Fluid

Designing software
that works – for everyone

The Fluid Project: Overview and Update

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Topics We'll Cover

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- What is Fluid?
- Overview of the Fluid 0.1 release
- UX Toolkit: walkthroughs, patterns, and more
- Component architecture
- Project roadmap
- How to get involved

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What is the Fluid Project?

Vision

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- Foster user experience design and development within academic community source projects
- …so that they can fulfill their potential as platforms for innovation
- Create a community of UX expertise
- Build a presentation layer that supports:
  - Cross-application sharing of designs
  - The diversity of needs within higher education
- Support the precarious values of usability, accessibility, and more

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UX in Community Source

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- UX is a challenge for all open source projects
- Fluid is looking at common problems:
  - How do non-technical people get involved in OSS?
  - How can we help designers and developers speak the same language?
  - How do you do user testing in a distributed environment?
- Higher education has a unique opportunity:
  - Often co-located with our users
  - Gather ideas and feedback, literacy, user testing
  - We can build better user interfaces

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Fluid's Approach

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- Cross-project collaboration:
  - Share scarce UX resources across projects
  - Solve common challenges
  - Recognize recurring user interface idioms and needs
- A holistic approach: combine technology & design
- A two-fold path:
  - **Social**: build a community around UX
  - **Technical**: new UI development tools

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Accessibility Vision

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- Accessible software is better software for everyone
- Disability is an artifact of the environment:
  - A mismatch between the user and the system
- Embrace diversity:
  - Users all have different needs
  - Under different circumstances
- One size never fits all
- Build systems that can bend and adapt to meet the users' individual needs

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Participating Projects

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- **Sakai**
  - Collaboration and learning environment
  - Teaching, research, and group collaboration
- **uPortal**
  - Enterprise portal system
  - Aggregates personalized student information
- **Moodle**
  - Learning management system
  - Strong focus on pedagogy
- **Kuali Student**
  - Upcoming, next generation student system
  - Viable alternative to high-cost commercial products

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Who Are We?

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- Fluid *is* Sakai
- We're members of this community and others
- All solving UX issues together
- Collaborate with tool and project teams
- One strand of activity among many

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What are we Building?

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- Rich, flexible DHTML user interface components
  - Components that work across applications
  - More than just widgets: activities and workflows
  - Easy to embed into tools and customize
- Lightweight JavaScript development framework
  - Wiring up component dependencies
  - JavaScript conveniences for DHTML accessibility
  - A simple set of supports: builds on existing toolkits
- User Experience Toolkit
- Interaction Designs
- Help integrating into Sakai and uPortal

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Introducing Fluid 0.1...

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What's in Fluid 0.1?

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- A component: the Lightbox
- A slice of the framework: the Reorderer
- The UX Toolkit:
  - How to do a UX Walkthrough
  - Three drag and drop design patterns
- Lots of sample code and documentation

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Why is 0.1 Important?

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- Opens up our work to wider audience:
  - Download it, try it out, share your thoughts, get involved
- Established a community process:
  - Release manager, status updates, code freezes
  - Designers can stop a release if there are UX problems
  - Transparent voting for committers
- This is the first of six more release milestones on a roughly quarterly schedule

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UX Toolkit

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UX Toolkit

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- All the stuff you need to design great interfaces
- Components and markup examples
- UI Design Patterns
  - Good advice when designing UIs
  - Take material from Tidwell, Yahoo!, and other patterns
- UX Walkthroughs & Distributed User Testing
  - Driven by the communities, but collaborative
  - Reusable protocol and checklist
  - VULab
- User Persona Library

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Components

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- Components are recurring interactions:
  - Navigation: wizards, sequences, workflows
  - Content: file management, uploading, finding content
  - Direct manipulation of objects
- Choosing components is based on:
  - Talking with users
  - Analysis of existing applications across projects
  - Solving the most frequent and severe problems

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UX Walkthroughs: Goals

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- Assess what we've got: identify user pain points
- Identify “componentizable” solutions
- Drive our development priorities
- Share simple, approachable techniques for usability and accessibility assessment
- Anyone can do a UX walkthrough
  - Try out our checklists and heuristics

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U-Camps

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- Our main educational effort
- Everyone should have a basic UX vocabulary
- Share a repertoire of viable UX techniques
- Opportunity for designers and developers to collaborate
- Loose agenda, open participation

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Virtual Usability Lab

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- Open source distributed usability testing
- Competition to expensive tools like Morae
- Before and after survey questions
- Remote screen recording
- No installation required
- Mouse and keyboard tracking
- Designed within a community that needs it!

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Open Source Design Patterns Library

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How Patterns Can Help You

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- A pattern is a *proven solution* to a *common problem* in a *specified context*
- Patterns serve as tools to communicate ideas, solutions, and knowledge about commonly recurring design problems
- A *pattern language* is a collection of related patterns which provide a method for choosing design solutions in a field of expertise
- User interface design patterns can help you create more usable *and* innovative user interfaces!
- Sakai UI Design Pattern Library: http://confluence.sakaiproject.org/confluence/display/DESPAT/Library

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Open Source Design Pattern Library Goals

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- Provide a practical tool to help designers and developers create the proper user interface for a specific context
- Specifically,
  - Providing guidance on proper implementation of Fluid components
  - Documenting patterns found in Fluid applications
  - Space for Fluid communities to grow their own design pattern libraries
  - Bringing together patterns from other collections (e.g. Tidwell, Van Welie) which are helpful to Fluid applications
  - Potentially, collect patterns from other open-source communities, or even organizations which would like to open-source their patterns
- http://wiki.fluidproject.org/display/fluid/Open+Source+Design+Pattern+Library

