Tree testing using a clickable prototype

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As we've approached the redesign of onrr.gov, we've done several rounds of user testing, including open and closed card sorting. Card sorting helped us determine the categories and subcategories that users expect to see on the website. We wanted to further confirm that we were placing the subcategories into the correct main categories and that users would be able to find the needed information, so we turned to tree testing. Tree testing was a new type of user research to our program analysts so we read a few articles to get up to speed.

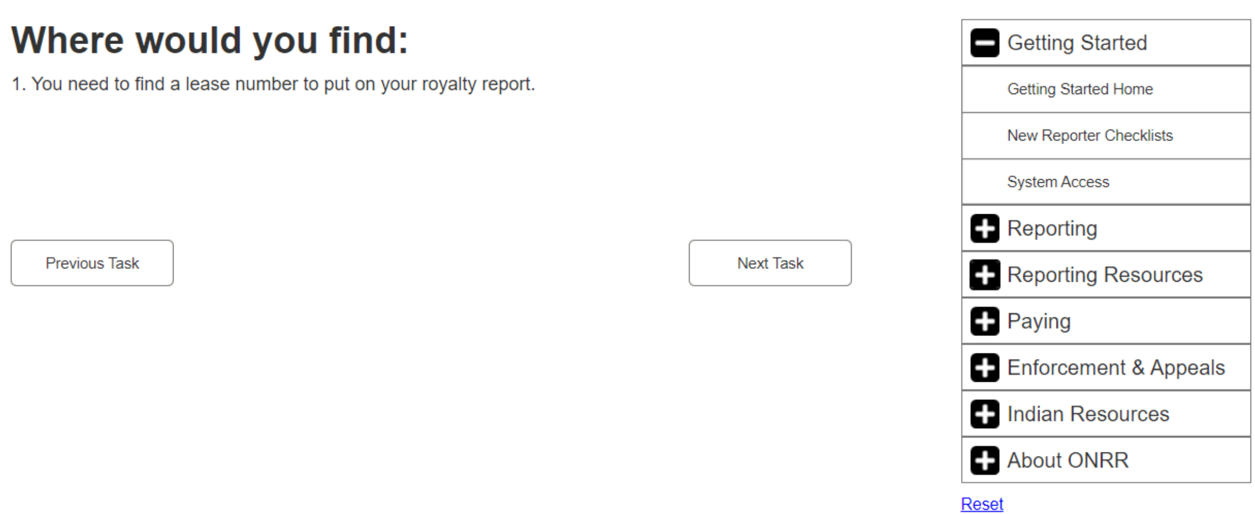
Getting started

Our first step in the process was to figure out how to use our existing or free software to conduct the tree testing. After some investigation, our UX expert determined that a clickable prototype would serve our needs. We used the software that she already uses for prototyping so she could quickly create the testing materials. You could use any software that allows clickable interfaces to do the same thing.

Planning the study

In planning the study, our goals were to validate the structure that came out of tree testing, determine whether users could find items that were hard to categorize in the card sort, and determine if we needed to change any category labels. We wanted to have common tasks that would direct users to each main category so we could really get a feel for how users search for information on our site. We limited the list to 10 tasks, since users learn the categories quickly in tree testing. We dug into past research to help us determine the user tasks and had our teammates peer review to make sure that our tasks were realistic and encompassed common user needs. Our UX expert also created 3 different versions of the prototype with the tasks randomly organized in different orders to remove some bias in the task order.

Version 1 of the clickable prototype



We also decided to show a wireframe of the homepage using the categories after the tree test tasks, so users could see where we were headed with the site using the categories and get some feedback on the categories in context.

While we were planning the study, we concurrently recruited as many external (capped at 9) and industry users as possible to survey a wide user audience.

Conducting the study

We scheduled 30-minute moderated virtual interview sessions with all 11 participants – 4 external and 7 internal. We had one moderator and tried to have two notetakers since this was a new way of doing user research for our team. After the initial explanation we had them work through all tasks and talk through their category decisions.

We initially tried to record their responses right in a spreadsheet to make it easier to analyze our findings, but in the first interview we found that it was too difficult to work quickly within the spreadsheet and we decided to use a document to take our notes instead. Despite it being our first time conducting tree testing using this process, we were able to easily communicate the instructions to the participants.

