Human Computer Interaction

Taslima Akter

Design for the Web

Note: Focus on Desktop Web

Number of Global Users (Millions)

comSCORE.
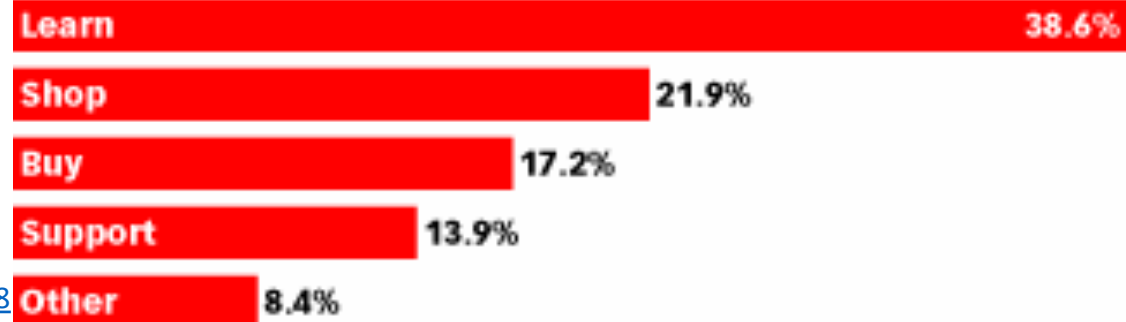© comScore, Inc. Proprietary and Confidential.   24   Source: Morgan Stanley Research

Source: http://www.smartinsights.com/mobile-marketing/mobile-marketing-analytics/mobile-marketing-statistics/
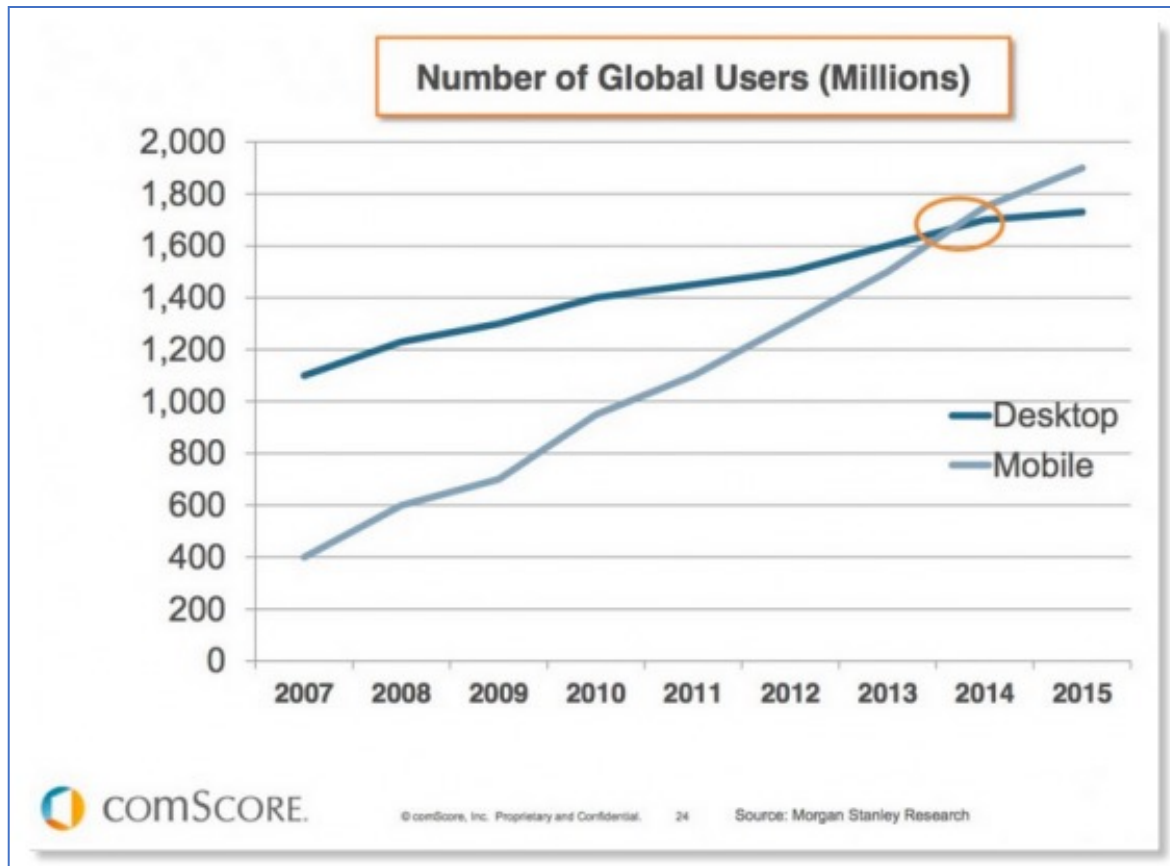
E-Commerce Usability