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Drag and Drop Pattern

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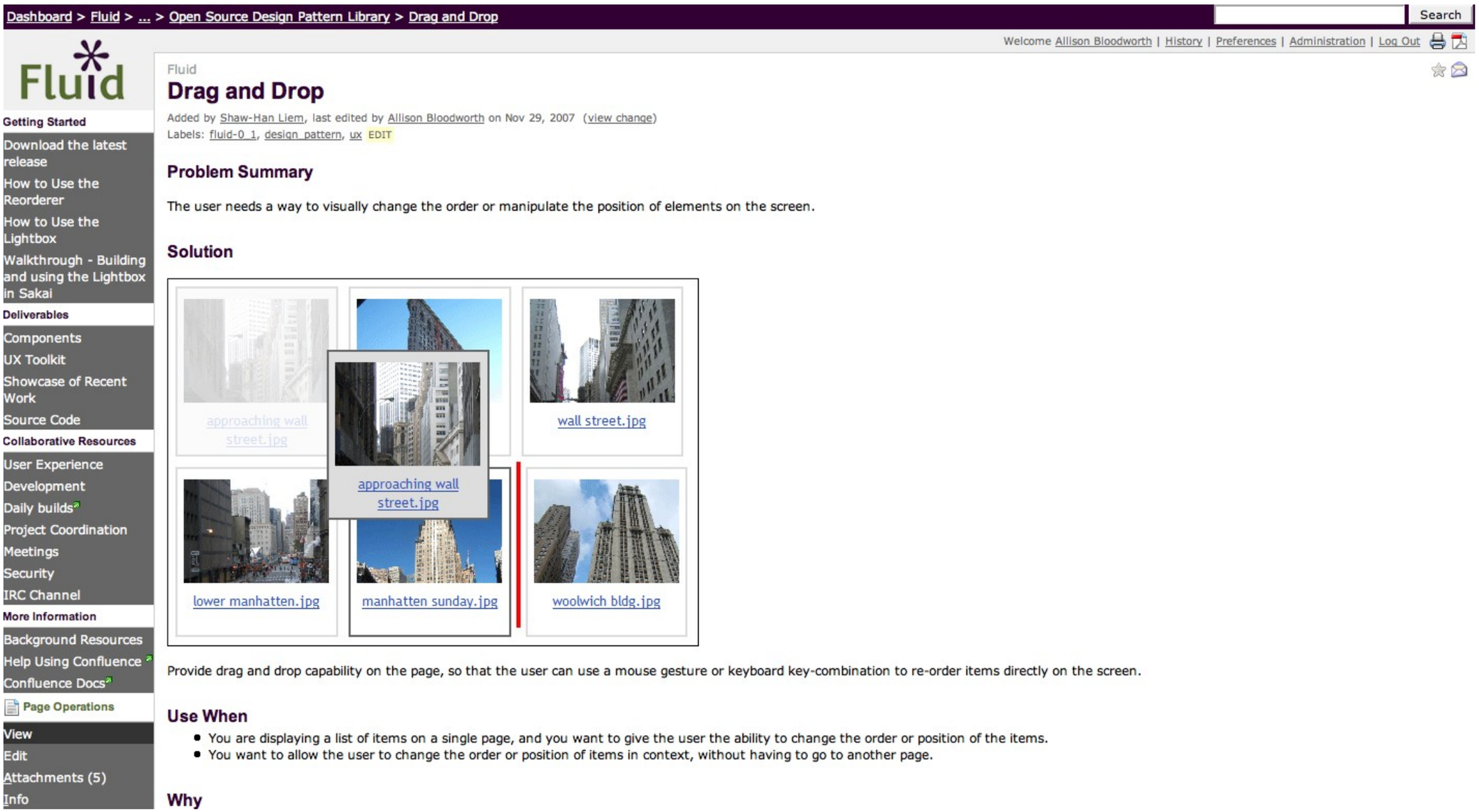

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Get involved with Design Patterns!

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- Talk to Allison during the conference
- Check out the varied info on design patterns on our wiki: http://wiki.fluidproject.org/display/fluid/Design+Patterns
- Join Fluid Design Patterns group & start creating patterns
  - Join fluid-work@fluidproject.org mailing list
  - Join sakai-dg-ui@collab.sakaiproject.org mailing list
  - Email me (abloodworth@berkeley.edu) with your contact info
- Check out and create more Sakai design patterns: http://confluence.sakaiproject.org/confluence/display/DESPAT/Library
- Sign up to help us with competitive analysis of other pattern libraries
- Help with development of (Drupal) content management framework for pattern library

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10448 - Site Navigation Enhancement

