



Designed a proposal for a VR exhibit on Marine Protected Areas for Birch Aquarium based on interviews, observational data, and prototype testing to inform the construction by UCSD's EnVision Maker Studio.

Context

My team of 6 UX designers worked with Nan, the Design Director at Birch aquarium. She gave us the opportunity to have Birch as our client.

Birch Aquarium is a showcase for research conducted by Scripps Institute of Oceanography that aims to facilitate understanding and protection of the ocean. This summer, the UCSD EnVision Maker studio, a team of engineering students and engineers, plans to construct a new exhibit for Birch on research conducted by Scripps.

Challenge

Talking to the Nan, she gave us the objective of creating a proposal that would inform the project that EnVision would build to eventually be a part of a new exhibit at Birch. One criteria she included was that the main content should be on Marine Protected Areas (MPA's). A significant amount of research had recently been done on MPA's by Scripps.

All members of the team, including myself, did equal work in observation, interviewing, analyzing and synthesizing data, prototyping, and testing.

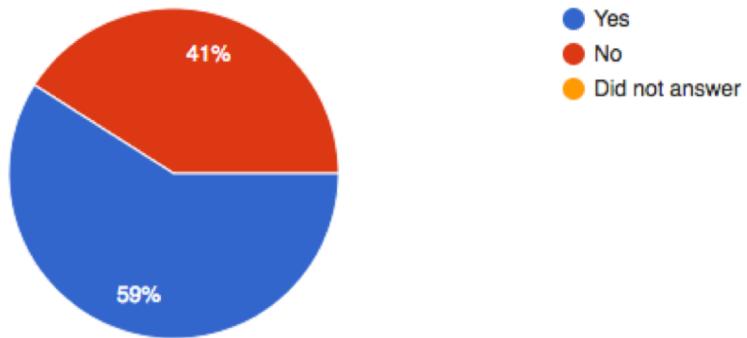
Observations

We wanted to see what made an engaging exhibit: what qualities matter to aquarium guests. From our interview with Nan and research she sent over, we found that socializing the biggest factor in guest experience. So we especially paid attention to how socializing played into interaction and satisfaction with exhibits, as well as noting emotions and surroundings.

Targeted Sampling

Are you visiting with children today?

100 Responses



Capturing diverse perspective was important because an exhibit design that appealed to all demographics would be ideal. To do this, we performed a targeted sampling, rather than a random sample. We would each pick 2 people, as different from each other's choices as possible, to follow and observe throughout their stay.

