

**Travel and
Tech Innovations
Research Report**



IXD

IXDSI Iteration Two
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Section **01** ***DEFINE***

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Background

In the previous project, the research shows the following insights:

- 75 percent of travellers met an embarrassing situation during their trips because of the cultural differences.
- During the user testing, more than 75 percent of users would read the tips in order to understand dos and don'ts in different countries/cultures, and felt that the information was useful
- There are market opportunities for travel information platforms

So, what are the opportunities? With the development of technology, it provides powerful advances in mobile capability. Nowadays, only very few people don't have a smartphone, there are even more mobile devices in the world than the number of human beings, and the number is increasing.

This trend has also influenced the travel industry. For example, business travellers check their smartphone 34 times a day on average. Furthermore, **more than 60 percent of travellers want real-time travel information with their smartphones** and believe that mobile plays an important role in travel programs.



Ideation

Crowd storming with customer experience audit provided valuable insights into the target audience or comment and approve generated ideas. It may not provide an ultimate winner but assist in making decisions of ideas to proceed. The crowd storming identified some great points of the target audience.

Through the customer experience audit, there are top 5 issues that traveller would meet during travelling:

1. Language barrier
2. Didn't do enough preparation
3. Got lost
4. Would like to get the local recommendation of the restaurants/stores
5. Cultural things (e.g. behaviours, religions)

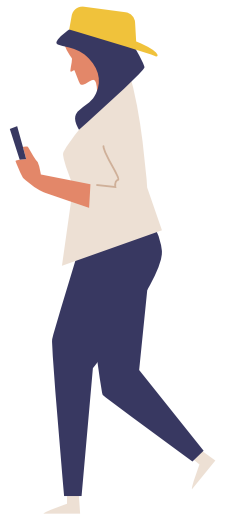
Female, 20 years-old, college student

"I want to know about what will the local people recommend, I don't want to go to the place for the traveler. I tried to search it on Google, but it's hard to find the information that I need."



Female, 24 years-old, sales

"Reading map and the language barrier are the biggest issues for me. I used a translation app but it's doesn't really help and it's embarrassing while you were talking to others."



Male, 31 years-old, engineer

"I usually found an agent from the travel destination to get information... oh, but cultural differences were an issue for me."

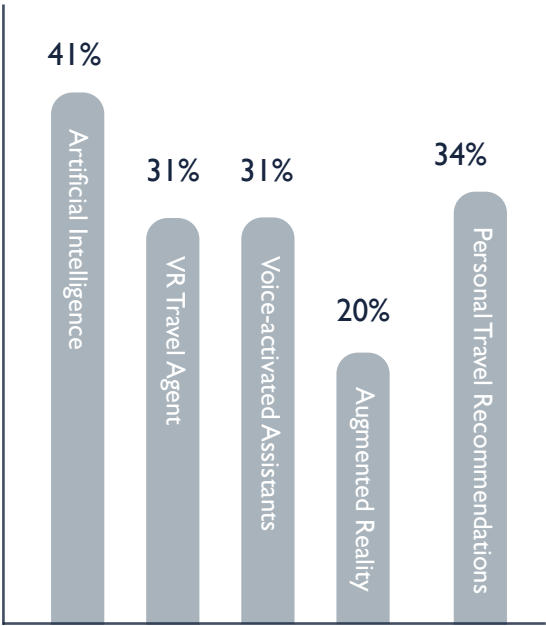


Secondary Research

	Formerly	Currently	Emerging
Technology	- Travel Books/ Magazines - Paper Map	- Online booking - Mobile communication - GPS - Digital camera	- Artificial intelligence - Speech recognize - Real time interaction - Virtual Reality
Market	- Sightseeing - Holiday travel - Brand	- Single travellers - Price and perk - Lifestyles of Health and Sustainability (LOHAS)	- Experience - Real-time feedback - Customized
People	- Family travel - Luxury - Tour group - Local shopping	- Style-lifers - Shopping traveller - Flexible working conditions - Backpacker	- Cultural travel - Relaxing, escape - Unusual destination - Flexible work life
Culture	- Tour group - Homogeneous culture	- Hybrid culture - Globalization - Urbanization - Hassie of travel	- Less culture shock - More comfortable with world cultures
Business	- Travel agency - Tour guides - Motels	- Personal, individual schedule - Eco-tourism - Network - B&B	- Mobile tour guide - Personal, individual schedule with AI - Local

Product and services people expect for future tourism:

41% of travellers want travel brands to use technologies such as **AI** to make travel suggestions based on past travel experience. 31% like the idea of a **'virtual travel agent'** in their home and 31% want to use **voice-activated assistants** to answer travel queries. 34% want to get **personal travel recommendations** for them. 20% want to use **AR** to familiarize themselves with a destination.



Over half (52%) would be excited about tech travel innovations. Such as a digital tour guide, bringing them a truly bespoke experience. As importance deepens on personal, individual recommendations that unlock the most out of every trip, people are expecting a rich and professional travel content to find even better ways of distributing this through the use of AI.

Scope of Users

According to predictions by Boston Consulting Group, **MILLENNIALS** will constitute almost **50 percent of travel spend of the world in 2020**. Such figures show that the travel industry should learn the unique travel needs of millennials to accommodate the new requirements and harness the potential profit.

How might we design a real-time interactive platform for travelers to get information about their travel destination efficiently?



A person wearing a red backpack and dark clothing stands on a dark, jagged rock formation. Behind them, a massive waterfall cascades down a steep, dark rock face. The scene is misty and atmospheric, with a color gradient overlay transitioning from a warm orange-red on the left to a cool blue on the right.

Section **02**

I 6/ assumptions

ASSUMPTIONS



Assumptions

This project would have to exist because of the following points:

Time is money. Users would like to get real-time information usually use Google search to get information; however, Google search provides too much information and may spend too much time to filter the information.

Users' (internal/external factors) readiness.

- Internal: users' mental Model
- External: technology

The psychological factors of users.

- People filter information
- People couldn't read the map
- People want a confirmation
- People want more choices and information than they can process
- People may care time more than they care about money

Business opportunity. For travellers, they can get the information from the platform, saving money (of guider) and saving time too. In addition, with the development of tourism, there are more job opportunities. It contributed to the generation of income, employment, and foreign-exchange earnings.



Section 03 *PLAN*

19/ research questions
20/ research methodologies
21/ project timeline
23/ testing plan

What's the plan?

