



IBM Emerging Technologies

Dojo: An Accessible JavaScript Toolkit

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Agenda

- **What is Dojo?**
- **Dojo Schedule and Plans**
- **Dojo Widgets**
- **Dojo Widget Accessibility Strategy**
- **ARIA Overview**
- **Demo**
- **Questions**

What is Dojo?

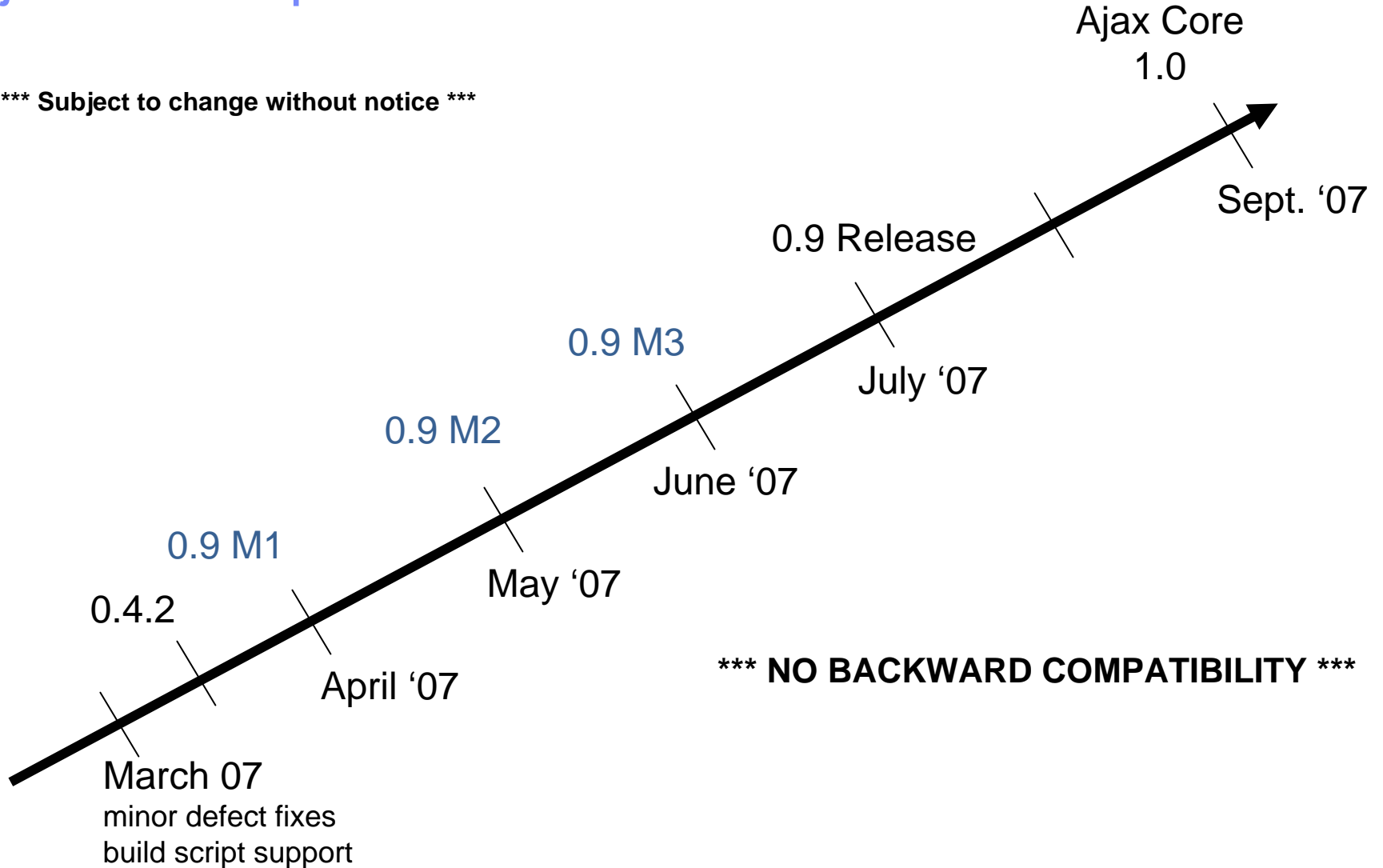
- **Open Source JavaScript Toolkit**
- **Makes development of Web Applications cleaner and easier**
- **“Easy” Ajax**
- **Data Binding**
- **Full event system**
- **Browser abstraction layer**
- **User Interface Widgets**
- **Dual Licensed**
 - [Academic Free License v2.1](#)
 - [BSD License](#)