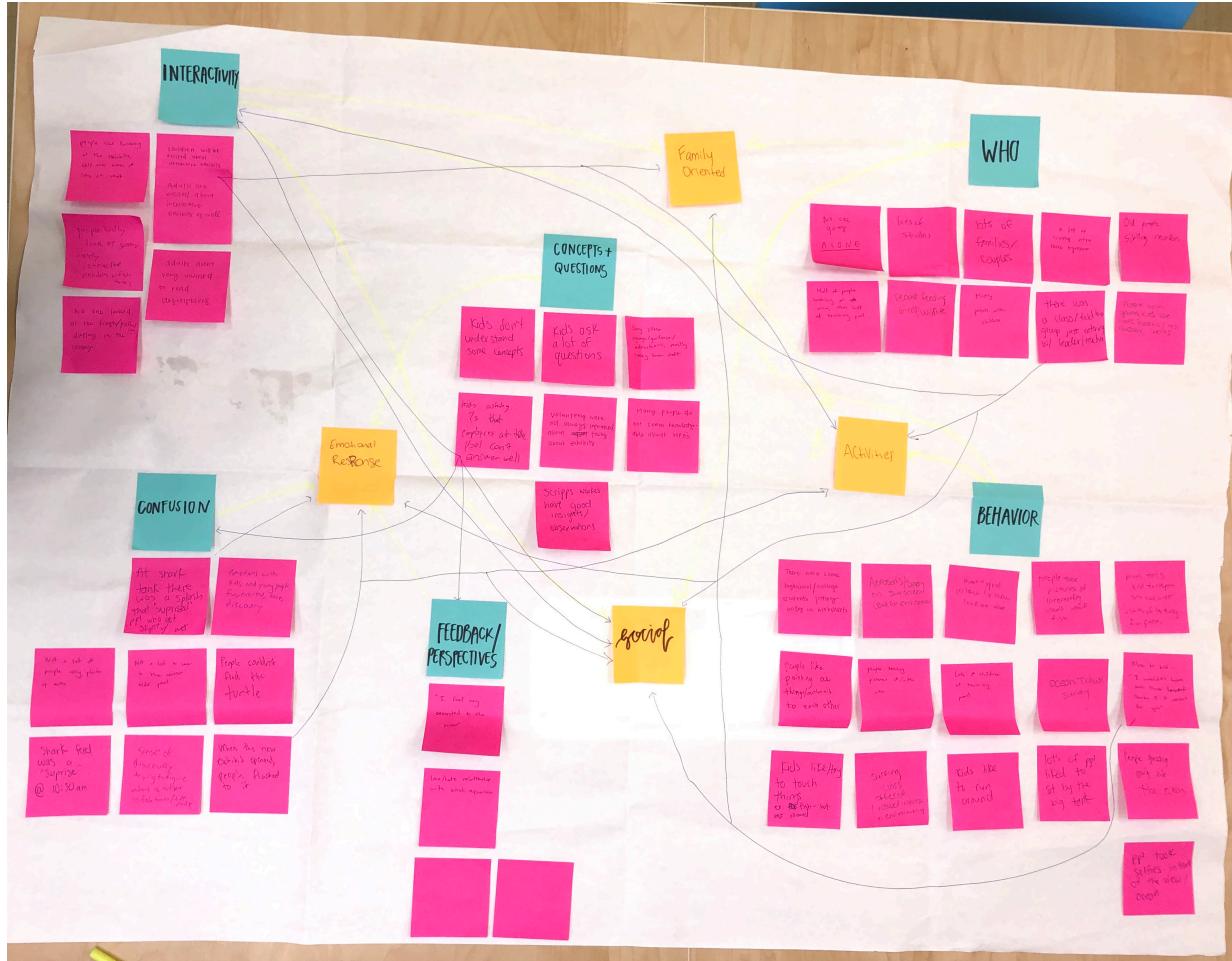
Emotional Impact

My team wanted to answer the question: what qualities of an exhibit make people feel a connection to the ocean? Through our interviews with Nan, she stated this was the most important goal, and what every exhibit strives to do, for the new exhibit— to create an emotional connection with MPAs.

Interviewing

To answer the question of what drives emotional connection, we wanted to ask guests specific indirect questions to gain insight. After getting our interview questions approved by Nan, we conducted 12 interviews with guests at the aquarium. We were constrained in that we were not allowed to directly interview kids. Families with children was the largest demographic of visitors so we interviewed parents to best understand that demographic. We also were constrained to only asking 3 questions per guest to uphold the guest experience.

Diagramming



Taking the observational data, interview data, and Birch-collected data, we synthesized these into tools to better understand the data and inform our upcoming ideation phase. We created an affinity diagram to find trends between all the observations and a Day in the Life model to understand the beginning to end holistic journey of a guest through the aquarium.

Personas

Persona: Pam (Parent)



Age

- 29 years old

Location

- San Diego, CA

Ethnicity

- White

Occupation

- Full time parent

Income

Background/Bio

- Pam is the mother of 3 young children. She was married 6 years ago to her college sweetheart and moved to San Diego for about 4 years ago for the good education system. Pam loves taking the kids around to different wildlife parks and reserves because she wants to stress the importance of the natural world to her kids. She is a member of the Birch Aquarium and often takes her kids there to freely roam around and explore the exhibits

Frustrations

- Doesn't get too much sleep
- Keeping track of 3 young ones is difficult

This person is very important to our topic because it encompasses insights into two of the main patrons of the aquarium: children, and their parents. I mention children because we aren't allowed to speak directly

The team created personas based on the demographics and their respective observed behavior to be used as a representation of the attributes of common users groups we will design for.

Ideation and sketching

Through our data synthesis, we found that emotional response, family oriented, interactivity, and a social component were significant threads across data with positive interactions with exhibits. So, we rapidly came up with and sketched out divergent, design ideas based around these attributes in order to explore *different kinds of design*. We took inspiration from other exhibits from various kinds of museums.

Scope Down: Virtual Reality

We ended up deciding to go in the direction of VR because it has a lot of potential to be very emotionally engaging given how unique and immersive VR can be. Talking with Nan, she explained Birch management had been on and off discussing VR but there were many VR skeptics. Given our more specified project direction, she stated our project would be most helpful if it demonstrated VR was a desirable medium a Birch exhibit.

Prototyping



We created a paper prototype emulating VR with team members holding up parts while I acted as narrator, explaining the educational MPA game. We tested this against a prototype Figma non VR tablet ocean exploration game. Participants would complete a post survey rating their experience. The survey results showed significant more positive ratings and comments on the VR prototype over the Figma.

Final Deliverable

At the end of 10 weeks of research, prototyping, and testing, we created a proposal supporting a VR exhibit as the future exhibit based on our research and testing. We compiled all of our research findings and diagrams to include in the proposal as well. Our team handed off to Nan and will be used to inform the EnVision studio's project.

Reflection

All my Human Centered Design classes at university taught me to prioritize really confirming that a problem exists, without coming in with assumptions or a solution in mind. Our team came into the project with such a broad scope that we only two weeks before deadline did we finally decide on the Virtual Reality direction. We did not have sufficient time to make a convincing proposal for or against VR. We also interviewed the EnVision lead only at the end of the project. He was a VR expert who gave us a lot of useful VR information and prototyping tools that we wish we had at the start. He clearly wanted to guide the project towards VR given his background. Our project would have been far more useful to Birch if we had focused our entire project on determining the viability of VR that Nan had mentioned early on.

Takeaways

If we had more time, I would have wanted to include in the report an analysis of various forms of VR and the resources needed to design, manufacture, and run these resources. Also, I felt the prototypes were too different in form and content to be a fair comparison demonstrating VR's superiority. Iterating on and making higher fidelity prototypes after feedback would have also allowed a more convincing case for or against VR.

With this real world client, I realized there were much more constraints to the design process. Performing a process that is most useful for the client must consider business and time constraints and prioritize specific design phases.