



BASIC LEVEL: An introduction to digital accessibility

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1. BASIC LEVEL: An introduction to digital accessibility

Trainer tip: Before starting this module, the trainer can ask each student to introduce and provide a description of themselves. The trainer should begin the presentations, to set the example for the rest of the group. E.g., "My name is Ursula von der Leyen, I have blonde hair and I am wearing a trouser suit in my office in Brussels in Belgium".

The learning objectives for this module include:

- To gain a basic understanding of accessibility as a concept.
- To gain knowledge on the diverse groups who accessibility can affect on a daily basis.
- To increase capacity on the digital items we need to look out for regarding accessibility.
- To be able to spot basic accessibility issues.
- To identify accessibility tools on devices and software.
- To understand the benefits of accessibility for an organisation.
- To understand the benefits of accessibility for individuals and society.
- To understand what inclusive design is.

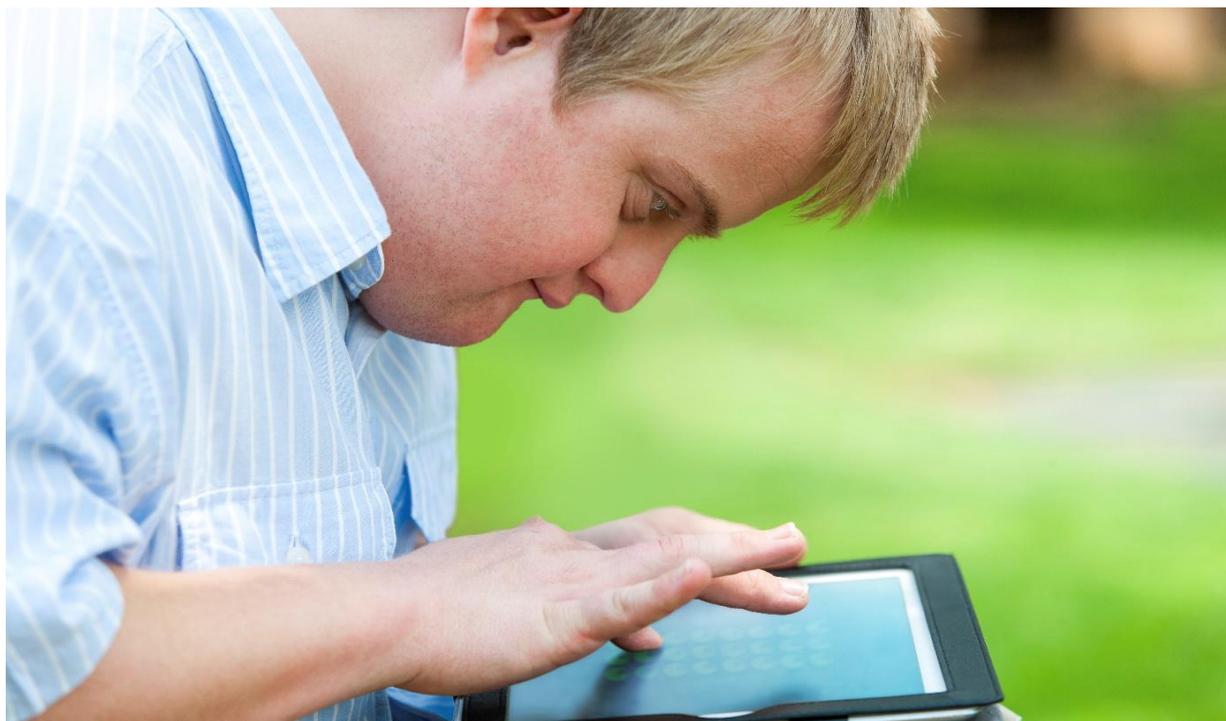
1.1 What is accessibility?