Dojo Schedule and Plans

- **Current Dojo Release is 0.42**
- **Next release is 0.9 in Summer 2007**
- **Dojo 1.0 planned for early Fall 2007**
- **Focus of 1.0**
 - Performance, performance, performance
 - Base Dojo
 - Core Widgets
 - Package size

Dojo Roadmap and Timeline

*** Subject to change without notice ***



Dojo Base

- **Core set of extremely common functions that are always available to developers**
- **Provided within updated, lightweight (<50kb) dojo.js**
- Module Loader
- Lang Utils & Array Extras
- Cookie functions
- Query, Node & Style Utils
- I/O (XHR in Base)
- Json serialization
- Events (simple connect)
- Effects
 - fade, slide, anim props
- Color functions
- Browser detection
- Url functions

Core Libraries

- Modules that are common to **most** Ajax applications
- Optionally included using `dojo.require()`
 - **Drag N Drop**
 - **Undo**
 - **Rpc**
 - **I18n**
 - Date
 - Number
 - Currency
 - **String functions**
 - **Topics**
 - **Data Access**
 - **Debug**
 - **Build System**
 - **HTML & Style Extras**

Core Dojo Widgets (dijit)

- **Accessible**
- **Internationalized**
- **Standard Look and Feel**
- **Developer Documentation**
 - API
 - User Manual
- **Supported Browsers**
 - Firefox 2.0
 - IE 6+
 - Safari (latest)
- **Data Binding**
 - Tree, Grid, Select

Core Dojo Widgets

- **Form Widgets**
- **Layout Widgets**
- **Advanced Widgets**

Core Dojo Form Widgets

- **Button, Dropdown Button, Combo Button**
- **Checkbox, Radio**
- **Autocompleter, Select**
- **Textbox**
- **Currency & Integer Validation Textboxes**
- **Resizable Textarea**
- **Slider**
- **Integer Spinner**
- **Inline Editbox**
- **Dropdown Calendar**

Core Layout Widgets

- **Accordion Container**
- **Content Pane**
- **Dialog**
- **Layout Container**
- **Page Container**
- **Split Container**
- **Tab Container**
- **Title Pane**

Core Advanced Widgets

- **Color Palette**
- **Context Menu**
- **Grid**
- **Rich Text Editor**
- **Progress Bar**
- **Toaster**
- **Toggler**
- **Toolbar**
- **Tooltip, Tooltip Dialog**
- **Tree**

Dojo Widget Accessibility Strategy

- **Follow Accessible Rich Internet Applications (ARIA) Specifications**
- **Full Keyboard Support**
 - IE 6+, FF 2
 - Drag n Drop as stretch goal
- **Low Vision Accommodation**
 - Support OS high contrast Mode
 - Font Size Changes
 - Browser Color preferences
 - Usable with Images off

Accessible Rich Internet Applications (ARIA)

- **Supports Web 2.0**
 - Sophisticated user interface components
 - Full Accessibility
 - Keyboard
 - Assistive Technologies
 - Interactive Web applications (Ajax)
- **Developed in W3C Web Accessibility Initiative (WAI) Protocols and Formats Working Group**
- **Implemented in FF 1.5+**