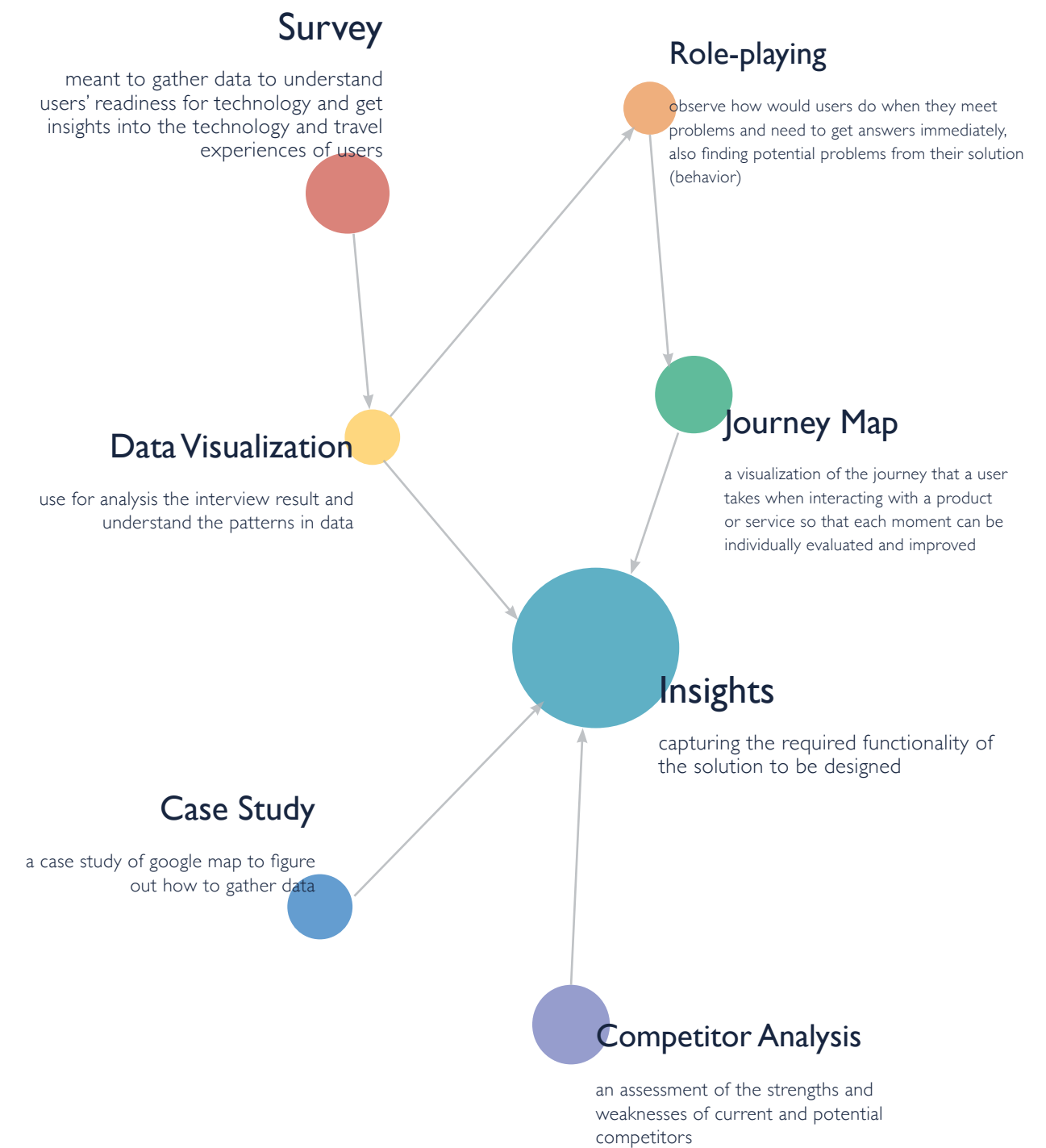
This section will talk about the research questions and research methodologies of the project, which is for testing the assumption listed in the last section and getting the insights of research questions. Most of them are primary research, including survey, role-playing, user journey mapping, competitor analysis, and case study. The section also includes the project timeline and user testing plan.

Research Questions

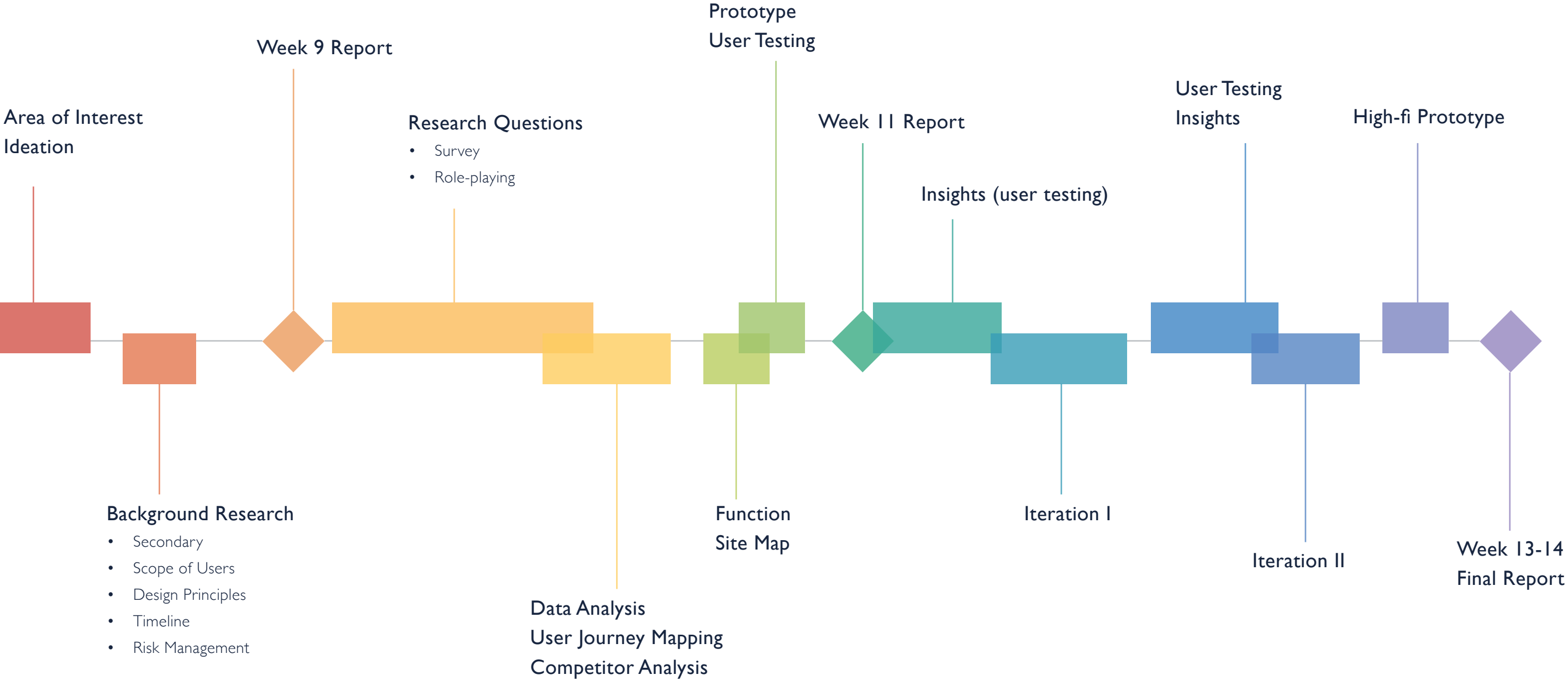
- Readiness of technologies?
- Pain points during traveling?
- Mental model?
- What's the opportunities?



Research Methodologies



Project Timeline



Testing Plan

What are we testing?

- Push Notification and positioning: if it really helps users to get the real-time information that they needed efficiently
- Air Pod (with searching and audio guide): what do users think about the feature

What is our hypothesis?

- The push notification and positioning can provide users with real-time information more efficiently than searching on Google.
- What user-related change of behaviour are we aiming to identify?
- Provide all information without typing and avoid the information bomb.

What can cause the hypothesis fail?

- Users don't allow the access of push notification and location
- Users feel notifications are annoying and don't want to open it anymore
- Users feel the information that the app provided is not useful to them

Which core questions do we need to answer from the test?

- Push notification and positioning
- Access allowance
- Filters
- customized recommendation/notification setting



Section 04

DISCOVER

27/ survey
29/ role-playing
31/ user journey map
33/ compertitor analysis
35/ research summary

Survey

The survey is meant to gather data to understand **users’ readiness for technology** and **get insights** into the technology and travel experiences of users.

- a snapshot of the attitudes and behaviours
- thoughts, opinions, and comments

91.2

91.2 percent of people don't own VR devices.

