

Based on: Pressman, "Software Engineering", chapters 16+
Based on: Norrie and Grossniklaus, "Web Engineering", ETH Zürich
<http://www.globis.ethz.ch/education/>



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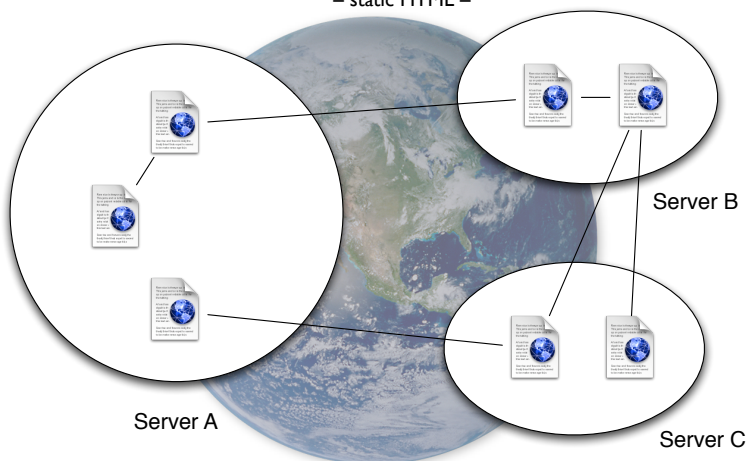
What is Web Engineering?

Techniques, tools, and methods to support systematic approaches to the development, deployment and maintenance of high-quality Web systems

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The Web in 1989

– static HTML –



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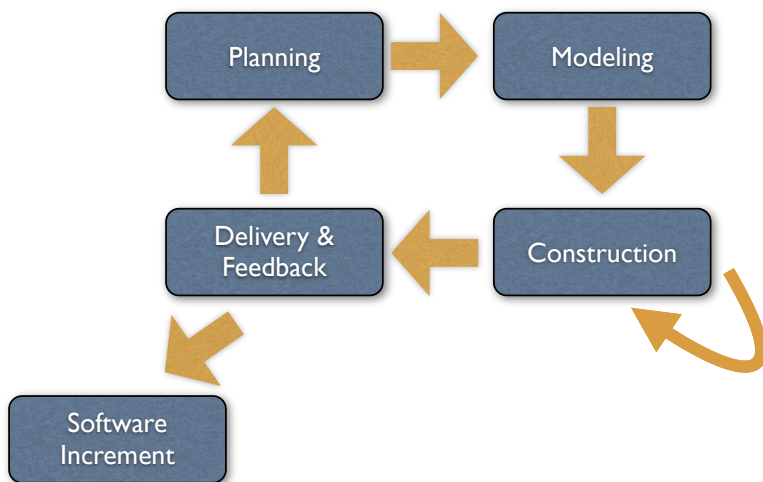
Originally: Static hypertext documents linked together

WebApp Process

- Must accomodate:
 - Incremental delivery
 - Frequent changes
 - Short timeline

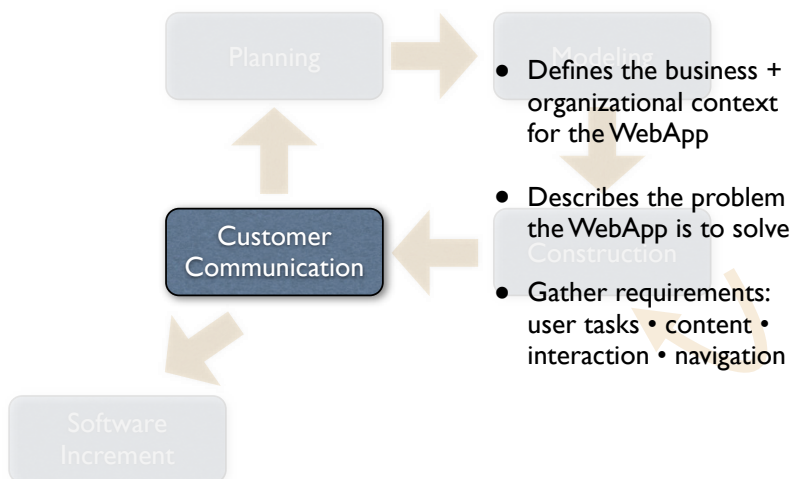
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Incremental Process



