



Fish
wish
Our
wish

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WHAT

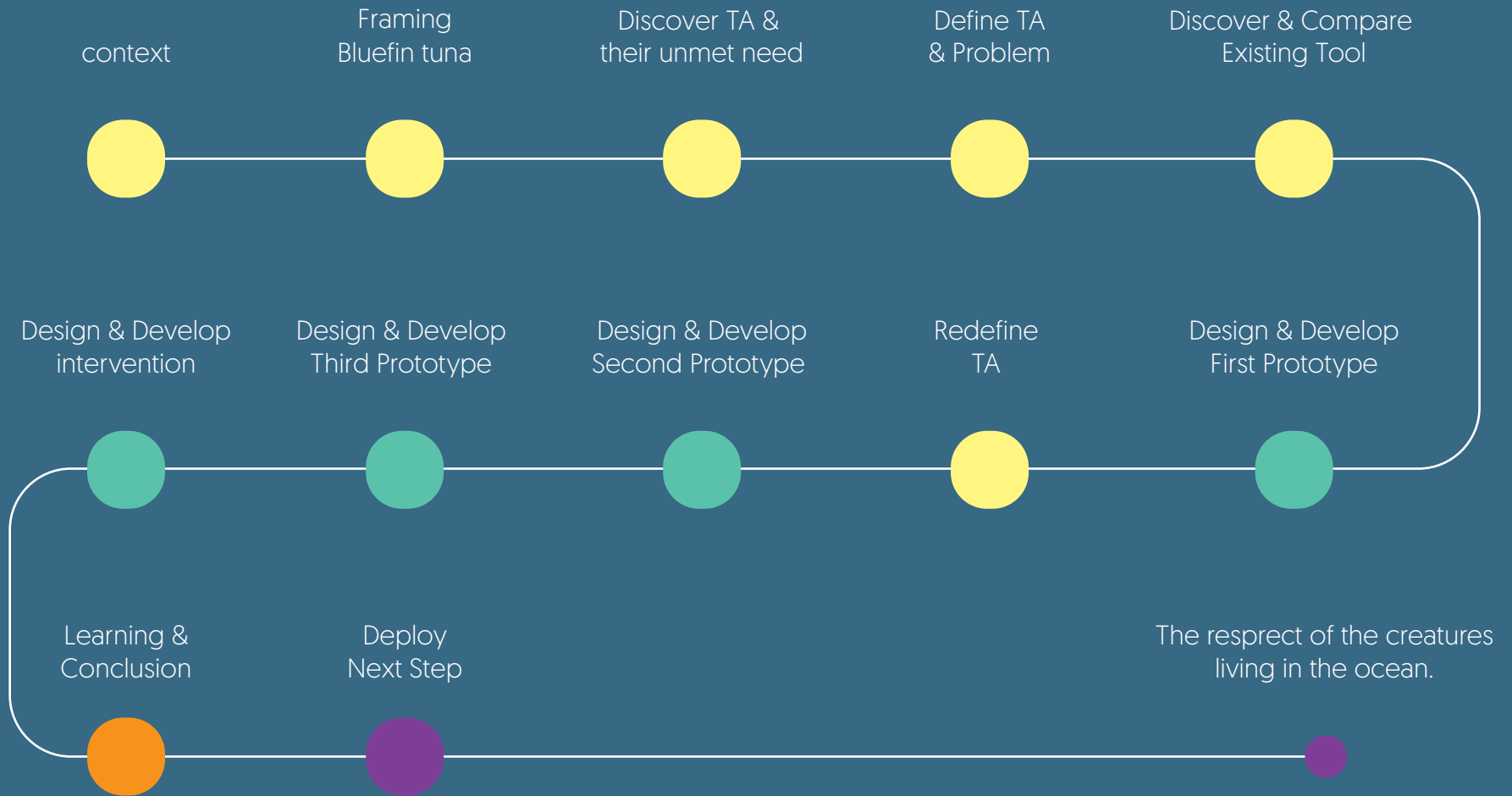
I, **Grace Hsieh**, am creating a **mobile app** that strives to disrupt the food scene for **eco-eaters** to easily make more sustainable seafood choices and ultimately reduce the impact on overfishing.

FOR WHO

WHY



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* TA: Target Audience



Source: Living Blue Planet Report, World Wide Fund For Nature 2015

The big problem

It is predicted by experts that by 2048, the diversity of fish species will be significantly reduced.

Within a few decades, overfishing became a severe problem. Global demand for fish is at about 158 million metric tons annually (and growing), which is about twice the already worrisome 80 million metric tons we take from the oceans. Right now more than 90% of global fish stocks are over-exploited, depleted, or fully exploited.² Science report indicated that fish species will collapse by 2048 if the long-trend consumption won't change.³

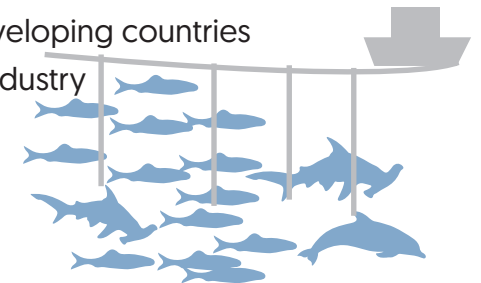
Why it matters?

There are 1.7 million jobs supported by commercial and recreational fishing, and it generated 199 billion dollars.⁴ If the fish population disappeared it will affect tens of thousands people's lives.

If fish stock will be gone in the future, not only all of the marine creatures will be threaten but also worldwide fisheries and related industries will be greatly affected.

Overfishing may...

1. Influence livelihood in developing countries
2. Threaten jobs in fishing industry
- =3. Devastate biodiversity



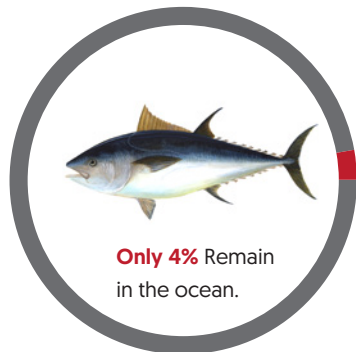
1. Impacts of Biodiversity Loss on Ocean Ecosystem Services, Science AAAS, <http://science.sciencemag.org/content/314/5800/787>
2. The United Nations' Food and Agriculture Organization, <http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf>
3. NOAA fisheries economics of the U.S. 2012 https://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2012
4. Ibid.