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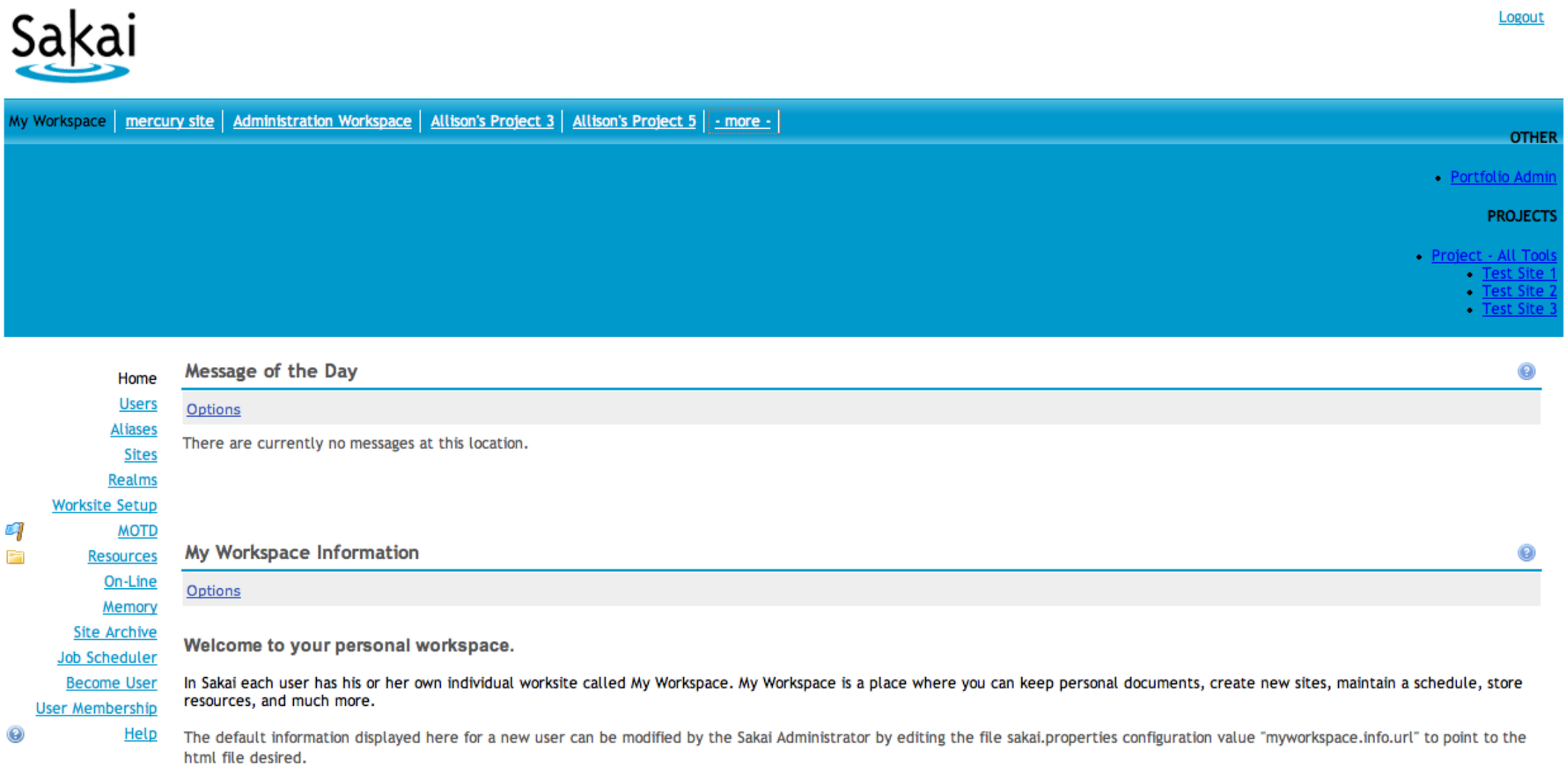

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Sakai version 2.5 w/new More Sites design

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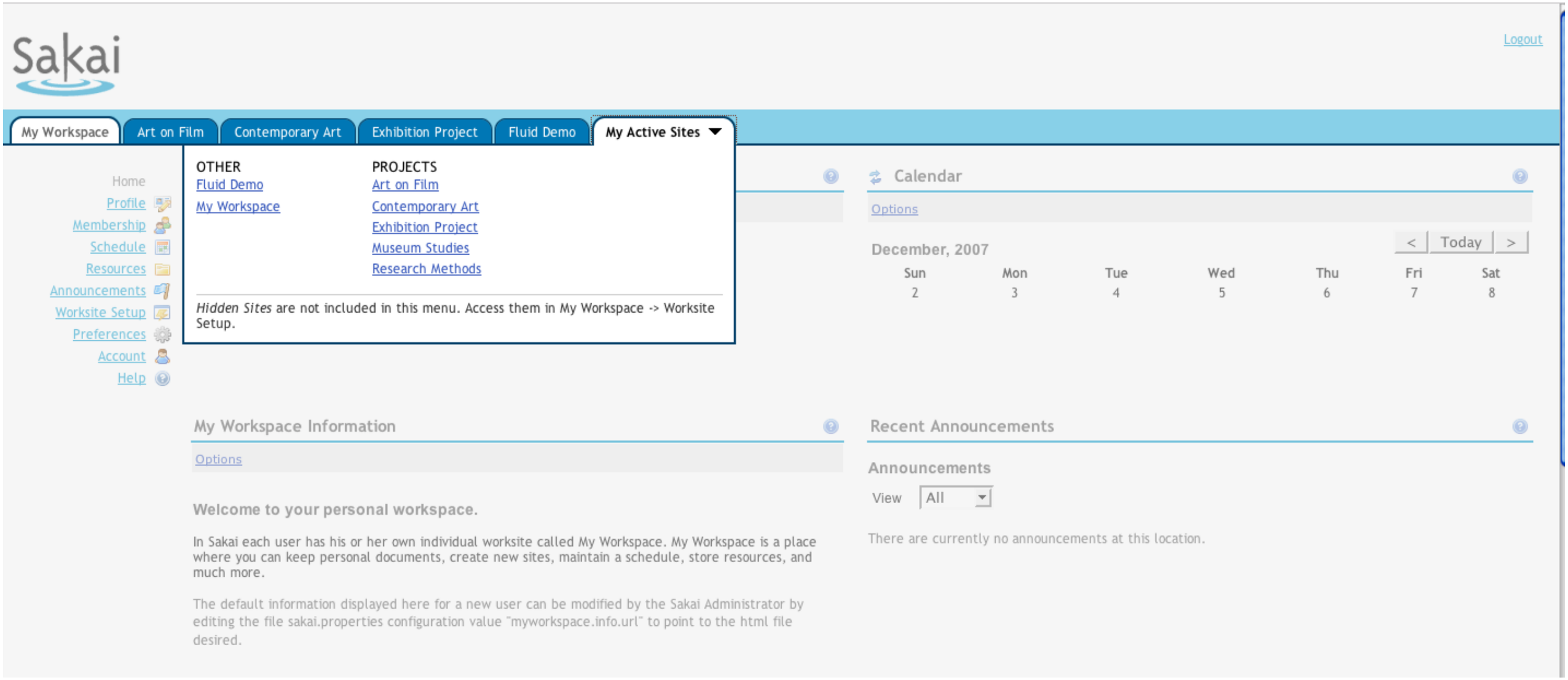

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Sakai's 'More Tabs' re-design

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- We've completed the re-skinning work the tabs
- Next steps:
  - Finish partial re-design of Customize Tabs to match new interface when 10448 is turned on (SAK-11460) - December
  - Update Help content to reflect changes (SAK-11963) - December
  - Finish adding accessibility semantics (SAK-11540) - 2.5.1
  - Add Customize Tabs link to tab row - post 2.5
  - Do full re-design of Customize Tabs to match interface when 10448 is turned on
  - Create a re-usable Fluid tab component?
- We'd love to have your help with coding our designs!