67.6

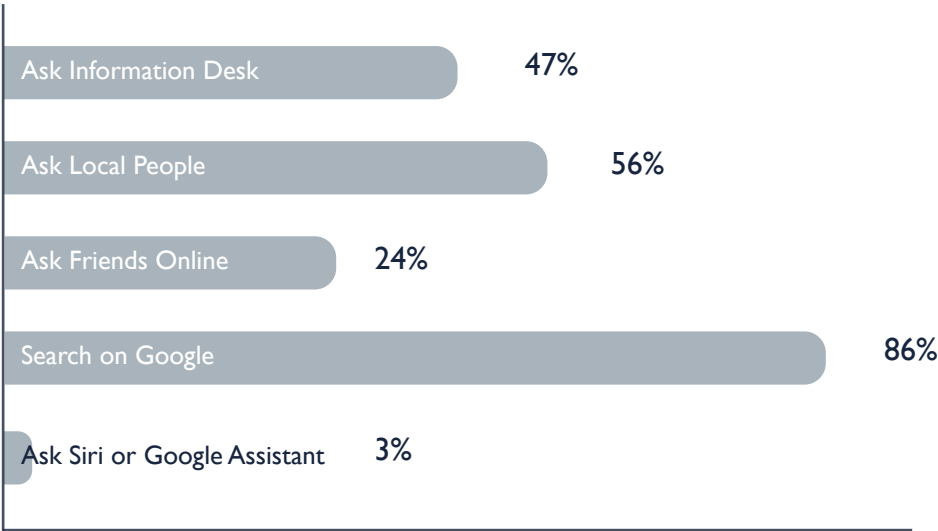
67.6 percent of people seldom or never use voice-activated assistants.

70.6

70.6 percent of people will allow to turn on GPS while they are using a travelling app.

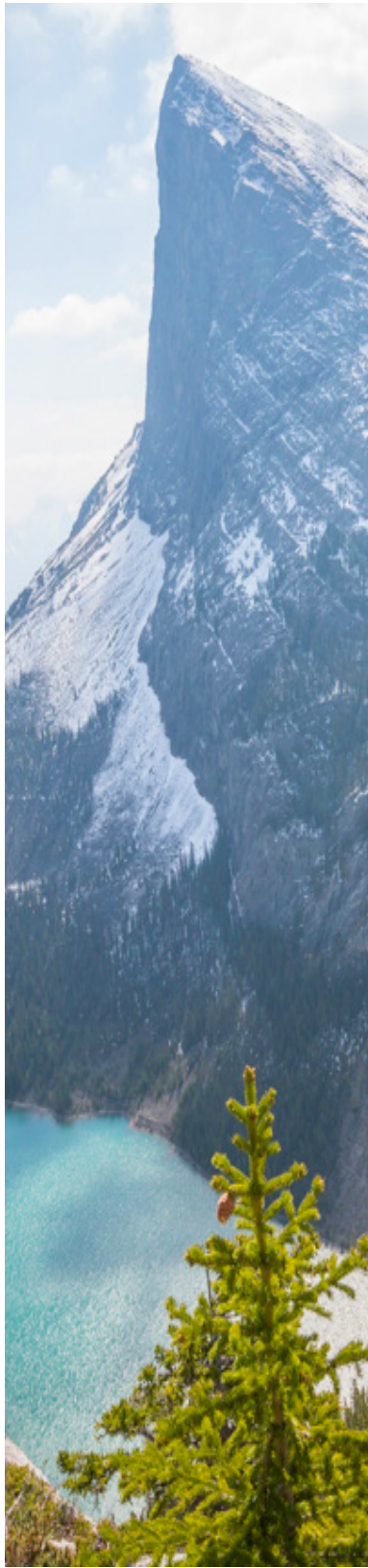
61.8

61.8 percent of people always use/open GPS.



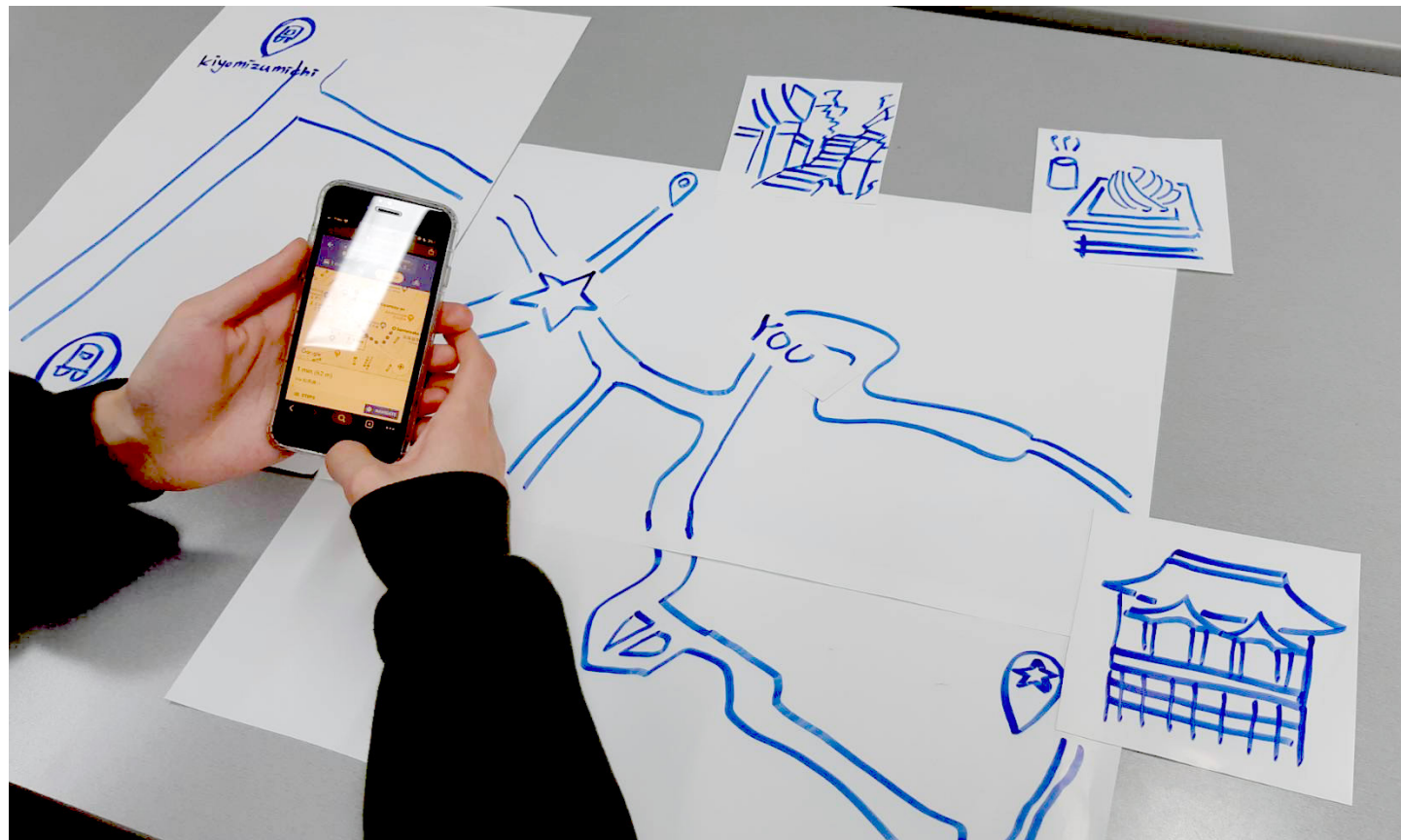
Survey Summary

- Although most people are excited to see VR travel agents, there are 90% of them don't have VR devices
“Too much effort, don’t have a VR device to experience it.”
- The voice-activated assistants might not be useful during the travel
- People are willing to see the notification features that send filtered information based on their choices and location to them during travelling
“It might be helpful. But I won’t rely on it unless I don’t have any plans during travelling. Overall, this function is acceptable.”
“It would be helpful so that I don’t have to search for information by myself.”



Role-Playing

It's not a traditional role-playing. The tester took on the role of the user and got a scenario that assuming the routines and behaviours that he or she might experience in actual scenarios. The purpose to set this test is to observe how would users do when they meet problems and need to get answers immediately, also **finding potential problems from their solution (behaviour)**. The result of the observation will show in the user journey map.



Background Intro

- Provide schedule: Kyoto Station > Sanneizaka > Kiyomizu-dera Temple
- Information about the travel destination

You are at Kyoto Station

- Couldn't find the bus stop
- What will you do?

After the lunch, keep going to Kiyomizu-Dera

- How would you get there?

When you are at Sanneizaka

- Feel hungry and want to try Soba because it's famous in this area
- How would you find the restaurant?

