Documenting Rich Apps

Section 2: Designing and Communicating Rich Interaction

Bill W. Scott, Y! Ajax Evangelist

bscott@yahoo-inc.com

# Designing vs. Communicating vs. Documenting

- Designing - conceive and idea through a design process.

- Communicating
  - Get buy in
  - Collaborate to ensure proper implementation

- Documenting
  - Archive ideas
  - "Hit by a bus" contingency

Design-ING

- != conceiving, creating, producing

- Formalized process
  - Studio = exploration + formal critique process
  - Divergent unrefined thinking followed by
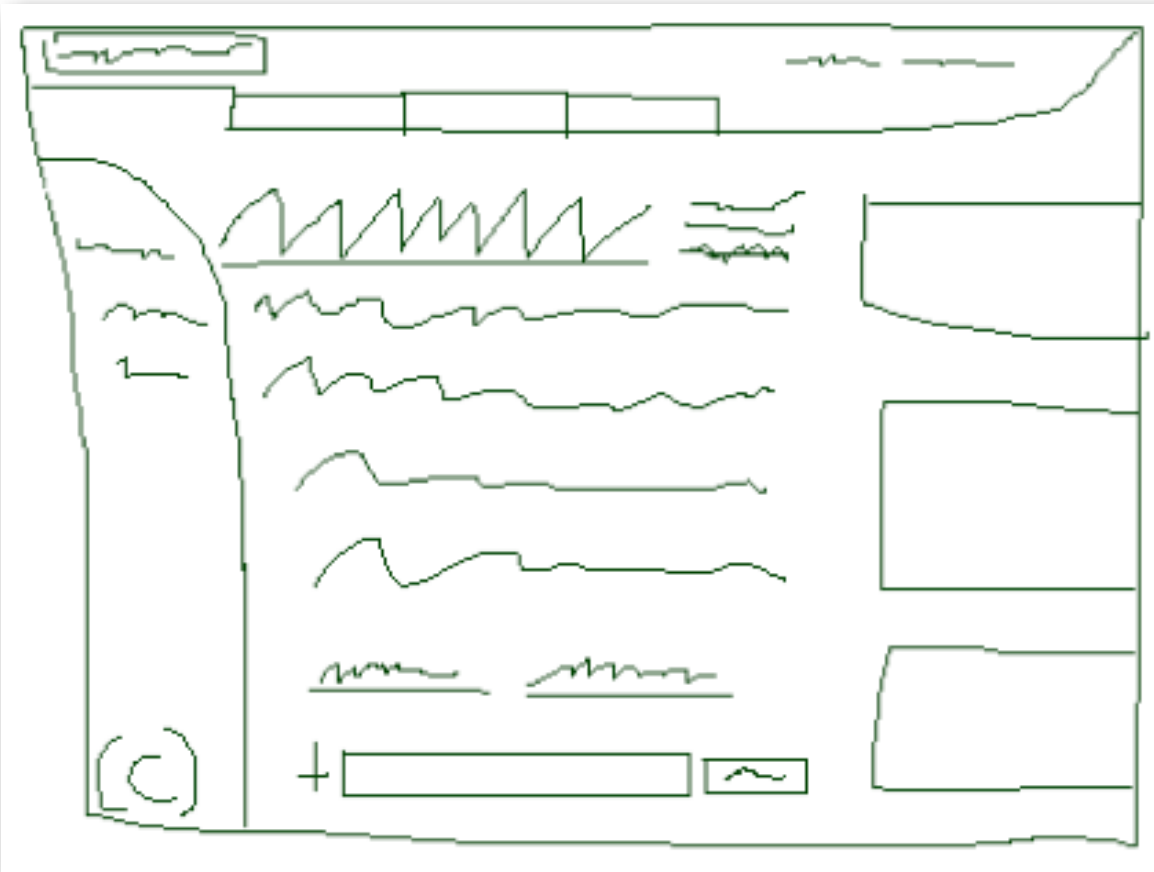   - Evaluation, testing and reflection

