From being lost in a sea of data to actionable insights: how simplicity empowers scientists to create clarity out of complexity

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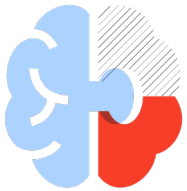
From being lost in a sea of data to actionable insights:

how simplicity empowers scientists to create clarity out of complexity

October 2023 | Pistoia Alliance UX Life Sciences conference

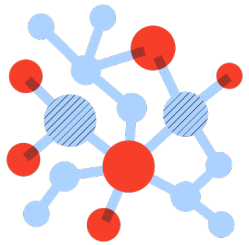
Sonia Sommariva

Let’s start, shall we?



Our starting point was an existing product for biologists and researchers in the pharmaceutical industry.

Knowledge ☑ Powerful database ☑ Challenging to consult/use ☑

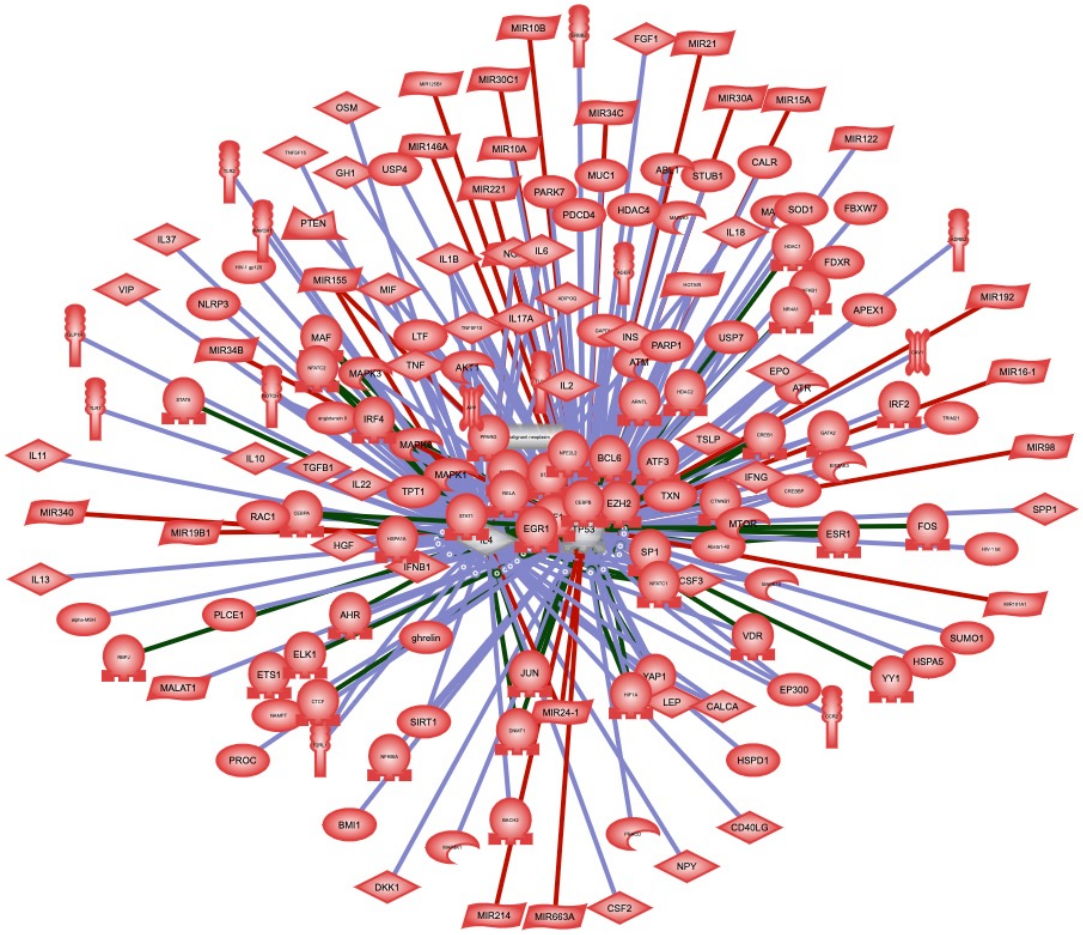


Its core functionalities were added on by individual biology experts, one feature at the time, unfortunately without much of a concern for usability.

Too much data displayed.