- More info: http://confluence.sakaiproject.org/confluence/display/UI/Sakai+%27More%27+Tab+Design

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Component Architecture

Technical Goals

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- Make it easier for developers to build better, more accessible user interfaces
- Support collaboration with designers
- Make it easier to share designs within a community
- Enable components to be adapted for a variety of tools and workflows
- Embrace the Web
- Support diverse presentation frameworks
- Don't reinvent the wheel: leverage good existing technologies and fill the gaps

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What is a Fluid Component?

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- On the client-side, a Fluid component consists of:
  - One or more HTML templates
  - One or more layers of CSS
  - JavaScript for behavioural logic
  - Accessibility metadata (control, presentation, etc)
- And on the server-side:
  - Binding conventions: markup with known, formal IDs
  - The ability to deliver the appropriate markup to the client and respond to its requests

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Anatomy of a Component

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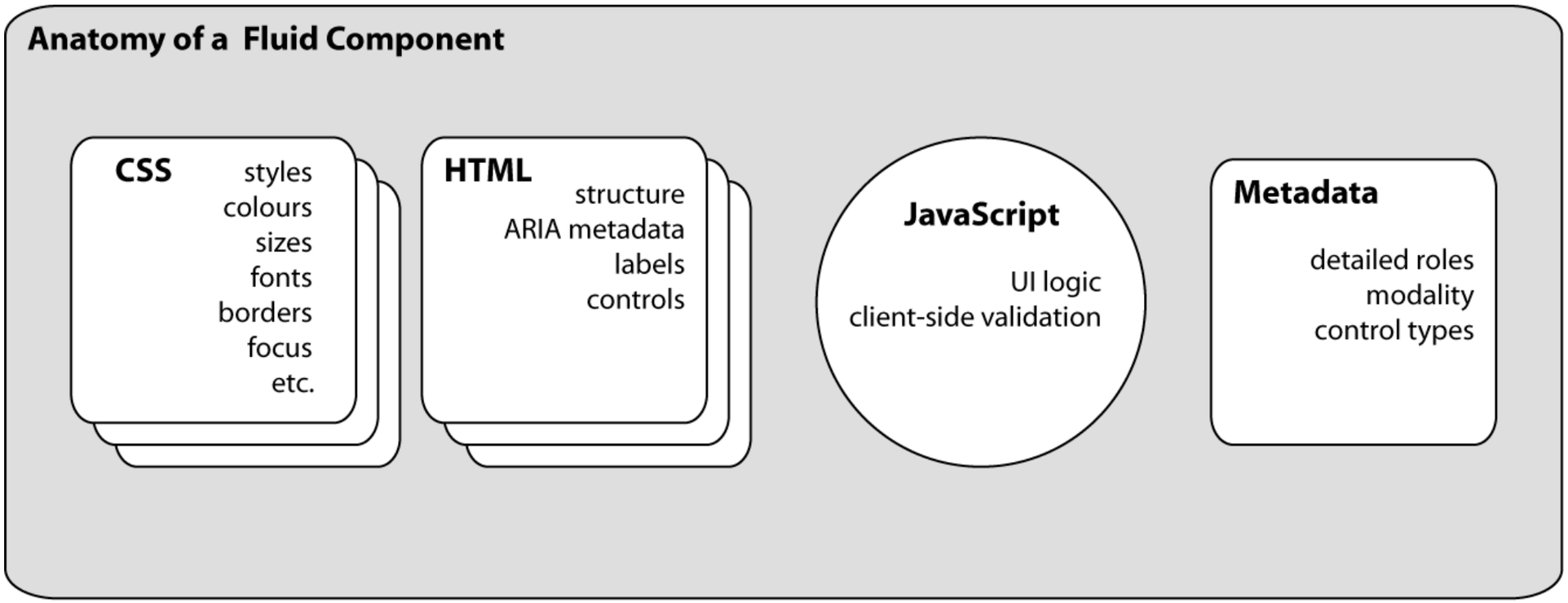

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A Flexible Framework

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- Solve the need for reuse and accessibility together
- Components need to adapt to different contexts:
  - Available screen real estate
  - Type of content
  - Amount of content
  - Method of control and navigation
- Leverage the web's strength in separating structure from presentation:
  - Alternative HTML templates
  - Alternative stylesheets
- Augment with alternative behaviours

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Huh?

