**WANDER**

Android travel app designed to make it easier to plan walking paths.

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Time: 4 months

**SUMMARY**

Do you love to travel? A well-planned walking path is one of the best ways see things, especially if you're tight on time. I designed an Android travel app called Wander to make it easier to plan walking paths.

**Problem**

Most travel apps rely on computer-generated walking paths. Sometimes these paths don't make sense, are unsafe, or not exactly what you want to do. Most frustratingly, travel apps give you little control to make changes.

(Screen shot of Triposo's crazy computer generated walking route)

**Solution**

Dial back technology and use a time-tested way of getting directions: drawing on a map. Digital maps with routes drawn by people, not computers.

Wander is an Android platform that allows people to create, select, edit, vote, and share walking paths. The goal is to give users more control.

View [prototype](https://xd.adobe.com/view/41545c7a-8638-473b-92bd-716e5b0270c8/). (link to prototype)

**Discovery**

I once went on a solo adventure to Kyoto, Japan. The old capital is full of incredible history and sights. I underestimated its vastness and only had two and a half days to see it.

(Pictures of Kyoto)

It turns out Kyoto is a walkable city. A Japanese travel guide gave me paper maps breaking down the city into sections. Each map section showed suggested walking routes. But it was raining, and it became a pain to use my rain-soaked maps without tearing them apart.

(Picture of paper maps with walking routes)

I tried switching to Kyoto's travel website. It has digital maps with similar walking routes, but it wasn't mobile-friendly. I couldn't expand it to fit the full size of my phone's screen.

(Screenshot of Kyoto travel website map on phone)

Why couldn't I have a mobile-friendly map with walking paths?

Did other people have the same problem?

**RESEARCH**

**Finding an opportunity to solve a problem**

I made an assumption: people need a travel app that makes it easier for them to plan walking paths. To validate this assumption, I needed to answer three questions:

1. Is there a need for a tool to make it easier to plan walking paths?
2. Who needs it?
3. What features do they need?

I conducted two surveys and two rounds of interviews to find answers. I asked questions focused on past experiences and behaviors. I also wanted to know any frustrations people had with travel planning tools.

**First Survey**

I posted a survey online (link to survey) to various social media platforms and public forums. I asked general questions about people's last sightseeing experience. I didn't mention anything about walking paths at this point. I wanted to see what problems or successes people would share that I may not have considered.

Here are my key findings from the 19 responses:

* 100% said they used smartphones to browse websites to plan sightseeing.
* A majority used Google Search (89%) and TripAdvisor (84%) for research.
* Fewer people used social media in their travel research: Facebook (21%) and Instagram (21%).
* People used Facebook (79%) and Instagram (47%) to post travel photos.
* When asked to select one experience that needed improvement: "planning route and schedule" was the top issue.

**“Mobile first” and need for more research**

Based on the results, it wasn't clear if there was a need for a tool to make walking paths easier to plan. However, if there was a need, it was clear that I needed to use a "mobile first" design approach. It was also clear that I needed to learn how people used Google Search and TripAdvisor for travel research.

Social media played less of a role in travel research than I expected. But, I still think there may be an opportunity to discover a greater connection between maps and social media, especially since Instagram is full of photo feeds for travel inspiration. I decided it was beyond the scope of this project but may be worth researching another time.

**Interviews**

During this project, I took a two-week trip to the Philippines to attend a wedding on Boracay Island. Many of my friends also attended. Different groups had separate plans for sightseeing before and after the wedding. It was the perfect opportunity to make observations and conduct interviews.

Here are key findings from interviewing 12 people:

* People used Google Search or TripAdvisor to find and compare lists of top things to see and do.
* Planning tended to stop at the city level in their search. Once in Manila, people weren't sure of what places they wanted to see. If they did have an idea, they weren't sure of the best order to see everything in a short period.
* Everyone's definition of sightseeing varied. Some people wanted to walk around historical places like the Intramuros, an old walled city. Others wanted to see street markets or the giant Mall of Asia.
* People on this trip relied on Google Maps to walk from point to point. They didn't have a walking path in mind.

**“Point-to-point” navigators vs. “Planners”**

There’s a spectrum of how people navigate. On one end, there are what I call “point-to-point” navigators and on the other end “planners.” People on this trip leaned towards being “point-to-point” navigators. Navigating to one place at a time using Google Maps. They didn’t necessarily need a walking path with all their stops planned out.