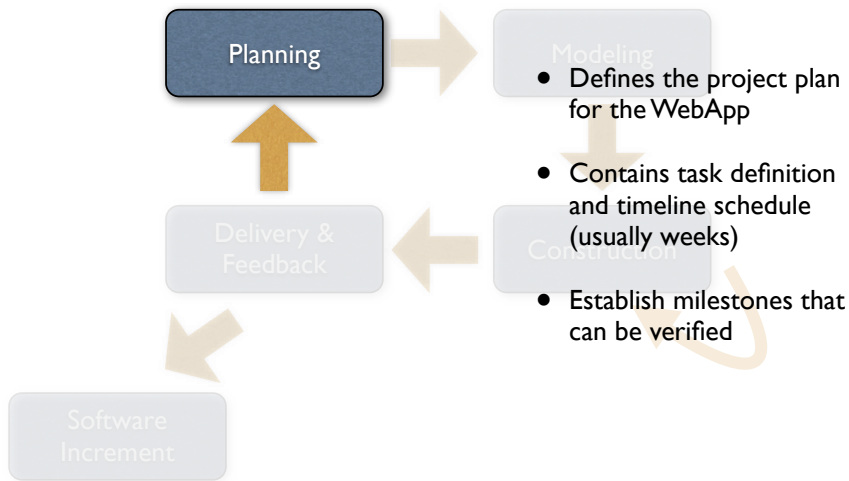
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The Customer



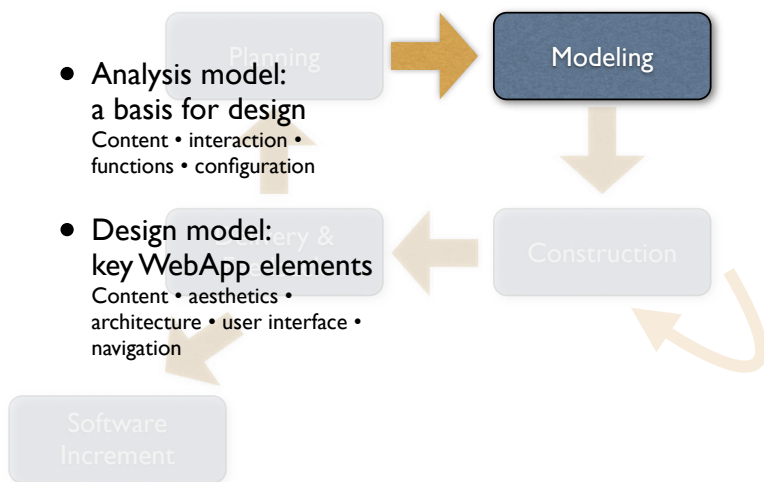
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The Plan



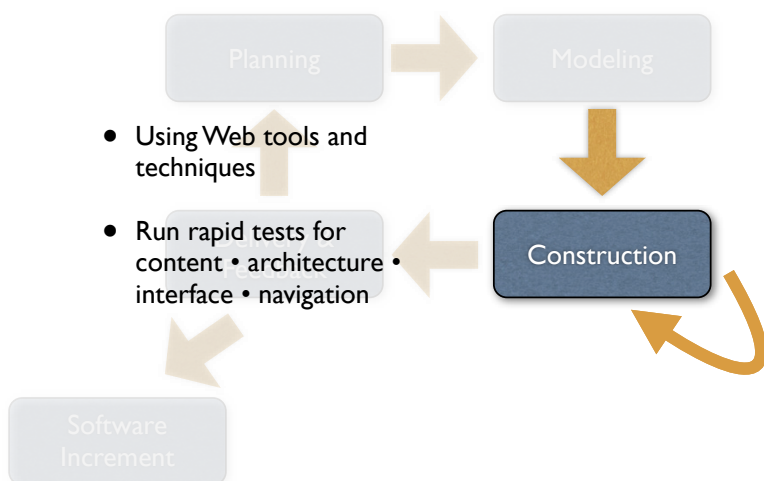
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The Model



