



June - November 2023
6 months

USER RESEARCH INTERACTION DESIGN
PROTOTYPING QUANTITATIVE RESEARCH

Government Digital Service (GDS) - GOV.UK

Understanding and tackling the key problems with Whitehall Publisher: the tool used to put content on GOV.UK.

Context



Whitehall Publisher is the main tool used to publish content on GOV.UK
There are >700k pages on GOV.UK. A few tools are used to publish and maintain them.
Whitehall Publisher is by far the most-used.

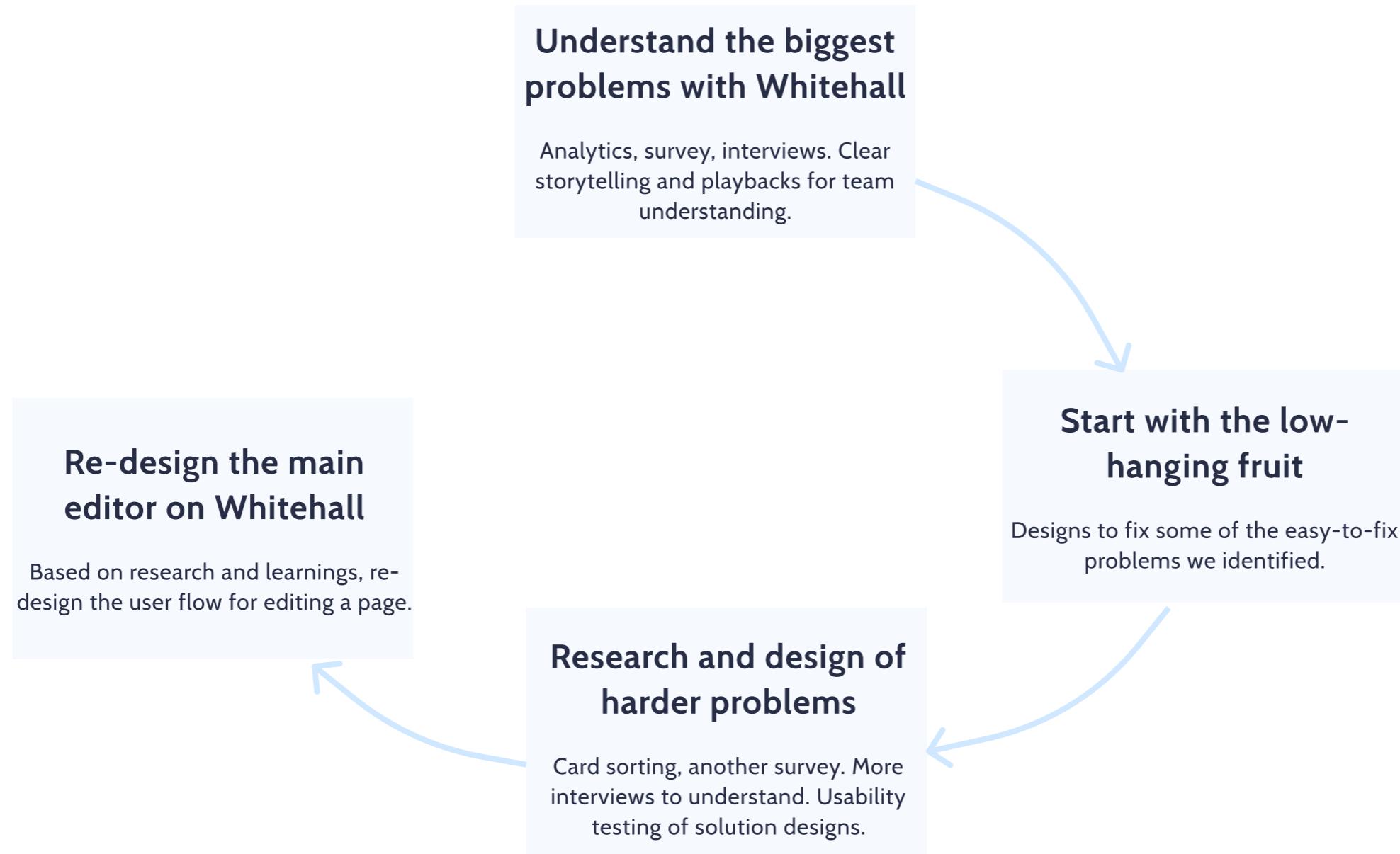


The users: Civil Servant content designers
There are just over 2,000 civil servants across departments that publish and maintain content using Whitehall Publisher. At GOV.UK, these users are referred to as 'publishers'.