There wasn’t evidence at this point to design a walking path tool. To move forward, I needed to find and interview “planners.” People who liked to have itineraries.

**Second survey**

Before conducting anothe set of interviews, I posted another survey (link to survey). This time, I asked specific questions about what tools people used to plan walking paths. I provided both digital and paper options. I also needed to know what they liked most about these tools, and what they liked least.

Here are key findings from the 32 responses:

* Travel apps like Google Trips (6%), Cool Cousin (3%), and FieldTrip (1%) are not popular tools for planning walking paths.

Here is a selection of informative comments:

* “I don't think there is an obvious way to customize my route. I think I can create a route but it seems complicated.”
* “It can take me to shady places...”
* “Lack of suggested routes/plans to cover various sight-seeing points.”
* “When I'm abroad and don't have mobile internet access, or I'm in a heavily pedestrian urban area (like Marrakech) where the maps may not be detailed enough, then Google Maps fails me. That's when I turn to paper maps of some sort, or maybe an offline map intended for travelers if I don't need to worry about having my phone out.”

**Realizing and opportunity to solve a problem**

After the second round of surveys, I realized that some apps fall short in

planning walking paths. There were two main pain points:

1. Feeling unsafe
2. Inability to easily create and edit a path

At this point, I realized an opportunity to design a tool for people who are

most likely to use route suggestions to cover various sight-seeing points.

**Personas**

I identified three people to interview who plan their travels in advance. These are people who I assessed would benefit most from a tool for planning walking paths.

(Persona #1 - Mom – Local Traveler)

(Persona #2 World Traveler – Romantic)

(Persona #3 Ambitious Explorer – Adventurer)

The personas have three goals in common:

1. Discover itineraries that match their interests and schedule
2. Easily edit their path and points of interest
3. Follow a route but also have the freedom to explore

I based my design decisions primarily on the goals of these personas.

Next, I needed to learn from the competition.

**Competitive Analysis**

I analyzed the strengths and weaknesses of travel app competitors. I identified six travel apps: TripAdvisor, Google Trips, Walc, FieldTrip, Cool Cousin, and Triposo.

I conducted SWOT analysis, creating matrixes such as the one below, to

assess the strengths, weaknesses, opportunities, and threats of each app.

(image stack of SWOT analysis – Use analysis of Triposo on front)

I also downloaded Triposo. Out of the list of travel apps I analyzed, Triposo had the most advanced tool for planning a walking route to multiple sightseeing points.

(Screenshot of Triposo walking path)

**Learning from the competition**

Top three strengths to include in the design:

1. Crowd-sourcing to provide self-sustaining content production
2. Voting system to let people decide what is most helpful
3. Integration with Google Maps because its database is extensive and trustworthy

Top three weaknesses to avoid in the design:

1. Overwhelming number of features and information
2. Computer generated routes that are unsafe or do not make sense
3. Making it difficult for people to edit a path and change points of interest

**Field research at Balboa Park, San Diego**

I also took advantage of the fact that I live in San Diego, a major tourist destination. I spent several mornings and afternoons at Balboa Park. I hung out next to maps posted throughout the park. I casually interviewed people to find out what they were searching. I also wanted to see what they thought was helpful, and what was frustrating.

**Time tested way of finding directions**

People still rely on friends, or even strangers, to find directions. This reinforced the crowd-sourcing and social approach in the design.

(image of me interviewing people and giving directions)

Sometimes the best way to find where you’re going is to ask someone who can draw directions for you on a paper map. With this in mind, I needed to design a digital version of this time-tested method of getting directions.

(image of paper map drawing directions)

It also occurred to me that not everyone walks on paths. Sometimes people move around on wheels: wheelchairs, scooters, bikes, skates. Which reminded me that I needed to push for an inclusive design.

(Picture at Balboa Park with cart)

**Meeting research goals**

1. Is there a need for a tool to make it easier to plan walking paths?

Yes

1. Who needs it?

People who plan travel itineraries like the three user personas.

1. What features do they need?

**A platform that allows people to create, select, edit, vote, and share walking paths.**

**DESIGN**

**User Stories**  
I created a spreadsheet with a list of tasks to match the goals of the user personas.

"As a \_\_\_\_\_\_, I want to\_\_\_\_\_\_ so that I can \_\_\_\_\_\_."

(Final user stories)

**User flows**

I created User Flows to visually depict how people complete each task listed in the User Stories.

