Information Architecture

A Quick Overview

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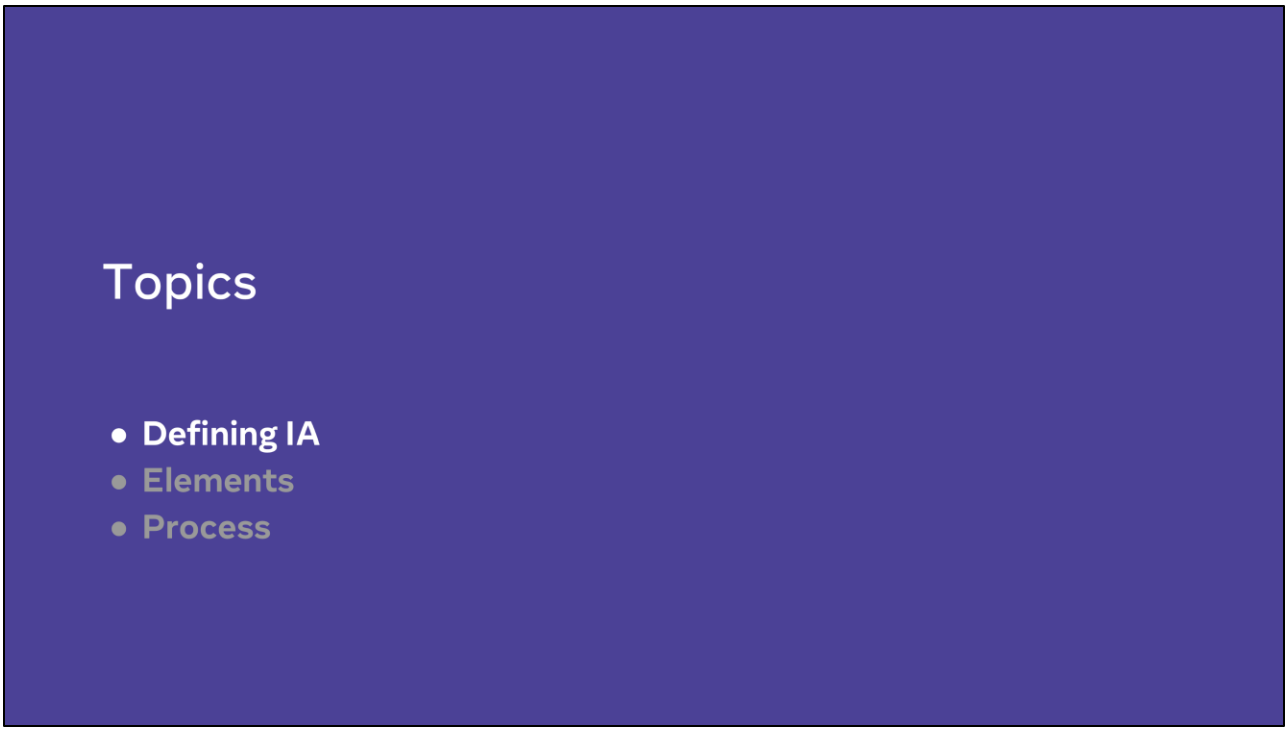
This talk is a brief overview of information architecture. Some of the details are based on internal wiki sites, but the principles apply in most other cases as well.

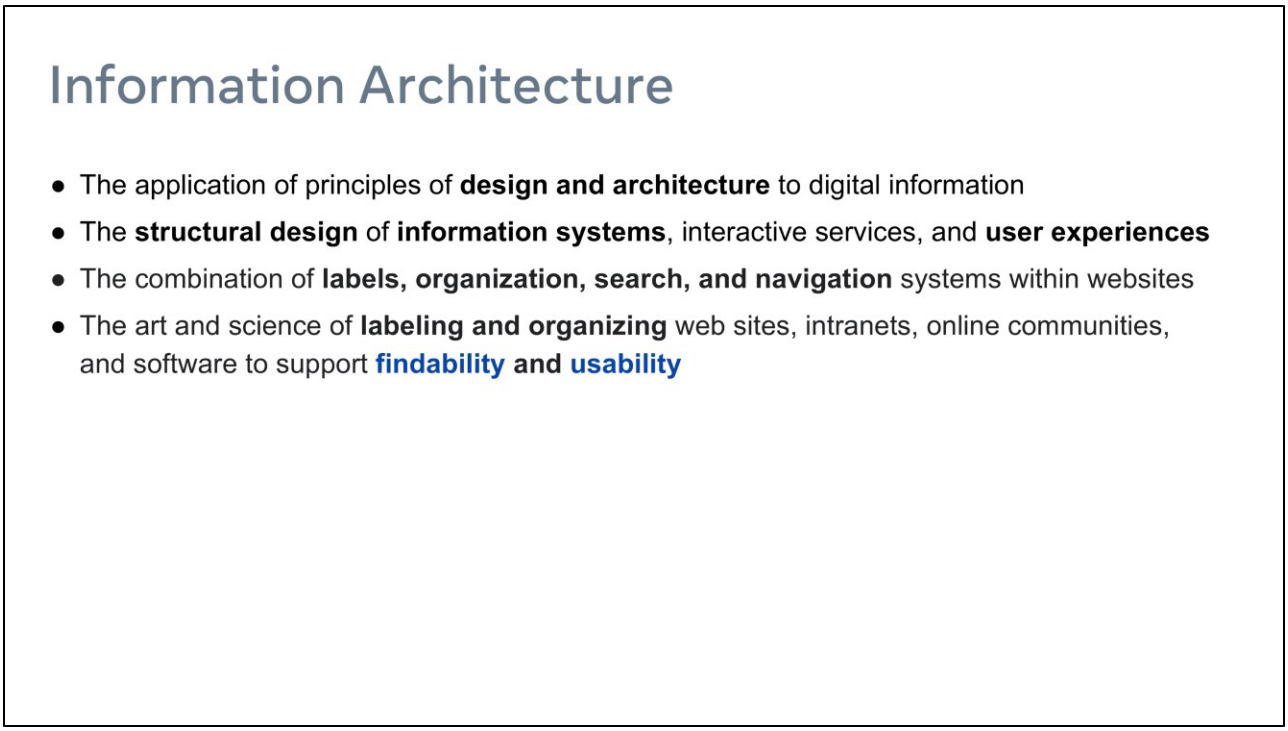
IA is a pretty big topic, and this is just a quick look. The main goal is to provide a sense of what IA is and how it's used.