- Web sites are a requirement for all companies
- Usability of web sites improving, but still bad
    - Failure rate: in 2000: 39%; vs. in 2010: 22%. (78% success)
    - http://www.useit.com/alertbox/usability-progress-rate.html
- 38.6% of e-commerce visitors were there for information-gathering

Source: *Keys to E-Commerce Success,* Nov. 2, 2009

http://www.emarketer.com/Article.aspx?R=1007358

Reason for Visiting a Retail E-Commerce Site* According to Internet Users Worldwide, April-June 2009 (% of respondents)

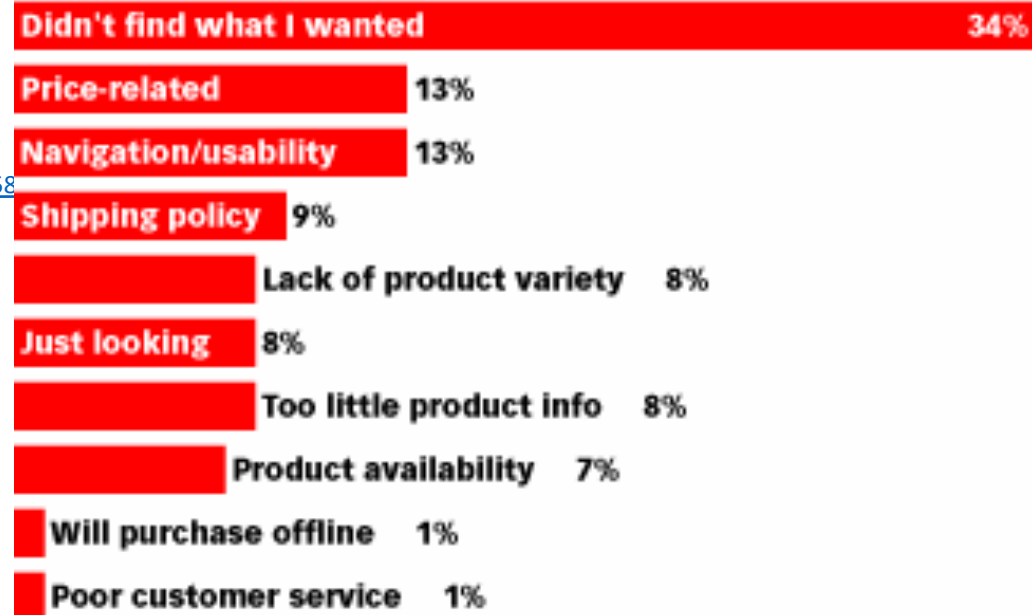|	
Learn	38.6%
Shop	21.9%
Buy	17.2%
Support	13.9%
Other	8.4%

Note: *refers to retail e-commerce site visit that prompted the survey
Source: iPerceptions, "Retail/E-Commerce Industry Report Q2 2009," October 2009

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www.**eMarketer**.com

Navigating sites is often difficult

- Studies find 58% or 74% failure at achieving a task at a site!
  - Lower rate when need a *sequence* of steps
  - eMarketer study: 61.5% success rate
    - Source: *Keys to E-Commerce Success,* Nov. 2, 2009
      http://www.emarketer.com/Article.aspx?R=1007358