During my initial research, I looked across different fields such as aquacultures, pollution, and certification labels to figure out on the best type of information that would change customers' behavior.

Among my findings, I learned about the different types of endangered seafood in the market. One of the endangered seafood, I found fascinating was the Bluefin tuna because it is popular and highly valued in the sushi market.

Currently, **Pacific Bluefin tuna**, which says that the population is much healthier than the Atlantic population, the stock is down by 96.4% compared to its estimated level before large commercial fishing in 1950⁴. Plus, Bluefin tuna is technically hard to farm by an ethical and sustainable way in order to fulfill the huge demand from the global market⁵.

Moreover, the Sushi market quickly expanded to worldwide the past decade. You can find 7200 restaurants on Yelp selling sushi in NYC.



Therefore, I first used Bluefin tuna as my main storytelling character to evaluate customers' behavior when ordering this fish for their sushi.

4. Monaco proposal, Atlantic Bluefin Tuna. <https://www.cites.org/eng/cop/15/doc/E15-52.pdf>

5. Bloomberg, Farm-Raised Tuna May Not Be the Answer to Overfishing <http://www.bloomberg.com/news/articles/2013-01-08/farm-raised-tuna-may-not-be-the-answer-to-overfishing>

Tuna Family Status:

CR Southern Bluefin Tuna

[CR] Critically endangered – Extremely high risk of extinction in the wild.

EN Atlantic Bluefin Tuna

[EN] Endangered – High risk of extinction in the wild.

VU Pacific Bluefin Tuna

[VU] Vulnerable – High risk of endangerment in the wild.

VU Bigeye Tuna

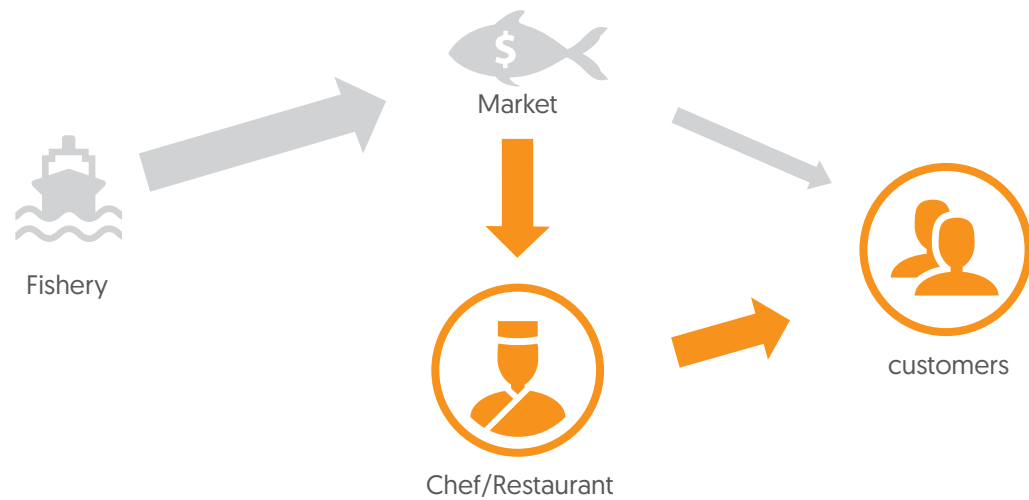
[VU] Vulnerable – High risk of endangerment in the wild.

NT Albacore Tuna

[NT] Near threatened – Likely to become endangered in the near future.

Source: IUCN Red List of Threatened Species

In this sushi supply ecosystem, there is [1] fishery; [2] market; [3] chefs & restaurants; and [4] customers. I initially chose to influence the chefs' behavior because I believe it would have the greatest impact since chefs play significant roles in serving delicious food to customers and in buying fish from different fish companies.



During the interviewing process, I informed the chefs and customers on the issue of Bluefin tuna population, and recorded both the chefs' and customers' reflections.

Customers in general

Chefs

Does

Most of them did not know about the endangered seafood.

They know about the issue, but to them it was more important to meet what customers want.

Feel/think

While the awareness of the issue made some customers feel guilty, they did not change their behavior. They were primarily motivated by the love of the taste.

1. They want to get support from customers
2. They want the government to set regulation to ban selling endangered species. This way, no other competitors will have the advantage of selling endangered seafood.

Influence on decision

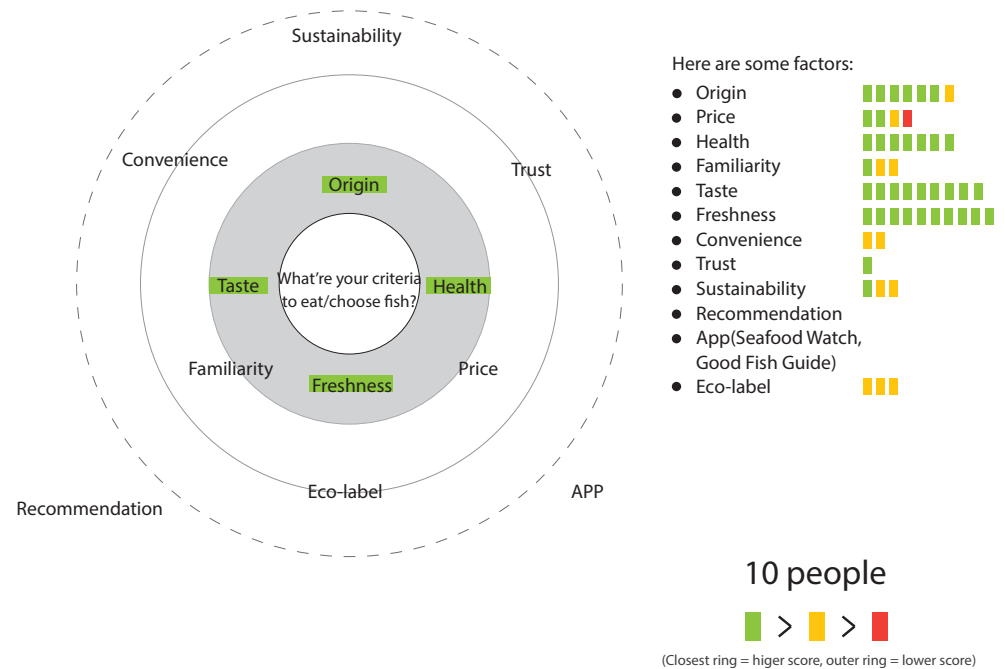
Ignorance was bliss. They just want to enjoy the food.