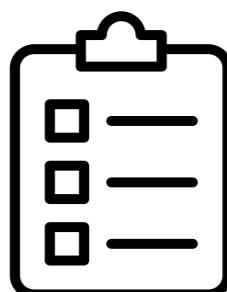


The objective: improve the experience of adding content in Whitehall
This was the quarterly objective for the Whitehall team for the 2 quarters I was there. I.e. make the experience of creating pages in Whitehall better.

My approach



Action - understand the biggest problems with Whitehall



Satisfaction survey

- 374 survey participants
- 8 questions
- A range of quantitative and qualitative questions e.g. satisfaction score (/10) and open questions about what we could do to improve their experience
- I think the quant. satisfaction score metrics we collected were good for establishing a baseline and comparing quarter to quarter, but this approach isn't good for getting an understanding of users experience. The qual. open questions about experience are far better for that.



Google Analytics

- I worked closely with the performance analyst on the team to get the data and insights we needed to understand the most impactful areas to address
- Where are the most errors occurring
- Understanding where users spend their time on the site can help us make time-consuming parts of the site more efficient. This can be misleading, however. For example, we found that publishers are spending significant time on the edit page. This might be a good thing and part of their job, e.g. spending that time improving content. This is where we needed interviews and qualitative research to understand the *why*.



Support ticket analysis

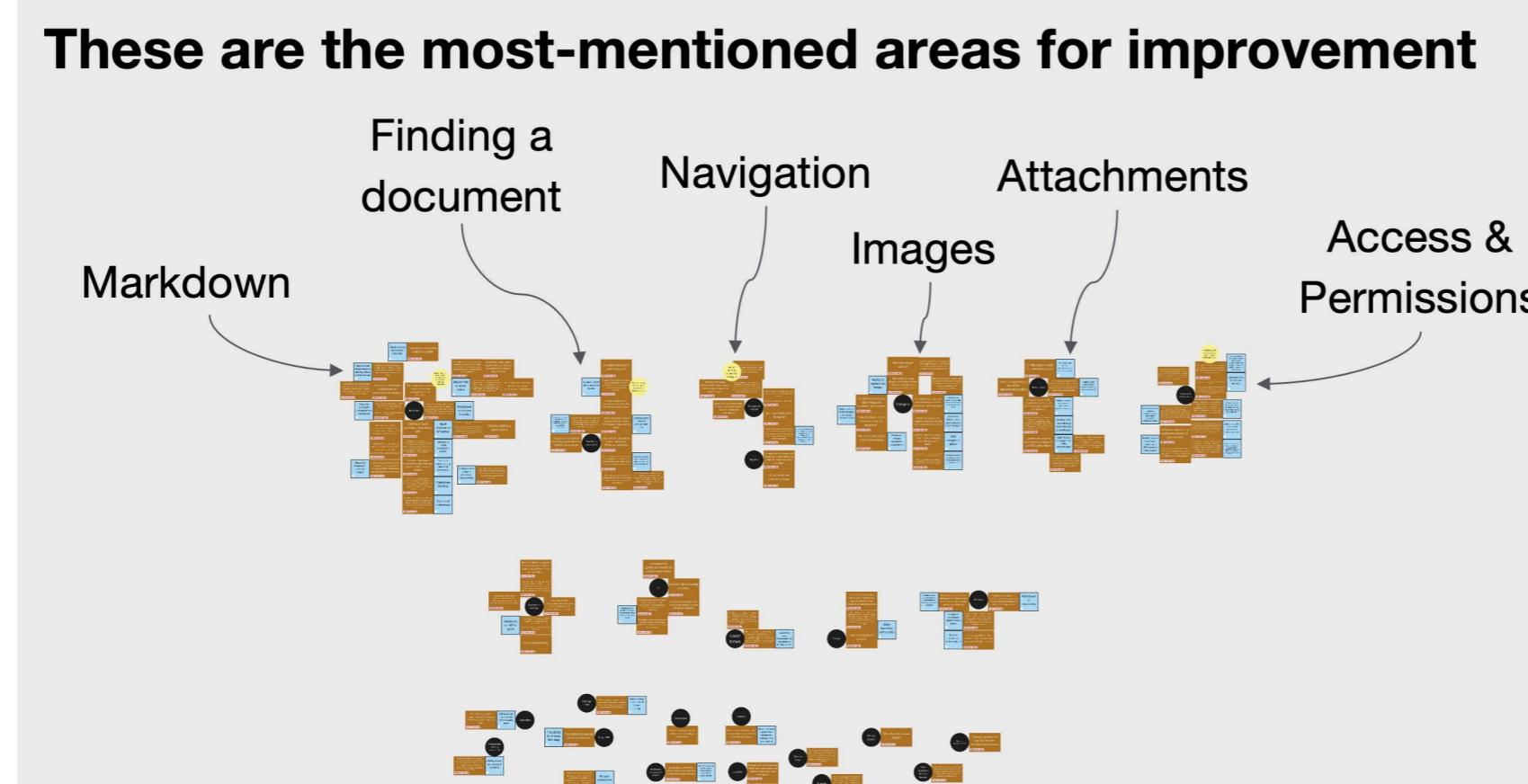
- Analysing support tickets and what are the biggest problems that come to support.
- Triaging the tickets to understand which ones are related to adding content to Whitehall, and grouping to understand what are the main problems.



