

IxD Studio I 05651

Designing A Responsive Website



Nila Banerjee
Angel Yu
10/13/2016

Table of Contents

1.0 Design Brief

2.0 Design Process (High Level)

3.0 Design Process (Detail by Stage)

4.0 Design Implementation

5.0 Learnings and Reflection

1.0 Design Brief

Keywords: Problem Reframe,
Guerrilla Research, Responsive
Website Design

Working in teams of two, students are asked to create a responsive website in response to an issue identified in the experience of getting to Carnegie Mellon. The project focuses on the transition from research to design, while incorporating in the process a variety of design methodologies and tools. Some examples of these include guerilla research, customer journey maps, problem reframe, as well as the analysis & synthesis bridge. The design of solution explores constraints and opportunities offered in responsive design. The final deliverables include designs for mobile and desktop browsers.

Given we had two weeks to work on this project, our goal was not to deliver a complete and finished design, but to present a concept of our solution and present it in a convincing manner. We aimed to obtain a better grasp of the transition from research to design, and explored each of the design tools utilized for the project. By the end of two weeks, we hope to deliver maximum value for our audience through identification of an issue and envision of an improved future.

Design Process

2.0 High Level

Process	Research	Model	Reframe	Ideation	Framework	Design
Methodology	Conduct guerrilla research to gain an understanding of the current state	Synthesize research findings to create an abstract model of the present	Envision an abstract model of the future to transition from research to design	Ideate to explore different ways of realizing the envisioned future	Create a framework to lay out key functional zones of an interface	Fill in details of the design to materialize the solution
Tool	Laptop and note-taking software Interviewer, observer, and interviewee	Interview Notes Customer journey map of the present	Customer journey map of the future Analysis-synthesis bridge	Persona-based scenarios (See, Think, Do)	Wireframes	High-fidelity mock ups

Design Process

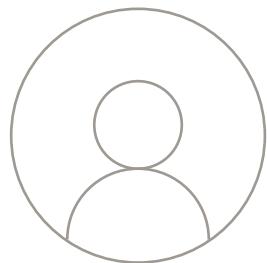
3.0 Guerrilla Research

For the research phase of our project we wanted to learn about students' journey to Carnegie Mellon, from the time they learn of their acceptance through the time they arrive on campus. Since we could not directly observe the students' experience getting to Carnegie Mellon, and worked under short constraints, we used directed storytelling as a way of learning about the students' experiences. We took turns taking the role of interviewer and observer, and conducted three half-an hour conversations with BHCI and MHCI students at Carnegie Mellon.

In the beginning of our interviews, we developed a rough guide for the session that we used to direct the conversation if the storyteller(interviewee) gets stuck. We then engaged the storytellers in recalling their experience with starter phrases such as "tell me about your trip to Carnegie Mellon", "What did you do to prepare for school?" and "how did you travel to campus?" In carrying out this activity, we consulted sources such as *Directed Storytelling: Interpreting Experiences for Design* by Shelley Evenson as a way of learning and guiding the conversations.

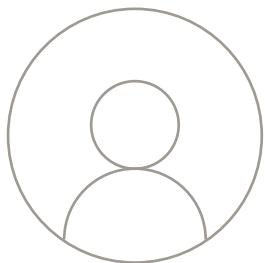
Design Process

3.0 Guerrilla Research



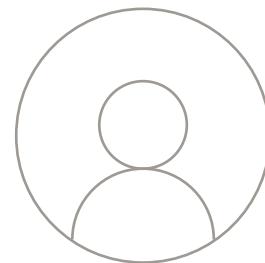
Mike*
A 20 yr old BHCI student

"I BROKE MY LEG IN THE SUMMER BEFORE SCHOOL. IT TURNED OUT TO BE A GOOD CONVERSATION STARTER AND I MET A LOT OF PEOPLE THROUGH THE INJURY."



Herman*
A 23 yr old MHCI student

"IN AUGUST I WAS TOLD THE OWNER HAD SOLD THE HOUSE. I HAD TO SCRAMBLE TO FIND NEW PLACE."



Judy*
A 26 yr old MHCI student

"I FELT LIKE I'D MADE THE MOST CONNECTIONS THROUGH OPEN HOUSE AT CARNEGIE MELLON. THAT'S WHY I CHOSE TO ATTEND THE SCHOOL."

Design Process

3.0 Guerrilla Research

MIKE

Got a fat letter since undergrad
didn't know it was supposed to come that day; pleasantly surprised since was waiting for another school; Tuesday in March; had to decide by April
visited during sleeping bag weekend and decided he wanted to come; stayed with a friend who let him stay for as long as he wanted to; got a personalized experience
didn't really prepare; packed a week before; last minute dorm shopping
broke ankle a week into July; was on crutches until October (came into college w/ crutches; had to ride handicap scooter); had to get surgery in August; worried about how to get around; nervous but excited about college experience
emailed Health Services a few weeks before; they cooperated and had scooter assembled for him and let him move in early; move in process was very smooth; they did a really good job
entire family came; got to spend time with them + explore Pittsburgh
worried because he was tired about going around campus
thought campus was really small when visiting, but was glad when he broke his ankle
wasn't able to hand in homework since couldn't go down the stairs; nurse wrote excuse letter for him
drove to Pittsburgh with family; 7 hour journey; slept through it
family did most of packing
hard to get around Oweek
getting on a bus was hard with crutches
met a lot of people through injury; good conversation starter
luckily placed on first floor of Donner
surprised that there were more things to do in Pittsburgh than he thought; came in with low expectations