Without support from the customers or the government, it is hard for them to change.

Problem

Most of customers did not know that they were eating endangered seafood or they did not seem to care about ocean sustainability.

Even though there are many tools out there and that there were organizations that are educating on what is sustainable seafood, the amount of information was difficult to process for an average customer. As a result, I shifted to understand the eating behaviors of customers, and how to make the information more accessible to change their behavior.



- **FishChoice**
FishChoice Inc.
- **Seafood Watch**
Monterey Bay Aquarium
- **FishWatch**
National Oceanic and Atmospheric Administration
- **Seafood Selector**
Environmental Defense Fund
- **Seafood Calculator**
Environmental Working Group



Comparative analysis tools:

While there are tools out there, such as FishChoice, and Seafood Watch, that measure different seafood's sustainability, these tools require time and effort to know [1] where the fish is from, [2] how it was caught, and [3] what type of fish it is.

Thus, I strived to learned how to overcome this burden on customers to trace where the seafood's source and at the same time increase the level of transparency because even the restaurant workers could not confirm on all those information.

“ How do we expect ourselves to know those when we try to order sushi? When we are looking at the menu, we are not looking at those data.

Nigiri

- 47. Sushi & Gyoza Dinner 15.50
- california roll, salmon roll, Zebi, deep fried gyoza
- ※ All Special Dinners come with salad & miso soup
- SUSHI DINNER**
- 00. Maki Dinner A 14.00
- california roll, spicy tuna roll, salmon roll
- 01. Maki Dinner B 14.50
- dynamite roll, B.C. roll, tuna roll
- 02. Spicy R Dinner 14.00
- spicy tuna, salmon, scallop rolls
- 03. Maki & Nigiri Dinner 16.00
- dynamite roll, salmon roll, 4pcs nigiri
- 04. Nigiri Dinner 17.00
- 4pcs assorted fresh nigiri, salmon roll
- ※ All Sushi Dinners come with salad & miso soup
- VIGIRI SUSHI**
- 05. Maguro tuna 1.95
- 06. Salmon 1.95
- 07. Ebi shrimp 2.00
- 08. Ika squid 2.00
- 09. Tai red snapper 2.00
- 10. Tako octopus 2.00
- 11. Hokkigai surf clam 1.95
- 12. Unagi BBQ eel 2.25
- 13. Masago fish roe 2.00
- 14. Ikura salmon roe 2.75
- 15. Tobiko flying fish roe 2.50
- 16. Inari sweet tofu 1.95
- 17. Smoked Salmon 2.50
- 18. Tamago egg 1.95
- 19. Scallop 2.95
- 20. Chop Scallop 3.25
- 21. Toro tuna belly 2.25
- TEMAKI (Cone Style roll)**
- 25. California Temaki 4.50
- 26. Dynamite Temaki 5.95
- 27. B.C. Temaki 5.50
- 28. Spicy Tuna or Salmon Temaki 4.95
- 29. Chopped Scallop Temaki 5.25
- SASHIMI**
- 33. Tuna Sashimi (f) 11.95 (h) 6.95
- 34. Salmon Sashimi (f) 11.95 (h) 6.95
- 136. Saba Sashimi / Nigiri Specs
- 137. Spicy Salmon Sashimi
- 138. Spicy Tuna Sashimi
- 139. Assorted Sashimi A
- 140. Assorted Sashimi B
- TERIYAKI**
- 33. Chicken Teriyaki
- hot plate teriyaki chicken with veg
- 34. Beef Teriyaki
- beef teriyaki on hot plate with veg
- 35. Salmon Teriyaki
- teriyaki salmon on hot plate with veg
- 36. Seafood Teriyaki
- assorted seafood on hot plate with veg
- 37. Tofu Teriyaki
- teriyaki tofu on hot plate with veg
- 38. Spicy Honey Chicken Teriyaki
- ※ All Teriyaki come with salad & miso soup
- YAKISOBA (Pan Fried Noodle)**
- 40. Veggie Yakisoba
- stir fried noodle with tofu
- 41. Chicken Yakisoba
- stir fried noodle with chicken
- 42. Seafood Yakisoba
- stir fried noodle with seafood
- 43. Beef Yakisoba
- stir fried noodle with beef
- ※ All Yakisoba come with salad & miso soup
- DONBURI**
- 45. Chicken Katsu-Don
- bowl of rice topped with a deep fried chicken
- 46. Tempura-Don
- bowl of rice topped with tempura seafood
- 47. Chirashi-Don
- bowl of rice topped with assorted sashimi
- 48. Oyako-Don
- bowl of rice topped with simmered chicken
- 49. Unagi-Don
- bowl of rice topped with BBQ eel
- 50. Pork Katsu (Pork Outlet)
- Deep fried pork, rice, salad, soup with miso
- ※ All Donburi come with salad & miso soup
- U-DON**
- 52. Vegetable Udon

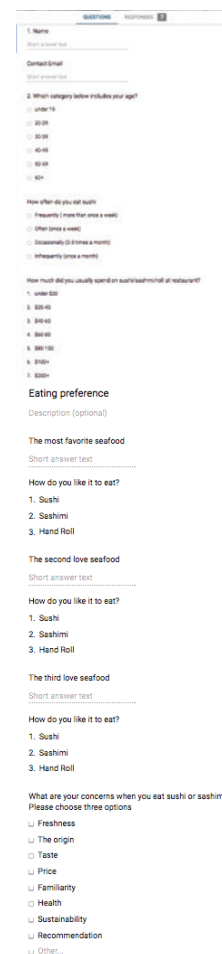


Most of the customers only care about issue when it comes to personal health. They did not consider the sustainable resource; they prefer to enjoy the current moment and flavor.