- Explorative research to understand the *why* behind things we learned about in quantitative methods
- Understanding our users' day-to-day
- Getting users to show us their typical workflows in Whitehall Publisher, and what their biggest problems are
- Asking questions to understand the *why* behind the biggest problems we learned about.

Result - understand the problems

Here you can see my analysis of the survey data for the question "If there is one thing we can do to make your experience with Whitehall Publisher better, what would it be?":



These are sticky notes grouped by category and as you can see, the most-mentioned areas of improvement are:

1. Markdown
2. Finding a document
3. Navigation
4. Images
5. Attachments
6. Access & permissions

This helped the team understand what we need to tackle, to improve the experience of Whitehall Publisher.

'Markdown' refers to the fact that publishers add content to pages in Whitehall using Markdown - a markup language for writing formatted text. Many publishers' issues were related to this. To fix those it would be necessary to provide a way of adding content without using Markdown, and that would take a significant amount of research and design to tackle.

Our first problems to tackle were these 2 low-hanging fruit:



Adding markdown is time-consuming and unintuitive, especially when adding tables.

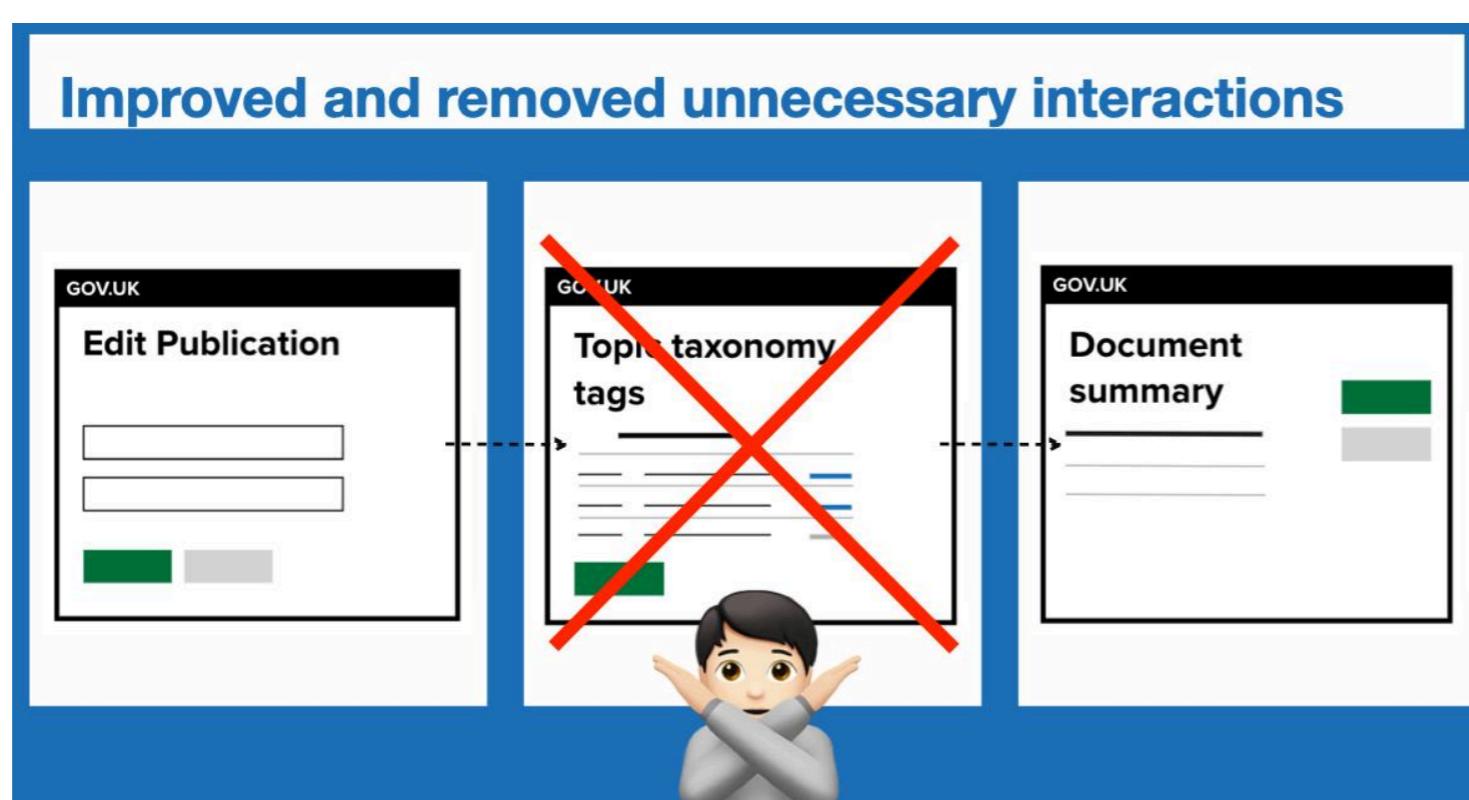


Navigation between tasks while adding/editing content in Whitehall is confusing. A specific pain point is that whenever you click 'save document' it takes you to the topic taxonomy tags page.

Action - fix topic tags flow

I redesigned the flow so that 'topic taxonomy tags' page was removed from the flow of saving your document, directly eliminating that frequent pain point.

So now, they don't have to update tags every time they click 'save'.



Result - fixing topic tags flow

