Search: Best Practices

Sierra Wren - January 2021

convercent®

Sources

The following information was compiled from these sources:

- Nielsen Norman Group (https://www.nngroup.com/)

- Interaction Design Foundation (https://www.interaction-design.org/)

- UX Collective (https://uxdesign.cc/)

- UX Planet (https://uxplanet.org/)

- Prototypr.io (https://blog.prototypr.io/)

Key Takeaways: User Behavior

- People are more likely to use the search function if they know the results pull from the *entire site*

- Well-designed information architecture helps users with cognitive load

- Search results pages:
  - Users rarely go to the second (and subsequent) page(s) of results
  - The results at the top of the first page get the most attention
  - If every result stands out, no result stands out

- Users start at a search engine 88% of the time they are given a new task to complete on the Web

- People turn to search as their first step – or as their second step, if their first attempt at navigating fails

Common Search Patterns: QUIT

A user types a query > sees results > quits

Also known as **good abandonment**, the user has likely found what they're looking for in the results/suggestions without having to complete their search

4

Common Search Patterns: NARROW

A user types a query > sees results > narrows them down

If there are too many options or it's hard to distinguish which one is the best, users need to narrow the search results by using filters, sorting, or advanced search.

5

Common Search Patterns: BEST FIRST

A user types a query > sees results > opens one of the first links

This pattern is common when users know what they are looking for.

We can help them by adding autocomplete, recognizing synonyms, checking typos, and offering alternative options.

6

Common Search Patterns: PEARL GROWING

A user types a query > opens one of the results > opens related links inside the document or uses terms from the document for queries

This pattern is common when users look for recommendations or research new topics

Common Search Patterns: POGOSTICKING

A user types a query > opens the first result > goes back to search > opens the second result > goes back to search > repeat

This behavior is common in e-shops, galleries, and lists when users browse results and open links to find out more information about items

8

Common Search Patterns: BERRY PICKING

A user types a query > opens a link result > studies the information > goes back to search > reformulates original query based on the new information > opens another link > repeat

This information-seeking process is one in which the query shifts as relevant information and documents are found along the way

9

Common Search Patterns: ORIENTEERING

A user types a query > opens a link > picks a broader range in navigation (broader on breadcrumbs menu)

This process plays the role of navigation

To help users transition faster, we can provide structured search results or structured autocomplete

Key Takeaways: Search Design

- Use the magnifying glass icon
  - The simpler, the better
  - Use a large icon with lots of padding
  - Use plenty of contrast so the icon stands out
  - Don't crowd the area OR isolate the search icon

- Ensure users can submit a search by using the Enter/Return key
  - Also provide the user with a clearly visible "Submit" button or icon

- Search suggestions should be differentiated
  - Ensure a difference can be seen in the searched text vs. the suggestions (bold, italic, indenting, etc.)
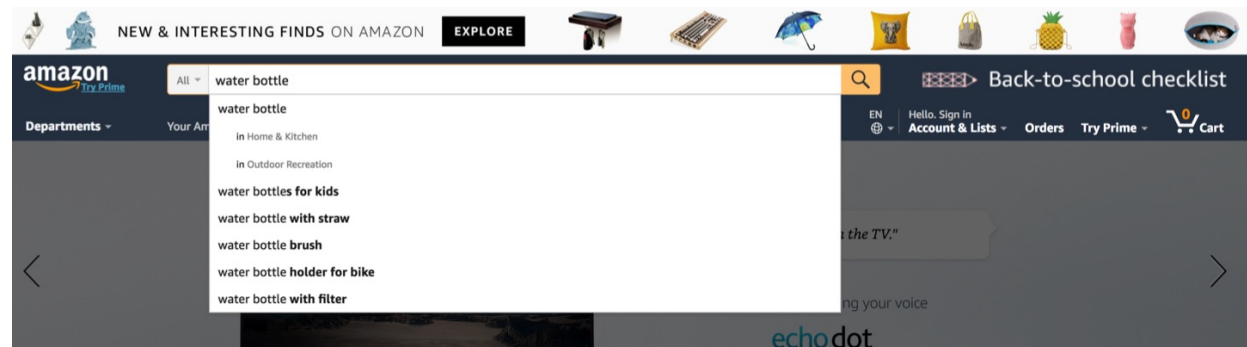
Key Takeaways: Search Design (continued)

