service, the videos assessed were found to lack critical accessibility features such as subtitling. In addition, video content was often found to be presented in isolation on a page, without any reference to other pages containing related information.

## **General web accessibility perceptions among web managers**

### **The focus on achieving accessibility remains more on a technical than a human level**

The majority of organisations interviewed referred to the WCAG guidelines as being the basis of their web accessibility policy. The focus of accessibility efforts thus seems to be on technically complying with the standards or guidelines referenced in relevant policies and legislation at a specific point in the development of a website rather than on optimising and continually improving the user experience as a whole. This indicates a need to promote a more user-centric delivery of services online through the adoption of a Universal Design approach.

### **Organisational policies and processes often do not consider accessibility as an ongoing issue**

Organisational accessibility policies are not always documented and/or formally implemented and this may lead to accessibility efforts becoming once-off activities related to specific events such as the development of a new website. Many of the

accessibility errors observed in the web accessibility assessment would have been avoided if proper maintenance and quality checking procedures were in place.

A number of structural and management barriers constrain public sector organizations from taking a more strategic and structured approach towards web accessibility in their day to day operations. These include:

- resource restrictions and the need to balance accessibility requirements with other organisational requirements;
- deficits in keeping awareness or knowledge within teams at required levels over time;
- non-availability of tools that support staff in achieving or maintaining accessible websites/content on an ongoing basis;
- decentralized/ad-hoc generation and publication to the website of inaccessible content by internal staff, and;
- management of external content providers in producing accessible content.

### **Insights into cost and benefits of web accessibility**

#### **Potential costs vary for public services to fully comply with WCAG 2.0**

The effort required to achieve full compliance across the 37 websites tested varies considerably due to the extent and mix of accessibility issues identified. Three categories of websites have been generally identified in this respect, varying in degree of the severity of issues identified and extent of efforts likely to be incurred in fixing these.

- The first grouping of websites could achieve full compliance with relatively minor efforts. Most websites assess come under this grouping.
- In the second grouping, some accessibility efforts have already been made and further improvements could be achieved if moderate efforts were made.
- The third category can be typified by websites where retrofitting of accessibility into the existing website is not recommended. For these website the amount of accessibility errors and/or the baseline technology used may make it either technically impossible or inordinately costly to achieve a satisfactory level of compliance. For this category rebuilding the website from scratch may be required.

In all cases, the ongoing and systematic review of the level of accessibility by the public sector organisation will likely reduce the need for future development work resulting directly from a degrading in the level of accessibility on the website over time.

### **Costs related to achieving accessibility to date are not perceived to be problematic**

The results from the interviews with web managers are in line with other studies, which have found that public sector web services do not identify or try to track specific costs that might be attributed solely to making or keeping the website accessible. Therefore, as in other studies, no specific accessibility costs could be identified and collated. Some specific one-off costs that were identified related to conducting user testing or commissioning accessibility audits. From those views expressed in interviews, any costs related to accessibility were not typically identified as being especially large. Therefore, the cost to achieving accessibility was not considered to represent a major barrier by the web managers.

Addressing accessibility from the beginning was seen as helping to keep costs to a minimum. The availability of nationally developed and deployed support tools and accessibility evaluation procedures, as found to be in place in Germany, was also reported to help keep costs to a relatively low level.



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**and used to the greatest extent possible by all people, regardless of their age, size, ability or disability.**