



ACCESSIBILITECH

Advanced methodologies to identify, assess and transfer innovative
solutions for the accessibility of people with disabilities

Evaluation report of the beta transfer of the Telework solution



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1. Summary

The following deliverable offers the evaluation of the solution selected in the beta testing for the telework area within the Accessibilitech project, this solution has been extracted from the mapping tool created within the framework of the project, thus ensuring that the solutions that reached the beta testing phase were accessible to various disability profiles, as well as scalable, replicable, or transferable. This report is part of Accessibilitech Work Package 3.

2. Introduction

Beta testing is the best chance to find bugs and usability issues before a product is fully released. While internal testing can uncover many problems, nothing can truly simulate real users trying to complete real tasks.

Additionally, beta testing is the first opportunity to test software in an actual production environment versus a lab or stage setting. This ensures the software can perform under real workloads and that speed, storage, and scalability all work as expected.

In the context of the Accessibilitech project, this is of additional importance, as it has been observed that many products are currently not accessible, usable, or designed from a user experience (UX) perspective.

Therefore, finding solutions to improve the lives of people with disabilities in e-learning, telework and telecare was indispensable. But this implies accessibility, which is why this beta testing procedure has been created to test whether the projects collected by the mapping tool are good examples for people with disabilities in these areas.

If you want to know more about the procedure carried out in the beta testing, see deliverable 3.2.a Beta testing project plan.

3. Telework solution selection

In this case the beta testing process is done in a solution about telework. Telework or teleworking as a work flexibility arrangement under which an employee performs the duties and responsibilities of such employee's position, and other authorized activities, from an approved worksite other than the location from which the employee would otherwise work. In practice, telework is a work arrangement that allows an employee to perform work, during any part of regular, paid hours, at an approved alternative worksite (e.g., home or telework centre).

The 10 solutions chosen for partner voting in the telework category were:

- Easy Reading: A Framework for Personalised Cognitive Accessibility when using Original Digital Content from Sweden
- Accessjobs from Spain

- Lucidspark from Netherlands
- Nextcloud Talk from Germany
- Teamtalk 5 Classic from Denmark
- Viadesk from Netherlands
- Webex Meetings from Denmark
- Microsoft Teams from different countries of Europe
- Zoom from different countries of Europe
- Confluence from Europe

Finally, the solution selected by the partners of the project in the final vote was Microsoft Teams, now we include the evaluation report of this solution.

4. Microsoft Teams

Microsoft Teams is a proprietary business communication platform developed by Microsoft, as part of the Microsoft 365 family of products. Teams primarily competes with the similar service Slack, offering workspace chat and videoconferencing, file storage, and application integration. Teams replaced other Microsoft-operated business messaging and collaboration platforms, including Skype for Business and Microsoft Classroom. Throughout the COVID-19 pandemic, Teams, and other software such as Zoom and Google Meet, gained much interest as many meetings moved to a virtual environment. As of 2022, it has about 270 million monthly users.

Features:

- **Chats:** Teams allows users to communicate in two-way persistent chats with one or multiple participants. Participants can message using text, emojis, stickers and gifs as well as sharing links and files. Messages can be marked as urgent or important. In August 2022, the chat feature was updated for "chat with yourself", allowing for the organization of files, notes, comments, images, and videos within a private chat tab.
- **Teams:** Teams allows communities, groups, or teams to contribute in a shared workspace where messages and digital content on a specific topic are shared. Team members can join through invitation sent by a team administrator or owner or sharing of a specific URL. Teams for Education allows admins and teachers to set up groups for classes, professional learning communities (PLCs), staff members, and everyone.
- **Channels:** Channels allow team members to communicate without the use of email or group SMS (texting). Users can reply to posts with text, images, GIFs, and image macros. Direct messages send private messages to designated users rather than the entire channel. Connectors can be used within a channel to submit information contacted through a third-party

service. Connectors include MailChimp, Facebook Pages, Twitter, PowerBI and Bing News.

- **Meeting:** Meetings can be scheduled with multiple participants able to share audio, video, chat and presented content with all participants. This supports thousands of users that can connect via a meeting link. Automated minutes are available using the recording and transcript features. Teams has a plugin for Microsoft Outlook to schedule a Teams Meeting in Outlook for a specific date and time and invite others to attend. If a meeting is scheduled within a channel user visiting the channel are able to see if a meeting is in progress.