The customer research from the Marine Stewardship Council said, 9 in 10 people believe ocean sustainability is important.⁶

From my sample interviews for both chefs and customers, I learned that many customers were driven to care about issue when it relates to personal health. They did not consider the sustainable resource; they simply prefer to enjoy the current moment and flavor. From the chefs' that I was able to interview, they agreed seafood sustainability was an important issue. However, they must put the customers' desire first.

Therefore, I designed my initial prototype called Sushindex to engage customers' decision making. The prototype failed since it was too difficult to obtain approval from restaurants and getting access to interview enough chefs, I focused on how to impact and influence customer's behavior.



Google survey before interview

6. Customer report. <http://msc.org/consumer-research>

SUSHiINDEX

Hypothesis / Design Goal #1

My premise was that if sushi lover in the US generally don't know other fish's taste enough, then I can motivate them to try different fishes by using the chart that helps people comparable flavors to give them other alternatives.

Initial approach

In the beginning, "Sushindex" was designed as a tool for chefs to offer alternative flavors to customers.. Most of my data to create this tool came from teaming up with two different restaurants, whose chefs provided me information to build a flavor chart. Basically, I created a seafood glossary for sushi or sashimi eating. Then we decide the evaluating language we would use together.

Roman characte	English	Lean(1)--- Fatty (10)	Tender(1)--- Chewy (10)	Mild(1)--- Strong(10)
FISH				
maguro / akami	Tuna	5	2	6
otono	Bluefin fatty tuna	10	1	8
bincho	Albacore			
chutoro	Bluefin medium fatty tuna Medium fatty tuna, from the upper belly.	8	1	7
akami	Lean tuna, cut from the back of the fish			
Shiro maguro	escocar	9	1	2
shirauo	Whitebait, icefish	5	3	7
sake	Salmon	6	2	7
torosalmon	Fatty Salmon belly	8	2	8
tai	Sea bream, porgy, snapper.	2	3	2
madai	Red seabream	2	3	2
siumedai	Golden eye seabream	6	2	2
suzuki	Sea bass, Striped bass, rockfish	2	2	2
seigo	Yong sea bass			
buri	Yellowtail (Adult)	8	2	4
hamachi	Yellowtail	6	2	4
kanpachi	Amberjack	6	3	2
saba	Mackerel	4	2	8

Buri / Yellowtail (Adult)

Lean ●●●●●●●●●● Fatty
Tender ●●●●●●●●●● Chewy
Mild ●●●●●●●●●● Strong

3 ▼ 4 ▼ 4 ▼

up: Flavor chart
Right: Sushi Glossary

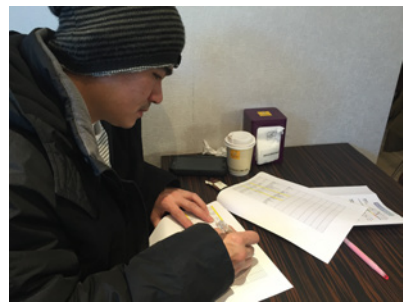
My design goal

- Enhance their willingness to receive information
- Encourage them to try difference
- Have curiosity to learn more

From chef perspective,

it has potential practical use to communicate with sushi eaters.

I was encouraged by two chefs and felt it could influence customers' behavior. However, I had hard time to find more chefs to participate that would let me test my prototype in their restaurants. Consequently, I decided to first test with a small sample of customers. If it was an acceptable and successful tool, I could use the feedback to convince other restaurants.

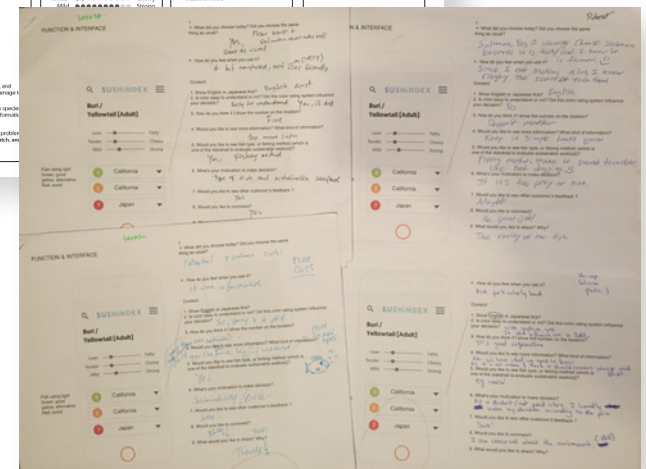


I hosted a dinner at a restaurant to test different customers' behaviors when they are provided with the Sushindex tool when they were ordering. Most of them changed their minds about what they were originally going to order, but not because of comparing flavors. Instead they were driven by the clear signal telling them which fish are endangered and that they should avoid ordering them. So in one sense, it was successful. However, the customers also found the process of checking information back and forth between the menu and the Sushindex was too troublesome and it was not customized the actual menu in front of them. In other words, Sushindex was kind of boring.

Decide to shift target audience:

In addition, in this prototype, I could not figure out what's the incentive to engage the general sushi lovers to use the tool nor convince them to change their order. Therefore, I decided to shift my target audience from general customers to be more specific audience who care about sustainable and environmental issue. For example, eco-eaters would be more receptive and find the tool more useful to shift their behavior for the better future.

In brief, the next prototype will help eco-eater to spend less time in processing information and the tool can easily apply the information to different restaurants' menus.