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- Flexible layouts
- Enhanced navigation options
- Alternative control strategies

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Composition = Flexibility

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- Fluid components are built out of smaller units
  - Keyboard handlers
  - Layout managers
  - Server callbacks
- Composition enables flexibility
  - At runtime, wire up alternative behaviour
  - Use web standards to change presentation (HTML/CSS)
- Easy to extend or modify component behaviour

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Component Composition

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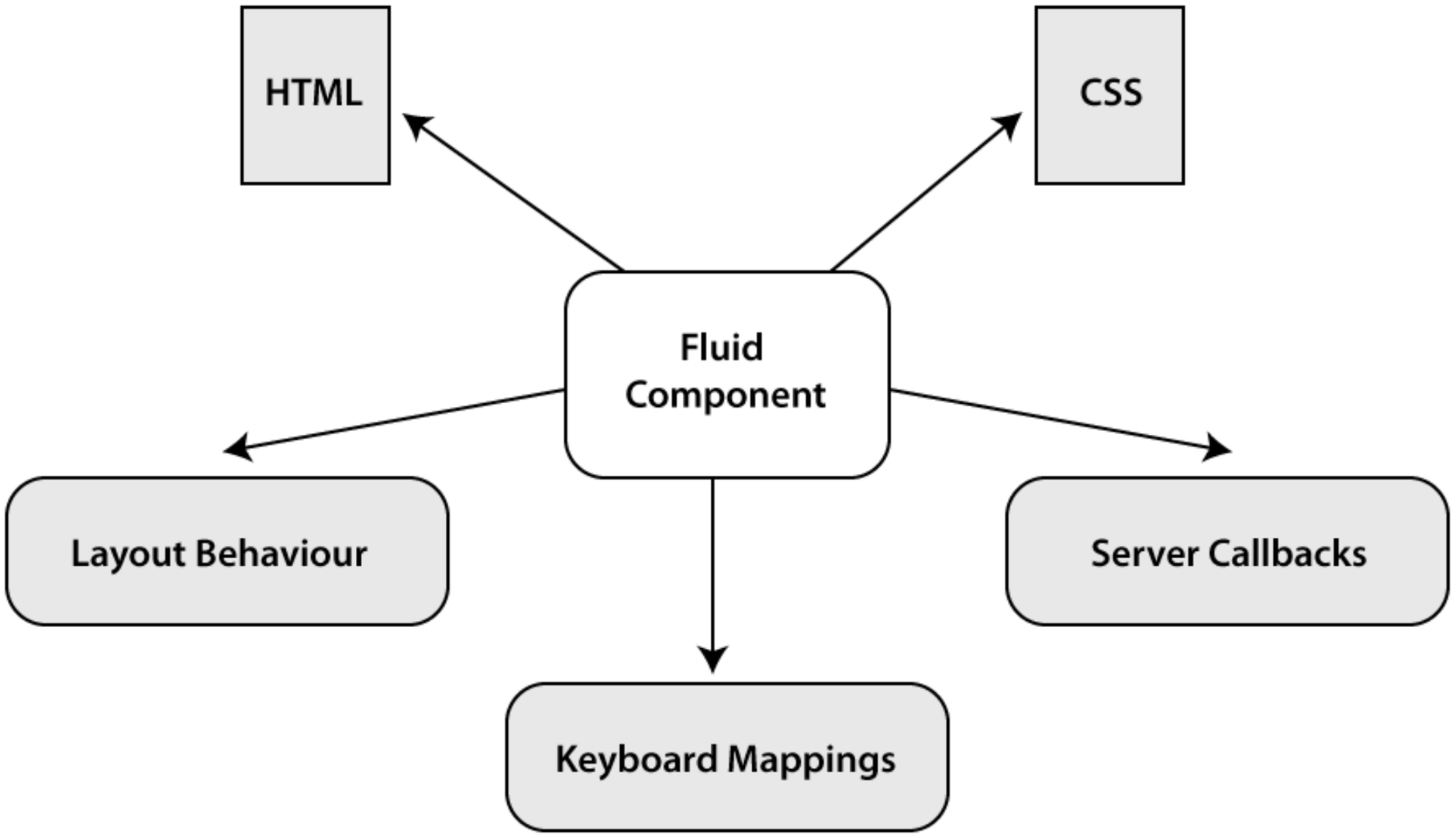

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The Fluid Framework

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- Common accessibility APIs:
  - Focus management
  - Keyboard handlers
  - Getting/setting ARIA properties
- Framework infrastructure:
  - Dependency injection
  - Server-side communication
  - Portal-friendly DOM conventions
- Adaptation:
  - The ability to wire up component behaviour at runtime

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Fluid Framework Illustrated

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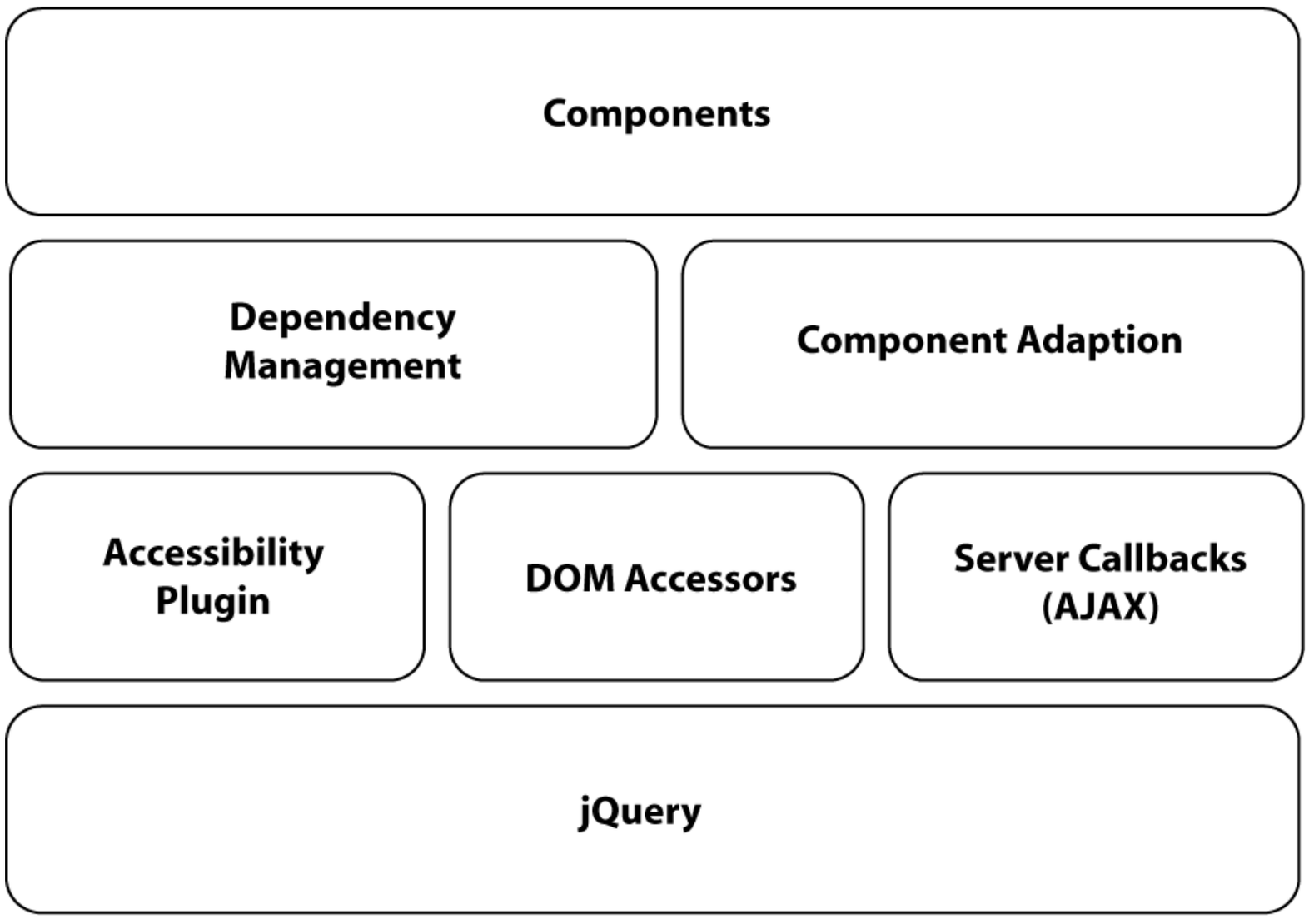
The Fluid Framework