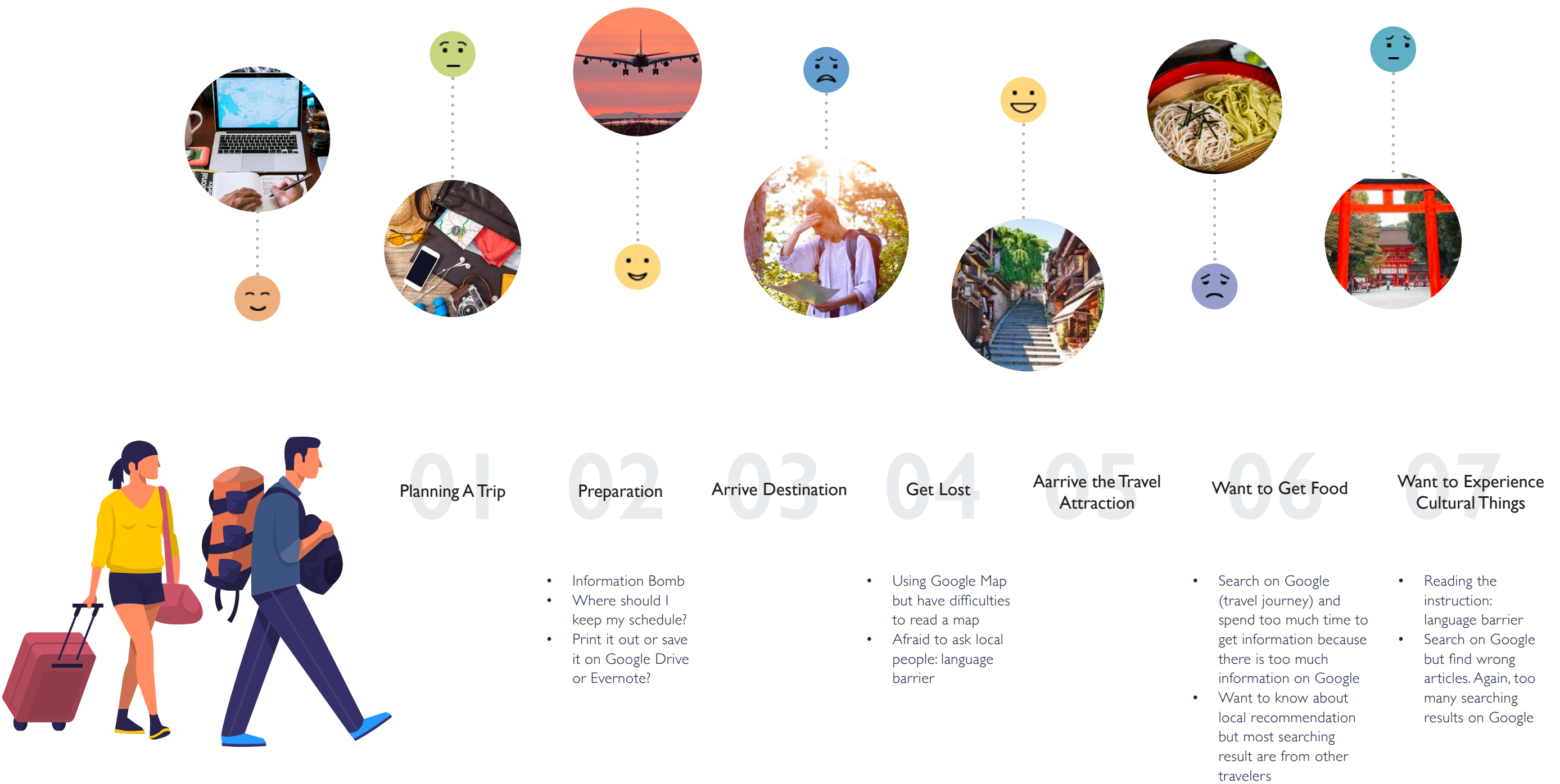
In the Kiyomizu-Dera, you would like to visit the shrine

- Don't know how to do the purification ritual altogether
- What will you do?

At the offering hall

- You are not sure what's the correct step to pray
- What will you do?

User Journey Map



Competitor Analysis

	Latest Update	UI Design	Information	Function	Cities
Pocket-Guide	2019	★★★★	• Map • City info • Places • Tickets	• Audio guided tour • Selection of language • Nearby restaurants • Share your experience	More than 150 major cities
Pocket Tour	2015	★★★★	• Nearby • My pocket/my profile	• Nearby attractions • Interact with other traveler • Find the history of each attraction and detail • Get inspired and plan your next trip	Greece, Ireland, Northern Ireland
Cities Talking	2018	★★★★★	• Tour • List/map • Around me • Eat/drink • Experience • Saved	• Audio guided tour • Nearby attraction • Offline (can save information)	Major European cities
Google Map	2019	★★★★★★	• Map • Transportation • Local restaurant, events, and activities and all contact info • Reviews • Indoor Map	• Beat traffic with real-time traffic conditions • Discover places and explore like a local • Direction	Whole world (?)

Research Summary

Through the user survey, role-playing and user journey, it's clear that people are excited about tech travel innovations but they haven't gotten ready for VR yet. The pain points are "timing" and "language barrier". Voice assistant is also an interesting point to consider because it's probably an opportunity for emerging travel trends. Through primary research, the project got some interesting insights. The report will talk about it in the next section.



Section **05**
INSIGHT

40/ insight



Insight

Although most people are excited to see VR travel agents, people are not ready to get this tech travel innovation

- More than 90 percent of people don't have VR devices
- "Too much effort, don't have a VR device to experience it."

The voice-activated assistants could be an opportunity

- 30 percent of people have never used voice-activated assistants
- On the other hand, there still have 33 percent of people would like to have voice-activated assistants for the app, the audio guide has become a trend and it will be convenient for people while their hands are busy and not available to hold a smartphone

People are willing to see the notification features that send filtered information based on their choices and location to them during travelling

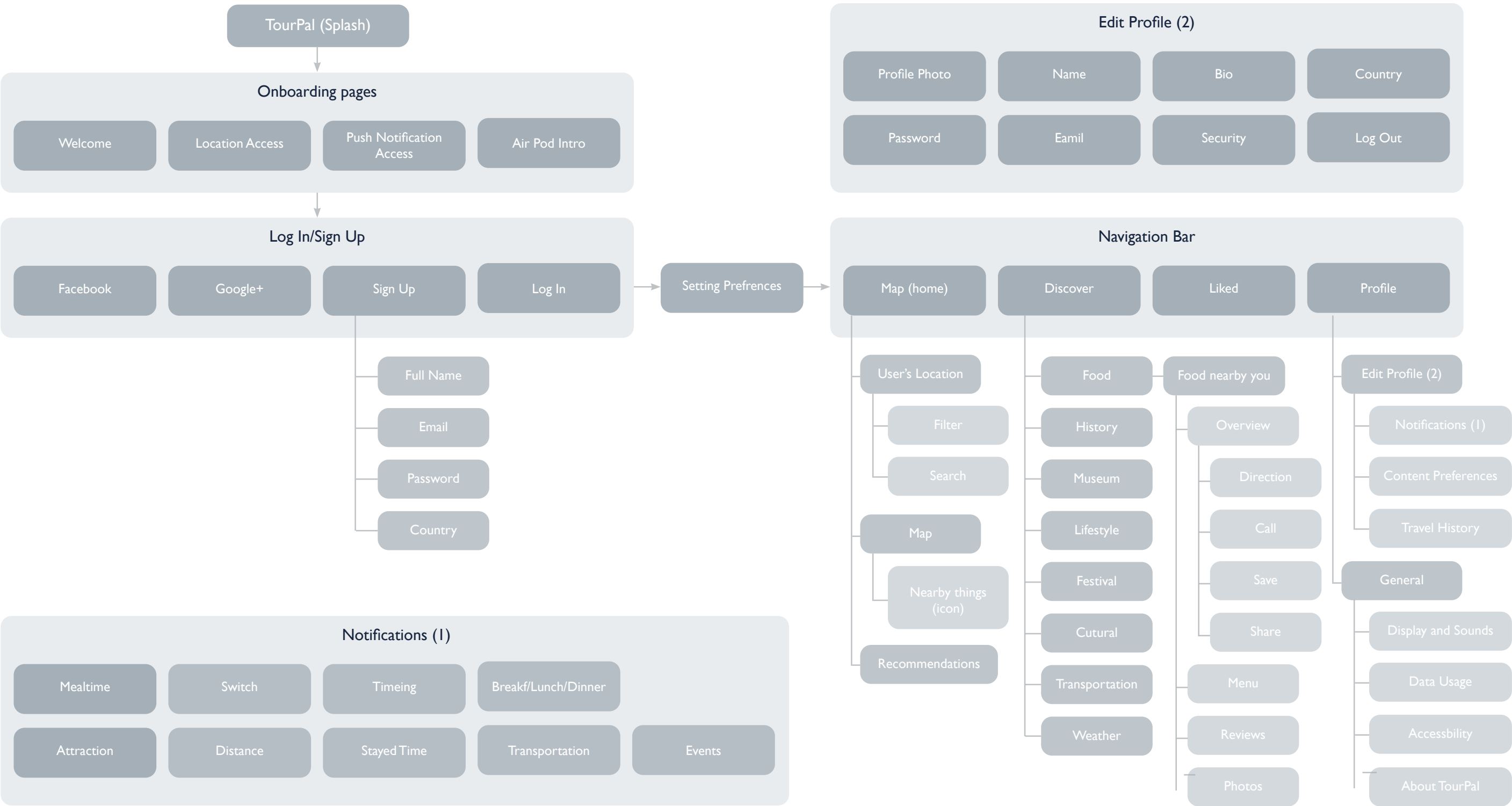
- "It would be helpful so that I don't have to search for information by myself." People spend around 12 minutes on average to get information on Google. 50 percent of people read the articles that didn't provide the information they needed
- Although exploring the nearby attractions has become a common feature, most of them didn't work with Air Pod and Apple Watch. They also won't provide push notification that let people can get information much easier