The talk is in three parts:

- Defining information architecture
- Common elements
- And the process of designing the information architecture of a site

If there's time at the end, I'll share some personal thoughts on the subject.



- Here are some typical definitions of information architecture from a dozen that I found in books and on the web. I've bolded common elements that appear in many of these definitions.
- Wikipedia actually has articles on findability and usability. They're important concepts.
- They're also the two most important words on the page. The point of your site, after all, is to help users "find and use" information.
- The list of 4 items in the middle is also a good one to retain.

On the next page, I've added a fifth definition to bring in a few more details.

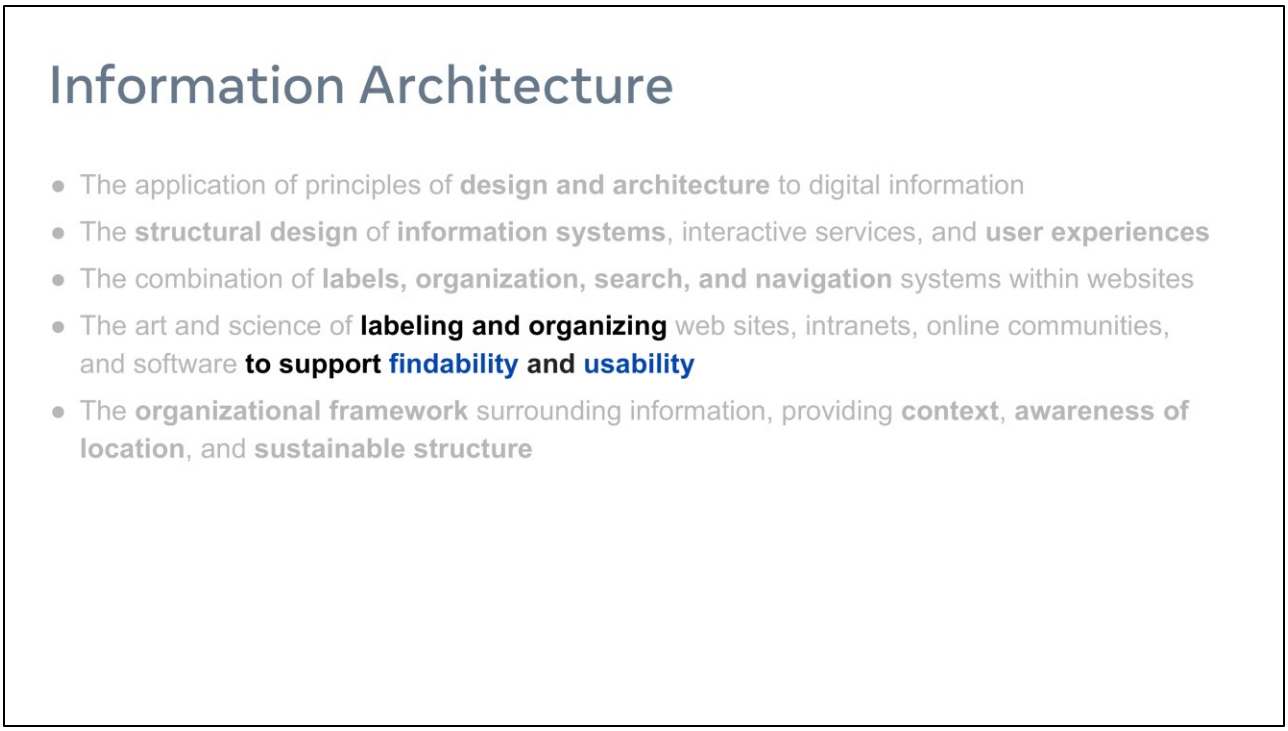
Information Architecture

- The application of principles of **design and architecture** to digital information
- The **structural design** of **information systems**, interactive services, and **user experiences**
- The combination of **labels, organization, search, and navigation** systems within websites
- The art and science of **labeling and organizing** web sites, intranets, online communities, and software to support **findability and usability**
- The **organizational framework** for a body of information, providing **context**, **awareness of location**, and **sustainable structure**

See it at the bottom?

IA often provides a big picture of the information, which gives the user helpful context.

And a good information structure helps us maintain and grow the site.



We might roughly define information architecture as: Organizing information to be found & used.

Big IA and Little IA
Some people really focus on the organizing and finding, and that's sometimes called "little IA". If you take a broader view and spend more time on design and "user experience", that's sometimes called "big IA".

For internal engineering docs, you're more likely to focus on Little IA - the organization of the information, not fancy styling. For a public site, Big IA usually becomes more important.

IA in Context

Information Theory	*Bits & bytes, entropy, error-correction, encryption, compression, etc.*
Information Architecture (IA)	Organizing information to be found & used
(Library &) Information Science (LIS)	*Information storage and access, often academic or scientific*
Information Management	*Like LIS, with more computer/database stuff*
Knowledge Management	*Systems for capture & sharing of knowledge*
Taxonomy	*Structure for information sets*
User Experience Research (UXR)	*User studies & systems, user interfaces (UI)*
Product Design	*Design*

Here are some other topics that are similar to Information Architecture. It helps to think about who is doing each one - an information worker, a college librarian, a computer scientist, a taxonomist, a UXR, a site or product designer, etc.

It would be interesting to do a pie chart of how much of a tech writer's job is information architecture, compared to other tasks like research, writing, maintenance, etc.

Topics

- Defining IA
- Elements
- Process

Ok, now I'll briefly mention some of the main elements of IA, without really drilling down on any of them.

Topics

- Defining IA
- **Elements**
- Process

- Labels & Vocabulary
- Search & Navigation
- Metadata
- Style

Labeling & Vocabulary are about naming and accessing information. Search & Nav are about finding information. Metadata is information about the information. And you know what Style means.