HERMAN

I got a letter. I was checking my email for other reasons, applied to a bunch of schools. Found in junk email.
Join our facebook group for accepted students (in inbox). Acceptance letter in junk box.
March 2016 hear back.
Instant reaction: called family/girlfriend.
The school I thought I was least likely gonna get into.
South Carolina. Wanted to get away from there.
Why did you want to study abroad. I had a limited experience of the world. I need to expand my world more.
A little stressed because it was my last chance to not do this. Main concern was money.
So why portugal.
How did you prepare to come here.
My packing process. I come straight out of undergard. I did a summer job Charlotte Not.
Living with rooms.
Stuff to keep in a box (just 1 box).
Parents drove with my bike. Drove 8.5 hrs.
Family live around pittsburgh.
He drove and parents drove in separate vehicles.
Doesn't like driving in silence/boredom.
Listen to podcast.
Couldn't listen to podcast or music when mom was there.
Use GPS to go to places.
Arguments over which way to drive. Dad drives really fast, and he drives slow. Pain following his dad.

HERMAN CONTINUED

Once got to pittsburgh. It was a disaster. Hard to find a housing for less than 6mo.
Found a place through craigslist.

Owner sold house. Had to scramble to find new place.

Msg people on craigslist. Nothing on Airbnb by then.

Ended staying long distance from school. Drove 20 min to Ikea. Ride 28x to school.
Airbnb 4 days a week. Staying with cousin weekend.

First week of class.

"It was alright." Only worried about the bus/commute.

The transit apps sucked.

Transit seemed like it had the nicest interface. But it showed the wrong bus.

Something that surprised you.

I really didn't think I was gonna like pittsburgh. It seemed dirty.

Don't know why.

JUDY

At desk at work; saw a CMU email; really nervous; started crying once she saw that she got in; took a snapchat and sent it to her friends/grandma; told boyfriend over gchat
Took the full period to decide; applied/got into to 4 programs; thought CMU was a stretch; didn't go to UW open house because she went there for undergrad + the date was really late; went to CMU, Georgia Tech, & Umich open houses; took a week off of work; talked to other students; open houses were really helpful (saw faculty speak, meet other admittants, saw campus); felt like she made more connections here than other open houses; liked people here

Had to book a lot of flights + spend a lot of money to go to open houses; was really stressful; would have been helpful if she had found out about getting in earlier + open houses were earlier

Have friends who live near campus w/ spare bedroom so got to live there

Did scavenger hunt during open house in Pittsburgh to get to know area better

Haven't explored much of Pittsburgh

Finished at job on June 30; was supposed to move out of apartment by end of July; realized that she wouldn't have time at the end of the month so had to do it in one weekend in the middle of month; stayed with her parents/boyfriend in Palo Alto/San Francisco; really stressful because she felt like she didn't belong; sense of unstableness

Had to get rid of a lot of stuff because had to drive here like bed, mattress, clothes; nice to purge; was able to fit more stuff in car than anticipated

Drove here with boyfriend over 9 days/8 nights; really fun; stressful until they started the trip; drove through utah, colorado, missouri, kentucky, pittsburgh; memorable experience

Anxiety about doing long distance with boyfriend; nice to be together during the trip; didn't think about fact that they would be separated

JUDY CONTINUED

Met roommates during open house; started looking for apartment on Craigslist; found in May; got a 5 bedroom house for 4 people. Got to house 2 weeks after lease started; some issues w/ utilities (didn't have hot water/Internet for a week)

Didn't have a bed on the first day; bought everything at IKEA next day; helpful to have boyfriend there for carrying things/assembly

Had to pick up ID day before Orientation; wasn't hard; had to run a lot of errands

Didn't have much time to unpack; room was only half moved into until the weekend; hard to live like that since she's neat/organized

She did laundry and then he didn't fold it; she had to do it later

Registered for classes in June after advising session w/ Nicole; felt that that was really late; didn't get into some electives that she wanted; wanted to take Service Design; was still finalizing electives during first week of classes to find ones that were open/interesting; frustrating (I'm paying this money why can't I be in the classes I want?); getting service design experience in independent study; likes Twitch Plays Game Design class (made bigger over summer to account for demand); wanted to take Jessica Hammer's class in spring

