Food &

Food as the Gateway to Community Engagement and Ecological Thinking

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Acknowledgments

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Abstract

Responsible for 60% of biodiversity loss (WWF 2018), our food system is in dire need of re-imagination and reconstruction. Besides its ecological impacts, food carries within itself the traditions of a family, a community, or a region. It sustains our livelihood, drives conversations, and evokes memories. Regardless of our social or political backgrounds, we are all connected to and through food in one way or another. It is thus a most promising medium to not only raise awareness about ecological matters but also encourage climate actions. Through the application of participatory design, this project aims to gain insights into individuals' domestic food practices and the challenges they encounter in adopting a more sustainable lifestyle. The findings gathered through a series of exploratory activities inform the development of an actionable-knowledge-sharing platform in which participants learn from and contribute to the collection of sustainable food practices across cultures. The proposed collaborative community will serve to empower environmental advocates to make concrete impacts within the current food system.

Keywords

participatory design | design for sustainable behavior | domestic food practices | ecological thinking | community engagement | knowledge sharing

Introduction

As a witness to the environmental degradation in my country, Vietnam, I came to understand the intensive and extensive influence of ecological crisis. Nevertheless, for the longest time, I'd always associated the issue with politics and economics rather than with something as simple as food. In my youth, food was invisible to me; it was either handled by another person–my mom, the school's cafeteria, some street vendor–or purchased and consumed in a quick and dirty manner, merely to cross one of the routines out of my schedule. Not until I lived independently and started cooking for myself did the whole process of bringing food to the table manifest itself in a new light before my eyes. The more I looked into the food industry and its impact on the environment, the more convinced I became that food could turn into the medium conveying the message of sustainability to the public and encouraging them to take action.

CHAPTER 1

Groundwork

Context & Framing

Food & Ecological Sustainability

One of my first encounters with food and sustainability was through Dan Barber's *The Third Plate* (2014). With his long-term mission of transforming food and farming, Dan Barber rose to prominence as a pioneering chef that blurred the line between dining and educational experiences.

His book, *The Third Plate*, documents his professional growth in relation to his advocacy of sustainability and explains the rationale behind the way his restaurant is run. In the context of ecological crisis and food insecurity, the author recognizes his responsibilities to not only satisfy a customer's appetite but also use his culinary expertise to reveal how our negligence of the food source and exploitation of nature disrupt the ecosystem. The industrial farming system, or more specifically, monoculture, has deteriorated the condition of our natural resources, which in effect, deprives our food of sufficient nutrition and rich flavor.

Barber's compelling stories point out the undeniable correlation between our food-related activities and the impoverishment of the global natural landscape. However, our food system and its ecological impacts are too vast and complex for a one-size-fits-all solution; its reconstruction requires the collective effort from all sides including community members, policymakers, business leaders, etc. As a communication and interaction designer, I was most concerned about how to employ my knowledge and skills in tackling the subjects of food and sustainability. Thus, the majority of my groundwork was dedicated to exploring potential ways of using food as a medium to promote environmental initiatives.

sustainable development

n.

development that meets the needs of the present without compromising the ability of future generations to meet their own needs

(World Commission on Environment and Development, 1987)

Linear vs. Ecological Thinking

For those, like Barber, with deep engagement with the natural world and profound understanding of the organisms' interconnection and interdependence, linear thinking may be deemed to pose a danger to ecological harmony. Its focus on the cause-and-effect relationship and the multiplication of the same model for the same desirable result fails to acknowledge the context within which an element exists, thus neglects the ecological impacts of one action.

Unlike linear thinking, ecological thinking proposes a rather broad perspective of the ecosystem. According to Donella Meadows, a system isn't just a collection of things; it is an coherently organized and interconnected set of elements (2009). This holistic viewpoint will inform more eco-centric, as opposed to efficiency-oriented, design solutions and facilitate the re-imagination of our food system and the restoration of our ecological balance.

linear thinking

n.

a thinking mode that focuses on the connection between cause-and-effect event pairs

ecology

n.

the branch of biology dealing with the relations and interactions between organisms and their environment, including other organisms

("ecology," n.d.)

ecological thinking

n.

the branch of systems thinking that emphasizes the interconnectedness and interdependence between organisms and their environment

Nevertheless, the path to fulfilling this objective poses mounting challenges. While elements are easily identified, the interconnections among elements aren't obvious. Therefore, ecological thinking requires the resistance against our instinct to make snap judgments and look beyond the visible to uncover the invisible. This ability is most likely to be acquired through intensive training and persistent self-discipline. Moreover, ecological thinking involves the capacity to think in complexity because "systems can be embedded in systems, which are embedded in yet other systems" (Meadows, 2009, p. 12). This, however, may cause cognitive overload and reduce the audience's information intake. The application of ecological thinking does not bring about immediate results as it takes long-term planning and careful calculation to avoid unfavorable consequences. The slow problem-solving process, unfortunately, does not align with the sentiment of our efficiency-driven society.

Bearing all of the aforementioned difficulties in mind, I hope to deliver the design solutions that not only prompt my audience to think far and broadly, but also speak to their day-to-day needs and challenges.

Community Engagement

The challenges in adopting ecological thinking could be mitigated through encouraging the public's participation in social activities, which allows them to step out of their enclosed bubble and observe how their own action affects the surrounding environment. In his paper *When ANT meets SPIDER: Social theory for arthropods*, Tim Ingold illustrates this interdependent relationship through the analogy of a butterfly and a fish.

> *True, it is not the butterfly alone that flies but butterfly-in-air and not the fish alone that swims but fish-in-water. But that no more makes the butterfly a fly-air hybrid than it makes the fish a fish-water hybrid. It is simply to recognise that for things to interact they must be immersed in a kind of force-field set up by the currents of the media that surround them. Cut out from these currents—that is, reduced to objects—they would be dead (p. 213).*

community

n.

a group of people with common characteristics or interests co-existing in the same physical or virtual space

In this sense, community engagement has the potential to unveil the complex interconnections through the immersion into everyday interactions.

community engagement

n.