Elements

Labels
Vocabulary
Search
Navigation
Metadata
Style

A label is a name or a handle for a thing. Labels include:

- Titles & headings
- Navigation items
- Button labels
- Link text
- Index terms

Index terms here means words, terms, or names that you tag to be indexed, for instance for the index at the end of a book.

Labels

Labels are:

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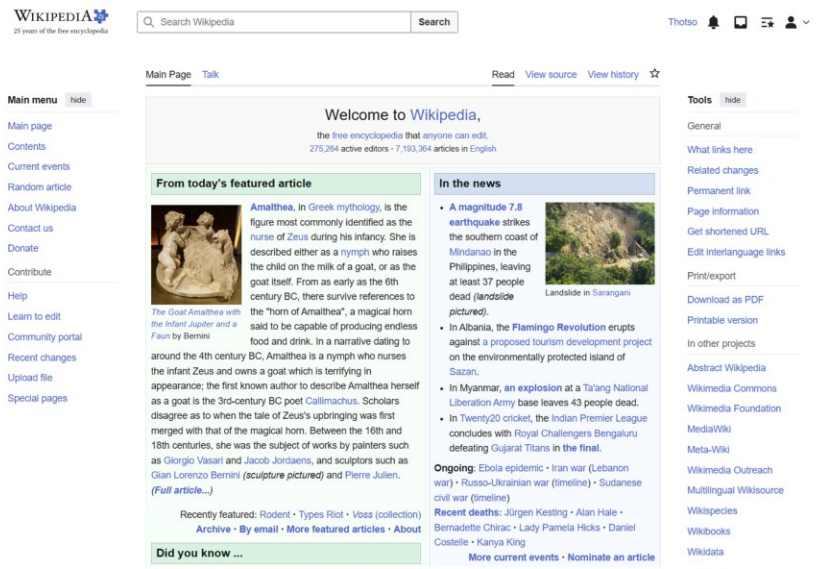


Take a minute to find some labels on this page, such as the title, the menu options, the button names or icons, and the hyperlinks to other information. Depending on how you define IA, you might also include some of the other links or buttons.

While we're here, I'll mention top-down navigation and bottom-up navigation. The menu navigation on the left is considered "top-down" navigation. That basically means it's a feature of the overall site, not part of the page content. Other top-down navigation includes navigation links that appear on every page, many of the menu options, and a breadcrumb trail if there is one. Top-down navigation is a feature of the *site*, not the *individual page*. The links within the page content are more free-form, and are likely to be different on every page. They are considered "bottom-up" navigation.

This distinction between top-down, global navigation and bottom-up, local, content-based navigation can help you think about your site navigation.

Notice that some of the labels are clickable *graphic icons*, not words.

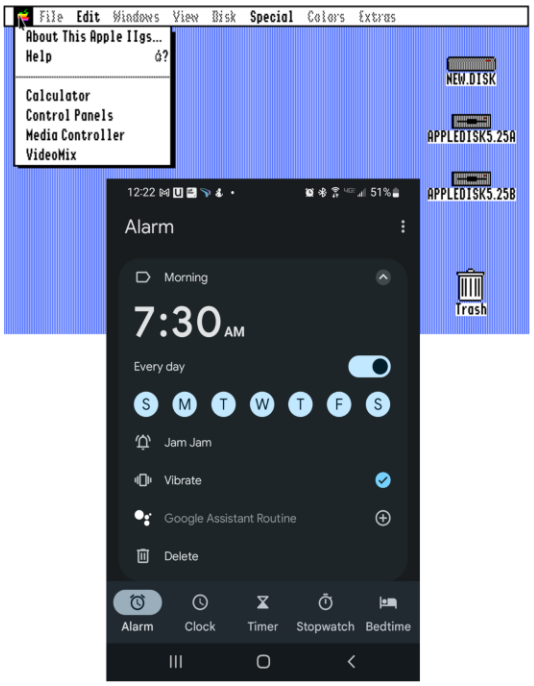
Graphics as Labels

Pros:

- Branding or visual appeal
- Less space
- Lower cognitive load IF they are…
  - Simple
  - Repetitive or obvious

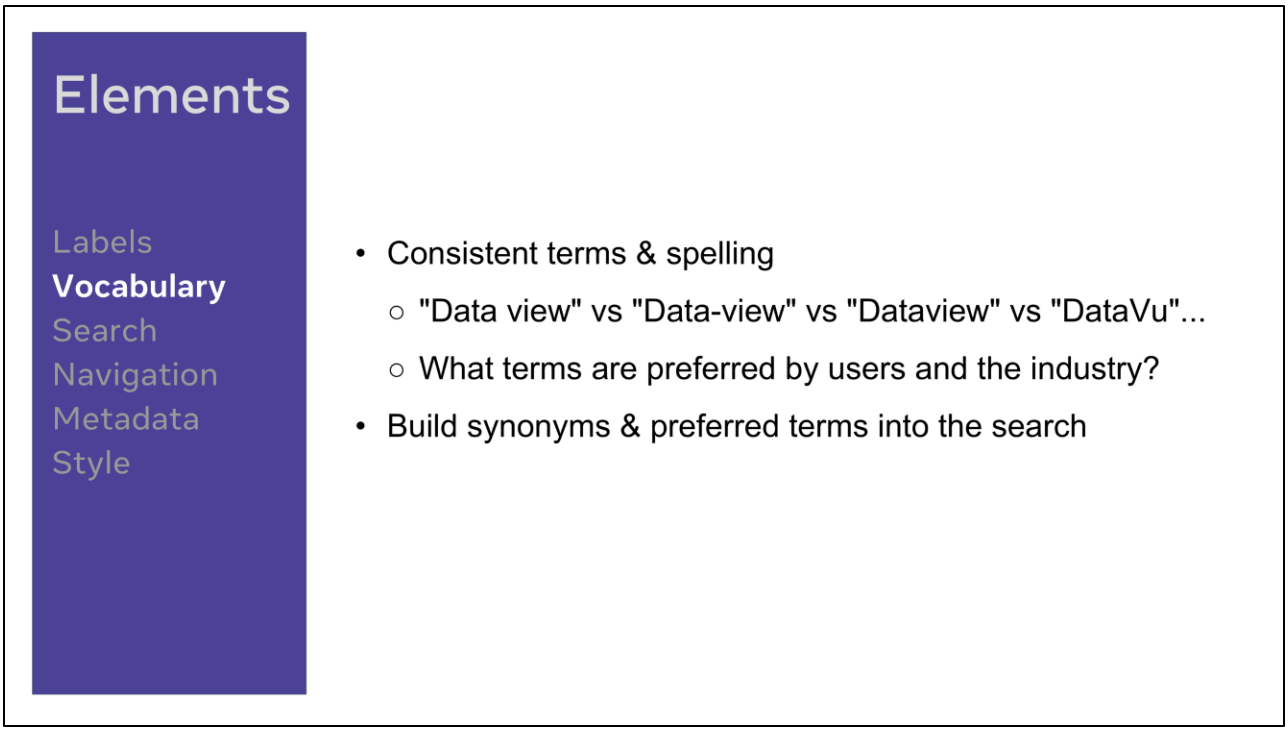
Cons:

- Higher effort
- Impact on community editing



It's not uncommon to use graphics or icons for labels. They can save space, and they can improve usability – *if* they are simple and easily recognizable. But it takes effort to create or graphics, and using them in the wiki might make it harder for the community to edit your site.

Icons can be counterproductive if you use a lot of them, they are complicated, or they only become meaningful after multiple uses. In that case, you may be designing for beauty, not for easily finding and using information.



Information architecture often requires decisions about vocabulary. If different pages use different words or spellings for the same thing, that makes the thing hard to find.

You may have to decide on the preferred term and how to spell it, and write the official definitions. This might involve researching the best terms and getting agreement from the product manager.

If you control the search engine, then you can add aliases or synonyms to link misspellings or alternative terms with the preferred term, so people can find what they're looking for..

Elements

Labels
Vocabulary
Search
Navigation
Metadata
Style

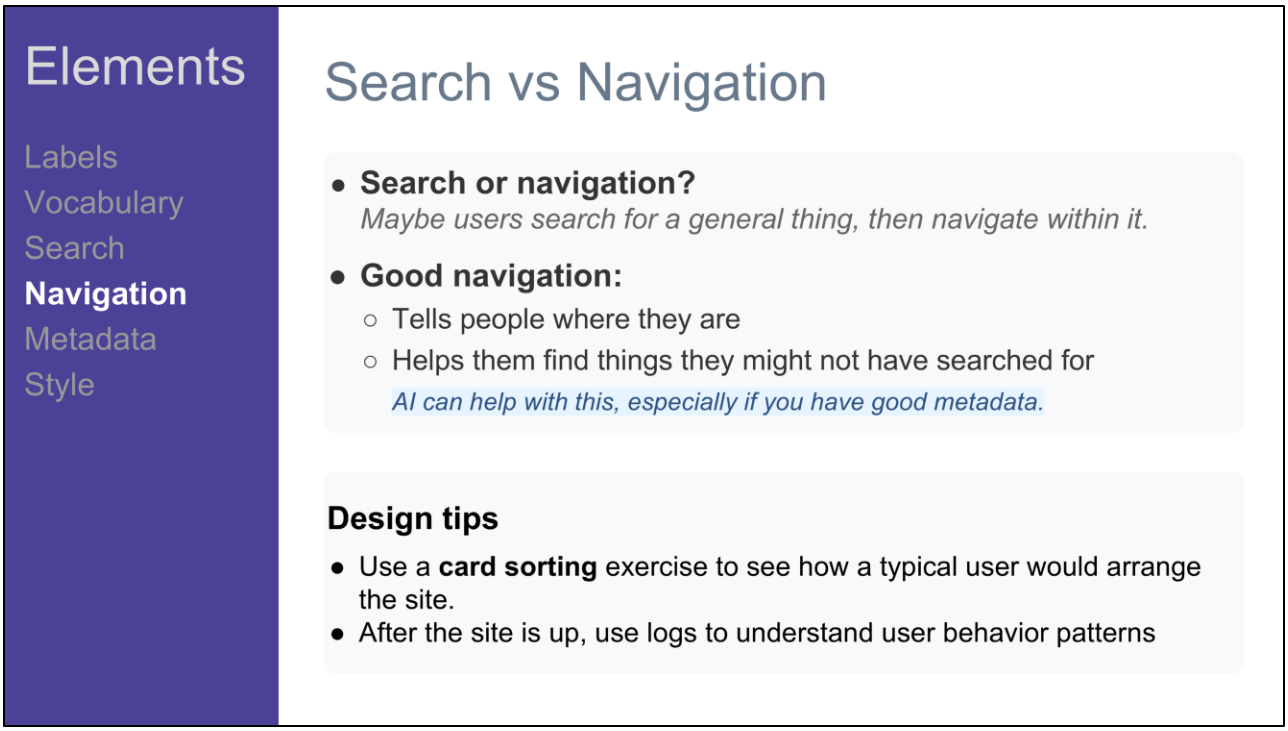
You might have to design the search.

Features of some search systems:

- Autocomplete, booleans, filters/facets
- Synonyms, spelling variations
- Weighting options
- Keywords, tags, zones
- Topic-based search
- Personalized results
- Knowledge cards

For a full public website, you may have to make decisions about what internal search engine to use, the algorithm, the user interface, and the way results are presented. There are a lot of options; a few are shown here.

Facets are panels that let you filter search results for a particular category by choosing specific options such as size, color, year, film director, etc. While *filters* may be global and unchanging, *facets* are dynamic and may show different parameters for different types of search results (carpets, dog food, movies, etc.).



Search is great, but don't underestimate the power of navigation.

- Navigation can show users the structure of your site, and "where they are" in it. The big picture can help them understand things better.
- If the navigation is good, users may find things they would not have thought of.

