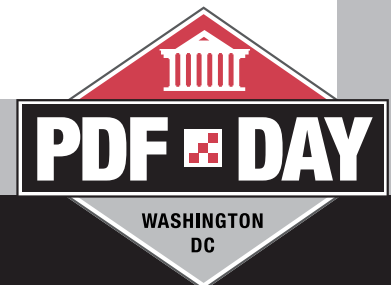# ACCESSIBLE PDF AUTHORING:
BREAKING THROUGH THE LIMITS OF ADOBE INDESIGN

Presented by: Damian Sian

Agenda

- Introduction
- Efficient PDF Accessibility
- Alternative text on URLs
- Expansion text
- Complex tables
- Formatting form inputs
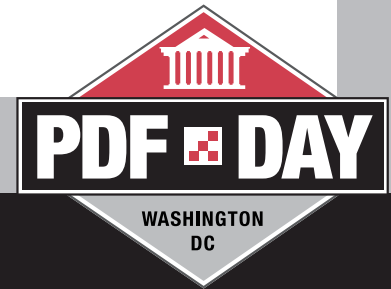- Data visualizations
- Math equations
- Conclusions

Introduction

Damian Sian

- Serving as the Senior Web Accessibility Advisor for Princeton University

- Experience leading teams in highly-regulated document workflows

- Certified Professional in Web Accessibility (CPWA) from the IAAP

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Define PDF Accessibility

WCAG 2.0 AA

Must conform to the 38 normative success criteria of the Web Content Accessibility Guidelines (WCAG) 2.0 Level AA.

PDF U/A

Follows the guidance provided in the PDF U/A specification and the Matterhorn Protocol.

Optimized for Vision Disiabilities

Works with assistive technology for the non-sighted and low-sighted individuals and assistive technologies.

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Purpose of This Presentation

Efficiency

When possible, finding ways to use InDesign to work 100% of the accessibility needs of the rendered PDF.
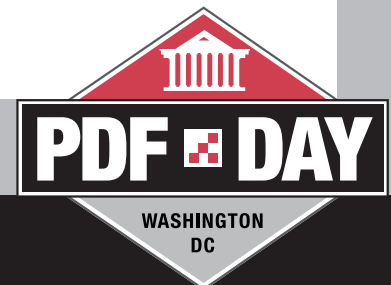
Missing the Mark

Reviewing areas where InDesign can improve to provide accessibility professionals greater control.

Hopes for the Future

Discussing barriers to access that can use innovative solutions.

1. Alternative Text on URLs

Problem

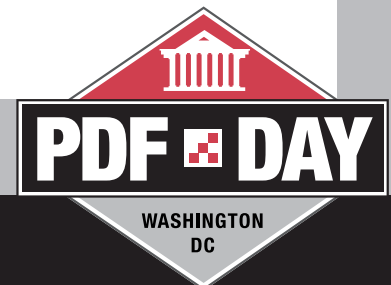Adobe InDesign lacks the ability to add alternative text descriptions to URLs.

Impact on Accessibility

Screen reader users rely on a list of links for navigation aids, and low-sighted users have difficulty scanning right-to-left

Impact on Efficiency

Manual, one-way trip edits to the rendered PDF post export.

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1. Alternative Text on URLs

Example:

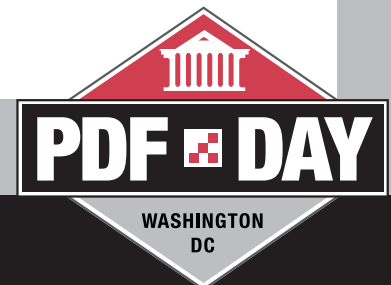When possible we should author URL links in plain, descriptive language like this: PDF Techniques for WCAG 2.0

Instead of exposing the full path and domain of a URL like this:

https://www.pdfa.org/publication/the-matterhorn-protocol-1-02/

If fully exposed URLs are required, then a plain language alternative text should be applied to the <Link> tag as shown in sample below.

Listen: *NVDA reads link with alternative text.*

2. Adding Expansion Text

Problem

Adobe InDesign lacks the ability to add expansion text for acronyms and abbreviations.

Impact on Accessibility

Misrepresented information can be more than a nuisance as unintended or incorrect information could be conveyed.

Impact on Efficiency

Manual, one-way trip edits to the PDF post export as there are no plug-ins for or native capabilities InDesign.

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2. Adding Expansion Text

Example:

ADA

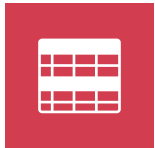Can be pronounced Eh Dee Eh, or Ada (sounding like Ada Lovelace).

VIP

Can be pronounced Vee Eye Pea, or vip (sounding like lip).