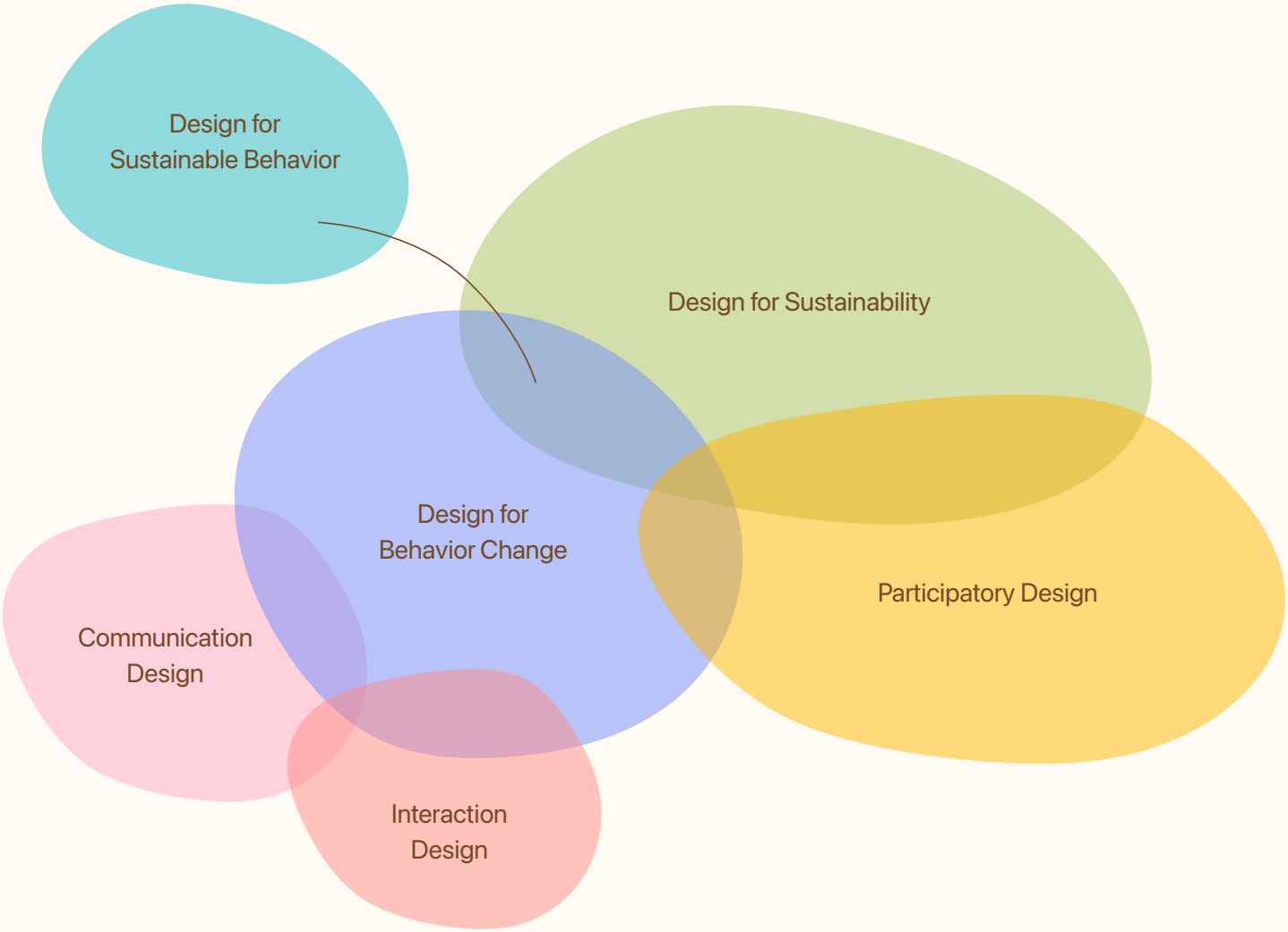
citizens' commitment to community and the willingness to take actions to solve problems or participate in activities that make our community better

(Vancouver Foundation's Connect & Engage: A Survey of Metro Vancouver 2017)

Nevertheless, community engagement is not everyone's cup of tea. My early investigation elicited the role of food in connecting individuals with their physical living space, activity space, and abstract space—the space of memory, emotion, and social relations. Among these aspects, the element of community engagement fit rather loosely in the bigger picture; participants expressed their reluctance to interact with their neighbors, which resulted in their distrust in them. This attitude may deprive those individuals of the opportunity to become active agents of change. In time of ecological crisis, such dispersed social

energy would be detrimental to the global sustainability movement. Therefore, my investigations looked for ways of exhibiting the relation between gathering the collective efforts to drive the sustainable initiatives forward.

Research Methods



Design for Sustainable Behavior

1. Design for Sustainability

Design for Sustainability (DfS) was born out of the concerns about the impact of design and its production on the ecological environment, as opposed to the consumerist design which took dominance during the 90's and used styling as a means to appeal to the market and increase consumption volume. In Ann Thorpe's *The Designer's Atlas of Sustainability*, DfS includes the 'theories and practices for design that cultivate ecological, economic, and cultural conditions that will support human well-being indefinitely' (2007, p. 13). Building on top of this definition, I'd like to add that because human well-being depends on the well-being of the ecosystem, the stewardship of human beings' welfare is equal to the protection of the ecosystem and all other-than-human beings existing within it. Over the course of its evolution, DfS has expanded from a technical and product-centric focus towards system innovations and transitions (Ceschin & Gaziulusoy, 2016, p. 118). In this sense, sustainability is not just "an add-on to the design [but] must be integral to that design, and design that design in terms of its goals and ambitions (Chick & Micklethwaite, 2011, p. 116). With its wide spectrum of applications, I looked into incorporating ecological thinking and sustainable behaviors at the societal level.

Design for Sustainability

n.

theories and practices for design that cultivate ecological, economic, and cultural conditions that will support human well-being

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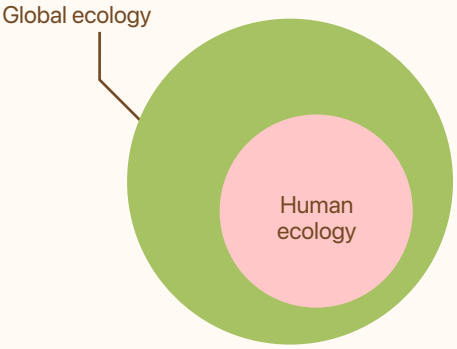
Model for Ecological Thinking

Ecological thinking governs all human activities because they have an impact on global ecology and vice versa.



