Representing Website Design

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WinWriters Online Help Conference
Seattle, Washington
February 19, 2003

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Five ways to represent the design of a website

1. Node-link diagrams
2. Flowchart node-link diagrams
3. Page mock-ups
4. Visual hierarchy diagrams
5. Page Layout Change (PLC) notation
Node-Link Diagrams
Hypertext Theory:
A node is a generalized unit of content (often equivalent to an HTML page). The electronic pathways that connect nodes are links.
The uses of node-link diagrams

- They enable designers to represent the design of particular websites.
- They enable designers to think through design ideas.
- They enable designers to gauge whether users can achieve situational awareness.
Representing a particular design
Thinking through design ideas
Gauging whether users can achieve situational awareness
Limitations of node-link diagrams

• You can run out of space trying to represent a large website.

• A node-link diagram has an “impoverished” notion of a node and a link. For example, how do you represent transactions? How do you represent downloads?

• They don’t tell you anything about the appearance of the website.
For detailed information on node-link diagrams

David K. Farkas and Jean B. Farkas

*Principles of Web Design*

Longman 2002
Flowchart Node-Link Diagrams
Flowchart node-link diagrams can represent processes
Flowchart node-link diagrams can represent processes—2
The limitations of classical and flowchart node-link diagrams

• You can run out of space trying to represent a large website.
• They don’t tell you anything about the appearance of the website.
For detailed information on flowchart node-link diagrams

Jesse James Garrett’s website: http://www.jjg.net

“A visual vocabulary for describing information architecture and interaction design”
http://www.jjg.net/ia/visvocab
Page Mock-ups
Page mock-ups
(thumbnails, sketches, wireframes)

• Page mock-ups are simply representations of individual pages—usually created early in the design process.

• Page mock-ups are central to design work. Human beings almost always “rough out” their design ideas.
Page mock-ups vary in fidelity to the finished page.

From Rosenfeld and Morville, 2002
The limitations of page mock-ups

Page mock-ups do not capture the thinking that surrounds them. They don’t tell you *why* the designer did what he/she has done.
For detailed information on using page mock-ups in Web design

Louis Rosenfeld and Peter Morville

Information Architecture for the World Wide Web
2nd. ed., O’Reilly 2002

... and many other books.
Visual Hierarchy Diagrams
Visual hierarchy diagrams

Visual hierarchy diagrams explicitly represent the subordination of the regions and elements on a page. Therefore, they convey a key aspect of the designer’s thinking.
“Each page should have a clear visual hierarchy”

“One of the best ways to make a page easy to grasp in a hurry is to make sure that the appearance of the things on the page—all of the visual cues—clearly and accurately portray the relationship between the things on the page: which things are related and which things are part of other things. In other words, each page should have a clear visual hierarchy.”

A web page with a simple, straightforward visual hierarchy

University of Washington
Department of Technical Communication

TC 510 Information Design
Professor David K. Farkas

Course Website — Fall 2002 (Day)

In this course we investigate a broad range of print and online documents from various rhetorical and cognitive perspectives. In particular, hypertext theory is our means to better understand how a document's explicit structure guides users as they navigate, shapes the message, and contributes to the user's overall experience.

We look closely at traditional print documents and at such innovations as STOP and Information Mapping. Our consideration of print is a foundation for studying the Web, other online media (e.g., ebooks, PDF, PowerPoint), and Virtual Reality.

This is a practice-oriented course aimed at improving your writing and design skills.
Visual hierarchies may be complex
Uses of visual hierarchy diagrams

1. Gauging how well the elements on the page are organized. Is there a clear visual hierarchy? Does it accord with the rhetorical function of the text?

2. Gauging—and informally scoring— the complexity of a design (the number of elements and regions).
A poor visual hierarchy
A poor visual hierarchy

Call for price  301-345-9504
Special import from Germany
Frankie Lyman and the Teenagers
3 CD boxed set, 72 cuts and illustrated booklet
Scoring visual complexity

18 design elements + 3 regions = 21
Limitations of visual hierarchy diagrams

1. Determining a visual hierarchy is a very inexact science with numerous principles involved.
2. Visual hierarchy diagrams take time to create.
3. Visual hierarchy diagrams focus our attention on individual pages. Users, however, experience a website as a succession of pages.
For detailed information on visual hierarchy diagrams


http://www.cs.tufts.edu/~isabel/reichen/page-layout.html
Page Layout Change (PLC)
Notation
PLC Notation

PLC notations expand upon visual hierarchy diagrams. They represent user pathways through a website and help us gauge—and informally score—the degree of page layout change.
Using PLC

1. Trace one or more user pathway, marking the regions of each page on the path.
2. Annotate the user’s pathway using PLC syntax.
3. Calculate the PLC score.
4. Compare PLC score to visual complexity score.
PLC Syntax

Link → Region(s)

“operates on”

Region(s) >> Region(s)

“reconfigured as”

(Note: Refer to >> as a “chevron.”)