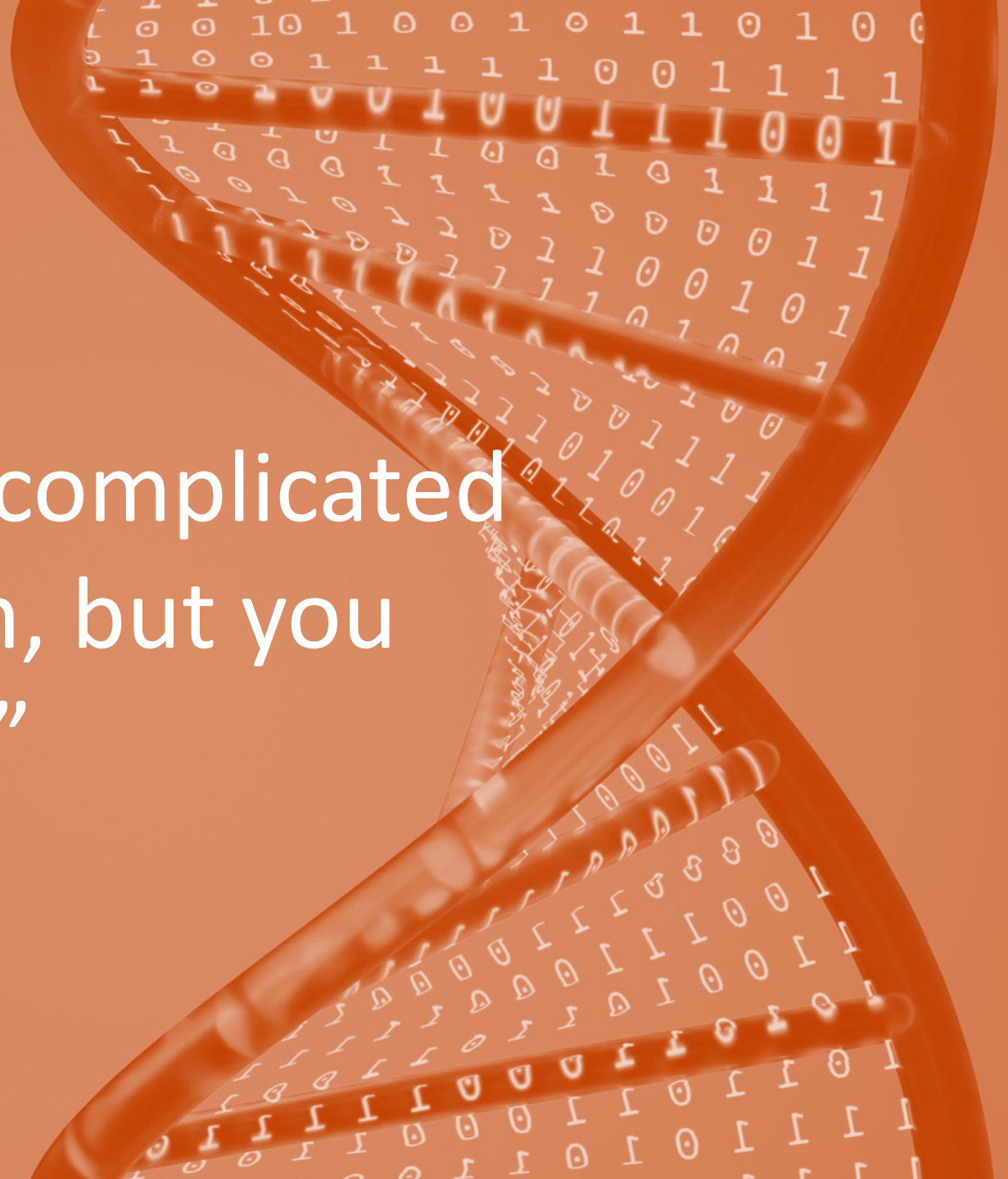
Users challenged to apply limits and filters even before knowing what they were searching for.

Everything, everywhere, all at once



- Meaningfully using a product like this would have required heavy training.
- It was an industry-standard network chart, but such a “standard” didn’t work if users needed to explore, for their research.
- Generating “hairball” chart

User thoughts 1/2



"Databases are so complicated that you use them, but you don't like doing it"

