

CARD SORTING:



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An Inexpensive and Practical Usability Technique

As consumers and creators, we accumulate a lot of stuff. It's a natural tendency for us to organize our stuff into groups that make retrieval easier. But not everyone has the same organization and labeling scheme. For example, some choose to label folders by topic; others choose to label folders according to the action they'll perform on the contents.

If you're designing a system to organize content, you can either come up with your own labeling system—which may or may not be shared by others—or you can talk to the actual users of the system and learn how they perceive its content. There are many methods of gathering this user data, but they can of-

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ten be both time-consuming and costly. Fortunately, there's hope: one method that is generally inexpensive, quick, and easy is card sorting.

What Is Card Sorting?

In short, card sorting is a user-centered design method for increasing a system's *findability*—that is, how easy it is to find stuff within the system. It involves sorting a series of cards, each with a label that describes a piece of content or functionality, into groups that make sense. It's a

low-fidelity discovery technique that can be used for several purposes:

- Grouping content to determine sections of larger volume: typically for a Web site (the focus of this article), but also for a book or other written record.
- Grouping links or titles to promote a mutual information scent, or indication of what they'll find behind a certain path. (e.g., for designing a navigation system or table of contents).
- Identifying trends in users' mental models about a particular subject; that is, learning how users think about something.
- Identifying labels that are misunderstood or difficult to categorize.

The advantages of card sorting are clear: It's an established, simple, and inexpensive method. But it does come with some disadvantages. It's typically content-centric, focusing more on the content than the task the user wants to accomplish, and the results can be highly variable depending on the participants' profiles and their unique mental model.

It's also important to mention what card sorting isn't. It's not a method for providing the final navigation; for example, the meaning of each Web site navigation option depends on its context, which card sorts don't provide.

When should you use card sorting? Ideally, it should be used after user research identifies user goals and after the content audit identifies all the content to be included in the information structure.

There are two main methods of card sorting: open and closed. Open card sorting is the most common method and the focus of this article. It allows users to create and name their own piles, providing further insight into their thinking processes that can be used as an input in defining information structures.

In closed card sorting, the moderator asks users to sort content into piles with predefined labels. It's typically used when adding new content to an existing information structure or for validating the results of an open card sort. However, Donna Maurer, a leading information architect, has recently disputed this point: she argues that categorizing information and finding it are separate cognitive processes, and therefore using a closed card sort to test an existing information structure is invalid. Regardless, many still consider the closed card sort useful, and it holds its place among card sorting techniques.

Finally, and only as a side note, I should mention an emerging technique related to card sorting called tag sorting, which uses tags from bookmarking and community sites such as del.icio.us (<http://del.icio.us>) and Flickr (www.flickr.com) as a basis for card sorting topics. It is particularly useful for identifying current trends in mental models. From these models you can develop a high-

level framework on which you can base your information structure.

Preparing a Card Sorting Exercise

Recruiting the Participants

Card sorting exercises can be done with individuals or, preferably, groups. When using individuals, recruit at least ten participants, although you can achieve reasonable results with fewer. When using groups, recruit at least five groups of three. Running card sorting with groups will provide richer data because groups discuss their decisions collectively, giving you better insight into participants' mental models.

Selecting Content Topics

The next step is selecting content topics, which can come from a variety of sources but are primarily pulled from existing and planned content or functionality. This is the core of card sorting, so it's important to get it right. Here are a few tips to keep you on track:

- Topics are often *key pages* and *key functionality*; avoid creating topics for every page within a site unless the site is small.
- The topics should be similar enough that they can be easily grouped. The worst outcome of a card sort is having the participants repeatedly comment that the topics are so unrelated that they can't group them together.
- Typical cards sorts have between twenty-five and fifty cards, but can contain up to 200 depending on time available and the complexity of your content.

Creating the Cards

Each card should be numbered and contain a short and understandable label that relates to each individual topic. Each label should be short enough that participants can read it quickly but detailed enough that participants understand what it is describing. You can supplement the labels with pictures and descriptions as long as they're used consistently. The labels can be created by hand or printed using standard labels. Printed labels are recommended, as they can be easier to organize beforehand and are more legible during the exercise.

Legal Forms

Every card sorting session should be accompanied by a legal form that addresses several issues. Depending on the nature of the project, you may want to require nondisclosure, or a confidentiality agreement regarding the site, product, or service that is under development. Next, the participants should be asked to sign a waiver, giving consent to use any recording made during the session for the purpose of designing the site or other project. Finally, the legal form should clearly state the participants' rights, including their right to withdraw, ask for a break, have privacy, and understand the purpose of the session.