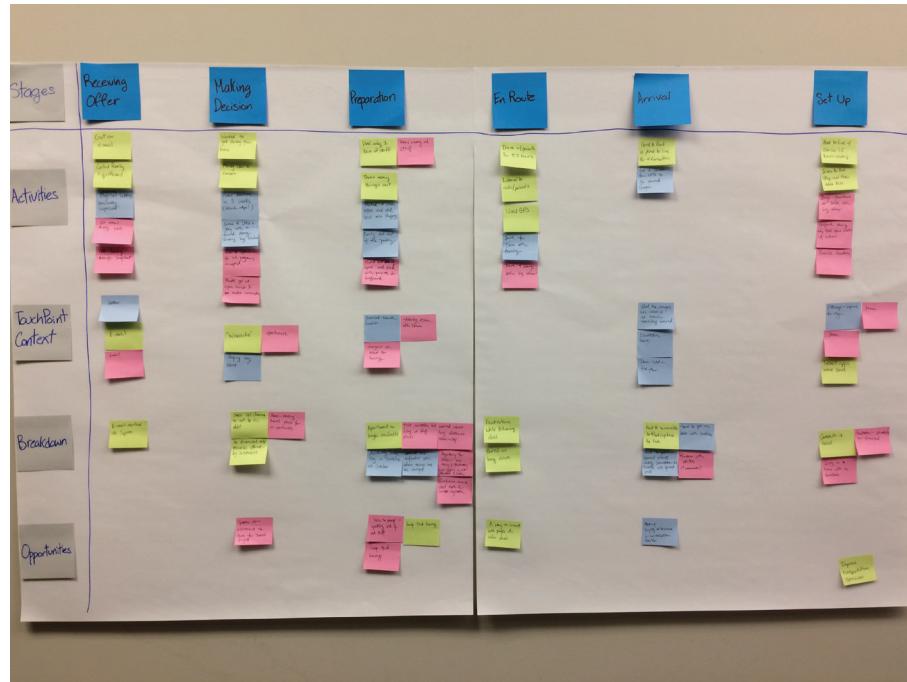
Wasn't sure when she could start registering/which classes she needed to take; wishes she had started looking at courses earlier like other people in program; wishes she had better understood that registering early would be helpful; disappointed/annoyed that since program is only 1 year and she didn't get into some classes she can't take the classes/get experiences she wanted

Would have been helpful if she could start registering for classes as soon as they got admitted

Thinks service design should be required for HCI

Design Process

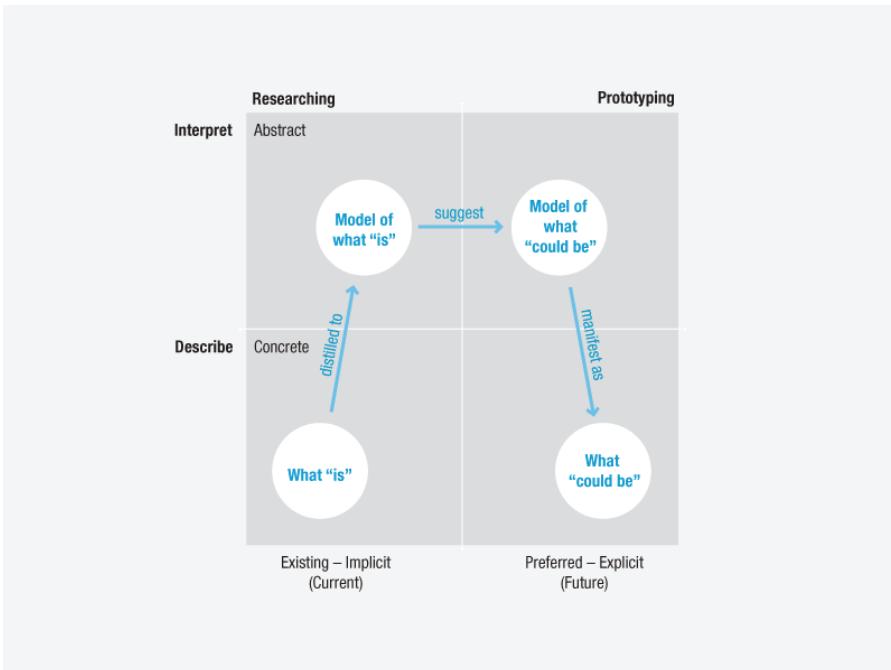
3.1 Affinity Diagram



We used affinity diagram to synthesize the stories we've heard. A color is chosen to represent each student. Their experiences are mapped horizontally, from Receiving Offer to Set Up on Campus, and vertically across Activities, Touch Points, Breakdown and Opportunities. In retrospect, we should have mapped the sticky notes according to the positive and negative states of students' feelings. However, seeing the notes in clusters helped us visually grasp areas of issues and opportunities.