Barriers to Buying on a Retail E-Commerce Site*
According to Internet Users Worldwide, April-June
2009 (% of respondents)

Didn't find what I wanted	34%
Price-related	13%
Navigation/usability	13%
Shipping policy	9%
Lack of product variety	8%
Just looking	8%
Too little product info	8%
Product availability	7%
Will purchase offline	1%
Poor customer service	1%

Note: *refers to retail e-commerce site visit that prompted the survey
Source: iPerceptions, "Retail/E-Commerce Industry Report Q2 2009,"
©October 2009

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www.**eMarketer**.com

Importance of Web Usability

- "**Nearly 9 of 10 of Americans Have Negative Feelings About Brands with Poorly Performing Websites and Mobile Apps, New SOASTA Study Reveals**" – June 20, 2013
  - https://www.bulldogreporter.com/dailydog/article/user-unfriendly-pr-nearly-9-of-10-of-americans-have-negative-feelings-about-brands-
  - "For those Americans who said they have a negative reaction when a website takes too long, 28% would visit a competitor's website, 27% would not trust the website, 18% would not visit that page again, and 13% would think the site may have been hacked."

Report on <u>Intra</u>net Web Usability

- Cite: http://www.useit.com/alertbox/intranet-usability.html (12/2012)

"Employees' average success rate when attempting basic intranet tasks:
  - 2002: **75%**
  - 2012: **74%**

- By comparison, 2012's average success rate on **public websites is around 80%**. Website usability has improved dramatically over the past decade…"

"Based on time-on-task metrics from our recent study, a company with 10,000 employees can **save $4 million per year** by going **from bad** intranet usability (defined as being among the worst 25% we tested) **to average** intranet usability."

 (cite: http://www.useit.com/alertbox/usability-progress-rate.html)

- New article: The Top Enduring Intranet-Design Mistakes: 7 Deadly Sins, https://www.nngroup.com/articles/top-intranet-design-mistakes/

Navigation

- Where am I?
  - Make sure each page identifies site
    - Logo, standard structure, and consistent design
- Where have I been?
  - Trails (also called "breadcrumbs")
    (http://www.nngroup.com/articles/breadcrumb-navigation-useful/)
  - Should start with the "home" link
  - Or shown by highlighting the menu structure
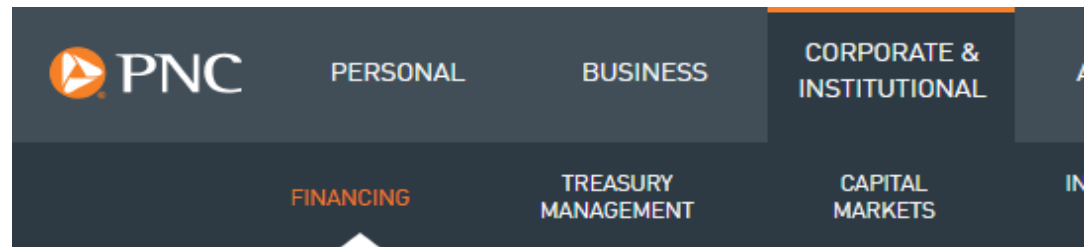
Navigation 2

- Where can I go?
  - Visible links on page
    - This has gotten dramatically worse with "flat design" (http://www.nngroup.com/articles/flat-design-long-exposure)
  - Standard navigation-bar is good
    - Show where you are
  - Links should have meaningful labels
- All pages should have one-click link to the homepage *– cite*
  - Non-standard location:

Navigation, 3

- Site Structure that maps into user's ideas and tasks
    - Nielsen reports 80% vs. 9% success rates depending on structure
- Product lists
    - Make it easy to compare

