HOW TO DESIGN ACCESSIBLE CANVAS APPS/ POWER APPS

(*LINKS BROKEN + OTHER EDITS FOR PRIVACY REASONS)

Table of Contents

DESIGNING POWER APPS CANVAS APPS ACCESSIBLE

STEP 1: Accessibility Checker as a self-serve tool

Start with **Accessibility Checker:** Use the **Accessibility Checker** to help review potential accessibility issues in your app. You can use a fast pass to find 25-30% of the MAS bugs. For more details please refer to: FastPass in Accessibility Insights for Web

STEP 2: Common accessibility issues and best practices to follow while designing a canvas app.

In this section we listed out:

- Common accessibility issues while designing solutions in Canvas apps / Power apps
- Important points to remember
- Top 7 MAS rules & easy ways to check them

Item#	Common accessibility issue topics	High Level Description and how to check
1.	**Layout and color**	• Focus order: app follows common reading order left to right and top to bottom on tabbing with TAB key • Meeting minimum contrast: for all text it should be minimum 4.5:1 and for non-text elements like button control borders, lines, focus on reveal border should be 3:1. Use a tool like Color Contrast Analyzer to measure contrast ratios. • Ensure sufficient text size and that texts don't get pixelated zooming 400% and beyond (ideally try to have 14 px or 16 px texts) • Reading order ideally should be Top to Bottom, left to right and should follow the visual semantics
2	**Keyboard Navigation**	• Ensure all interaction and navigation can be done just by using keyboard • All buttons, image, tables, labels, text fields and other interactable elements need to have an accessible name • These accessible names need to be short, concise, unique and easily understandable without the use of technical jargon and acronyms. Test the accessible name by enabling a screen reader (such as Narrator) and tab through the UX, listening to confirm the name announced is accurate. • Set TabIndex to 0 for all interaction elements to be read by screen readers; if they are decorative elements or text, set TabIndex to -1. • Avoid setting tab index higher than zero.

3	**Screen Readers**	- Use multiple screen readers (both desktop & mobile) to test canvas apps - JAWS and NVDA should be the starting point - VoiceOver and Talkback should be used for mobile apps testing
4	**Control Type & Structure**	- Ensure all interaction and navigation can be done just by using keyboard - Include at least one heading <h1> on each screen of the app. You can create headings by setting the **Role** property of a **Label**. - For any interactive text, use a **Button** instead of a **Label**. For visual users it can look like a highlighted text or a text with link, but for screen reader users it should behave like a button. - Containers versus groups- Group related content in **Containers**. This helps assigning common controls and properties to everything inside the container. Note: Containers don't work within forms, and Data tables, PDF viewers are not supported controls inside a container - For Gallery controls, visit Gallery control in Power Apps - Power Apps | Microsoft Docs
5	**Multimedia & synchronised videos**	- Ensure all videos have a well-timed Closed Captions (CC) button, which is easily accessible and available next to Play Pause button (and not buried inside settings). In WebVTT format use the **ClosedCaptionsUrl** property - Transcripts need to be available and preferably downloadable. They need to be accurate in content. - Screen Reader should announce 'Time left' in the video. These announcements can't be turned off, even if timer is hidden with low opacity. - Do not allow auto-play. Please avoid any flashing content.
7	**Working with signatures**	Ensure all signature input has an accessible alternative where PenInput control is required for signing. Example: - show a TextInput control where a user can type their name. - Ensure the signing instructions are placed in the AccessibleLabel property and the control is placed close to the Pen input (preferably to the right or immediately below).