3 Basic Steps to Designing

- Sketching
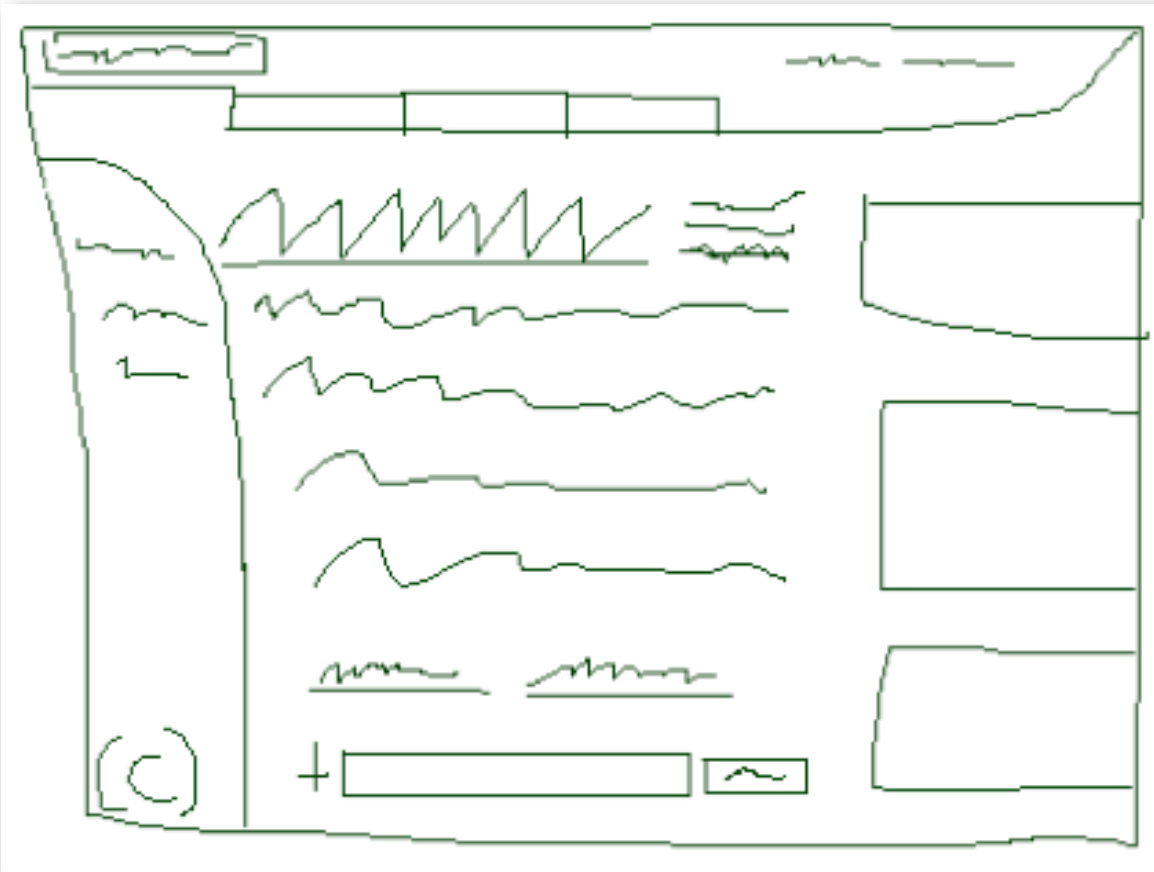
- Framework and Language

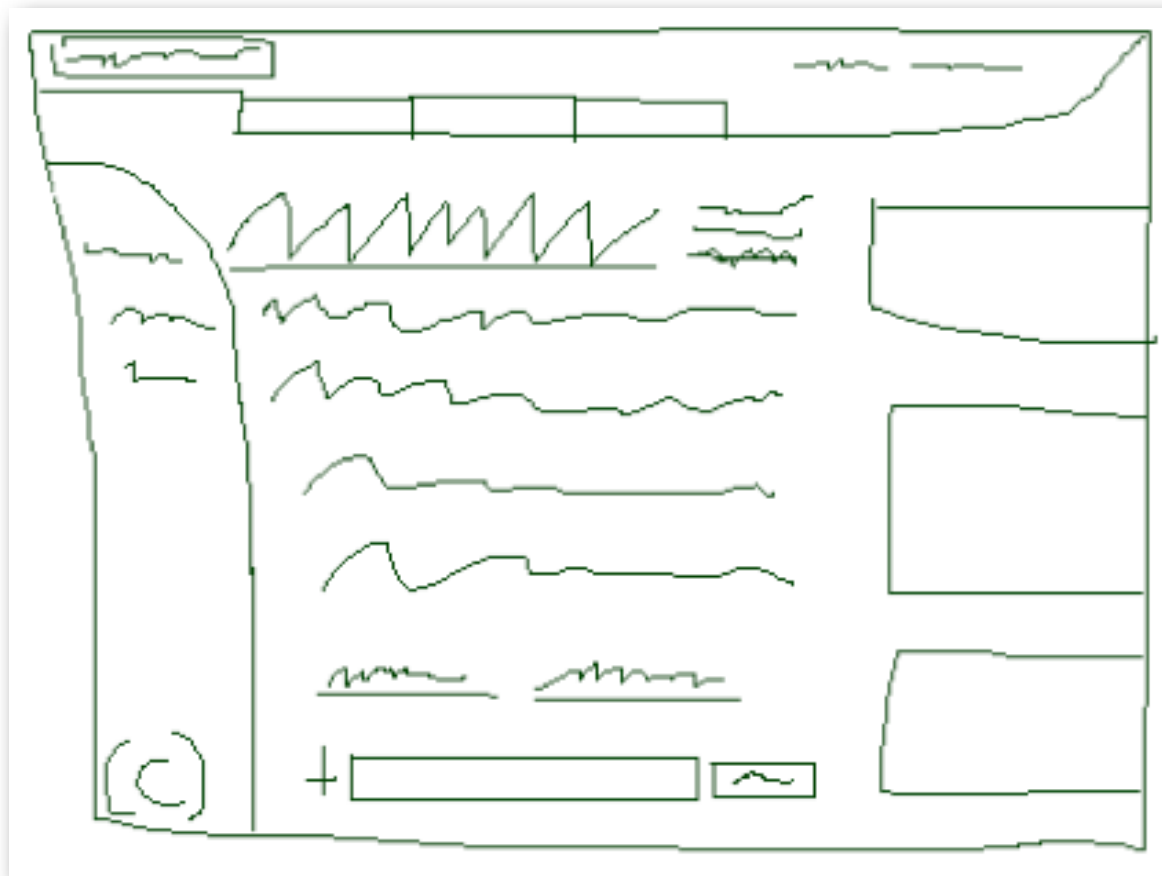- Refinement
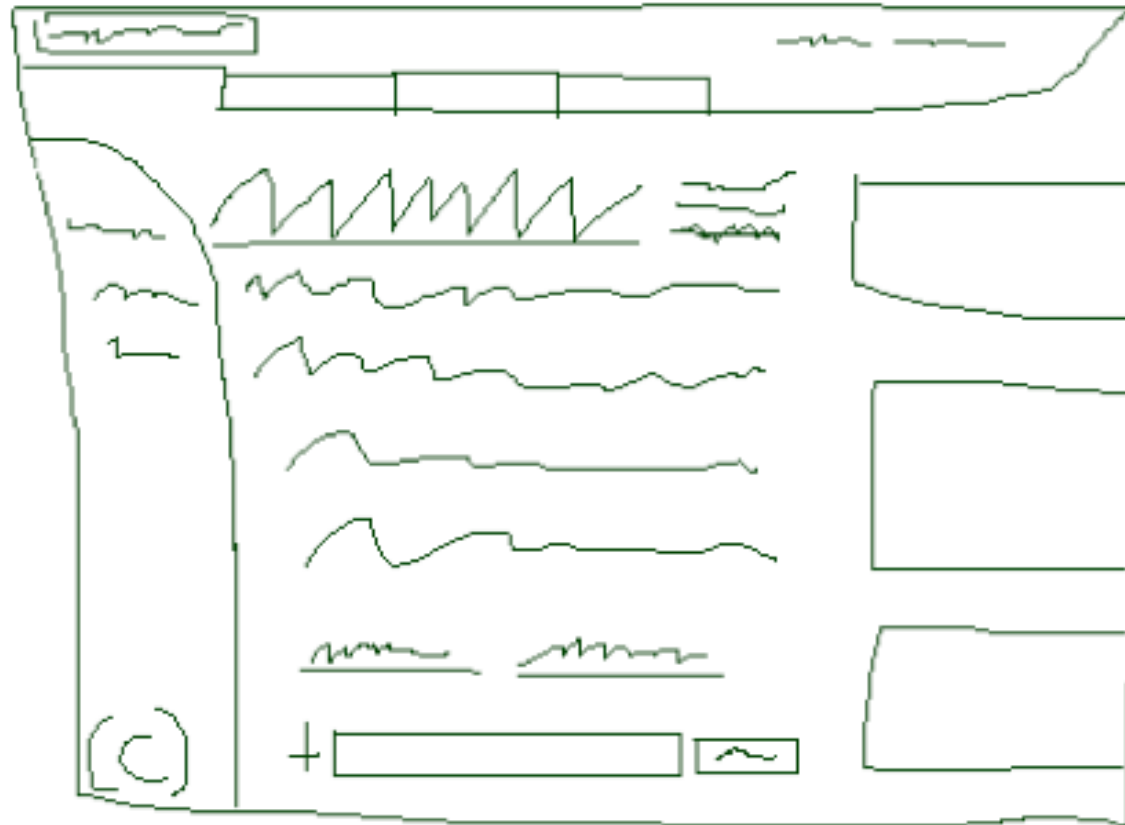
What do you see here?