If a new user might arrive at any page on your site, then "every page is page one". In that case, every page should try to take care of people who arrive by search or by navigation, and be helpful to first-time visitors as well as experts.

But don’t burden frequent visitors with a long welcome that they read once and never need again!

Elements

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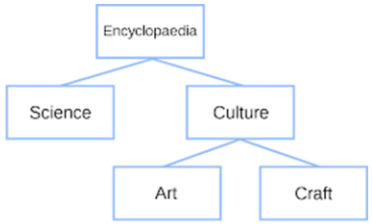
We tend to imagine a hierarchy, in which every item has 1 parent and 0 or more children.

Alternatives include heterarchy, polyhierarchy, and web.

In a polyhierarchy, there are multiple ways to categorize & access the information.



We may default to thinking about *hierarchy* for our site navigation, but we should consider alternatives. In a *heterarchy*, like Wikipedia, there's no hierarchy; all pages stand alone. Everything is found either with search or with links from other pages (bottom-up navigation). In a *polyhierarchy*, a page may have more than one parent page, so you can navigate to the same page through more than one branch or category (in the top-down navigation). And in a "web", anything can link to almost anything, like in a graph, or a brain.

Note: Some would say that navigation and organizational structure (such as hierarchies, webs, etc.) are separate things. But in this brief talk, I'm treating site organization as if it's the same thing as navigation, as it is in some wikis and content management systems.

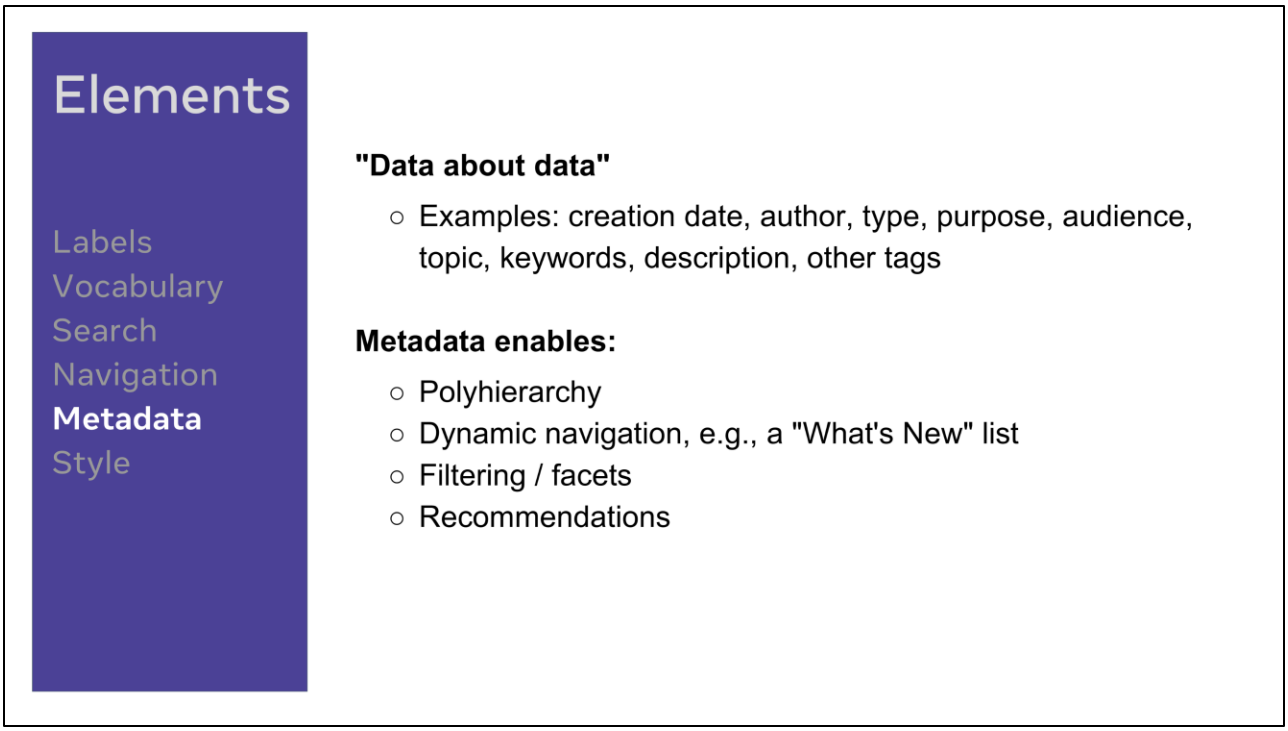
Personas & Paths

- Persona = role & use-case
- Different reading paths for different personas

- Engineer? PM? Designer? New hire?
- Taking a day to learn something, or rushing to solve a midnight crisis?

Your site design should actively consider your users and use-cases. If everyone is the same, then the top-down navigation will work for all of them. But if you have users with significantly different roles or use-cases, then you can provide lists of links (bottom-up navigation) to give each persona a reading list that matches their situation.

These lists might go on your landing page or on your content pages.