An overview of the many accessibility features that make sure all users can have the best possible experience in this application. Some of these solutions include:

- Work more efficiently with keyboard shortcuts
- Use Microsoft Teams more inclusively
- Make your Microsoft Teams meetings and live events accessible with Add alt text to visuals in chat messages, change your background for a Teams meeting or Reduce background noise in Teams meetings.
- Use captions and transcriptions
- Use Microsoft Teams with a screen reader
- Control Microsoft Teams with your voice
- Customize your view
- Between others...

4.1. Software used in betatesting

The support products used for the evaluation have been:

- **Color Contrast Analyser:** free color contrast checker tool that allows you to easily determine the contrast ratio of two colors simply using an eyedrop tool. The CCA enables you to optimize your content—including text and visual elements—for individuals with vision disabilities like color-blindness and low-vision impairments. Features: Compliance indicators for Web Content Accessibility Guidelines 2.1 (WCAG 2.1). Multiple ways to select colors: you can manually enter CSS color formats, use an RGB Slider, or opt for the color picker tool. Color Blindness Simulator. Support for alpha transparency on foreground colors.
- **NVDA:** is a free and open-source, portable screen reader for Microsoft Windows. The project was started by Michael Curran in 2006. NVDA is programmed in Python. It currently works exclusively with accessibility APIs such as UI Automation, Microsoft Active Accessibility, IAccessible2 and the Java Access Bridge, rather than using specialized video drivers to

"intercept" and interpret visual information. It is licensed under the GNU General Public License version 2.

- **JAWS:** JAWS, Job Access with Speech, is the world's most popular screen reader, developed for computer users whose vision loss prevents them from seeing screen content or navigating with a mouse. JAWS provides speech and Braille output for the most popular computer applications on your PC. You will be able to navigate the Internet, write a document, read an email and create presentations from your office, remote desktop, or from home.

4.2. Analysis

In the manual part of this analysis, some aspects related to the accessibility of the interface and the different functionalities of the videoconferencing platform will be discussed.

This section offers a description of results obtained from the analysis carried out taking in consideration the criteria. These have been organized according to the requirements tested, on which the following information is provided:

- A description of the requirement, explaining what they consist of and why they're important
- Description of results obtained with examples of best and bad practices detected.

1.1. Alternative text for images

Websites tend to include images in their content. It is important that when an image is added, an alternate text attribute for images is specified. The HTML attribute is alt.

Images must have an alternative text that describes its content. This description is read out loud by screen readers to the users.

However, not all images need description. It is important to consider whether the image provides relevant information to users. If it does not, the alt text must be null (alt="").

Results obtained

In Microsoft's video conferencing tool, all images and icons are correctly labelled with their alternative text and other descriptions can be added. In this context, the images are considered to have a good level of accessibility.

1.2. Audiovisual content

Making videos accessible requires enabling captioning for people with hearing disabilities and audio description for people with vision disabilities. Although level AA does not require adding Sign Language interpretation, deaf people who rely on it to communicate will appreciate it.

Regardless of the accessibility features used to make the audiovisual content accessible, making the video player accessible must also be considered. This allow access to the video player's controls (play, pause, and stop buttons, etc) to people who use different of peripheral equipment such as a mouse, keyboard and any other device for data entry.

Results obtained

Within the application, audio and video can be recorded and transcribed, and live subtitles are available for meetings. It is considered that the inclusion of the sign language interpreter needs to be improved.

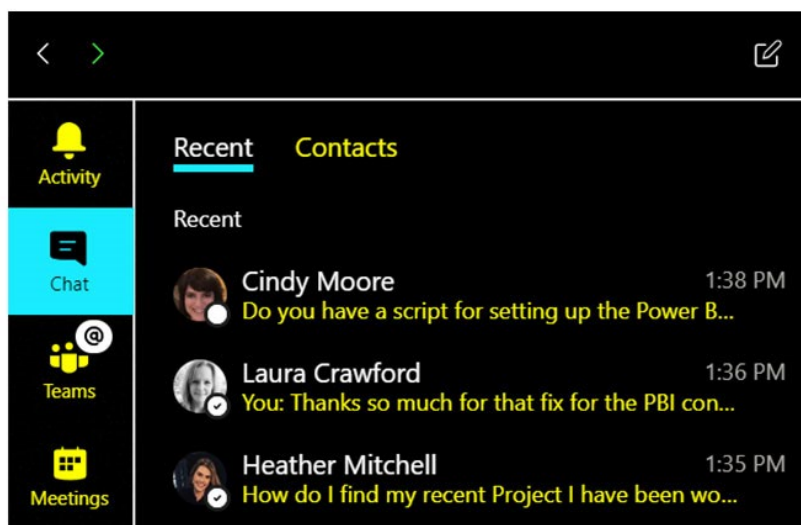
1.3. Proper use of color

The contrast between the font and background colors must be adequate. When using images that convey information, the color contrast must also be optimal. Color contrast can be tested using the free tool [Colour Contrast Analyser](#).