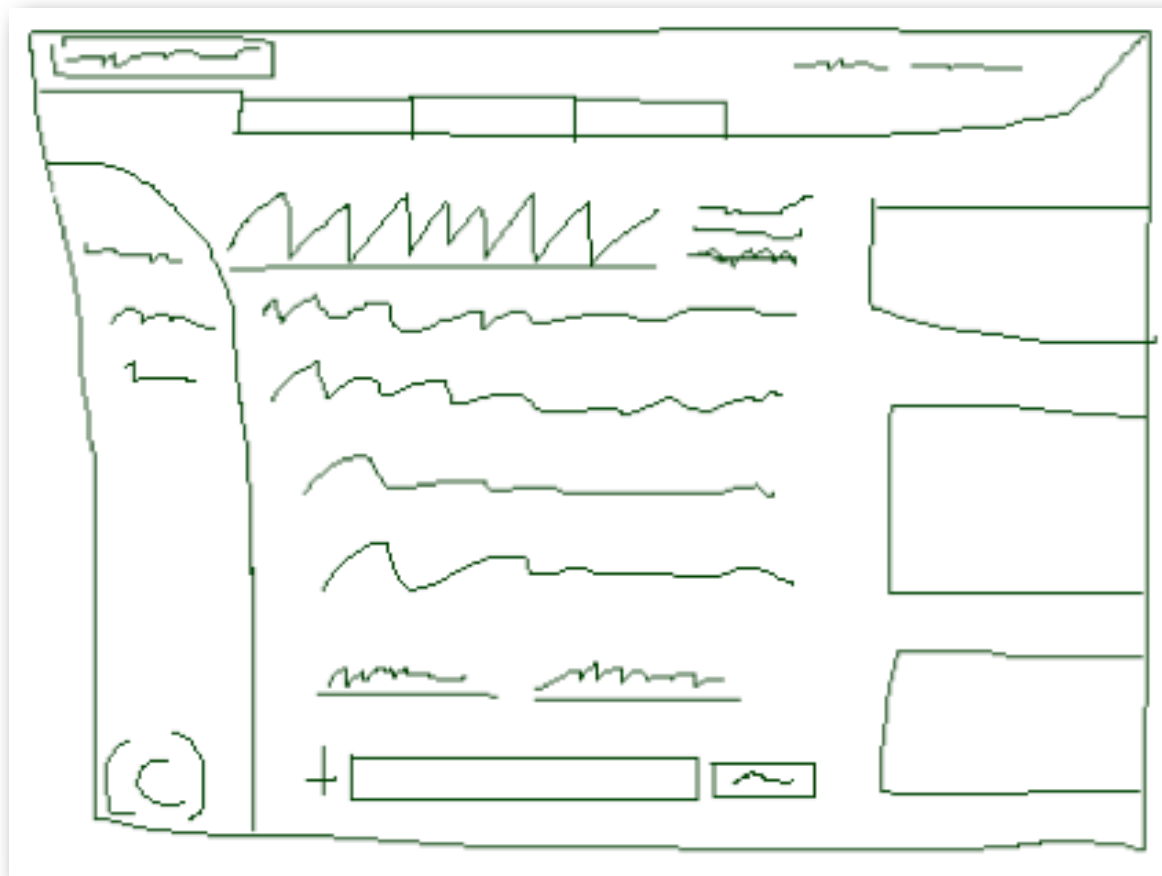# Rapid & Rough

What do you see here?

Rapid & Rough

What do you see here?
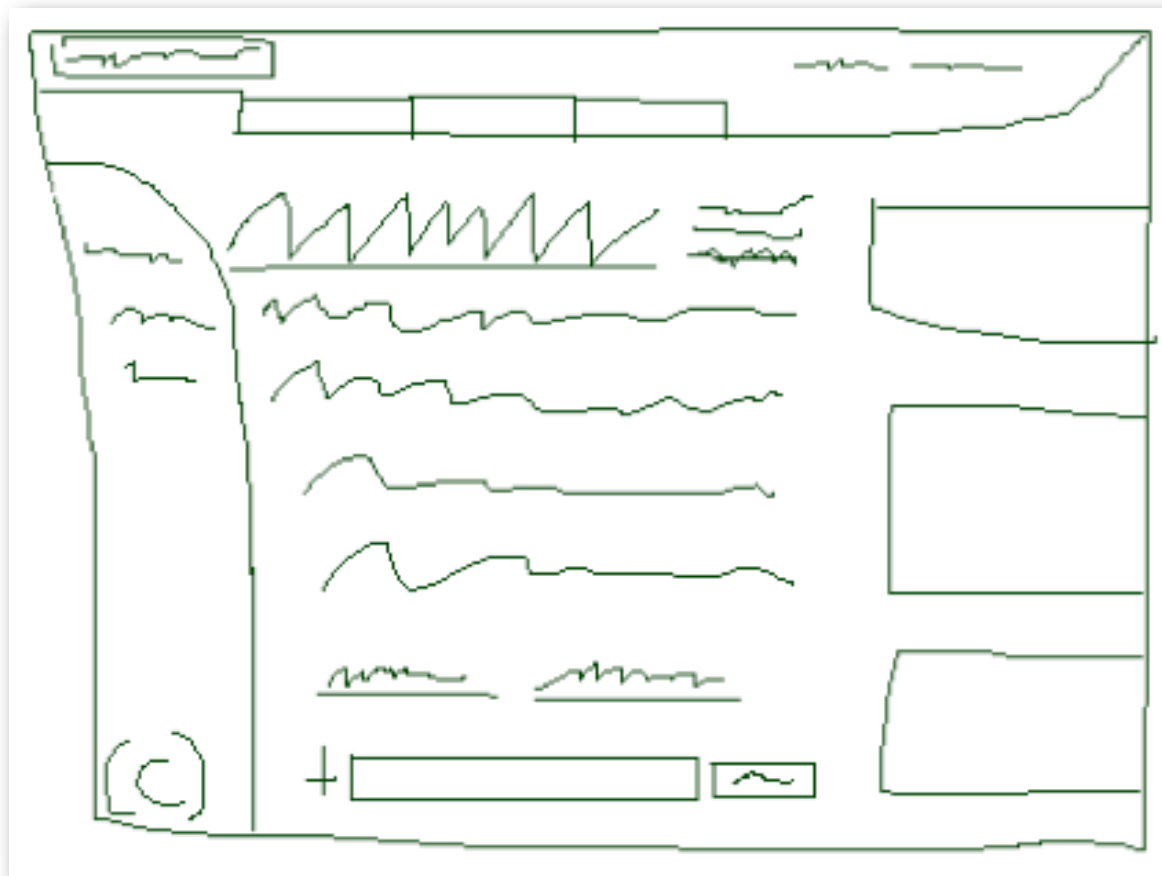
Rapid & Rough

Multipicity

What do you see here?

Rapid & Rough

Multipicity

What do you see here?

Rapid & Rough

Multipicity

Communication
CONCEPTS

What do you see here?

Bill Buxton on Sketch vs. Prototype

Sketch	Prototype
Invitation	Attendance
Suggestion	Describe
Question	Answer
Propose	Test
Destructive	Constructive