Spreadsheet notes:

					P1	P2	P3
Default	Version 1	Version 2	Version 3	Task	Version 1	Version 2	Version 3
1	3	1	3	You are a new reporter and want to get set up to start submitting reports to ONRR.	Getting Started > System Access	Getting Started > Getting Started Home	Getting Started > System Access
2	5	7	8	You are having trouble logging into Data Warehouse and want to get help finding out what you should do.	About ONRR > Contact Us	Reporting Resources > Reporting Contacts	About ONRR > Contact Us
3	6	3	2	You need to report production.	Reporting > Production	Reporting > Production	Reporting > Production
4	1	8	1	You need to find a lease number to put on your royalty report.	Reporting > Royalty	Reporting Resources > Reference Lists & Codes	Reporting Resources > Reporting Resources Home
5	9	4	10	You need to look something up in the handbook (instructions starting with P3) for oil royalty reporting.	Reporting Resources > Handbooks	Paying > Royalty Payments	Reporting Resources > Handbooks
6	4	5	5	You want to find the ONRR representative assigned to your company to contact with	Reporting Resources > Reporting Contacts	Reporting Resources > Reporting Contacts	Reporting Resources > Reporting Contacts
7	2	2	4	You have a new person on your team and need to fill out the form for them to be an official contact (Addressee of Record Designation for	Getting Started > System Access	Getting Started > New Reporter Checklists	Reporting Resources > Reporting Contacts
8	7	6	9	You need to make a rent payment.	Paying > Rental Payments	Paying > Rental Payments	Paying > Rental Payments
9	8	10	6	You need to read a regulation to value a commodity on your report.	Reporting > Production	Reporting Resources > Regulations	Reporting Resources > Regulations
10	10	9	7	You received an order to pay from ONRR and you would like to file an appeal.	Enforcement & Appeals > Appeals	Enforcement & Appeals > Appeals	Enforcement & Appeals > Appeals

Document notes:

Tasks: Version 1

#	Task	Category	Subcategory	Notes
1	You need to find a lease number to put on your royalty report.			
2	You have a new person on your team and need to fill out the form for them to be an official contact (Addressee of Record Designation for Service of Official Correspondence Form - ONRR-4444) .			
3	You are a new reporter and want to get set up to start submitting reports to ONRR.			
4	You want to find the ONRR representative assigned to your company to contact with questions.			

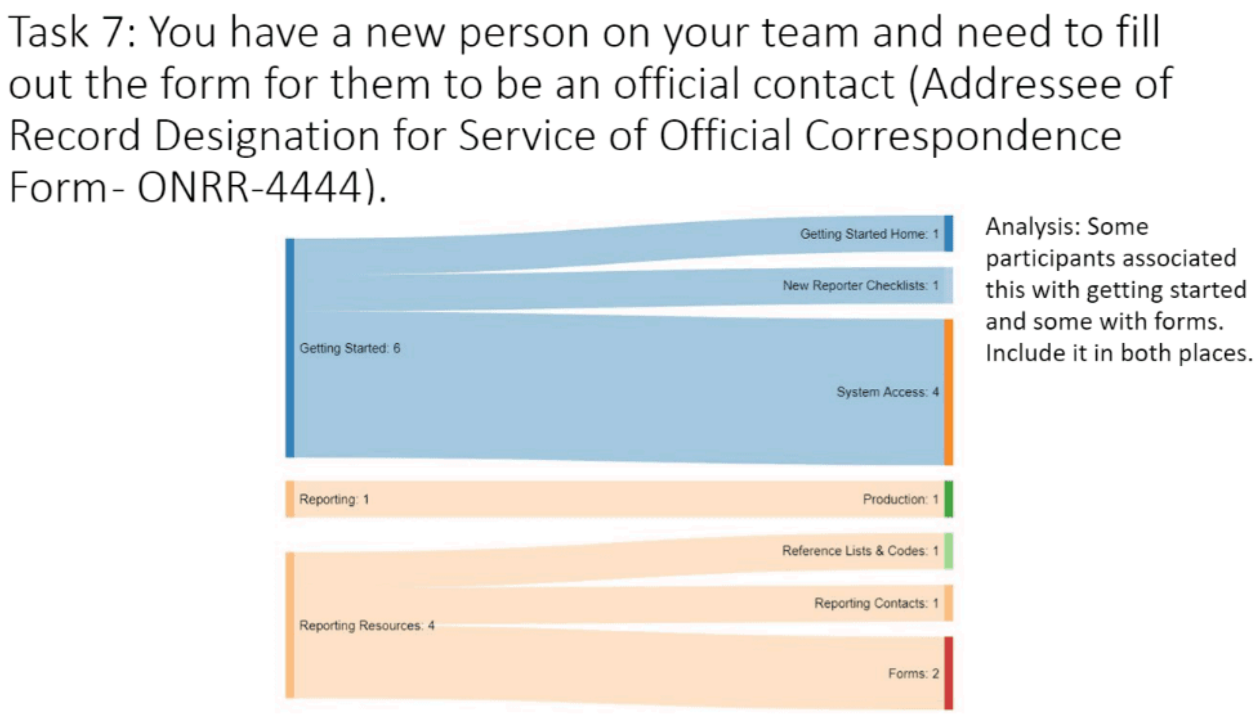
Analysis

After summarizing the findings, we used Sankey diagrams to show how users navigated from the task to the subcategory. The visualization helped to illustrate which tasks were straightforward and which ones were confusing. We had several tasks that made us feel confident that we had the right structure in place, including leading participants to report production, find contacts, file appeals, and make rent payments. The Sankey diagram below illustrates how all participants agreed on where to report production.