Some of the Design best practices based on past experiences and canvas apps/ power apps limitations:

TOPIC	DESCRIPTION
Dialogues, Interfaces & overlays	Dialogs and user interfaces that appear on top of other content are not supported. Since AT changes to focus mode when a modal dialogue appears, ensure it does not confuse the screen reader and makes the focus jump back and forth. This can be achieved by: - Using the 'Notify' function - Using separate screens for each dialog
Tables & custom tables	Custom tables are not supported. The only built-in control that supports two-dimensional data is the Data Table. While describing the data table the order should be: - Explain rows, then columns (need to be annotated properly so that screen reader users can understand their structure and navigate cells.) - Then explain data in the semantic format as seen visually
Card controls	- While creating a customized card control, use an Accessible Label. - If the url text is too long to fit in the card space or in a single line, change it to multi-line. (Edit-> multi-line text) -
Landmarks & Regions	Landmarks and regions are still not supported inside Power apps. The only thing that it does now is that Power Apps automatically sets the main landmark to the app screen. As a workaround, and to enable users to quickly navigate and understand layout of the application, we should use headings. Headings need to be meaningful and represent the section in a unique way than the rest of the page.
Combo boxes and dropdowns	- Users use Up & Down Arrow keys to navigate through combo boxes. Please provide means to cater to this user behavior - Each option/ component within the combo box should have an accessible label associated - Use Dropdown when screen real estate is limited or there are a lot of components that can be meaningfully stacked. - For Dropdowns, the control can show a maximum of 500 items.

Scrollable Labels	- Don't make labels scrollable if they're not meant to be buttons. This is because setting TabIndex and making Labels accessible would make them behave like buttons - Ensure the **Label** is large enough to fit text. (Hint: The **AutoHeight** property can be used to automatically adjust the control's size)
Texts and Fonts	Avoid using fonts that are tilted, disorientated or wider or taller in one dimension. Try to use fonts that are squarish in the aspect ratio. Fonts that are proven to work well with dyslexic people, and are available within Office ecosystem are: - Segoe UI - OpenDyslexic - Helvetica - Courier - Arial - Verdana Do not try to manually space out texts.
Text/ Line/ Paragraph Spacing	- Line height (line spacing) to at least 1.5 times the font size - Spacing the following paragraphs to at least 2 times the font size - Letter spacing (tracking) to at least 0.12 times the font size - Word spacing to at least 0.16 times the font size

Top Frequently Occurring Mistakes in Canvas Apps:

a. Keyboard Focus indicator not visible on focus landing. MAS 2.4.7 – Focus Visible
b. Buttons not labeled correctly MAS 4.1.2 - Name, Role, Value
c. Buttons inaccessible by keyboard MAS 2.1.1 - Keyboard
d. Font need to be square (not taller or wider), and with sufficient text spacing between words, lines, paragraphs MAS 1.4.12 – Text Spacing
e. Reflow- texts, pictures and overall content flow need to be maintained in 200%- 400% zoom and beyond MAS 1.4.4 - Resize Text
f. Color contrast (text & non-textual contents)
g. Interaction should happen only with user inputs. For example, a link should specify if it is going to open a new page or would redirect the user to a different page. MAS 3.2.2 - On Input

Note to repro the issue:

In the event we find a possible PowerApps product issue, we will document that in our accessibility testing ADO and report to the Product Group. In some cases, the product group may require you to create a minimal app that demonstrates it. For example, an app with one control.

- Create and attach the app to the ADO bug report.

- Alternatively, describe steps to create app if it is trivial
- Do not give us the actual app with dozens of screens and controls unless the issue cannot be isolated easily. Complex apps take more time to investigate, and the product group will not take time to learn a complex app or to get access to dev/production environments to reproduce an issue
- Screenshots and videos are a nice supplement. But they don't tell which controls are involved and how they are configured. That's why a copy of the app and repro steps are important.

Screen readers & browser combinations compatibility

The following screen readers and browser combinations have been verified to work with Power Apps:

- **JAWS**: Microsoft Edge
- **Narrator**: Microsoft Edge
- **NVDA**: Google Chrome, Firefox
- **TalkBack**: Google Chrome, Power Apps mobile
- **VoiceOver**: Power Apps mobile, Safari (macOS, iOS, iPadOS)