UX Foundations: Information Architecture

1. **What is Information Architecture?**

- Information architecture as the art and science of organizing and labeling websites, interacts, online communities and software to support usability and findability."
- Research helps guide your creativity.

2. **Research to Determine Information Architecture**

- Get feedback from real users.
- Think about how your user thinks and categorize activities, items and individuals.
- **Card sorting** is a method used to help design or evaluate the **information architecture** of a site. In a **card sorting** session, participants organize topics into categories that make sense to them and they may also help you label these groups.

3. **Creating and running a paper Card Sort**

- List tasks currently supported.
- List your wants.
- List actions people can perform.
- Task should be realistic and believable.
- Tasks should be clear like "you were just given a dendrobium orchid. How should you make sure it lives a long time"?
- User goal is "where they go to achieve tasks"?
- You need to lost 30 to 50 tasks.
- Tasks are representative of all site or product areas.
- Better to print your cards than hand writing.
- Give a refence no to each card.
- Find users that will use your product.
- Find enough people (15 in each user category)
- Check they fit recruiting profile.
- Schedule times to meet.
- Reward with a gratuity.
- All you should need is a large table, area free of distraction.
- Put all the task cards on table and ask participants to make groups of them.

- If a group is big like 10 or ore cards say them to divide it into smaller groups.
- Now say participant to name each group.
- Ask them were any group difficult to create and why?
- Why any cards difficult to put in a group? If so, why?
- Thank the participants.
- After each participant has completed the card sort exercise, you'll need to record the groupings they used in a spreadsheet. Use the participant's name as the identifier, then the name they gave to the first group, followed by the reference numbers from the card they put in that group. Repeat this down the page for each group in turn. If some of your participants created hierarchies of groups, say cut flowers and live flowers, underneath the heading of flowers, just ignore the hierarchy for the moment. Make a separate group for each label that was written. Keep a note of the hierarchies the participants created, though. That can be useful later in the process. Here's a little trick. You can check that you entered the data correctly by doing the sum of the column. The sum of the numbers in the column should be the same as the sum of all the numbers from one to the number of cards you have. The formula is really simple, number of cards multiplied by number of cards plus one. Divided by two. So if you had 30 cards, it would be 30 times 31 divided by two. After you've run all of your participants, you'll end up with a spreadsheet full of group names, each name containing a set of card reference numbers. This is the data that you'll need for your analysis.

4. Analyzing a Paper Card Sort

- Each participant is likely to have sorted the cards into slightly different groups, and quote those groups slightly different things. Still, hopefully just from watching the card sort sessions you'll already have noticed some general agreement between participants. Or the emotions of maybe two separate ways of looking to a site's contents or tasks. Now, we want to get a bit more rigorous with our analysis. We already talked about capturing the raw data in an Excel file. And turning into a grid of participant card names for each task. We could probably have recorded our sort data directly into this grid format after each card sort session. But it's really

useful to have both views, with the data sorted by group name and also sorted by task name. Sorting by group name lets you quickly tell how many groups each participant created, and how large each group was. Sorting by task name let's you know how many groups or group names participants placed each task into. Now we have the data in a more compact format, it's time to rationalize those group names. It's likely that several participants used similar names for groups, like maybe about us, or company information, or even just the company name. If those groupings tend to contain similar cards, it's fair to give them all the same name. This isn't necessarily the final name we'll give to this category. But it's a good way of reducing the range of different group names to a common set. Make a copy of your original data in a new sheet to the spreadsheet. Then replace all the original category names the participants used. With the smallest set of standardized names. Whenever you can, you want to draw out the underlined contents of the category and the name you give it. Look for synonyms like check out at the card, or basket, or common nouns and verbs that participants used.

- Work on same or different groups by participants?
- Note is there a pattern to the differences?
- Pattern based on participant characteristics?
- Is it customers vs suppliers?
- Is it technician's vs salespeople?
- Same or different group labels?
- Differences in languages?
- How was information organized?

5. **Running and Analyzing a Computer-Based Card Sort**

- Computer based card sort tools are xSort (xsortapp.com) for mac and UXSORT (uxsort.com) for pc.
- You can use an online conferencing to share a screen.
- You can use an online tool.
- Optimalworkshop.com
- Uxpunk.com/websort.
- Userzoom.com
- Find a tool that work for you.