Listen: *NVDA reads expansion text for ADA as 'Eh Dee Eh' and VIP as 'Vee Eye Pea.'*

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3. Complex Tables

Problem

InDesign lacks the ability to create multiple headings or the ability to establish relationships between cells via cell IDs.
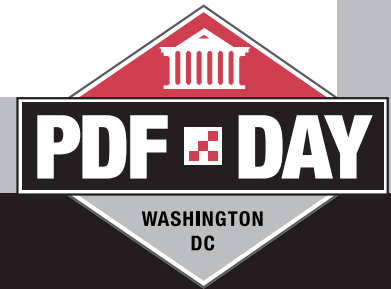
Impact on Accessibility

Complex tables establish relationships in the data which is missed by screen readers without proper markup.

Impact on Efficiency

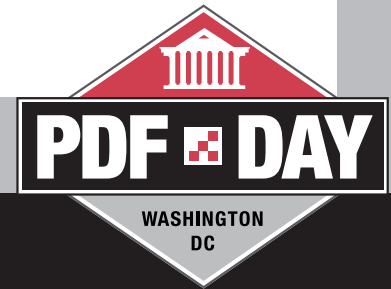Requires third-party plug-ins in InDesign or via manipulating the PDF post export.

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3. Complex Tables

Example from W3C Tutorial:

	Example 1 Ltd	Example 2 Co
Contact	James Phillips	Marie Beauchamp
Position	Sales Director	Sales Manager
	Example 3 Ltd	Example 4 Inc
Contact	Suzette Jones	Alex Howe
Position	Sales Officer	Sales Director

Listen: *NVDA reads multiple heading levels in a single table.*

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4. Formatting Form Inputs

Problem

InDesign does not allow for comb formatting or the addition to JavaScript validation directly in the application.
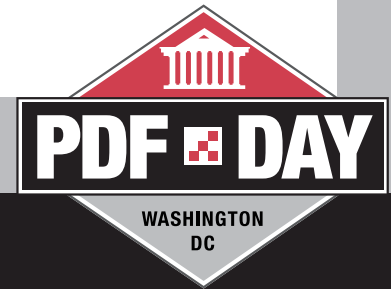
Impact on Accessibility

Manually editing form elements post export has a massive negative affect on PDF accessibility workflows.

Impact on Efficiency

Requires third-party plug-ins in InDesign or via manipulating the PDF post export.
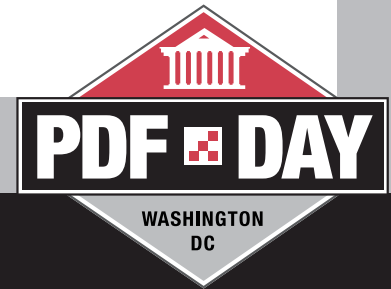
4. Formatting Inputs

Example:

Zip code

- In this sample, we need the zip code to have a 5 digit comb format for affordance, and to only accept numeric characters.

- Formatting inputs post export is time intensive and creates opportunities for errors.

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5. Data Visualizations

Problem

Whereas we can add alt text to charts and graphs, InDesign cannot create a meaningful live text equivalent.
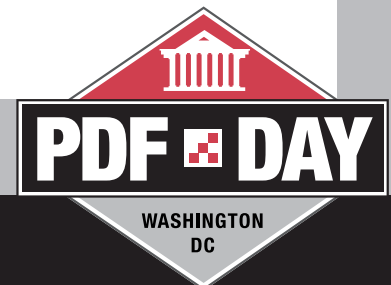
Impact on Accessibility

Alt text is difficult to consume since there is no navigation ability in the presentation of long, continuous strings of data.
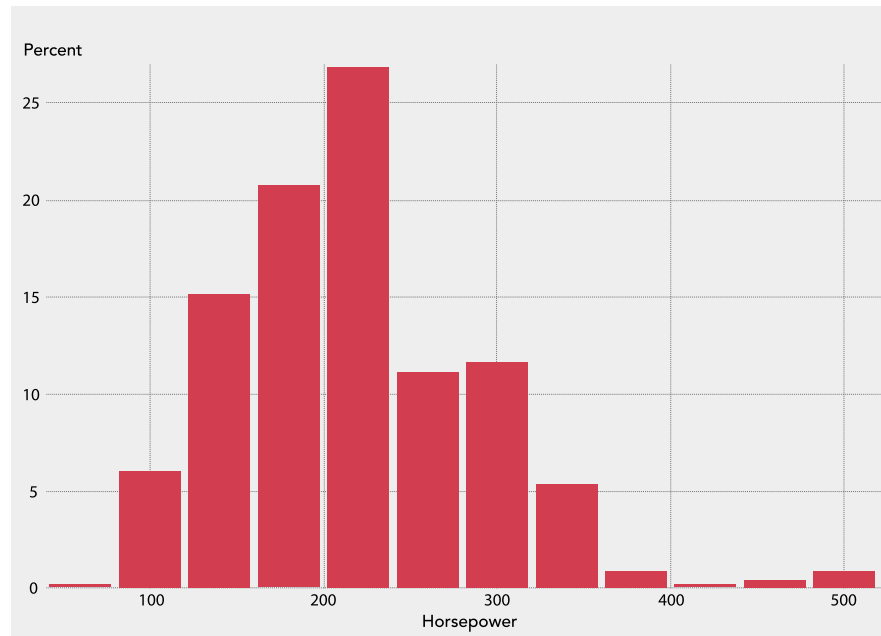
Impact on Efficiency