(White, St. Pierre, & Belletire, 2013, pp. 1–3)

2. Design for Behavior Change

Since it was first published in 2009 by Dr. B.J.Fogg, founder of Standford University's Behavior Design Lab, the Fogg Behavior Model (FBM) has gained reputation among those who work in human-centered and persuasive design sector. Based on the science of human psychology, the model identifies three factors needed for a target behavior to occur: (1) motivation, (2) ability, and (3) triggers (2009, p. 1). Despite its significance in today's technological landscape, the FBM neither sets out to challenge the status quo nor addresses the contemporary ethical considerations of persuasive technologies. In his paper, Dr. Fogg explicitly mentions that "persuasion" refers to "attempts to influence people's behaviors, not attitudes" (2009, p. 1). This goal-driven approach could raise ethical concerns because it disregards the users' autonomy and has the potential to cross the line between persuasion and manipulation. As a result, while the FBM provides a useful framework to drive behavioral changes, I searched for a model that brought about long-term effects and involved users with the design process.

3. Design for Sustainable Behavior

Although my objective aligned the most with DfS, its wide range of discussed topics made it difficult for me to navigate the research. Meanwhile, DfBC focuses on behavioral changes without explaining the reasons for those changes to occur. DfSB manages to solve the challenges within these two fields by merging them together. Unlike the FBM, which neglects the users' autonomy,

HyunJae Daniel Shin and Richard Bull's framework encourages the internalisation of behavioral change by incorporating empowerment, information, and motivation (2019). In this model, the users build their own connection with environmental matters through feedbacks and feedforwards,which describes the "effect of perceived characteristics of availability, functionality and usability acquired from an artefact" (Matsumura, 2013, p. 70). Because their adoption of sustainable behaviors is rooted in internal motivation, it requires less reinforcements and generates a rather rewarding feeling. This model served my research much better than the FBM because the users could customize it to their unique needs and challenges without having to rely on the top-down decision-making.

Participatory Design

Participatory design had been at the crux of my research from the beginning because despite my keen interest in improving the public's ecological literacy, my knowledge alone fell short in delivering sufficient education of environmental issues. Instead of relying solely on my limited resources, I approached those sharing the same concerns and found out that a long history of sustainable food practices had already existed and been waiting to be discovered and spread. Hence, my objective shifted from disseminating educational materials about food and sustainability to creating a platform where the audience could contribute their knowledge, open discussions, and get involved in actionable initiatives.

Participatory design stems from the belief that each individual has certain level of knowledge, expertise, and creativity to offer. Thus, it aims at developing methods to unearth the hidden assets and give the users the authority to shape and influence the final results. That means their presence should be introduced not only "at the moment of decision" but also "at the moment of idea generation" (Jungk, 1972, pp. 121–122). In this regard, the participatory approach flattens the hierarchy between designers and users and enables robust collaboration. Additionally, the inputs from the users help validate or invalidate assumptions at the early stage of project development.

For my research, the participatory approach gave me insights into the participants' understanding of the relationship between food and environmental issues and pointed to possible sources of influence in their domestic food practices. Their conversations helped me refine the scope of the research and inspired the design outcomes.

Participatory Design

n.

an approach to design that attempts to actively involve the people who are being served through design in the process to help ensure that the designed product/ service meets their needs

(B.-N. Sanders & Stappers, 2012, pp. 19)

Empathic Design

The core value of participatory design lies in the commitment to understanding the users' pain points and needs in order to deliver relevant products. In order to attain that goal, designers need to develop a sense of empathy with their users. In the context of my research, empathy is an attitude that encompasses all participatory activities starting with active listening and allowing the participants to express their suppressed thoughts and feelings. According to IDEO's article, "Empathy on the Edge," empathy is an innate ability and could be honed through "deliberate practice" (2014, p. 3). However, in her book, *Health Design Thinking*, Ellen Lupton warns that designers "can never really wear another person's shoes" and that "focusing exclusively on empathy can lead to separating 'us' (designers) from 'them' (users)"(Ku & Lupton, 2020, p. 23–24). Thus, the interaction between designers and users should be integrated throughout the entire design process for constant validation and revision.

empathy

n.

a form of understanding in which the empathizer attempts to understand somebody else's situation or perspective, and tries to predict how that person would experience and react to events or changes in conditions

(B.-N. Sanders & Stappers, 2012, pp. 240)

Information Design

Figure 1.
Communication model describing the knowledge boundaries between a messenger and a receiver

One of the main focal points of my research dealt with aligning the investigated subjects with my current design practices grounded mostly in communication and interaction design. As the research evolved, I began to realize a lot of food and sustainability issues had some correlation with how information was formed, exchanged, and turned into concrete actions.

Among the scholarly resources, my research resonates most with Young-ae Hahn's paper, *Communication of Food Sustainability* (2014) in which Hahn defines the dynamic between the messenger, the receiver, and the message based on the types of knowledge, information flow, and communication contexts. Here she draws attention to the notion of "knowledge boundaries" shaped by a person's (i) background knowledge, (ii) personal circumstances, (iii) attitudes shaped by the knowledge and circumstance, and (iv) current goals and interests (p. 269). Designers should bear in mind these factors when introducing foreign concepts and practices to individuals or communities with established knowledge and principles. Neglecting the communication contexts may