In analytics we can see the decrease in average time spent on the topic tags page. Time saved here means more time spent doing valuable content design work.



Almost all the subsequent publishers we spoke to in interviews said they noticed that change and it's been valuable. For example this direct quote from a publisher in our 2nd quarterly survey.



"Not having to go to topic tags every time I save has saved me time and frustration."

– Content designer at DEFRA



How a table appears on GOV.UK:

Bus company	Routes included in the £2 fare cap	Routes not included in the £2 fare cap
<u>Arriva Kent & Sussex</u>	1, 2, 100, 101, 116, 132, 133, 140, 141, 145, 146, 155, 164, 166, 175, 176, 177, 182, 190, 191, 193, 700, 3, 4, 5, 7, 9, 12, 59, 71, 72, 82, 85, 89, 6, 7, 218, 219, 277, 281, 402, 402A, 402B, 402W, 6X	6, 9, 10, 633, 653, 658, 659, 660, 668, 670, 689, 692, 694, 695, 570, 572, 575, 576, 641, 642, 643, 286, 531, 582, 774, 775, 776, 77X
<u>Arriva Thameside</u>	1, 2, 8, 132, 133, PR, 414, 470, 477, 480, 481, 483, 489, 490, 414A, 414A, 480A, 490A, A, AZ, B, 1, 2, 6, 7, 8, 9, 29, 4A, 1, 1, 2, 3, 4, 6, 8, 10, 59, 308, 309, 311, 508, 509, 510, 724, 2, 3, 4, 9, 10, 20, 302, 335, 336, 508, 55, 97, 98, 100, 101, 301, 97A, 98A, SB1, SB2, SB3, SB4, SB4A, SB5, SB50, SB7, SB8, SB9, 66, 251, 308, 310, 324, 331, 378, 379, 380, 395, 401, 403, 404, 405, C1, M2, M3, M4, M5	497, 821, 824, SB11, SB6
<u>Arriva The Shires Ltd</u>	150, 250, 280, 300, 500, X30, X8, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 30, 31, 32, 33, 35, 36, 37, 48, 800, 850, 31A, 32A, 33A, 36B, 36S, 37A, 5A, 6A, 7A, 80X, 1, 2, 3, 4, 5, 6, 7, 8, 9, 33, 150, 250, 2A, 33A, 3A, 8A, 8E, 9A, M5, M6, X33, X60, 1, 4, 12, 13, 14, 23, 24, 25, 27, 28, 29, 31, 32, 321, 800, 28B, A, F70, F77, Z	9, 9A, APS, L1, L2, L3, L4, L5, L6, 755, 757, 801, 802, 810, 812, 817, 823, 828, 829, 835, 838, HH, POS1, POS2

How publishers edit that table in Markdown:

Body (required)