Design Process

3.2 Modelling & Reframing

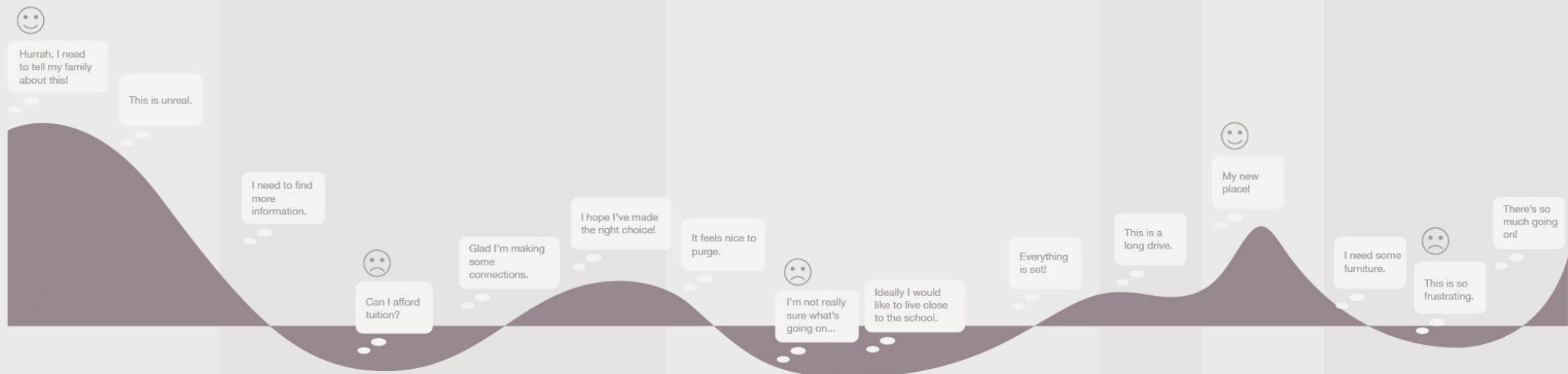


Having gone halfway between the lower left and upper left quadrants of the analysis-synthesis bridge, we went on to build an abstract model of what “is”—or, in the context of this project—a model of the present state of student’s journey to Carnegie Mellon. This is shown as a customer journey map on the next page.

Allen's

Experience of Getting to Carnegie Mellon

THOUGHTS, FEELINGS, AND ACTION OVER TIME



RECEIVING OFFER	MAKING DECISION	PREPARATION	TRAVEL	ARRIVAL	SET UP		
Receives letter of acceptance in an email 	Notifies family and friends 	Finds out more information from websites, open house and social media 	Considers factors such as tuition, scholarships, location, and curriculum Makes connections through social media and events Makes decision and replies back to school 	Throws out old things and buys items for school Searches and signs up for courses Looks up housing on Craigslist Moves out of apartment Makes travel arrangements 	Drives 8.5 hrs with family Moves in with roommates 	Makes do with room and travels to IKEA for furniture 	Deals with utility problems Attends orientations and finalizes electives

BREAKDOWNS AND OPPORTUNITIES
<p>B: Email could be marked as spam and fails to communicate in a timely fashion</p> <p>O: Extend option to involve families and friends in the upcoming preparation?</p> <p>B: Stressful to make plans for attending open houses.</p> <p>B: Financial stress, no financial aid offered by program.</p> <p>O: Provide suggestion list for items to get</p> <p>B: Stressful to register for courses. Electives hard to get in.</p> <p>B: Not the most reliable way of finding a place to live. Could result in unexpected situations.</p> <p>O: Resurring feedback from school</p> <p>O: Make the school available in case of emergency</p> <p>B: Potential breakdown with utilities</p> <p>B: Potential emergencies with housing, may need to find new place to live</p> <p>B: May not be easy to get around the city</p> <p>B: Moving large pieces of furniture</p> <p>B: Utility providers are not always the most responsive or helpful</p> <p>B: Utility providers are not always the most responsive or helpful</p>

THE STORY SO FAR

Allen is a twenty-four year old designer who has just been accepted to his dream program at Carnegie Mellon University. He is very excited about the year ahead. However, between his acceptance and the start of semester in September, Allen has to manage making his way from California to Pittsburgh and settle down in a place.

GOALS AND EXPECTATIONS

Moving is stressful; Allen tries to spend the least amount of time on moving because he works full time and wants to spend his time with his family. He expects information and help from Carnegie Mellon in case of questions and concerns.

Design Process

3.2 Modelling & Reframing

We noticed that at the current states, the student's experience of getting to Carnegie Mellon is characterized by a mixture of positive and negative feelings. We identified three areas of notable concern: housing, course registration, and getting around in Pittsburgh. We felt that housing offered a fertile ground for exploration because every student seemed to have a horrible housing story. From here on we embarked on the arduous process of reframing the problem.

Design Process

3.2 Modelling & Reframing

REFRAMING THE PROBLEM

FIRST TRY: (Issue) people feel burdened to make a decision with consequences. (Reframe) people do not make decisions but are assigned to houses.

SECOND TRY: (Issue) the move in process has a lot of painful bumps (problems with housing, utilities, and unexpected issues). (Reframe) bumps are not painful but opportunities for new/fun experiences.

THIRD TRY: (Issue) people have a hard time disposing of and buying furniture. (Reframe) people do not own furnitures but rent them for a certain period of time.

FOURTH TRY: (Issue) people make decisions on limited resources of info, thereby limiting their option. (Reframe) people have more resources/information.

FIFTH TRY: (Issue) housing is a pain. (Reframe) housing is fun/exciting.

Design Process

3.2 Modelling & Reframing

We liked our second try the best and decided to go with this direction
(Issue: the move in process has a lot of painful bumps (problems with housing, utilities, and unexpected issues. **Reframe: bumps are not painful but opportunities for new/fun experiences.** We ideated 3 possible solutions that could be explored to solve this problem.

Design Process

3.2 Modelling & Reframing

SOLUTION GENERATION

SOLUTION 1: ON CAMPUS SHOWERS/LOCK/STORAGE

Frances doesn't have hot water at her house. Frances goes on a website and signs up for a slot in a CMU locker room to shower, etc. Frances now has access to utilities while her landlord fixes the water.

SOLUTION 2: TRUCKS TO MOVE FURNITURE

Charles bought a computer desk from IKEA but he doesn't have a car and thinks the shipping fee is too high. Charles signs up for CMU trucks which offers pickup and delivery at a cheaper price. Charles now doesn't have to worry about moving.

