



Master Test - The Bubble Machine

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Minor UXD

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Debrief

The bubble machine shows a network of documents and people and the connections between them. The connections can be either because a person is friends with another person, or sees the document on their feed. Because the news people consume is based on what they like, the chance they keep seeing the same items is big. This causes them to be stuck in their own reality with people who also see the same things they do. The bubble machine shows where these so called 'bubbles' are formed between people and news items and can be used by journalists to mimic the spread of disinformation.

Problem statement

The current system is based on a network diagram. It shows the connections on different levels. Because the network is so big, it is hard to see what is connected anymore and all looks like a big hairball. There is also no explanation on what the parameters are and how they are used.

Design challenge

The goal is to create an interface for the bubble machine in a way that it is clear for a journalist what the goal is and how they can use the simulation in an independant way without someone needing to explain it to them. I will focus on the UX of the current design and look for current painpoints by analyzing it and think of different ways to improve the interface. I will also research different visualisations to see if a different one would fit better than the current one if needed.

Goals

Business Goals

- Finding a use for the simulation for a certain target group.
- Finding out how the spreading of disinformation might possibly be stopped altogether.
- Having a product that is usable for the target group.

User Goals

- Getting an understanding of how the filter bubble machine works.
- Knowing how to use the filter bubble machine independently.
- Understanding how the filter bubble machine might help them reach their goals.

Stakeholders

- Marcio Fuckner (creator of the filter bubble machine)
- Yuri Westplat (Owner of the filter bubble machine)
- Journalists (the end-user)

Painpoints

In order to recreate the UX of the filter bubble machine, I first did an analysis of the current problems the system encounters when trying to use it. These points will be taken into account when creating the new user interface.



- 1 There is no explanation to be found about what all the parameters do.
- 2 No legend to understand the color codes and dots
- 3 There is no explanation along the x and y axis.
- 4 In order to run the simulation you have to press a button. There is no ability to view live changes.
- 5 No onboarding or explanation as to what the user is look at.
- 6 Can't zoom in on individual bubbles or dots.
- 7 There is too much chrome causing not knowing what to do.

Conclusion

The most important thing missing is clarity. When a user would use the simulator they would have no idea where to start, what everything means and how to use the controls.

There is a lot of opportunity for new functionalities that help enhance the user interface and give it the clarity it needs in order to use it.

Interview

Together with the other UXD students, we have set up an interview with a journalist to get a better understanding of how far they're knowledge about filter bubbles reaches, explain the simulation and how they would like to use it.

1 Are you familiar with filter bubbles?

I've actually held a couple of speakings about fake news and the topic of filter bubbles does come up. I think it makes sense that like-minded people find each other when they have the same interest.

So the bubbles do exist, but how influential are they? This is almost impossible to measure. This will differ from person to person. Especially people that are insecure, alone and influenceable are more keen to share and belief what they see, because they seek a group with like-minded opinions.

2 How would you use this simulation?

Well, it is still a simulation and there is no real data behind it. This way it doesn't give me extra context and I'm not sure how I could use it.

If there would be, for example, demographic information behind the users, and the item points were articles from news sites or newspapers, it could be really interesting for them to see what articles different people would feel attracted to. This doesn't have so much to do with the fake news part unfortunately.

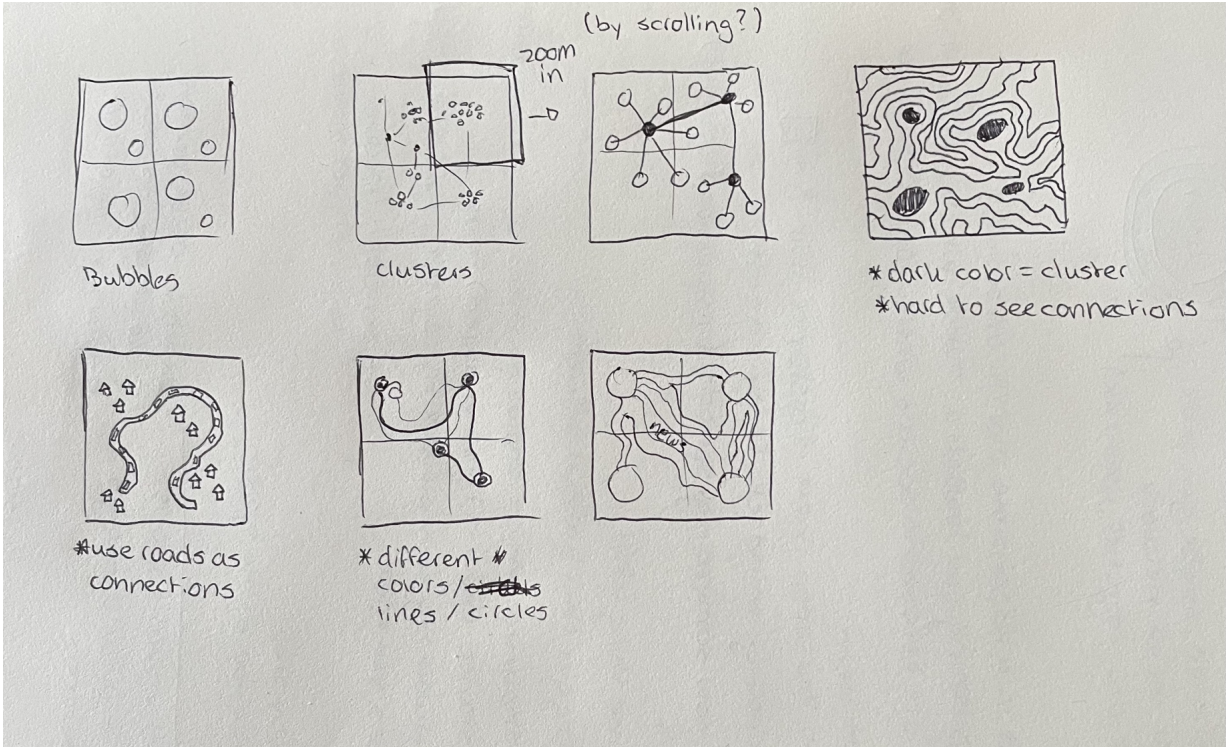
Conclusion

Because of the interview we found out a new way where it could actually be more interesting for journalist to use the filter bubble machine. Instead of focussing on fake news, the journalist thought it would be a fun idea if each newspaper had their own kind of simulation to see what kind of articles performed best. Based on these context they could act more on it.

Unfortunately I didn't have the data currently to fulfill these wishes, and I don't have enough time to more or less change the concept of the filter bubble machine. It will be put into the recommendations for the owner and creator.

Researching visualizations

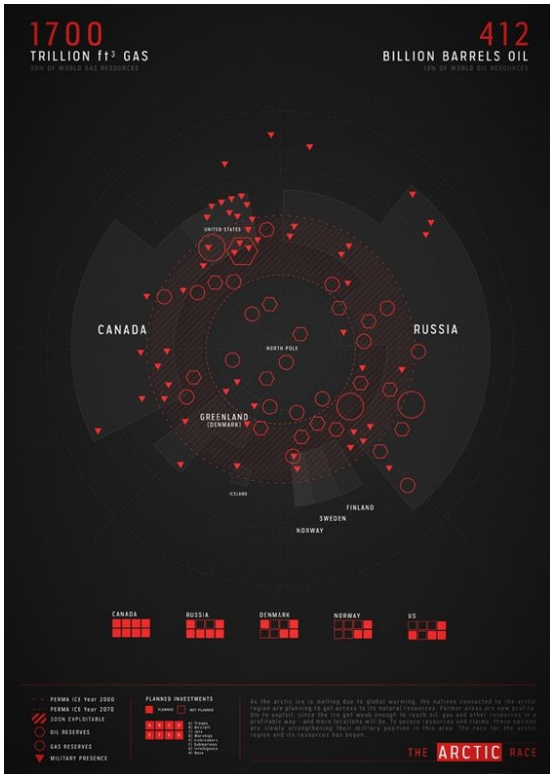
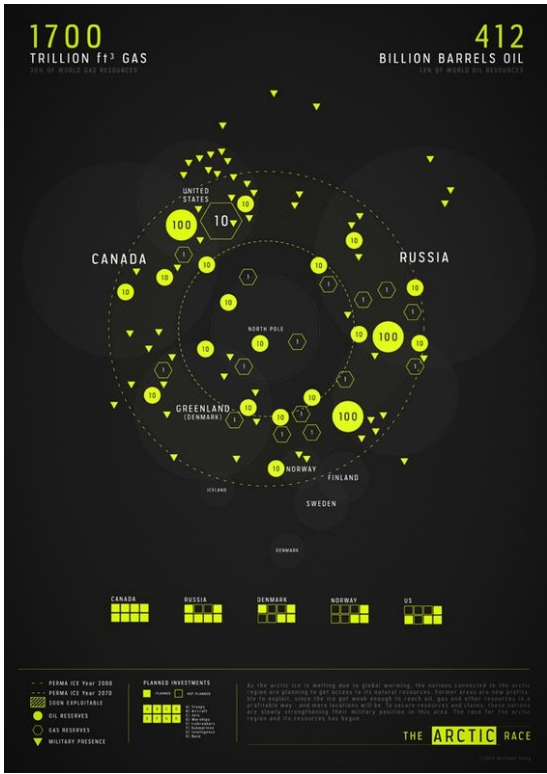
The current visualizations brought more confusion than clarity, so I thought I might try and focus on something that would fit better.



I have been searching online and in books for different visualizations and trying them out on paper.

The visualizations more or less came back to the same thing and without using color or a legend, the concept was a bit abstract.

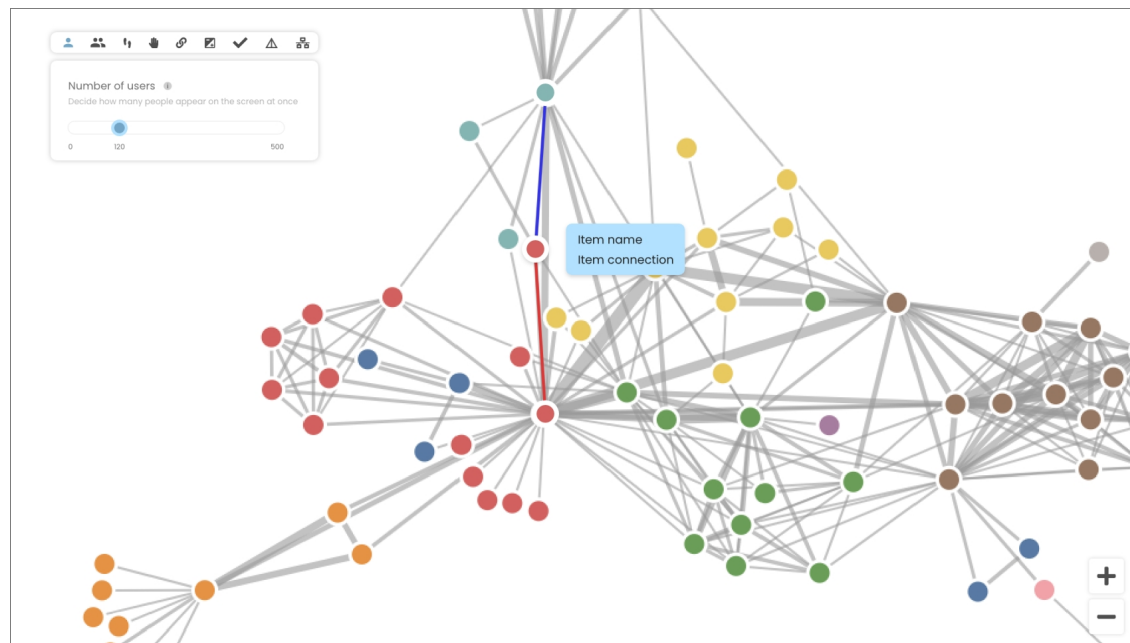
Something I did discover while sketching, was that keeping the connections would be important. The connections explain in what ways disinformation is spread and by how many.