Trainer tip: Before diving into this chapter, it is a good idea to gauge the existing knowledge of the students about accessibility. This will help the trainer to adapt the pace of the training sessions or identify any specific training requirements. The question "what does accessibility mean for you?" can be used.

Accessibility is when all individuals, regardless of ability, are able to participate in society in an independent way. This can cover anything from being able to move and orientate oneself in the physical environment to absorbing

information and performing services. But it is also about being treated well and having a chance to communicate on your own terms. Accessibility is about the whole of life, and the whole person.

When it comes to the digital world, accessibility can be defined as all individuals being able to use Information Communication Technology (ICT) systems, hardware, software and tools, perform services and understand content.



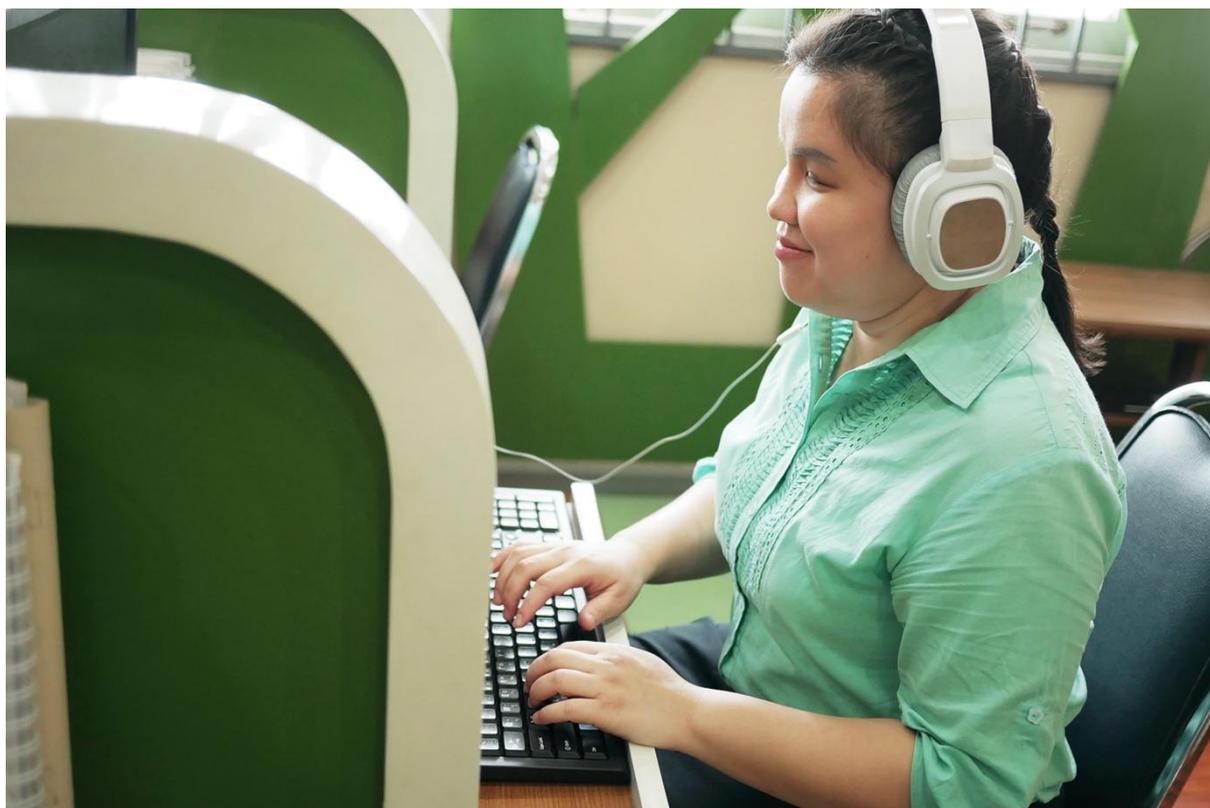
1.2 Who is affected by accessibility (target groups)

Accessibility affects us all. We are born with a set of physical and cognitive abilities that differ between people. If we live long enough, we will probably encounter that our senses change over time, making us see, hear and move with less ease than when we were younger. Anytime in our lives, we can have an accident and be temporarily or permanent disabled. There are also situations in life where we are more in need of accessibility, for example when we are stressed or depressed.

