Seminar 9
Title: Prototyping in action
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Unit framework

Seminar / studio Objectives

- Understanding of the differences between a prototype and an fully developed information system
- Ability to select the most appropriate type and format for the development of a prototype for a given situation
- Develop paper and computer based prototypes.
Seminar overview

- What is prototyping?
- Steps in developing a prototype
- The prototyping team
- Types of prototyping
- Prototype formats

References [1]


What is prototyping?

- An iterative design tool to explore and refine ideas
- Is a disposal item
- Relies on tools that enable the interface to be specified quickly
- Can be used as part of a rapid application development (RAD) process
- Often a working mini-version of the final product
- ‘proof of concept’
- Demonstrates the underlying technology of the final product
- A potential marketing tool
Why prototyping?

- Easy for users to point out what they DON’T like from a computer system or screen, rather than defining what they want
- It is an evolutionary process
- Can be non-operational (screen only)
- Can be fully operational pilot (or proof of concept)
- Can have some features operational
- Useful when requirements are hard to define
- Can be used within an SDLC process to help determine requirements

Benefits of prototyping

- Usually quick to build
- (Rapid) iteration
- Client and developers work closely together
- Technical and non-technical people work side by side
- Feedback is obtained without excessive amounts of recourse being used
- Reduced documentation requirements
- Is often unstructured

Steps in prototyping

(Martin et al (2005) p397)
The prototyping team

- IT manager + Business manager + user + developer
- (They all may be the same person)
- Need to determine what to continue or when to stop
- The user needs to be dedicated as there is continual (and time consuming) involvement.
- The project manager needs to respond quickly to user requests (Ok is good enough)

Types of prototyping [1]
(see Benson and Standing, p206-207)

- Feasibility prototyping:
  - Explores the technologies that may be used. These could be computer hardware, or interaction styles
- Requirements prototyping:
  - Defines the users' requirements. Composed of screen with menus, icons and forms to illustrate the types of data to be captured or output. The screen design is not important. ('grayscale prototyping') - video

Types of prototyping [2]
(see Benson and Standing, p206-207)

- Design prototyping:
  - Developing the user interface to show users. Users explore the ease of use, layout, input, help and error messages
- Implementation prototyping:
  - The prototype is extended to be the actual system, though not fully featured, eg security, editing may be omitted
Prototyping formats: Paper

To enable draft interaction designs and screen designs to be very rapidly simulated and tested.
Four stages of paper prototyping may be required:
1. concept design: to explore different metaphors and instructional strategies
2. interaction design: to organise the structure of screens or pages
3. screen design: for initial design of each individual screen
4. screen testing: to refine the screen layout

[http://www.usability.serco.com/trump/methods/basic/prototyping.htm]

Prototyping formats

- Whiteboard
- Pen/Paper/Sticky notes
- Electronic – use of application software (eg PowerPoint, Access), 4GL programming languages (eg VB), or Web tools (eg Dreamweaver)

“The more of the final product a prototype covers, the more the product is designed. But a prototype cannot cover all the details. For the prototype to work as an effective tool in an iterative design process you need to make the right trade-off between graphic detail, the level of interactivity and the breadth and depth of features covered by the prototype.”

http://www.guuui.com/issues/03_05.php?PHPSES SID=a41b5938cf839b5729083f0ed04a8ba0
Tips from the developers

- Don’t get carried away in making the prototype look pretty
- Keep interactivity at a medium to high level
- Don’t compromise on breadth
- Compromise as much as you can on depth
- Set (and document) some standards as you develop the prototype
- Iteration is the key to prototype designs, this means that work will be done, undone, redone. Don’t let this irritate you.

Web design myths [1]

- Web design is about HTML, layout, and typography.

Since the beginning of the Web, there has been an unfortunate terminology problem in Web design circles. Traditional art and design schools focus considerable attention on mastery of media, and rightly so. However, this media-oriented way of thinking about design applies best to design problems that have little or no complex structure, no architecture to worry about. Jumping directly to the crafting of individual pages short-circuits the important planning phase that information architects soon recognized was required for Web sites more complex than a handful of pages. Moreover, traditional Web designers have typically focused on implementation, not just planning and prototyping, the primary design activity where planning and prototyping is the primary design activity and where implementation is subsequently performed by programmers. Because Web implementation has historically been relatively easy at the front end, it has often been lumped together with the design process. For truly graphic designers, who were recruited for Web design in the boom times, the design of a graphic image also means its implementation. However, to produce superior solutions, most commercial Web sites today require a greater division of labor between design/planning and implementation.

Further reading