Taken from the notes of J. Spool on BrainSparks Blog of a talk given by Bill Buxton to Boston-SIGCHI.
http://www.uie.com/brainsparks/2006/11/16/buxton-on-sketching-and-experience-design/
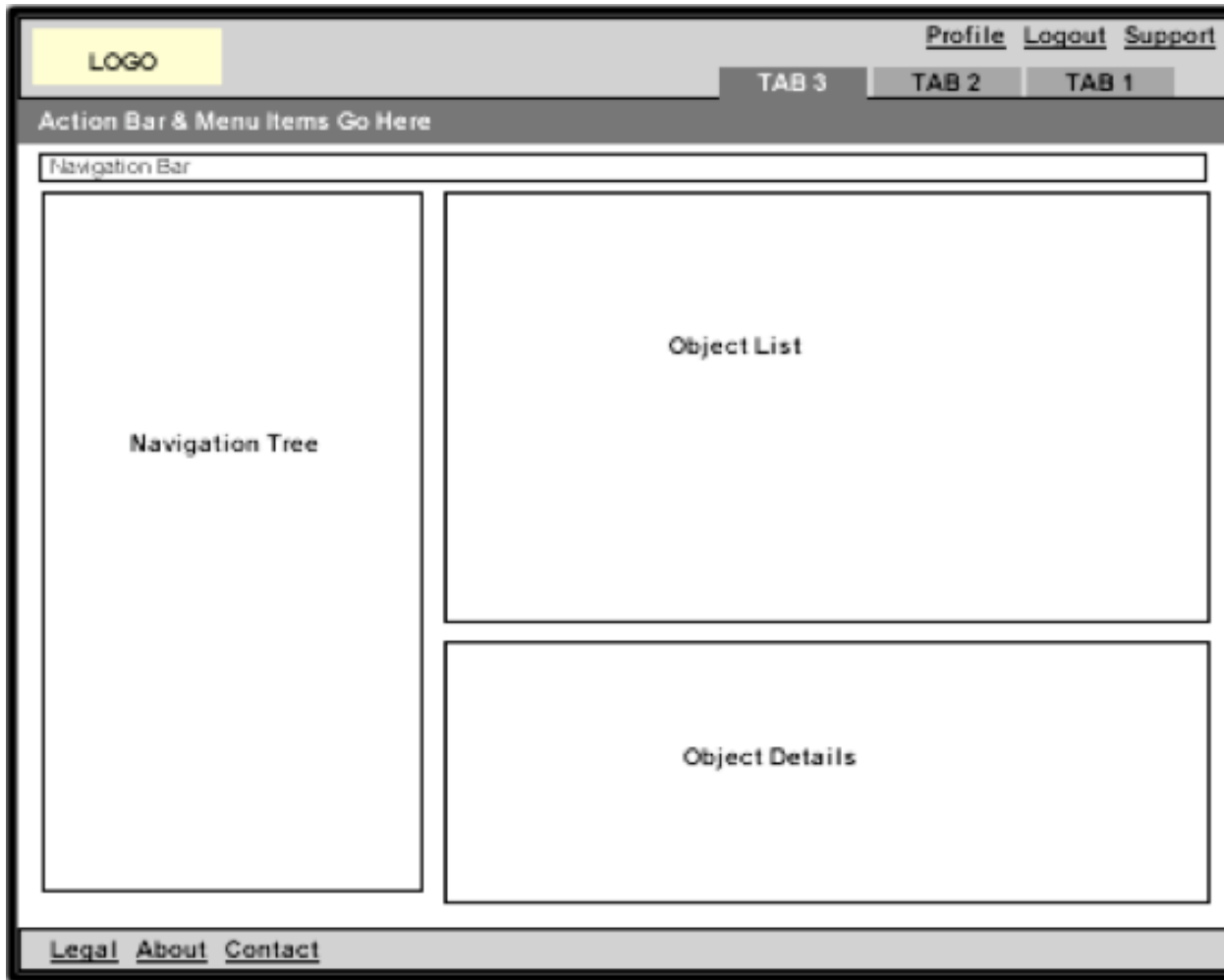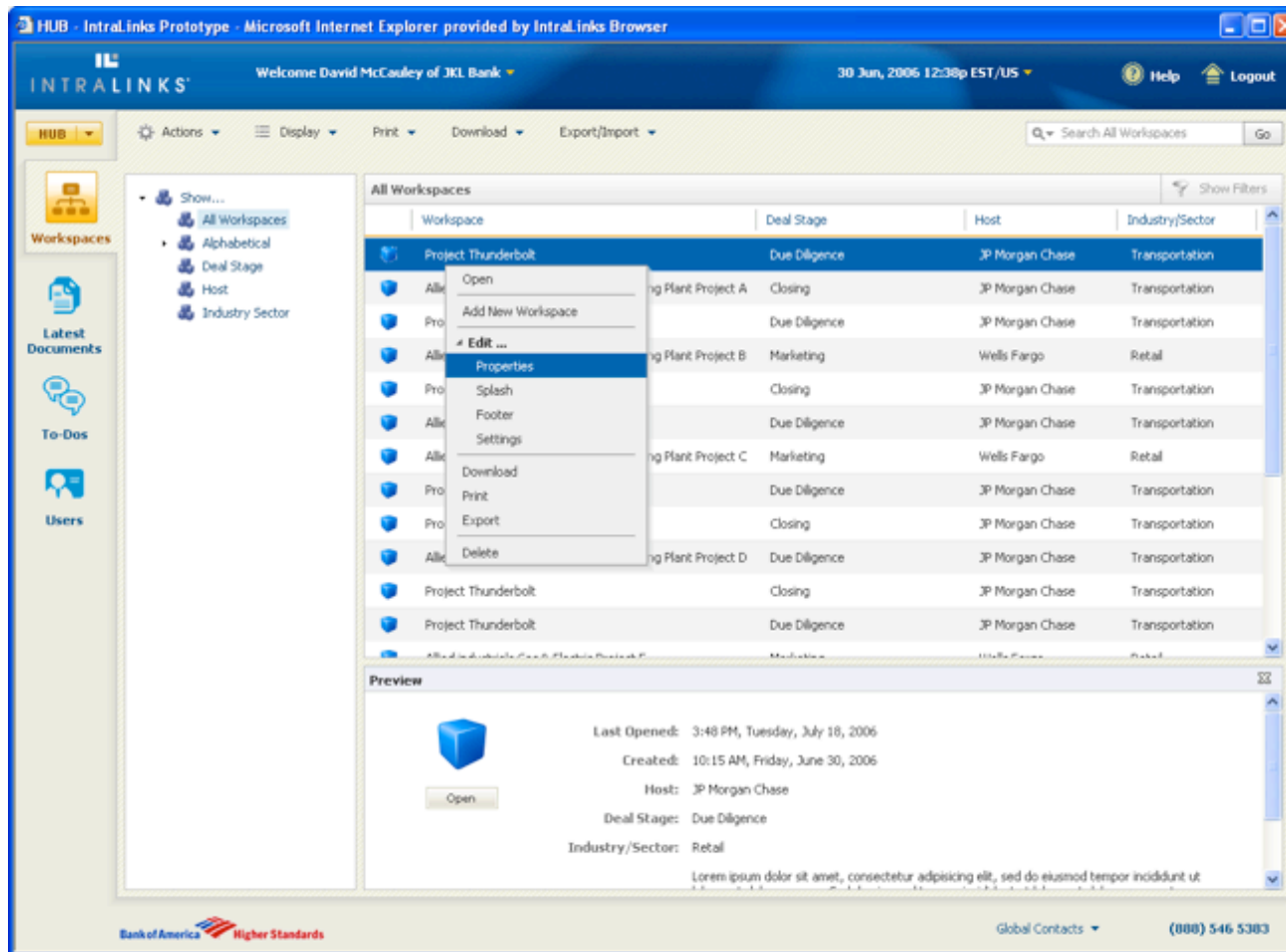
Create Structure

Navigation

Language
- Object
- Action
- Modifiers

Details

Behavior

Exceptions

States

Messaging

Designing Behavior

- Time: Behavior cannot be static

- It is not "flow" between contexts
  - Happens within a context

- Multiple states
  - Sometimes fluid motion

- Hard to communicate "intra-contextual" behaviors using static renderings
  - More difficult to test

Sample Process

- Sketch on paper/whiteboard

- Scan/Photograph into digital environment

- Trace (or re-draw) using computer tool

- Use "blocking" tool to define framework

- For further refinement, fill in blocks with higher-fidelity drawing tool

- Add interactivity so behavior can be experience, evaluated, tested and reflected upon

Documenting Blessed Moments

Wireframing AJAX is a bitch. The best our agency has come up with is the Chuck Jones approach: draw the key frames. Chuck Jones had an advantage: he knew what Bugs Bunny was going to do. We have to determine all the things a user might do, and wireframe the blessed moments of each possibility.
- Jeffrey Zeldman

http://www.alistapart.com/articles/web3point0/

- Blessed Moments =

  - Microstates

  - Interesting moments

- Challenge is how to document the microstates

Microstates, Interesting Moments

- Wireframes
  - Maps directly to the page interaction model
  - Does not map well to the microstate level

- Microstates can be captured as
  - Keyframes
  - Storyboard grids
  - LO-FI animations

Keyframe Animation
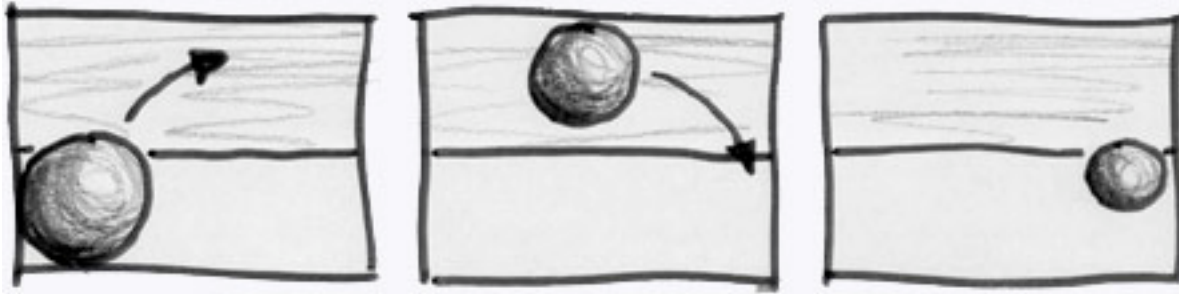
- In animation, key frames are the drawings which are essential to define a movement.
- Called "frames" because their position in time is measured in frames on a strip of film.
- A sequence of keyframes defines which movement the spectator will see
- The position of the keyframes on the film defines the timing of the movement.
- The remaining frames are filled with more drawings, called "inbetweens".
  - Scott McCloud, *Understanding Comics*, describes *Time Frames* as
    the ability of our minds to "fill in the intervening moments, creating the illusion of time and movement".

adaptive path

Participant Interface Notes

Title:	Register page
Date:	18 July 2005
Version:	1.0

Functional Notes:

The registration page allows users to signup for Participate simply by entering a user name and a valid email address.