SOLUTION 3: AIRBNB AMONG CMU STUDENTS

Allen can't move into his apartment: the wall fell off. Allen signs up for CMUxAirBnB through a website. Now, Allen pays \$x to stay with another student for two nights while his apartment is fixed.

Design Process

3.2 Modelling & Reframing

SOLUTION GENERATION

SOLUTION 1: ON CAMPUS SHOWERS/LOCK/STORAGE

Frances doesn't have hot water at her house. Frances goes on a website and signs up for a slot in a CMU locker room to shower, etc. Frances now has access to utilities while her landlord fixes the water.

SOLUTION 2: TRUCKS TO MOVE FURNITURE

Charles bought a computer desk from IKEA but he doesn't have a car and thinks the shipping fee is too high. Charles signs up for CMU trucks which offers pickup and delivery at a cheaper price. Charles now doesn't have to worry about moving.

SOLUTION 3: AIRBNB AMONG CMU STUDENTS

Allen can't move into his apartment: the wall fell off. Allen signs up for CMUxAirBnB through a website. Now, Allen pays \$x to stay with another student for two nights while his apartment is fixed.

We decided to go with the third solution. Basing off this direction, an improved future is envisioned through another customer journey map. This map takes Allen, our CMU student, through a housing crisis in which he utilizes the proposed solution to save himself. This new journey map is shown on the next page.

Allen's

Housing Experience and How He Saves Himself from Crisis

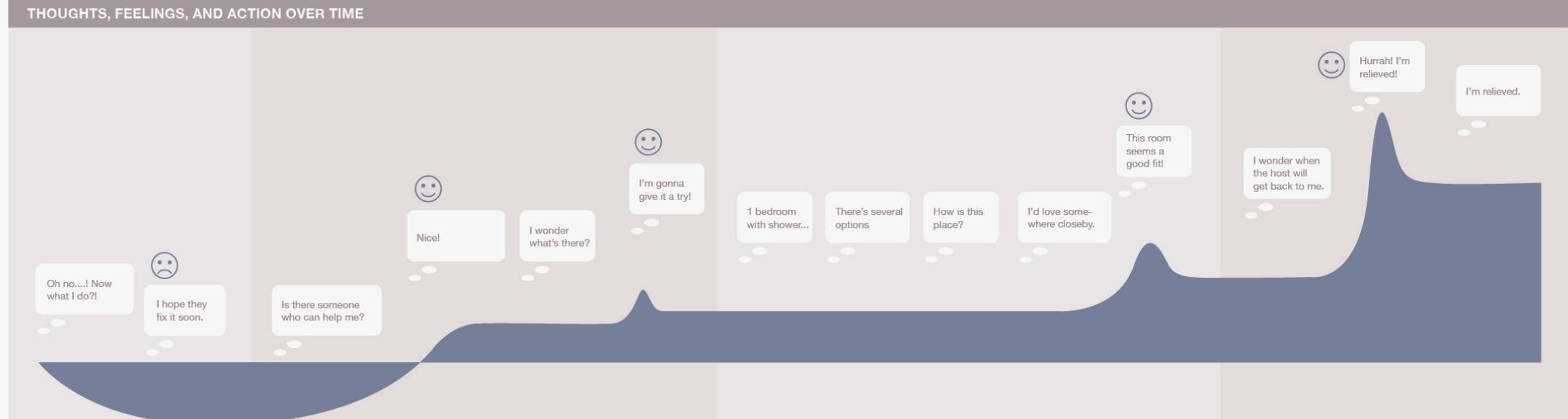
THE STORY SO FAR

Allen has moved into his place for a weeks. On a hectic day at Carnegie Mellon, he finds out that his roof is leaking. Feeling overwhelmed and anxious, now Allen has to scramble to find a place to stay while his roof is getting fixed.

GOALS AND EXPECTATIONS

Find a decent place to stay for the duration of roof repair.
Find a solution fast and stress-free.
Feel safe and well.

THOUGHTS, FEELINGS, AND ACTION OVER TIME



EMERGENCY OCCURS

Finds out the roof is leaking on a weekday

Notifies landlord to fix



LOOKS FOR PLACE TO STAY

Remembers about emergency assistance offered at CMU

Searches for CMU's emergency relief program



Looks on the emergency website for available assistance
Clicks on "get housing"