There are many ways to group and describe disabilities, but in this training, we are using the user situations listed in the European standard that make up the minimum requirements of the European legislation in the field.

The user situations are further described below:

- Usage without vision
- Usage with limited vision
- Usage without perception of colour
- Usage without hearing
- Usage with limited hearing
- Usage without vocal capability
- Usage without manipulation or strength
- Minimize photosensitive seizure triggers
- Usage with limited cognition



1.2.1 Usage without vision

Users that are medically blind or severely visually impaired are accessing the internet, documents, digital books etc. using assistive technology like screen readers (described in the module on assistive technology). Accessibility for this group can for example mean that the interface needs to comply with technical standards and that the assistive technology can interpret the code, for the individual to use it.

1.2.2 Usage with limited vision

Users that have a visual impairment but can still see, can access web content with or without assistive technology. For some, the built-in enlargement is enough, others need special software to get extreme magnification. Meanwhile, others prefer to have content read out loud. For example, accessibility for this group can mean ensuring that the graphical design is done in a flexible way, so it allows for magnification.

1.2.3 Usage without perception of colour

Colour blindness means that the user can't distinguish between certain colours. For example, accessibility for this group can be that the graphical design uses more than colour alone to convey meaning. If there are two buttons, one green for YES and the other red for NO, this could potentially cause trouble for colour blind users. However, if you add the words YES and NO to the buttons, the alternatives become understandable no matter your ability to perceive colours.

1.2.4 Usage without hearing

Users that are born deaf usually have sign language as their maternal language. Written language is almost a "foreign" language and therefore accessibility for this group can for example be providing sign language interpreted video alternatives to text and other visual forms of information.

1.2.5 Usage with limited hearing

Users that are hard of hearing usually experience the most digital problems when it comes to video or audio on the web. As more and more information is provided in multimedia, this becomes even more important. Accessibility for this group can include captioning videos and providing a text alternative for audio.

1.2.6 Usage without vocal capability

Users that have speech impairments can encounter difficulties in digital services where you have to provide input using your voice, for example in automatic phone exchanges. Accessibility for this group is often provided by offering alternatives. Speech input is fine as long as there is also a possibility for the user to choose to type the input instead.

1.2.7 Usage without manipulation or strength

Users with different kinds of motor impairments may use different kinds of assistive technology for input, rely on the built-in support for accessibility or on the design of the interface. Accessibility for this group can involve making sure buttons and links are big enough to hit, even on small devices, and sufficiently separated from each other to avoid unintentional clicking.



1.2.8 Minimize photosensitive seizure triggers

Photosensitive epilepsy can be triggered by flashing lights or contrasting light and dark patterns, and these effects can make any user feel disoriented, uncomfortable or unwell. These days, few websites use these kinds of effects, so the requirement may be more likely to be relevant in games and feature films. The use of animations and motion can also make the user feel unwell or can be very distracting.

1.2.9 Usage with limited cognition

Users with cognitive impairments may have problems with perception and reasoning to navigate the interface, attention and focus, understanding content, execution that requires memory to complete the task and many other areas. Accessibility for this group can for example be providing video and illustration as an alternative to text and making sure the interface is clean and simple. Other examples can include easy to read text and speech to text technology.

1.3 Basic concepts

Digital accessibility is often seen as technical, difficult or even impossible. This is because it can sound utopian and overwhelming to try to design for all. But if you start with the user instead of the technology, you will soon grasp the basic idea.

One important concept is equivalence. Accessibility will not always mean exactly the same experience for all users, but that they all get the equivalent information.

