

State of California Portal Review

Executive Summary of UT Findings and Usability Lessons Learned

 **Human Factors International, Inc.**

User Experience for a Better World



Prepared by:

Steve Fleming, Usability Analyst

Pete Elgin, Usability Analyst

Suzi Shapiro, User Researcher

Noah Schaffer, User Researcher

Eric Olive, Accessibility Analyst

Jeff Horvath, VP, Government and Non-Profit

Ed Frease, Account Executive

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- **Effectiveness**
Can users achieve what they need by using the product?
- **Ease of learning**
How fast can a user who has never seen the interface learn to use it?
- **Efficiency of use**
How fast can users complete tasks?
- **Memorability**
Can users remember enough to reuse the interface effectively?
- **Error prevention**
The best way to deal with errors is to design the interface so users do not make errors.
- **Satisfaction**
How much does the user like using the system?

VIMM System

Design Principles

Visual

Optimize visual comprehension by...



- Matching screen flow to task flow
- Good grouping and labeling
- No gratuitous color

Intellectual

Simplify decision making by...



- Providing previews and easy escapes
- Using controls consistently
- Providing good system feedback

Memory

Minimize the memory load by...



- Making options visible
- Designing for recognition versus recall
- Providing defaults

Motor

Minimize movement time and interactions by...



- Using short distances and large targets
- Optimizing for the input device
- Using natural response mappings
- Reducing windows and steps

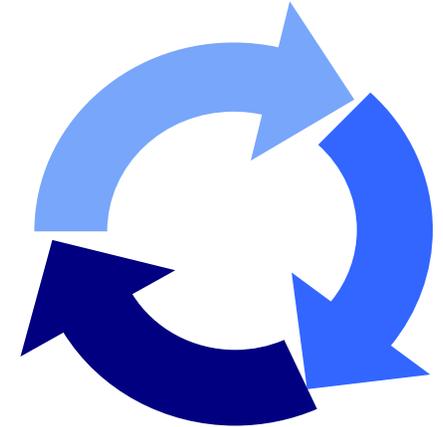
- **The purpose of usability testing is feedback**

- Feedback is fundamental to survival
- Goal-directed behavior depends on feedback
- Dynamic systems use feedback to adapt
- Get feedback early and often

- **Direct Benefits**

- Gets feedback directly from users—not intermediaries
- Provides data for design decisions—not opinions
- Saves development time by avoiding extensive rework late in the development process
- Creates a positive return on investment (ROI)

- **UT is NOT just one type of analysis that happens once at the end of a project**



Type of sessions

Informal vs. formal

Small numbers (qualitative)

Large numbers (quantitative)

Methodology

Lab testing

Remote testing

A-B testing

Level of fidelity

Hand sketches

Wireframes

Graphical mock-ups

Interactive prototypes

HFI conducted UT sessions with 18 citizens of California between 04-09 June 2010

- 12 sessions were face-to-face in a facility in Sacramento, CA
- 6 sessions were conducted remotely with participants from other parts of California

Sessions lasted one hour and included:

- Brief background about the participant and their job
- Initial reactions to the redesigned site (www.ca.gov)
- Completing tasks using the redesigned site
- Follow-up questions on specific elements of the site (e.g., likes and dislikes)

Remote sessions were conducted using WebEx and a teleconference line

State of California staff observed in-person sessions and remote sessions

Participants were identified by using a screening questionnaire developed in conjunction with the CA Portal team

- Mix of men and women across a wide age range
- Mostly individuals with a few small business owners
- Individuals who had been to the site recently and others who had not been to the site in a year or more

Overall, participants had a strong, favorable reaction to the site

- Several participants stated that they liked this site better than older versions of the site (“it used to be like the Winchester House”)
- Most liked that it (mostly) all stayed in the same browser window
- Many left feeling that they had learned more about what was available and were interested in exploring the site more deeply

However,

- Participants effectively used very little of the navigation – they stuck with the most obvious method (and some were frustrated after having other nav options pointed out to them)
- Participants had some difficulty differentiating a few of the navigation options

Therefore . . .

- Reduce the number of navigation options and ensure that each navigation area has a specific organizing principle
- Consolidate and re-organize some of the navigation links
- Make updates to presentation of some link lists



- “[there is an] overabundance of ways to get at the same link.”

Note: a more detailed presentation was delivered to the Portal team in mid-June

Be judicious in the use of valuable screen real estate on the home page

Participants were not confused by the two search controls, but found both easily.