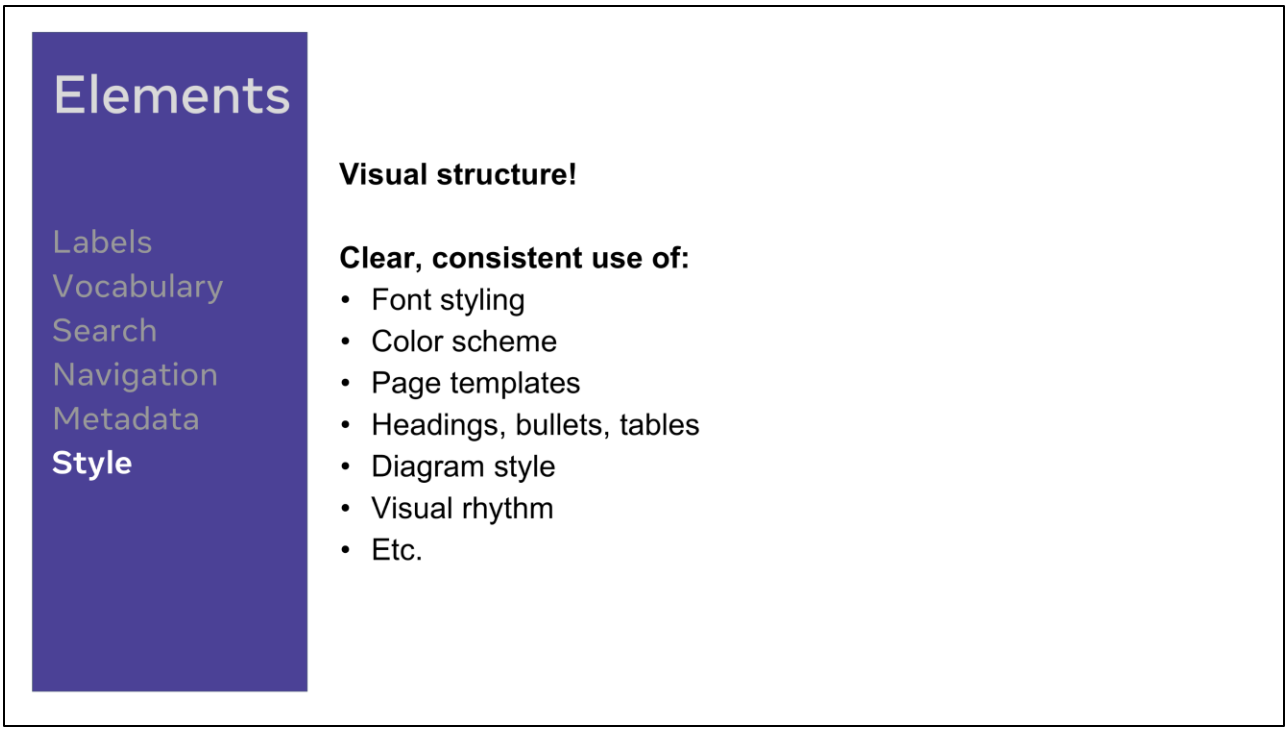


Ok, on to *metadata*, which means "information about information" or information about the page. You see a list of examples here.

In a search interface we can add a filter based on specific metadata items. That's just like when you're on Amazon and you check a box to only show a particular brand or price range. That type of filter is sometimes called a "facet".

Similarly, when Netflix suggests a movie for you, the recommender is filtering on metadata for things like genre, actors, director, etc.

Among other things, metadata enables you to implement facets and recommenders.



And the last element on our list is style. Visual style helps readers to see the structure of the information on the page, and to understand what they're reading. The list here mentions some of the factors in visual style.

Consistent styling reduces mental effort. For instance, studies of slide presentations found that viewers understood and remembered better when the slides all had consistent colors, fonts, etc. So a clear, consistent style in your web pages and documents will help people find and use information.

Elements

Labels
Vocabulary
Search
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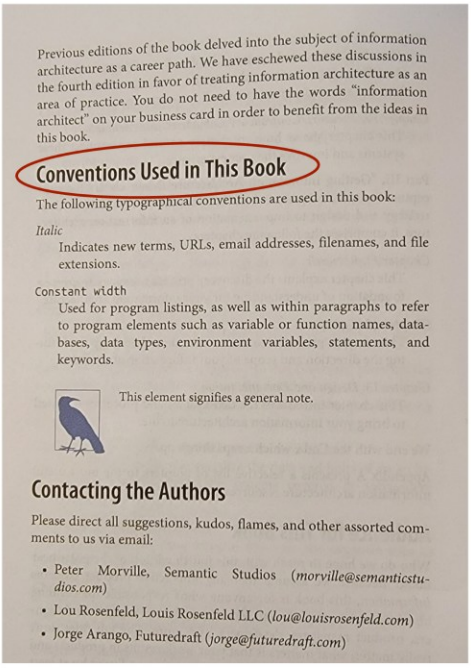
Style

Visual structure!

Clear, consistent use of:

- Font styling
- Color scheme
- Page templates
- Headings, bullets, tables
- Diagram style
- Visual rhythm
- Etc.



Previous editions of the book delved into the subject of information architecture as a career path. We have eschewed these discussions in the fourth edition in favor of treating information architecture as an area of practice. You do not need to have the words "information architect" on your business card in order to benefit from the ideas in this book.

Conventions Used in This Book

The following typographical conventions are used in this book:

Italic
Indicates new terms, URLs, email addresses, filenames, and file extensions.

`Constant width`
Used for program listings, as well as within paragraphs to refer to program elements such as variable or function names, databases, data types, environment variables, statements, and keywords.

This element signifies a general note.

Contacting the Authors

Please direct all suggestions, kudos, flames, and other assorted comments to us via email:

- Peter Morville, Semantic Studios (*morville@semanticstudios.com*)
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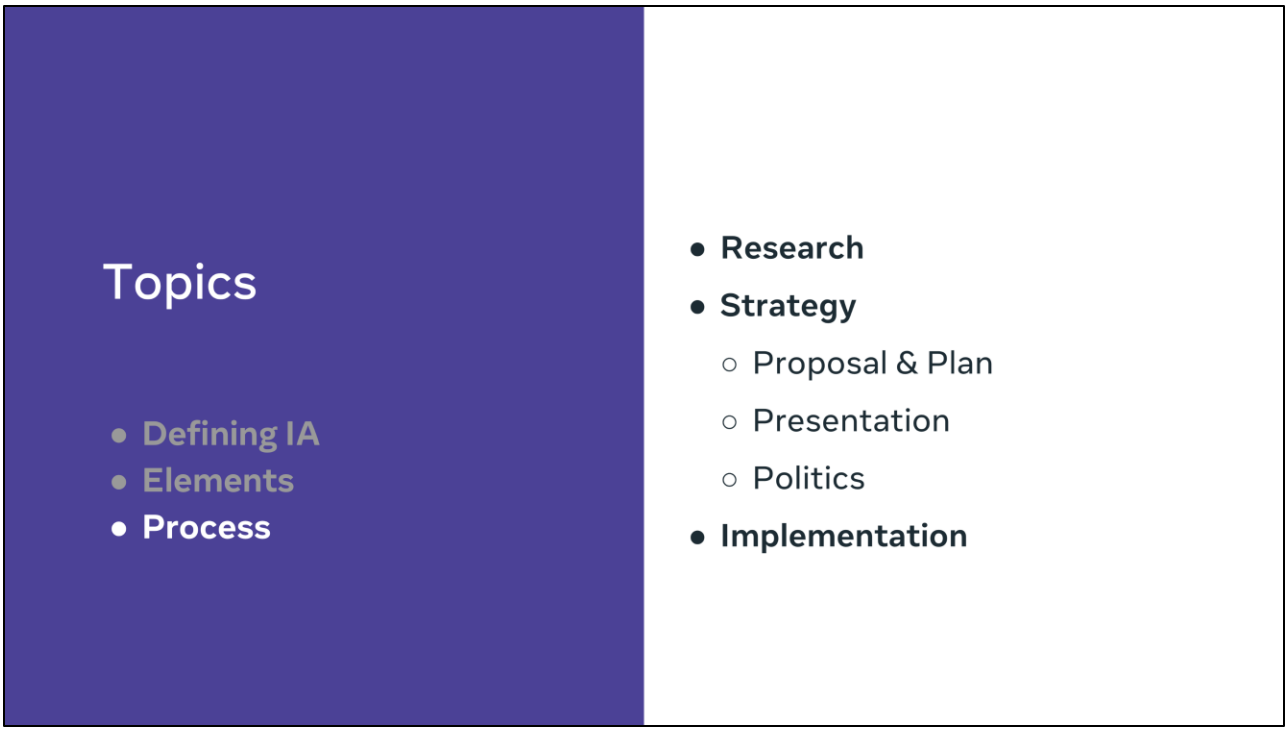
Here's a feature you see at the front of some books, explaining the styles used by the book.

Along this line, you might consider using a style guide to make your site clear and consistent. The Microsoft style guide is available online, for instance. You may agree or disagree with it, but it shows the types of options and the reasoning behind them. Whatever style you choose, use it consistently throughout your site!

Topics

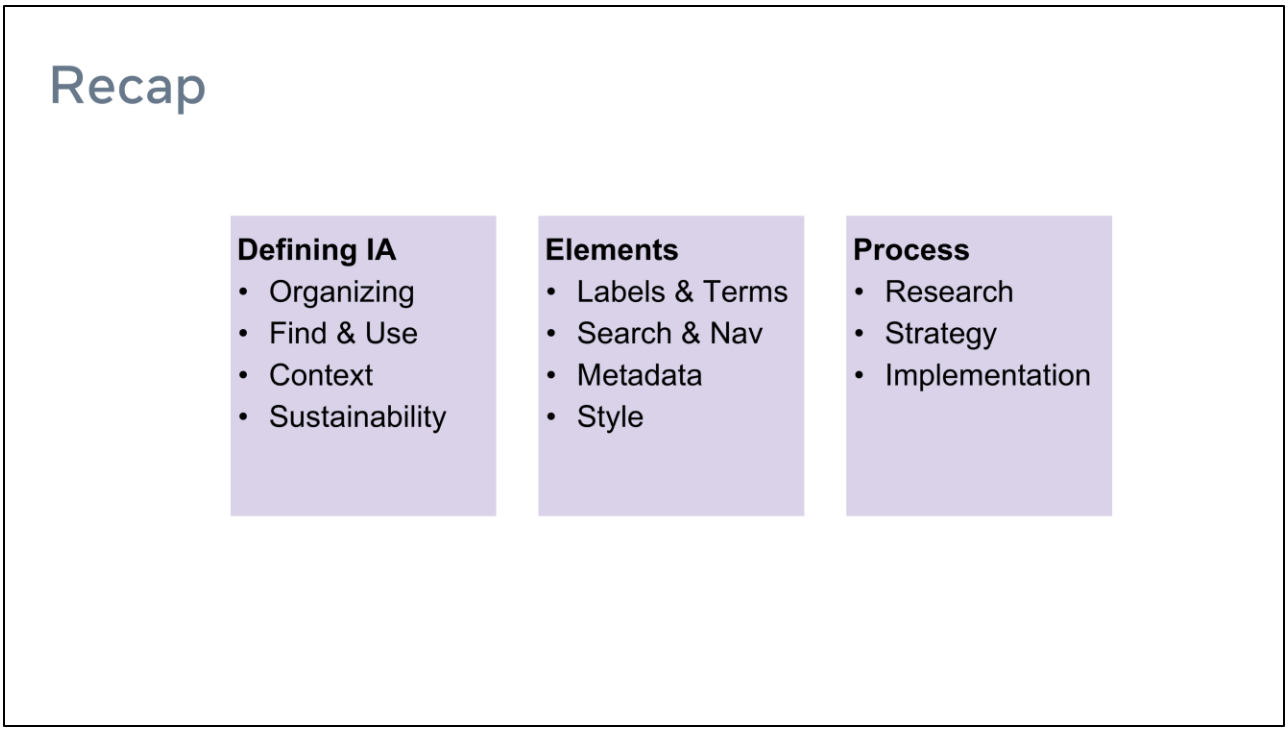
- Defining IA
- Elements
- Process

Okay, a quick look at the IA process.



- I've listed 3 items: research, strategy, and implementation.
- Research might include:
  - Talking to product managers
  - Reading the existing site or documentation
  - Looking at metrics
  - Surveying or interviewing users
  - Exploring what other sites or companies do
- During the research or planning phase, you might use tools like card sorting or tree testing.
  - For instance, in a tree test, you ask users to say where they would go on your menu to answer a question or perform a task. This shows whether they understand your navigation.
  - A card sort is a similar test to see if your vocabulary, categories, or structure make sense to users.
- In a large project, you'll need to formally present your ideas for approval, typically with a document and some slides. You'll want a structure diagram, or in simple cases, a spreadsheet or bullet list of sections and pages.
- I mention politics because your client may not agree with everything you suggest. Stay open and flexible, and remember that you're just advising them. Ultimately the site will be their home and they will have to live with it and grow it.
- The implementation phase, for internal engineering docs, is usually

just about setting up a wiki or arranging a docathon. But for larger projects, especially public websites, you would work with engineers and a product manager to build the site.



