

Prototyping and Usability Testing with Visio

- ◆ Karen Bachmann
- ◆ Whitney Quesenbery,
Whitney Interactive Design

Overview of Prototyping

Uses, functions and
types of prototypes

What is a prototype?

- A model of the final product
 - ◆ A way to see what something will be like before it is built.
- A vehicle for exploration
 - ◆ A way to validate ideas in a low-risk environment before making a final decision
- A proof of concept
 - ◆ A way to test specific aspects of a design problem
- A method of communication
 - ◆ A way to develop and maintain an understanding of the end result with the development team

Why prototype?

- Explore
 - ◆ Create a strong design by iterating through ideas rapidly
- Communicate
 - ◆ Demonstrate progress against time lines in tangible format
- Collaborate
 - ◆ Enhance collaboration with other teams through clear understanding and a shared vocabulary
- Validate
 - ◆ Test a design in early stages when changes can be made easily

Prototyping goals

1. Can users work effectively with the interface

- Visual or information design issues
 - ◆ Can the user find and understand the information on the screen?
- Navigation issues
 - ◆ Does the user understand the meaning of each control?
Can they find the controls or information needed to complete their task?
- Efficiency issues
 - ◆ Can the user work quickly enough to meet usability goals

Prototyping goals

2. Demonstrate the user interface

- Communicate the design to developers, marketing, management, or customers
- Walk through proposed navigation design
- Match screens and controls to use cases
- Demo proposed functionality to internal or external groups

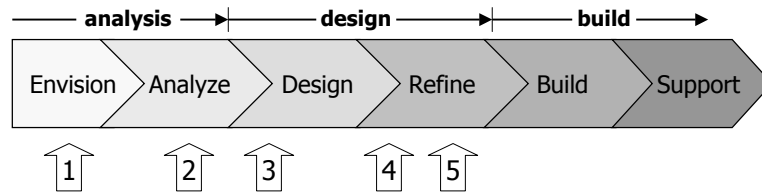
Types of prototypes

- Low fidelity (wire-frames)
 - ◆ Simple layout sketches which usually focus on content and layout
- Slide shows
 - ◆ High fidelity visual design, but with minimal interactivity
- Medium fidelity
 - ◆ Good visual fidelity with nominal interaction capability following a scenario
- High fidelity
 - ◆ Full interaction capabilities and detailed screen layouts.

What to include in a prototype?

- Horizontal
 - ◆ Full breath of functionality, but with little depth
- Vertical
 - ◆ Complete demonstration of representative tasks or information paths
- Key Screen or T-Prototype
 - ◆ Full breadth indicated, with 1-2 tasks prototyped in detail

When to prototype?



- ◆ vision prototypes expose early ideas to comment
- ◆ wireframes accompany use-case analysis or participatory design sessions
- ◆ key screen prototype demonstrates interaction structure/UI architecture
- ◆ prototypes validate specific or complex work flows
- ◆ visual prototypes test layout for usability and technology

Selecting a prototyping tool

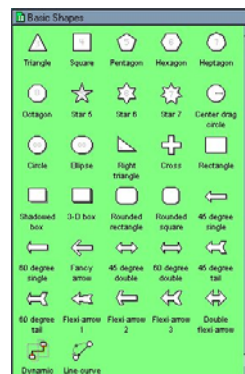
- Paper
 - ◆ low fidelity and difficult to distribute
- HTML
 - ◆ good for navigation, but not always appropriate
- Development environment
 - ◆ high fidelity, but slow and can limit creativity
- Director (or other interactive environments)
 - ◆ good for experimental interactions, can be rapid, can be too different from final environment
- Visio
 - ◆ hybrid: rapid, high screen fidelity, moderate interaction

Visio as a Prototyping Tool

Effective use of Visio to create screen prototypes that are in close fidelity to the final screen layout.