Compare similar products

	This Product Samsung - 24" T350 Series IPS FHD, AMD FreeSync Monitor (VESA, HDMI, VGA) - Dark Blue Gray	Samsung - 27" T350 Series IPS FHD, AMD FreeSync Monitor (VESA, HDMI, VGA) - Dark Blue Gray	LG - 24" IPS 3-Side Borderless FHD 100Hz AMD 100Hz FreeSync Monitor (HDMI) - Black
	⭐⭐⭐⭐⭐ (3,583)	⭐⭐⭐⭐½ (2,494)	⭐⭐⭐⭐⭐ (445)
	$99.99	$119.99	$169.99
Refresh Rate	75Hz	75Hz	100Hz
Maximum Resolution	1920 x 1080	1920 x 1080	1920 x 1080

Navigation, 4

- Shallow vs. Deep Website Hierarchies
    - Tradeoffs –
      depends on "natural" structure of infomation
        - http://www.nngroup.com/articles/flat-vs-deep-hierarchy
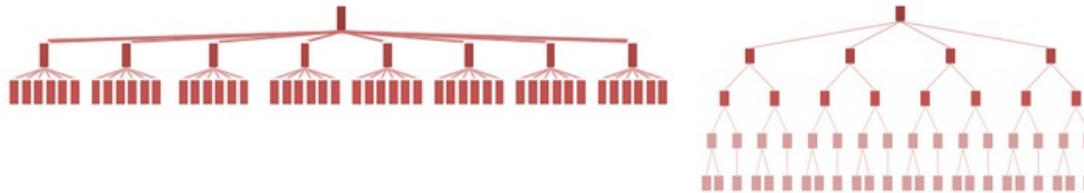
- Never say "under construction"
    - The web is always changing
    - Except for prototypes (obviously)

Design for multiple browsers

- Cross platform design
- You don't control the layout or navigation
  - People use various browsers, window sizes, etc.
  - Various languages and fonts installed
  - Cell phones, tablets, etc.
  - Users can jump in middle, go back and forward
- Test your pages in Chrome, Safari, Microsoft Edge, Internet Explorer, and Firefox
- Test in all (recent) versions
  - People don't update

Design for multiple browsers, 2

- Tools for checking:
  - "BrowserLab" built into Dreamweaver
  - http://browsershots.org/ (No longer active)
  - https://www.lambdatest.com/

Responsive Design

- "Responsive Design" - definition
  - One design fits all, *or*
  - *Compute* design based on window width - example
    - Change size, position, and even which elements are present

- But don't just use menu icon on desktop
  - "Discoverability is cut almost in half by hiding a website's main navigation."
    -- *cite*
  - Example: https://www.bloomberg.com/
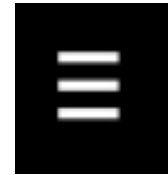
Percentage of Sessions Where Navigation Was Used
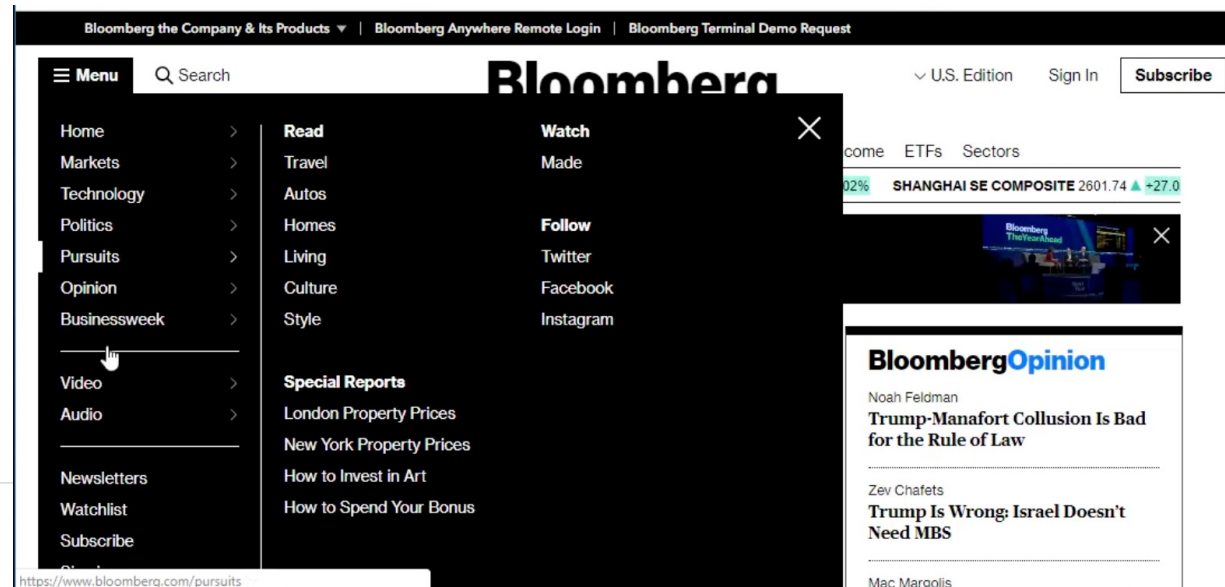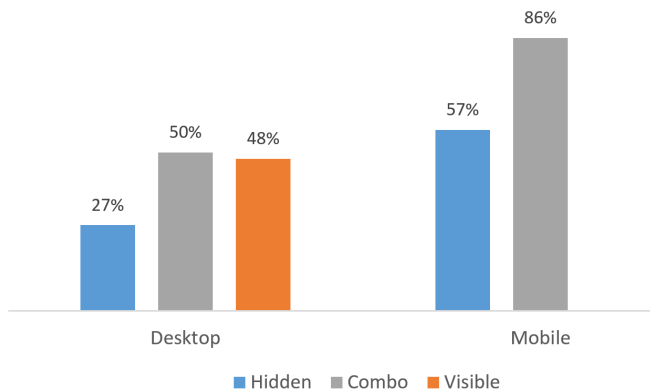
Design for quick downloading