Region(s) = Region(s)

“remains as”
A simple example with minimal change (no reconfiguration)

B → C
A = A
Clicking a link in B drives a change in C.

This is a very typical design.
Fusing regions
(Tracing a path across three pages)

Massive reconfiguration, fusion of multiple regions.
Fusing regions
(Tracing a path across three pages)

Link in main content area (MCA) changes content of main content area.
Splitting a region

C → C
C >> D+E
Spawning a new region

B → B
B >> B(C)
Dropping a region

C $\rightarrow$ C(D)
C(D) $\gg$ C
**Shifts in the dimensions of regions**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
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</thead>
<tbody>
<tr>
<td><strong>Wanda's home page</strong></td>
<td><strong>Employer</strong></td>
<td><strong>Design/Build</strong></td>
<td><strong>Communication Skills</strong></td>
<td><strong>Hypercritical</strong></td>
<td><strong>Image explication</strong></td>
<td><strong>Resume</strong></td>
<td><strong>Remodeling the academy</strong></td>
<td><strong>Return to Wanda's home page</strong></td>
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<td></td>
<td>Olympic Association Company</td>
<td>Related work, both regional and academic</td>
<td>Lose your fear of public speaking at Speech Builders, then construction industry's Toastmaster affiliate in Seattle</td>
<td>An evaluation of Digiglo, a Web site for the subject of the Oscar-winning film, <em>Boys Don't Cry</em></td>
<td>An analysis of five portraits taken by internationally acclaimed photographer, Steve McCurry</td>
<td>Background on a brand new program in the Construction Management program</td>
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<td><strong>Wanda's design page</strong></td>
<td><strong>Connected</strong></td>
<td><strong>Establishing a presence</strong></td>
<td><strong>Words</strong></td>
<td><strong>Design principles</strong></td>
<td><strong>Remodeling the academy</strong></td>
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<td>Connected</td>
<td>Create lasting impact based on the Web</td>
<td>Connected</td>
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</tr>
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</table>

C → A-I
(A-I) ⟸ (A-I)
Regions introduced by scrolling

Scroll → A, B, C
A, C >> D
The scope of PLC:
What behaviors can it track?

1. Changes in content only (no reconfiguration)
2. Splitting into two or more regions
3. Fusing regions
4. Spawning a region
5. Dropping a region
6. Shifts in the dimensions of regions
7. Regions introduced by scrolling
8. Any and all combinations
The scope of PLC: What events are supported?

- Mouse click
- Mouse rollover
- Scrolling via scroll bar
- Scrolling via an anchor link
- Automated cycling of graphics on a page
- Turning of a page (print)
Scoring PLC: Determining the degree of Page Layout Change

PLC score = X + 2Y

X = # of regions that change (number of letters following arrow)

Y = # of reconfigured regions (# of letters—whichever is highest—on either side of the chevron)

The scoring is not “objective.” It’s a reference point for design discussions and decisions.
Minimal change yields a score of 1

PLC score = X + 2Y
PLC score = 1 + 0
PLC score = 1

Clicking in Region B affected Region C. Therefore, X = 1.
Modest change yields a score of 5

PLC score = $X + 2Y$
PLC score = $1 + 2(2)$
PLC score = 5

Clicking in Region B affected Region B (the content changed).

Region B has also been reconfigured by spawning Region C.
Extensive change yields a score of 27

PLC score = X + 2Y
PLC score = 9 + 2(9)
PLC score = 27

C → A-I
(A-I) >> (A-I)

All regions were affected and all were reconfigured.
A complex design with extensive change yields a score of 49.

PLC score = \( X + 2Y \)

PLC score = 17 + 2 (16)

PLC score = 49

All regions were affected.
Region A was not reconfigured.
Region B stretched. Regions C-J fused into Regions C and D.
Comparing PLC scores with visual complexity scores

It is worthwhile to compare how visual complexity correlates with PLC. For example, when the MSN pages scored 49 in PLC, there was also a large drop in visual complexity from 141 to 54. Visual complexity can also increase with PLC score.
Value of PLC

PLC promotes greater awareness of important design variables. It helps designers

– Identify non-standard navigation.
– Identify design errors pertaining to PLC and visual complexity.
– Gauge PLC and visual complexity as aspects of the overall user experience.
Uses of PLC

PLC does not directly tell you what is good or bad. It invites such questions as these:

– “Why do I see such different PLC scores among pages serving a similar purpose?”
– “Why does this pathway vary so much in PLC scores?”
– “Is this behavior typical of the genre?”
Conclusion: You can usefully represent the underlying structure and the appearance of a website

1. Node-link diagrams
2. Flowchart node-link diagrams
3. Page mock-ups
4. Visual hierarchy diagrams (with visual complexity scoring)
5. Page Layout Change (PLC) notation
The End