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Markup Contracts

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- The DOM is a stew of potentially diverse elements
- Finding your own stuff is a challenge
- Solution: semantic, namespaced IDs
  - Unique placement prefixes: portal namespacing
  - Reflects containment relationships
  - Describes what the markup represents
- IDs become a stable way to communicate with server
- id="gallery::lightbox::thumbnail::orderable:0:"
- Framework will help build the necessary jQuery selectors

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Accessibility API

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- jQuery.a11y.keyboard
  - .makeTabFocussable(elements)
  - .makeSelectable(container, elements, direction)
  - .makeActivatable(elements, function)
- jQuery.a11y.aria
  - .getRole()
  - .setRole(elements)
  - .addState(elements, state)
  - .removeState(elements, state)

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Heuristics for Building a Fluid Component

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- Favour markup over messaging
  - Use HTML as data format
  - Use standard form POSTs to help degrade gracefully
- Break layout logic into separate units
- Provide configurable keyboard mappings
- Pass all dependencies in on initialization, at least until we have a bit of IoC support
- Allow for template and markup variations

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Project Roadmap

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Release Plan

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- Quarterly milestone releases
- Whole package:
  - Components, framework, UX Toolkit, Documentation
- Major Goals:
  - User research
  - Delve into file management components
  - Viable framework: everyone can build components
  - Launch the Open Source Design Patterns Library

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Component Roadmap

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- Focus on file management and navigation
- *“My files available from anywhere”*
- Embeddable components:
  - File Uploading
  - Reworked, lightweight File Picking
  - Tagging and Tag Clouds
  - Smart folders, “playlists,” contextual filtering
  - Favourites and Clipboard/File Basket
  - Infrastructure: Accessible Thick Box, Tree, Sortable Tabs
  - Drag and drop portlets

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Instructor organiser view (pops up as helper in any site)

student syllabus view (a tool in a site)

Recent

Uploaded by me

My Tags

- Actresses
- Playhouses
- Dramatists
- Audiences
- **Week 1**
- Week 2

My Sites

- Drama 101
- Drama 102
- Drama 103
- Drama 104

my file 1.doc
my file 2.doc
my file 3.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc

Week 1
Week 2

my file 1.doc
my file 2.doc
my file 3.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc
my file 1.doc

FIRST IDEAS !

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Image Gallery Project Goals

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- Deliver small scale local pilot to UCB campus starting no later than fall 2008
- Contribute to and leverage work in the Fluid project to develop a component for file upload
- Explore the relationship between file management and presentation within Sakai to help evolve UX in this area

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Image Gallery Design Goals

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- Easy upload from within Image Gallery
  - from computer, current or other site
  - *Image Uploader* incubator for abstract *Uploader* component
- Increased dynamic interaction of image and collection organization using "playlist" metaphor
- Add own context to images & collections through tagging, “collection-lists”, meta-data
  - Social networking later phases
- General usability clean up

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Image Gallery

IG - 1

Browse Images & Collections | Add Images

Search | All Images | Find

Search Component

Search currently out of scope

Multi-Views Component

All Images (228)

Recently Added (22)

Collections

Flagged (118)

Week 1 (21)

Week 4 (35)

Playlist Component

New Collection

Collection Name

Show: Title Description Tags

In-line Edit Component

Filename.gif

Filename.jpg

Filename.jpg

Filename.jpg

This is where the description will be displayed

Click here to enter description

This is where the description will be displayed

This is where the description will be displayed

Filename.gif

Work title

Filename.gif

Filename.gif

This is where the description will be displayed

Click here to enter description

Click here to enter description

Click here to enter description

Work title

Work title

Work title

Filename.gif

This is where the description will be displayed

This is where the description will be displayed

This is where the description will be displayed

This is where the description will be displayed

Tags / Keywords

Select tag to view tagged images

tag tag tag tag tag tag tag tag tag tag tag tag tag tag tag tag tag tag tag tag

Tagcloud Component

IG - 4

Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → Multi-step Indicator Component → 3) Add Information to Images

Choose Images from: Your computer
Images in **this** site
Images in **another** site

Browse to upload images. Use the control and shift keyboard shortcuts to choose multiple images at once.