Section 06

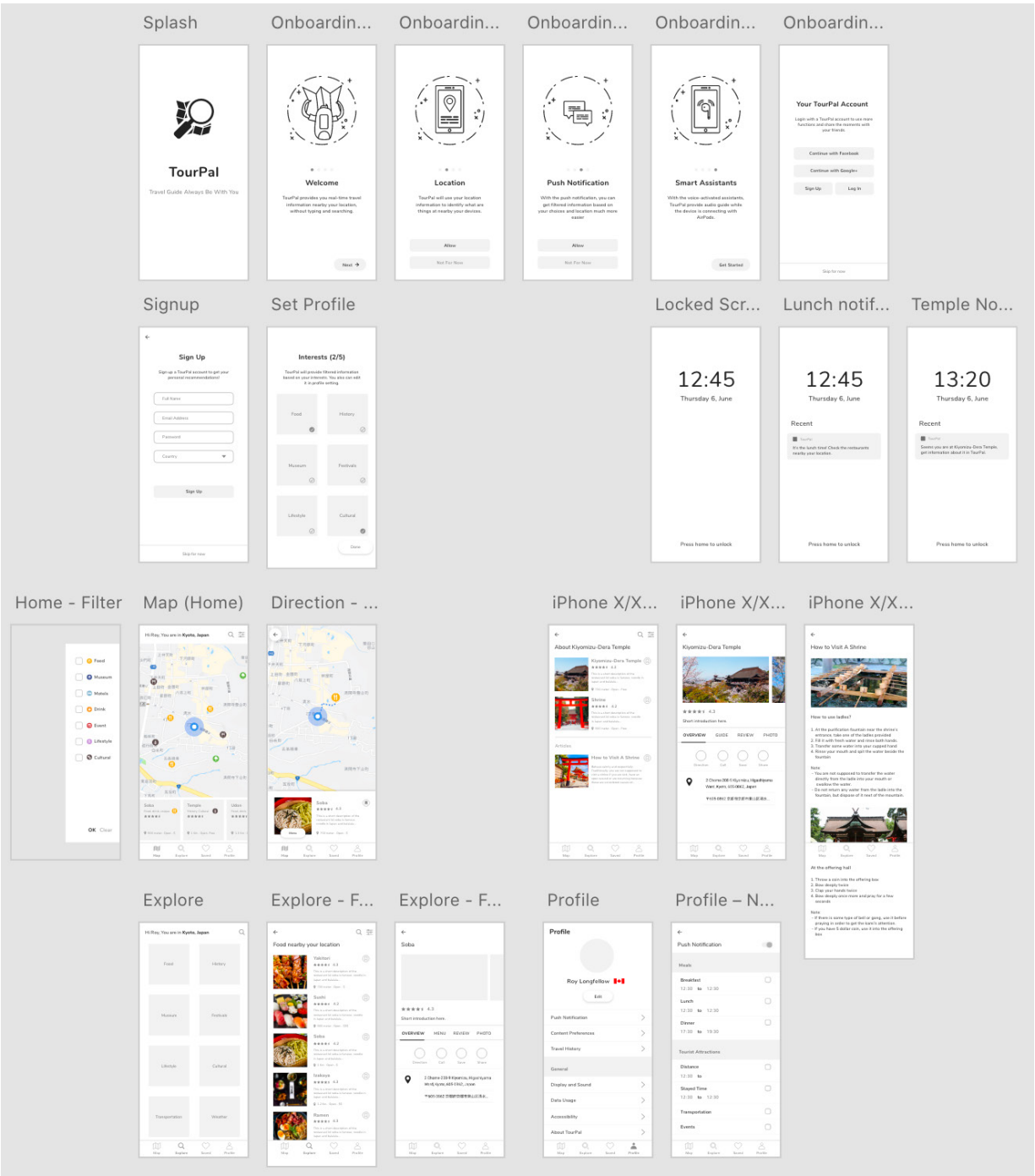
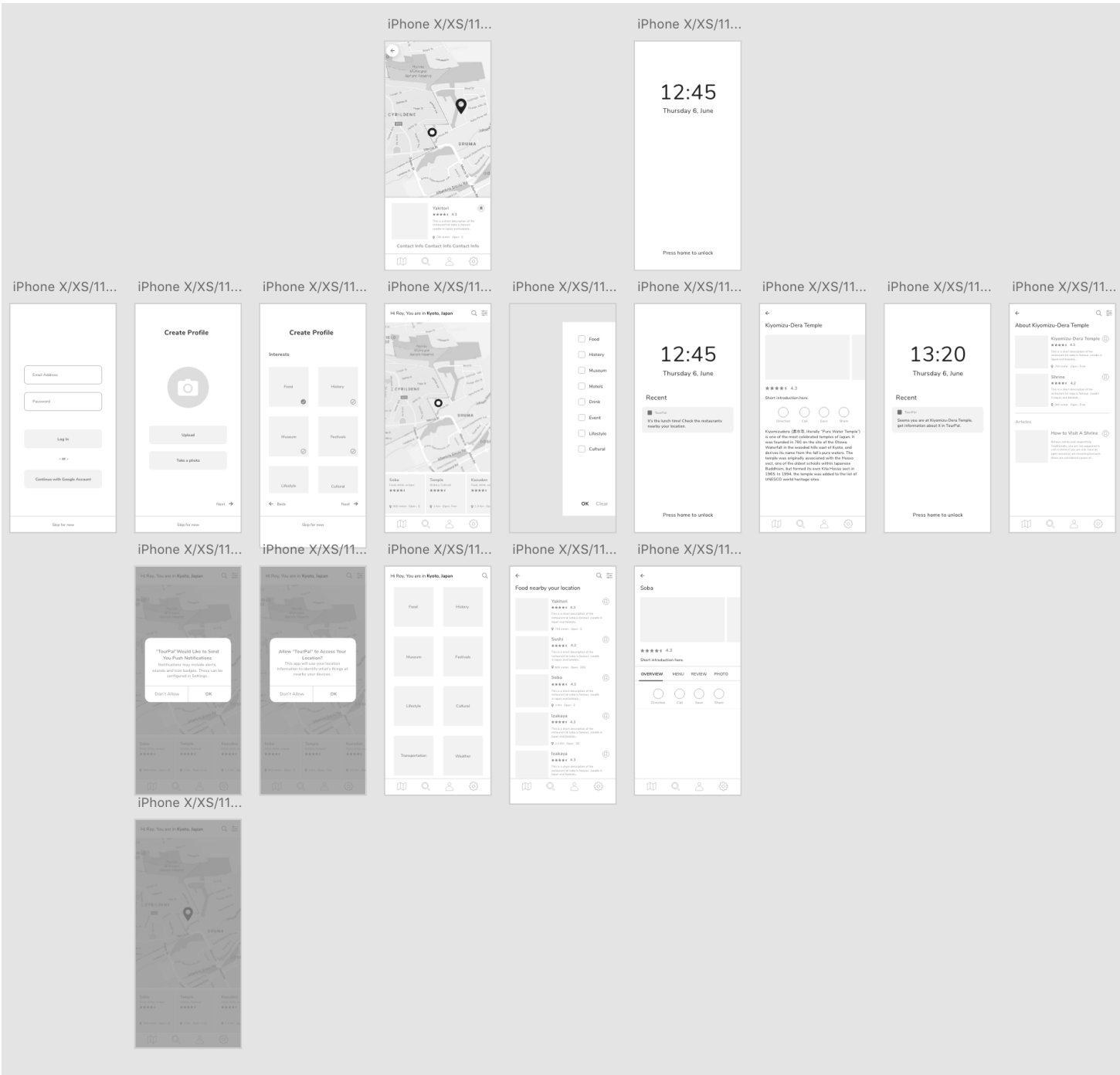
DEVELOP