A couple of examples:

If you are to inform about something important, video is a good way to communicate, especially since large populations have difficulties reading text. But not everyone can hear the speaker talking in the video – therefore it must be captioned. Everything that is heard but not seen, must be captioned to support hard of hearing users.

If you are producing a document and want to highlight something for your readers, colour can be very efficient, as a bright colour is easily distinguishable in a document with black text on white background. However, not everyone can see colours – therefore the colour must be complemented with bold text, underlined text or an icon for everyone to get the message. Colour alone must not be used to reveal meaning.

Trainer tip: After presenting the previous examples of inaccessibility ask the group if they can think of any additional examples and how they can be corrected.

1.4 An example of accessibility: Managing colour contrast

The accessibility requirement for colour contrasts means that content must be readable for as many users as possible, no matter of ability, content or situation. It does NOT mean that use of colour as such is problematic or that black and white websites are the most accessible. This is important to remember.

The contrast ratio between text and background colour is measurable and must for example be at least 4.5:1 in the body of the text. This can be measured by using a free downloadable tool, for example the [Colour Contrast Analyser from The Paciello Group](#)

Below is an example of good and bad colour contrast (source: Harvard university)



Trainer tip: The trainer is encouraged to download the colour contrast analyser tool mentioned, or any equivalent, prior to the training session. The trainer can then use the tool during the session to have a look at the colour contrast on two different websites. It would be good to have one example where the colour contrast is accessible and one example where it is not.

1.5 Websites, documents and apps

Digital accessibility covers all Information Communication Technology as well as Internet of Things. It is sometimes hard to distinguish the digital world from the physical one, as so many parts of our lives are combining the two.

Trainer tip: The trainer can check that everyone understands what the “Internet of things” is here. Ask if anyone in the group knows the meaning. If no one knows, the trainer can provide the definition.

[Definition of Internet of things](#)

In this training, we are focusing on accessibility in websites, documents and apps, as these items are covered by the Web Accessibility Directive. The Web Accessibility Directive is a law stating that all public sector bodies across Europe have to comply with basic accessibility requirements. The directive is further explained in Module Empowerment of PwD through human rights.

- A website can be any set of web pages, external, internal, public or for closed groups.
- Documents can be any kind of document, but in reality, the vast majority of documents published on websites are PDF documents, and sometimes Word files.

Almost everything is called an app these days, but in this training, we are talking about native apps developed for and used by smartphones.

Trainer tip: The teacher can ask the students to provide an example of a website, a document and an app so that they have an example of each of the items covered by the WAD.



1.6 The role and benefits of accessibility within an organisation

To be able to consistently practice ICT accessibility in all relevant activities, there needs to be a framework in place that allows for a systematic approach to the issue at organisational level. Web accessibility is an on-going process that needs to be considered in relation to key developments within the organisation regarding for example client base, strategy, working methods and engagement with the community. In other words, web accessibility should be practiced as an on-going programme, not just as ad-hoc activities.

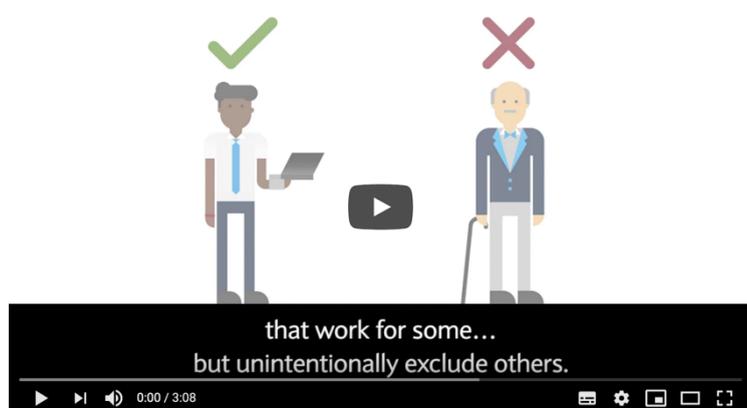
1.6.1 Accessibility in action: Barclays Bank

Barclays bank has established an organisation-wide accessibility strategy for identifying, anticipating and addressing the additional needs of customers and colleagues with impairments and it contributes to their brand identity.