SELECTS OPTION

Clicks through filters according to preference



Discovers and views options



Reads details and reviews



Compares & contrasts housing options



Selects option and makes reservation



RECEIVES CONFIRMATION

Waits for host confirmation

Receives confirmation via email or phone

Packs and goes to new place



BREAKDOWNS AND OPPORTUNITIES

B: A housing emergency occurs unexpectedly

B: Student needs to find resources and deal with the issue

O: Student gets connected with CMU's emergency relief program

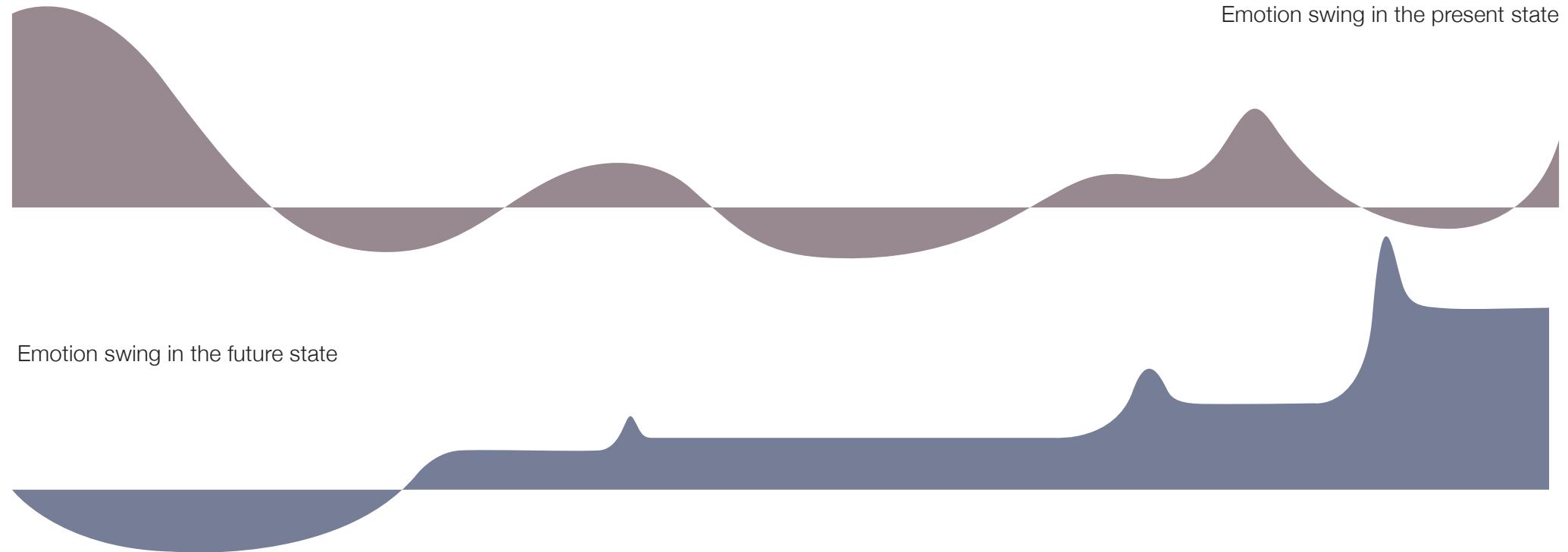
O: Student finds relief solutions based on preference and need

O: Student is further assured through community and peer reviews

O: Student is relieved of emergency through peer support

Design Process

3.2 Modelling & Reframing



As can be seen on the left, Allen's emotions have improved significantly in this envisioned future. He experiences less swings in positive and negative feelings, and progresses relatively stable towards a positive state.

Design Process

3.3 Scenarios

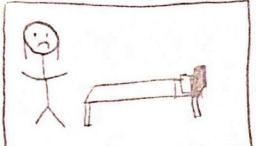
Having settled on a solution, we tested it with three different scenarios depicting individuals and their experience with the design solution. We focused on “**see, think, do**” as means to illustrate the different dimensions of each sequence in the scenario.

Design Process

3.3 Scenarios

Diana Uses Urgent CMU Housing

Diana has a spare bed in her house that no one is currently using.



I wish I had some way to use this; now it just takes up space.
She decides to check out the Urgent CMU Housing website.



This is great! I'm getting so many requests.
Diana gets paid by students who stay with her - an easy source of extra cash with minimal effort.

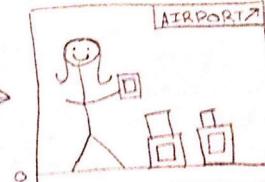
Jenna uses Urgent CMU Housing

Jenna's flight was delayed and she can't pick up her keys or move into her house.



Where can I stay for the night?
Jenna logs onto Urgent CMU Housing.

Jenna finds a professor with an extra room who will let her stay.



I'll get my keys tomorrow and stay with a professor tonight.
Jenna takes an Uber to the professor's house for the night.

Allen uses Urgent CMU Housing

Allen can't move into his apartment because his roof is leaking.
I need somewhere to stay while this is fixed.

Allen logs onto the Urgent CMU Housing website.