- Users #1 complaint is slow downloading
  - HCII's slow website: http://www.hcii.cmu.edu/ ☹
- Users want response times of less than 1 second
  - Longer than 10 seconds, users cannot stay focused on the task
  - Forwards and backwards
- Predictable is important
  - Always mark pages that may be slow due to multimedia content

Rules for links

- Provide links to related items of interest
- Misleading link names are a "broken promise" – erodes trust and credibility (http://www.nngroup.com/articles/link-promise/)
- Link text should be descriptive
  - Not: "~~For the schedule, click here~~"
  - Better: "See the schedule and homeworks"
    - Easier to tell what link will get to
    - Underlined words are visually highlighted
    - Some users with disabilities won't probably "click"

Rules for links, 2

- Be cautious about opening up new browser windows or tabs
  - Can't go back
  - Lose track of all the windows
  - Example: [Stuttering Foundation shop](#)
  - Example: [ACM dl search](#): pdf vs. link for results
- Advertising links go to "payoff" pages rather than to general pages
  - Users don't explore to find the advertised item
  - Users want information now not 5 clicks from now
  - Make sure the links stay valid

Design for credibility

- Don't look amateurish
  - Nice, clean designs
  - Good graphic design and color choices
  - Links and code that work
  - Copyedit and proofread (spell-check)
    - Typo "Policys"
    - Typo in *title*: "Warantee"
- Ability to find out privacy policy
- Obvious way to provide feedback to the company
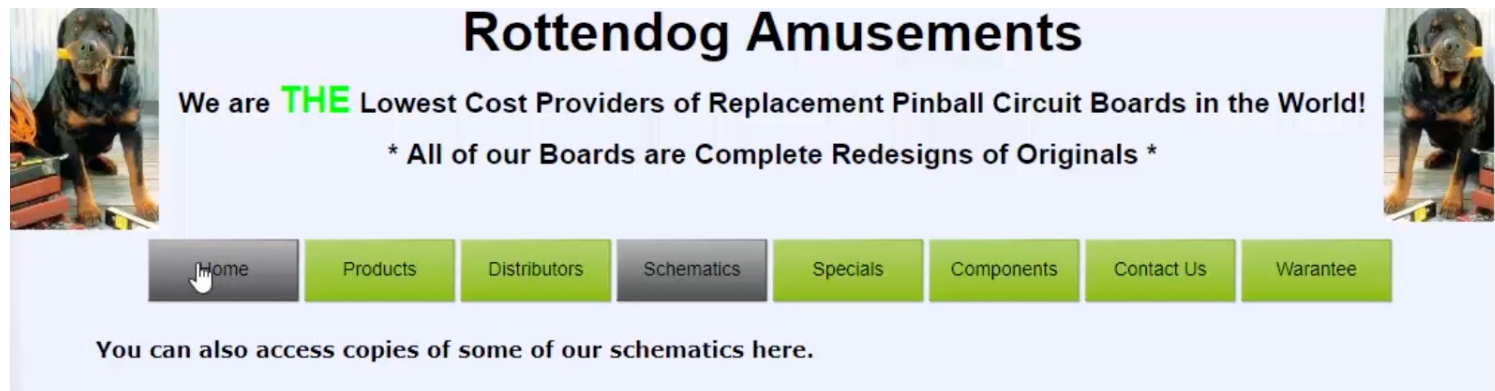
Web is an Attention Economy