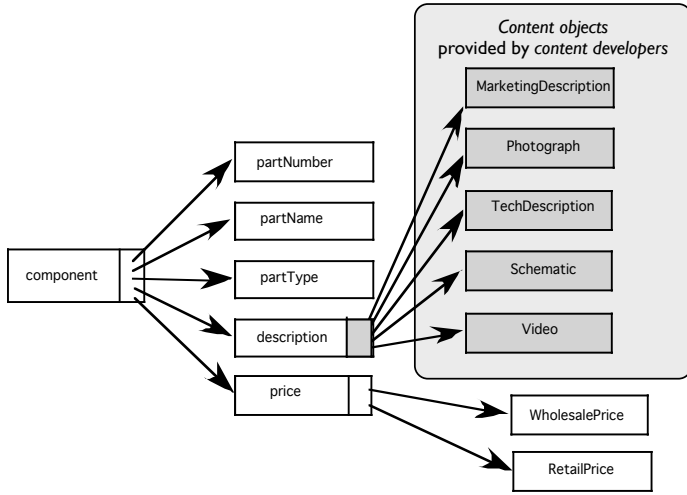
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Construction



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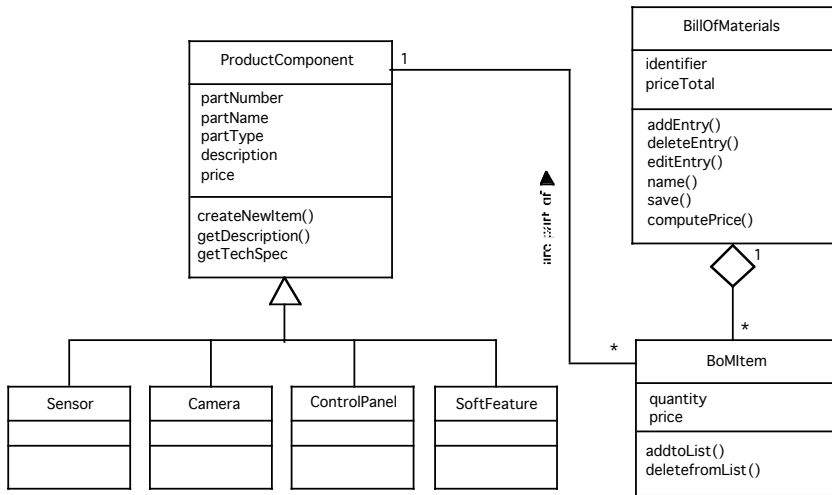
Data Tree



Shaded rectangles are content objects – which need to be provided by content developers (not programmers)
See Pressman, “Software Engineering”, chapter 18

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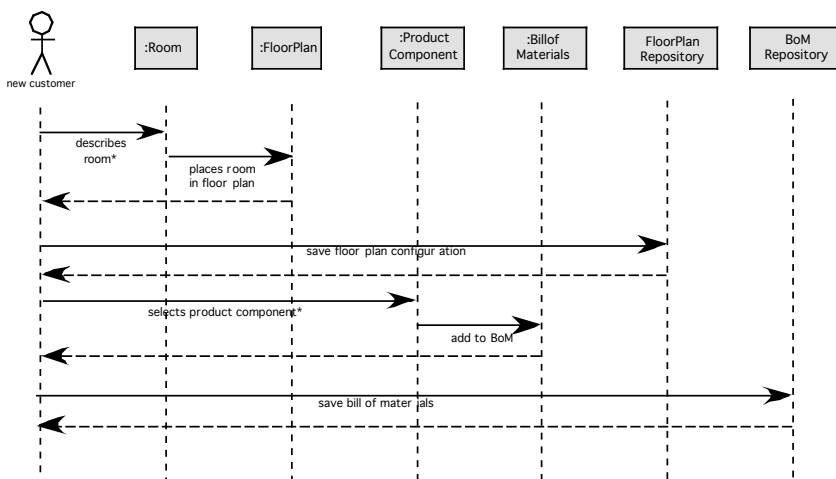
Object Model