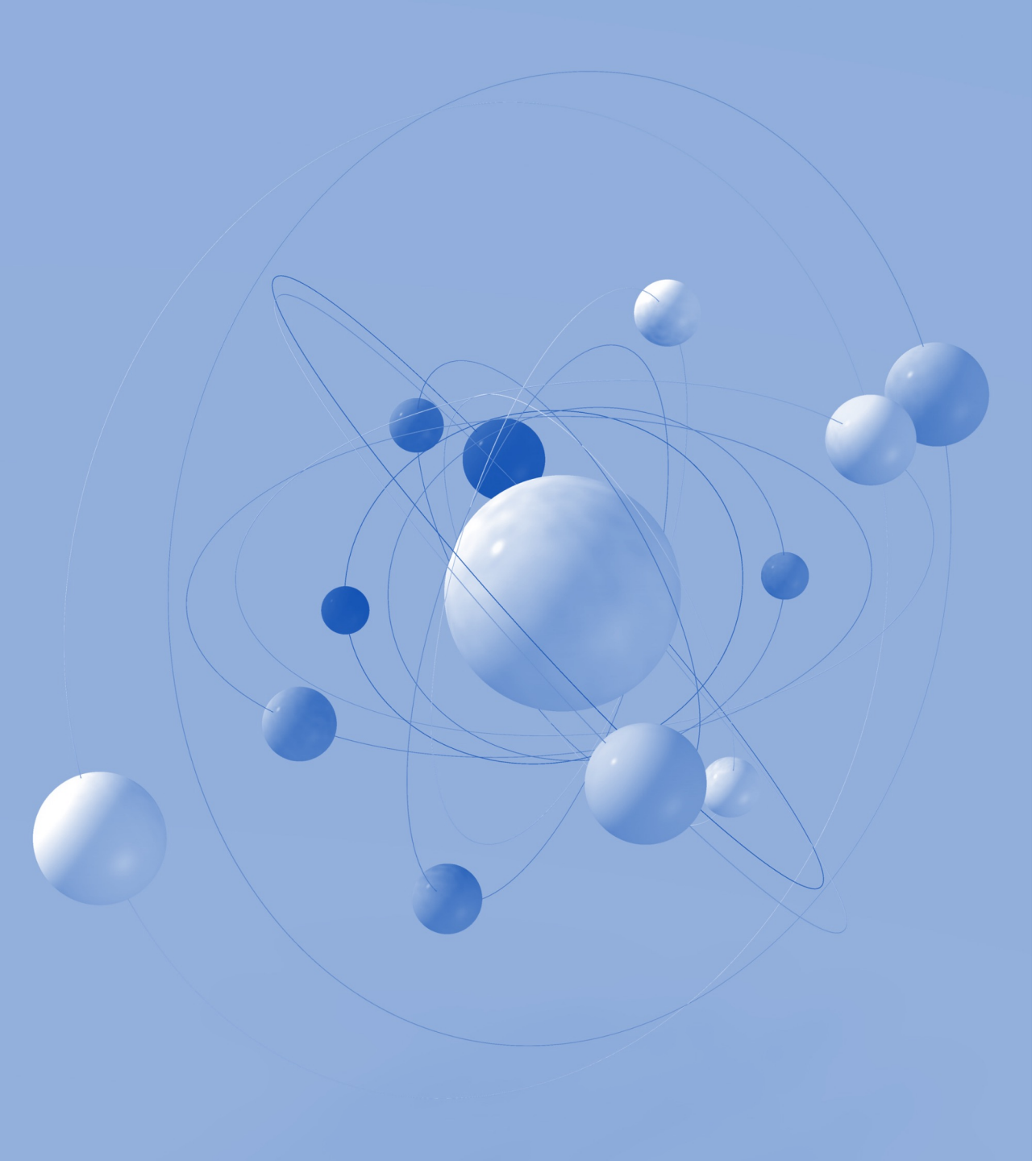
User thoughts 2/2

"We loved the product, but it came down to a Ridiculogram"

The lesson?

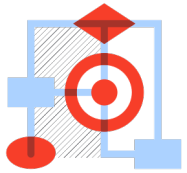
It doesn’t matter how good your data is, if you can’t use it.

A new beginning



Learn from past mistakes

Keep in mind users and internal team



Let’s solve users’ needs, don’t multiply them.

Approach: focus on ONE use case, but doing it well.