Introducing Visio

- An object-oriented drawing program
- Basic building blocks:
 - ◆ Shapes and stencils: Range from basic shapes and flowcharting to Windows UI and UML
 - ◆ Templates: Support consistent use and reuse of elements throughout prototype
 - ◆ Backgrounds: Contain common elements applied across screens



Visio basics

- Setting up a screen layout to be correctly proportional
- Working with existing templates and stencils
- Creating backgrounds
- Creating custom shapes in a drawing master stencil
- Building custom stencils and template

Visio drawing structure

- Benefits of using stencils
 - ◆ Consistency within and between projects
 - ◆ Reusable repository of elements and layouts
 - ◆ Rapid development of prototypes
- Analyzing visual design and layout
 - ◆ Customizable grid layout
- Creating composite shapes for screen objects
 - ◆ Custom stencils
 - ◆ Custom shapes
 - ◆ Layered backgrounds

Creating the Prototype

HTML pages contain an image of the Visio page and image map hyperlinks.

1. Prepare

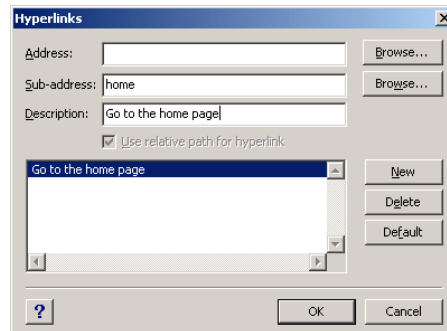
- Understand how the demo will be used
 - ◆ Will the demo use a script or be free-form?
- What functions will be included?
 - ◆ What Visio pages represent these functions
- What links or other interactivity are required?
 - ◆ Be sure the level of interactivity is appropriate for Visio
 - ◆ Plan strategies for complex interactions

2. Plan the interactivity

- Identify all pages or screens in the demo
 - ◆ Create a single Visio file with all pages
- Draw an overall navigation flow
 - ◆ How to the individual pages connect to each other
- Identify the links on each page
 - ◆ (Optional) Move any global links to the background layer
 - ◆ Identify the Visio page that is the target of each link

3. Create the links

- To create a link:
 - ◆ Select a shape
 - ◆ Select Insert | Hyperlink or Alt-K
- Enter the link target
 - ◆ Address: Leave blank for the current file
 - ◆ Sub-Address: Select a the Visio page
 - ◆ Description: Enter appropriate text

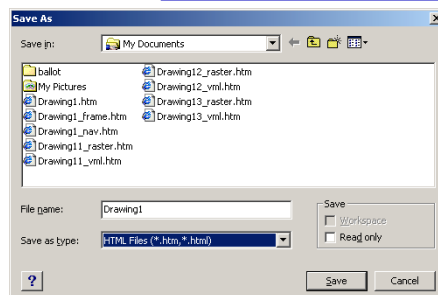


Tips

- **Hyperlink tips**
 - ◆ Links on background pages or grouped shapes only work in Visio 2000
 - ◆ Do not layer links on top of each other
 - ◆ Do not create multiple targets to a link
 - ◆ Links work better on solid objects, with a larger click-target
- **Delete any shapes outside the page layout area**
 - ◆ The HTML page image will contain all shapes on each page, including hidden shapes or those on a different layer
 - ◆ If you included browser toolbars in the layouts, delete them

4. Save As HTML

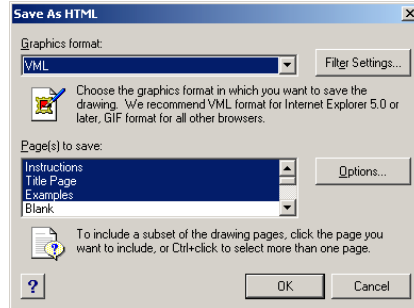
- **Save your file, then Save As HTML**
- **All HTML files will be created in the selected directory, with File Name as a prefix**
- **Files created:**
 - ◆ filename.htm
 - ◆ filename_frame.htm
 - ◆ filename_nav.htm
 - ◆ .js files and nav images