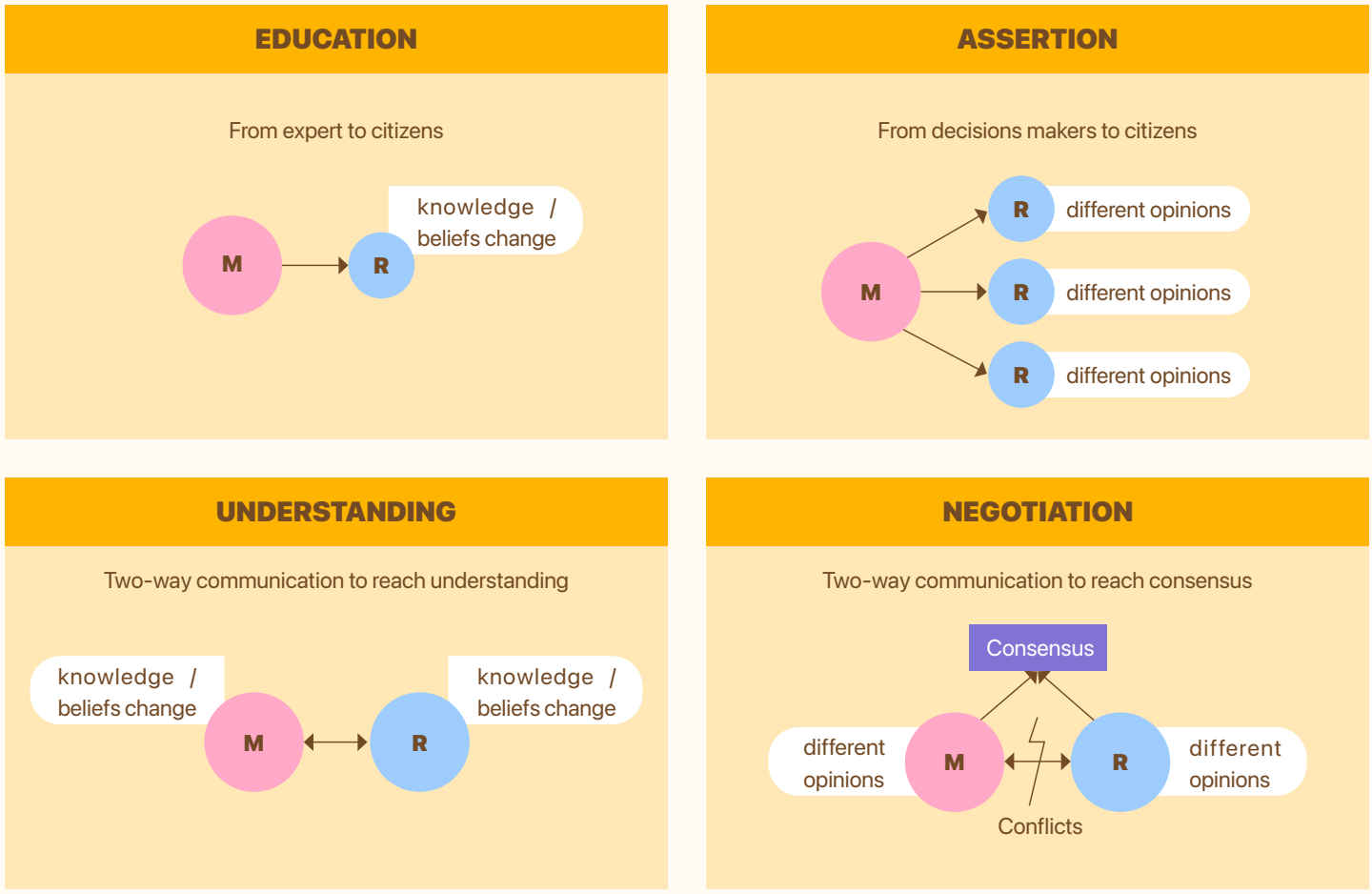


Figure 2.
Gudowsky and Bechtold's four types of communication activities

lead to the audience's resistance to new concepts and the failure in implementing innovative invention.

The article also refers to Gudowsky and Bechtold's four types of information flow as summarized in Figure 2.

Although the model of *messenger—message—receiver* has existed for quite some time, it gains a new meaning when applied specifically to the realm of communication of food sustainability. Based on the framework suggested in the article, I situated my research within the realm of understanding and negotiation where participants learned how to show "what values they can create for others" and worked towards the same goal (Hahn, 2014, p. 271).

In order to achieve understanding and consensus in communication, the information needs to be presented in the way that invites reaction and conversation. Joanna Boehnert's article, *Ecological Perception: Seeing Systems* (2014), touches on the application of visual communication in elucidating the complexities and subtleties of the interrelationships within the ecosystem. This paper reaffirms that visual communication as a form of metaphor goes beyond laying out the facts; it has the potential to bring out emotions, challenge assumptions about reality, and encourage positive changes. The author also puts emphasis on the role of designers in facilitating the audience's process of translating information into knowledge, and I may add, action. Because deciphering visual communication and acquiring visual intelligence—the ability to perceive, analyze, and understand the logic of visual messages—are not innate, these aptitudes need to be trained and nurtured (p. 428).

One of the points that Boehnert omits in this paper is the visual representation of network systems usually runs the risk of causing cognitive overload, a condition that occurs when the information input exceeds the audience's processing capacity. Unlike the traditional static visual representation, the emergence of interactive information graphics allows information designers a wider range of visual expression and the audience the freedom to navigate through a wealth of information. In his article, *Interactive Information Graphics: A framework for classifying a visual genre* (2017), Wibke Weber lays out the strategies in producing information graphics and forging the relationship between the presented information and the audience. Here, he introduces the notion of dramaturgic structure, "the framework of an infographic provided to the user by the producers" and its two modes—linearity and nonlinearity (p. 247). While a linear structure ensures a directive top-down storytelling from designers to the audience, "a highly interactive nonlinear dramaturgy requires a 'bottom-up-input from the user" (Ryan, 2006, p. 99). In the case of my knowledge-sharing platform, the nonlinear approach made a better fit in optimizing the audience's authority over content creation and discovery.