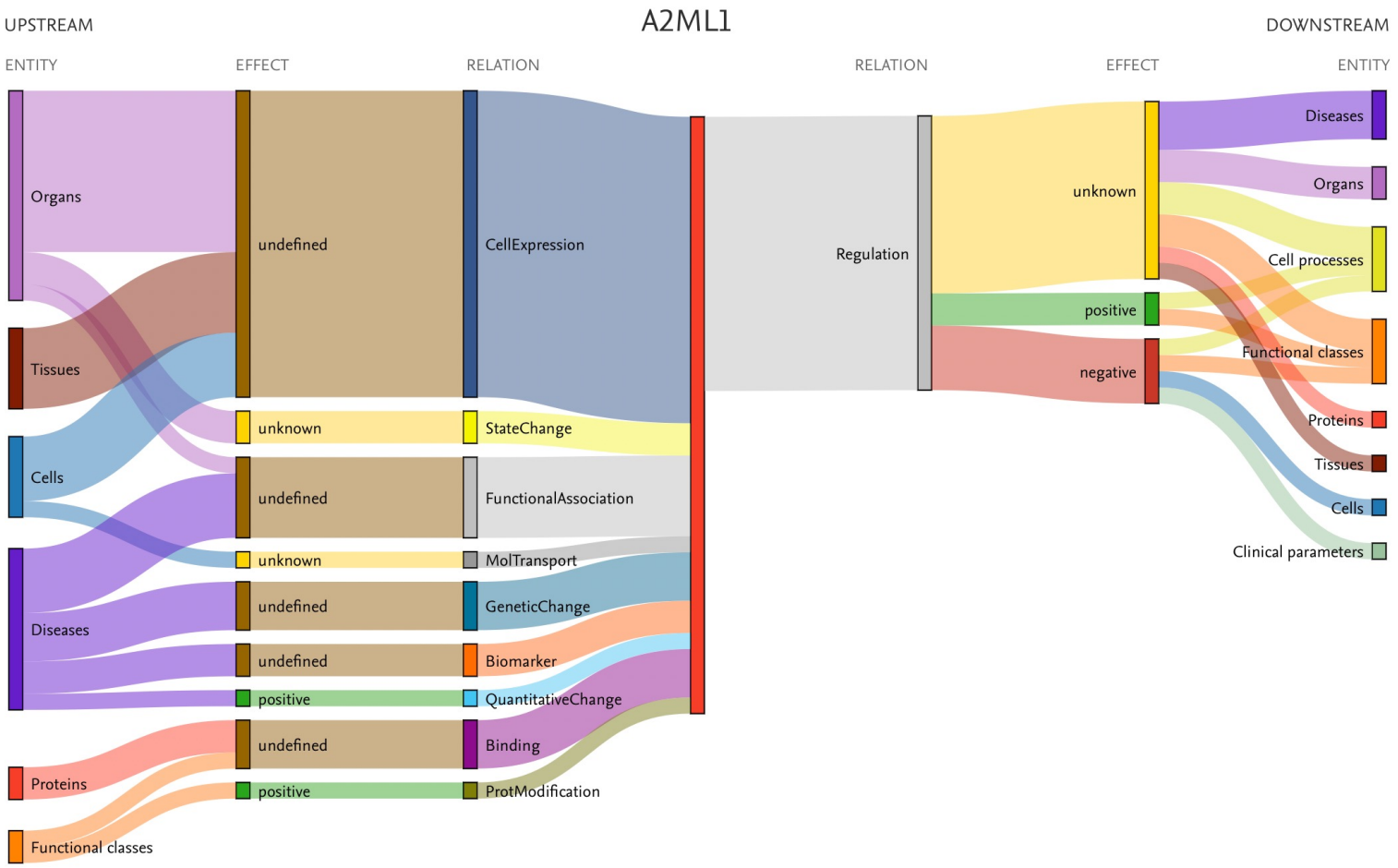

"In simplicity
you find the
most incredible things"

EmBiology Search

EmBiology search is the first use case we developed.

The team followed a biology-first approach, prioritizing biological relationships rather than keywords.

Or, as some of our users said, a biology-smart approach.



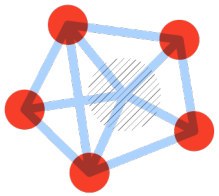
And then?

Then, this happened

"This is great, but can I search multiple things at the time?”

Chapter 2: EmBiology Insights

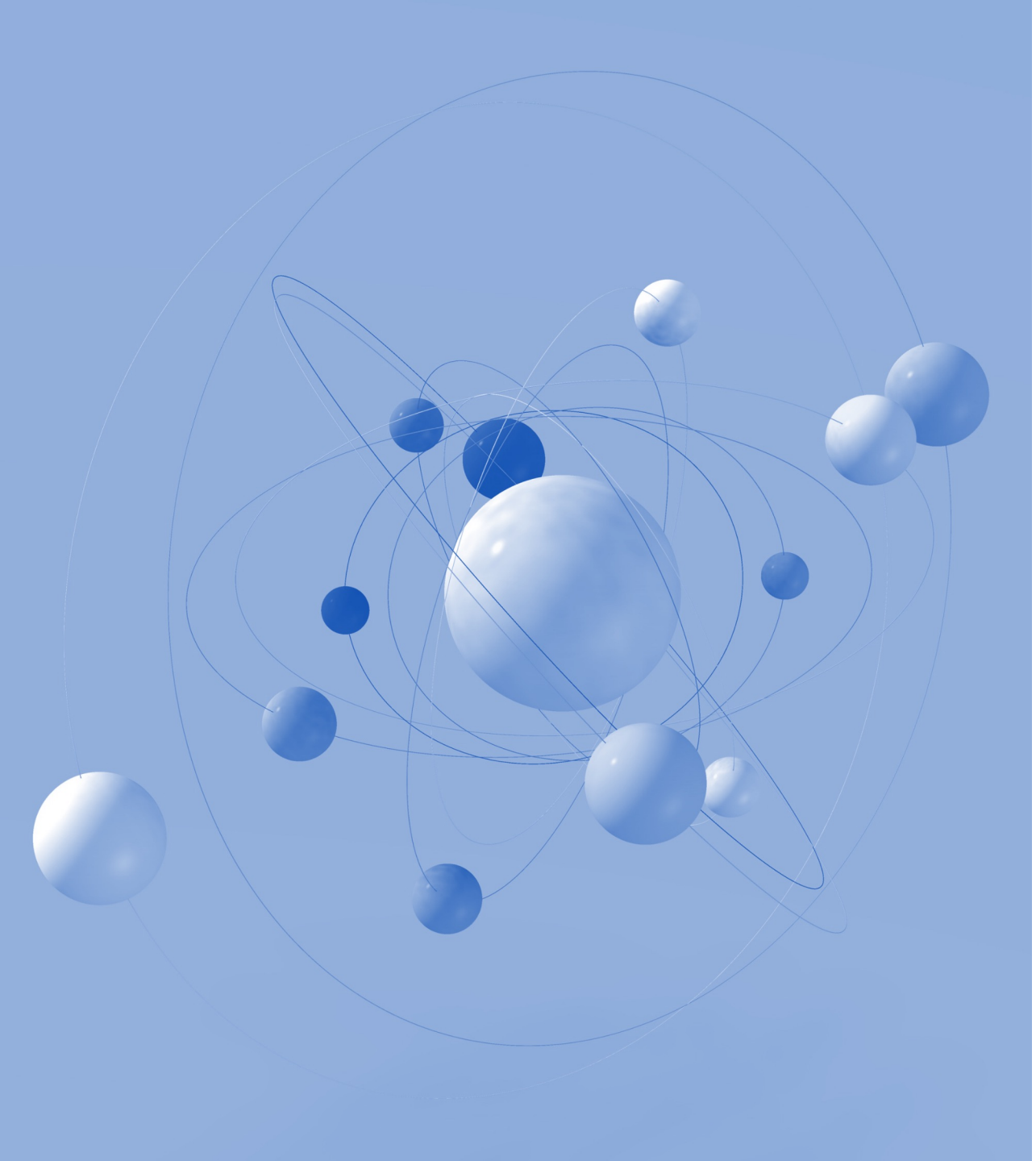
Things started to be a bit more complicated when users' comments about EmBiology included searching multiple things at one time.