The Search control in the middle of the page, however, did push other content "below the fold".

Lesson learned:

- Avoid letting redundant content take the place of valuable information for site visitors.

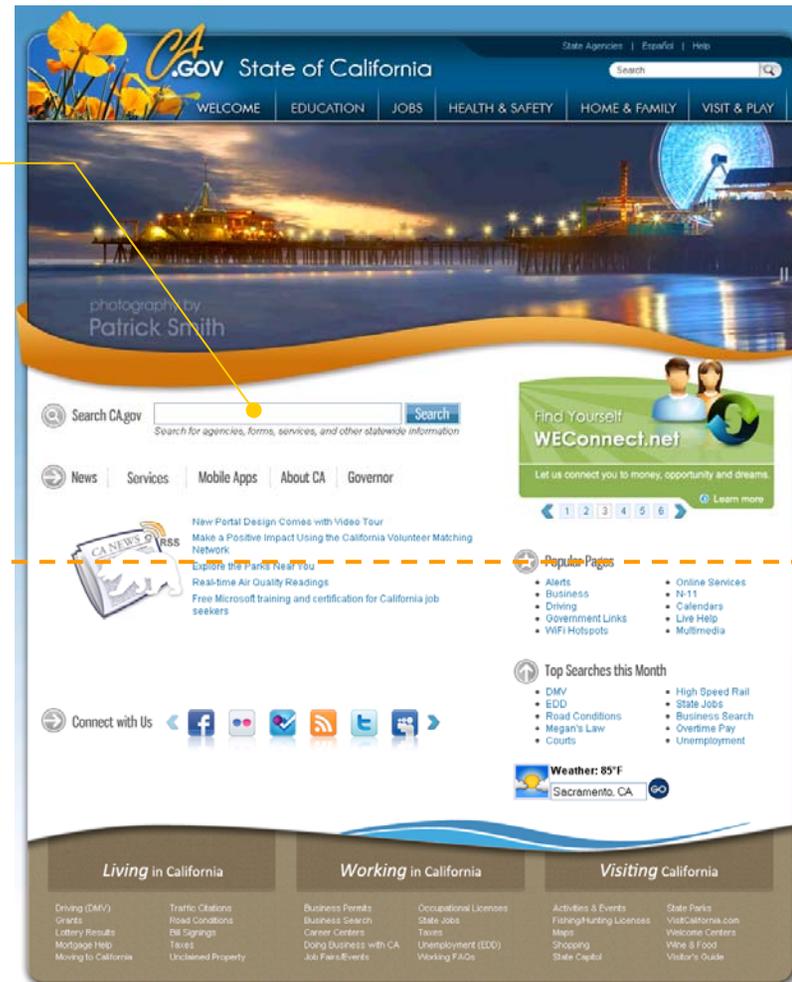
Recommendation:

- Remove the search control in the middle of the page to allow the content below it to move up and be more visible.

"Above the fold" refers to the part of a page the user can see before having to scroll. "Below the fold" refers to the part of the page that the user must scroll to see.

The most important real estate on the page is above the fold. Content below the fold will largely be ignored.

The fold



Reduce the number of navigation options to simplify the choices the site visitor must make