Nothing fancy about this – this is straight-forward design

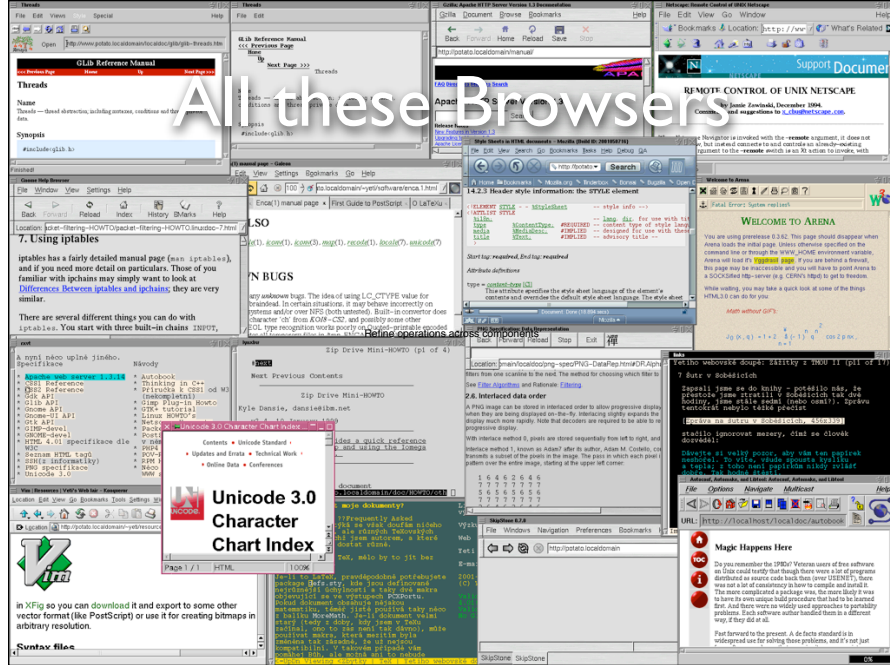
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Sequence Diagram

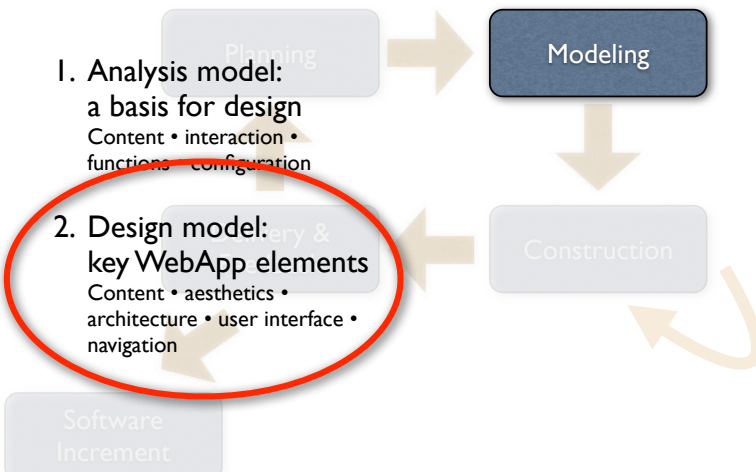


Refine operations across components

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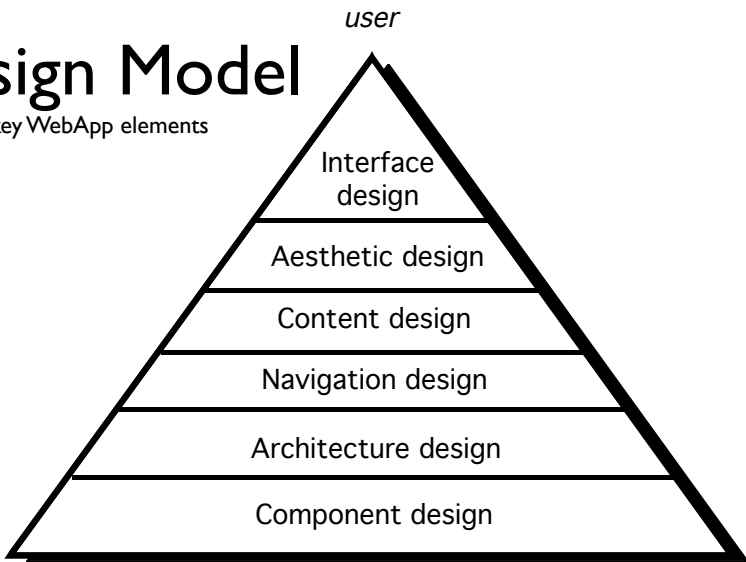