East of England

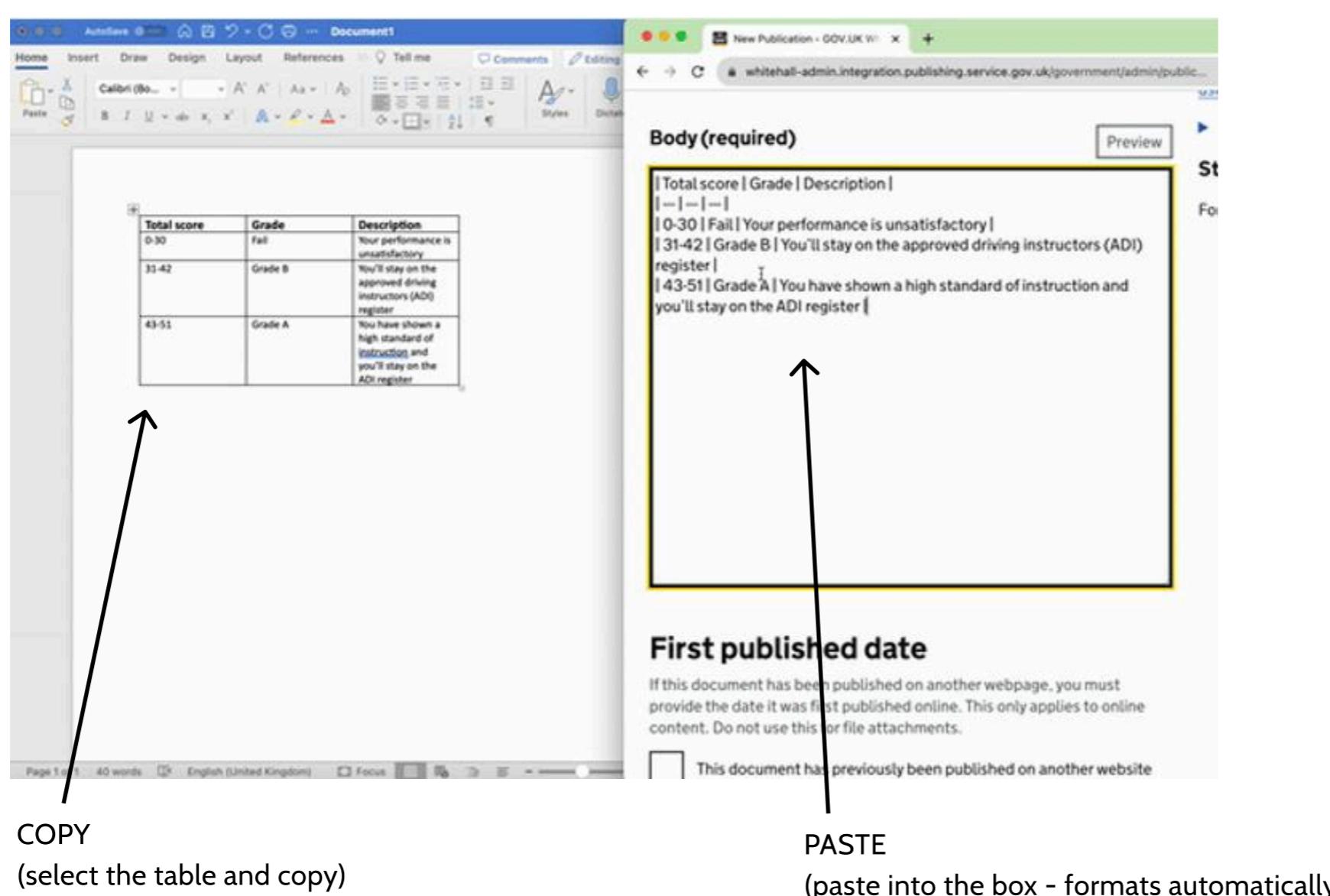
| Bus company | Routes included in the £2 fare cap | Routes not included in the £2 fare cap |
|---|
| # [Arriva Kent & Sussex](<https://www.arrivabus.co.uk/floating-pages/2-pound-bus-fare>) | 1, 2, 100, 101, 116, 132, 133, 140, 141, 145, 146, 155, 164, 166, 175, 176, 177, 182, 190, 191, 193, 700, 3, 4, 5, 7, 9, 12, 59, 71, 72, 82, 85, 89, 6, 7, 218, 219, 277, 281, 402, 402A, 402B, 402W, 6X | 6, 9, 10, 633, 653, 658, 659, 660, 668, 670, 689, 692, 694, 695, 570, 572, 575, 576, 641, 642, 643, 286, 531, 582, 774, 775, 776, 77X |
| # [Arriva Thameside](<https://www.arrivabus.co.uk/floating-pages/2-pound-bus-fare>) | 1, 2, 8, 132, 133, PR, 414, 470, 477, 480, 481, 483, 489, 490, 414A, 414B, 480A, 490A, A, AZ, B, 1, 2, 6, 7, 8, 9, 29, 44, 1, 1, 2, 3, 4, 6, 8, 8, 10, 59, 308, 309, 311, 508, 509, 510, 724, 2, 3, 4, 9, 10, 20, 302, 335, 336, 508, 55, 97, 98, 100, 101, 301, 97A, 98A, SB1, SB2, SB3, SB4, SB40, SB5, SB50, SB7, SB8, SB9, 66, 251, 308, 310, 324, 331, 378, 379, 380, 395, 401, 403, 404, 405, C1, M2, M3, M4, M5 | 497, 821, 824, SB11, SB6 |
| # [Arriva The Shires Ltd](<https://www.arrivabus.co.uk/floating-pages/2-pound-bus-fare>) | 150, 250, 280, 300, 500, X30, X8, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 30, 31, 32, 33, 35, 36, 37, 48, 800, 850, 31A, 32A, 33A, 36B, 36S, 37A, 5A, 6A, 7A, 80X, 1, 2, 3, 4, 5, 6, 7, 8, 9, 33, 150, 250, 2A, 33A, 3A, 8A, 8E, 9A, M5, M6, X33, X60, 1, 4, 12, 13, 14, 23, 24,