The ability to search for multiple concepts at one time was the most appreciated [and requested] functionality from our former product. It allowed users to find patterns and connections between multiple items.

Something that we learnt from users is that it’s rarely about ONE thing, but rather how things are interconnected with one another, how they interact and what patterns can be found.

EmBiology phase 2



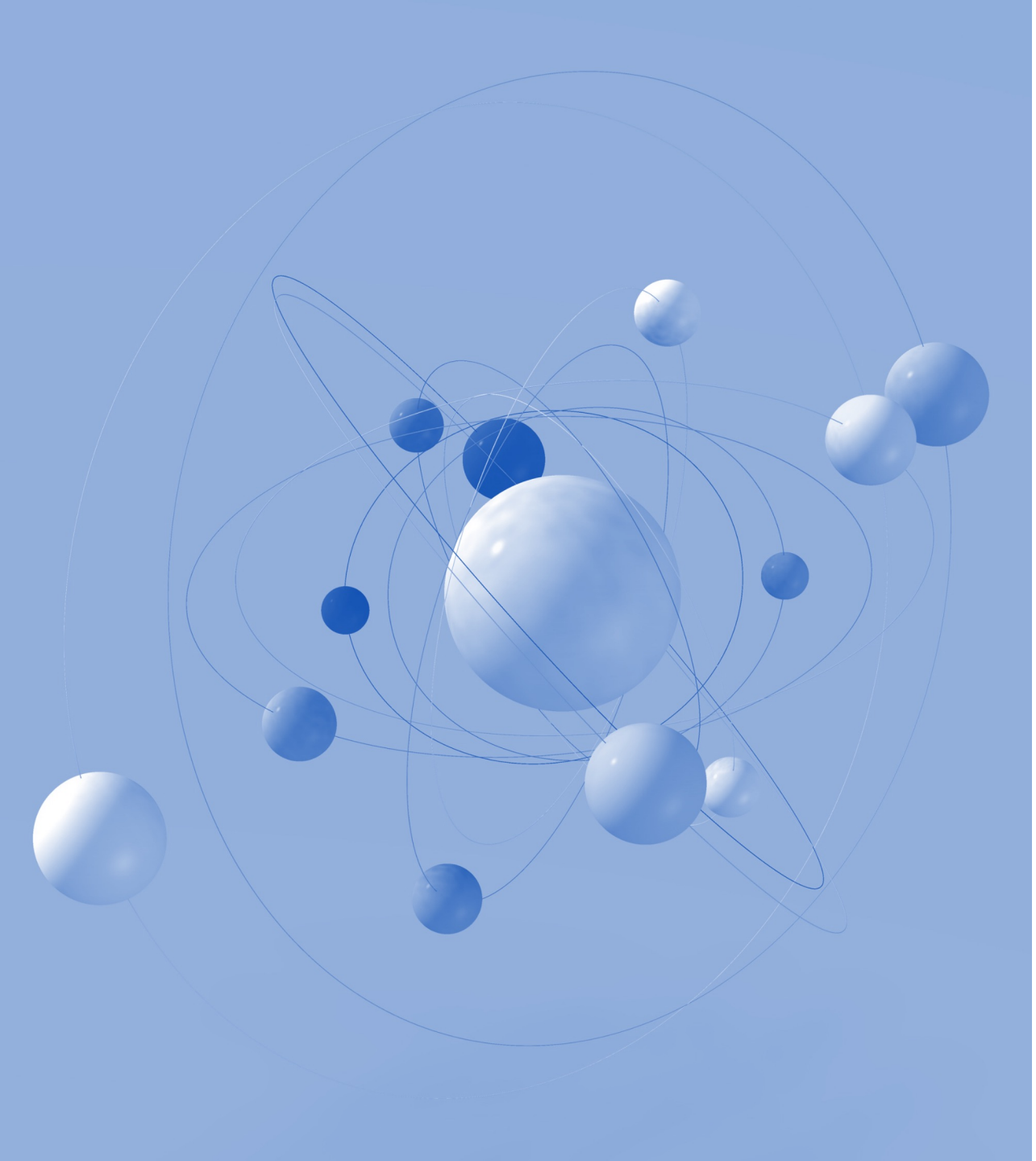
EmBiology Phase 2

- 8 exploratory 1:1 interviews.
- Bioinformaticians, biologists from the pharma industry and academic researchers involved in selecting genes/proteins for their experiments.
- Major pain points