The first iteration wasn't visually attracting for the public to look at. I used Pinterest to look for inspiration for different ways to visualize the current model. Especially the first one with the blue, red and purple seemed really interesting so I tried that out in the second iteration.

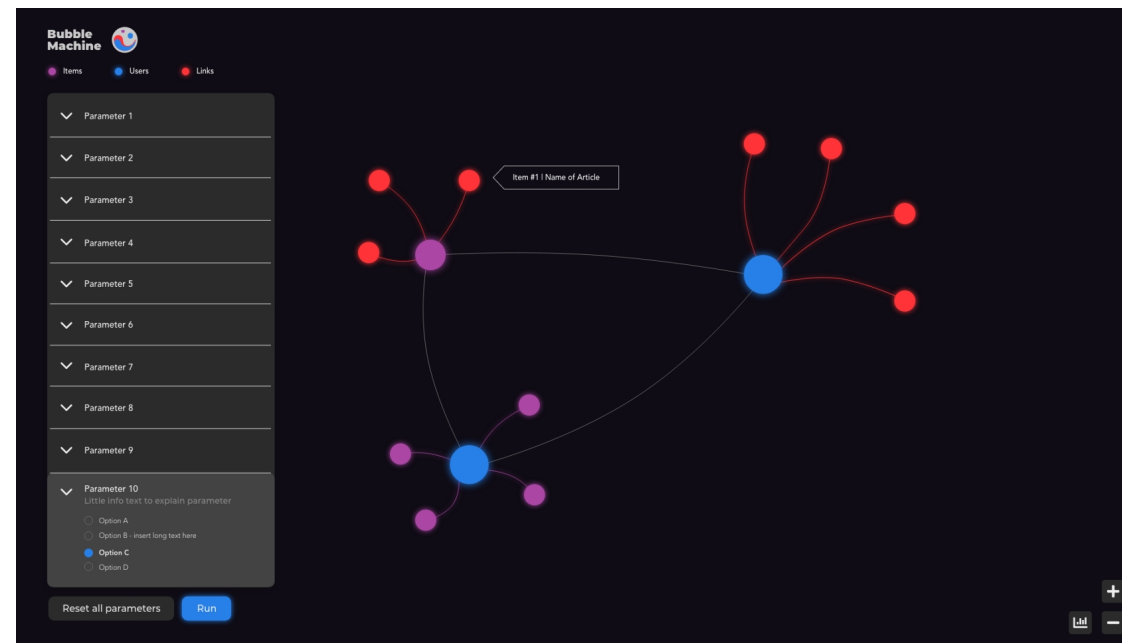
Researching visualizations - Iterations

Over the course I tried out different type of interfaces to see what would work best. These were all iterations I made that didn't work out in the end.



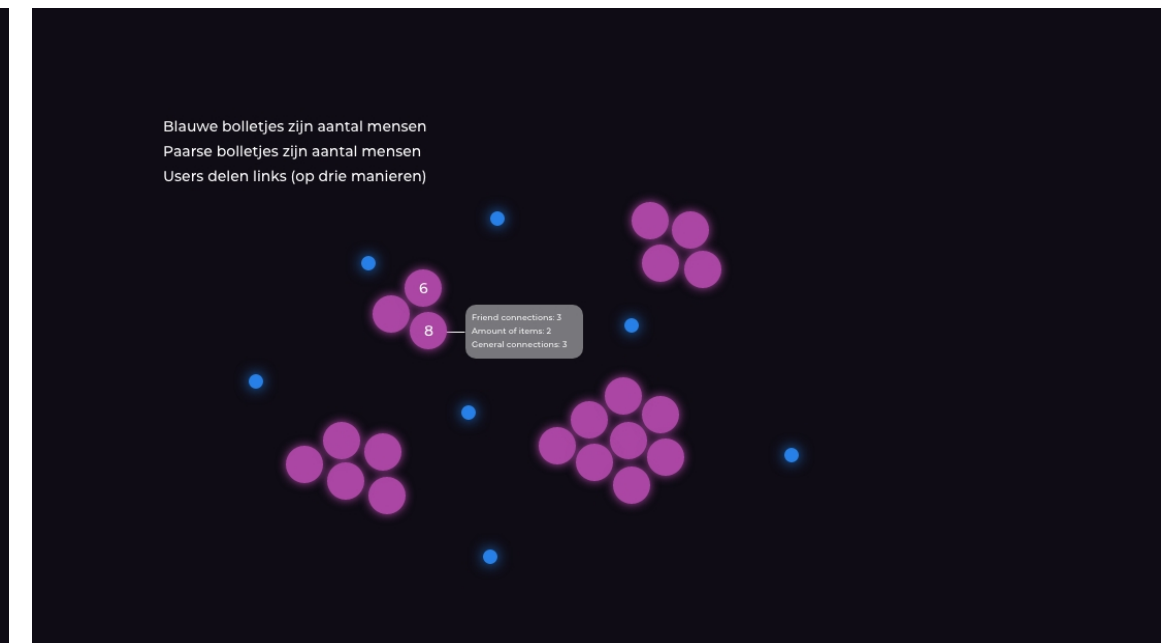
Here, the focus wasn't yet on the visualization but more so on a way to show the parameters without taking up the whole screen. Within the visualization I tried something with the connections and dots and figured out it would be a fun way to hover over the dots and a piece of information would appear about that connection.

Also, this way of using the parameters didn't make it. The icons were too vague and didn't really say anything.



This visualization I created when being inspired by the Pinterest posts. I took the idea of connected neurons and tried to give it my own twist with the different colors and dots. At the moment this didn't really say anything, the colors meant nothing and if you had 500 users in the simulation, there would be a wave of colored connections which would cause chaos again.

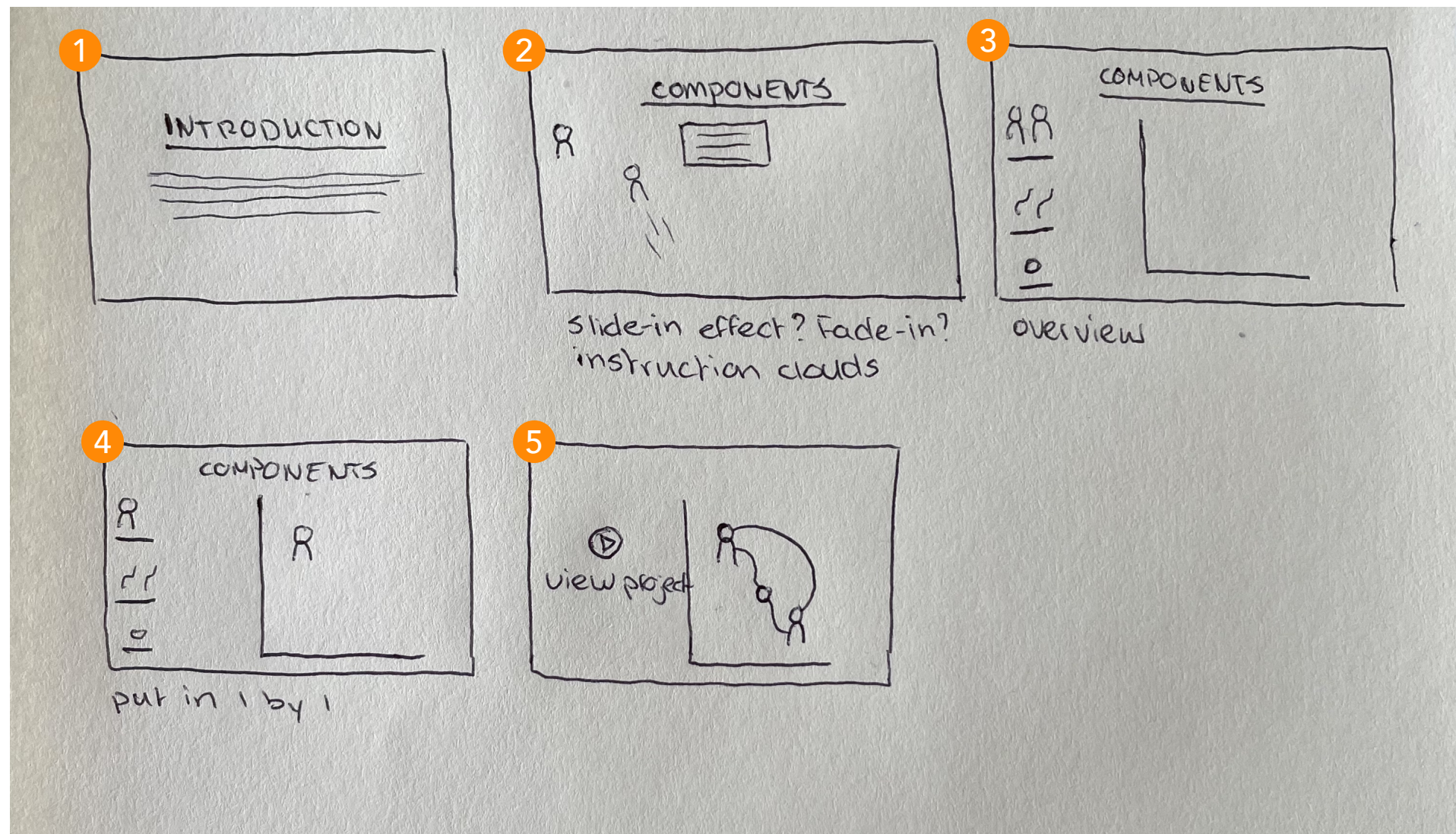
Then there was the parameters again, this time taking way too much space. I had to think of which parameters to eliminate and find a different solution to them still.



This is already getting closer to the end product. I split the color palette into two colors: users and documents/items. The connections aren't visible, you only know how many connections there are by looking at the number in the purple dot. Needless to say this also didn't work, it could not tell you anything about where to connections where leading to.

Onboarding

To drop a user right into the interface wouldn't help them understand anything at all. That's why I thought of different ways to introduce them to the concept and explain how to use it.



- 1 A short introduction on what this project/visualization is about.
- 2 Moving in the components one by one to explain them and using animations to make it more engaging.
- 3 The overview when all the components have entered the screen.
- 4 The components will now be placed into the graph/axis one by one using animations again.
- 5 Once the whole story about how the filter bubble machine works is explained, a start button appears that asks to view the project.