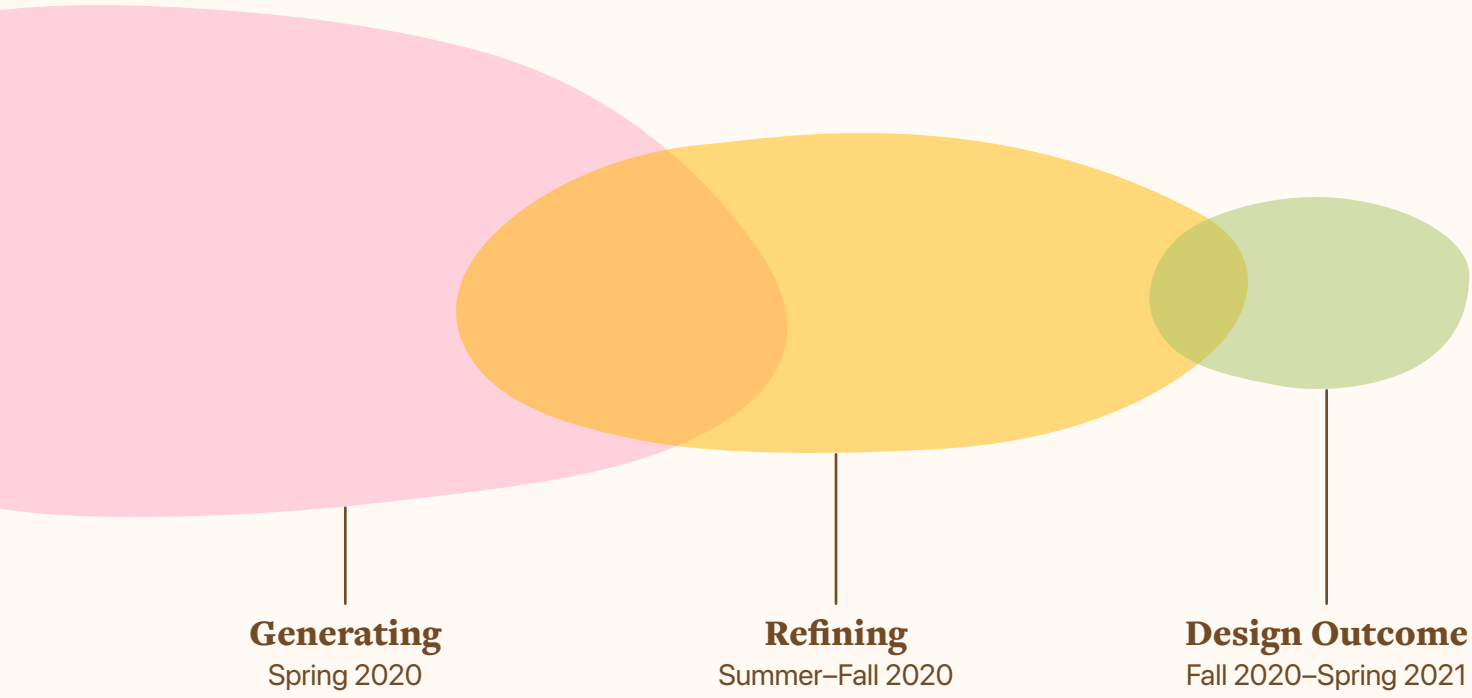
Community-based Project

The participatory approach not only gives the users the chance to voice their opinions but also kindles their creative and collaborative spirit. As mentioned before, my early research took notice of the participants' reluctance to interact with their neighbors and partake in community activities. The phenomenon of social withdrawal jeopardizes the potential of social innovation.

Thus, in order to tackle such a complex subject as developing sustainable food practices, it is of utmost importance for a designer such as myself to come up with a strategy that could gather these isolated little drops of water to "make the mighty ocean" (Carney, 1845). In this regard, I looked to Ezio Manzini—a leading thinker in design for sustainability and social innovation for inspiration. In what he calls "the contemporary post-traditional, highly connected societies," the inhabitants of this fluid world can be seen as "people free of the previous social ties but nestled in a mesh of interactions taking place in both the physical and the digital worlds" (Manzini, 2018, p. 162).

Indeed, even for my research participants with low levels of community engagement, they were often connected with the outside world via the means of digital social networks. Without the geographic limitation, people could choose to receive and generate information and ideas in their own way. We have witnessed many successful examples of how the actions and decisions made in the virtual world could be translated into those in the real world. For instance, Ecosia, a tech company based in Berlin, Germany, manages to breed two seemingly irrelevant aspects—digital privacy and environmental protection—into an interesting product—a secure search engine that plants trees. As stated on its homepage, Ecosia promises to use the ad revenue from its users' searches to plant trees where they are needed the most. Products and services like Ecosia have transformed the traditional roles of consumers or users into the actors in solving problems.

With my background in communication and interaction design, I saw Manzini's proposal of "the creation of the connected loneliness of solitary individuals" as an inspiration to gather the collective efforts for the promotion of food sustainability using the digital infrastructure.



CHAPTER 2

Explorations

Generating

Spring 2020

My design process started with what Steve Portigal calls *a bland curiosity*—a simple quest to explore my fields of interest and learn from my participants without the commitment to any particular design outcome (2013, p. 4). Each participatory activity was an experiment of organizing and engaging a group of people in the conversation about food and sustainability using a variety of design methods. The exploratory approach allowed me to investigate multifold components of the research development:

- What most pressing aspects of food and its ecological impacts should be addressed?
- Who is my target audience and how do I gain access to them?
- How do I create workshops conducive to organic conversation and robust idea generation?
- What type of dynamic do I want to form between the participants?
- How do I employ my design skills to deliver a relevant solution?

The insights gained from this phase informed a more concerted series of participatory activities in the refining stage.

Your Recent Meal

Your Recent Meal
A game activity designed to encourage teams to challenge each other to think about the larger contexts surrounding their meals.

Objective

A game activity was designed to encourage teams to challenge each other to think about the larger contexts surrounding their meals.

Design process

The design process takes place as shown in figure 3.

Analysis & Insights

A skill that I took away from this project was organizing a group activity. Because I had never created participatory activity before, it was stressful to stand in front of approximately 20 people, to make sure the game was well understood, and to open up for random responses. As the monitor of the activity, I needed to stay sensitive to the participants' reactions and manage the energy of the room.

Additionally, designing a functional and interesting game brought up certain challenges. In order to get to more thought-provoking questions, more rounds needed to be played, which paradoxically made the game repetitive and boring. Therefore, a form of guidance to prompt active engagement at the very beginning was necessary.