- Ultimate currency is the user's time
- There is *too much content* on the WWW
- In traditional media, inertia helps keep people reading
- On the web, it is almost as easy to go to the competitor as to go to your next page
  - Web **content** must give immediate benefits to the users or they will allocate their time to other sites

Content Study

- In a study of 24 web sites, content-related issues caused 40.2% of the usability obstacles.
  - Inaccuracies or missing information in the sites' text
  - Text that didn't do its job
  - -- Jared Spool, www.uie.com
- Even for domain experts:
  - https://www.nngroup.com/articles/writing-domain-experts/

Writing for the Web

- Different than manuals, papers, reports

- Keep text short, succinct

- "Plain Language Is for Everyone, Even Experts" - *cite*
  - Better SEO ranking; has strong business value

- Write for scannability
  - Nielsen study: "Users **scarcely read anything** during an average website visit."
    - Eye tracking studies
    - http://www.nngroup.com/articles/website-reading/
  - Begin Link Names with the Most Important Keyword
    - (scanning in CI video of Stuttering Foundation)
  - Multiple heading levels
  - Bulleted lists
  - Hypertext links and other highlighting for important words
  - Provide sufficient information on source page to avoid needing to follow links

Design for Quick Scanning

- Neilsen reports "F" shape scanning
  - https://www.nngroup.com/articles/f-shaped-pattern-reading-web-content/
  - When little structure to content
  - Across top two content rows
  - Then, down content
- "I can't believe it's not there" - *cite*

Text in Pictures

- Don't put important text in pictures
  - https://chi2018.acm.org/
  - Also can't be selected for copy/paste
  - Exceptions

Legibility

- Design for legibility & "Readability"
  - Can be measured
    cite: http://www.nngroup.com/articles/legibility-readability-comprehension/

- Good color choice
  - Optimal: black text on white background
  - Need good contrast
  - Color blind people
  - Background: plain-color or extremely subtle pattern
    - Busy background and bad color choices
    - Too much animation
  - NOT IN ALL CAPS. READ 10% SLOWER
    - Seems like shouting

Page Titles

- Remember to title your pages
- Don't use URL, codes in title
- Make different pages have different titles
  - Page history, bookmarks
- Make first word most important
  - Shows up in icon, abbreviations, etc.
  - "MyCompany: Welcome" vs. "Welcome to MyCompany"

Form Fields

- Provide formats and prompts that help
  - Even better: be flexible: ignore spaces, ,-(), etc.
    - 4122685150 vs. (412) 268-5150 vs 1-412-268-5150
  - Phone numbers, social security numbers, etc.

Why Home Page Design is Important

- "Homepages are the **most valuable real estate** in the world"
  - "Space on a big company's homepage is worth 1,300 times as much as land in the center of Tokyo."
  - Cite: http://www.nngroup.com/articles/homepage-real-estate-allocation/
- "A homepage's impact on a company's bottom line is far greater than simple measures of e-commerce revenues: The homepage is your company's **face to the world**. Increasingly, potential customers will look at your company's online presence before doing business with you."