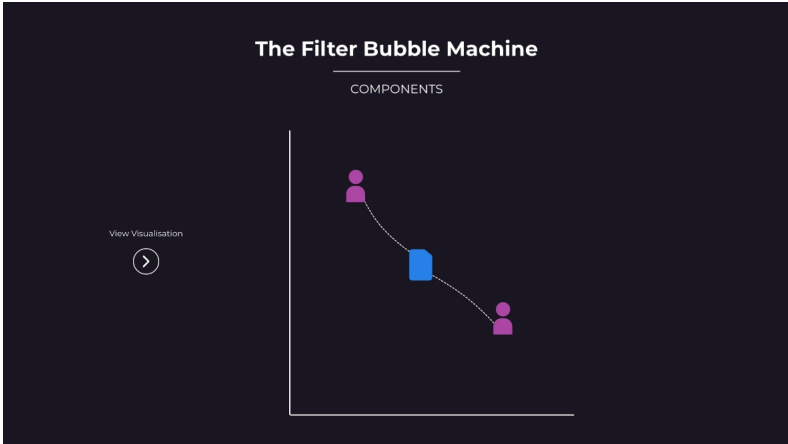
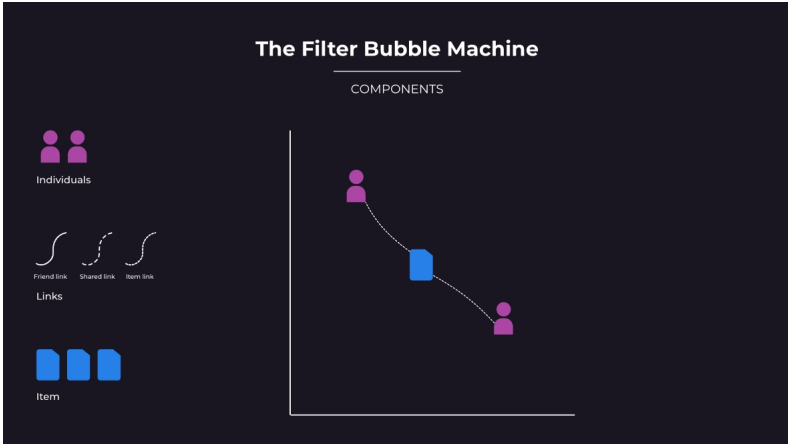
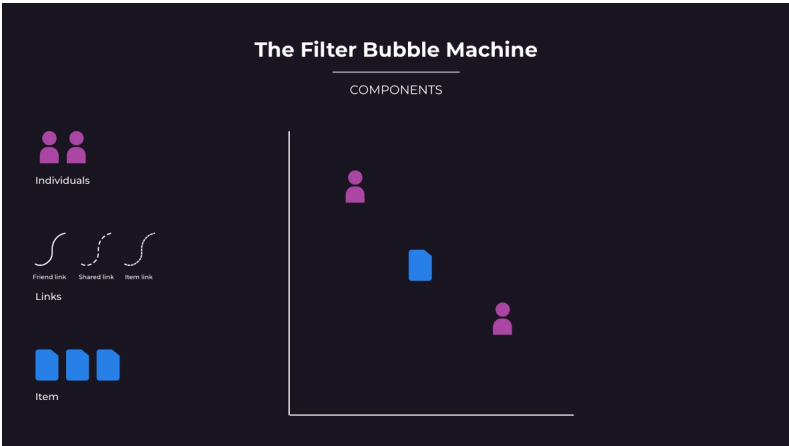
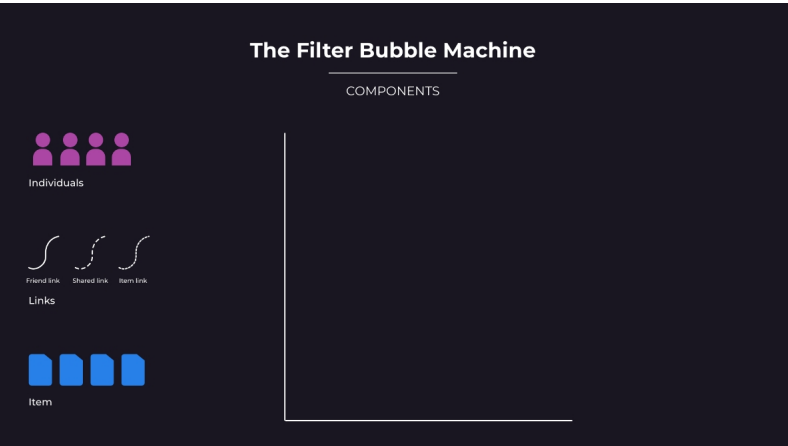
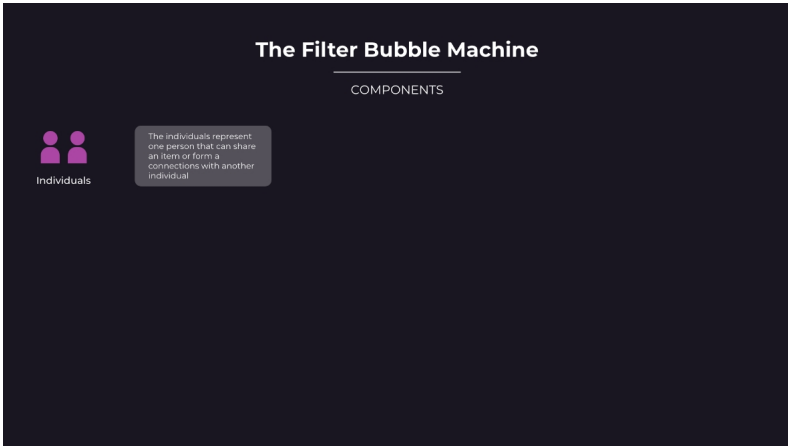
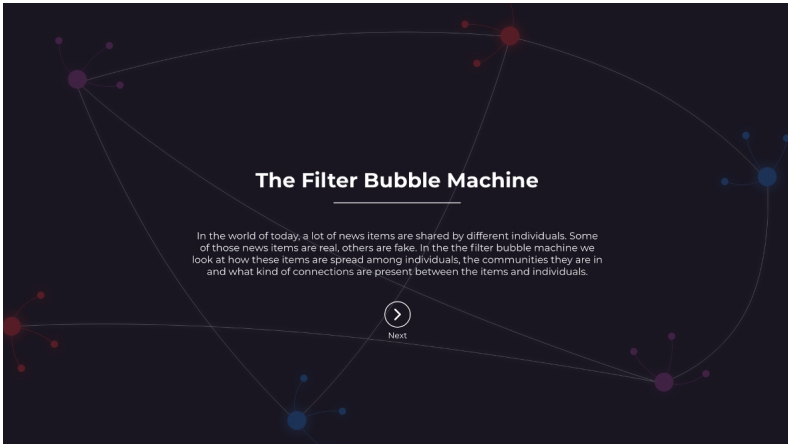
One thing I was wondering is how to give some extra explanations in case of the graph/axis, and to transition from the introduction to the actual page where it all happens.

This could be solved by using small clouds with explanations inside of them, showing up per component.

The second problem I thought might be solved by having some sort of play or start button, just like in the example Yuri showed us:
<http://drones.pitchinteractive.com/>

Onboarding

To get a better idea of what the onboarding might look like, I created a quick prototype in Adobe XD.

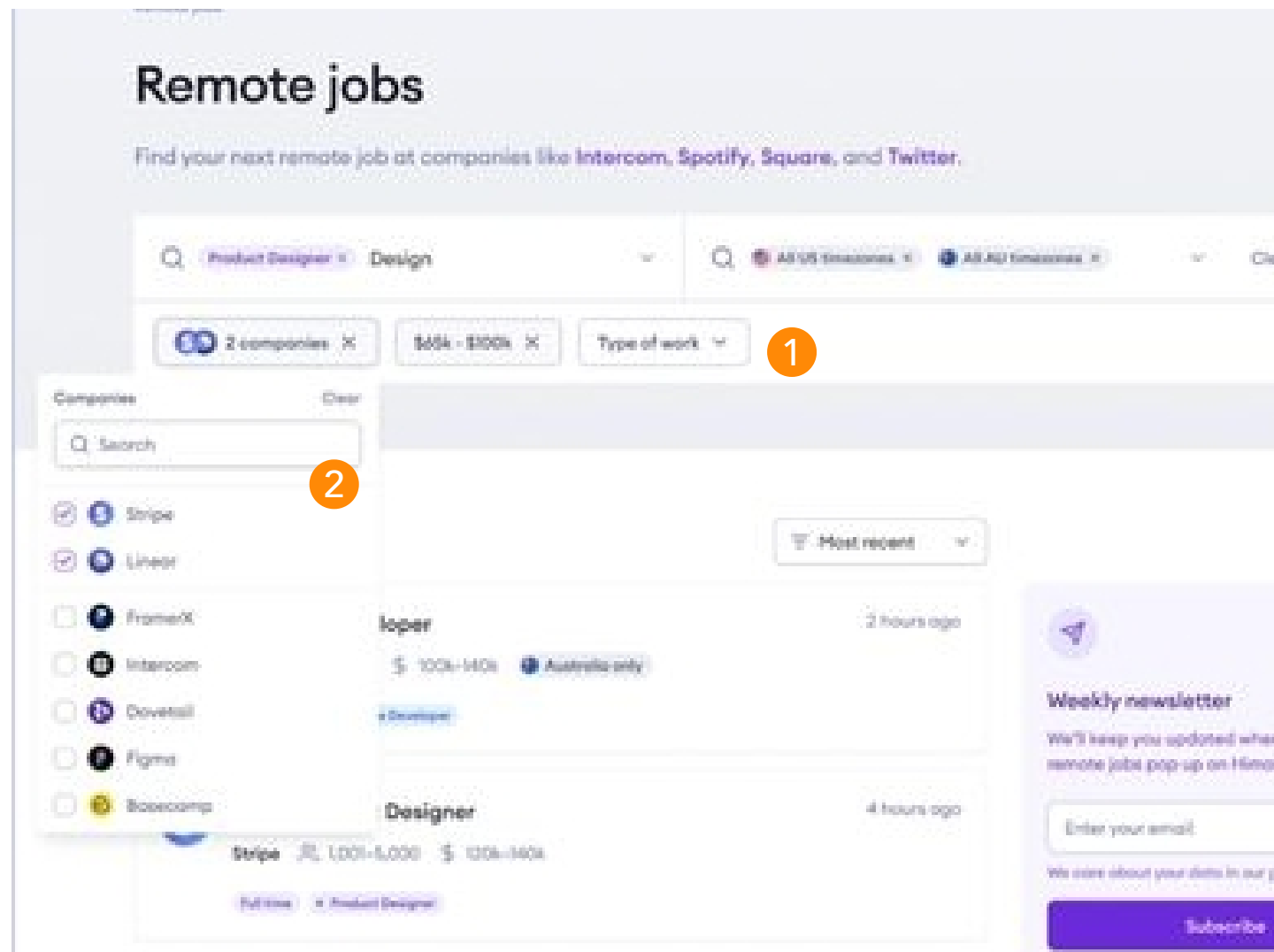


I was inspired by a YouTuber that was laying out the components of a mechanical keyboard to let people know what they needed.

This onboarding was created quite early so this is still the old way of explaining the visualization. I got the tip to make it more interactive since it only moved by time, but I ended up using a different onboarding for the end product.

Researching filters

The parameters are an important piece of the filter bubble machine, but it took a while to find out what way to show them would be best without them taking up a lot of space. They are actually filters, so I decided to look on Pinterest but also on Google Pictures to find ways of how filters are used in an interface. This interface was one that inspired me the most.



- 1 A place to show which filters are on and a way to remove them by having an 'X' at the end so you don't have to remove all the filters but just individual ones.
- 2 When changing a filter, a dropdown shows up with different options and checkboxes to select them.

This inspired me to put the parameters horizontally instead of vertically so they wouldn't take as much space. It also helped me remember to give the user the option to remove filters individually.

The dropdown can be used to change the parameter but also gives more space to explain what the parameter means.

Feedback sessions

Over the past weeks I have received quite some feedback that got me thinking more about what I should implement into the project and what not. I have enlisted the most important pieces of feedback I have received and what I decided to do with it.

1 Understand the data

Especially at the start I couldn't really grasp what was going on in the bubble machine, specifically data-wise. I was advised to find out more about it and ask what data was behind it.

Turnes out there is more or less none. It's all based on a simulation, so the users are not real users, the content spawns randomly and has no meaning behind it.

Knowing this actually gave me the power to decide how the bubble machine could be used. I figured that the filter bubble machine would have far more context when the user knew something about the demographics of a person, how they are connected to others and what content the content points are about.

2 Improve the UX

This existed out of multiple things:

- Giving everything a less technical name so people could understand.
- Finding shapes that works best.
- Showing which filters are on.
- Deciding what could stay and what should go.

Needless to say I took all of these feedback points and changed the things that needed change or went on to do some more research. If someone didn't point this out to me, I wouldn't have gotten to the product I designed right now.