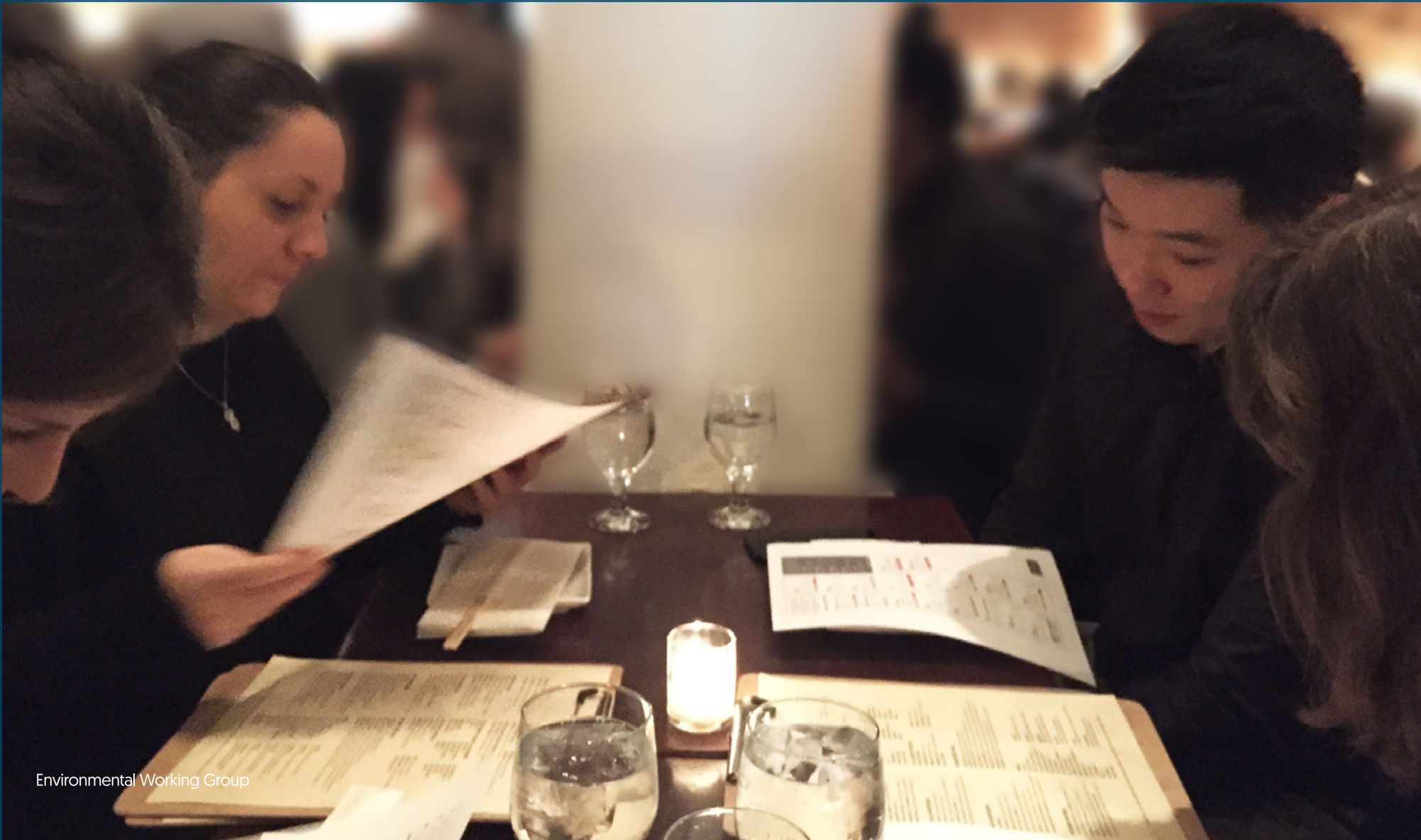
Sushindex paper version and the questionnaire

Main Learning:

- **Time-consuming:** How can I redesign and organize the information to make it more user-friendly?
- **Immediacy:** How can I influence their choices in the moment?
- **Universality:** How to solve the information transparency problem and easily be applied to different restaurants?

The fish I chose from Sushindex didn't show up on the menu, so I have to repeatedly confirm the information both on the menu and sushindex. **This process needs to be more simple, or I am not sure if I would use it next time.**

-- Customers Loreto





Sushi Quest

Facebook shared challenge

Hypothesis / Design Goal #2

Considering the inconsistency information in each of sushi restaurant. The uniform format of tool merely guided customer to do more work to check information which they doesn't like it. Hence, my second prototype tried to test if I can influence their behavior by game.

The essential three hypothesis helps me to design my intervention:

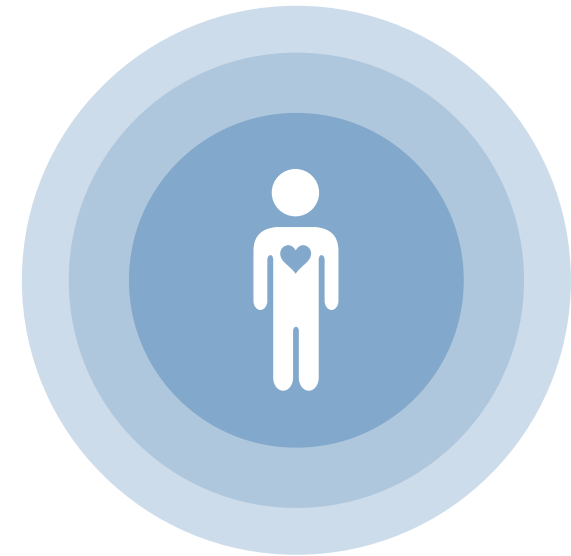
1. Will the social media game and the simply substitute suggestion motivate customer to change their behavior?
2. Would people take action when they receive the physical incentives?
3. Does the flavor chart help them feel more comfortable to explore new dish?

(Change) Target Audience:

Based on the Pew Research, 72% of online American adults use Facebook, a proportion unchanged from September 2014.⁷ Most of social media users are in the age ranging from 20-40. Therefore, I started to narrowed down my audience to young adults and eco-eaters. I tested my prototype with 7 target audiences who work or intern in United Nations and ask their feedback.