Task 3: You need to report production.

Analysis: Nobody had trouble with this.

Then we had several tasks where participant responses diverged significantly. These tasks included how to set up a new team member, how to find information on the site, and how to find help with ONRR reporting and paying systems. The Sankey diagram below shows that participants were divided on whether to go to the Getting Started category or Reporting Resources main categories to add a new team member as a contact. The responses further diverged within the subcategories as some participants were looking for a specific form and some thought it would be in Getting Started. Our solution to this and similar issues will be to include the needed resource in more than one category.



We also made some major changes to the categories. We found that participants had to think about where to look for the regulation/valuation task and thought that valuation should be a separate category, so we added one for that. Participants unfamiliar with Indian reporting would navigate to the Indian Resources category for anything Indian related so we will cross post Indian pricing, regulations, and codes to the Indian Resources category. Participants were also divided on whether to look for similar information in the Reporting or Reporting Resources category. We determined that it would be better to use only the Reporting category and add the Reporting Resources as sub-categories to each reporting section.

Overall, participants wanted more information about how the entire reporting and paying process works, especially those that are newer to their positions or need information on how to report and pay on more complex leases and agreements. People from within our agency who field contacts from industry also expressed this need, so we will be creating a visual showing the process.

To better illustrate the changes to the main and subcategories that we are proposing, the first table below shows the original tested categories and the second table shows the new proposed categories.

Tested categories

Getting Started	Reporting	Reporting Resources	Paying	Enforcement & Appeals	I R
New Reporter Checklists	Production	Reference Lists & Codes	Rental Payments	Compliance Authorities	C A
System Access	Royalty	Reporting Contacts	Royalty Payments	Appeals	A A
	Solid Minerals	Handbooks	Late Payment Interest	Bankruptcies	F I M C
	Geothermal	Forms	Treasury Referrals	Civil Penalties	I E

Getting Started	Reporting	Reporting Resources	Paying	Enforcement & Appeals	Ir R
					S C
		Pricing			T A
		Unbundling			T C
		Reporter Letters			
		Regulations			
		Training Videos			

Categories after testing

Getting Started	Reporting	Guidance & References	Paying	Enforcement & Appeals	In Re
How Leasing Works	Oil & Gas Production - File Reports - Forms	Valuation & Pricing	Payment Options	Compliance Authorities	As

Getting Started	Reporting	Guidance & References	Paying	Enforcement & Appeals	In Re
	- References -Reporter Setup - Contacts				
New Reporter Setup	Oil & Gas Revenue - File Reports - Forms - References -Reporter Setup - Contacts	Reference Lists & Codes	Jointly-Owned Lease Payments	Appeals	Co Ag
System Access	Solid Minerals - File Reports - Forms - References -Reporter Setup - Contacts	Reporter Training	Late Payment Interest	Bankruptcies	In Gu Re
Reporter Training	Geothermal - File	Handbooks	Unpaid Debt	Civil Penalties	In Pa

Getting Started	Reporting	Guidance & References	Paying	Enforcement & Appeals	In Re
	Reports - Forms - References -Reporter Setup - Contacts				
		Forms	Contacts	Cooperative Agreements	
		Reporter Letters			
		Rules & Regulations			

Lessons learned

The tree test was a valuable way to dig into our site reorganization and test our hypotheses and assumptions. We tried again to take notes in a spreadsheet rather than a document and it didn't work out very well. We tried this about a year ago for user interviews with the same result, so we should avoid doing that in the future to save ourselves from having to duplicate the notes we take. We also found it was helpful to have more than one person observe and take notes because participants moved through the tasks very quickly and it was sometimes hard to record their responses. The moderator learned to ask questions and slow them down to give the note takers more time.

We also learned how quickly participants move through a tree study and learn the categories. None of us had ever observed one live because we had always used remote tools before and it really underscored the importance of having few tasks and randomizing the order. Some of our sessions only lasted 15 minutes even after troubleshooting technical issues getting started.

We also learned how to simplify some of our main categories in our site organization and to reorganize some of the sections where we needed more feedback.

Our next step is to use the content audit to place everything into the new categories, and refine the current subcategories to match the website content. We are also wireframing at the same time to make sure that we have content where we want it and a home for every piece of content. Finally, we will run another round of user interviews after we finish refining the subcategories to confirm that we've properly organized the content.

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‹ How we do quality assurance

UX intern mission accomplished: plan and participate in a design studio ›

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