3 Use a compare feature

I thought having added sections would help with comparison enough, but then I was suggested to work with overlays. This way the user can view multiple sessions but all stacked on top of each other.

In the top, a checkbox appears so a user can choose which sessions they want to compare to one another.

When the compare button is pressed, the checkboxes appear next to the tabs of the session and the user can select multiple session to use as an overlay. Each session is color coded so it's clear to the user which visualization is from which session.

User testing

A couple of user tests were done to see if the product is actually relevant and user friendly. I set up a complete prototype so they could press and try out anything they want.

Insights

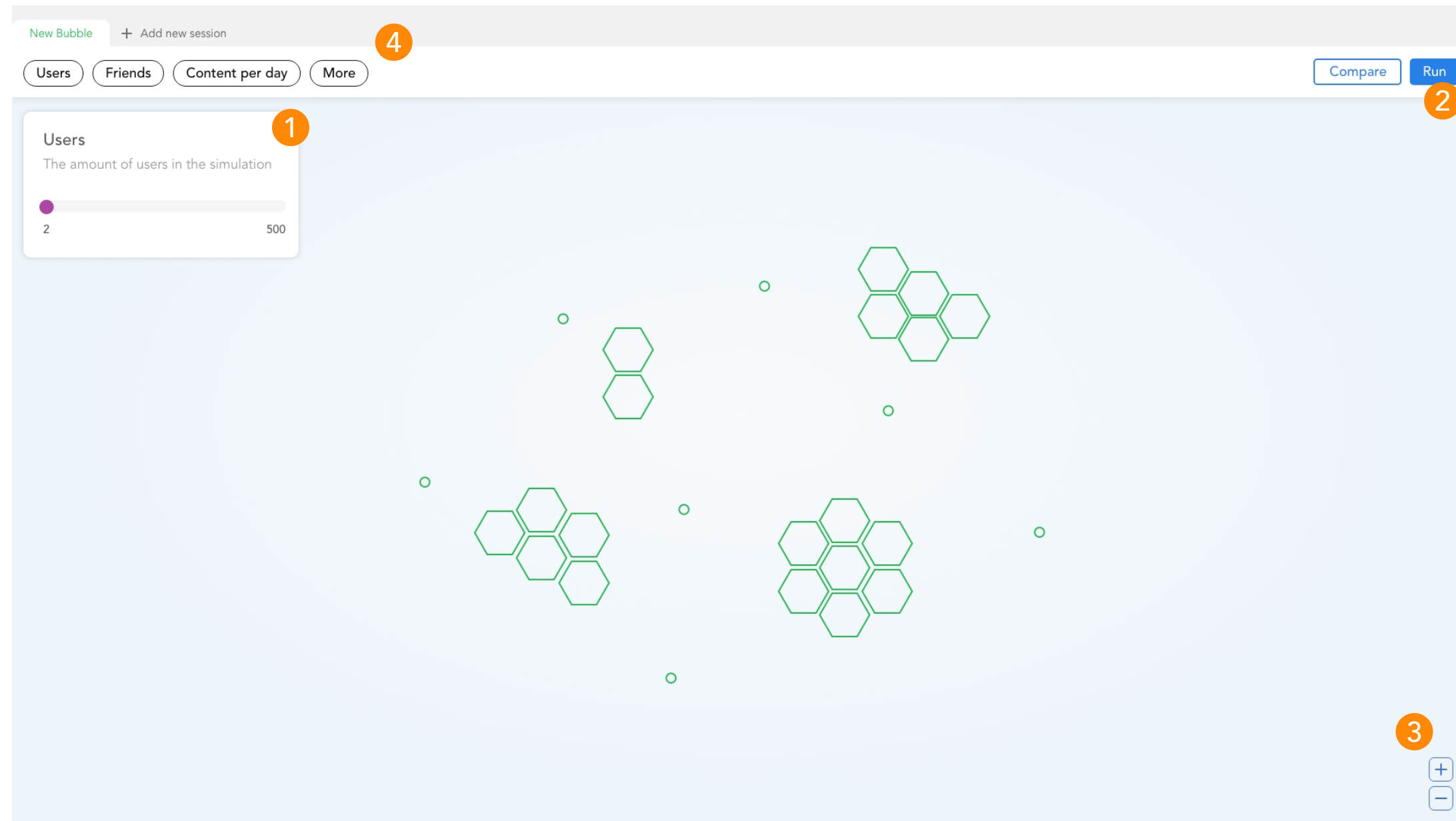
- Some users didn't understand what a prototype really was and didn't know what to do from the start unless I guided them.
- In the onboarding the text about the purpose of some steps wasn't clear enough.
- 'Run' doesn't sound logical to the user. They didn't understand what would happen if pressed
- The filters were clear and easy to understand how to use.
- At first they saw an 'add new session' button so that's the first they did.

Conclusion

- At the start I have to give more explanation of what it is I do and what a prototype means and what I expect from the user by giving more direction.
- By describing why the user would want to use something, they could get a better understanding of the purpose.
- Instead of 'run' I could have gone for 'start'. Or give more context in the onboarding as to why someone should press start.
- I made the 'add new session' button and the tabs of the sessions smaller in comparison to the filters. This way the filters look like they have the most priority.

Improved painpoints

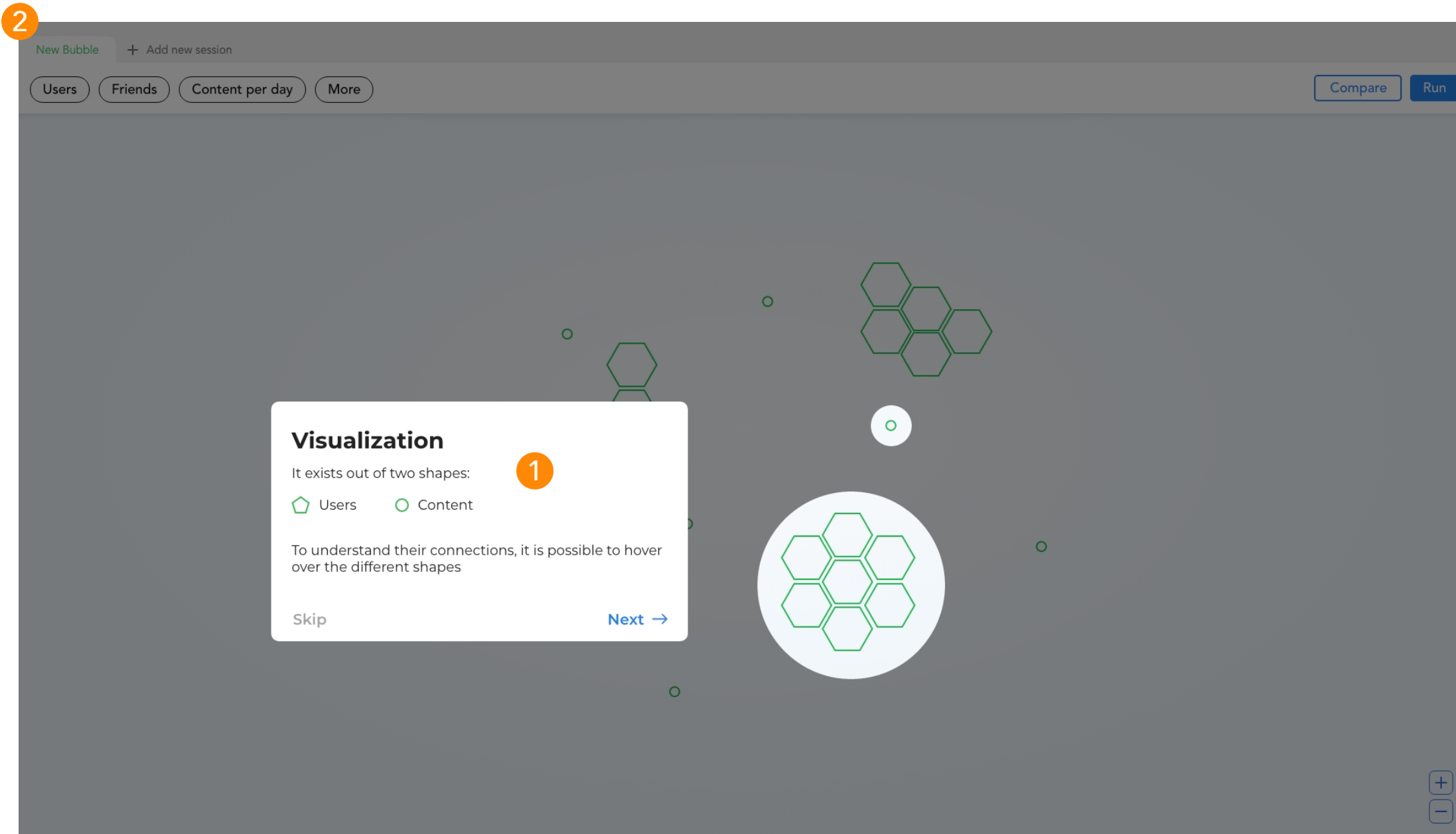
To get to the end product, I took the pain points discovered earlier and researched them to get to the best solutions.



- 1 To understand what the parameters do, a little explanation is given when clicking one of the filters
- 2 The run button is still there. From the user testing it helped as a better trigger.
- 3 Zoom buttons are added to zoom in and out on specific bubbles.
- 4 The chrome is reduced by putting everything behind the navigation.

Improved painpoints

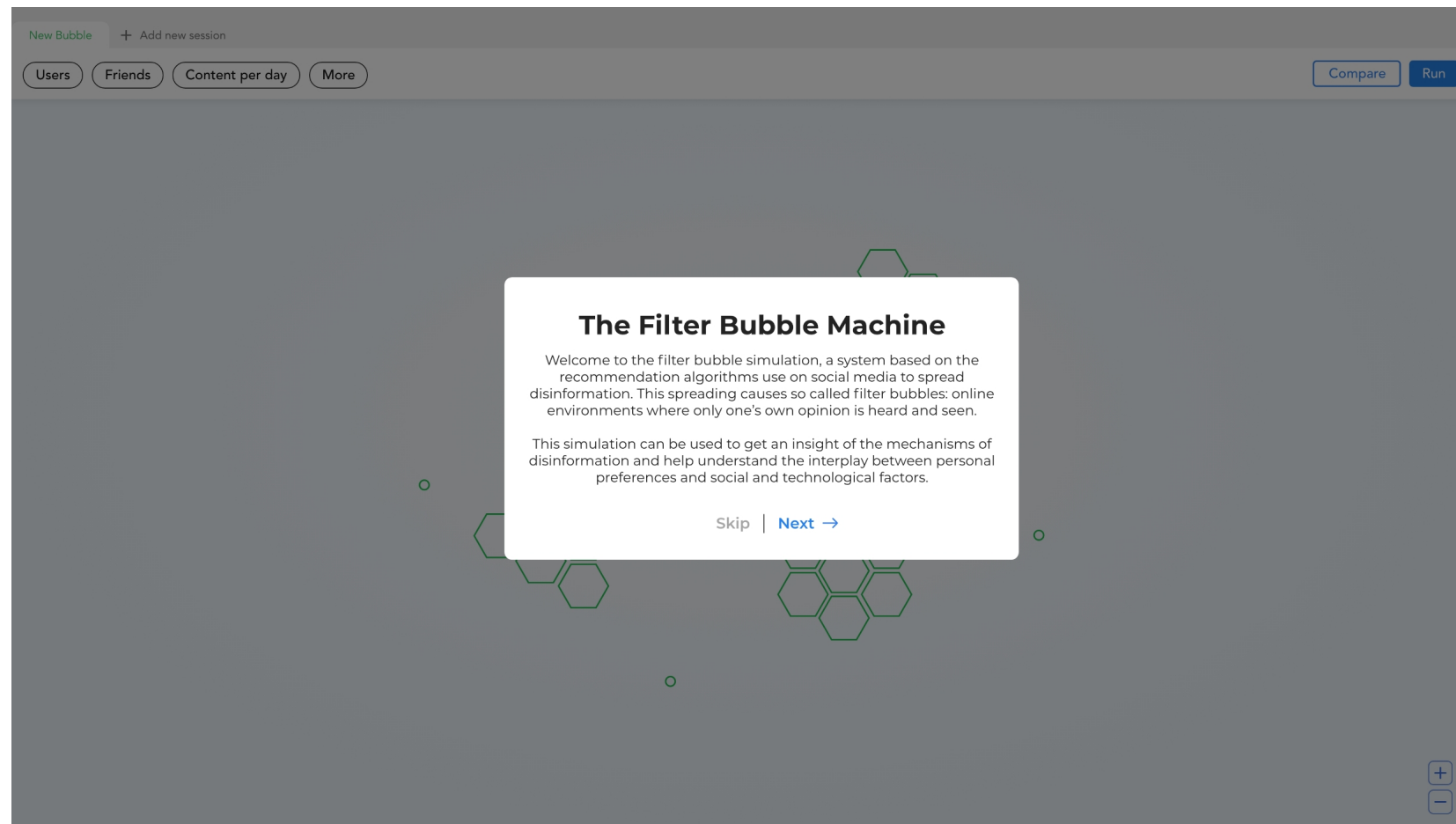
To get to the end product, I took the pain points discovered earlier and researched them to get to the best solutions.



