

Accessible DHTML

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The Next ~50 Minutes

- The problem: DHTML is not accessible
- The old “solution”
- Quick teasers about the new solution
- Illustrative Code demo
 - problem, keyboard, AT, ARIA, High Contrast
- Dojo
- Questions?

DHTML Primer

- Custom widgets
- JavaScript
- CSS
- adding behaviour to existing HTML elements: div, span, ul

Why is DHTML Not Accessible?

- lack of semantics
- developers focus on mouse interaction
 - lack of keyboard support
- visually biased information
- important visual stuff happening away from focus

The Old “Solution”

- *<noscript> tags used to provide alternative*
- *User experience delta.*

<noscript> tags == No love.

New DHTML Accessibility

Keyboard navigation!

ARIA: Semantics! Live Regions!

== Accessible Innovation

Let's look at code!

Keyboard

- HTML4: form controls and hyperlinks
- HTML5 and ARIA: all elements

- no tabindex as HTML4
- tabindex = -1 programmatic, mouse
- tabindex = 0 +tab, document order
- tabindex > 0 +tab, numerical order

- Firefox, IE, Opera

Let's implement keyboard
interaction!

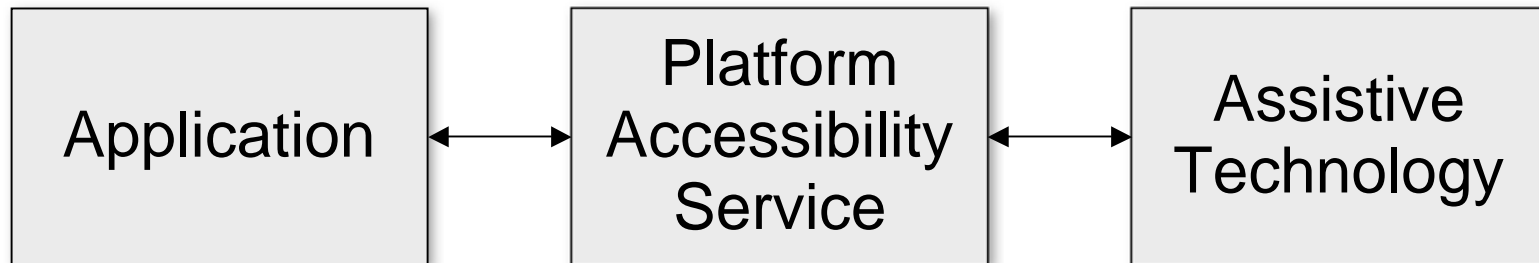
Keyboard still to do

- Close menu on keypress
- Return focus
- Keyboard/mouse interaction

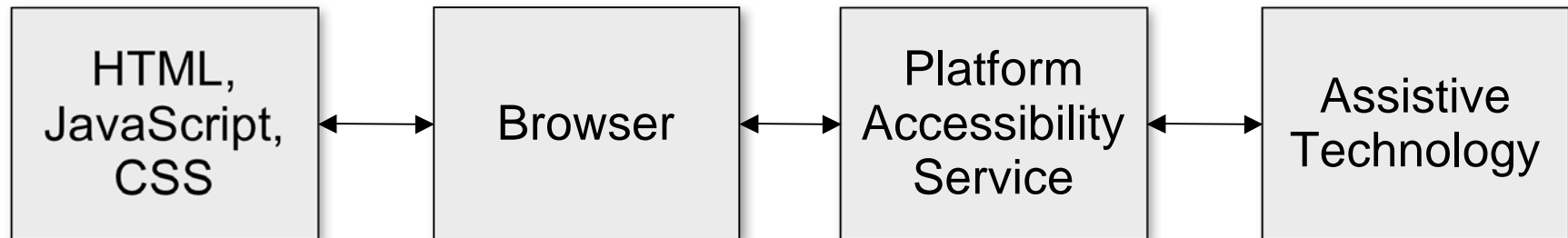
Assistive Technologies

- Screen readers
- Screen magnifiers
- Alternative input
- Require user interface semantics to provide a good user experience

