Putting DDI in the driver’s seat

Using Metadata to control data capture

Samuel Spencer
Australian Bureau of Statistics
2010: XForms and DDI

January:  XForms transform demonstrated within ABS

June:     XForms live-demo at IASSIST 2010

July:     XForms research put on hold

October:  Commercial Census web-form tool investigated
ABS DDI Data Collection Projects

- Internet Activity Survey
- Agricultural Census
- Questionnaire Design Tool (QDT)
Internet Activity Survey

Then:

- Survey used in DDI/XForms research
- eForms solution using ABS developed technology
- Custom tool creates XForms, rendered using Orbeon
Internet Activity Survey

Then:
- Survey used in DDI/XForms research
- eForms solution using ABS developed technology
- Custom tool creates XForms, rendered using Orbeon

Now:
- Candidate for migration to custom IBM web-form solution
Agricultural Census

Now:
- Currently running on IBM web-form solution
- Forms displayed using AJAX which interprets proprietary hand-crafted XML
Agricultural Census

Now:
- Currently running on IBM web-form solution
- Forms displayed using AJAX which interprets proprietary hand-crafted XML

Future:
- Research into DDI to XML transforms
Questionnaire Design Tool

Then:
- Online app for questionnaire metadata management
- Manages creation of Blaise and paper forms
- Uses ABS-built proprietary XML (QDT-ML)

Now:
- Investigations into replacing QDT-ML with DDI
- Research into using QDT to create web-forms
How can it made simpler?
The XForms standard describes a structured format for capturing form questions, control structures and complex data structures needed for accurate information capture.

However, to be useful it needs to be transformed, as it's not able to be displayed natively in current generation browsers.
The DDI 3.0 standard describes a structured format for capturing form questions, control structures and complex data structures needed for accurate information capture.

However, to be useful it needs to be transformed, as it's not able to be displayed natively in current generation browsers.
<!DOCTYPE HTML>
Why HTML5?

- Buzzword compliant
- Vast Improvement
- Open Standard
- Growing support
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- Vast Improvement
- Open Standard
- Growing support

(Even Microsoft is aiming to support HTML5 with IE9!)
Why HTML5 Forms?

- Most of the goodness of XForms, but with better native support
What percentage of the time of this talk have you spent anticipating a Star Trek Joke?
What is the registration code of your favourite Federation starship?

eg. NCC-1701-A
Legacy browsers can cope and render with HTML5 Forms *
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* Because all unknown input types default to text
Caveat Logica Artifex
Caveat Logica Artifex
(Let the craftsman of logic beware)
Caveat Logica Artifex
(Let the craftsman of logic beware)

Programmer Beware!
# HTML5 Forms Inputs

<table>
<thead>
<tr>
<th>Form: Search</th>
<th>Opera</th>
<th>Firefox</th>
<th>Safari</th>
<th>Chrome</th>
<th>Opera</th>
<th>Firefox</th>
<th>Safari</th>
<th>IE</th>
<th>Chrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Form: Phone</td>
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<tr>
<td>Form: URL</td>
<td>✔</td>
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<tr>
<td>Form: Email</td>
<td>✔</td>
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<tr>
<td>Form: DateTime</td>
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<tr>
<td>Form: Month</td>
<td>✔</td>
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<tr>
<td>Form: Week</td>
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<tr>
<td>Form: Time</td>
<td>✔</td>
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<tr>
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<tr>
<td>Form: Number</td>
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<tr>
<td>Form: Range</td>
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<tr>
<td>Form: Colour</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
### HTML5 Forms Attributes

<table>
<thead>
<tr>
<th></th>
<th>MAC</th>
<th></th>
<th>WIN</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OPERA</td>
<td>FIREFOX</td>
<td>SAFARI</td>
<td>CHROME</td>
</tr>
<tr>
<td>Form: Autocomplete</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Form: AutoFocus</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: List</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Form: Placeholder</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: Min</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: Max</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: Multiple</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: Pattern</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: Required</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Form: Step</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Tools for making HTML5 usable in "legacy" browsers exist!
Tools for making HTML5 usable in "legacy" browsers exist!

But this sounds suspiciously like another transformer.
But...

- HTML5 is easier to manipulate than XForms
- Client-side Javascript transforms are quick
- Javascript development is quicker
- Eventually they won't be needed
### HTML5 Forms Attributes

<table>
<thead>
<tr>
<th></th>
<th>MAC</th>
<th>WIN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OP</td>
<td>10.63</td>
</tr>
<tr>
<td>Form: Autocomplete</td>
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<td>❌</td>
</tr>
<tr>
<td>Form: Autofocus</td>
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</tr>
<tr>
<td>Form: List</td>
<td>✔</td>
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<tr>
<td>Form: Placeholder</td>
<td>❌</td>
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<td>Form: Min</td>
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<td>Form: Max</td>
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<tr>
<td>Form: Multiple</td>
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<td>Form: Pattern</td>
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<tr>
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<td>❌</td>
</tr>
<tr>
<td>Form: Step</td>
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</tr>
</tbody>
</table>
Client-side "validation" doesn't guarantee valid data
Server-side validation & control
One solution: DDI ⇒ Python

- Convert DDI to Python Classes
- Python frameworks allow easy generation of web-apps
- Python can be compiled into numerous languages
  eg. C, Java, .Net
But the same issues arise...

- No standard
- XForms
- Each language and implementation is different
DDI to Forms (D2F)

- Standard way to produce web-forms and services from DDI
- Platform and technology agnostic
- Increases reproducibility
- Encourages web-form use
- DDI in / DDI out
D2F-Compliance

- D2F-compliant form creator would include specific elements and metadata
- D2F-compliant web-app would expect the same
- Thus any D2F-compliant transform could be used with any D2F-compliant server
- D2F-servers capture data however required, but must expose data using DDI
Next time...

- Smarter web-forms with local storage and web-sockets
- μDDI - Embedding rich, structured metadata from DDI inside HTML5 using Microformats
Questions?

Contact me:

Work:
email:  samuel.spencer@abs.gov.au

Play:
twitter: @legostormtroopr
web: http://www.kidstrythisathome.com

Also:
DDI Developers/Users/TIC Mailing Lists, Linked In, Facebook (reluctantly), Team Fortress 2, Xbox Live, carrier pigeon, etc...
If can can't find me, just google "Samuel Spencer DDI"