“At Barclays, accessibility is about more than just disability. It’s about helping everyone to work, bank and live their lives regardless of their age, situation, abilities or circumstances” – Paul Smyth, Head of Digital Accessibility, Barclays.

The Barclays Accessibility Team supports all digital teams to embed accessibility into services and culture through effective governance, partnering, training and tools. They have established an enterprise-wide accessibility strategy, standards and programmes together with sponsorship and have become the most accessible and inclusive Financial Times Stock exchange (FTSE) company.

Furthermore, to help everyone understand the Barclays accessibility-focused mindset, they have created an accessible banking YouTube playlist, featuring a range of animations which help colleagues to understand what accessibility is, the benefits and the different types of impairments.



[Barclays Accessible Banking YouTube playlist](#)

Source:

["Barclays bank Case Study", W3C](#)

["Three lessons from Barclays about winning the business case for accessibility", AbilityNet](#)

Trainer tip: After reading the "Accessibility in action" example. The trainer can ask the students if they know of any other examples of companies who have embraced accessibility into the organisation's way of thinking and doing. The students can share any examples they may have. Depending on the profile of the students, the trainer may also wish to access and show one or two of the

videos in the Barclays Accessible Playlist to show examples of what the company is doing in terms of accessibility.

1.6.2 Accessibility Maturity Model

The Business Disability forum has established a maturity model regarding organisational practice of accessibility (Business Disability Forum, 2016). The model describes 5 levels of organisational maturity in the subject:

- Level 1 - Informal (No documentation or process in place)
- Level 2 - Defined (Documented but not actioned or completed once)
- Level 3 - Repeatable (Process established and actioned consistently)
- Level 4 - Managed (Process monitored & improved, business as usual)
- Level 5 - Best practice (Innovate, improve and share)

To assess the level of maturity, the framework evaluates the practices of the organisation on ten different aspects including for example accessibility know how, disability awareness, leadership from executive level, benchmarking, procurement practices and the development life cycle.

As with most organisational practices, the chance of success increases with the level of engagement and leadership from top levels in the organisation. A survey conducted by the International Association of Accessibility Professionals, IAAP, in 2019 shows that there is a correlation between the increased maturity of accessibility programmes and the organisation's level of investment in specific leadership and management components.

Based on the results of the survey, IAAP recommends 10 areas of investments that will help to ensure successful accessibility programmes. Key recommended investments include:

- Dedicated funding & accessibility resources

- Accessibility criteria in contracts and procurement orders
- Accessibility in both design, authoring, engineering and testing practices
- Engagement with the disability community
- Written organisation-wide policy and senior leadership
- Benchmarking and compliance practices

Trainer tip: The trainer can ask students to share what level of the accessibility maturity model they think that the organisation they work for is at and why. The trainer could also select a couple of examples to share with the group just in case students are not willing or are unable to share any examples. The trainer can also play the following short video explaining the AMM.

[A brief video explanation of the Accessibility Maturity Model](#)

1.6.3 At organisational level

Accessibility touches on several areas of the activities throughout an organisation. To keep the commitment active, and most importantly, to translate it into action, all staff need to know how they should contribute to their own specific role. This is not limited to the roles working directly in web production, such as design, development, authoring, engineering and testing practices. The list of successful investments mentioned above shows that the staff working in management, procurement, human resources and communication also need to have at least a basic level of awareness and knowledge of accessibility.

1.6.4 Web development

All staff involved in web production will be doing work that has a bearing on accessibility. But not all requirements will be relevant for all staff. It is much easier for each role in the organisation if the specific requirements that each team or individual is working with is role-based and thereby relevant for my work. This way, responsibility is also divided, and knowledge spread.