Initial approach

The format of social media game is gif file which would show rotating picture once you click. Next, when you click again, it would randomly stop and show a suggested fish. Based on the recommendation from seafood watch and the article, seafood substitutions, from National Geographic⁸, I choose four fishes and one vegetable to make a gif rotating game. **The design purpose of this game is to understand if the game and the simplified instruction will engage my target audience and change their behavior.** Hence, I also included the flavor chart from Suhindex for each of fish to test **if the flavor chart would help them feel comfortable to explore new dish?**



7.The Demographics of Social Media Users <http://www.pewinternet.org/2015/08/19/the-demographics-of-social-media-users/>

8. seafood substitutions, National Geographic <http://ocean.nationalgeographic.com/ocean/take-action/seafood-substitutions/>

There are the content I test on Facebook:

GO SUSHI QUEST (PROTOTYPE TESTING)

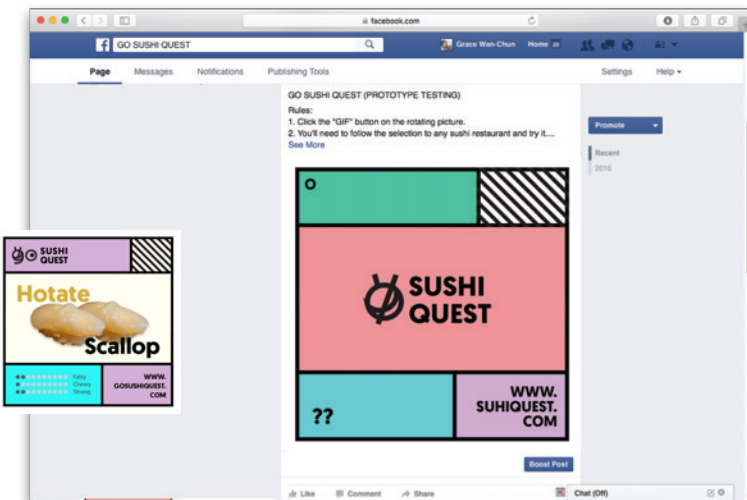
Rules:

1. Click the "GIF" button on the rotating picture.
2. You'll need to follow the selection to any sushi restaurant and try it.
3. Take picture and hashtag, # gosuhiquest & # nobluefintuna
4. Share with friends

Background story:

Bluefin tuna is the most stable fish in a sushi restaurant. But did you know that 96% of Pacific Bluefin tuna are now gone compared with the estimated level in the 1950s. 90% of juveniles are caught before the age of 2. Now estimated fewer than 40,000 adults remain in the wild.

Let's take bluefin tuna off the hook and let them have a chance to grow up. Are you ready for the quest?



Feedback and Learning:

I'll definitely play it on social media. I will probably take it as a consideration next time I go to eat sushi, but I won't go to the sushi bar right away. -- Akne

People liked the game idea. It's fun and they wanted to share with their friends. However, only 10% of people would take action immediately. Even though I gave them different incentives, like coupon or free sushi.

The moment of ordering: The significant moment of behavior change for customers happened when they are ordering and get informed the information.

Substitute label system:

Hypothesis / Design Goal #3

Substitute label system is similar to the Sushi Quest game in that I promote sushi eating to eat those general sustainable suggestions. It's different from the media. This one is customized on physical menu so that they can look at the menu and order directly. I take references from the Seafood Watch standards to build this substitute label system. The system helped to reduce time spent learning about endangered fishes, and the system influenced the behaviors at the critical time of when the customers were ordering.

I had thought this would be my final intervention since it met a lot of the conditions. However, each time I tried to get the restaurant manager to approve to use the system, I did not get any restaurants to adopt to the system.

Feedback and learning:

1. I designed this label system to avoid telling people negative information by promoting my suggestive selections.
2. While, I received positive feedback during testing to change what customers ordered, I learned I also needed to persuade the restaurant to adopt to the label system. However, restaurants did not like the idea of adding more information nor reducing the number of choices for ordering since it may negatively effect their business profits.

Original Menu

Red Dragon Roll \$ 15.00 Eel, avocado and asparagus topped with spicy tuna served with spicy mayonnaise and eel sauce.	
Vegetarian Dragon Roll \$ 11.00 Sun-dried tomato, asparagus and cucumber wrapped with avocado served with passion fruit and raspberry sauce.	
Sushi and Sashimi a La Carte	
Tuna / Maguro \$3.50	Eel/ Unagi \$3.50
Toro \$8.00	Scallop / Hotate \$4.00
Spicy Tuna \$3.00	Crabstick / Kani \$2.50
White Tuna \$3.50	King Crab \$6.50
Yellowtail / Hamachi \$3.50	Blue Crab / Watari kani \$5.00
Salmon / Sake \$3.50	Squid / Ika \$3.00
Smoked Salmon \$3.50	Octopus/ Tako \$3.50
Fluke/ Hirame \$3.50	Egg / Tamago \$2.50
Striped Bass/ Suzuki \$3.50	Salmon Roe / Ikura \$4.00
Mackerel/Saba \$3.50	Tobiko \$4.00
Shrimp / Ebi \$3.00	Bean Curd Skin/ Inari \$2.50
Jumbo Sweet Shrimp \$6.00	Uni \$8.00

Standard recommendation to eliminate the endangered species

Red Dragon Roll \$ 15.00 Eel, avocado and asparagus topped with spicy tuna served with spicy mayonnaise and eel sauce.	
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Jumbo Sweet Shrimp \$6.00	● Uni \$8.00



Fishwish

Hypothesis / Design Goal #3

From the three prototypes, I learned some key insights:

1. **Make a tool that complements not just supplement the restaurants menu**
2. **Must influence the customers at the point of ordering**
3. **Make the information simple and organized**

These insights helped guide the design of my final intervention—
Fishwish™



Fishwish™ is a mobile app that strives to disrupt the food scene by offering a new way to empower eco-eaters to make more sustainable choices.