Home Page

- Ref: https://www.nngroup.com/articles/ecommerce-homepages-listing-pages/
- Design differently than inside pages
  - Welcoming & Informative
- Should be obvious what company does
  - www.Oath.com
  - Good example: https://www.expedia.com/
- Provide good entry into site's navigation
  - Good example: https://sites.google.com/site/vlhcc2017/
  - Bad example: http://mojoyogurt.com/#/home
  - Also news that of general interest
    - Secondary
    - Reason to return to site

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Home Page, 2

- Provide direct access to most important functions ([Delta example](#))
  - Vs. [www.AA.com](#) – picture is probably too big
- No "splash screens" – waste time
- Don't require pop-ups for site to work
- One click access to home from all interior pages
- Good title for home page (used by search engines)
- Cite: Nielsen's "[Top Ten Guidelines for Homepage Usability](#)"

Search

- Nielsen: ½ users go straight for the search option
  - Search in upper right, especially on home page
- CDW focused on improved search results (2008):
  - "The results are in: CDW has realized a 4.5% increase in sales driven through site search and a 16% increase in shoppers clicking through from results pages to product pages."
    – cite: http://www.internetretailer.com/article.asp?id=28897
- Jumps right to pages, so need to be clear where ended up
- Show what searched for
- Offer scoped search if large space, e.g.: Amazon
- Larger search box -> type more terms -> better results
- Don't use Boolean queries
  - Men and Women
  - Replace with ability to filter results
- Search results
  - Allow user to change sort order
  - Sorted by quality and relevance
  - Only give what asked for
    - Cite: http://www.uie.com/articles/three_perils_search
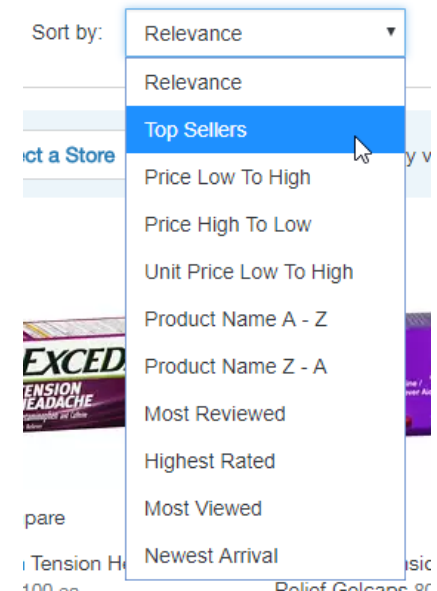
Search, 2

- UIE: searching *again* doesn't help
  - First time: 23% of the users got a "no results" message.
  - Of those users who kept going, 44% got a "no results" on the second attempt.
  - If they still persisted, 50% got a "no results" on the third attempt.
  - And if they were really persistent, it didn't help because 100% got a "no results" on the fourth attempt.
  - Encouraging users to continue with helpful hints doesn't actually seem to help.
  - So: get users relevant results on the first try!
  - Reference

Finding products by browsing

- Many people browse for products from homepage -- [Cite](#)

- Or search by category, then browse

- Clear Product Organization

- "Polyhierarchies" -- https://www.nngroup.com/articles/polyhierarchy/
  - Multiple ways to get to same product
  - Graph not a tree
  - E.g., https://www.rei.com/ - getting to "hats"

Picking your URLs

- Company.com and www.company.com
  - Pick a new company name that can be the URL
  - Easy to remember and spell
- Put "index.html" file in every directory
  - Use directory name as main URL
- Allow URLs to be archived and emailed
  - Make site friendly for incoming links
  - [Current](#) vs. [permanent reference](#) (ACM Technews)
  - Even for products and steps of a purchasing process
  - Add links or "redirects" so old URLs still work

CANVAS

15 minutes

A20: Evaluate a Bad Website

〉 Find a badly designed website

〉 Find at least 3-4 bad design choices made by the website

〉 Submit answers to Canvas

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