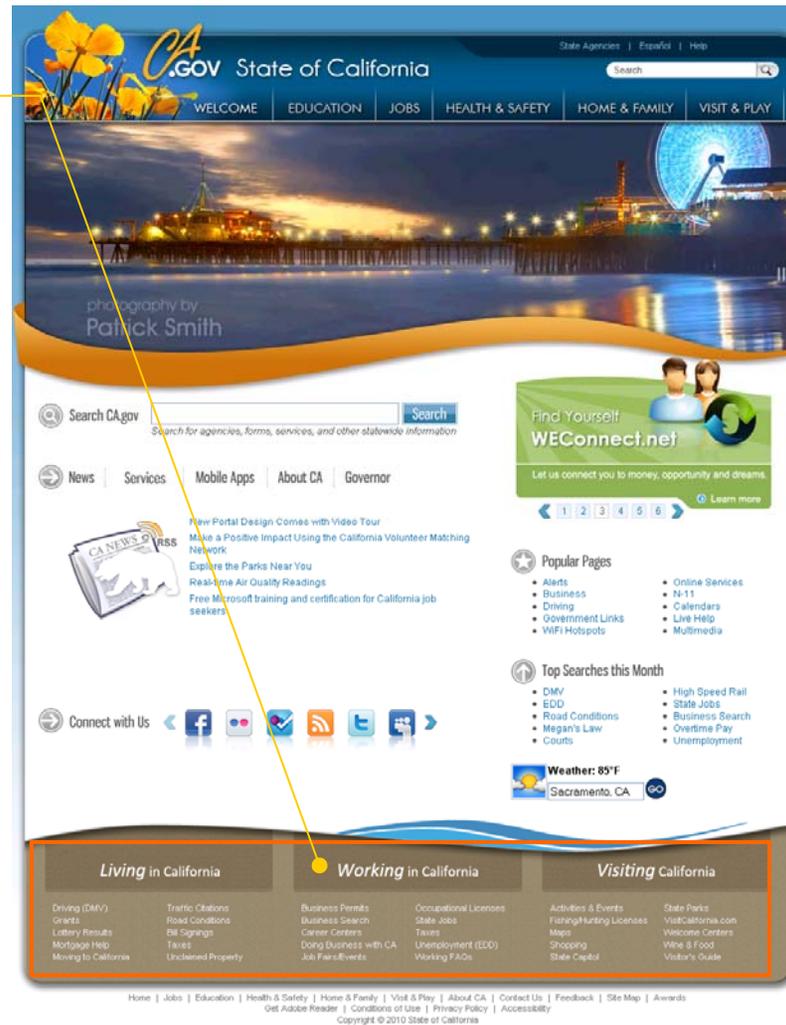
Participants did not find this set of links until well into each session. Once they did find it, they liked many of the link labels.

Lesson learned:

- Site visitors will use the initial set of navigation options they are given and will not search out additional ways to navigate a web site.

Recommendation:

- Remove this section and move these categories and links into the appropriate primary navigation sections.



Ensure that each navigation area has a specific organizing principle

Participants did not interact with this carousel until directed there by the moderator.

Lessons learned:

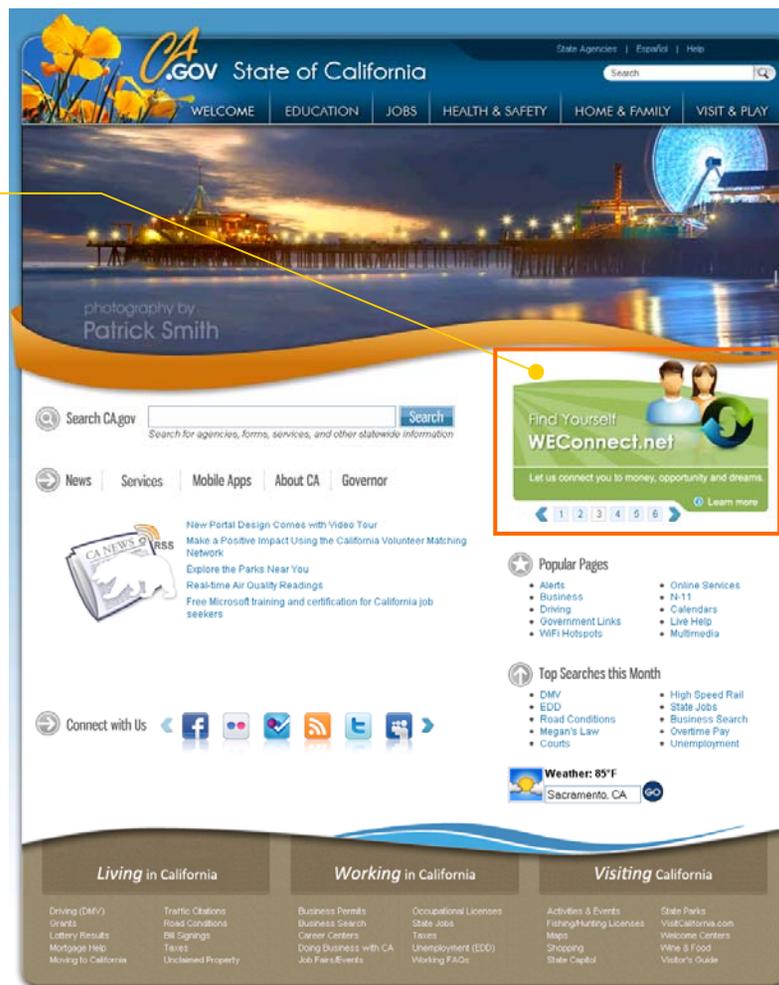
- The carousel is a set of seemingly unrelated items, with no “organizing principle”.
- Also, visually-salient presentation does not guarantee user attention, especially on the Web, where brightness and movement often indicate “advertisement distracting me from what I am trying to do”.