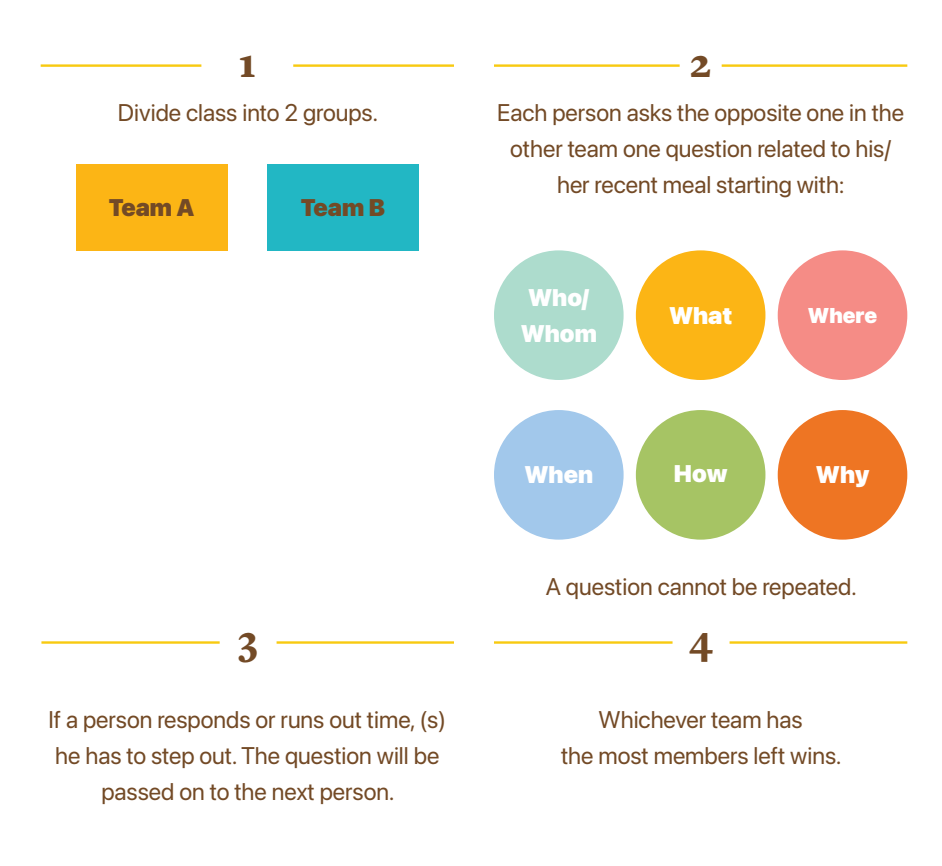


Figure 3.
Infographic describing the design process of *Your Recent Meal* activity

Moreover, the activity created unnecessary competitiveness which could trigger a sense of humiliation and run against the original idea of establishing an inclusive and welcoming community. For future projects, I created activities that leaned more towards co-creation because it gave more weight to participants' inputs.

Draw Your Kitchen

Draw Your Kitchen
A drawing-and-sharing activity prompting participants to reflect on their interaction with food and with the community in which their food was circulated.

Objective

I investigated the relations between food and:

- a personal idea of it
- physical space—kitchen and house
- community: the space within which the house was situated

and the role of technology in strengthening the sense of community

through a drawing-and-sharing activity that prompted participants to reflect on their interaction with food and with the community in which their food was circulated.

Design process

The participants were asked to draw the layout of their kitchen on a square. From there, the drawing expanded to other sections of their living space. Building on top of the first layer, the participants described their typical day, how they moved around the space, and how they interacted with food.

Analysis & Insights

The simultaneous actions of drawing and storytelling helped the participants recall the memories with more ease. Because most of the participants spoke English as a second language, sometimes there was no equivalent translation to certain concepts. Instead of having to describe them in words only, the participants could rely on the visuals to get the message across.

This activity played a significant role in shaping my design experiments because it brought more specificity to such complex and vast subjects as food and ecological sustainability. The examination of one's living space showed that food was integral to everyday activities, and domestic food practices reflected a person's understanding of and attitude towards the ecological impacts of the food industry. Therefore, it was reasonable to suggest that the systemic changes in the food landscape could start with facilitating individuals' transition to more eco-conscious food consumption behavior.

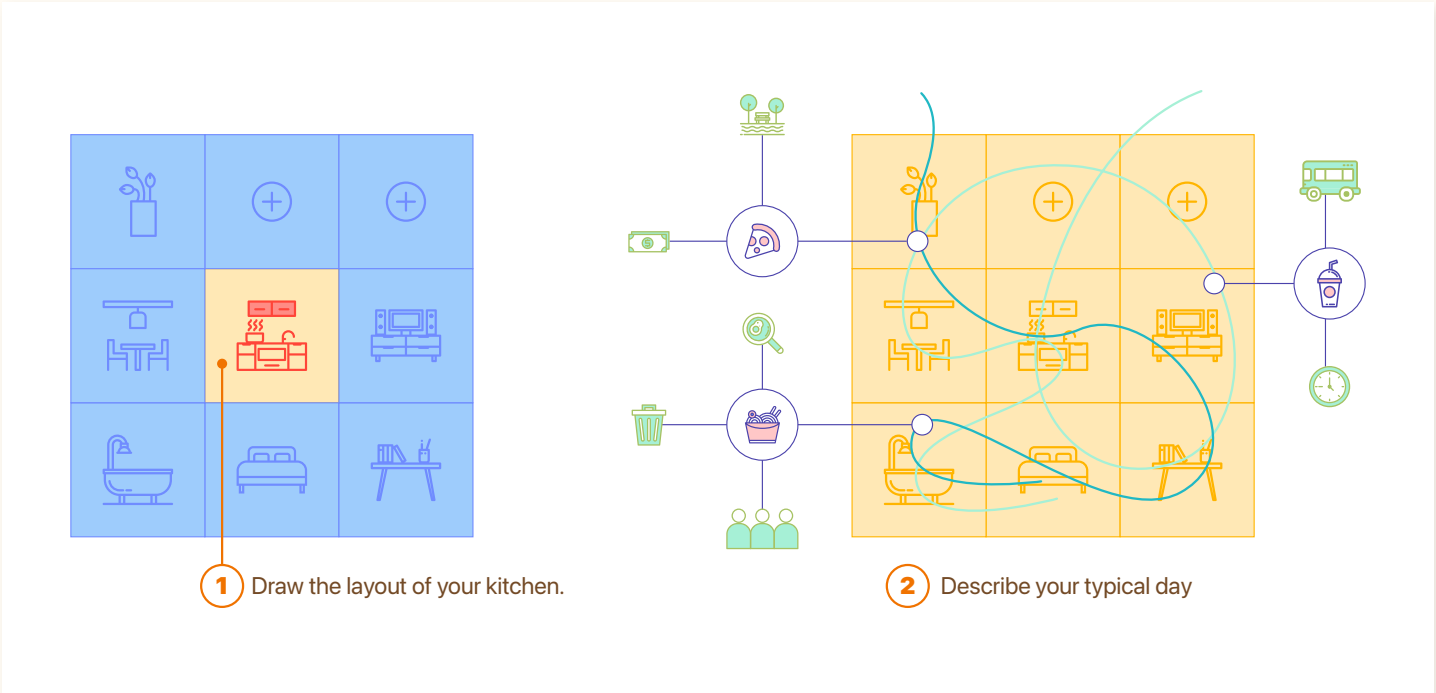


Figure 4.
Infographic describing the design process of *Draw Your Kitchen* activity