- 1 To lessen the amount of chrome, an explanation of the legend is explained in the onboarding.
- 2 An onboarding is added to explain the user how the filter bubble machine works before using it.

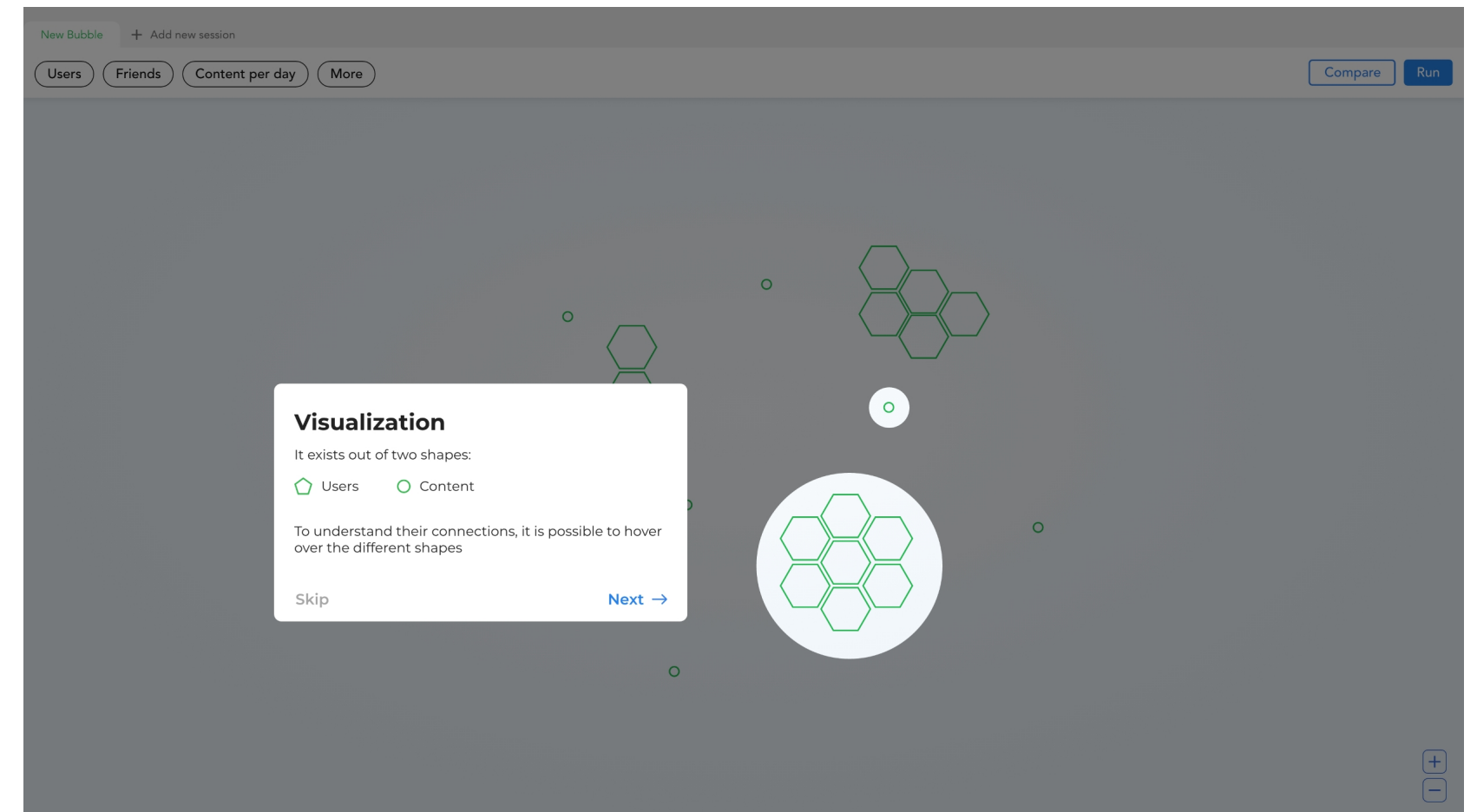
Onboarding

Before the user is thrown into the filter bubble machine, they get a little onboarding session beforehand to walk through and get a better understanding.



Explanation

At the start when the user enters the filter bubble machine, they first get a quick explanation of what it is and does.



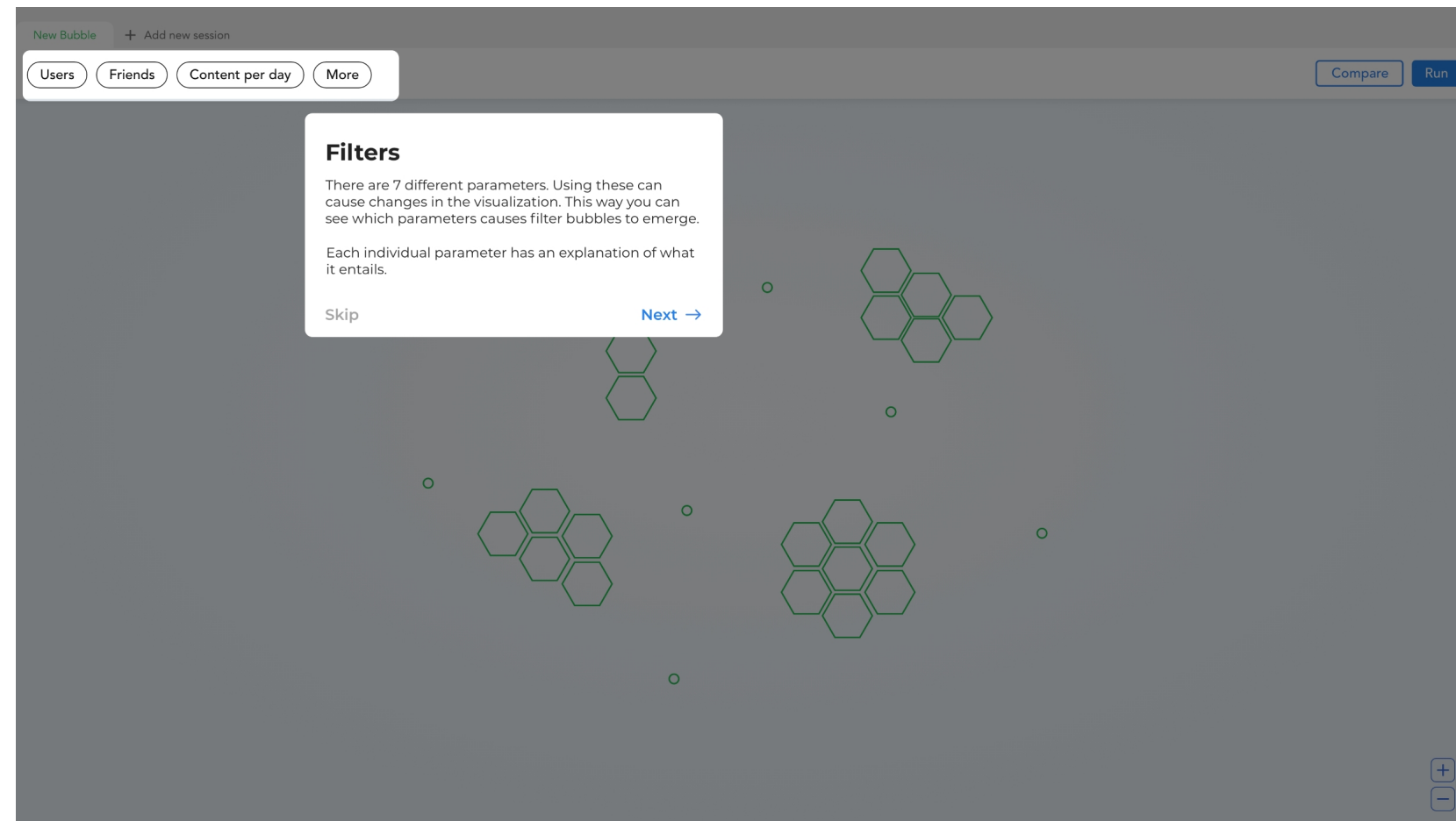
Visualization

The first thing explained is the visualization since this is the most important part that changes all the time depending on the filters selected.

The explanation tells the user what the different shapes are so they know what they mean and how they interact with each other.