(Final flow chart)

**Wireframes**

I spent the majority of my time creating wireframes to focus on the functionality of the travel app. I sketched using pen and paper which let me put my design ideas down quickly. For inspiration, I looked to patterns found in popular apps such as TripAdvisor and Airbnb.

I went through each user story and wrote the task in the top left corner of each page to focus on the specific problem I needed to solve.

Here are a couple of early wireframe sketches coming up with howsomeone views a list and eventually selects a path. User testing revealedthat I needed to use a blend of the two ideas below. A list for easierskimming instead of cards. And a map view instead of an info page withphotos, because that’s what testers expected after selecting a path.  
(Trip advisor screen shot) (list view wireframe)

(Early concept wireframe skectch for list view)

**Branding**

I started by sketching and brainstorming to come up with a brand name.

(brainstorm sketch)

The contenders for the name were Paths, Walk, and Wander. I eliminated Walk because not everyone can walk. And sometimes people move on paths using wheelchairs, scooters, strollers, and skates.

I always explore opportunities for an inclusive design approach. Appealing to a wider market of consumers is good for business. More importantly, inclusive design is an approach to help everyone.

When surveyed, people preferred the name Wander. It conveyed walking as a sense of adventure.

**Logo**

Next, I brainstormed logo ideas for Wander.

(brainstorm sketch)

I analyzed logos from well-known companies like Facebook, Instagram, and Airbnb for inspiration. The logos tended to be flat, simple, and scalable to small sizes. Initially, I thought of incorporating a foot in the logo but remembered that not everyone walks on a path.

I also tried a map themed logo but that didn’t seem to appeal to people.

(picture of map logo)

Then I went back to capturing the essence of what it felt like to wander. I turned the location marker on the map themed logo into a hot air balloon. Then I remembered my pilot friend who once told me how he flew a helicopter around the pyramids in Egypt. I imagined how adventurous that flight would have felt and the sense of wonder. So, I decided to add pyramids with my hot air balloon.

(picture of logo)

**Color**

I used nostalgic travel posters for color inspiration and created a mood board using Pinterest.

(three Pinterest posters)

I used Dribble to pick a color for the pyramids in the logo. I chose orange (#D4610E) to match the desert theme in the logo and to highlight buttons throughout the app.

(Picture of color picker)

I found a monochromatic palette and applied it as a gradient to the pyramids in my logo.  
(color palette inspiration)

I used the Adobe Color Wheel to help pick a blue color to complement the orange to give the app a vibrant feel.

(complementary color picker)

**Typography**

I chose Courgette for the brand name and titles throughout the app. The typeface designer, Karolina Lach, describes Courgette as a medium-contrast, brushy, italic-script typeface which evokes a loose, wispy feel to the Wander brand.

**Style Guide**

Lastly, I used Google's Material Design guidelines for typography details to complete the style guide.

(Style Guide)

**Mockups**

I created 71 pages of high-fidelity mockups using Adobe XD and Google’s Material Design guidelines (link to Material Design).

I designed Wander to be highly interactive especially in the path editing mode. I needed users to be able to distinguish what was clickable and to create icons that looked like physical buttons. Material Design's 3D approach was better suited for those goals than a flat design approach.

(List view mockup) (map view mockup)

**Prototype**

I used Adobe XD for rapid prototyping. Adobe XD was particularly useful for creating flows for the many combinations of actions a person can make in the map view.

(Screenshot of map view progression)

**TESTING**

**Test iteration process**

I tested early and often during every phase of the design process: wireframes, mockups, and prototype. I took every opportunity to test in person or remotely online to refine my design solutions.

The most challenging problem I tried to resolve was the task: "As a registered user, I want to change the path on my map."

Initially, I used Material Design’s Floating Action Button (FAB) to allow people to edit their path. However, test results showed that the FAB was not clear in its function.

**Testing Wireframes**

I tested wireframes using click tests and navigation tests on UsabilityHub.com.

(Wireframes navigation test results Edit Path FAB)

**Testing Mockups**

I tested mockups to see if more colors and context would help.

(Mockup click test results for Edit Path FAB)

Then I looked to apps like Airbnb for patterns of inspiration.

(Airbnb snapshot of filter/ map button)

I then redesigned the Floating Action Button and labeled it "Edit Path," which yielded better results.