The Model



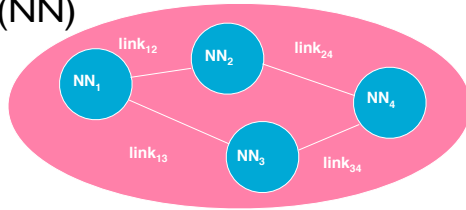
Design Model

key WebApp elements

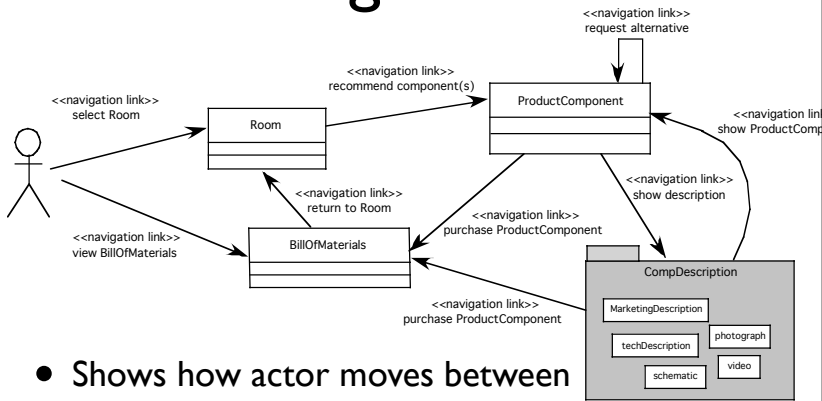


Navigation Semantic Units

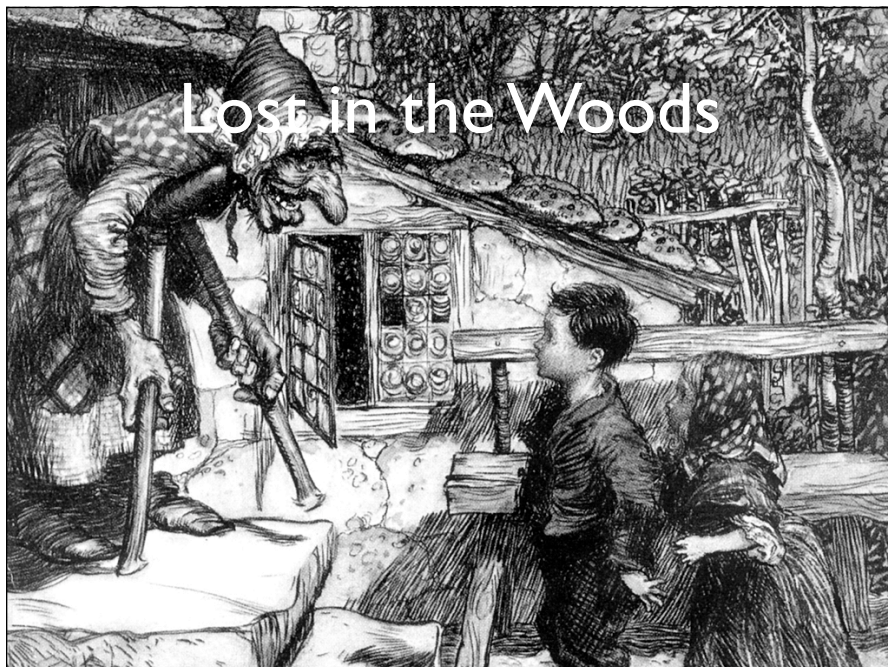
- **Ways of navigation (WoN)**
represents the best navigation way or path for users with certain profiles to achieve their desired goal or sub-goal
- **Composed of**
Navigation nodes (NN)
connected by
Navigation links

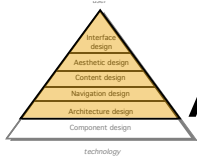


Creating an NSU



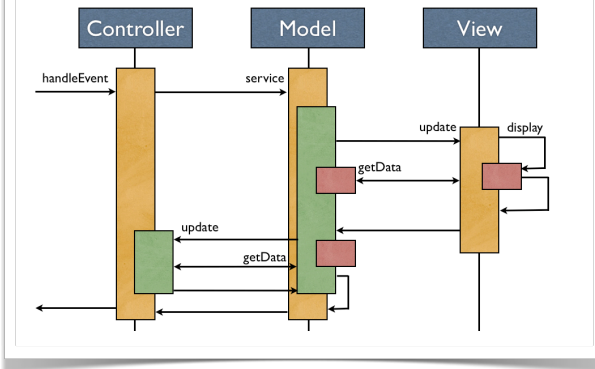
- Shows how actor moves between content objects or WebApp functions
- Describes navigation for each use case