Recommendation:

- Remove it (or move it down the page) to allow the Popular Pages and Top Searches sections to move up the page.

An “organizing principle” is a conceptual model that a site visitor can use to understand how content is related, such as understanding that all links are related to a single topic.

If it is not clear (such as lacking a clear header), the site visitor will use their own mental model to “create” one.



Ensure that each navigation area has a specific organizing principle (continued)

Participants did not deeply understand the organization of the content in the middle of the page.

Lesson learned:

- Without a strong “organizing principle”, users will erroneously assume the first option is “what the section is all about”.

Recommendation:

- Reevaluate the presentation and organization of this section to create more closely associated links and content, which will help site visitors use it more effectively.



Develop and maintain a consistent interaction metaphor throughout the site

Participants did not quite understand this diagram.

Lesson learned:

- New and interesting ways of presenting data need to be very clear because they cannot leverage existing familiarity.
- They also need to provide a clear “added value”.

Recommendation:

- Remove it and represent the content from the secondary navigation fly-out again.

The screenshot shows the CA.GOV State of California website. The main navigation bar includes links for WELCOME, EDUCATION, JOBS, HEALTH & SAFETY, HOME & FAMILY, and VISIT & PLAY. The 'Home & Family' section is highlighted with a red box and contains a network diagram of services. The diagram shows 'Children & Families' as a central hub connected to 'Health', 'Persons with Disabilities', 'Seniors', 'Driving & Transportation', 'Marriage', 'Housing', 'Taxes', 'Consumers', 'Moving to CA', 'Schools', 'Kids', 'History & Government', and 'Arts'. Below the diagram is a 'I Need To...' section with links for 'Calculate child support', 'Find & compare schools', 'Find child care', 'Get food stamps', 'Get mortgage help', 'Get married in CA', and 'Search unclaimed property'. A 'RELATED AGENCIES' section lists the Department of Motor Vehicles, Department of Consumer Affairs, Department of Social Services, and Department of Aging. A map titled 'CA.GOV NEAR ME' shows service locations across California. The footer contains sections for 'Living in California', 'Working in California', and 'Visiting California', each with a list of related services.

Expose critical and frequent content and ensure labeling is clear

Without a clear label to show it is a separate type of content, this was missed by most participants and not understood by the few who tried to use it.

Lessons learned:

- Too many, different navigation options become invisible to site visitors.
- Unclear labeling can prevent site visitors from using all the functions that are available.

Recommendations:

- Remove it to simplify the overall number of navigation choices the site visitor must attend-to and decide among.
- Alternately, label it "Online Services" and move it into the body of the page, where it can be expanded to show the options available.

The screenshot displays the CA.GOV State of California website. The top navigation bar includes links for WELCOME, EDUCATION, JOBS, HEALTH & SAFETY, HOME & FAMILY, and VISIT & PLAY. The 'Home & Family' section is active, showing a network of service categories: Health, Children & Families, Persons with Disabilities, Seniors, Driving & Transportation, Arts, Schools, Marriage, Housing, Taxes, Consumers, Moving to CA, History & Government, and Kids. A yellow box highlights the 'FAMILY SERVICES' button, which is labeled with a blue plus sign and the text 'FAMILY SERVICES'. Below this, there is a section titled 'I Need To...' with links for 'Calculate child support', 'Find & compare schools', 'Find child care', 'Get food stamps', 'Get mortgage help', 'Get married in CA', and 'Search unclaimed property'. A 'RELATED AGENCIES' section lists the Department of Motor Vehicles, Department of Social Services, Department of Consumer Affairs, and Department of Aging. A map of California shows service locations with numbered markers (1-13). The footer includes links for Home, Jobs, Education, Health & Safety, Home & Family, Visit & Play, About CA, Contact Us, Feedback, Site Map, Awards, and copyright information for 2010 State of California.

Always provide clear labeling using site visitors' terminology

The map has a potentially-strong organizing principle and a unique navigational value, but most participants didn't understand it.