Browse...

Flash Version 8 required for optimal viewing. Download now or go to the basic upload view

Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → 2) Add Images to Image Gallery → 3) Add Information to Images

Choose Images from:
- (•) Your computer
- ( ) Resources in this site
- ( ) Resources in another site you own

Browse to upload images.

[ ] [Browse...]

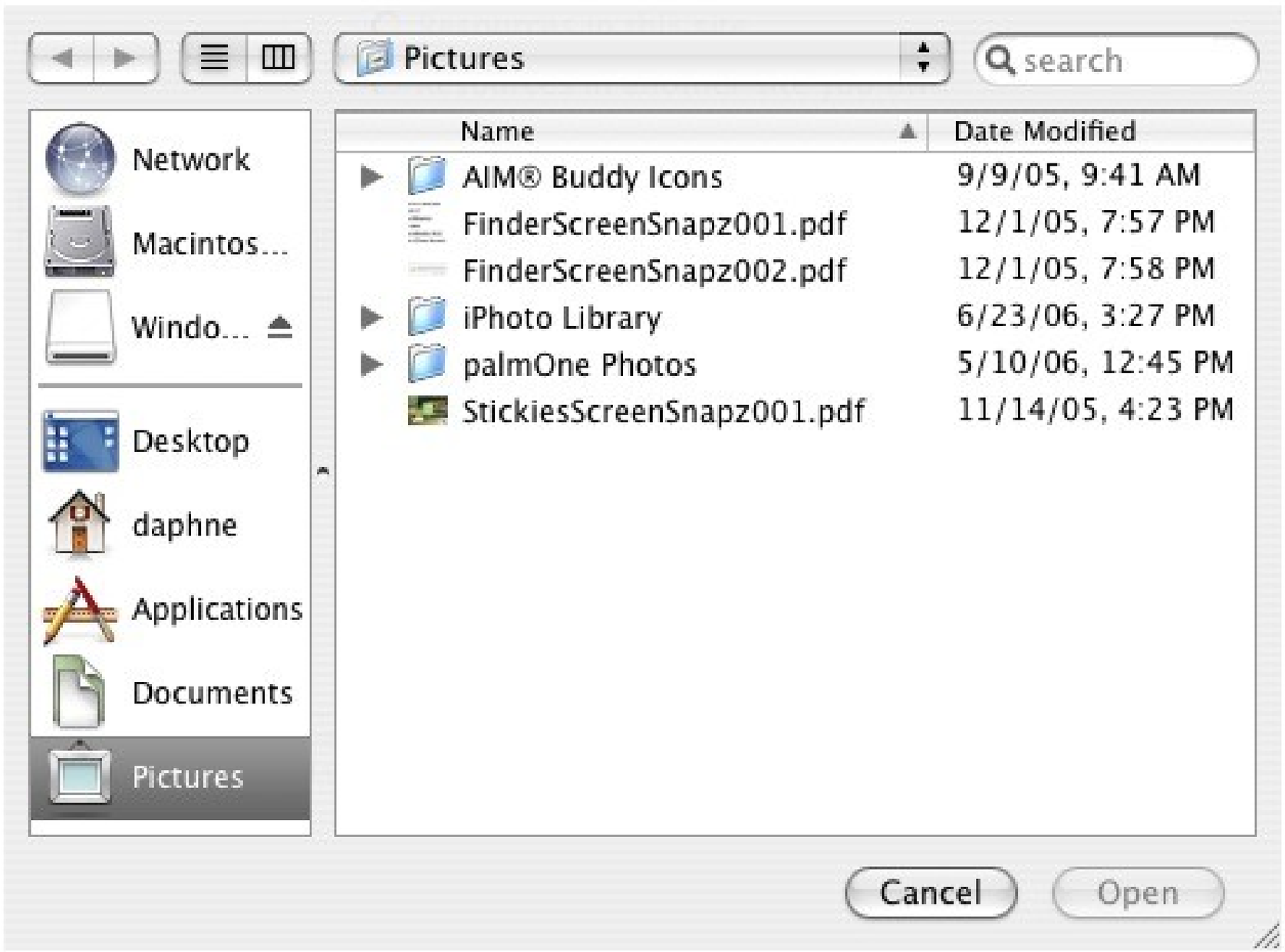
Add More Images

[Continue] [Back] [Cancel]

Browse Images & Collections | **Add Images**

1) Choose Images → 2) Add Images to Image Gallery → 3) Add Information to Images

Choose Images from: Your computer



IG - 6

Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → 2) Add Images to Image Gallery → 3) Add Information to Images

Choose Images from:
- Your computer
- Images in **this** site
- Images in **another** site

Choose images from resources

enter filename | Find

	Title	File Type	Created by	Created Date
	Filename	jpg	[Creator]	[Created date]
	Folder name			
	Folder name			
	Folder name			
	Filename	png	[Creator]	[Created date]
	Filename	jpg	[Creator]	[Created date]
	Filename	gif	[Creator]	[Created date]
	Filename	gif	[Creator]	[Created date]
	Filename	jpg	[Creator]	[Created date]

Continue | Cancel

Would be great if this was all my image files & it shows me where they've been used along with some of this other information

Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → 2) Add Images to Image Gallery → 3) Add Information to Images

Choose Images from:
- Your computer
- Images in **this** site
- Images in **another** site

Choose Images in:

Choose Site

From Resources

enter filename | Find

Title	File Type	Created by	Created Date
Filename	jpg	[Creator]	[Created date]
Folder name			
Folder name			
Folder name			
Filename	png	[Creator]	[Created date]
Filename	jpg	[Creator]	[Created date]

From Image Gallery

enter filename | Find

Collection	Title	File Type	Created by	Created Date
▶ All Images (228)				
▼ Recently Added (5)				
	Filename	png	[Creator]	[Created date]
	Filename	jpg	[Creator]	[Created date]
	Filename	png	[Creator]	[Created date]
	Filename	jpg	[Creator]	[Created date]
▶ Flagged (118)				
▶ Collection 1 (22)				

Choose Files | Cancel

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Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → **2) Add Images to Image Gallery** → 3) Add Information to Images

File	Size	
Image file 1.jpg	4.78 MB	Remove
Image file 2.jpg		Remove
Image file 3.jpg		Remove
Image file 4.jpg		Remove
Image file 5.gif		Remove
Image file 6.jpg		Remove
Image file 7.png		Remove
Image file 8.png		Remove
Image file 9.gif		Remove

75% Complete (X files)

Time left: 2 min. 3 sec.