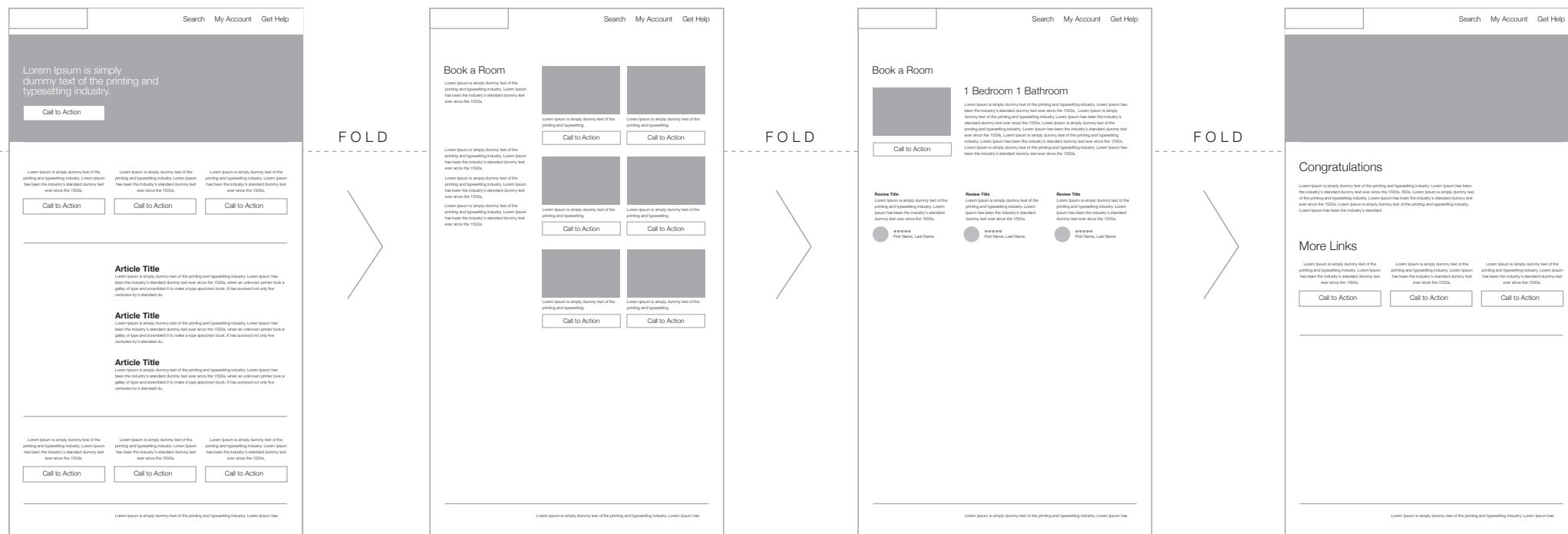
Allen enters his information to find a suitable match on a cluster computer.
Now I at least have somewhere to stay tonight.
Allen matches with another student who he can stay with for a few days.