It is important that color is never used as the only visual means of conveying information. For example, if errors on a form are marked in red, an alternative means for conveying this information should be considered for those who cannot see colors.

Results obtained

All contrasts are correct, but to facilitate accessibility, other display modes are available: Default, Dark or High Contrast.



1.4. Headings or title section

Headings or section titles are used to markup the content structure displayed on each page. These elements are markup using HTML tags <h1> to <h6>, depending on the structure.

Headings also used to communicate blind users the structure of the content so they can jump between paragraphs or text blocks with their screen readers.

It is important that these headings are used and that the structure is always respected. For example, the first heading of a page should be <h1>, followed by <h2>, <h3> etc. If an <h3> appears after an <h1> the heading markup is not correct. Also, blocks at the same hierarchical level must have the same heading label.

Results obtained

The headings are well structured and can be navigated correctly with a screen reader.

1.5. Lists

Groups of elements, such as a navigation menu or a traditional list in which different items are listed, should be markup as lists using the HTML elements: in lists that do not follow any order and in ordered lists.

If there are sublists, these must be nested with HTML.

Results obtained

When there are lists in a chat message, this reads appropriately with good levels of threading.

1.6. Declaring language

Language markup in HTML code allows screen readers to adapt their speech synthesis to the content language. The language on each page must be markup using *lang* attribute.

Also, if there is content in one language and, within it, there are texts in another language, such fragments must be markup with the same label and the corresponding language.

Results obtained

The application has no translation problems in any of its versions, either app or web, this has been the responsibility of the company's localisation team.

1.7. Hyperlinks

The links on a website must have a label identifying their purpose. In other words, it must be clear to the user what will happen or which page they will access if they click on a hyperlink.

If images are hyperlinked, they must have a alternative text, unless the image is accompanied by a visible text, in which case it will be null (alt="").

Finally, it is essential that links can be followed using a mouse and a keyboard, since there are different ways to navigate a website. For example, blind people cannot use the mouse.

Results obtained

All links are well labelled by default in the platform. Sometimes the contrast is not adequate, but that is what the contrast modes mentioned above are for.

1.8. Forms

To guarantee user interaction with online forms, it is important that fields are properly labeled, instructions on how to enter data are provided in a precise manner and that errors committed during the data entry are properly conveyed.

Users must also be able to navigate through the fields of a form using the mouse and keyboard.

Results obtained

Microsoft Teams communicates directly with other corporate tools, so Microsoft Forms are used for the forms, which meet all the necessary accessibility and usability parameters.

1.9. Tables

If tables are used to group data into categories, it is important that they are accessible. For example, rows and column headers must be markup with <th>. This will make it easier for screen readers to review tables for blind people. Additionally, merging cells or including rows and columns without information makes it difficult for blind people or people with cognitive disabilities to understand the table.

Results obtained

No tables have been detected in the Microsoft Teams software in both web and app.

1.10. Digital documents

Any digital document in any format, such as PDF, available for downloading from the website must also be accessible.

Accessibility requirements for digital documents are the same as the ones for HTML content previously described. For example, heading structure and lists markup, text alternative for images, accessible tables, and proper use of color, among others.

Results obtained

The digital documents included in the platform are shared by all the users who use it, for this reason the accessibility of digital documents depends on external files, and people with different levels of accessibility.

5. Conclusions

After a few years where the pandemic forced us to change our lives, this is a good example of how a large corporation has achieved a version of its platform with high levels of accessibility, when they realised the needs of people with disabilities, they put their teams to work on a new version or gradual improvements that alleviated the barriers that these people had. These measures included:

- Live Captions
- Transcription of Recorded Meetings
- Chat Translation
- Zoom
- Zoom In-Meeting
- Immersive Reader
- Dark Mode
- High Contrast Mode
- Voice Messages
- Turn on Text Telephone (TTY)
- Background Blur
- Virtual Backgrounds
- Audio Suppression
- Shortcut Keys
- Virtual Consultations

This has been the solution chosen within the framework of the Accesibilitech project in the area of teleworking for the beta testing process.

6. References

- [1] «Microsoft Teams Wikipedia» [En línea]. Available: https://en.wikipedia.org/wiki/Microsoft_Teams.

- [2] « Accessibility tools for Microsoft Teams» [En línea]. Available:
<https://support.microsoft.com/en-us/office/accessibility-tools-for-microsoft-teams-2d4009e7-1300-4766-87e8-7a217496c3d5>.