  Key goals

  Approach to the workflow

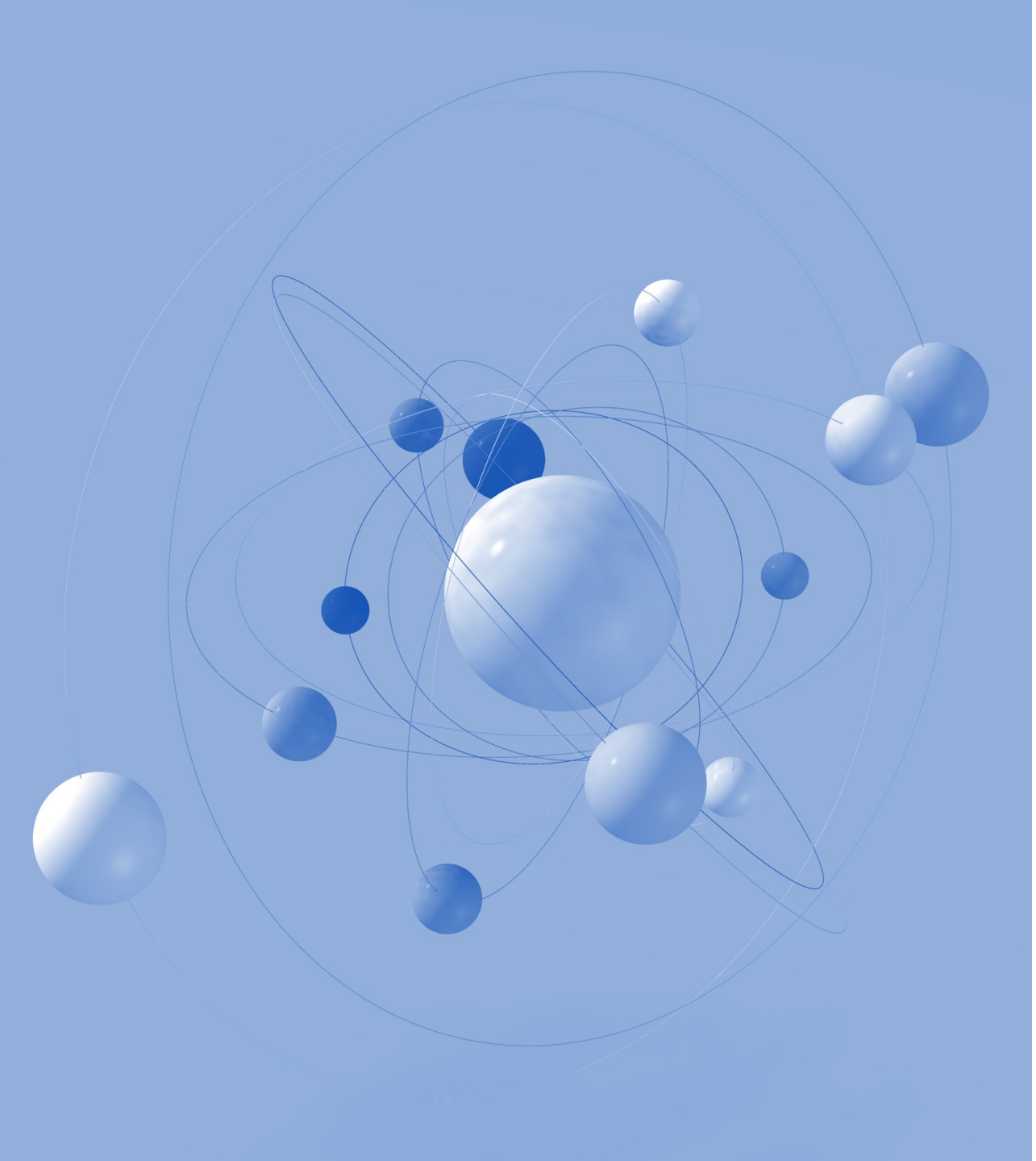
  Different perspectives



EmBiology Phase 2

- Not simply a “new feature” but a new framework

- Core: helping our users to get clarity out of complexity



EmBiology Phase 2

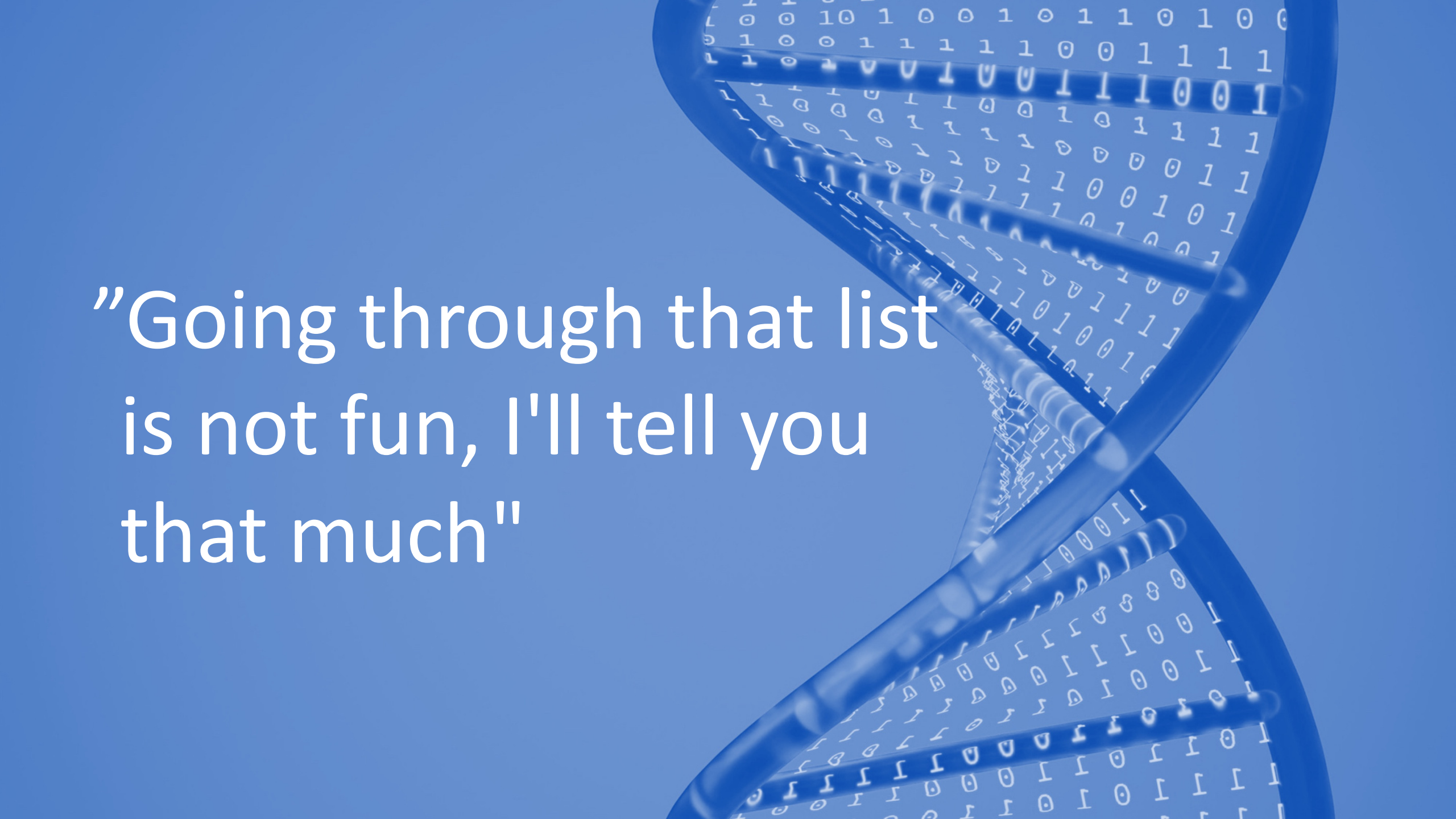