Figure 5.
Kitchen layouts sketched by participants

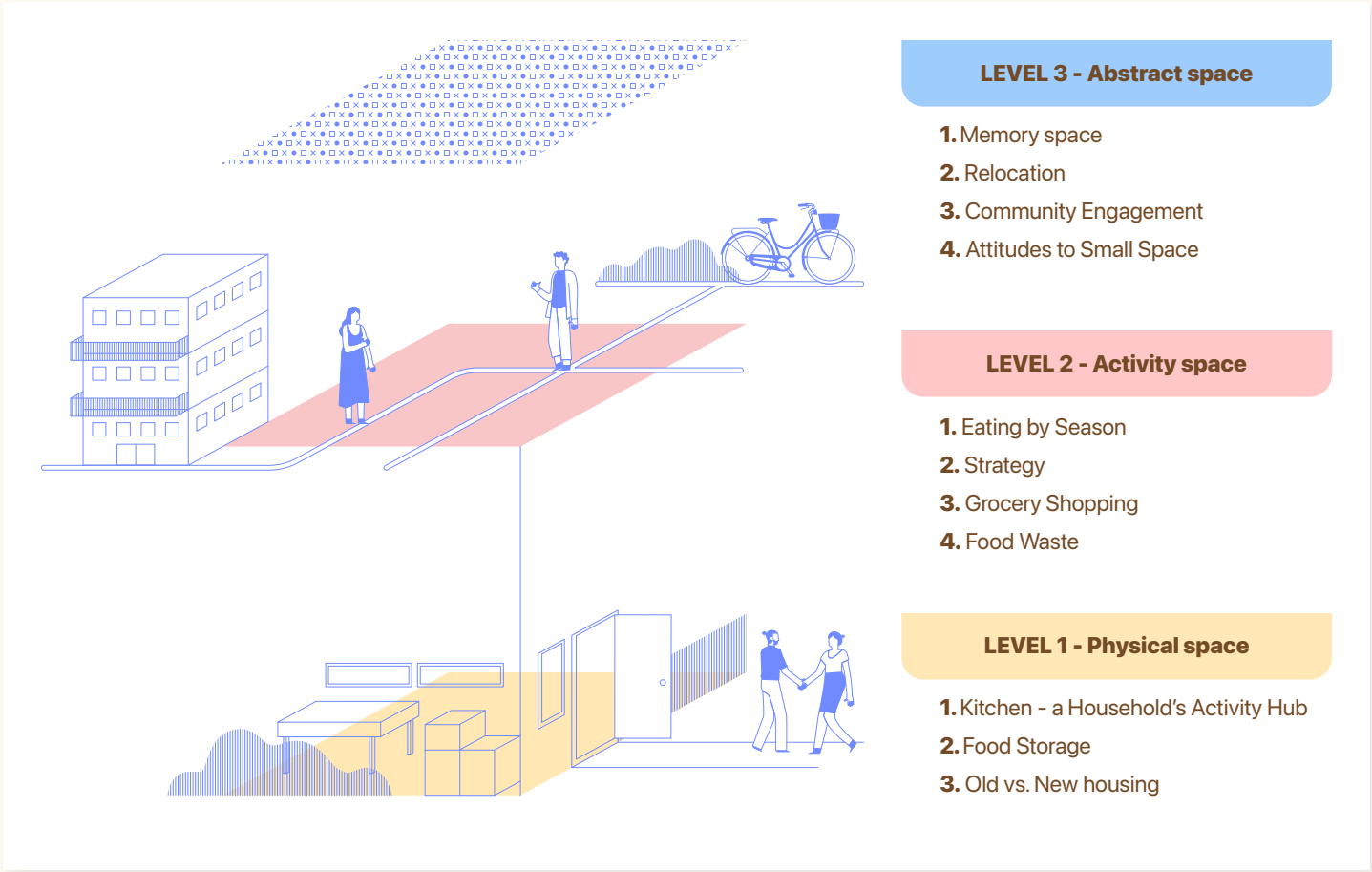


Figure 6.
Synthesis of the major themes discussed during *Draw Your Kitchen* activity

Food - Animate - Inanimate

Objective

I investigated the relations between food and:

- animate beings—living organisms such as human beings, animals, plants, etc.
- inanimate beings—non-living objects such as natural forces, natural objects, man-made artifacts, etc.
- space—a defined or undefined area containing and surrounding all beings

through a participatory activity that prompted participants to reflect on how food was interwoven in their daily life.

Food - Animate - Inanimate

A participatory activity for reflecting on how food was interwoven in everyday life.