1 Provide the user with some notification of what the email a friend action is worth in Participant points to encourage follow-through and introduce non-registered users in the Incentive program.

2 On click, commit the user's entered email addresses and message, send to target addresses, and link user to a confirmation page

3 For users who have invited friends over email, provide reporting on # invited and # accepted. Hide actual names by default, but allow users to view them by clicking the "view" link

a When user completes name entry and clicks to email entry, compare the entered name to previously claimed names on the site. If the name is a match, generate alternates that can be clicked on to fill the entry field.

> The name ryan_c is unavailable.
> How about:
> ryan_c_01
> iam_ryanc
> ryan_c_isme

↓ User makes selection or inputs new name that is valid & available:

> That name works. Thanks!

b Is it possible to treat the "submit" button click as a call to validate the form of the user's entered email? If there are any formating errors, alert the user and prevent the page from loading the confirmation.

> The address you entered isn't formatted properly.

---

branding & navigation

register

All we really need is a unique name and email, everything after that is gravy. Lorem ipsum dolor sit amet, nulla at fermentum nonummy turpis mauris rutrum justo, nec. Cras malesuada, nulla at fermentum nonummy.

create a username: [ ] *alternate names* ✳ **a**

enter your email: [ ] *email error* ✳ **b**

hot posts **1**

Instruction text lorem ipsum dolor sit amet, consectetuer adipiscing elit.

Tuesday, July 19, 2005 archive >

⊠ written by: **authorname** tag: **campaign**

...psum dolor sit amet, consectetuer adipiscing elit. Cras malesuada, nulla at fermentum nonummy, turpis mauris rutrum justo, nec molestie dolor eros porttitor lorem. Proin pharetra wisi eu tortor. Vivamus cursus tortor id purus. Suspendisse potenti. Ut dui. Vestibulum tincidunt.

comment on this post | more by this author | permalink

⊠ written by: **authorname** tag: **film** **2**

...psum dolor sit amet, consectetuer adipiscing elit. Cras malesuada, nulla at fermentum nonummy, turpis mauris rutrum justo, nec molestie dolor eros porttitor lorem. Proin pharetra wisi eu tortor. Vivamus cursus tortor id purus. Suspendisse potenti. Ut dui. Vestibulum tincidunt.

comment on this post | more by this author | permalink

Monday, July 18, 2005

⊠ written by: **authorname** tag: **campaign**

...psum dolor sit amet, consectetuer adipiscing elit. Cras malesuada, nulla at fermentum nonummy, turpis mauris rutrum justo, nec molestie dolor eros porttitor lorem. Proin pharetra wisi eu tortor. Vivamus cursus tortor id purus. Suspendisse potenti. Ut dui. Vestibulum tincidunt.

comment on this post | more by this author | permalink

archive >

⊠ **Sign me up for the mailing list** **3** submit >

footer

Keyframe Wireframing: Adaptive Path Example

a When user completes name entry and clicks to email entry, compare the entered name to previously claimed names on the site. If the name is a match, generate alternates that can be clicked on to fill the entry field.

The name ryan_c is unavailable.
How about:
ryan_c_01
iam_ryanc
ryan_c_isme

User makes selection or inputs new name that is valid & available:

That name works. Thanks!

b Is it possible to treat the "submit" button click as a call to validate the form of the user's entered email? If there are any formating errors, alert the user and prevent the page from loading the confirmation.

The address you entered isn't formatted properly.

register

All we really need is a unique name and email, everything after that is gravy. Lorem ipsum dolor sit amet, nulla at fermentum nonummy turpis mauris rutrum justo, nec. Cras malesuada, nulla at fermentum nonummy.

create a username:

alternate names **a**

enter your email:

email error **b**

- Keyframes define discrete microstates of the user interaction

Source: Adaptive Path, Designing & Building Ajax Applications, 2006

Keyframe Wireframing: Adaptive Path Example

a When user completes name entry and clicks to email entry, compare the entered name to previously claimed names on the site. If the name is a match, generate alternates that can be clicked on to fill the entry field.

The name ryan_c is unavailable. How about:
ryan_c_01
iam_ryanc
ryan_c_isme

User makes selection or inputs new name that is valid & available:

That name works. Thanks!

b Is it possible to treat the "submit" button click as a call to validate the form of the user's entered email? If there are any formating errors, alert the user and prevent the page from loading the confirmation.

The address you entered isn't formatted properly.

register

All we really need is a unique name and email, everything after that is gravy. Lorem ipsum dolor sit amet, nulla at fermentum nonummy turpis mauris rutrum justo, nec. Cras malesuada, nulla at fermentum nonummy.

create a username:

alternate names   **a**

enter your email:

email error   **b**

- Keyframes define discrete microstates of the user interaction

Source: Adaptive Path, Designing & Building Ajax Applications, 2006
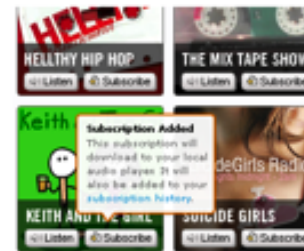
Keyframe Wireframing: Adaptive Path Example

a When user completes name entry and clicks to email entry, compare the entered name to previously claimed names on the site. If the name is a match, generate alternates that can be clicked on to fill the entry field.

> The name ryan_c is unavailable.
> How about:
> ryan_c_01
> iam_ryanc
> ryan_c_isme

User makes selection or inputs new name that is valid & available:

> That name works. Thanks!

b Is it possible to treat the "submit" button click as a call to validate the form of the user's entered email? If there are any formating errors, alert the user and prevent the page from loading the confirmation.

> The address you entered isn't formatted properly.

register

All we really need is a unique name and email, everything after that is gravy. Lorem ipsum dolor sit amet, nulla at fermentum nonummy turpis mauris rutrum justo, nec. Cras malesuada, nulla at fermentum nonummy.