(Mockup click test results with “Edit Path” button)

The test results proved the need to break away from Material Design's guidelines. The pencil icon is widely understood to mean edit. But it wasn't clear what the Floating Action Button could change since Material Design doesn't use labels.

I have seen some people create Floating Action Button designs that expand into a submenu with labeled options.

(floating action button submenu) (expanded floating action button with labels)

However, I decided that anything more than one click was too many. I couldn't delay users from reaching their goals by favoring aesthetics over functionality. As a new design, I have a small window of opportunity to show testers what the travel app can do for them.

**Other lessons learned: touch target size matters**

A lesson that I learned in the early stages of the prototype is that touch target size matters for phones. One person I randomly tested struggled to see anything happen when they tried to click on icons. In this case, the 24 x 24 dp icons were too small to register a response.

Material Design says touch targets should be at least 48 x 48 dp to ensure a physical size of about 9mm regardless of screen size. There should also be at least 8 dp separation between them. I made changes to include the minimum suggested touch zone size and spacing. I immediately saw testers move more fluidly through the app.

**Usability Testing with Prototype**

I conducted four usability tests. Two in-person and two remotely. I used Lookback.io, Quicktime, or a digital camera to record people’s faces and where they clicked on the prototype screens. Each session was approximately 10 minutes long.

I gave testers the following tasks:

1. Find a path using your current GPS location on your phone.
2. Filter the list for half-day plans made for photographers.
3. Select a path that will show the best photo spots at Balboa Park.
4. Sign-up using your email.
5. Create your profile. Upload a profile photo. Then add your profile name and story.
6. "Like" the current path to save it for later.
7. You decide to make some changes to the path. You're no longer interested in the Sculpture Garden. Remove its location marker.
8. You think the Spreckels Organ Pavilion on the left side of the map is more interesting than the Sculpture Garden. Add its gray location marker.
9. Erase the top portion of the path and re-draw it going to the new location marker you just added.
10. You think the path you created is awesome. Share it with family and friends.

**Usability Test #1 Results**

**(link to video recording)**

* In-person recording with a digital camera while the user tested the prototype on a phone.
* She had trouble figuring out what to do next after adding her profile photo and bio.
* She said the sequence of re-drawing the path before adding the new location marker felt unnatural.

**Usability Test #2 Results**

**(link to video recording)**

* Remote video recording using Lookback.io with user testing the prototype on a phone.
* She also wasn't sure what to do next after uploading her profile photo and bio. At the end of the test, she mentioned she was looking for a "Save" or "Back" button.

**Usability Test #3 Results**

**(link to video recording)**

* Remote video recording using Lookback.io with user testing the prototype on a phone.
* He had trouble figuring out which button to click on to update his profile settings.
* He tried to click "Edit Path" when asked to remove location marker for the Sculpture Garden.
* In the map view, he attempted to zoom in and see the names of locations. He said, "I can't see the Sculpture Garden."

**Usability Test #4 Results**

**(link to video recording)**

* In-person video recording using Quicktime with user testing the prototype on a laptop.
* She hesitated to click on the button for “Use current GPS location.”
* She took a moment to realize she needed to click on the form field to enter her email address.
* She tried to click "Edit Path" when asked to remove the location marker for the Sculpture Garden.

**What I changed base on usability test results**

I made three key changes based on the usability test results:

1. I added name labels to the location markers.

(Screenshot of map with location names added)

1. I allowed people to remove location markers from the edit path view.
2. I added save buttons to allow people to confirm their edits, rather than use an auto-save feature.

("Save changes" button on profile page) ("Save changes" button in path editing view)

**CONCLUSION**

I created a travel app that gives people more control in planning walking paths.

My biggest doubt was whether people would find Wander valuable. Testing showed that my app can benefit people in planning their travels.

What surprised me most was the amount of research, design, and testing required to solve for a relatively small list of tasks. There are so many other design features to add to make the app more complete and fully functioning.

If given more time, I would create a coded prototype to test how a person would navigate at Balboa Park. A proven navigation feature would add greater value to the app.

I would also collaborate with experts in design, engineering, and business. They could offer valuable perspectives from their respective fields that I may not have considered. Their fresh ideas and teamwork would result in better solutions.

This project was challenging and helped me grow as a designer, more than any other project up to this point. I learned the value of discovering problems early and making smaller more manageable changes. I also learned the importance of being able to validate and defend my design decisions. I'll take these lessons learned and continue to improve my design process for the future.