You can see how unintuitive and frustrating it is to edit the table directly in Markdown.

Through user research we learned that users are using an table editor tool to format their tables to then paste into Whitehall Publisher.

This is problematic from a security point of view. This content could be confidential and there's no approved tool to do table-to-Markdown conversion.

So, our team made it possible to copy a table and paste it directly into the editor. Our editor formats it into markdown automatically.



Result - save time and frustration for publishers

We received a lot of feedback about how much time this saved content designers.

 “It’s so easy to copy tables over from Word now. It’s saved so much time fiddling with tables in Markdown.”

"It's so easy to copy tables over from Word now. It's saved so much time fiddling with tables in Markdown."

Content designer in user interview

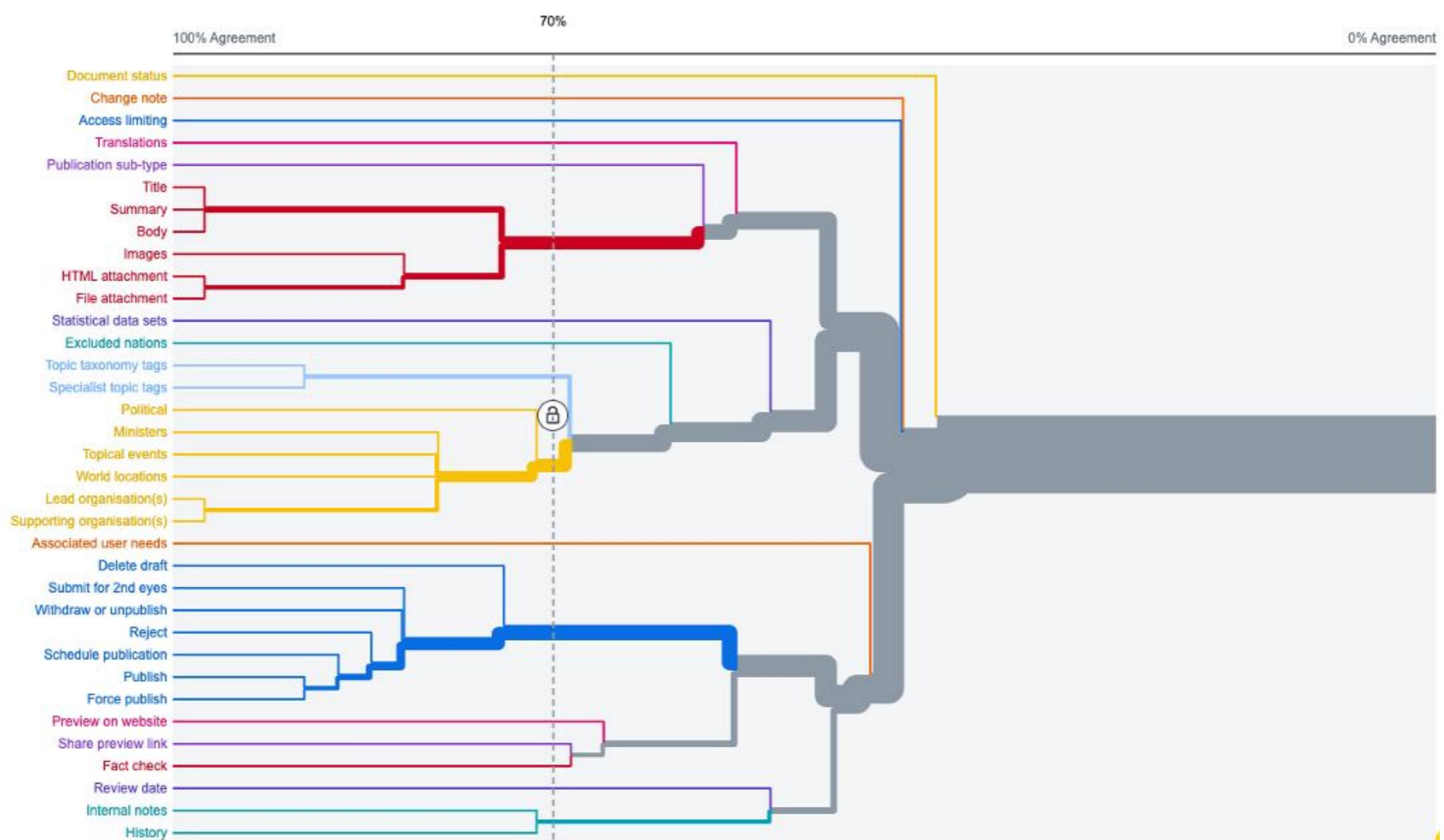
“The paste updates have saved me so much trouble doing tables on my pages.”