create a username: [ ] *alternate names* **a**

enter your email: [ ] *email error* **b**

- Keyframes define discrete microstates of the user interaction

Source: Adaptive Path, Designing & Building Ajax Applications, 2006

Keyframe Wireframing: Yahoo! Podcast Example

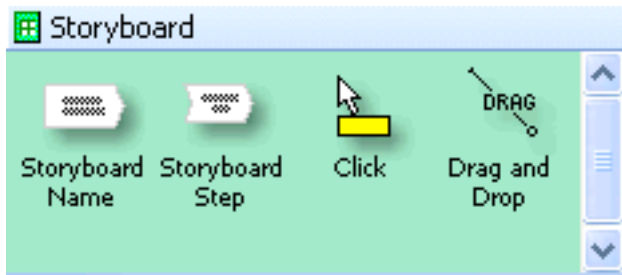# Keyframe Wireframing: Yahoo! Podcast Example
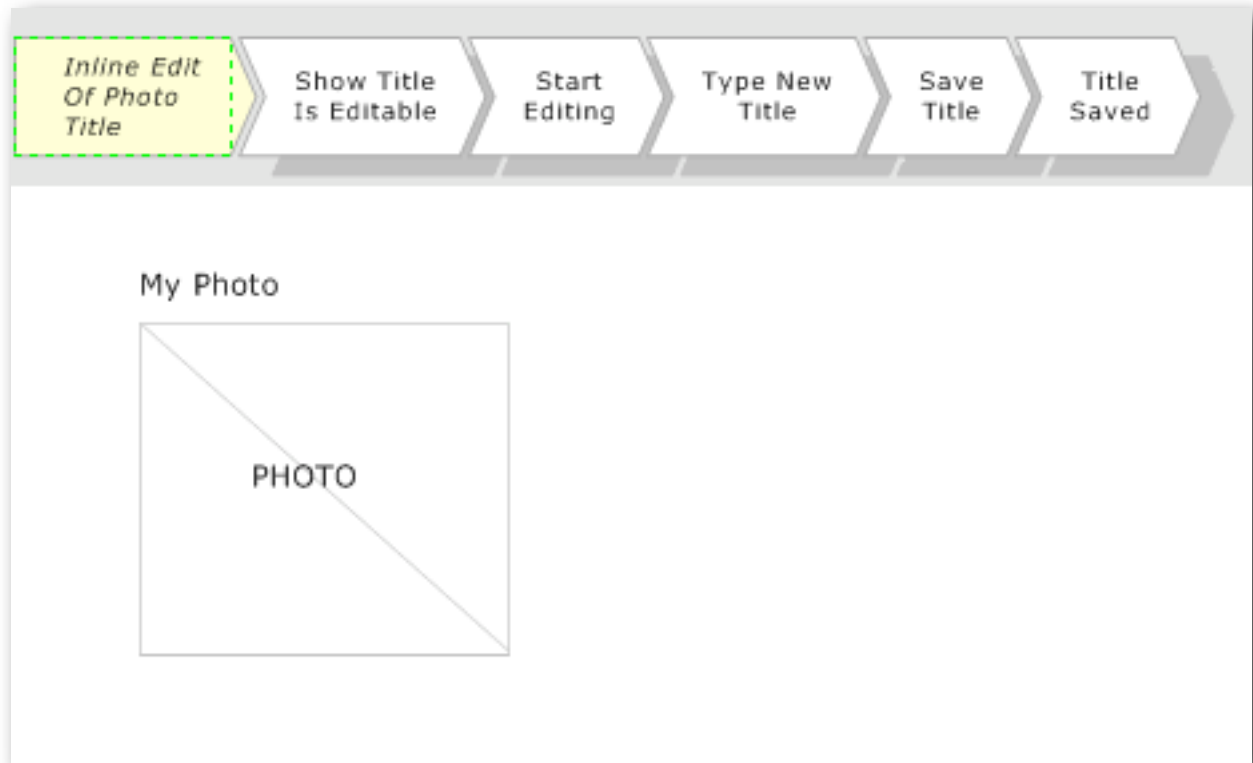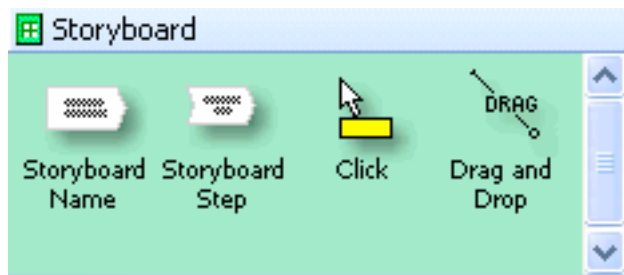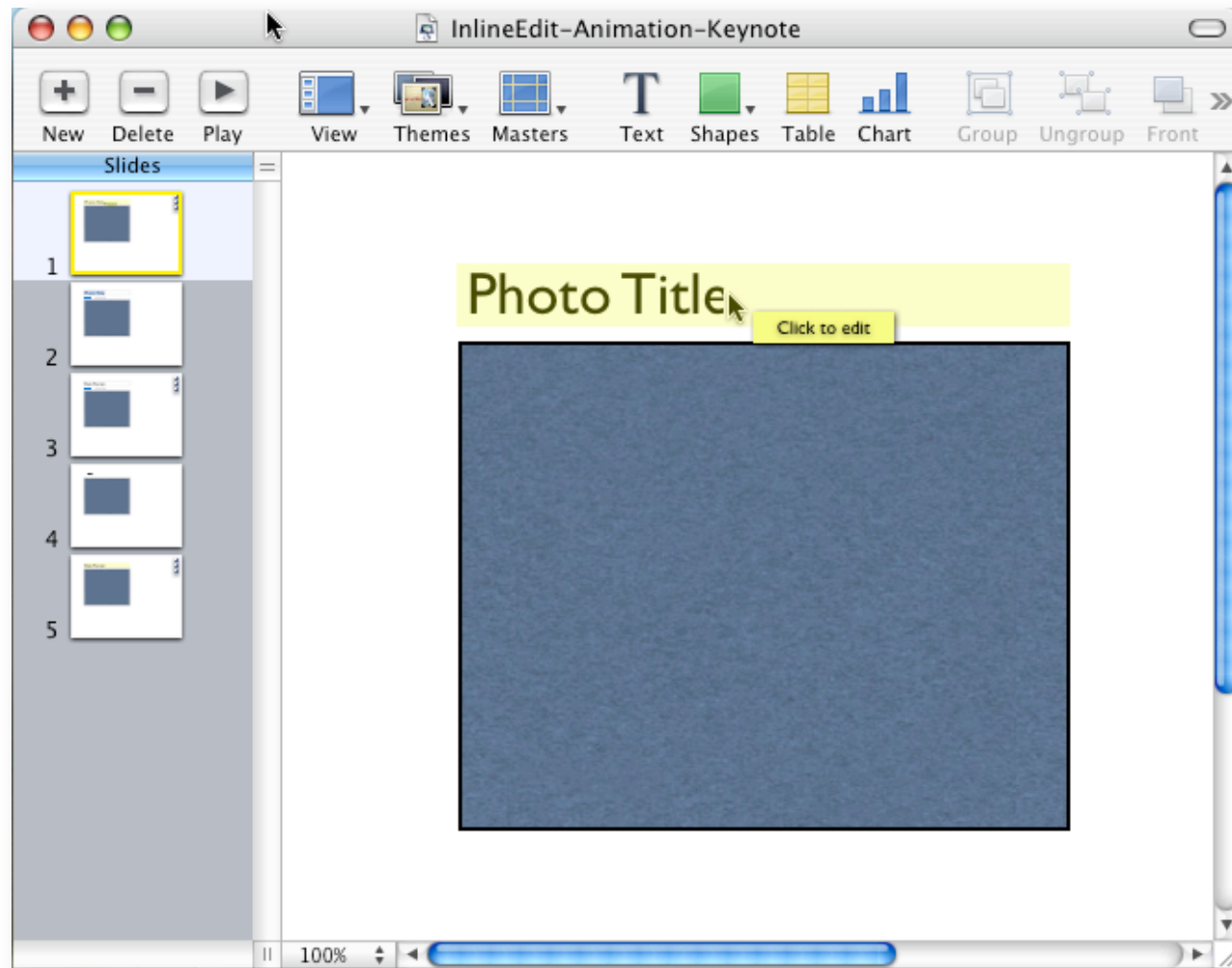
Keyframe Animation in Visio

- Animated Wireframe Toolkit
  - Changes in state placed in different layers
  - Storyboard steps toggle visibility of associated layers
  - Each storyline serves as a use case in the wireframe

Source: http://www.boxesandarrows.com/view/storyboarding_rich_internet_applications_with_visio

Keyframe Animation in Visio

- Animated Wireframe Toolkit
  - Changes in state placed in different layers
  - Storyboard steps toggle visibility of associated layers
  - Each storyline serves as a use case in the wireframe

Keyframe Animation in Visio

- Animated Wireframe Toolkit
  - Changes in state placed in different layers
  - Storyboard steps toggle visibility of associated layers
  - Each storyline serves as a use case in the wireframe

Source: http://www.boxesandarrows.com/view/storyboarding_rich_internet_applications_with_visio

Slides make major steps

Builds used to bring in transitions, animations

Photo Title

Keyframes with Fireworks + PDF

- Use frames

- Export to PDF

- Annotate in PDF

- Each frame is an "interesting moment"

- Sense of time & motion

- Can be converted to "interactive" using linking within PDF

- Can embed movies into PDF for cinematic effects

Keyframes

- Advantages
  - Consistent with current wireframe documentation
  - Show microstates in context
  - Easily generated & refined

- Disadvantages
  - Not good for branching logic
  - Not good for dense interaction
  - Makes wireframe noiser
  - Hard to show actual timing of interaction

Storyboarding

- Storyboards are graphic organizers such as a series of illustrations or images displayed in sequence for the purpose of previsualizing a motion graphic or interactive media sequence.

