Information architecture

7 lesson
Human computer interaction
Dr Kristina Lapin
Information architecture

• What is, why is important
• Definition
Information spaces in airports

• Screens show departure times and registration desk numbers
• Information signs
  – Gates numbers
  – Direction labels
  – Information symblos
• Information centers
• Voice messages
Characteristics of information spaces

- Frequency of changes
  - Train schedule or stake prices

http://www.litrail.lt/

http://www.nasdaq.com/
Information architecture

1. The structural design of shared information environments.

2. The combination of

   • organization,
   • labeling,
   • search, and
   • navigation systems

   within web sites and intranets.
Information architecture

• Information
  – Data is facts and figures
  – Knowledge are in the head
  – Information is between

• Architecture
  – Structuring, organizing, labeling
  – Finding and managing
Information architecture

• Structuring
  – Determining the appropriate levels of granularity for the information “atoms”,
  – Deciding how to relate them to one another.

• Organising
  – grouping components into meaningful and distinctive categories

• Labelling
  – What to call those categories and the series of navigation links that lead to them.
What Isn’t Information Architecture?

• Graphic design is NOT information architecture.
  – Layout
• Software development is NOT information architecture.
• Usability engineering is NOT information architecture.
IA structure

• Organization system
  • A way to present information, e.g. content categories

• Navigation system
  • Help user move through the content

• Search system
  – Allow user search the content

• Labelling system
  • Describe categories, options, and links in language that (hopefully) is meaningful to users;
IA components

**Navigation system**

- Darbo pasiūlymai
- Karjera
- Testai
- Papildomas darbas
- Forumai
- FACEBOOK
- BLOG’as
- Dalintis/saugoti

**Labeling system**

- Prisijunkite
- Vartotojo vardas:
- Slaptažodis:
- OK
- - prisiminti mane

**Search system**

- Darbo pasiūlymų paieška:
- pagal datą
- pagal galiojimo datą
- pagal pareigų srity
- pagal vieto
- pagal imonę

**Organisation system**

<table>
<thead>
<tr>
<th>Administration / Secretarial (41)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APSAUGA / GELBĖJIMO PASLAUGOS (6)</td>
</tr>
<tr>
<td>BANKAI / DRAUDIMAS (42)</td>
</tr>
<tr>
<td>ELEKTRONIKA / TELEKOMUNIKACIJOS (27)</td>
</tr>
<tr>
<td>ENERGETIKA (19)</td>
</tr>
<tr>
<td>FINANSAI / APSKAITA (65)</td>
</tr>
</tbody>
</table>

**Viečo**

- PREKYBA (85)
- RINKODARA / REKLAMA (56)
- SAVANORIŠKAS DARBUS (11)
- STATYBA / NEKILNOJAMAS TURTAS (27)
- SVEIKATOS APSAUGA / SOCIALINĖ RŪPYBA (25)
- TEISĖ (10)
Task for you

• https://gustavus.edu/
Top-down IA

1. Where am I?
2. I know what I’m looking for; how do I search for it?
3. How do I get around this site?
4. What’s important and unique about this organization?
5. What’s available on this site?
6. What’s happening there?
7. Do they want my opinion about their site?
8. How can I contact a human?
9. What’s their address?
1. Where am I?

2. How to search?

3. How do I get around this site?

4. What’s important and unique about this organization?

5. What’s available on this site?

6. What’s happening there?

7. My opinion

8. Contact a human

9. What’s their address?
Bottom-up IA

• Where am I?
• What’s here?
• Where can I go from here?
1. Where am I?

2. What’s here?

- French Fries and Veggie Fries
  - Description: Recipes for fried or baked french fries, sweet potato fries, and other veggie fries—Even vegetarian Spiral version!
- Chef John’s Classic Rice Pudding
  - Description: The perfect old-fashioned comforting dessert!

3. Where can I go from here?

Welcome! Here are recommendations for you.

- Personalized recommendations based on your taste preferences and cooks you're following.