43/ content outlines
45/ low-fidelity prototype
47/ iterations

Content Outline



Low-fidelity Prototype



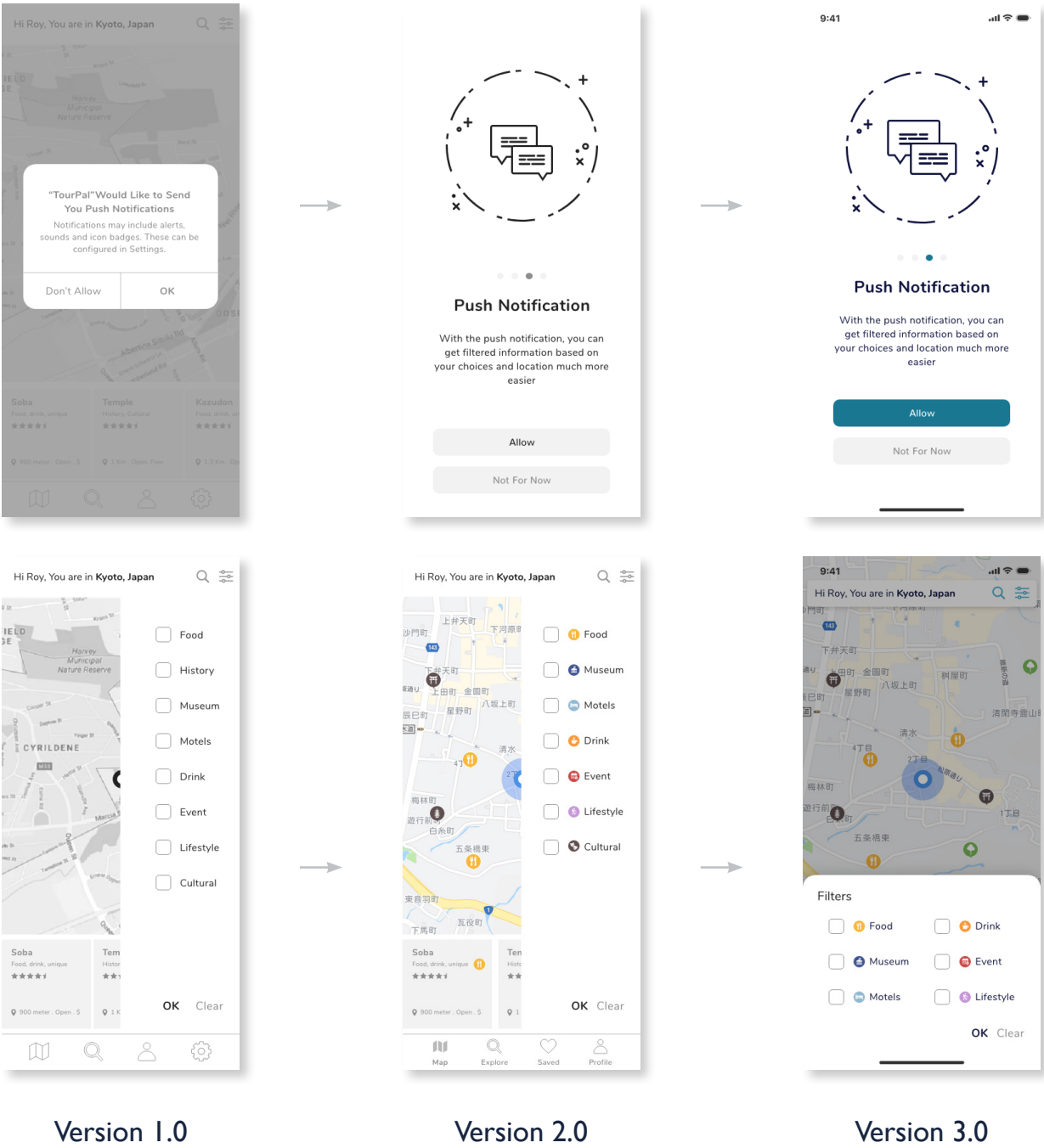
Iterations

To observe the application really resolve the problem/pain point which was found in the Discover phase, the user testing set similar scenarios as the scenarios of role-playing. In the first iteration, there was a big issue if users didn't allow access to push notification and location. Without access, the only feature of the application would just provide information by searching and filtering. For the filter, some users mentioned that it would be good to have a filter of food allergy; however, there were some users said that it's annoying if there are too many filters. The final and the most important feedback was about Air Pod using and Apple Watch connecting. The idea won unanimous applause. Although not every user uses Air Pod or owns an Apple Watch, they thought it would be a

good idea to open the market in the industry.

In the second iteration, users compared the instruction on onboarding pages and system pop-up windows and 62 percent of users would like to read the instruction on onboarding pages rather than system pop-up windows. The second insight is that users liked the customized/ filtered notification setting because users felt annoying if there are too many push notifications. With a detailed setting system, they could decide what kind of information would show up on their mobile devices. One user also mentioned that it would be great to have a note system so that users could check their travel schedules with the application easily.

Push Notifications and Filter Iterations



Section **07**
DELIVER

51/ benefit sought
53/ final delivery

TourPal - A Travel Guide Always Be With You

“Ease has become a new stander for tech travel innovations.”