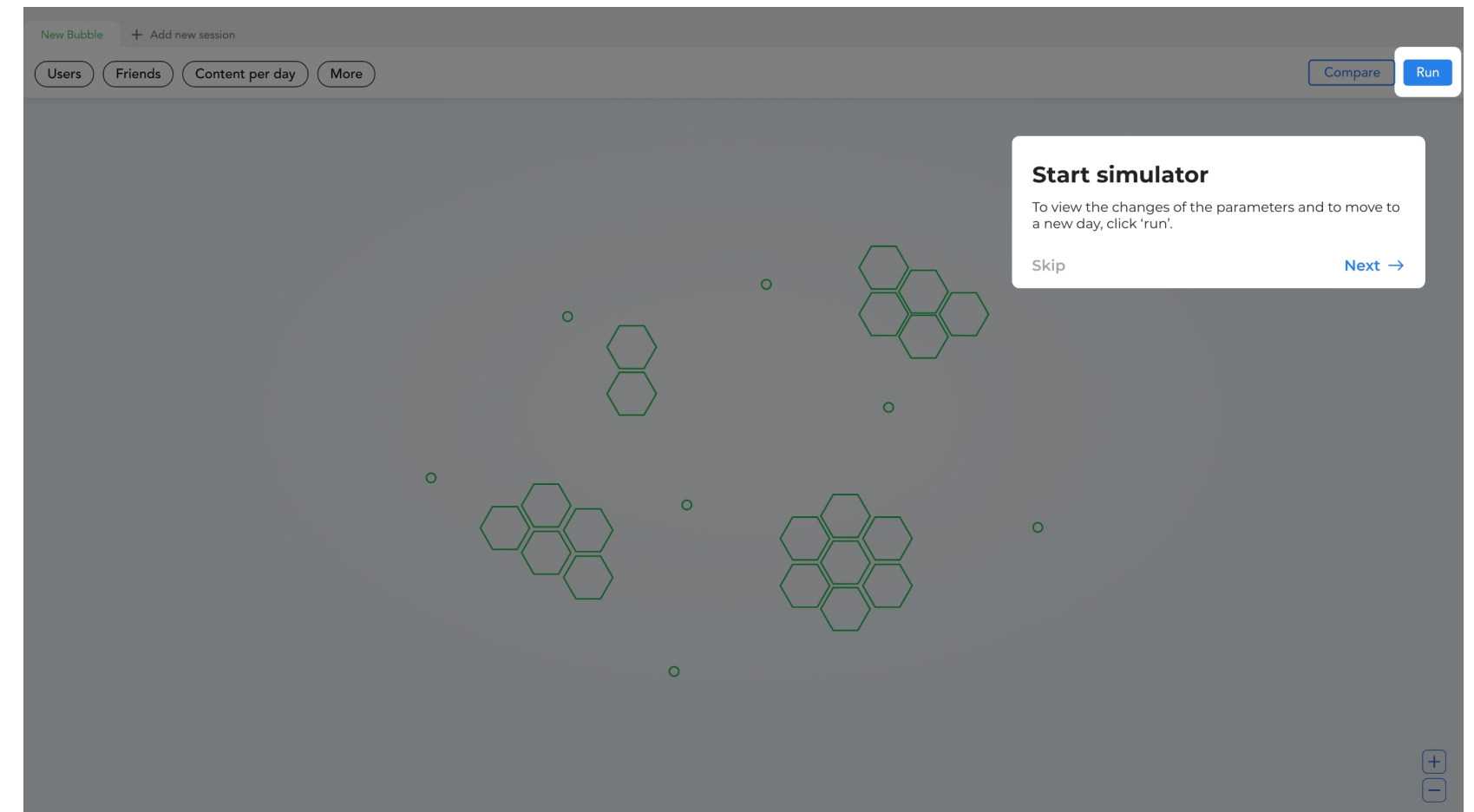
Onboarding

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Filters

Next up are the filters. There is an explanation of how to activate them and what they do. They are put right behind the visualization since this is how you get to interact with it.

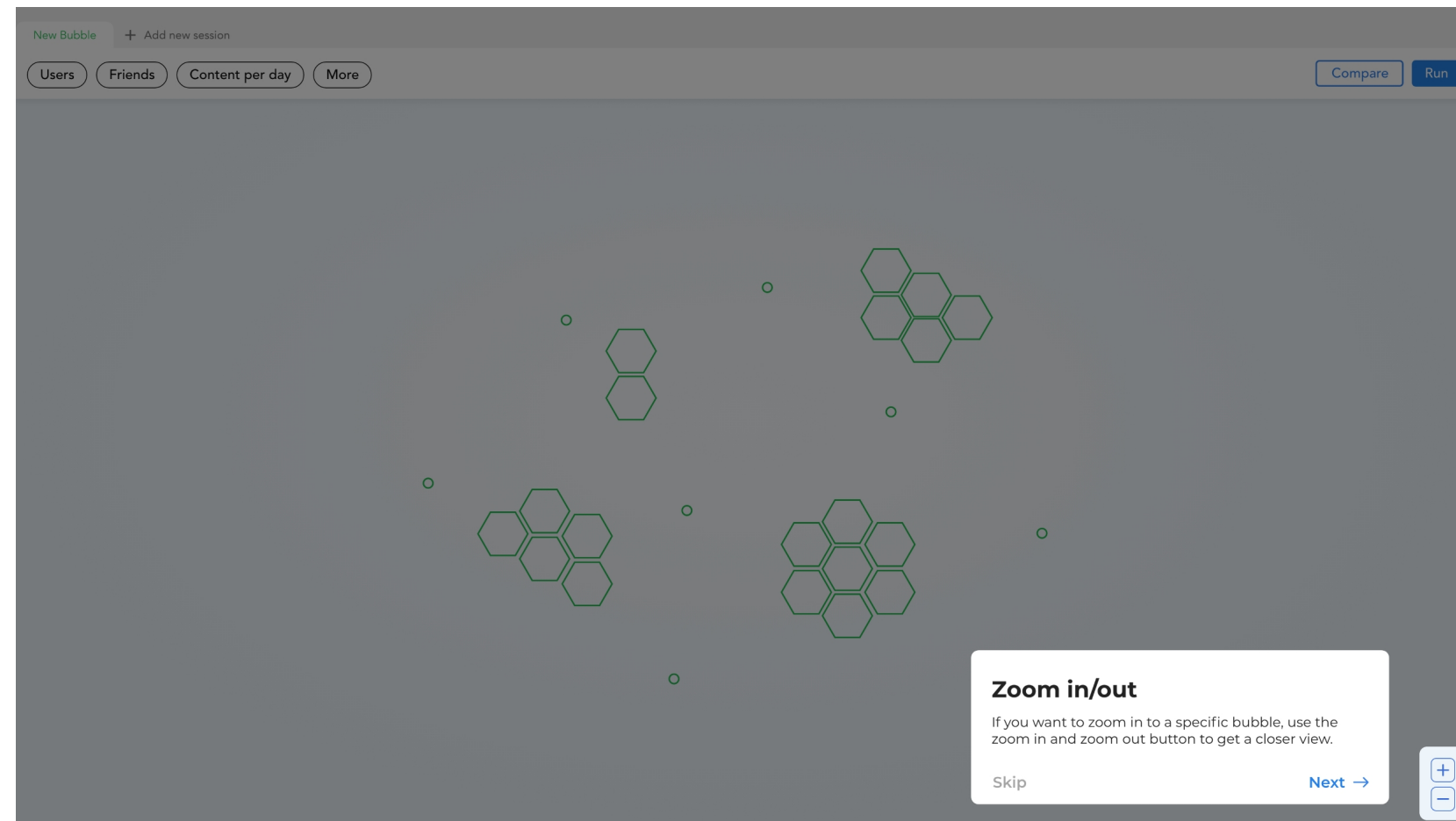


Run

To get something done within the bubble machine, the user needs to press run. This is a trigger used to move things around within the visualization after the filters are activated.

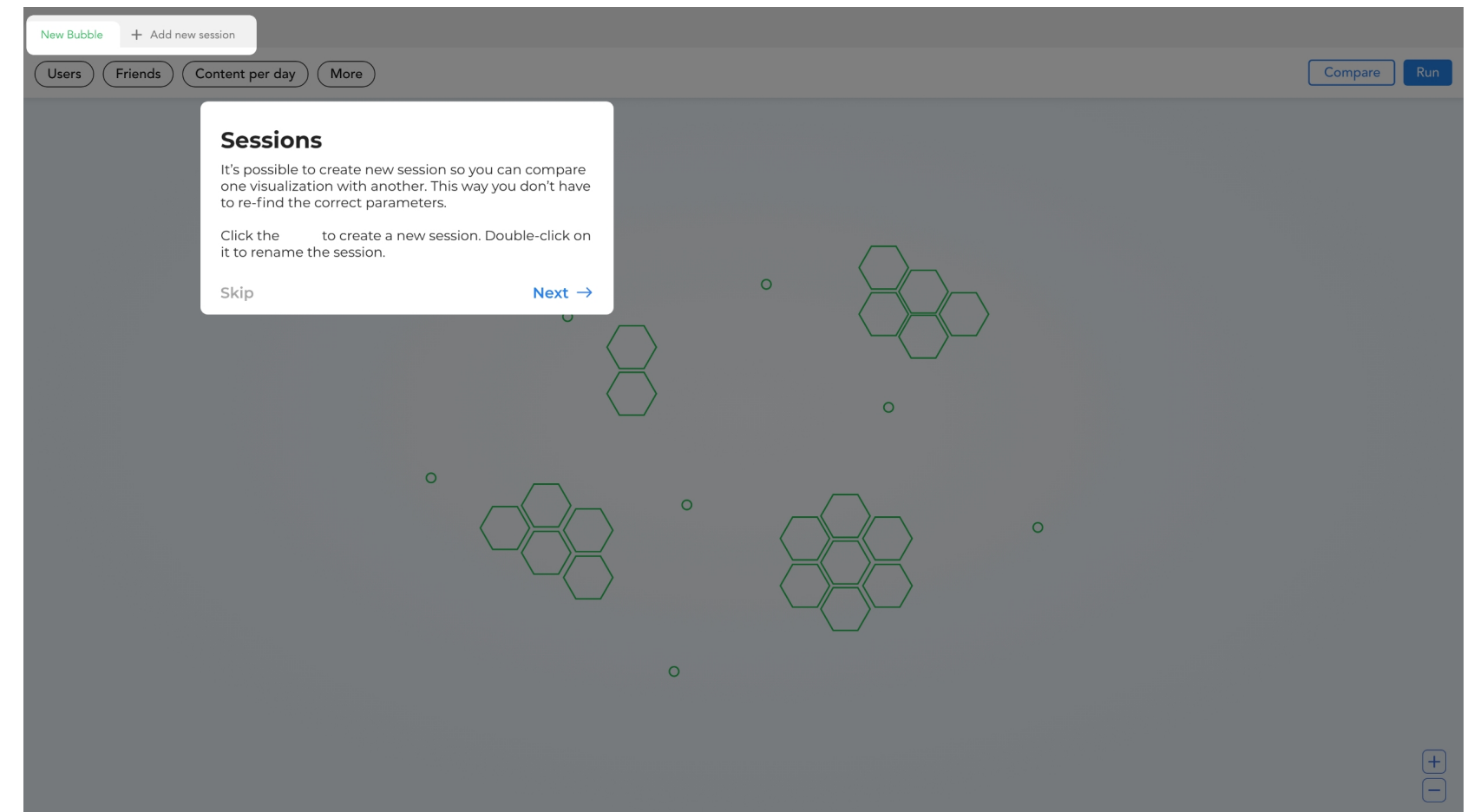
Onboarding

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Zoom in/out

An extra function the user can use to zoom in when they've added a lot of users into the simulation. This way they can see better through the chaos and zoom in on certain bubbles to see what is going on with the connections.



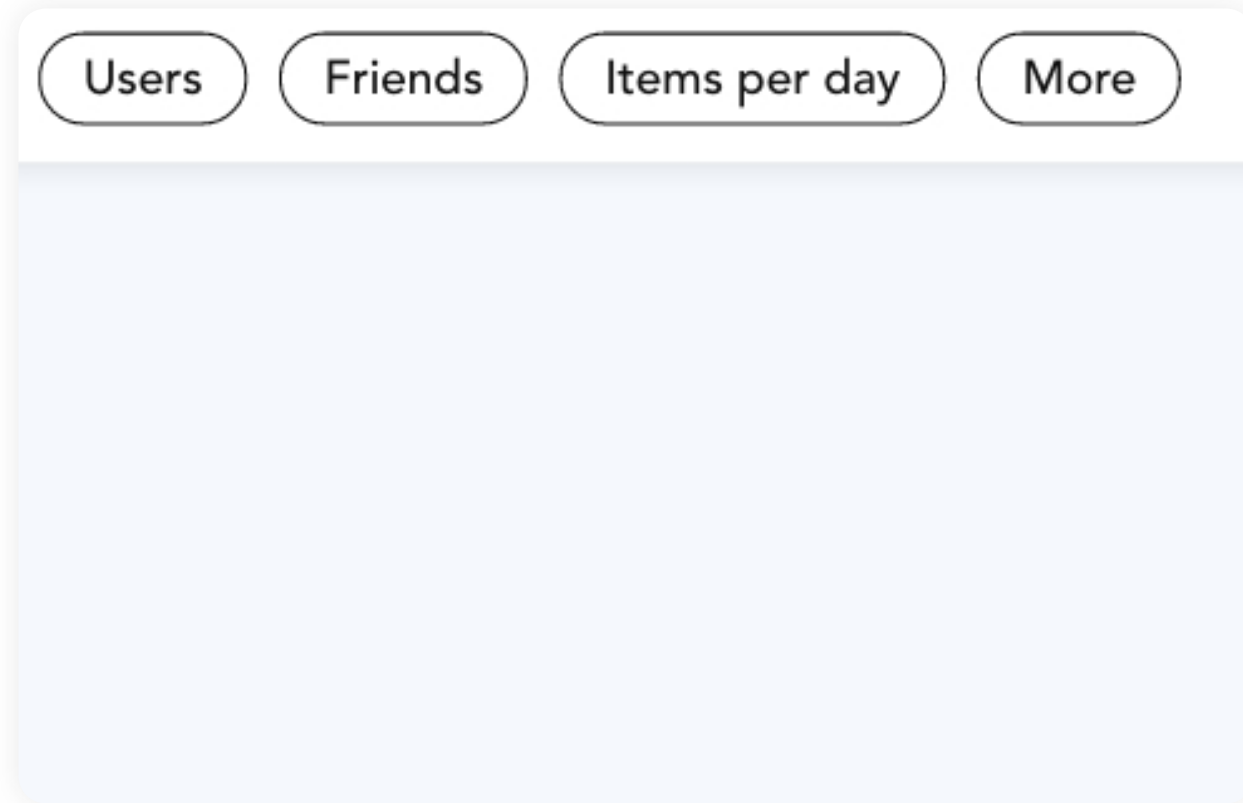
Sessions

Lastly, the user is showed how to create new sessions so they can compare the visualizations with one another.