- Search results
    - Show a message when nothing is found - OR provide close/related suggestions
    - Provide a quick sorting option
    - Show the query at the top of the search results
    - Highlight query/term in search results
    - Optimize the search results (most relevant and accurate at the top)

- Search box
    - Outline the input field – or at least provide good color contrast
    - Automatically place the cursor in the search box
    - Include a word and/or icon to show the user that the search field is editable
    - Field should be at least 27 characters in length OR should expand to accommodate full query

9%		9%	12%	17%
13%				

Suggestions to Improve Intranet Search Engines

- Provide curated search suggestions

- Recognize synonyms and alternative terms
  - Allow common language vs. industry-specific jargon

- Accommodate variant word forms with stemming

- Handle misspellings gracefully

- Support homophones

- Ignore stop words

In computing, **stop words** are **words** that are filtered out before or after the natural language data (text) are processed. While "**stop words**" typically refers to the most common **words** in a language, all-natural language processing tools don't use a single universal list of **stop words**. Jun 10, 2020

https://medium.com › stop-words-in-nlp-5b248dadad47

Begins with...	Stop words
A	about, after, all, also, another, any, are, as, at
B	be, because, been, before, being, between, but, both, by
C	came, can, come, could
D	did, do, does
E	each, else
F	for, from
G	get, got
H	has, had, he, have, her, here, him, himself, his, how
I	if, in, into, is, it, its
J	just
L	like
M	make, many, me, might, more, most, much, must, my
N	never, no, now
O	of, on, only, other, our, out
S	said, same, see, should, since, so, some, still, such
T	take, than, that, the, their, them, then, there, these, they, this, those, through, to, too
U	under, up, use
V	very
W	want, was, way, we, well, were, what, when, where, which, while, who, will, with, would
Y	you, your

Scoped Search: Limiting Search Boundaries

Scoped search allows users to limit their search to a section or type of content on a website instead of searching everything in one go.

Typically, it is implemented in two ways: **drop-down scope selection** and **autocomplete scope suggestions**, which appear below or within the search box.

There are five main issues with scoped search:

1. Users expect search to include the entire site
2. Users overlook widgets that act as scope selectors (e.g., drop-down menus or autocomplete suggestions)
3. Scoped search forces people to make a decision too soon
4. Scoped search only allows single selection of categories, when multi-selection might be more appropriate
5. Indistinct groupings and unclear labels increase cognitive strain

Things to Consider: Results Page

- *Types of results*
- *Visualization of results* (table, list, cards, adjustable view, faceted navigation)
- *Number of items on a page* (view settings, sorting, pagination, loading, infinite scroll, combinations)
- *Preview* (query terms to highlight in preview, summary of a document that helps differentiate between results, page preview)
- *Accessibility*
- *Shortcuts*
- *Actionable results* (sharing, saving, adding, commenting, previewing, bulk actions)

- *Interface feedback* (loading icon/progress indicator, information about search process - results, time, applied filters, system notifications, not found page, microinteractions)
- *Search history* (recent queries, most popular queries)
- *Filters and sorting* (categories, labels, filters, placement, actions, sorting)
- *Customization*
- *Personalization*
- *Keyboard shortcuts*
- *Relevance indicators*

New terms!

Information Foraging Theory

The easier it is to track down new resources, the less time users will spend at each resource

ANIMAL FORAGING		INFORMATION FORAGING
Food	**Goal**	Information
A site containing one or more potential sources of food	**Patch**	A website (or other source of information)
Search for food	**Forage**	Search for information
The animal's assessment of how likely it is that a given patch will provide food	**Scent**	How promising a potential source of information appears to the user
The totality of food types that an animal may consider in order to satisfy their hunger	**Diet**	The totality of the information sources that a user may consider in order to satisfy an information need

17

Two Metrics for Search Performance: Precision and Recall

Precision:

*the percentage of **retrieved search results that are relevant***

Recall:

*the **percentage of all relevant results** that the search system actually retrieves*
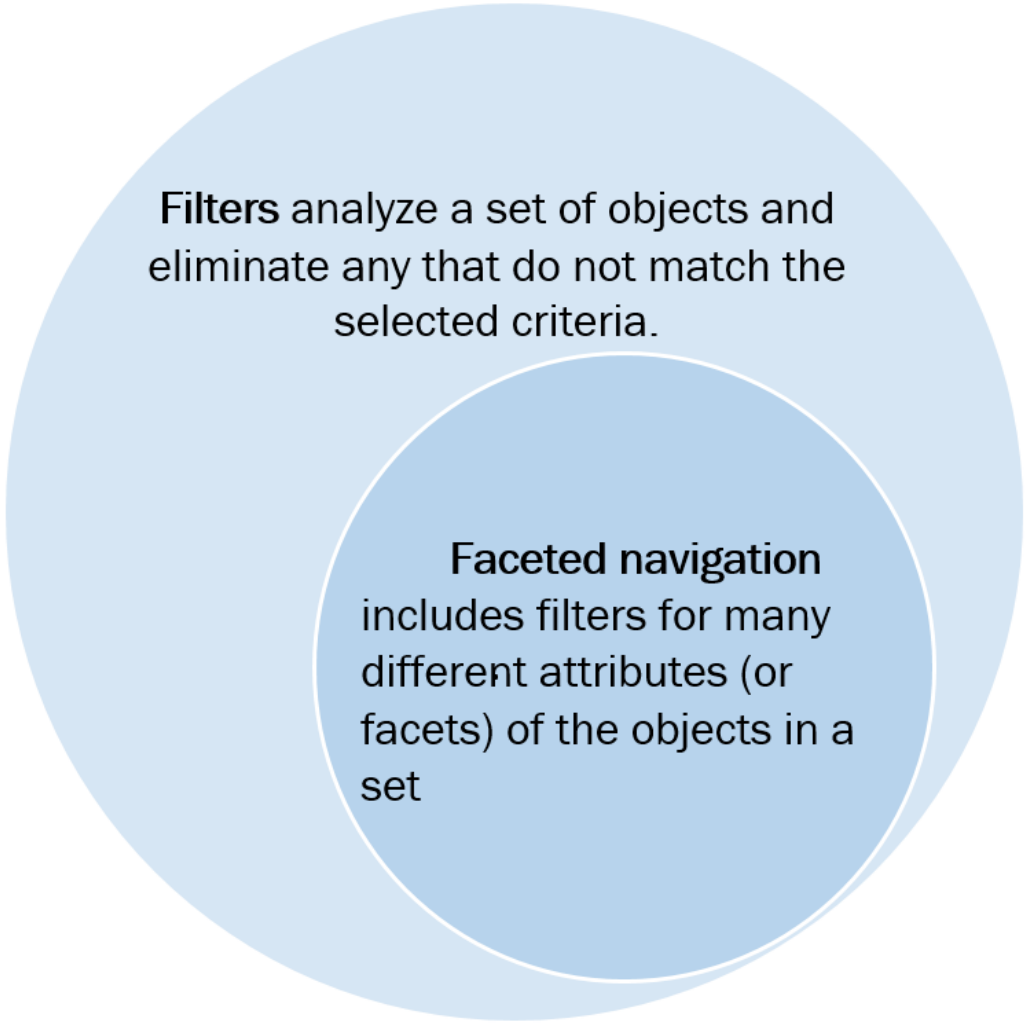
(more important for intranet searches)

Imagine that on a recipes website, we have 1000 recipes, of which 300 are for Indian dishes. Assume that when we search for Indian dishes, we get 500 results on the search-results page. Of those 500 search results, only 100 of them are actually Indian dishes; the remainder 400 are actually nonIndian recipes that are not relevant to our search. That means the **precision** is 100/500 or 20%. The **recall** would be 100/300 or 33%, as the search engine only found 100 of the 300 Indian recipes available on the site, which means that 200 Indian recipes didn't show up on our search-results page at all.

Filters and Facets

Filter *means anything that analyzes a set of content and excludes some items.*

**Faceted navigation** *is composed of multiple filters that comprehensively describe a set of content.*

Filters analyze a set of objects and eliminate any that do not match the selected criteria.