Questionnaires

Questionnaires are optional but can be useful if you want to gather topics related to a subject (known as freelisting) or study how frequently participants access specific content or functionality (usage surveys). For freelisting, simply ask the participants to "list all of the topics related to X." This is helpful for learning about topics you may have missed or for verifying your list of topics. Usage surveys are quick methods of determining the usefulness of specific content. Obviously, the more often a piece of content or functionality is used, the more useful it is considered.

Writing the Script

After you've selected your topics, created the cards, covered the legal issues, and considered questionnaires, you should write a script that will be your guide during the sessions. This will help you conduct the card sorting exercises consistently and ensure that nothing gets forgotten.

The first part of the script is the introduction. Thank the participants for coming, explain the purpose of the session, and go over the legal forms. During the introduction, it's important to be clear and concise. The following is a typical introduction to a card sorting session:

Hello, my name is Joshua. You may be aware that we're redesigning the company [Web site, intranet, resourcing system]. In order for us to make it easy to

use, we're gathering input from the people who will be using it. To do this, we're going to run a simple exercise that will help us understand how you think about the different pieces of content and functionality on the site.

Before we get started, there are several important legal issues and rights I need to explain. The first is nondisclosure, which means that you can't talk about the site or your opinions of it to anyone. The second is the waiver, which gives us consent to use the recordings we make today for the purpose of redesigning the site. Finally, you have the right to withdraw at any point, ask for a break, and understand the purpose of this session. Do you have any questions about anything I've just explained?

The second part is the questionnaire (if included). While the participants are completing the questionnaires, you should be prepared to answer questions about any aspect of them, including the meaning of the topics that you included.

Third is the actual card sorting exercise. What you say at this point can make or break the session, so try to be as clear as possible:

On the table is a stack of cards that represent the different pieces of content and features of the site. I'd like you to work together to sort the cards into groups that make sense. You don't need to consider the current navigation or the way you would like the navigation to be structured; simply organize them into groups that make sense to you.

After you've grouped all the cards, give each group a suitable name. If there's something missing from any group, use one of the blank index cards to add it. Equally, if something doesn't belong in any group, place it to the side.

Let me know if you have any questions. You can begin whenever you're ready.

Fourth is the wrap-up, in which you should again thank the participants and answer any questions they might have.

The Presession Checklist

A day or two before the card sorting session, you should always run through a presession checklist to make sure you

have everything you need. Here's my sample checklist:

- All of your participants have confirmed and been reminded about their session.
- You have all the required materials, including the created cards, some extra blank cards, adequate copies of the legal forms and questionnaires, and a few pens.
- Your location has been confirmed and you've double-checked that no one else is planning to use it.
- You've run through the test script at least twice.
- You have the materials or a computer for note-taking.
- You have backup help in case something goes wrong.

After running through your checklist, you're ready to run the exercise.

Running the Card Sorting Exercise

Your first card sort may feel daunting, but if you've planned well, your script should guide you from the start. Facilitating user research can be tricky at times. Your main job is to observe and listen, but you also need to keep the momentum going while considering the comfort of the participants. Here are a few practical tips to keep the exercise running smoothly:

Encourage everyone to participate. As with other research techniques involving multiple participants, there may be one or two participants who dominate the activity. Try your best to ensure that all participants are contributing by asking the quieter participants about their thoughts.

Remind the participants how card sorting works. Card sorting is generally a simple exercise, but some participants may become sidetracked as the session progresses. Occasionally remind the participants about the purpose of the exercise and how they should be grouping the cards.

Keep the participants on task. People will tend to wander off in discussion, but it's important to keep them focused on the task at hand.

Take shorthand notes. Focus on participants' insightful comments or useful questions. As facilitating often requires your full attention, you may want to recruit a colleague to take notes.

Analyzing the Results

To quickly analyze the results of a card sort, you can simply look for broad patterns and trends. If you've observed all the sessions, you'll probably have a relatively good idea of the major trends, and identifying patterns should be straightforward unless you're dealing with a large (100+) set of topics. To perform a high-level analysis, lay the groups of cards out on a table, or affix the group to a wall or whiteboard in order to see the patterns.

However, if you want or require a more detailed analysis, I recommend entering the results into a spreadsheet. You'll be looking for two key outputs: areas of similarity and areas of difference. To determine similarity, calculate the percentage of time that participants placed cards in the same category and the percentage of time that participants place two cards together. Areas of similarity are obviously important, but areas of difference can also be very useful to determine content that participants didn't understand or that might belong in more than one area.

A Simple Method

Card sorting is an inexpensive, quick, and easy method for gathering user input about the design of an information structure. The results of a card sort should be used to help determine how content is organized within a system, or for identifying trends in mental models. While generally simple and reliable, card sorting is not intended to provide the final navigation or labeling system. A full consideration of the context of use is necessary when designing any information structure. **i**

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