Recipe cards with images and descriptions of various dishes.
Where am I?
Home page identity crisis

(Johnson 2003)
Well designed identity
Navigation should

• Be easy to learn
• Be consistent throughout the website
  – try https://www.baekdal.com/plus
• Provide feedback
  – such as the use of breadcrumbs to indicate how to navigate back to where the user started.
• Use the minimum number of clicks to arrive at the next destination.
• Use clear and intuitive labels,
  – based on the user’s perspective and terminology.

http://www.usabilityfirst.com/about-usability/information-architecture/
Navigation should

• Support user tasks.
• Have each link be distinct from other links.
• Group navigation into logical units.
• Avoid making the user scroll to get to important navigation or submit buttons.
• Not disable the browser’s back button.

http://www.usabilityfirst.com/about-usability/information-architecture/
Classification schemes

• **Alphabethical**: in phone books, book stores and directories of all kinds.
  – Problem: formal names sometime differs from informal

• **Chronological**: for historical archives, diaries and calendars, and event or TV guides

• **Geographical** suits travel subjects, social and political issues and regional organizations
  – such as wine sites, local foods
# Chronological classification

<table>
<thead>
<tr>
<th>Time</th>
<th>Channel</th>
<th>Show</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 am</td>
<td>7</td>
<td>Harry's Practice</td>
</tr>
<tr>
<td>2:30 am</td>
<td>7</td>
<td>Home Shopping</td>
</tr>
<tr>
<td>3:00 am</td>
<td>7</td>
<td>Home Shopping</td>
</tr>
<tr>
<td>3:30 am</td>
<td>7</td>
<td>Sons and Daughters</td>
</tr>
<tr>
<td>4:00 am</td>
<td>7</td>
<td>NSW Today</td>
</tr>
<tr>
<td>2:00 am</td>
<td>7mate</td>
<td>All Worked Up</td>
</tr>
<tr>
<td>2:30 am</td>
<td>7mate</td>
<td>All Worked Up</td>
</tr>
<tr>
<td>3:00 am</td>
<td>7mate</td>
<td>Inside West Coast Customs</td>
</tr>
<tr>
<td>3:30 am</td>
<td>7mate</td>
<td>Pimp My Ride</td>
</tr>
<tr>
<td>4:00 am</td>
<td>7mate</td>
<td>Motor Mate</td>
</tr>
<tr>
<td>2:00 am</td>
<td>9</td>
<td>Danoz</td>
</tr>
<tr>
<td>2:30 am</td>
<td>9</td>
<td>Global Shop</td>
</tr>
<tr>
<td>3:00 am</td>
<td>9</td>
<td>Extra</td>
</tr>
<tr>
<td>3:30 am</td>
<td>9</td>
<td>Good Morning America</td>
</tr>
<tr>
<td>11:55 pm</td>
<td>SBSONE</td>
<td>Secret Sunshine</td>
</tr>
<tr>
<td>2:30 am</td>
<td>SBSONE</td>
<td>Beat The Ancestors</td>
</tr>
<tr>
<td>3:25 am</td>
<td>SBSONE</td>
<td>Engineering Giants</td>
</tr>
<tr>
<td>4:25 am</td>
<td>SBSONE</td>
<td>Food Lovers' Guide Australia</td>
</tr>
<tr>
<td>2:00 am</td>
<td>7 Eleven</td>
<td>Home Shopping</td>
</tr>
<tr>
<td>2:30 am</td>
<td>7 Eleven</td>
<td>Home Shopping</td>
</tr>
<tr>
<td>3:00 am</td>
<td>7 Eleven</td>
<td>Home Shopping</td>
</tr>
<tr>
<td>3:30 am</td>
<td>7 Eleven</td>
<td>Home Shopping</td>
</tr>
<tr>
<td>4:00 am</td>
<td>7 Eleven</td>
<td>Life Today with James Robson</td>
</tr>
<tr>
<td>4:30 am</td>
<td>7 Eleven</td>
<td>CBS This Morning</td>
</tr>
<tr>
<td>1:00 am</td>
<td>7 TWO</td>
<td>Carlito's Way</td>
</tr>
<tr>
<td>4:00 am</td>
<td>7 TWO</td>
<td>Love Thy Neighbour</td>
</tr>
<tr>
<td>4:30 am</td>
<td>7 TWO</td>
<td>Shortland Street</td>
</tr>
</tbody>
</table>
Geographical classification
Classification schemes

• **Faceted** classification
  – Major concepts of the site, their facets (attributes) and their values
  – By **topics**
    • Yellow pages, travel agencies, recipe sites, …
  – By **tasks**
    • In text editors: edit, insert, format, …;
  – By **audience**
    • bank sites: private and business clients;
    • Universities – prospective students, students, staff

• **Metaphors**: desktop, folder, file.