Architecture Design

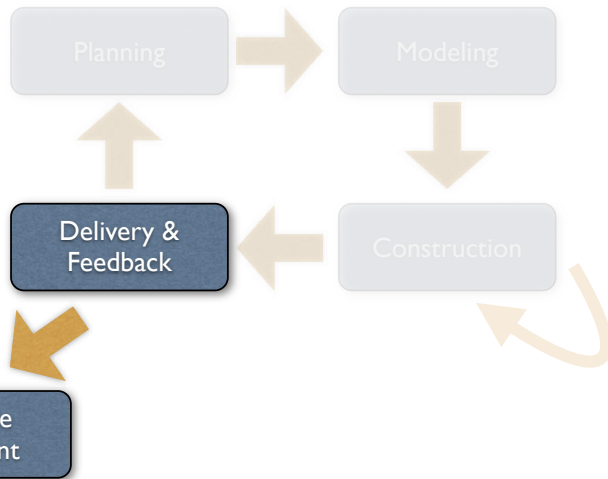
Model-View-Controller



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MVC is the standard architecture of WebApps – to accommodate separation of functionality and presentation

Getting Feedback



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Field Reports

- Collect data where users navigate to...
- and whether they reach their goal!



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Usability Tests

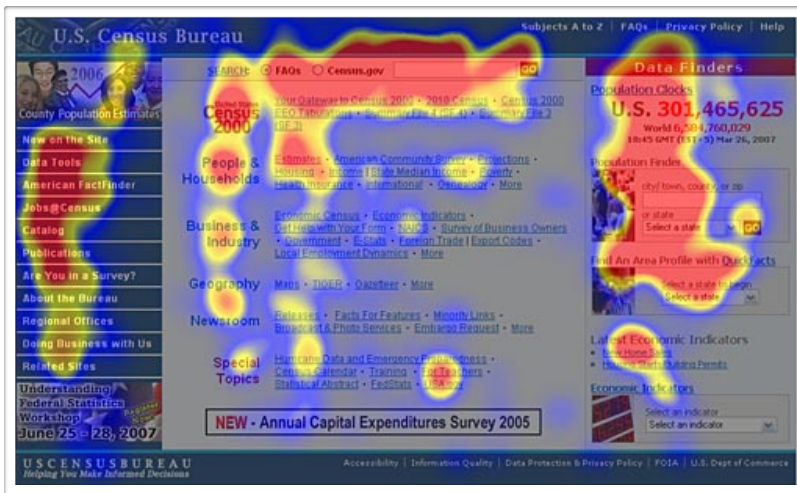


<http://www.useit.com/alertbox/fancy-formatting.html>

One site did most things right, but still had a miserable 14% success rate for its most important task. The reason? Users ignored a key area because it resembled a promotion.

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Usability Tests

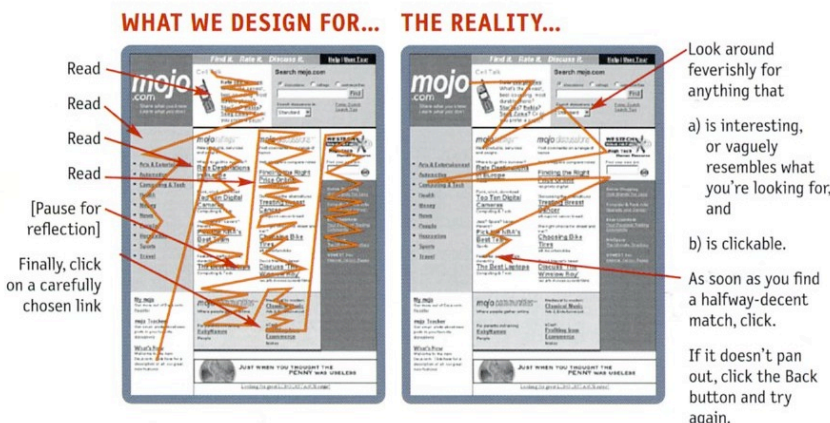


The following heatmap from one of our eyetracking studies shows how users looked at this homepage. Their task was to find the current population of the United States.

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Users scan Pages

(rather than reading them)



We're thinking "great literature" while the user is looking at a billboard on the highway
From Steve Krug, "Don't make me think"

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