How it works:

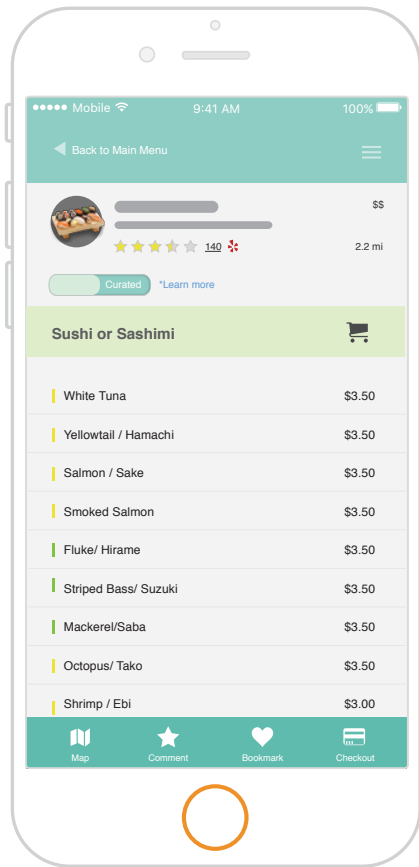
The FishWish app basically curates the existing restaurant menu based on the standard recommendation of Seafood Watch to help sushi eaters in choosing their seafood. There are two main ways the app curates the menu. In other words, two different ways people can use to learn about sustainable seafood.

How it works:

1. Hide:

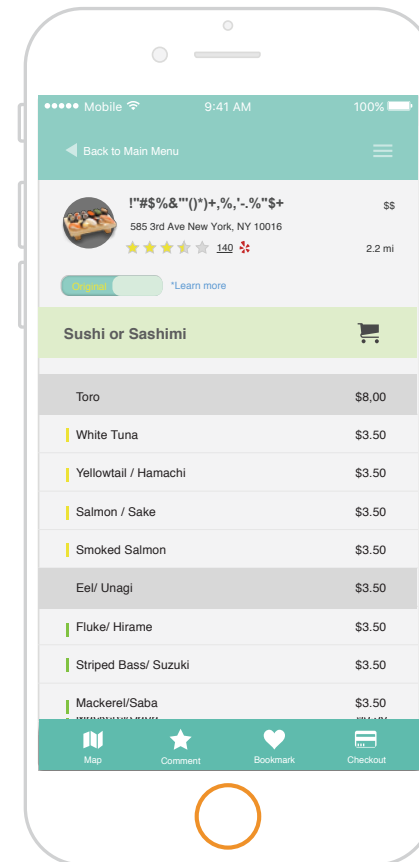
The App shows only the sustainable seafood in the menu and hides the most unsustainable and endangered ones.

This Ideal for customers **who trust entirely FishWish curation or passive learners ordering online**

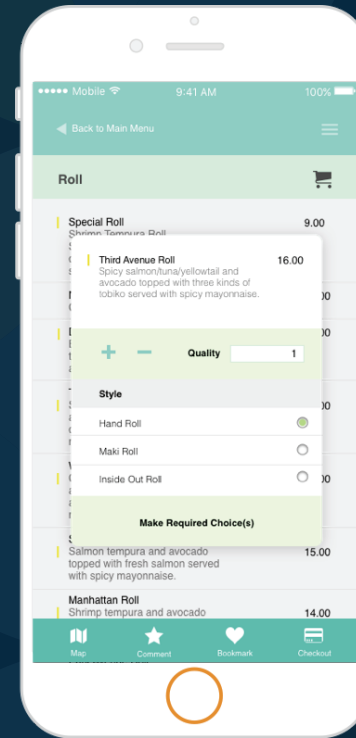
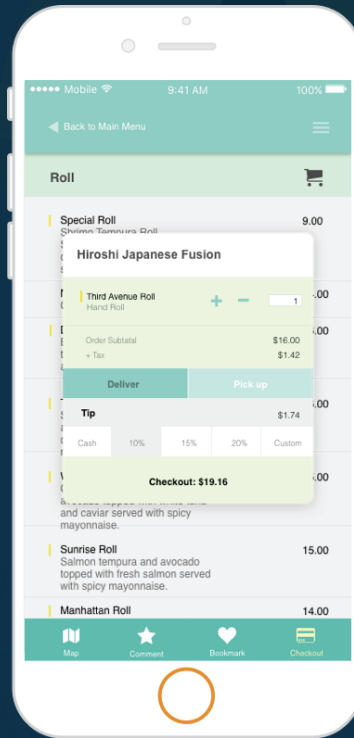
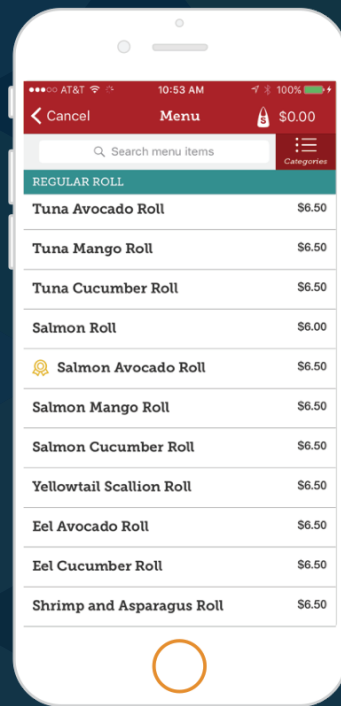


2. Curate:

The last method is showing the entire menu and curated using icons and color coding beside each menu item. If users click on the icon, the app will show more information about the endangered seafood. **This is ideal for active learners ordering online.**



seamless



Similar to Seamless, Fishwish offers online ordering and food delivery functions. The added value is that Fishwish introduces the concept of "better choice towards the ocean" among consumers. It tells you what the sustainable seafood options are.

Feedback and learning

It makes me feel more informed and happier about my purchase. I think an App would be perfect because it would be more convenient to look at my phone each time instead of searching on a couple of websites.

- Customer, Vivien

It would make me feel way better if I would know that my choice is a sustainable one and good for the ocean

- Customer, Anke

I got similar feedback from participant. They all feel good to be informed and by making the eco-eating process easy and convenient, they can **make sustainable decisions without the hassle of making secondary efforts** to check the information about their choice of sushi.