- How to map these problems out and provide a solution that was well fitting within the user journey?

- The whole team gathered around an affinity map and started brainstorming around the emerging patterns.

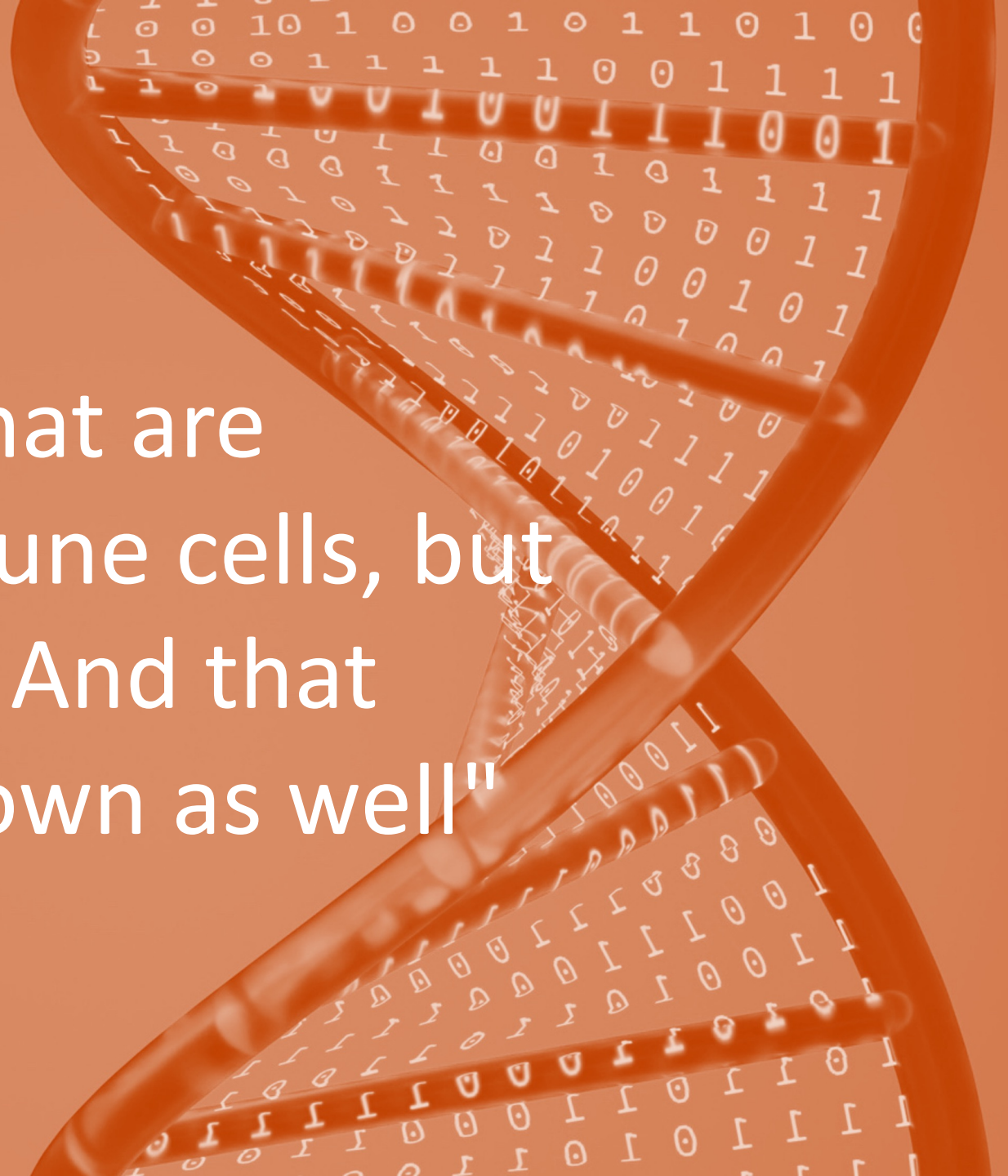
What did we learn?