Action - Card sorting to understand publishers' mental models

One of the main problems we learned about in Whitehall is that navigating around the site can be confusing. This was a harder problem to fix. Through observation of users going about their daily tasks, I realised this was likely caused by a number of things:

- Poor visibility of system status - users were often confused as to what had just happened and what the system was doing.
- Whitehall does not match mental models - users were often unclear what some terms on Whitehall actually mean, and where actions were laid out on the site.

Because of this, I realised that for future designs it would be valuable to have a better understanding of publishers' mental models. I carried out a card sorting experiment to achieve this. The most valuable artefact is this dendrogram, explained below.



On the left, we have all the actions that users can take on Whitehall. The dendrogram (with the vertical line at 70% agreement) tells us that 70% of participants agree with the groupings shown, for example ['Delete draft', 'Submit for 2nd eyes', 'Withdraw or unpublish', 'Reject', 'Schedule publication', 'Publish', 'Force publish']. That tells us publishers see these actions as related, so they should be shown together on the page in Whitehall.

Armed with these insights, every iterative design could take into account the mental models of publishers, and bring related actions together on Whitehall, making it more intuitive.

Result - card sorting results and actions

In short, we brought together the actions that users grouped together in their mental models, but were far apart in Whitehall.

In user research, we received feedback that Whitehall "felt more intuitive", as a result.