118 Files Add more images Total: 541.81 MB

Tag All These Images

Tags: tag inter

For multi-word tags use quotes (i.e. "image tool") or underscore (i.e. image_tool)

interaction (30)
Interaction (10)
intermediate (1)

Your previously used tags

Font size depicts relative tag usage

tag tag tag

Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → **2) Add Images to Image Gallery** → 3) Add Information to Images

File	Size	
Image file 1.jpg	4.78 MB	Remove
Image file 2.jpg	4.80 MB	Remove
Image file 3.jpg	4.78 MB	Remove
Image file 4.jpg	4.68 MB	Remove
Image file 5.gif	4.69 MB	Remove
Image file 6.jpg	4.70 MB	Remove
Image file 7.png	4.63 MB	Remove
Image file 8.png	4.70 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove
Image file 9.gif	4.78 MB	Remove

118 Files Add more images **Total: 541.81 MB**

Add Images Cancel

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Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → 2) Add Images to Image Gallery → **3) Add Information to Images**

✔ **Your images were added successfully.**

Batch | **Individual**

Add information to **ALL** added images

Add Tags

Tags: tag inter

For multi-word tags use quotes (i.e. "image tool") or underscore (i.e. image_tool)

interaction (30)
Interaction (10)
intermediate (1)

Your previously used tags

Font size depicts relative tag usage

tag tag tag

Image Gallery

Browse Images & Collections | **Add Images**

1) Choose Images → 2) Add Images to Image Gallery → **3) Add Information to Imag**

✔ **Your images were added successfully.**

Batch | **Individual**

	Title:	Image 1.gif
	Filename:	Image 1.gif
	Description:	Add description here
	Tags:	interaction HCI
	Copyright:	Material is in public domain
	Access:	Only **members of this site** can see this file
	Title:	Image 1.gif
	Filename:	Image 1.gif
	Description:	Add description here
	Tags:	interaction HCI
	Copyright:	Material is in public domain
	Access:	Only **members of this site** can see this file
	Title:	Image 1.gif
	Filename:	Image 1.gif
	Description:	Add description here
	Tags:	interaction HCI
	Copyright:	Material is in public domain
	Access:	Only **members of this site** can see this file

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What's next

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- Image Gallery, Fluid & Resources WG collaboration
  - Envision resources of the future - my files from anywhere
- Image Gallery work released sometime next summer
- Contextual inquiries inform problem space and component work

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Fluid 0.2: January 2008

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- Maintenance release
- Strengthens our existing code base, adding:
  - Production-friendly release packaging
  - Support for almost any markup you can throw at it
  - Nested Reorderers
  - Cleaner API for modifying drag & drop behaviour
  - Consolidation on jQuery
- How you can help:
  - bug fixes, write test markup, try out the Reorderer

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Fluid 0.3: March 2008

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- Contextual inquiry and design framework
- File Upload component
- Portlet Layout Manager (drag and drop portlets)
- Tag cloud component
- Several new design patterns
- How you can help:
  - Get involved in user research
  - Code, designs, testing for new components
  - Write a design pattern

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Fluid 0.4: June 2008

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- File Picker
- File Upload 2.0
- One other new component
- U-Camps
- New design patterns
- How you can help:
  - Join the U-Camp team
  - Code, designs, testing
  - Integrate components into your tools

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Fluid 0.6: September 2008

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- Focus on adaptation
- Landmark navigation component
- Extend existing components for adaptation
- User preferences editor
- Accessibility design patterns
- A new wave of UX walkthroughs, targeted at file management
- How you can help:
  - Accessibility testing
  - Help with UX walkthroughs
  - Component and framework development help

USER EXPERIENCE

Fluid 0.8: December 2008

Fluid
Designing software
that works – for everyone

- U-Camps
- Updated design patterns CMS
- Two new components
- Lots of user testing

USER EXPERIENCE

Fluid 1.0: March 2009

Fluid
Designing software
that works – for everyone

- Last wave of Sakai 3.0 integration and testing
- Content management for UX Toolkit
- Polished do-it-yourself UX Walkthrough kit
- Two new components
- Framework next steps
- How you can help:
  - Roll Fluid components into your tool
  - Coding, design, user testing
  - Help with QA effort
  - Contribute to vision for post-funding phase

USER EXPERIENCE

Fluid

Designing software
that works – for everyone

Getting Involved

How You Can Help

Fluid
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that works – for everyone

- Join our mailing lists
- Share code
- Help with design effort
  - UX Walkthroughs are fun and easy
  - Contextual inquiry
  - Component design teams
- Use and extend Fluid components in your tools
- QA: design test plans, help with testing
- User testing
- Share design patterns

USER EXPERIENCE

Wrapping Up

Fluid
Designing software
that works – for everyone

- Fluid Project Web Site:
  http://fluidproject.org
- Our wiki:
  http://wiki.fluidproject.org
- Our source code:
  https://source.fluidproject.org/svn
- Our mailing lists:
  fluid-work@ for community collaboration
  fluid-talk@ for anything you're interested in

USER EXPERIENCE