- ◆ *_raster.htm
 - ◆ *_raster.gif/jpeg
 - ◆ *_vml.htm
 - ◆ *_vml.enz
 - ◆ *_vml.vml
- } Only if VML is selected

4a. Save As HTML options

- Select graphic format
 - ◆ VML - scaleable, but only works in IE5
 - ◆ GIF, JPEG - work in all browsers
 - ◆ PNG - works in some browsers
- Select pages to include
 - ◆ Default is all foreground pages



Be sure to test a typical page to see which graphics format works best for your page images

5. View the prototype

- Two ways to navigate:
 - ◆ Use hyperlinks in your screens
 - ◆ Use the page index in the bottom frame

Usability Testing with Visio Prototypes

Conducting a usability test with a Visio prototype.
A rapid usability technique to gain insights into users' reactions to specific user interface elements.

15 mins

What can Visio effectively test?

Yes

- ◆ Navigation between major functions or within a single task
- ◆ Screen layout and placement or grouping of controls
- ◆ Terminology and language in the interface
- ◆ How well users understand functionality provided
- ◆ Choice of graphical elements, such as icons

No

- ◆ Complex interaction requiring dynamic presentation of information
- ◆ How well users can complete forms, especially with program response to data entry
- ◆ Windows management

Planning a usability test

- Establish goals and scope
 - ◆ What do you hope to learn?
- Plan the usability test
 - ◆ What tasks or sections of the product are included?
 - ◆ Scripted task or user-driven exploration?
 - ◆ What functionality must be active?
- Recruit users and set up facility
 - ◆ 2-3 users per round
 - ◆ Plan facilitation and interaction areas

Guerilla usability tests

- Small in scope
 - ◆ Looking for input on specific design problems
 - ◆ Testing overall organization of workflow or information architecture
- Small number of users per iteration
 - ◆ Just enough to gain enough insight to confirm or iterate design

How do users interact with the prototype?

- Navigation is done on-screen
 - ◆ All buttons, links or other major navigation controls are active and can be used to move from page to page
- Post-it notes represent
 - ◆ Drop down menus or combo boxes
 - ◆ Some popup windows
- Filling in forms on paper
 - ◆ Print outs of the forms let users write in any data they would enter.
- Talk through the actions
 - ◆ Users describe aloud what actions they take and data they use

Sounds crazy!

...but it works.

- The informality is infectious
 - ◆ It's relaxing and interactive for the users
 - ◆ Users have little trouble moving from screen to paper when necessary (as long as they match)
 - ◆ The fact that it's obviously a work in progress encourages users to make suggestions and talk easily
 - ◆ Users will feel that they are making a real contribution to the development of new products

Any questions?

Reading List

- **Prototyping Using Visio by Robin Kavanagh and John Soety**
<http://www.stcsig.org/usability/newsletter/0007-prototypingvisio.html>
- **Usability Methods Toolbox (Section on prototyping)**
<http://www.best.com/~jthom/usability/usable.htm>
- **Five Paper Prototyping Tips by Matthew Klee**
<http://world.std.com/~uieweb/paperproto.htm>
- **Using Paper Prototypes to Manage Risk**
<http://world.std.com/~uieweb/paper.htm>
- **Conceptual User Interface: A New Tool for Designing E-Commerce User Interfaces**
<http://mime1.gtri.gatech.edu/tim/imb/papers/cui.html>
- **Interactive Sketching for the Early Stages of User Interface Design by James A. Landay and Brad A. Myers**
http://www.cs.berkeley.edu/~landay/research/publications/SILK_CHI/jal1bdy.html
- **Microsoft Visio Tips & Tricks**
<http://officeupdate.microsoft.com/visio/tips/vistips.asp>

Contacting Us



Whitney Quesenbery
Whitney Interactive Design
www.WQusability.com
whitneyq@wqusability.com

Karen Bachmann
karenlynn@mindspring.com