Storyboard for a James Bond Movie. Source http://en.wikipedia.org/wiki/Storyboard

Storyboard Grid: Drag and Drop Microstates

- Drag & Drop Interesting moments
  - Page load
  - Mouse hover over drag-able object
  - Mouse down on drag-able object
  - Drag initiated (mouse down, mouse moves >= 3 pixels)
  - Drag over valid target area
  - Drag over invalid target area
  - Drag over original location
  - Drop accepted
  - Drop rejected
  - Drop on original location

Storyboard Grid: Drag and Drop Microstates

- Actors
  - Page
  - Cursor
  - Tool Tip
  - Drag object
  - Drag ghost
  - Original location
  - Drop target

Storyboard Grid: Drag & Drop

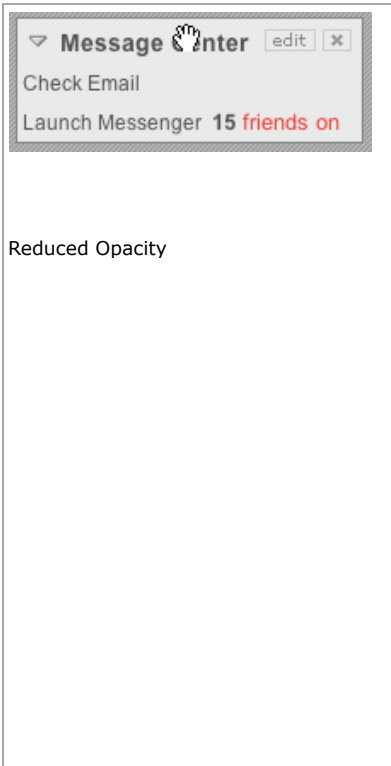|	Page Generation	Mouse Hover	Drag Initiated	Drag over Valid	Drag over Invalid	Drag over Original	Drop Accepted	Drop Rejected	Drop on Original
Page Content	Hint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cursor	Normal	Move Cursor	Move Cursor	Move Cursor	Move Cursor	Move Cursor	Normal	Normal	Normal
Drag Object	Normal	Normal	Reduced Opacity & Tracking	Reduced Opacity & Tracking	Reduced Opacity & Tracking + Invalid Badge	Reduced Opacity & Tracking	2. Modules animates into the area just below insertion bar 3. Module comes to rest in new area 4. Modules slide up in a self-healing transition to close hole	Normal Opacity + Zoom Back to Original	Normal Opacity + Zoom Back to Original
Orig Location	Normal	Normal	Hole Opens	Hole Remains	Hole Remains	Hole Remains	Hole Remains	Hole refilled with drag object	Hole refilled with drag object
Drop Target	Normal	Normal	Normal	Insertion Bar	N/A	N/A	1. Insertion Bar Removed	N/A	N/A

Storyboard Grid: Drag & Drop

	Currently on beta.my.yahoo.com		ID:	Bill Scott & Eric Miraglia	

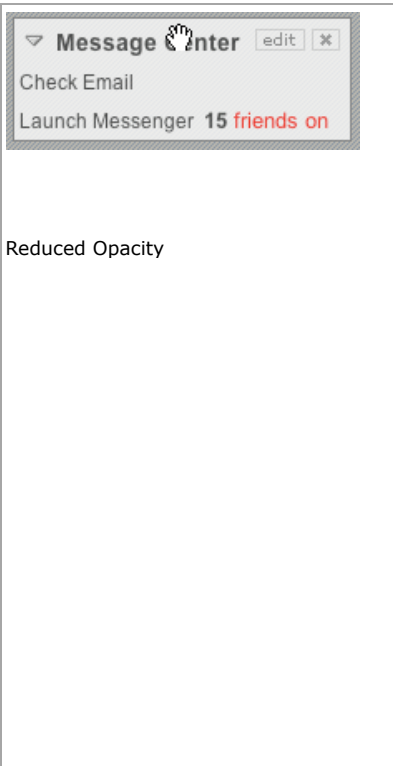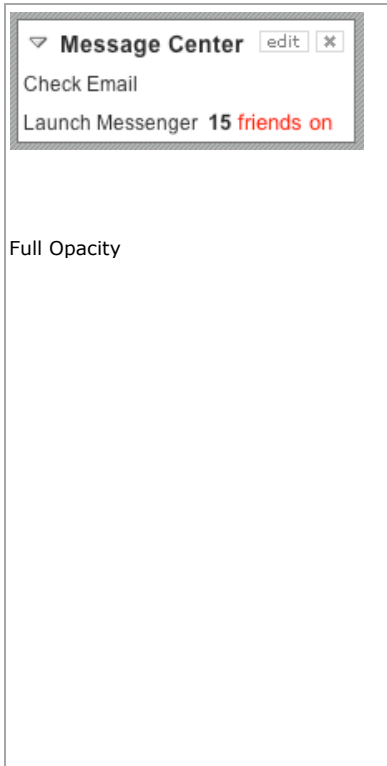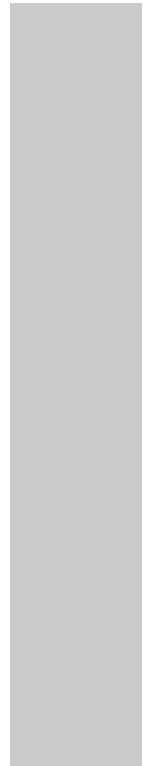|	Mouse Hover	Mouse Down	Drag Initiated	Drag Over Valid Target	Drag Over Invalid Target	Dr... Paren...
Cursor	CSS Move curs...	CSS Move cursor	CSS Move cursor	CSS Move cursor	CSS Move cursor	CSS Move cursor
Tool Tip						
Drag Object		Full Opacity	Reduced Opacity	Reduced Opacity	Reduced Opacity & Invalid Badge	Reduced Opacity
Drop Target		No insertion bar, just a gap	No insertion bar, just a gap	Insertion bar showing where it will drop	No insertion bar, just a gap	No insertion bar, j...
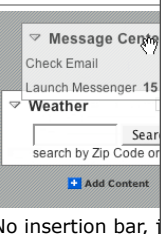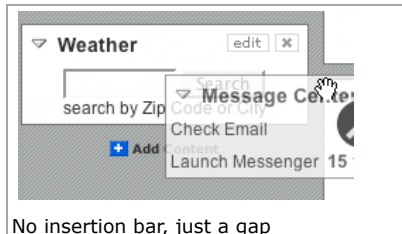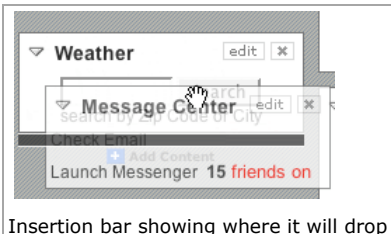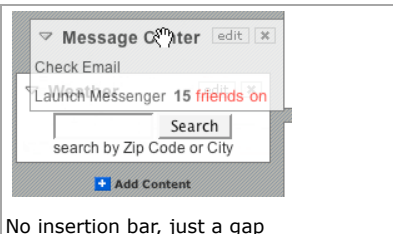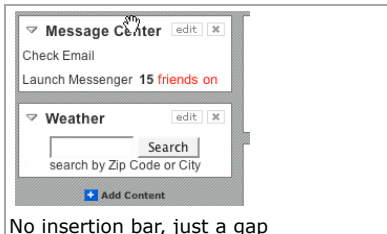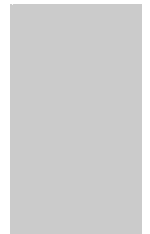
Storyboard Grids: My Yahoo! Example

