

# Understanding End User Role in PDF Accessibility

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# Objectives

- Provide a realistic perspective recognizing the complexity of the screen reader user's experience reading and interacting with PDF documents.
- Address steps to overcome accessibility barriers.
- Share a comprehensive analytical and remedial approach which considers all of the necessary conditions to provide and deliver an accessible PDF.

# Background

1. When using or evaluating the accessibility of PDF documents adopting a multithreaded approach is useful.
2. Variables influencing accessibility are best described as falling along a continuum rather than “either or”. Many variables exist which influence accessibility.
3. When evaluating a given document just a few or all variables may come into play

## Screen Readers Challenges

- Screen readers can work well with web pages and word processing files, but
- Forms and complex document layouts require:
  - Graphic elements, meaningful navigation, and interactive behavior
  - User agents to provide useable and accessible form fields.

# PDF ACCESSIBILITY

- Users expect to access PDF documents from any operating system,
- Accessibility of PDF files is critical to people with disabilities,
- Access to PDF files continues to be regarded as challenging by blind and visually impaired people.
- Accessibility has often focused on only one or two of the elements which contribute collectively to accessible PDF production.

# Primary Conditions to achieve PDF Accessibility

- Production-side authoring expertise
- Successful automated production
- Awareness of remediation techniques available to user of assistive technologies.



# Production-side authoring capacity

- Origin of PDF documents can be classified
  - Nonautomated
    - Often includes some automation used during production
    - For nonautomated documents authors must provide full markup including those elements which specifically address requirements for accessibility
  - Automated
    - Must provide a comprehensive markup and tag set
    - Image only PDF's are only accessible by users with access to OCR
    - Some uncertainty in the result of OCR

# Tools and Techniques Supporting Assistive Technologies

- Document viewing and use requires both the Adobe Reader and a range of associated assistive technology
- User skill level ranges widely among all who use assistive technology
- A range of technical capabilities of screen access technology
- Limitations in the “Infer Reading Order” tool
- Additional Factors:
  - Unavailability of current versions of screen access technology
  - Lack of training to use available remedial strategies
  - Hardware which is unable to support current release of Adobe Reader and related applications

# Accessibility of PDF - Issues

- Automated tools:
  - Can effectively facilitate rapid remediation,
  - Inaccessible elements can be corrected automatically,
- Remaining issues which can be remediated only by the skill and knowledge of the author may remain. In such situations the document remains either partially accessible or inaccessible.
- Unpredictable elements influence levels of accessibility:
  - *Example: Data tables which are updated by an automated process and loose header and column information. Framework of the file has been designed to include all necessary tagging; a change in the presentation format of the table from text data to images will create inaccessible PDF documents.*

# Accessibility of PDF - Issues

- The PDF production process is almost infinitely variable and cannot be expected to conform to preconditions. When analyzing the accessibility of a set of PDF documents the mechanism for generating each class or type of document must be considered separately.

# Types of PDF Documents or Forms

- Tagged,
  - Allow users to navigate all structural elements such as tables, headings, images, and form controls. Documents are tagged in order to ensure that each visual element is specifically associated with the element type.
- Untagged, and
- Scanned documents

*Many PDF documents result from automated processes. These may include image scanning, web page captures, non-web screen captures and automatic text to PDF processes. Some of these mechanisms have little if any potential to produce proper markup which provides accessibility.*

# Accessibility of PDF – Human Factors

- User and author knowledge of accessibility in PDF often result in significant impediments.
- Lack of understanding of markup as a necessary element of document preparation is a critical issue confronting authors and producers.
- Users differ widely in their knowledge of the Adobe Reader and access technology.

*The result of this wide range of skill includes the perception that documents are inaccessible by those who are lacking the required skill to understand the “Infer Reading Order” technology.*

## *Demonstration 2*

- Application 3
- Application 4
- Application 5

# Q & A

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