ARIA Support for Assistive Technologies

- **Provide full keyboard support and focus**
- **Define Roles for rich interface components**
- **Define States/Properties of rich interface elements**
- **Communicate role and states to AT**
- **Provide support for live updates (in progress)**
- **Implemented in Firefox**
- **Supported in Window-Eyes 5.5+, JAWS 7.1+**

ARIA Roles

- **link**
- **combobox, option**
- **checkbox**
- **radio, radiogroup**
- **button**
- **progressbar**
- **slider**
- **spinbutton**
- **tree, treeitem**
- **alert**
- **application**
- **presentation**
- **group**
- **grid, gridcell**
- **tab, tabcontainer, tablist, tabpanel**
- **list, listitem**
- **menubar, menu**
- **toolbar**
- **more.....**

ARIA States

State	Values
checked	true false mixed
disabled	true false
readonly	true false
expanded	true false
valuemin, valuemax, valuenow	CDATA
owns, haspopup	IDREF
describedby. labelledby	IDREF
Many more	

Dojo ARIA Support

- **ARIA support added into all core widgets**
- **Dojo WAI apis for getting /setting role and state**
 - `dijit.util.wai.setAttr()`
 - `dijit.util.wai.getAttr()`
- **Role and State information can be added into Widget Templates**

Dojo Keyboard Support

- **Full Keyboard support added to core widgets**
 - Firefox 2
 - IE 6
- **Dojo onkey event to “normalize” key events and keys**
- **Set focus appropriately**
- **Mimic the operating system widget behavior**
 - Working with DHTML Style Guide Group
- **Drag and Drop as a stretch goal for 1.0**

Dojo Low Vision Support

- **Support for High Contrast Mode**
 - No use of CSS background-images to convey information (this is a change from initial strategy)
 - Use of borders to distinguish items
- **Run with images off**
 - Images loaded via Scripting (where possible)
 - Appropriate alternative text
- **No fixed font sizes**

Demo

- **Tree**
- **Buttons**
- **Checkbox, Radios**
- **Accordion Container**
- **Title Pane**
- **Tab Container**
- **Slider**
- **Spinner**

Summary

- **Dojo Open Source JavaScript Toolkit makes Web 2.0 application development faster, easier**
- **Dojo 1.0 will Rock!**
- **Dojo is committed to Accessibility**
- **Dojo 1.0 Core Widget Set will be fully Accessible**
- **Web 2.0 Accessibility is possible via ARIA**

Needed – Usable Access Testers for Web Server

- **Requirements:**
 1. experience administering IBM Websphere Portal or other web server
 2. has a disability
- **The sessions will take place in the Marriott, Executive Suite I, (18th floor) on Thursday (Noon-5 PM).**
- **If unable to meet during these date/times, please leave your contact info**

Additional IBM Presentations

- **NEXT SESSION - IBM and the US Dept. of Education Taking Steps toward an Accessible Future**
3:05 pm Hilton Los Angeles Ballroom
- **Firefox's Accessibility Ecosystem**
Friday, 8:00 am, Hilton La Jolla B
- **Tools for Improving ODF Accessibility**
Friday, 9:20 am, Marriott Denver
- **IBM's Accessible Open Computing Strategy: Usable Access of Emerging Technologies and Platforms**
Friday 10:40 am, Hilton La Jolla B
- **IBM Rule Based Accessibility Validation Environment**
Friday 3:05 pm, Hilton Los Angeles B

Resources

- Dojo Home <http://www.dojotoolkit.org/>
- Dojo Book <http://dojotoolkit.org/docs/book>
- Accessibility Section of Dojo Book
<http://dojotoolkit.org/node/118>
- Dojo 1.0 Widget Status
<http://www.dojotoolkit.org/developer/dijit>
- ARIA Roadmap <http://www.w3.org/TR/aria-roadmap/>
- Mozilla Developer Center - Firefox ARIA Information
http://developer.mozilla.org/en/docs/Accessible_DHTML
- Mailing list for ARIA issues - wai-xtech@w3.org