Lesson learned:

- Clear labeling helps site visitors take a familiar concept and apply it in a new context.

Recommendation:

- Label the map more clearly in order to provide more value to site visitors.

The screenshot shows the CA.GOV State of California website. At the top, there is a navigation bar with links for WELCOME, EDUCATION, JOBS, HEALTH & SAFETY, HOME & FAMILY, and VISIT & PLAY. Below this is a 'Home & Family' section featuring a network diagram with nodes for Health, Children & Families, Persons with Disabilities, Seniors, Driving & Transportation, Taxes, Consumers, Housing, Moving to CA, Schools, Arts, History & Government, and Kids. A 'FAMILY SERVICES' button is also present. Below the diagram is an 'I Need To...' section with links for Calculate child support, Find & compare schools, Find child care, Get food stamps, Get mortgage help, Get married in CA, and Search unclaimed property. A 'RELATED AGENCIES' section lists various departments. At the bottom right, a 'CA.GOV NEAR ME' map is highlighted with a red box, showing a map of California with numbered markers (1-13) indicating service locations. The footer contains links for Home, Jobs, Education, Health & Safety, Home & Family, Visit & Play, About CA, Contact Us, Feedback, Site Map, Awards, and copyright information for 2010 State of California.

Organize navigation options in a way that helps site visitors quickly understand them

Participants had difficulty finding content within this section.

Lessons learned:

- Given many options, site visitors scan for key words that help them make the right selection.
- Context plays a key role in easily understanding labels.

Recommendation:

- Re-organize the secondary navigation under Education to be more helpful to site visitors:

Place Parents, Students, and Teachers in the first column so that audience-oriented labels are together.

Place K-12, Colleges & Universities, and Continuing Education in the second column to group topics with a chronological flow of education.

Libraries can stand alone in the third column.



Organize the information architecture as an “inverted pyramid” – from broader options to more detailed options

Participants had some difficulty finding content within this section.

Lesson learned:

- Navigational options should always go from broader options to more detailed (inverted pyramid).

Recommendations:

- Rename the primary navigation option from “Jobs” to “Work” to make the primary navigation more general and complement the more specific secondary navigation. It also provides a good contrast to “Education” and “Play”.
- Rename “Workplace Issues” to “In the Workplace” or “Workplace Topics” to avoid a negative bias.
- Provide access to a topic for “running a business” or “small business” (even if links on the detail page all go off to the business-oriented site).



Organize the information architecture as an “inverted pyramid” – from broader options to more detailed options (continued)

Participants had some difficulty differentiating topics within this section.

Lesson learned:

- When navigation options are not true peers, there is some risk that it will confuse site visitors.

Recommendations:

- Roll “Caregivers” content under “Health Care” to maintain the broad-to-specific inverted pyramid.
- Make Community Services Directory a link in the body of the page, rather than a sub-nav option under Health & Safety and Home & Family, to help site visitors understand it is a general resource.



Organize navigation options into meaningful groups to provide site visitors extra context

Participants had some difficulty parsing the different topics within this section.

Lesson learned:

- As on the previous slide, when navigation options are not true peers, there is some risk that it will confuse site visitors.

Recommendations:

- Make “Moving to California” the first option.
- Include “Living in California” as a comparable option, leveraging links from the bottom of the page.
- Group “Children & Families”, “Persons with Disabilities”, and “Seniors” together in one column, because they all have similar audience-type perspective.
- Group “Marriage”, “Housing”, and “Taxes” together in one column because they represent specific events (consider putting Taxes under Work, also).
- Make Community Services Directory a link in the body of the page, rather than a sub-nav option.