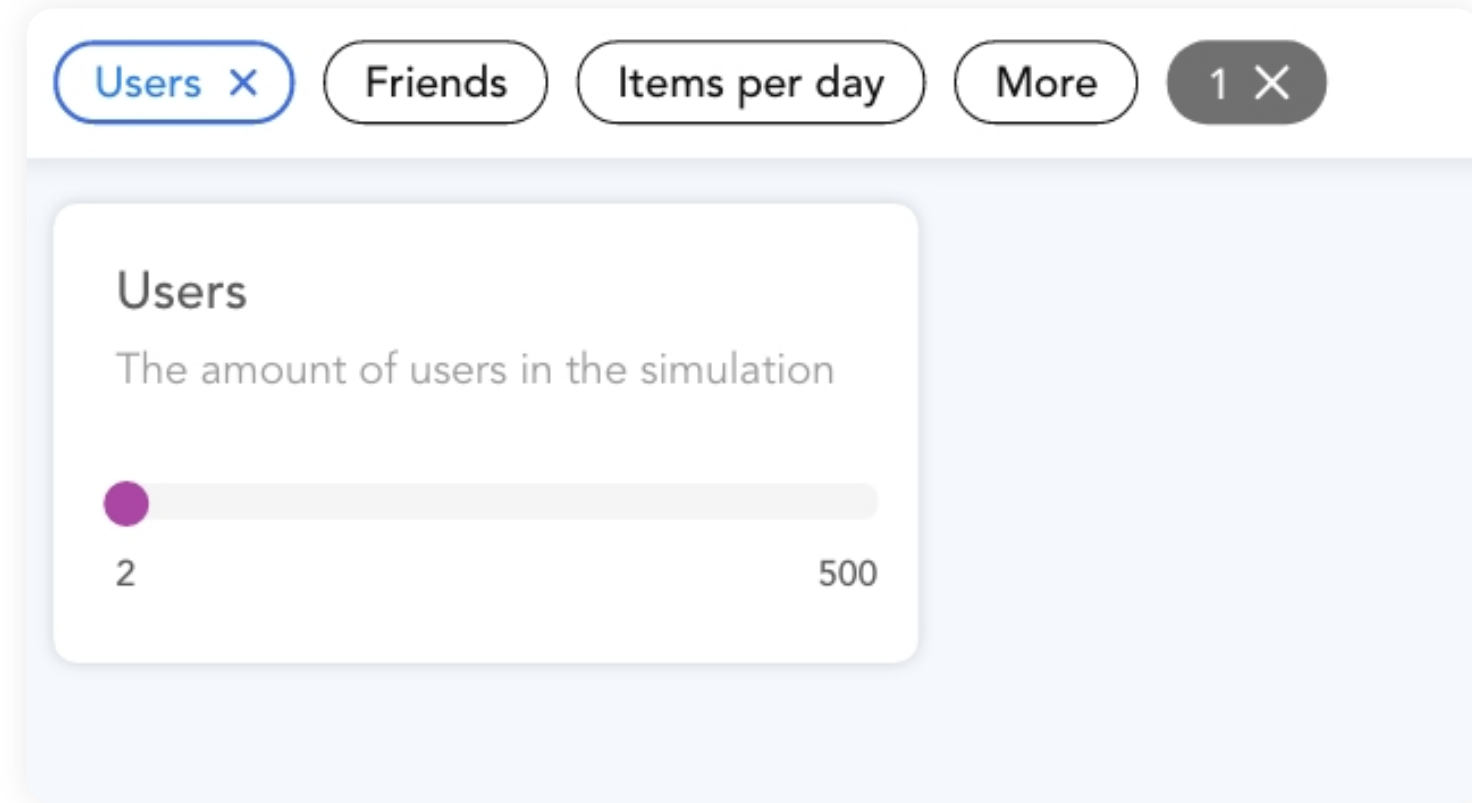
Micro interactions

Using micro interactions helps deliver a sense of orientation in the flow and grabs peoples attention. I have added in a total of 5 micro interactions to achieve this effect.

1 Dropdown & selected filter



The filter bubble machine has multiple parameters, or filters. Here, the 3 most important ones are shown. The user can press the different filters in order to activate them.



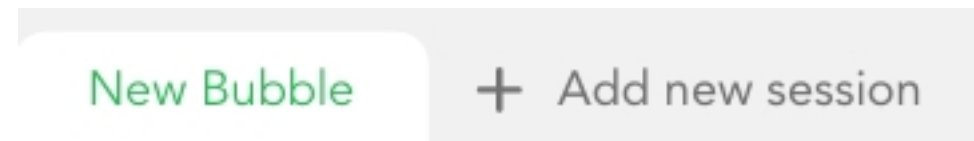
When activated, the button changes color and an 'x' is added to remove the filter again. There also appears a box that explains the filter and has a slider to change the filter.

Using this let's the user know the filter is activated.

Micro interactions

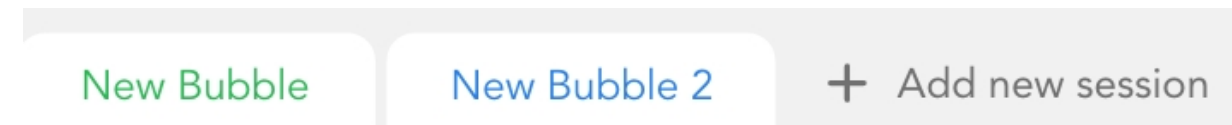
Using micro interactions helps deliver a sense of orientation in the flow and grabs peoples attention. I have added in a total of 5 micro interactions to achieve this effect.

2 New session



When the user first starts up the bubble machine, automatically 1 session is generated. If the user wants to add more session, they can do so by pressing the button next to it.

The extra text is added to let people know what kind of action will take place when they press the + button.



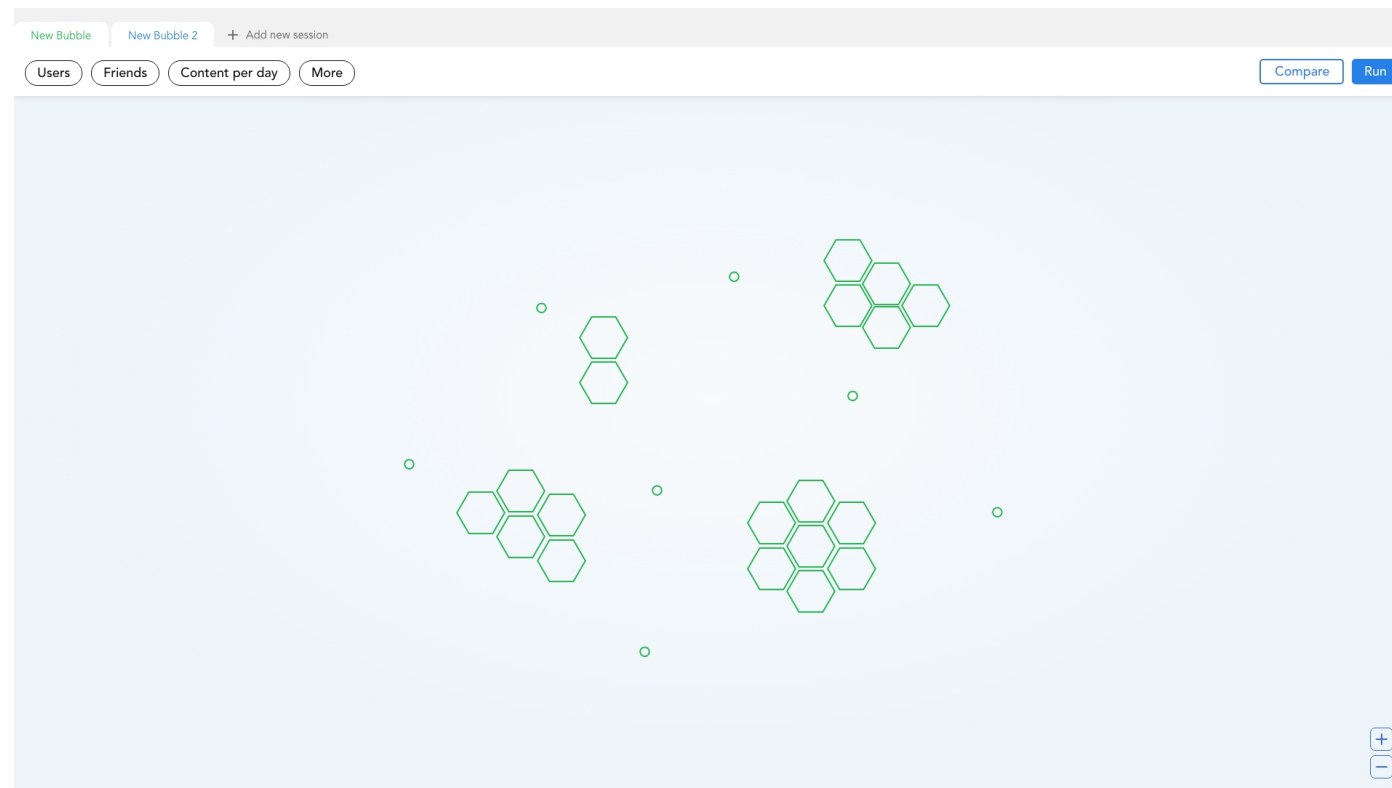
If the user did create a new session, this one will show up in a new tab next to the first one. The micro interaction helps tell the user where to look in order to enter the new session.

The color of the text indicates what color the visualization will have. This is relevant when using the compare button since this will create an overlay between the two colors.