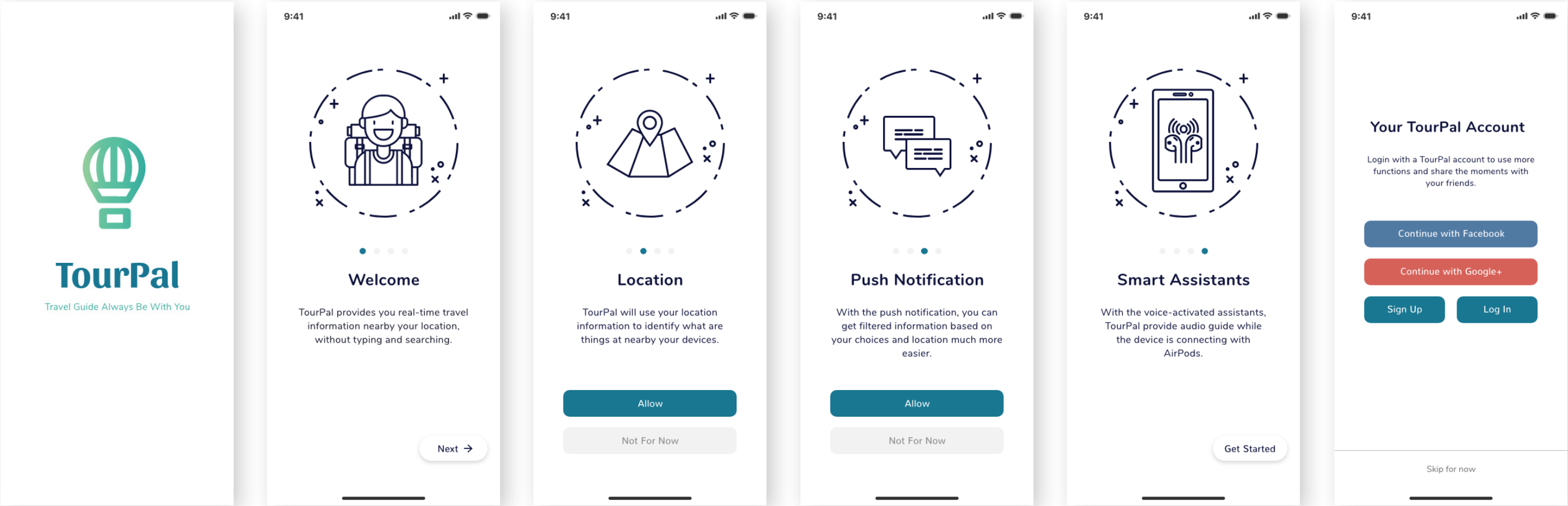


Of course, there are many platforms that provide you with all helps with your travel needs, such as booking accommodation, taxi and flight tickets (with the cheapest price); however, how can you get real-time information during the trip?

TourPal has a strong value proposition, a relatively new service that helps users “get information without typing on your phone while travelling”. With the voice-activated assistants and positioning feature, users can get information about the tourist attraction rashly. It allows users to filter the information, so users could just get the information that they are interested in.

All information sources are from verified attraction official sites or local people, so users could get local recommendations without a language barrier or information bomb.

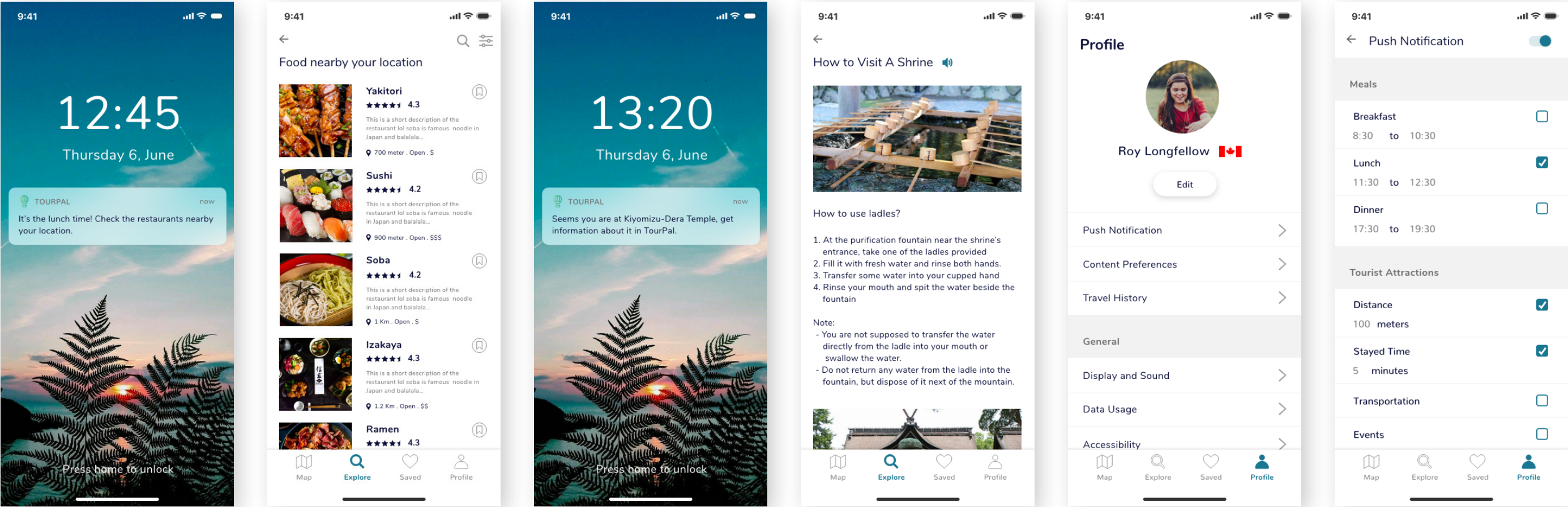
Final Delivery



Onboarding

With the onboarding pages, users could understand what the app is; in addition, while the application asks for the access of location and push notification, users could read the information and illustration on onboarding pages. Users could log in with their social network account to save time to sign up.

Final Delivery



Customized Notifications

The customized notifications will send users to push notifications based on the interest that users set in the Content Preferences page. Through the way, users could get information without typing and filtering. It also works with Air Pod so that users don't have to hold on their smartphones to check the information that they are interested in. The setting of the notifications can be edited easily and detailed so that users won't receive too much push notification and feel annoying of it.

Section 08

Reflect

60/ reflection



Reflection

Through the whole process of iteration two, I thought I finally understood what should I do in each section. In iteration one, I was not on track and didn't do time management. In addition, because I spent too much time on interviews, I didn't leave enough time to do the iterations. This time, I tried to follow the timeline and asked people for interviews much earlier. I felt I did much research than iteration one (which I think I should do but I didn't). Secondary research really helped a lot. I should read more to gain more knowledge in the industry. In addition, to do a case study was useful. I didn't put the case study part in the final section because most contents of it were text. I was thinking about how to gather a large amount of data and found some articles talk about how Google Maps gets its real-time data. It's really useful and I believed that I need to read more articles like that.

I noticed that although one research result was important, we should do more research on that. For example, in the survey result, most people didn't use voice assistants. However, through the competitor analysis and interviews during the user testing, I realized that voice assistant could be an opportunity. People may not use it for NOW, but it's a TREND, and we can have the feature for people who are comfortable to use voice assistants. Furthermore, I need to find more competitors in the industry. Not only focusing on the problem that I have observed but also finding other problems and learning from how the competitor figure it out.

Overall, I feel happy for my outcome of iteration two and I think I really need to read more and talk more to understand what do users need in the industry and what are other people in the industry working on.

Section 09

APPENDIX

63/ define
64/ discover
65/ develop
68/ image sources
69/ references

Develop

User Testing Script

Introduction

Thank you for participating in our user testing. I am Shawna and I will be guiding you through our user testing experience.

Before we get started, I wanted to confirm that you are okay with this session being recorded?

To provide some context, I am creating an application for travellers or backpackers that provide information that users may need in real-time. I am here to learn about how users use the application.

I am going to show you a prototype and ask you to perform some tasks as if it were a fully functional app. As you do these things, please try to do whatever you would normally do. Please try to think out loud while you're working. Just tell me whatever is going through your mind. Please know that we're not testing you, and there is no such thing as a wrong answer. You're doing this helps us understand what works or doesn't work about the application.