Design Implementation

4.0 Wireframes

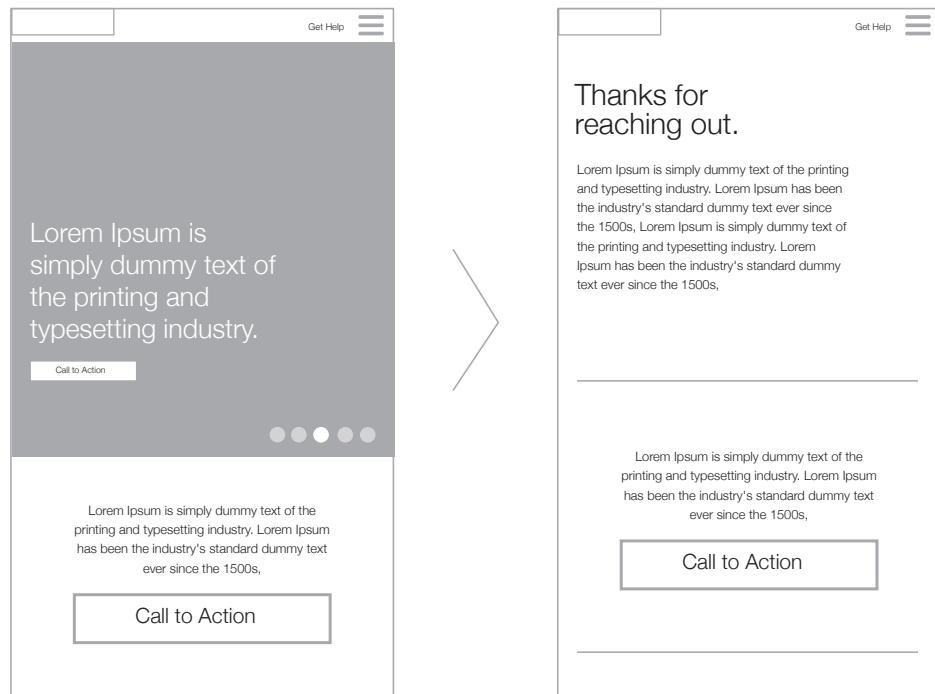
Desktop



Design Implementation

4.0 Wireframes

Mobile

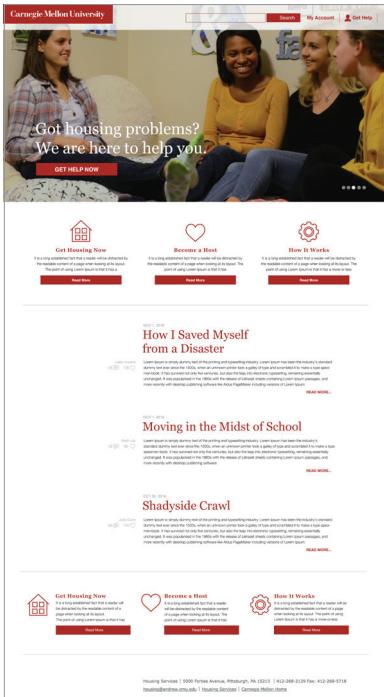


Design Implementation

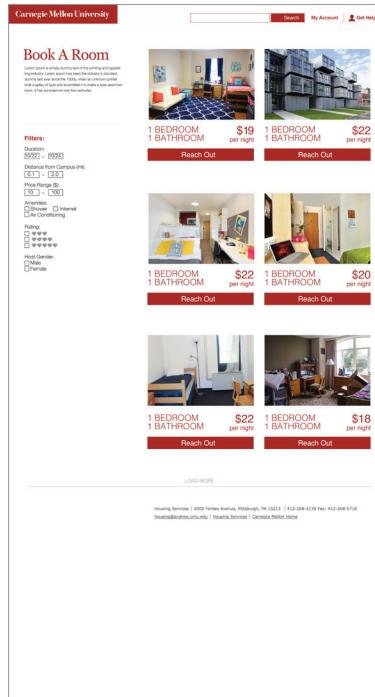
4.1 Design Mock Ups—Desktop

Invision Link <https://invis.io/8B8YPWN4T>

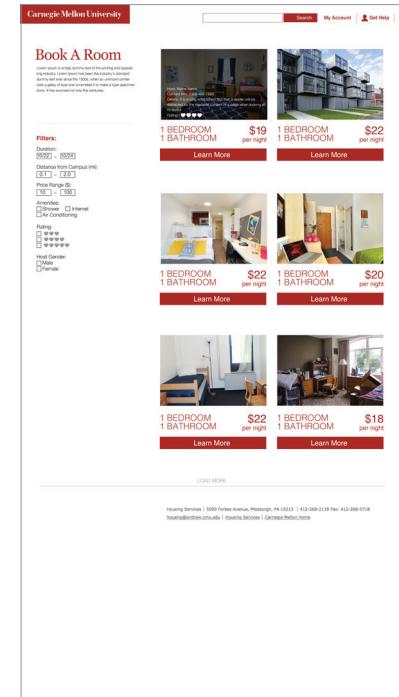
① Home Screen



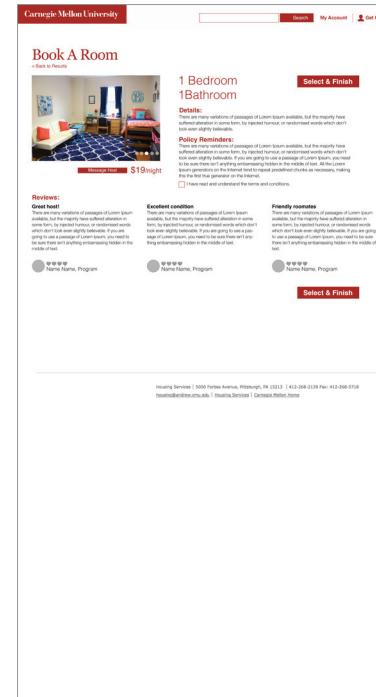
② Book a Room



③ Room Info—Quick View



④ Book a Room



⑤ Confirmation

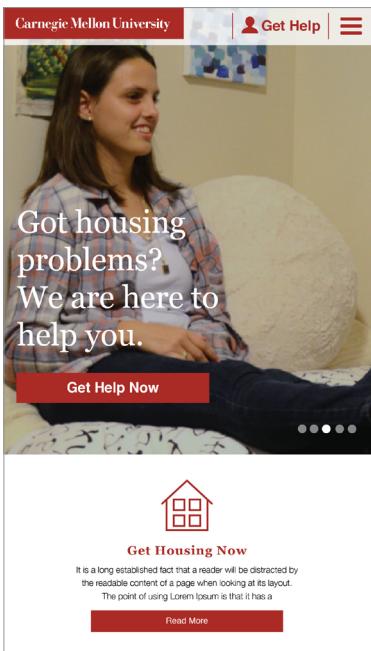


Design Process

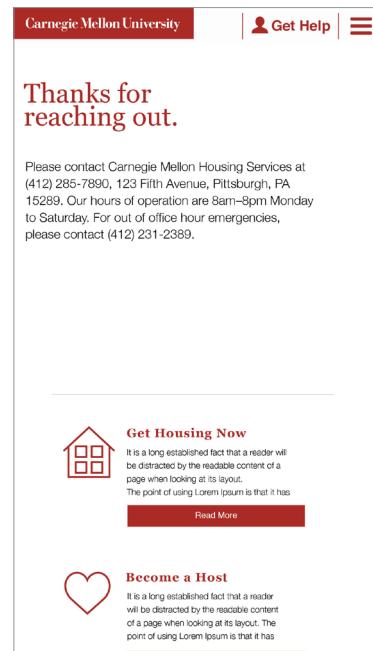
4.1 Design Mock Ups—Mobile

Invision Link <https://invis.io/4A8YQ135M>

① Home Screen



② Get Help



Design Process

5.0 Learnings & Reflections

Currently, the design visions focus on the concept of “emergency relief”, with secondary themes of “community” and “fun” hinted through blog posts on the homepage, UX features such as likes and comments, as well as usage of terms such as “reach out”, “adventure”, and “disaster”. To push the project further, we would spend more time investigating elements of fun and excitement. This will not only help support reframing of the problem statement, but also differentiate the platform from regular booking websites and leverage the value of peer support in emergency situations.

Design Process

5.0 Learnings & Reflections

One thing we learnt through this project: it is helpful to look at the reframing process by asking “what if” questions. “What if housing experiences were fun instead of anxiety-inducing?” “What if students are guaranteed a place to live in all instances of emergency?” “What if students are relieved of the responsibility of finding their place.”

Asking “what if” questions freed us of pre-conceived notions and opened up new streams of possibilities. It also serves as a great brain-storming phrase that gives us something to rest on while gazing into the unknown.

That's all we have.
Thanks!