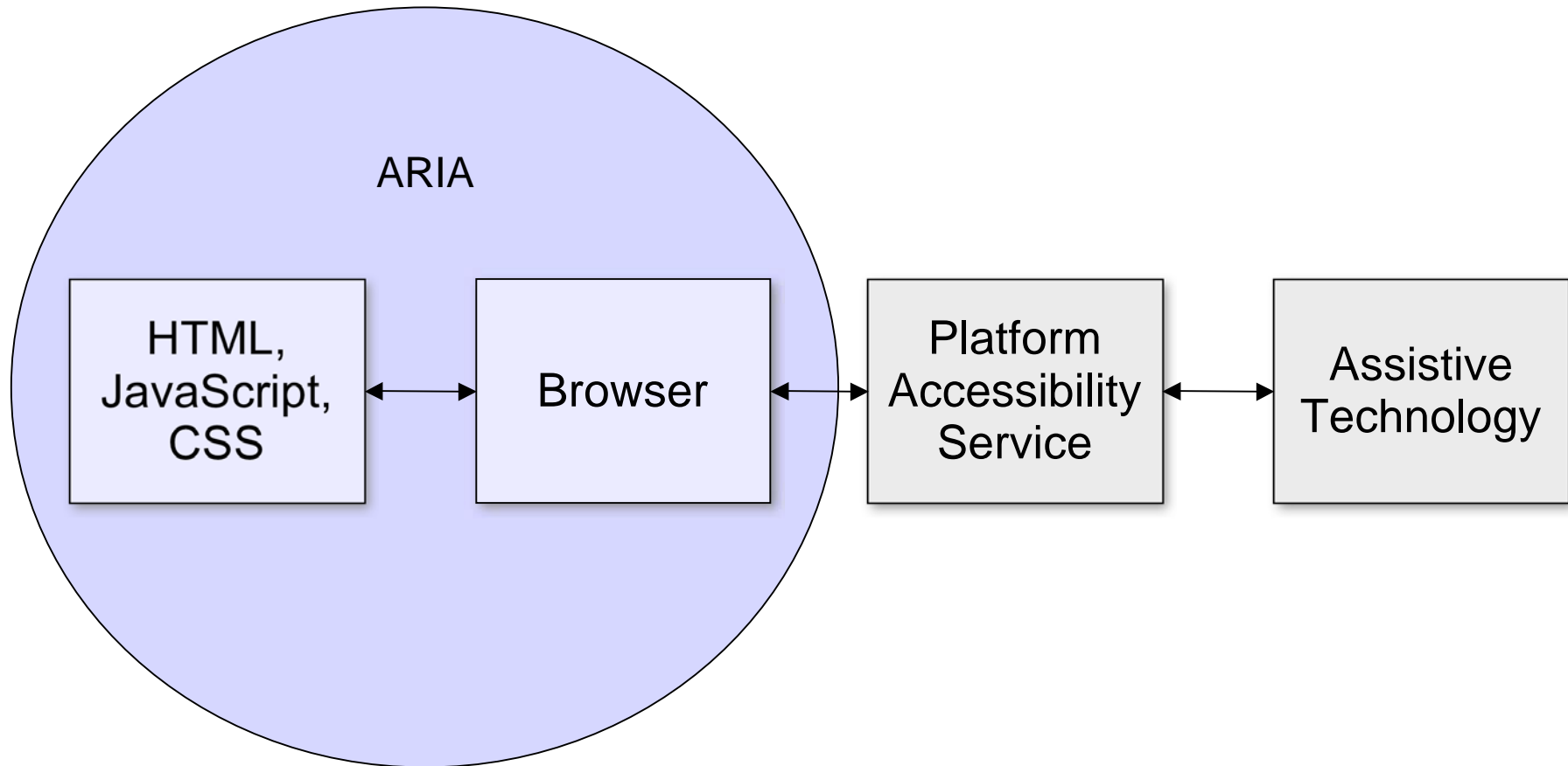
Assistive Technologies



Assistive Technologies and HTML



Assistive Technologies and HTML



ARIA: Accessible Rich Internet Applications

- W3C Working Draft
- <http://www.w3.org/TR/aria-roadmap/>
- Machine-readable semantics for custom widgets
- Roles (menu, progressbar, tree)
- States (disabled, valuenow, expanded)
- Live regions
- Drag and drop
- tabindex
- Firefox, Opera in progress

ARIA Example

- `<div role="wairole:progressbar"
aria-valuemin="0"
aria-valuemax="10"
aria-valuenow="8">
</div>`

Let's look at our menu's
screen reader experience

High Contrast

- Background colours are normalised
- Background images disappear
- Foreground colours (text, borders) are normalised

Let's have a look at our menu

Dojo

- 1.0 coming very very soon!
- dojo: core
- dijit: widgets
- dojox: extensions

Theme Tester demo

Dijit

- Infrastructure for building accessible widgets
- Themeable
- Internationalisation, including detection of writing direction
- Set of accessible widgets

Accessible Dijit Widgets

- Form
 - Button, CheckBox, ComboBox, CurrencyTextBox, DateTextBox, FilteringSelect, Form, InlineEditBox, NumberSpinner, NumberTextBox, Slider, Textarea
TextBox, TimeTextBox, ValidationTextBox
- Layout
 - AccordionContainer, ContentPane, LayoutContainer, LinkPane, SplitContainer, StackContainer, TabContainer
- Misc
 - ColorPalette, Dialog, Editor, InlineEditBox, [Menu](#), ProgressBar, TitlePane, Toolbar, Tooltip, Tree

Thanks.

Who Supports ARIA?

- * **W3C PF**: standardization effort: Roadmap, Roles and States
- * **IBM** -- Firefox implementation, [Dojo toolkit support](#), testing tools, supporting standardization effort, test cases and docs
- * **University of Toronto** -- Dojo toolkit support
- * **Dojo Foundation** -- Dojo toolkit support
- * **University of Illinois** -- test cases, Firefox accessibility extension testing tool, developer training, supporting standardization effort
- * **Mozilla Foundation** -- [grants to developers](#) for ARIA work
- * **Opera** -- beginning support in Kestrel (Opera 9.5), supporting standardization effort
- * **Sun Microsystems** -- Orca screen reader support, contributor to style guide group
- * **Freedom Scientific** -- JAWS screen reader support
- * **GW Micro** -- Window-Eyes screen reader support
- * **AI Squared** -- ZoomText screen magnifier support
- * **CLC World** -- Fire Vox screen reader extension implementation of ARIA widgets and live regions, live region test cases, live region report and recommendations
- * **Google** -- developing support on experimental pages Google Reader and Google Notebook
- * **Paciello Group** -- developing support in some pages, assisting with Best Practices document, article such as WAI-ARIA in HTML and WAI-ARIA live regions
- * **Yahoo!** -- presentations to accessibility community, working on ARIA examples
- * **AOL** -- style guide and best practices, supporting standardization effort
- * **SAP** -- developing support in SAP applications, supporting standardization effort
- * **Microsoft** -- supporting standardization effort, IE 5+ support ARIA keyboard navigation (via the same tabindex extensions contained in HTML 5)

YOU!!!