In addition, **Fishwish allows customers to make a sustainable choice without altering the physical menu in the restaurants.**



Work with group of people who care about the same issue

I had a hard time finding a group who was willingly to collaborate with.

1. Organizations like Seafood Watch, which are focused on educating people about sustainable seafood sounded like the ideal organization to work with. However, non-profits like Seafood Watch had their own agendas and were too busy to reply back to me.

2. My limited timeline to convince other organizations to join my vision

Therefore, my solution was to create something that is simple and practical that can add value to a broad audience. My goal was to create an adaptable and widely used tool that organizations such as Seafood Watch would be willing to endorse and sponsor instead of relying on these organizations to create from scratch. I understood that nonprofits have limited time and resources to supervise on my school project. Therefore, I learned to use these organizations resources differently. I can consult their published data and ask specific questions to them when it was necessary.

Information design and user center design

No matter what product or service you create, you will likely find yourself competing for your users' time, money, loyalty and the adoption.

--Interactive design by Andy Pratt

From the book, "interactive design" by Andy Pratt and Jason Nunes, it mentioned that no matter what product or service you create, you will likely find yourself competing for your users' time, money, loyalty and the adoption. In my case, because my intervention Fishwish is designed for eco-eater and tried to fulfill their unmet need. It increased their willingness, adoption and loyalty to continue to use this App. I could not control the price of the meal, but not all of the sustainable seafood are expensive options. So when Fishwish curated the most unsustainable and endangered options on each restaurant, customer can decide can compare the price by them. As a result, one of the value "time" become the most important design principle for my target audience. **Namely, Fishwish shorten the time of checking, organizing, and asking information by customer themselves, and make the experience process more convenient and informed.**

Now Fishwish focus on the user experience to make sure it fit my target audience’s unmet need. In the next half year, I will schedule the talking with sustainable seafood related organization and interget the following resource in the chart.

Scientific research:

It would be critical to receive the up-to-date fish stock and policy information from scientific and research team as well as government.

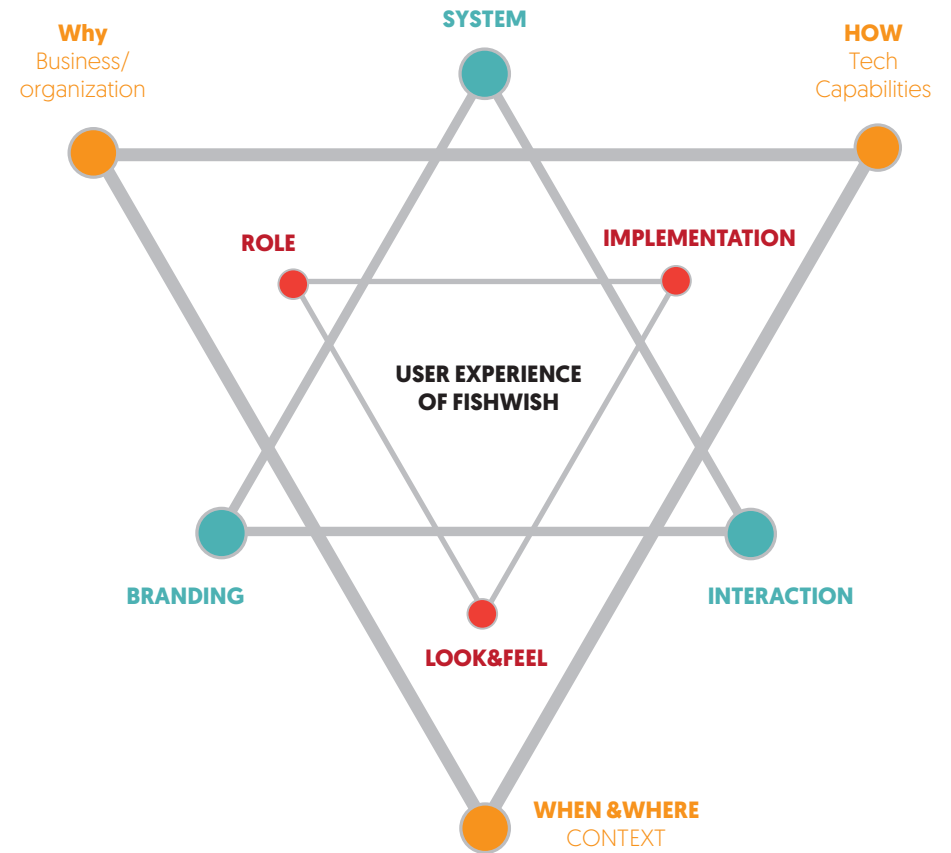
Technology:

I asked two questions to both IOS and Android engineer about the feasibility of FishWish. One, is there any chance I can integrate my Fishwish inforumation into the menus on Yelp or Seamless? The engineer told me if those companies shared their “SDK” or “API” to the public that might make it possible to load their menu to the app and change the content.

There are two possible ways to make it technologically happen.

1. Ideally, it would be the best solution if Fishwish can collaborate with Seamless or Yelp and create a sustainable label on their platforms directly.
2. Another ideal situation will be creating another App and import data from Yelp and Seamless to Fishwish and collaborate with scientist and research team.

Fishwish is looking forward to future collaboration with scientific teams, engineers, and cooperation with online food delivery companies such as Yelp and Seamless. Additionally, Fishwish hopes to collaborate with the chefs and culinary organizations to seek for sustainable audience.



Resource

NOAA - National Oceanic and Atmospheric Administration
Ocean Health Index
SeaWeb
Sea Food Champions
Clean Shipping Index
Internation Maritime Organization
The Safina Center's Online Seafood Guide
Pure salmon campagin
FORBES
Seafood watch
United Nation Food and Agriculture Organizaiton (FAO)
RFMOs.
Blue Ocean
Center for biological diversity
NRDC- Natural Resources Defense Council
Slow food NYC
Slow fish
PETA (People for the Ethical Treatment of Animals)
Chefs Collaborativer
Global Tuna Conservation - The Pew Charitable Trusts

Thank you

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Yamada

and all of the people who helped me a long the way.



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