To recap what we've covered,

- Information architecture is an evolving field that's typically about organizing a site for finding and using information, often in a way that creates helpful context and makes the site maintainable and grow-able.
- The main elements of IA include labeling, vocabulary, search & navigation, metadata, and style.
- The work process includes research, planning, presentation, and implementation.

Now I'll share an opinion about architecture.

Great Engineering

- Valliere cannon (1730)
  - Beautiful, heavy, must be sent back to factory for expert repair
- Gribeauval cannon (1760)
  - Plain, lighter, modular, parts can be swapped in the field
  - Loved by Napoleon

Handcrafted French cannons in the early 1700s were beautiful to look at. But they were so heavy they took 20 horses and 35 soldiers to drag them. And they were not standardized, so if they had a problem, they had to be taken back to the factory for repair. In the 1800s, mass-produced canons used a lighter alloy, did not have fancy decorations, were less expensive, and were modular so that they could be repaired in the middle of a battle. Napoleon loved the new cannons so much he called them his beautiful daughters.

The older handcrafted cannons went away because they were not practical.

Great Architecture

This unique, interesting building was:

- Expensive to build
- Hard to maintain
- Difficult to modify or expand

The geodesic structures invented by architect Buckminster Fuller, like this building, were beautiful and amazing. But the world did not fill up with them, because they were not practical.

It's likely that your site may need to change, adapt, and grow. It may even need repair in the middle of battle.

Your information architecture should be designed for that.

Great Architecture

These boring buildings were modular, maintainable, & expandable.
(Same 2 buildings, 136 years apart.)

This image is from the book *How Buildings Learn* by Stewart Brand.

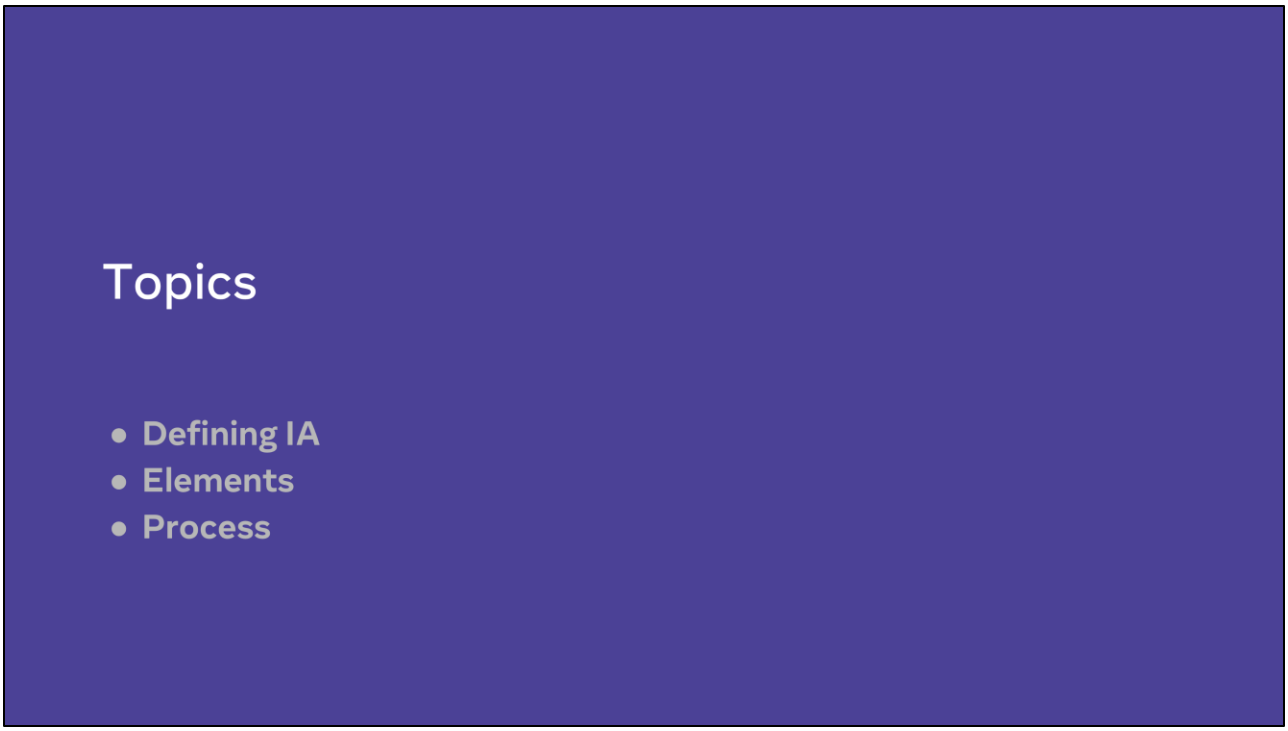
70% of homeowners modify their house. Nearly 100% of wiki or web site owners will modify their site and build additions as needed. The architecture should make that easy.

That might involve:

- Modular design with obvious logic, so people know where to add new info or new sections
- A grouped multilevel structure, instead of a long flat list of pages that just keeps getting longer
- A clear structure, on the theory that if people understand the structure, they're more likely to edit the page and more likely to do it correctly
- Relatively simple page style so that people don't need advanced skills to make changes or add a new page
- Emphasis on information structure rather than surface features. The powerful thing about a chess board is not its color scheme or engraving; it's the structure and functionality.

These are my opinions in general, and especially when it comes to wikis. Some

people would disagree. But these ideas are consistent with the wiki philosophy as expressed on Wikipedia (https://en.wikipedia.org/wiki/Wiki).



Hopefully you'll remember that information architecture is about designing for *finding and using* information.

Elements to consider include labels & vocabulary, search & navigation, metadata, and some would say style.

The IA work process includes research, strategy, and implementation. And remember that this is often done in consultation with both users and owners.

And that's the end of this presentation!

Here are some resources for further exploration.