1.6.5 Benefits of accessibility

Accessibility can also be described as a way of structuring digital information in a consistent way, streamlining development as well as content creation, ensuring branding and design is presented in a coherent way and improving digital marketing.

This may sound too good to be true, but as accessibility is based on standards and user needs, using accessibility as the concept for your design process does actually support quality and efficiency both in the short and long term. Some examples:

One basic concept of digital accessibility has to do with consistency. It is easier to use something if it resembles something you have experienced before. This is especially important for those users with cognitive impairments and users who are not tech savvy, however, recognisable patterns make completing a task easier and more efficient for all users.

Another basic concept of accessibility is content structure, when it comes to for example headings. By making sure content creators are using templates instead of inventing the wheel every time a new web page or document is produced, a lot of time is saved, the graphical design becomes consistent, and the accessibility is improved for many user groups, especially users with reading difficulties or visual impairments.

A third basic concept of accessibility has to do with following the technical standards. As Google is a deaf and blind user – only interpreting the code and not the design of your website – the same actions that help support assistive technology will also improve your search engine optimisation. Both use content structure, semantics (the meaning of a word, phrase or text) and functionality to present web content to users of to identify the relevance of the content.

As if this wasn't enough, agile development with early tests based on real user needs often tend to save resources in the end, as mistakes can be detected and remediated before it is too late.

1.6.6 Accessibility in action: The National Public Radio (NPR)

A programme called “The American Life” was broadcast on more than 500 National Public Radio (NPR) stations in the United States and had an audience of approximately 2.1 million listeners each week. In 2011, in response to new regulations in the USA, the broadcaster began to create transcripts for all of their recorded programmes. A study carried out following this change concluded that not only did the change comply with legal obligations, but also generated a number of benefits for NPR including:

- An increase in traffic on search engines by 6.86%
- An increase of unique visitors to the website by 4.18%
- 7.23% of visitors viewed at least one transcript
- Better understanding for visitors who have English as a second language
- The possibility for visitors to use transcripts in noisy or sound-sensitive environments

Source:

[“This American Life” Case study, 3PlayMedia](#)

Trainer tip: The trainer can ask the students if they can think of any additional benefits of accessibility for an organisation? Do they know of any examples where accessibility has improved business for a company? If anyone has experienced digital inaccessibility and how this made them feel towards the organisation? If they can locate an example of a complaint of a person with disabilities about inaccessibility and what was the focus of the complaint?

If anyone has experienced good examples of digital accessibility and how this made them feel towards the organisation?

1.6.7 Understanding what we have learnt: Now it's your turn!

- Think of an example when you may have experienced inaccessibility in your everyday life. Take into account the following aspects:
 - How did it make you feel?
 - What did you do?
 - What could have been done to resolve the situation?

Trainer tip: The trainer can ask each of the students to share their experiences with the rest of the group. The trainer may want to start with an example of their own personal experience to get the discussion going.

- Think of a friend, family member or someone in your life who may have accessibility needs. Using the information previously described in this chapter:
 - Can you identify the user situation they would fit into?
 - What initial accessibility needs can you identify for this person?

Trainer tip: The trainer can ask the students to share their examples with the rest of the group. The trainer can also build on other examples that have already been mentioned during the course of the training session.

- Go online and find and identify a good example of accessibility according to the examples provided in the chapter. This may include captioning for a video, sign language interpretation, flexible graphic design.
- Choose an organisation and consider how they are managing accessibility according to the main principles we have learnt in this chapter:
 - Initial thoughts on the accessibility of their website.

- o Do they describe the accessibility of their website (could be an accessibility statement or instructions on how to use it for example)?
- o From the information you have, where would you place this organisation on the Business Disability Forum Maturity Model?

Trainer tip: For the final two exercises, the trainer can ask the students to each present their findings to the rest of the group. A time limit should be given to each student so as to limit the discussion. If a student does not wish to share their findings, then this should be respected.