Pre-test Questionnaire

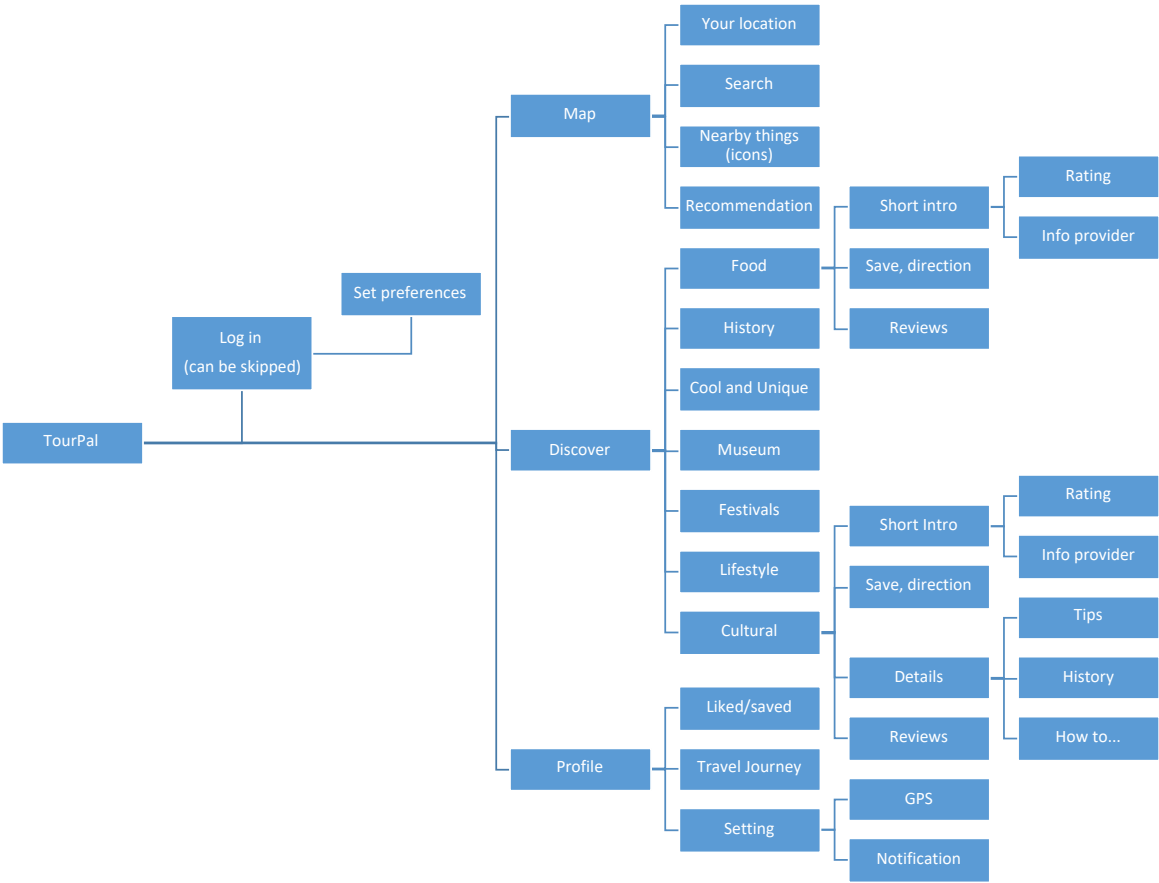
- Have you every travelled outside of your country?
- Did you meet any problem during the travel?

Testing Steps

1. Provide the schedule (same as the role-playing one)
2. Leave 5 minutes for the user to search information
3. Sign up the app > home page
4. Check all information on navigation bar
5. Scenario 1: Lunch time
6. Scenario 2: Visit shrine
7. Scenario 3: Edit customized notification

Develop

Content outline (version I)

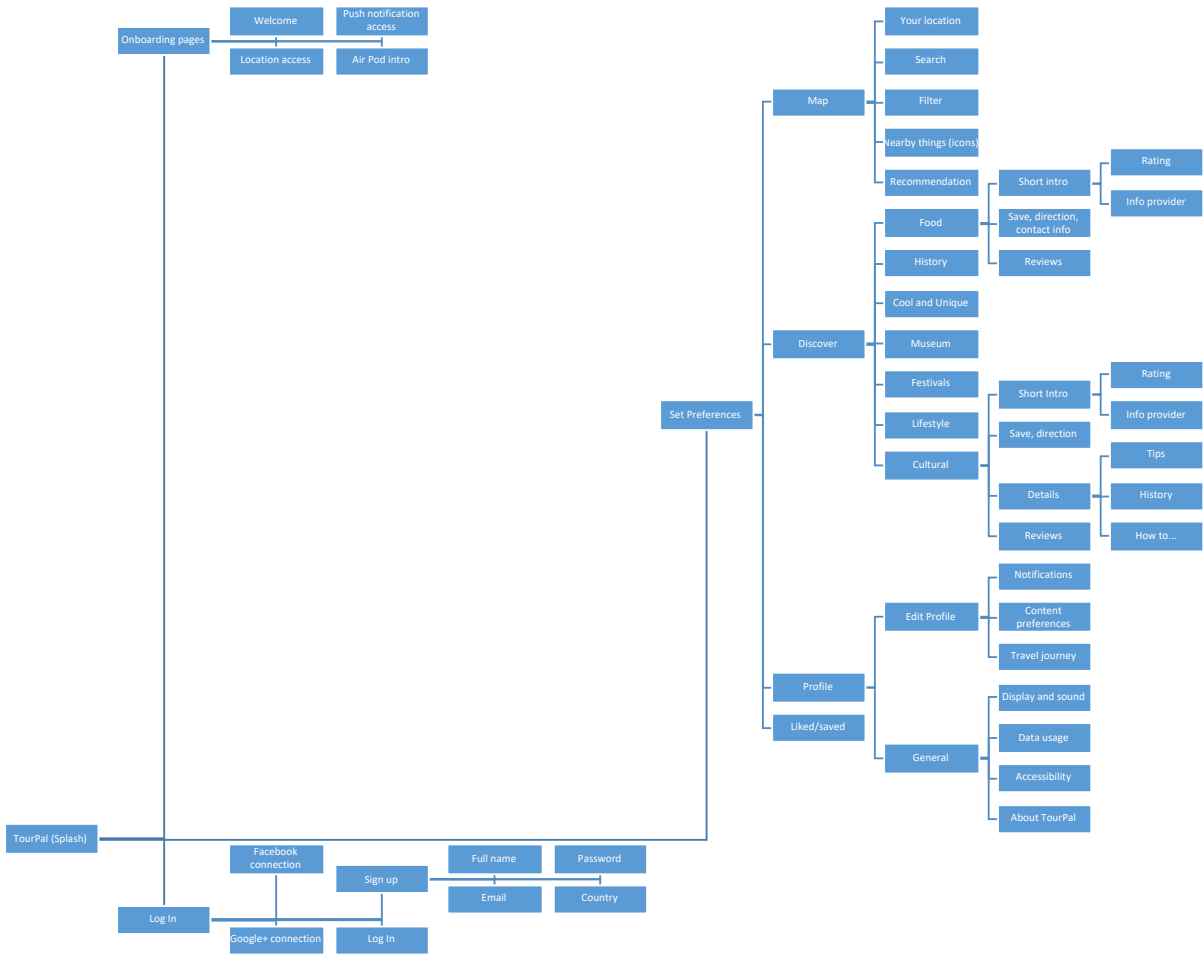


Feedback from testing (version I)

- Connect with apple watch or air pod
 - “If I go shopping and I don't have a free hand to hold a mobile device?”
 - Don't let air pod ask me, but give an option to open it
- Navigation bar should provide text to avoid misunderstanding
- Location icon consistency
- Information hierarchy (of information page, font sizes)
- Customize setting of notification
 - “If I have prepared lunch in my bag, I probably don't need the notification...”
- Filter
 - Food allergy
 - Feel annoying if there are too many filters
- Won't allow the Notification requirement unless providing instruction of functions/ reasons that it's necessary to allow it

Develop

Content outline (version2)



Feedback from testing (version2)

- Onboarding is really useful and users would read the instruction rather than system pop-up
 - 62% of users prefer the onboarding pages
- Customized/filtered notification setting is great
 - Users feel annoying if there are too many push notifications
- Information sources and filter/search
 - “I’m curious how would you filter the articles so that it’s the most relevant one? What if it’s five articles that don’t really answer my question?”
 - Providing a function to see the information I searched before I travelled or saved my schedule
 - “Like create notes for myself and then make it pop up.”

Image Sources

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