- **Setting up a card sort using optimal sort:**
- Sign up.
- Create a new server.
- Set survey settings.
- Make cards by clicking card tab.
- You can add images/ urls/ descriptions to each card.
- Click on randomize card order when presented to participants to reduce potential bias.
- Select the card sort type e.g. open or closes. In close people will make their own groups.
- Write a message in “message tab” for participants.
- Write thankyou message.
- In appearance tab you can add your logo or any image related to site.
- You can now share url of your survey to the participants.
- Click on launch now and you are live.
- Now write the mail to participant including why perform reverse sort.?
- How long it will take?
- What they get for doing it?
- When you want them to do it by?
- Who to contact with questions?
- Don’t forget to copy url of your survey in the mail.
- You can now track responses.
- Keep track of few things like time taken etc.
- Select the cards in same category, standardized selected category and give it a category name.
- One major advantage of using a computer based or online tool, is that it can collect information for you. So you don't have to do as much data collection and entry. Most of the tools also give you an analysis suite, to help you make sense of the data. Here, we'll look at the information you get from optimal sort. If you though that the hand-based card sort analysis was painful. You'll be very relieved to know that optimal sort and the other tools do a lot of data entry and formatting for you. Even if you ran the card sort in person, optimal sort lets you enter the results, and lets you do cluster analysis calculations for you. Having said that, it's still up to you to

make sense of what the results are telling you. That still means diving into the data to some degree. Computer based tools aren't any more magic than an Excel spreadsheet. They might give you more data visualizations, but you still need to spend time working out what the data is telling you.

6. **Creating an Information Architecture from your Analysis**

- Take observation and cluster analysis.
- Items that participant group more clearly makes basic low-level structure.
- Right information = correct order
- Sometime an element can be assigned to different groups by different participants. There can be problem with terminology or incorrect target audience.
- Comments from the participants can help in deciding the proper group.
- The best way to create your hierarchy is to split your participants in to two different groups.
- Make cluster analysis of both groups.
- Use data and comments to find patterns.
- Start working from cluster analysis and dendrograms, then think about participants comments and then make your hierarchy.
- Create groups that match the majority.
- Check majority with individual results.
- Create hierarchy that works for everyone.
- Combine cluster analysis, dendrogram, and comments to create first pass.
- Back up all decisions with data.

7. **Validating the Information Architecture with Reverse Sorting**

- Once you've put together a draft of your structure, you should test it with users by doing a reverse card sort. This allows you to get quick feedback that the assumptions you made when you created your new information architecture are right, before you make any design changes. A reverse card sort is very much like it sounds. Rather than sorting the task cards into groups, participants indicate where they think they'd go within your information architecture hierarchy to perform each task or find each item. We still run the reverse sort with our abstract information architecture hierarchy, rather than the menu structure we think we'll ultimately create. That way, we get to test out the whole structure in one go. The reverse

sort, which is sometimes also called tree testing because your hierarchy is a bit like a tree structure, gives you a good sense as to whether users can or can't find items.

- **Creating and running a paper-based reverse sort**
- Selecting transcript lines in this section will navigate to timestamp in the video
- Running a paper-based reverse sort is really simple. And the analysis is much easier than for a card sort because you just have to create a tally of where each participant placed their task cards. The output is just a count of the number of places where participants agreed and disagreed with your hierarchy, plus any comments they made along the way. The way we run the reverse sort is to create an index card for each part of the information architecture hierarchy that we created. Then we get people to tell us where in this hierarchy they'd expect to find certain items. These items correspond to the cards that we used for our initial card sort. If participants expectations are a good match with the hierarchical structure, we know we're on the right track. We would typically use between 15 to 20 participants again, if they're all representative of the same user type. We can follow the same basic protocol as with the original card sort. But because the reverse sort uses a slightly different method, I've included a different moderator script for you to use.
- The results from a reversed sort are easy to visualize in a simple Excel table. Just tally the number of participants who chose a particular menu location for each task. Here, you can see menu locations on the left-hand side and tasks across the top. You should highlight the cells in the spreadsheet that correspond with the correct answer. In other words, where you would expect people to go to find the information. Here we've highlighted them in green. For some tasks, there may be more than one correct location. Once you've added all the data, you'll find that most cells in the table will remain blank. If your information architecture was spot on, all the participants will have chosen the locations that you wanted them to and so you'll have a large tally against one navigation menu item for each task.
- Agreement = number of correct locations/tries
- Agreement = number of first attempts/correct locations.

- Don’t expect 100% agreement.
- As with card sorting, there are software tools to help you present the reverse sorting cards. Most of these tools also collate and present the results for you in ways that can help you interpret the data. The tools normally work by displaying the top-level items in your information architecture as a menu. Participants are given tasks and asked where they'd expect to find the answer. When participants select a certain item in the menu, the tool displays a sub-menu of the items in the next level of the hierarchy. This way it's possible to track where each participant says they would expect to find the items you specify. The two main ways that people use computer based reverse sorting are to automate a paper card sort session, or to make it possible to run online reverse sorts. As with online card sorts, there are several benefits to conducting a reverse sort online. It might give you access to more of your users, and some tools allow participants to complete the sort in their own time. You send a link in an email to each participant, and then the tool notifies you when your participants have completed the sort. The downside is that you can't watch each session as it occurs and hear what participants say.