Some research insights

- Users identify hundreds of interesting proteins from experiments without knowing what to do with them.
- Researchers have a precise approach to identify the proteins they will pursue [e.g., where they're expressed].
- Different aliases in different databases for the same protein/gene cause confusion.
- There are biologists that need the big picture, and others that think more by disease or tissue area.


”Going through that list
is not fun, I'll tell you
that much"

"I look for things that are expressed in immune cells, but not in other cells. And that helps narrow it down as well"




”Sometimes is just hard
to know where start looking"

New project

Saved experiments

EmBio Insights

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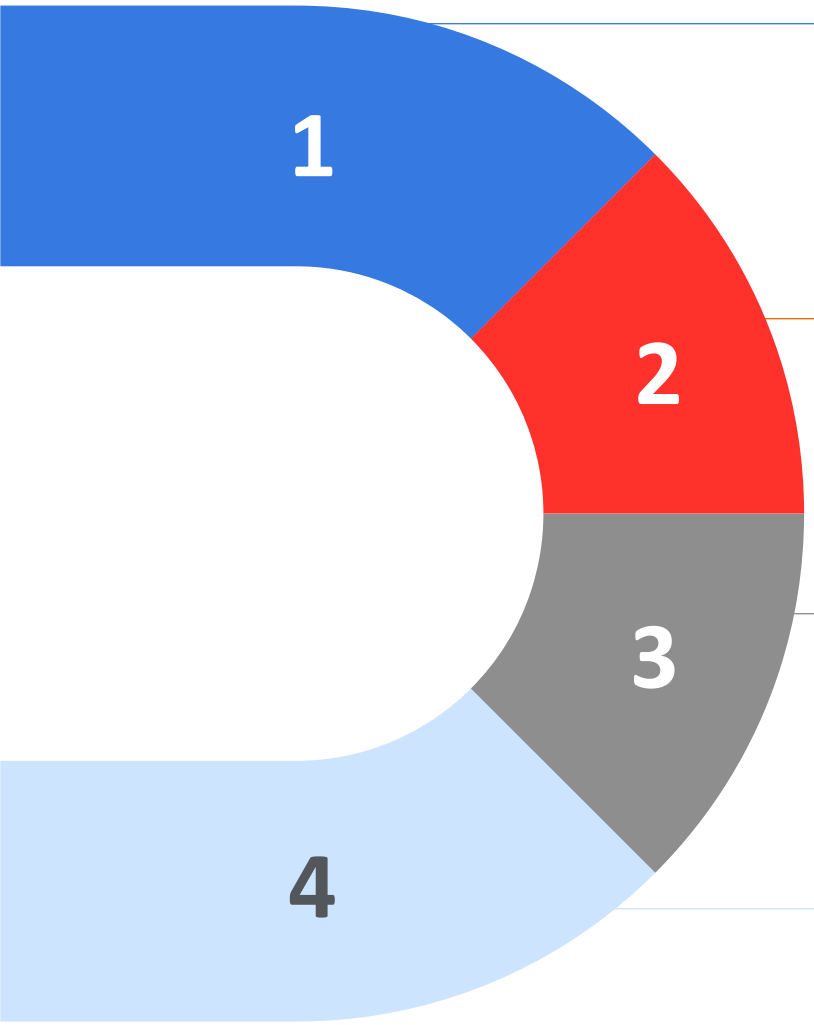
	List name	Status	Date		
1.	Example gene list Jira DEMO.xlsx Click edit icon to enter your experiment description.	Completed	26/09/2023	Open analysis	
2.	Example gene list Jira.xlsx Click edit icon to enter your experiment description.	Completed	11/09/2023	Open analysis	
3.	Example gene list Jira DEMO.xlsx	Completed	11/09/2023	Open analysis	

What’s next?



February 2023

Research plan and Interviews

April 2023

Analysis, workshop and brainstorm

May 2023

Prototypes and testing

September 2023 >

Releases and assessment

Thank you!

Get in touch:

s.sommariva@elsevier.com

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Break and networking

11:00 – 11:30