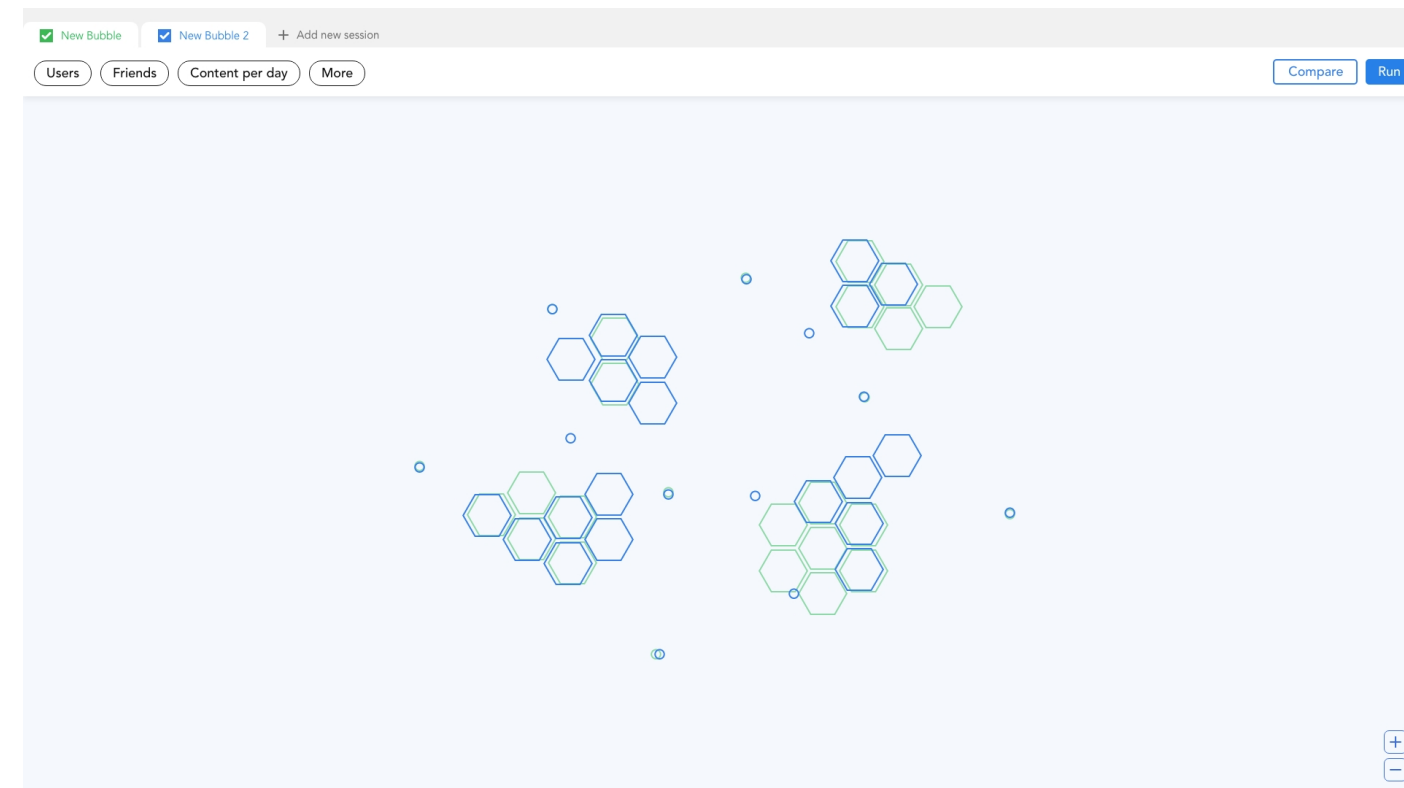
Micro interactions

Using micro interactions helps deliver a sense of orientation in the flow and grabs peoples attention. I have added in a total of 5 micro interactions to achieve this effect.

3 Compare



In this case, the user find themselves in the first session, indicated by the green visualization.



When the compare button is pressed, checkboxes will appear and an overlay is created. This helps to compare the differences between the filters that are used in the session.

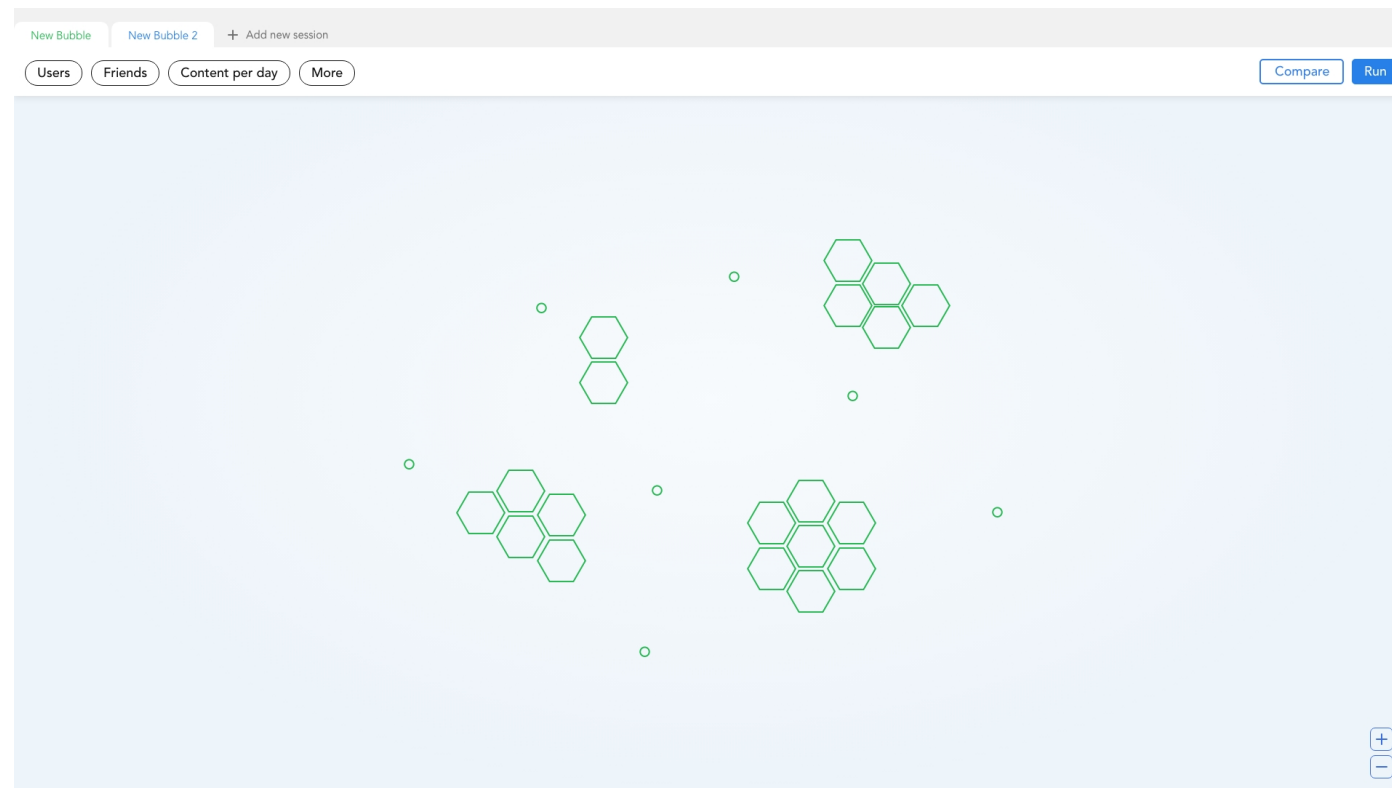
The green is less vibrant than the blue to make a more clear view of what is happening.

Having used a micro interaction, the user sees where to select the checkboxes and can connect the colors to the visualizations.

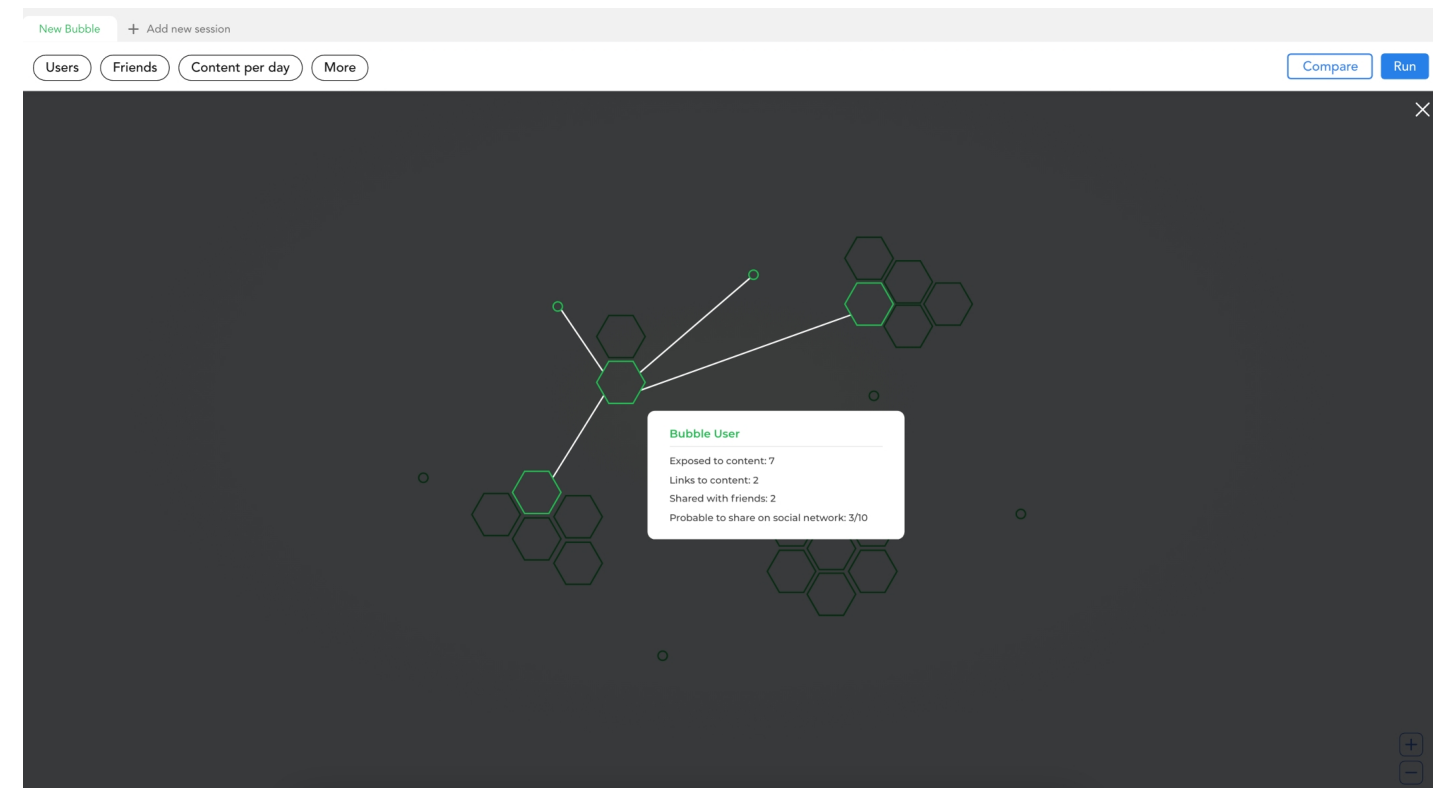
Micro interactions

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4 Hover state



This is the ideal state the user ends on after the onboarding is completed. To get a better understanding of the connections between the users and content, it is possible to hover over the items.



In this case, it causes a focus on one of the users where you can see the connections this person has to other users or content.

This micro interaction helps focus the user on what is important, in this case, the connections between the users and content.

Reflection

Through the course I noticed things that I could have done differently and want to take along for next time I'm working on a project like this. Here I listed the most important takeaways.

1 Keep in touch

At the start of the project I had quite a lot of questions, which stagnated the project a little bit. I should have set up more calls with the project developers or just ask my list of questions in teams. Every time I found excuses not to just do it while it could have saved so much time if I did everything right away.

Next time I want to set standards for myself where I get in contact at least once a week and also schedule something with the project owner/stakeholder in advance so an appointment is always set.

2 Find target audience

I knew quite early who the target audience was, but I didn't really know where to reach out. In the 3rd week, I finally got in contact with two teachers that teach journalism, but they only had time in the 4th week which was quite late. This caused that I couldn't really change the project to what they suggested would be a good use.

In the future I would like to reach out earlier by for example talking to my own network more, asking if they know anybody that could help me out.