Designing for Accessibility
Perth IDUG

Chandi Perera
CEO, Typefi Systems
Agenda

Session 1

Introduction to accessibility.
Principals of designing for Accessibility.

Session 2

Creating accessible documents from Adobe InDesign.
Limitations, tricks and tips.
Accessibility is:

Individual’s ability to obtain and use information quickly and easily.

Access to information for individuals with disabilities including visual, auditory, physical, speech, cognitive, and neurological disabilities.
Why Accessibility

World population: 6 Billion

Worldwide Number Disabled: ~1 Billion (16%)

U.S. Number Disabled: 51 Million (18%)

ABS estimates one in five (20%) of Australians have a disability (reaching 81% for ages over 85)
Disabilities

Traditional Causes:
- Mobility.
- Blind.
- Deaf.

Other causes:
- Aging.
- Cognitive.
- ESL & Language.
- Colour blind.
- Education.
Globally, the population aged 60 years and over is projected to nearly triple by 2050, while the population aged 80 years and over is projected to experience a more than fivefold increase.

- Australian Social Trends, 2004 (ABS)
Legislative Requirements

Convention on the Rights of Persons with Disabilities (UN).

Disability Discrimination Act (Australia & UK).

Americans with Disabilities Act (ADA) – 1990 (USA).

Section 508 of Rehabilitation Act – 1998 (USA).
Designing for Accessibility

Important to consider all disabilities
  Visual.
  Mobility.
  Language.
  Colour Blind.
  Cognitive.
From the World Health Organization

The fact that readers may have low vision need not be a problem, if the language is clear and if good design principles are followed. ... you will ensure that your products are not only more accessible to people with visual impairments, but also more readily comprehensible to all readers.
Issues to Remember

Designing and printing clearly helps readers who are partially sighted.

Readers with more profound visual impairment will require materials in other formats: large print, Braille, audio tape and files suitable for screen readers and other applications such as DAISY talking book.

Ensure that all final print-ready documents have a source file other than a PDF, such as Microsoft Word or XML formats, readers who are visually impaired will have easier access to your message in their chosen format.
Design Tips

Based on “See it right: making information accessible to people with sight problems (2006)”, published by the Royal National Institute of Blind People (RNIB), London

http://rnib.org.uk/professionals/accessibleinformation/Pages/see_it_right.aspx
Tips - Typeface

Ensure that the typeface is sufficiently large. The RNIB recommends 12 or 14 point.

Use a normal-weight typeface for text, with bold for emphasis.

Avoid the use of italics, capitals and underlining as they affect readability.

Use bold type for titles, headings and legends (e.g. for tables, figures, photographs, captions and text boxes)

Choose a clear and simple typeface.

Artistic expression may not be your friend.
Tips - Design

Ensure that the layout is consistent and logical.

The different elements on a page (headings, images, text, legends, etc.) should be readily distinguishable.

Set text horizontally

If text is set over a background colour, ensure that there is a strong contrast between the text and background.

The best contrast is achieved using black type on a white background.
For languages that are read from left to right, set the text flush to the left-hand margin, as this makes it easier for readers to find the starting point of the next line.

For languages that are read from right to left, set the text flush to the right-hand margin.

Avoid centring text, unless it is part of a title or main heading.

If text is fully justified, ensure that the spacing between words is consistent (i.e. there are no large gaps).

Ensure that the use of white space around letters is consistent.
Use a line space between paragraphs.

Separate columns of numbers or text with good-sized margins. If space is limited, use a vertical line between columns.

Readers should not get lost on your page.
Information should not be conveyed solely through the use of images, figures or colour.

Ensure that any images are contextually relevant and are accompanied by an explanatory legend.

Avoid placing text over or inside an image.
What not to do example above (chart labels overlapping graphic, making it difficult to read)
Tips - Images

Avoid putting images within text in a column, as this will make the text difficult to read.

Avoid enlarging images from their original size, which will compromise the quality. The resolution of images used for print should be at least 300 dots per inch (dpi).
Tips - Printing

Avoid using glossy laminated paper.

Select a paper that is thick enough to minimize the amount of show through from the other side.

Ensure that the text is not too close to the central margin.
Accessibility is not about technology

Good design principals.
Clear language.
Ability to generate alternate formats.
Creating Accessible PDF from InDesign

Accessible PDF is also referred to as “Tagged PDF”.

PDF tags provide a structured, textual representation of the PDF that is presented to screen readers.

Demonstration

Creating a Tagged PDF.
# PDF Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
<th>Support in InDesign</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;sect&gt;</code></td>
<td>Section</td>
<td>Yes</td>
</tr>
<tr>
<td><code>&lt;h1&gt; ... &lt;h6&gt;</code></td>
<td>Head</td>
<td>Yes</td>
</tr>
<tr>
<td><code>&lt;p&gt;</code></td>
<td>Body text</td>
<td>Yes</td>
</tr>
<tr>
<td><code>&lt;figure&gt;</code> or <code>&lt;caption&gt;</code></td>
<td>Figure and Caption</td>
<td>Partial</td>
</tr>
<tr>
<td><code>&lt;table&gt;</code> &lt;th&gt; &lt;tr&gt; &lt;td&gt;`</td>
<td>Table, table heads, table rows, table data</td>
<td>Minimal</td>
</tr>
<tr>
<td><code>&lt;l&gt;</code> &lt;li&gt;</td>
<td>List and list item</td>
<td>No</td>
</tr>
<tr>
<td><code>&lt;artifact&gt;</code> background</td>
<td>Background and unused content</td>
<td>Yes</td>
</tr>
<tr>
<td><code>&lt;formula&gt;</code></td>
<td>Formula</td>
<td>No</td>
</tr>
</tbody>
</table>
InDesign Limitations

May be possible by tagging the **frame** only (such as `<TOC>`).

Some tags are only supported indirectly. For example `<Link>`, if you create a hyperlink it will automatically be tagged as link, but applying this tag via a character style role mapping is meaningless for text-only links.
Note that within the subset of Acrobat tags supported by InDesign, if a paragraph style name exactly matches an Acrobat tag name, any InDesign-specified Role Maps will be ignored (i.e., an “H1” paragraph style cannot be role mapped to be <H2> in the tagged PDF).

All other content tags are instead mapped to <P>.

InDesign prevents the insertion of tagged, grouped inlines.

InDesign always exports single, inline tagged text frames as <Figure> regardless of how the inline text frame was explicitly tagged (unless they’ve been tagged as <Artifact>).
The language attributes of the document/paragraph/character styles are not passed through to the tagged PDF.

There isn’t a 1:1 mapping for some (“Simplified” and “Traditional Chinese” in InDesign vs “Chinese” in Acrobat).

**Map Styles to Tags** doesn’t appear to follow the page order of the document and instead appears to follow a FIFO order when creating the structure, resulting in a confused and largely unusable sequence of tags.
Some notes

InDesign natively may not produce what you need in a tagged PDF (more later).

You may need to supplement the production process by manually applying tags in Adobe Acrobat.
Tips

Stack order is the reading order (when there are multiple elements on the page). Reading order is bottom to top.

InDesign only supports a subset of Acrobat’s tags. While the tags that are support represent 80% of the content, it’s that missing 20% that provides the high usability that is severely lacking.
References and Links


Colour Contrast Analyser 2.2 (new version) and is available from the Web Accessibility Tools Consortium. http://www.wat-c.org/tools/CCA/1.1/