Present a visible data table, hide the tabular data while adding to tags tree, or possibly toggle the view.
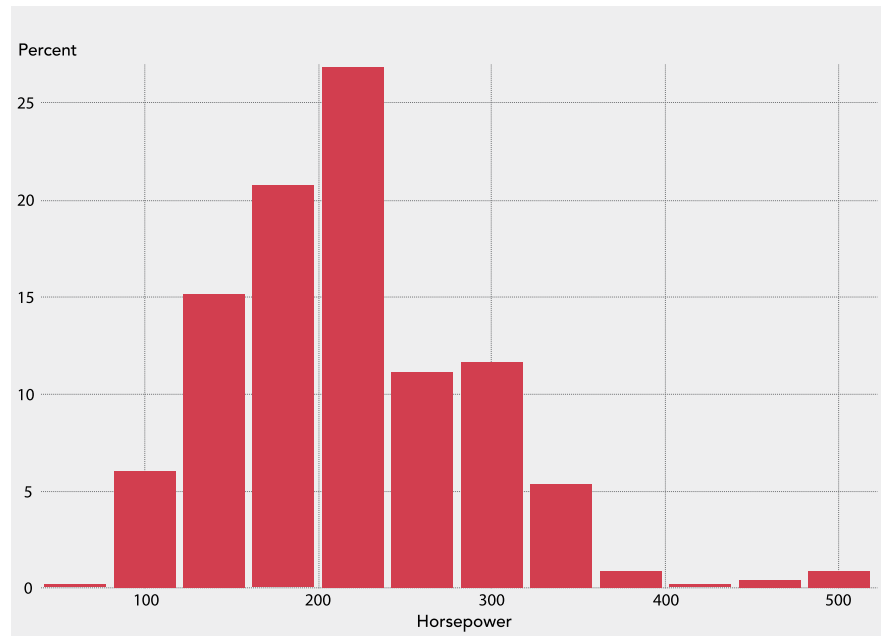
5. Data Visualizations

Example 1:

- In this example we add a verbose alternative text description that captures the X and Y axes and overall structure of the chart.

Listen: *NVDA reads verbose alt text.*

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5. Data Visualizations

Example 2:

- The data table is behind the graphic; alt text on the image points to the hidden table, andn the table is read aloud to the screen reader.
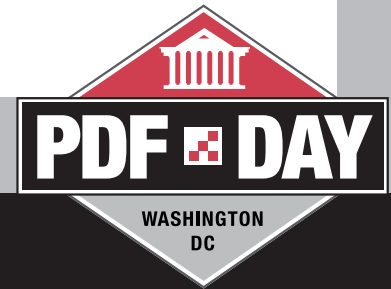
Listen: *NVDA reads the hidden data table.*

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5. Data Visualizations

Example 3:

Horsepower	Percent
60	0.2
100	6.1
140	15.2
180	20.8
220	26.9
260	11.2
300	11.7
340	5.4
380	0.9
420	0.2
460	0.5
500	0.9

- In this example, we use buttons to show/hide the data visualization and the underlying data table.

- This approach does not work in reflow view.

6. Math Equations

Problem

InDesign has no means to create math equations that are visually and semantically accurate.
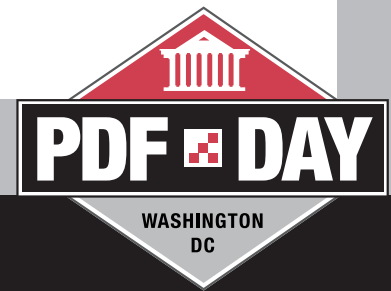
Impact on Accessibility

Whether or not the equation is marked as <Formula> or not is irrelevant to a screen reader.

Impact on Efficiency

Requires third-party plug-ins in InDesign or via manipulating the PDF post export.

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6. Math Equations

Example:

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

- This equation is a placed vector graphic with alternative text created using math speech.

- Whereas this is accessible, we need the ability to use live MathML text, not images of text.

[Example of LaTeX rendered MathML](#)

Listen: *NVDA reads alternative text of the math equation.*

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Closing Remarks

Thank You!

- Editing PDFs for accessibility post export creates wasteful, one-way trips that hinder the adoption of accessibility.

- Without the use of third-party plug-ins and tools, there is currently no path to efficient accessibility workflows.

- Adobe needs ensure accessibility standards can be met within the authoring tool