• **Hybrid**: combination of various schemes.
Faceted classification: travel agency

Major concepts: flights, hotels, cars, etc.
Common facet for all concepts:
• price

• Unique facets:
  – flights go from one city to another,
  – hotels are located in a single city
    • but may be part of a chain, etc.
Task classification

You found over 133,000 products in Shoes

Find by Shoe Type
- Orthopedic / Comfort (20,979)
- Boots (16,775)
- Sandals (9,533)
- Running (6,911)
- Slip-Ons (8,772)
- More...

Find by Brand
- New Balance (5,072)
- Adidas (4,352)
- Reebok (3,843)
- Rockport (5,773)
- Skechers (3,940)
- More...

Find by Gender and Age
- Women (25,289)
- Men (30,947)
- Girls (7,054)
- Boys (6,771)
- Infants and Toddlers (1,555)

Or find by
- Price Range
- Shoe Style
- Store
- Material
- Toe Type
- Keyword

Compare prices on over 133,787 products

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Store Name &amp; Rating</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Featured Product</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Classification by audience
Metaphors: Aqua Park Vichy
Social classification

- User *tagging* in social networks
  - a **tag** is a keyword or term assigned to a piece of information
- Tag clouds
Importance of classification

• Jared Spool's User Interface Engineering research:
  – Departments in left navigation panel www.macys.com
  – Combination department and gallery Old Navy (www.oldnavy.com)
  – Combination of product description and departments
    • Lands' End (http://www.landsend.com)
  – Combined text lists of all the products in the department with a toggle to see the pictures for a gallery
    • Eddie Bauer (http://www.eddiebauer.com)

• Results:
  – 78% of users used navigation, 28% search
  – Land’s End design performed the best, Old Navy’s – the second
  – Left navigation design – the worst performance

https://articles.uie.com/strategies_categories/
Organisation structures

• **Hierarchical** tree structure
  – shallow and broad structure with many branches
  – Deep structure with few branches
• Breath vs depth?
• Problem
  – No matter what classification scheme is chosen, some item will not fit nicely into it
  – Then the designer puts it under two or more headings
  – Hierarchy becomes a network
    • More difficult to understand
Classification by topic: travel
**Dalykinė schema: kelionės**

**Kalėdinis konkursas! Laimėk kelionę į savo svajonių miestą!**

<table>
<thead>
<tr>
<th>Kryptis</th>
<th>Kelionės data</th>
<th>Šaltinis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valstybė</td>
<td>2014 Gruodis</td>
<td><em><em>4</em> ST. GEORGE SPA HOTEL</em>* (Apgyvendinimas Kipre, Pafosas)</td>
</tr>
<tr>
<td>Valstybė</td>
<td>2014 Gruodis</td>
<td><strong>Pramoginis - pažintinis savaitgalis Paryžiuje</strong> (&quot;Royal Mansart&quot; 2*)</td>
</tr>
<tr>
<td>Valstybė</td>
<td>2014 Gruodis</td>
<td><em><em>PAPHIESSA 3</em> (Apgyvendinimas Kipre, Pafosas)</em>*</td>
</tr>
<tr>
<td>Valstybė</td>
<td>2014 Gruodis</td>
<td><strong>Norwegian</strong> (Italija, Graikija, Turkija - 11 dienų kruizas) Norvegijos Jade laivu</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kaina nuo:</th>
<th>Daugiau</th>
</tr>
</thead>
<tbody>
<tr>
<td>808,00 Lt</td>
<td>231,01 €</td>
</tr>
<tr>
<td>489,00 Lt</td>
<td>141,62 €</td>
</tr>
<tr>
<td>356,00 Lt</td>
<td>103,10 €</td>
</tr>
<tr>
<td>1.896,00 Lt</td>
<td>549,12 €</td>
</tr>
</tbody>
</table>
Effective IA

1. Understand the business/contextual requirements and the proposed content for the system. Read all existing documentation, interview stakeholders and conduct a content inventory.
2. Conduct cards sorting exercises with a number of representative users.
3. Evaluate the output of the card sorting exercises. Look for trends in grouping and labelling.
4. Develop a draft information architecture (i.e. information groupings and hierarchy).
5. Evaluate the draft information architecture using the card-based classification evaluation technique.
6. Don’t expect to get the information architecture right first time. Capturing the right terminology and hierarchy may take several iterations.
7. Document the information architecture in a site map. This is not the final site map, the site map will only be finalised after page layouts have been defined.
8. Define a number of common user tasks, such as finding out about how to request holiday leave. On paper sketch page layouts to define how the user will step through the site. This technique is known as storyboarding.
9. Walk other members of the project team through the storyboards and leave them in shared workspaces for comments.
10. If possible within the constraints of the project, it is good to conduct task-based usability tests on paper prototypes as it provides valuable feedback without going to the expense of creating higher quality designs.
11. Create detailed page layouts to support key user tasks. Page layouts should be annotated with guidance for visual designers and developers.
Over-the-Top Websites

http://www.webpagesthatsuck.com/over-the-top-web-sites.html
INFORMATION ARCHITECTURE FOR MOBILES
How is mobile different?