8. Computer-Based Reverse Sorting

- Login to your optimal workshop account.
- Upgrade.
- Create a new survey.
- Name the survey.
- Click on the tree tab.
- Copy your data from spread sheet and paste it.
- Click on task tab.
- Paste all tasks or enter manually one by one.
- Please select the correct answer from tree below.
- Click on message tab and you can customize your message.
- Now that we've got our reverse source set up, there're only a couple of things we need to do, in order to kick it off. First, let's set the tree coverage graph. With all tasks entered already, click on the tree coverage link in the task tab. This shows a picture of all the nodes in information architecture structure and let me see which one have potential correct answer on them.

In other words, participants have the option to select almost all of structure in their answers. I always like to check that the reverse sort is working how expected before I send it live. You can do this using the preview button. In order to get save, you see exactly what your participants would see. This is your last chance to check that the hierarchy is correct, because once a reverse sort gets launched, you can't make any changes to it. Just click the Launch Now button and you're live. Of course, just like with the card sort, your participants still need to know where to go to complete the reverse sort. So, it's time to compose an e-mail to them. Any time you're sending e-mail to participants, you need to think carefully about whether they'll interpret the instructions the same way you intended.

- After participants have taken survey, you can analyze results.

9. From Information Architecture to Navigation Structure

- The term information architecture refers to how you show visitors to your site or users of your application the content you have and the actions they can perform. That encompasses much more than just the menu system. You can use it to determine how best to show your content, your site structure, and even the terminology that you use to describe things. In other words, it's one of the basic tools you'll use to decide how to arrange your content or data so that people can find and use it quickly. So far, we've run a card sort, which tells us how users grouped tasks on our site and the category names they use. We've created an abstract information architecture. And we've run a reverse sort to test how well the abstract information architecture meets with user's expectations. you'll want your navigation menus to be as concise as possible, and as informative as possible.
- We used the card sort and reverse sort to determine how content on the site should be categorized. That categorization will now help us work out how to display content on pages at each level of the site. What order to list items in within the menu, and how to provide indexing and pagination. What attributes people are likely to want to filter by. Think of your information architecture categories, as a map to use when you create pages at each level of your site. Most sites will have Detail pages, Category pages and the Home page, along with some special purpose pages. First, what is the meaning of content-based navigation? Well, there's navigation

at every level of your site. From Detail pages up to the Home page. On your Detail page, you have content areas, inline links, and related links. Category pages group several detail page together with content summaries. And, you've guessed it, more related links. Above Category pages, you have your Home page. That might contain sections devoted to each category. Or maybe only the most important categories. It might also contain content, like news items, that don't really appear anywhere else on the site. How do you know what Category pages to create? With Detail pages to summarize on each Category page? Well, that's one use of your information architecture. You'll also need to consider the layout of pages that contain Content Filtering tools and navigation specific pages, like your search results page and your site map. All of these areas benefit from a good overall information architecture with set, well defined, well named categories.

- It's only after you've worked out what parts of the information architecture can be displayed around all the other areas of the site that you want to start thinking about your menu structure. At this point, you know what things can be dealt with without needing menus. So, you've automatically limited the number of different menu items you'll need. The process for coming up with the right set of menus is very much like doing your own card sort. Do it use index cards, sticky notes, or sketches? But do it with your hands, not software. It's much faster to rearrange things by hand, so you'll be more tempted to do it and end up with the best structure, rather than a good enough one. Once you have your navigation menu structure arranged as a set of cards, it helps to turn it into a diagram that you can share with other people. At this point, it's worth putting it in digital format. There are several tools that work well for this, from specialist applications such as Visio to most drawing applications, or even presentation tools like PowerPoint. For smaller sites, you can include every page in the diagram.

10. Testing that you've got it right

- Once you've applied the new information architecture to all aspects of your site or application be sure to usability test it. That will let you know whether you've created conceptual problems, and whether can find all the places where you expose the information architecture in the user interface.

- You should usability test before you go live, but it's still worth checking in on your product after you've gone live. Watch your server logs or instrumentation to see whether there are specific areas that people don't go, or a high proportion of searches for a particular item. You might need to tweak the information architecture a little bit in the future. Your sever logs, search logs, and help desk calls, will let you know where the issues lie. If you start getting an unusual number of searches for a specific category of items, or high number of support calls asking how or where to complete a certain action, it suggests that either your design needs to change or that potentially your information architecture isn't categorizing items how users expect.
- Plan and design a change.