Design for scanning

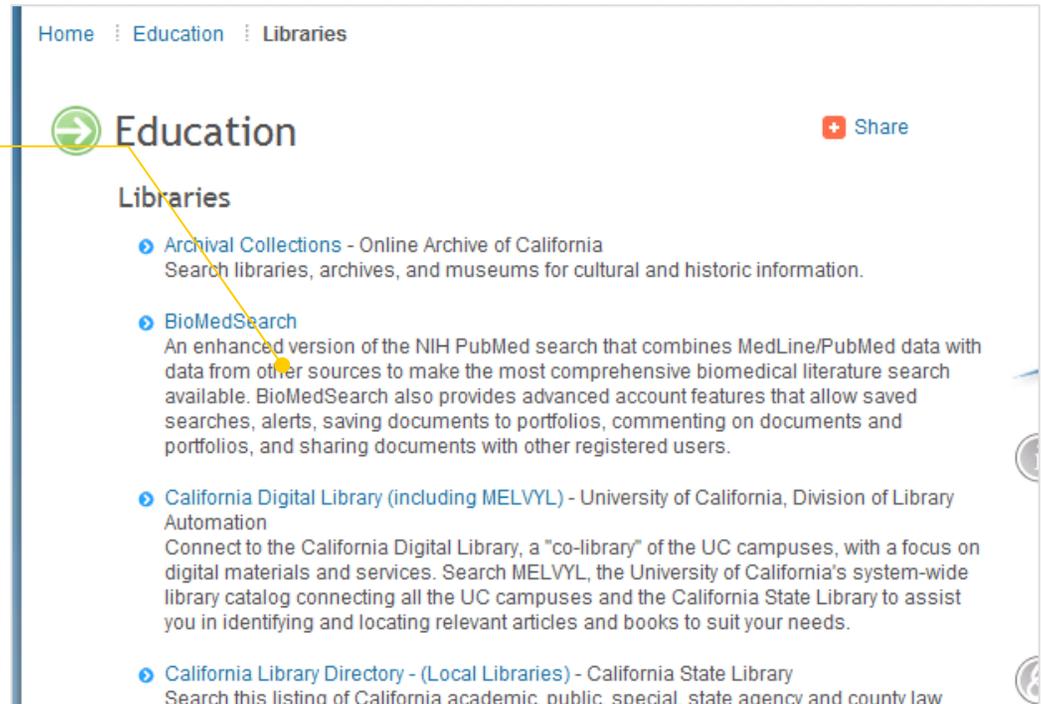
Participants quickly abandoned this page when they arrived on it.

Lessons learned:

- Users of the Web don't read until they find the content they are looking for.

Recommendations:

- Use a larger font size for headers, allowing them to be scanned more easily.
- Avoid dense paragraphs of text by using bullets and brief statements.



The screenshot shows a website navigation menu with the following structure:

- Home :: Education :: Libraries
- Education (highlighted with a green arrow icon)
- Libraries
 - Archival Collections - Online Archive of California
Search libraries, archives, and museums for cultural and historic information.
 - BioMedSearch
An enhanced version of the NIH PubMed search that combines MedLine/PubMed data with data from other sources to make the most comprehensive biomedical literature search available. BioMedSearch also provides advanced account features that allow saved searches, alerts, saving documents to portfolios, commenting on documents and portfolios, and sharing documents with other registered users.
 - California Digital Library (including MELVYL) - University of California, Division of Library Automation
Connect to the California Digital Library, a "co-library" of the UC campuses, with a focus on digital materials and services. Search MELVYL, the University of California's system-wide library catalog connecting all the UC campuses and the California State Library to assist you in identifying and locating relevant articles and books to suit your needs.
 - California Library Directory - (Local Libraries) - California State Library
Search this listing of California academic, public, special, state agency and county law

A red 'Share' button is visible in the top right corner of the menu. A yellow line with a dot at the end points from the 'Lessons learned' section to the 'Education' header, and another yellow line with a dot at the end points from the 'Recommendations' section to the 'BioMedSearch' item.

Design for scanning (continued)

Participants had difficulty finding items in this long list.

Lessons learned:

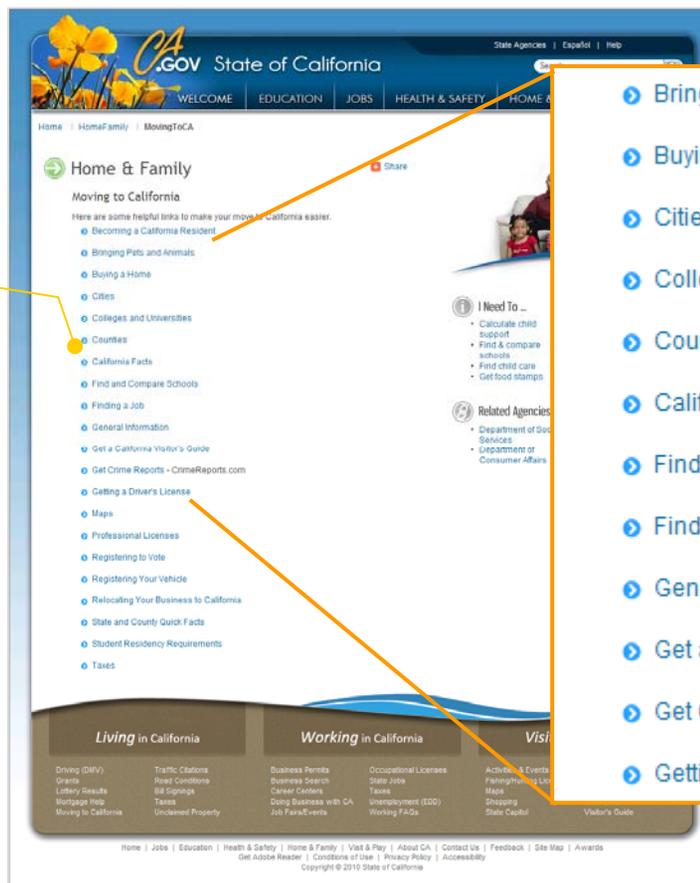
- Use of bullets and short text alone does not guarantee content is easy to scan.
- Bullets and alignment do help the user scan quickly by providing a visual anchor.
- But, site visitors are scanning the list to find the key words that match what they are looking for, so key words need to be first, differentiable, and easily understood.

Recommendations:

- In alphabetical lists, use keywords as the first word in the link.

For example, looking for “J” for “Jobs” means missing it under “F” for “Finding a Job”. Note similar effects with “Pets” and “Driver’s License”.

- Also, to help site visitors manage long lists, group them into meaningful categories, to reduce the amount of effort required.



- ▶ Bringing Pets and Animals
- ▶ Buying a Home
- ▶ Cities
- ▶ Colleges and Universities
- ▶ Counties
- ▶ California Facts
- ▶ Find and Compare Schools
- ▶ Finding a Job
- ▶ General Information
- ▶ Get a California Visitor's Guide
- ▶ Get Crime Reports - CrimeReports.com
- ▶ Getting a Driver's License

Create meaningful groupings to help site visitors parse detailed content

Because most of these are very similar to each other, participants did not discover the “different” option – Call 811 – which was a solution to one of their scenarios.

Lesson learned:

- In this list, most of the headings start with “California”, requiring the site visitor to read more of the content.

Recommendations:

- Combine similar links together and group them into a single category, enabling less-similar links to stand out.
- In this example, put all the Code links together under one heading, allowing “Call 811” to stand out.

Home :: HealthSafety :: LawsAndRegs

Health & Safety Share

Laws & Regulations

- [California Health and Safety Code](#) - Legislative Counsel of California
Access laws on health and safety regulations, health facilities, health care service plans, community care facilities, emergency medical services, and more.
- [California Penal Code](#) - Legislative Counsel of California
- [California Welfare and Institutions Code](#) - Legislative Counsel of California
- [California's 29 Codes](#) - Legislative Counsel of California
See all 29 of California's code sections with a subject index and keyword search.
- [California Code of Regulations](#) - California Office of Administrative Law
Search a database of state agencies' regulations.
- [California Office of Administrative Law](#) - California Office of Administrative Law
Link to the Office of Administrative Law which ensures that state agency regulations are authorized by statute and are consistent with other law. Find information on emergency regulations and the rulemaking process. Link to OAL publications.
- [Call 811](#)
Know what's below before digging.

As with any design recommendations:

1. Identify which of the changes you want to make in the short term

- Some things you won't have time to change, but they may still be problematic for some users, so consider the other ways to help the site visitors (FAQs, search indexing)
- Identify any areas that need additional research and create a "watch list" for tracking actual site usage

2. Let a good user-centered design process drive your next redesign

- Collect all the data that already exists in the organization about site visitors
 - Direct user feedback from Feedback and Contact Us
 - Indirect user feedback from site logs, patterns of traffic on the site, search logs and "clicks to Help"
- Get the perspective of the site visitors via data-gathering
 - Data-gathering participants can show the tasks that they typically do on the site and provide good insights into terminology and emotional investment
 - Card sorting exercises can provide a lot of insight into what topics users of the site think are strongly related
- Use validation testing with end users to check that you have maintained their perspective throughout the design process

Thank You...



Human Factors International, Inc.

User Experience for a Better World

hfi@humanfactors.com

Corporate Headquarters.

410 West Lowe, P.O. Box 2020

Fairfield, IA 52556

USA

800-242-4480 / +1-641-472-4480