- Small size, lighter, more portable
  - More convenient to use
- Many users feel real emotional connection to their devices

(McVicar 2012)
Popular navigation patterns

- Main navigation bars and tabbed bars
- Hierarchical Tree Navigation
- Nested Doll Navigation
- Hub and Spoke Navigation
- Bento Box Navigation
- Filtered View Navigation
The navigation bar is efficient, but
• it works well only for few navigation options;
• it takes up valuable real estate above the fold.

The tab bar can appear
• at the top (Android mostly) or
• at the bottom of the page (iOS mostly).
It is usually present on most pages within an app.

https://www.nngroup.com/articles/mobile-navigation-patterns/
Tab bars and navigation bars

• Well suited for sites with few (4-5) navigation options
• For more - Carousel may be a solution
  – but if the categories are different
  – then users won’t scroll
  – because the weak information scent from the visible categories may prevent them from guessing what items are hidden

https://www.nngroup.com/articles/mobile-navigation-patterns/
Hierarchical Tree Navigation

• Provides a top-level category for navigation followed by further layers of content in sub-categories below that level

• **Good for** organising complicated site structures that need to follow a desktop site’s structure.

• The drawbacks
  – this model can become difficult to accommodate on the mobile screen;
  – the more content you have, the more difficult it is to squash all that data into the screen.
Nested Doll Navigation

- Linear menu pattern
- Users incrementally tap or swipe
  - to reveal additional menu options
  - as they traverse up and down through the site map.
- Funnelling users from broad overview pages to detail pages helps them hone in
  - on what they’re looking for
    - and focus on content within an individual section.
  - well suited to small screens
    - but comes at the expense of easy lateral movement across sections.
Hub and spoke navigation

• Central screen acts as the launchpad for exploration
  – Links point outward to other sections
  – To move from one section to another,
    • you must first jump back to the hub.

• Eliminates the need for global navigation on each page
  – a popular choice for
    • multi-functional tools
    • task-based applications
  – that benefit from focus and minimal distraction.

https://www.smashingmagazine.com/2014/10/wayfinding-for-the-mobile-web/
Bento Box/Dashboard Navigation

- Brings more detailed content directly to the index screen by using components to display portions of related tools or content.
- More suited to tablet than mobile – due to its complexity
- Good for
  - Multi-functional tools and content-based tablet apps that have a similar theme.
- Most interactions occur in a single multi-purpose screen
  - that unfolds to reveal layers of additional information.
- A popular choice for websites
  - on which users interact with data aggregated from a variety sources.
Filtered View Navigation

- Allows to navigate within a set of data by selecting filter options to create an alternative view.

- **Good for**
  - Apps or sites with large quantities of content,
    - such as articles, images, videos.
  - Filtered view systems deal with a single data set.
  - Information may be explored from multiple perspectives,
    - with a variety of views and sorting options
    - controlled by the user.
Combining schemes

- Example:
  - One scheme for public part
  - Another for registered members
Why IA matters

- The cost of finding information
- The cost of not finding information
- The value of education
- The cost of construction
- The cost of maintenance
- The cost of training
- The value of brand
Effective IA design

• Context
  – Business goals, funding, politics, culture, technology, resources, constraints

• Content
  – Document/data types, content objects, volume, existing structure

• Users
  – audience, tasks, information seeking behavior, experience
Summary

• Information architecture is concerned with
  – understanding the structure and
  – organization of the content of the site.

• Navigation concerns
  – how people move around the site and
  – how they get to know
    • what is on the site and where it is.
References

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• Raluca Budiuu: Basic Patterns for Mobile Navigation: A Primer, NN/g, 2015
• Iain Barker. What is information architecture?, steptwo.com.au
• Web design reference: Information architecture, d.umn.edu
• The Definition of Information Architecture, Semantic Studios
• Information architecture, usabilityfirst.com
• Alan Cooper, Reimann Robert, Dave Croni. About face 3: the essentials of interaction design. Wiley, 2007
Exam questions

• Definition and purpose of information architecture.
• What components includes information architecture?
• Creating information architecture using top-down approach
• Creating information architecture using Bottom up approach