Storyboard Grids

- Advantages
  - Denotes detailed interaction in context of time & objects
  - Sequence denoted by linear time layout
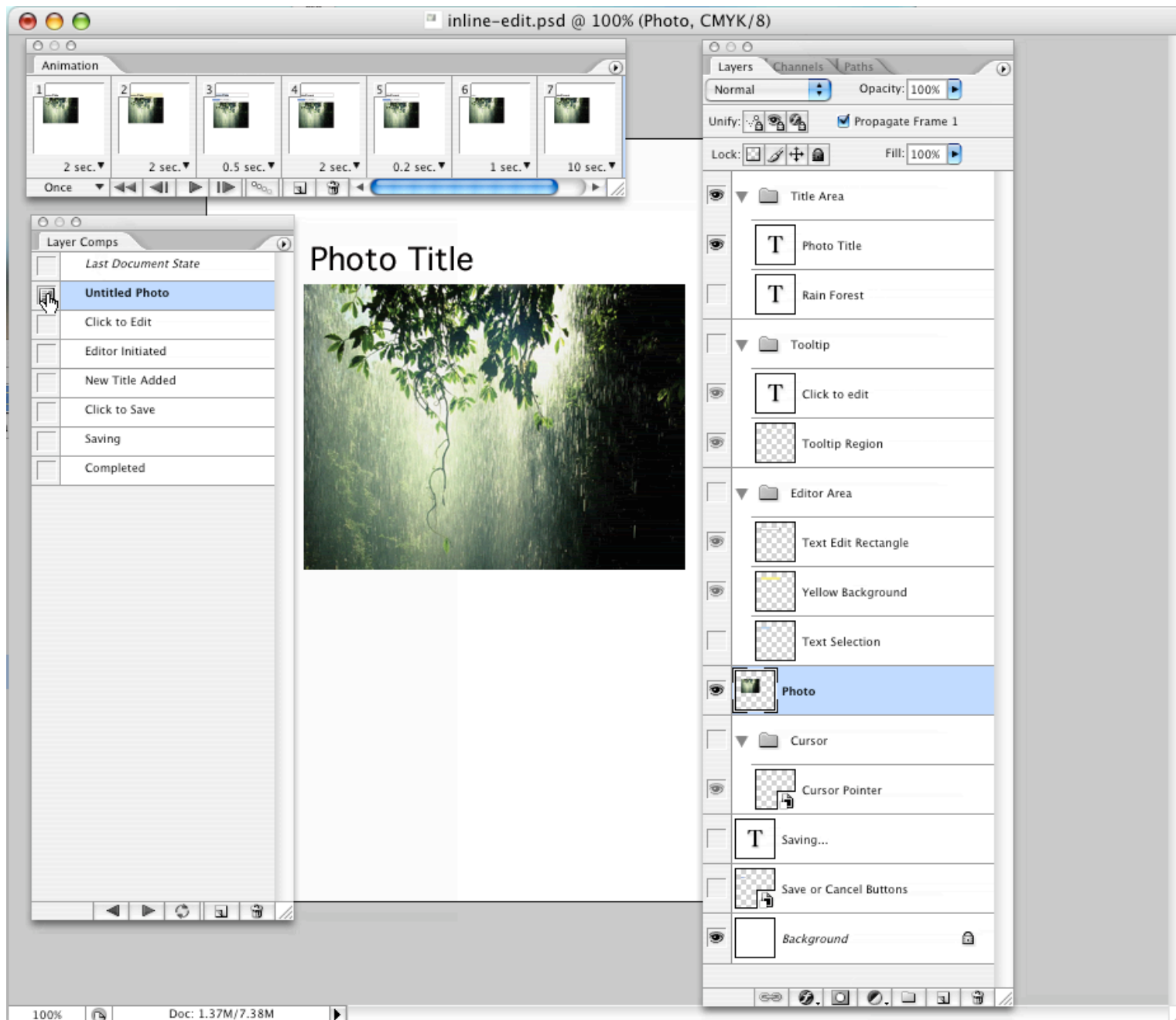 - Easy to treat as a sketching grid

- Disadvantages
  - Outside of context of page
  - Can contain microstates that require keyframes (complex)
  - Good for microstates, but not overall interaction
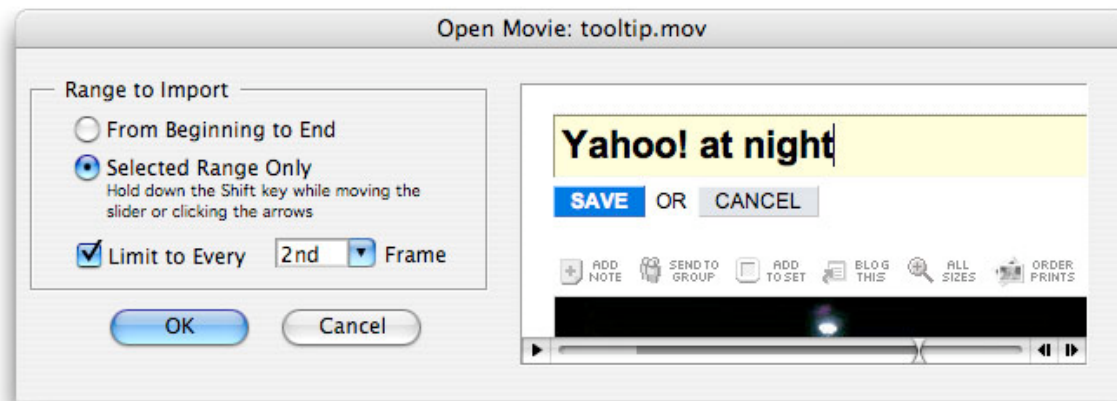
LO-FI Animation

- Animated GIF
  - Easy to create from a series of images
  - Images can be created by hand or
  - Images can be captured from other applications

LO-FI Animation with Photoshop

LO-FI Animation from Screencasts

- Start with screencast of existing interaction
  - Mac: SnapZPro; Windows: SnagIt

- Use tool like Adobe ImageReady to turn into animated GIF
  - Place QT Movie in folder by itself
  - File:Import:Folder As Frames

  - File:Save Optimized As...

LO-FI Animations

- Advantages
  - Easy to illustrate rate of animation
  - Quick to communicate how the interaction will look
  - Easy to integrate into wikis, web sites, etc.
  - Can complement wireframes

- Disadvantages
  - Needs supporting documentation
  - Lacks technical details
  - Not real implementation

Other Tools, Approaches

- Flash

- Flex

- DHTML

- iRise (www.irise.com)

- Axure (www.axure.com)

- Interactive PDFs
  - http://www.gotomedia.com/gotoreport/may2005/news_0505_usable1.html

- Word

Resources

Articles

Web 3.0 article: www.alistapart.com/articles/web3point0/

looksgoodworkswell.blogspot.com/2005/11/visio-wireframe-toolkit-for-download.html

looksgoodworkswell.blogspot.com/2005/11/animating-interactions-with-photoshop.html

Prototyping with PowerPoint: blogs.msdn.com/jensenh/archive/2006/02/20/535444.aspx

Visio - the interaction designer's nail gun: http://www.guuui.com/issues/01_06.php

PDF Prototyping: http://www.gotomedia.com/gotoreport/may2005/news_0505_usable1.html

Products

www.axure.com/demo.aspx

iRise Application Simulator: irise.com

Visio Stencils

www.boxesandarrows.com/view/storyboarding_rich_internet_applications_with_visio

Visio Stencil Library: swipr.com

Wireframe Stencils: http://iainstitute.org/tools/

Garrett Dimon's Stencils: http://www.garrettdimon.com/resources/templates-stencils-for-visio-omnigraffle