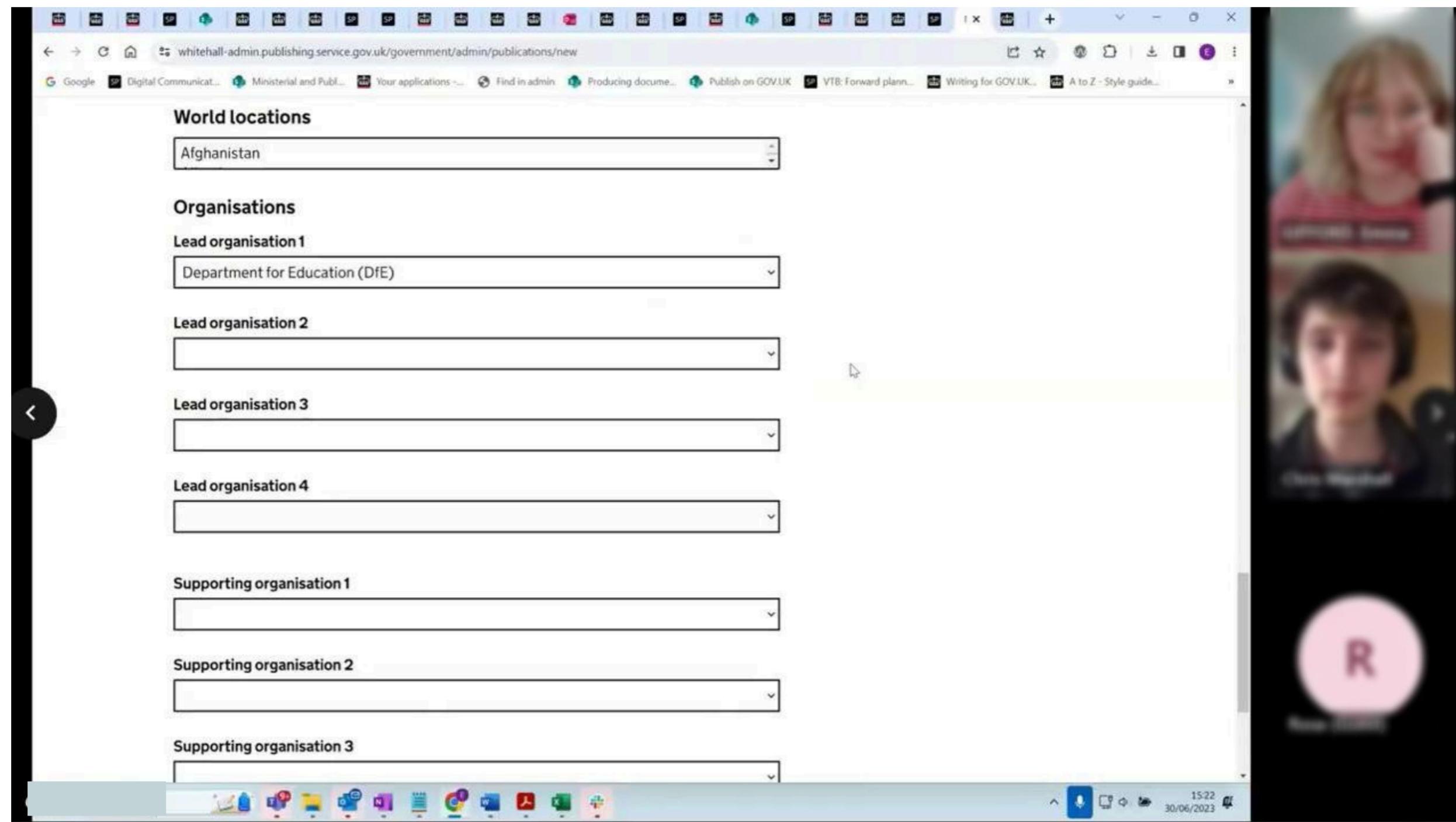
Action - change the user flow for editing a document

We tested a major re-design for the main user flow of editing a page in Whitehall. This meant introducing a hub-and-spoke model to the edit page.

Whitehall's edit page had grown organically over the years and was an unintuitive jumble of fields that publishers had to get used to.

We re-designed the flow to make it more intuitive and fast for users to edit pages.

Previous design - one giant edit page:



The 'edit' page shown in this UR recording includes all the possible fields to edit a page, and is a frustratingly long page of fields, one after another.

In countless UR sessions, we noticed users wasting lots of time scrolling past these rarely-used fields, such as 'supporting organisation 3', a field you'd only need if that page was co-created with 3 Gov Departments.

Our redesign: a 'hub' page for overview, with 'spoke' pages to edit

The first screenshot shows the 'Document summary' page for a 'How to prove and verify someone's identity' guidance note. It includes sections for 'Type of document', 'Status', 'URL', 'Organisations', 'Review date', and 'Content'. A blue arrow points from this page to the second screenshot.

The second screenshot shows the 'How to prove and verify someone's identity' page. It features a green 'Success' bar stating 'New edition created'. Below it, there are tabs for 'History' and 'Fact checking'. A blue arrow points from the 'Content' section of the first screenshot to the 'History' tab here.

The third screenshot shows the 'Content' section of the 'How to prove and verify someone's identity' page. It includes fields for 'Title', 'Summary', 'Body', and 'Content'. A blue arrow points from the 'Content' section of the second screenshot to the 'Content' section here.

Our re-designed user flow for editing a page in Whitehall turned the 'edit' page into a hub from which publishers could edit specific sections directly, rather than scrolling through unnecessary fields.

The result was a much less cluttered page, with actions where publishers expect them.

Result - a better user experience

“ “Feels natural to me. I initially had to adjust to things being in different places, but it flows well.
There's nothing that doesn't exist where I think it should.”
– Content designer in user testing session ” ”

“ “I like that it's separated into these modules. It's more action oriented.
E.g. I'm just modifying attachments rather than clicking that edit button and editing everything at once.”
– Content designer in user testing session ” ”

We carried out extensive user testing on this re-designed flow for editing a page. We used a Figma prototype and had users share their screen so we could observe their use. We got lots of positive feedback that users found the re-design intuitive.