Faceted navigation includes filters for many different attributes (or facets) of the objects in a set

Good Abandonment

When the user's information need is successfully and entirely addressed by the search results page, with no need to click on a result or reformulate the query
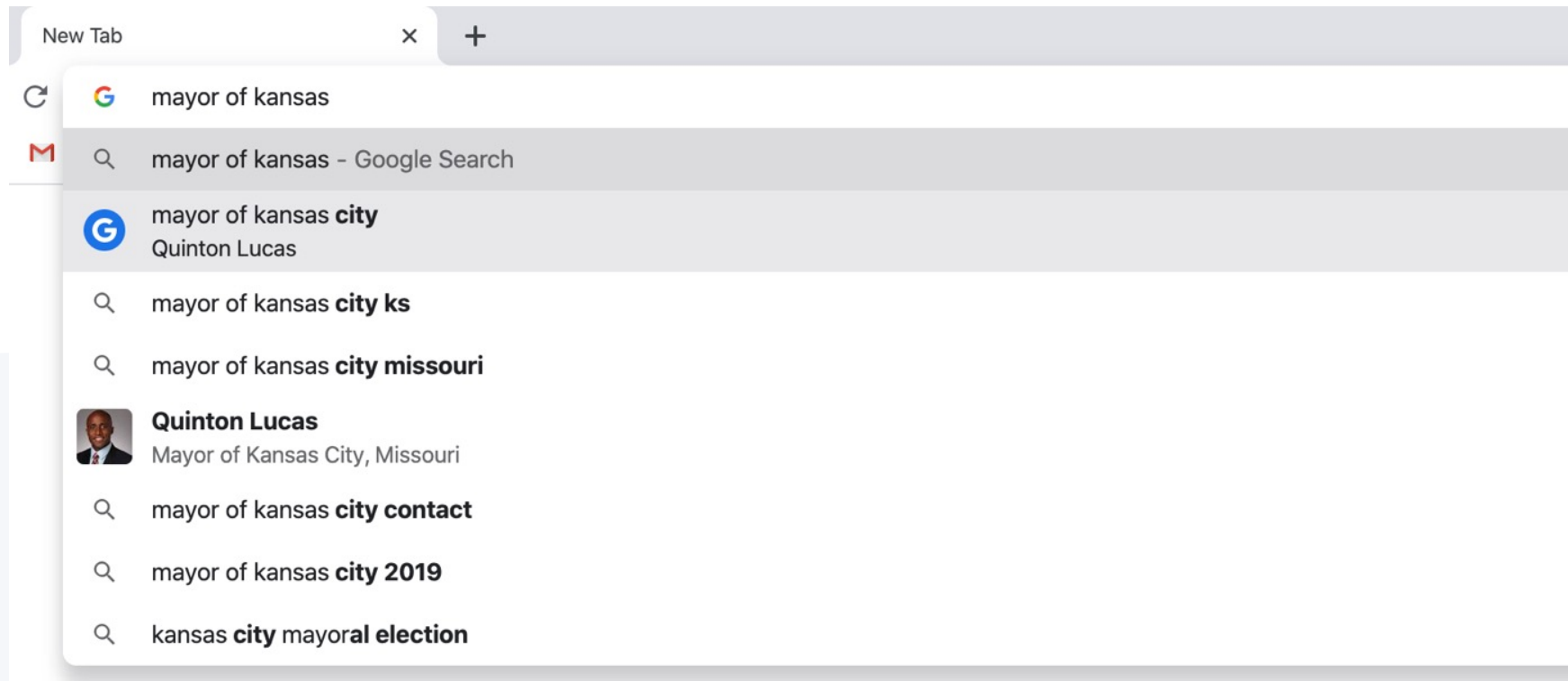
Satisficing

Settling for something we know may not be the best possible choice, but that at least meets our essential needs [satisfy + suffice]

- Two strategies to encourage higher user engagement:
  1. Lower interaction cost - make each step easier, and users will walk farther
  2. Increase benefits - ensure users can quickly get some pretty-good information

- It's great to provide rich, detailed information, but succinct summaries are essential for attracting satisficers

- Sorting helps satisficers quickly identify good-enough stuff

Levenshtein Distance Algorithm

The Levenshtein distance between two words is the minimum number of single-character edits (insertions, deletions, or substitutions) required to change one word into the other

Questions to consider during research:

- What are our users' information needs and interests?

- At what point do users click on search?

- How do they form queries?

- Do they know exactly what they're looking for?
  Or are they just browsing?

- What do they expect to find?

- What are the next steps?

- Is there a pattern in user actions?

- What applications do they use?