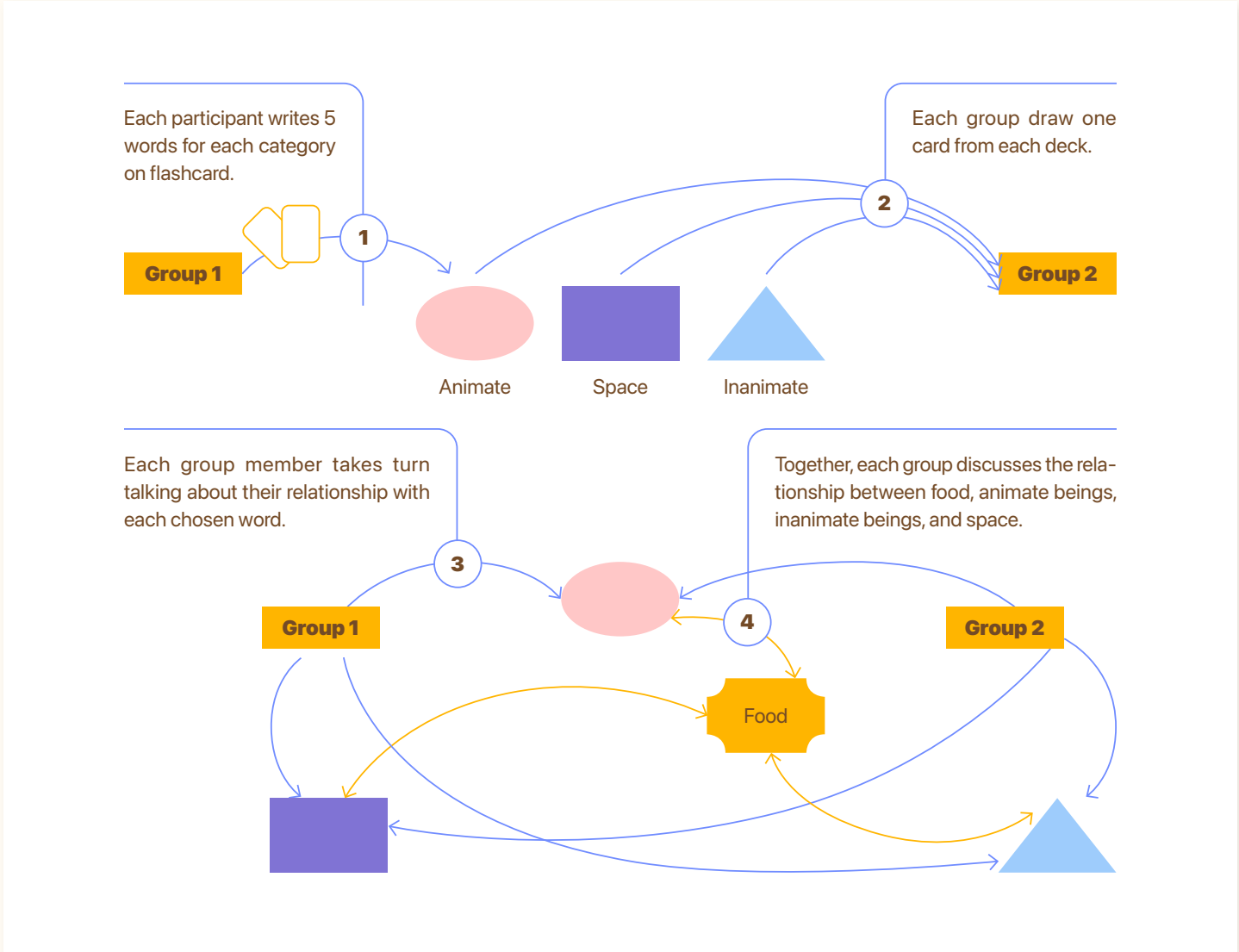


Figure 7.
Infographic describing the design process of Food

Design process

This activity was a further exploration of drawing and storytelling in sharing ideas. For the activity, the participants were divided into two groups, taking turns to talk about their relationship with food, animate beings, inanimate beings, and space. Unlike the first activity *Your Recent Meal*, the group division was not meant to instigate competitiveness, but rather enabled more focused conversations.

Analysis & Insights

Although the activity used forced combination as a method to generate unconventional ideas, the lack of structure and instruction resulted in divergence and confusion. Moreover, the terms *animate and inanimate beings* seemed too abstract and vague that the participants had a hard time grasping the concepts. This activity taught me about the importance of a thoughtfully designed framework for spontaneity and creativity to emerge. The lessons learned from this activity would be applied to subsequent ones with more defined structures.

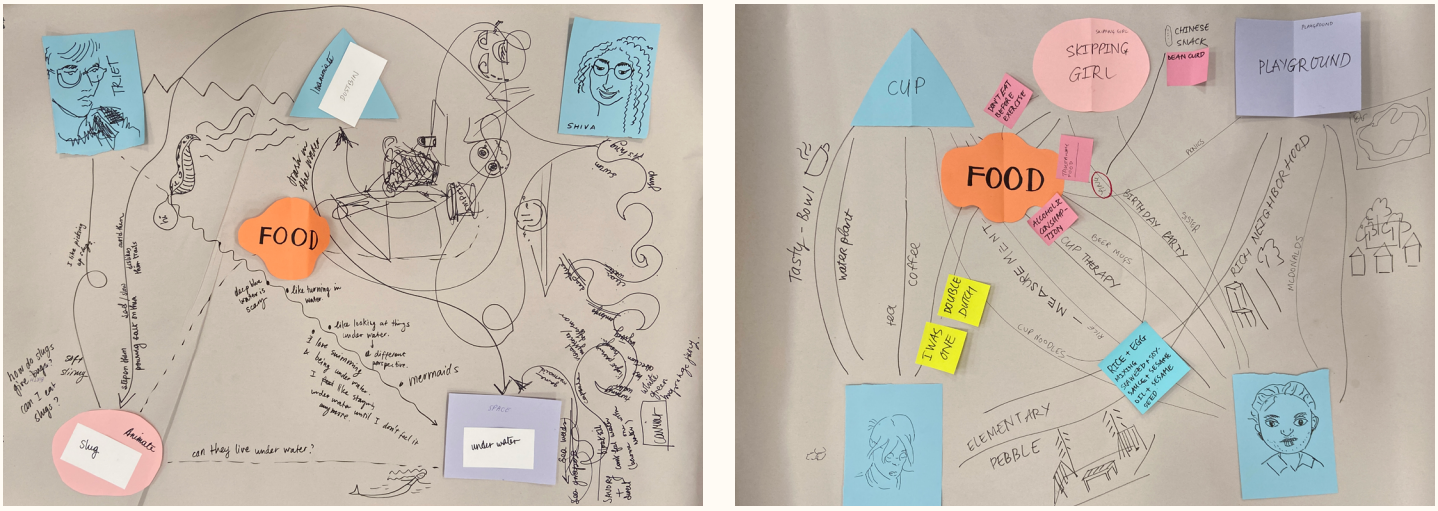


Figure 8.
Diagrams sketched by *Food - Animate - Inanimate* participants

Build a Communal Kitchen
A group activity for participants to build a communal kitchen together.

Build a Communal Kitchen

Objective

I investigated the idea of the commons—the idea that cultural and natural resources should be accessible to every member of a given society

through a group activity that invited participants to build a communal kitchen together.

During the creation process, participants needed to take into consideration the kitchen's functionality as well as the issues that may arise when people share the same space. They also discussed and came up with the solutions to those potential problems.

Design process

The participants worked together on building the communal kitchen, based on the following set of questions:

1. Where and how do you plan to build the communal kitchen?
2. Who has access to the kitchen?
3. How should the kitchen be used?
4. What are the pros and cons of a communal kitchen?

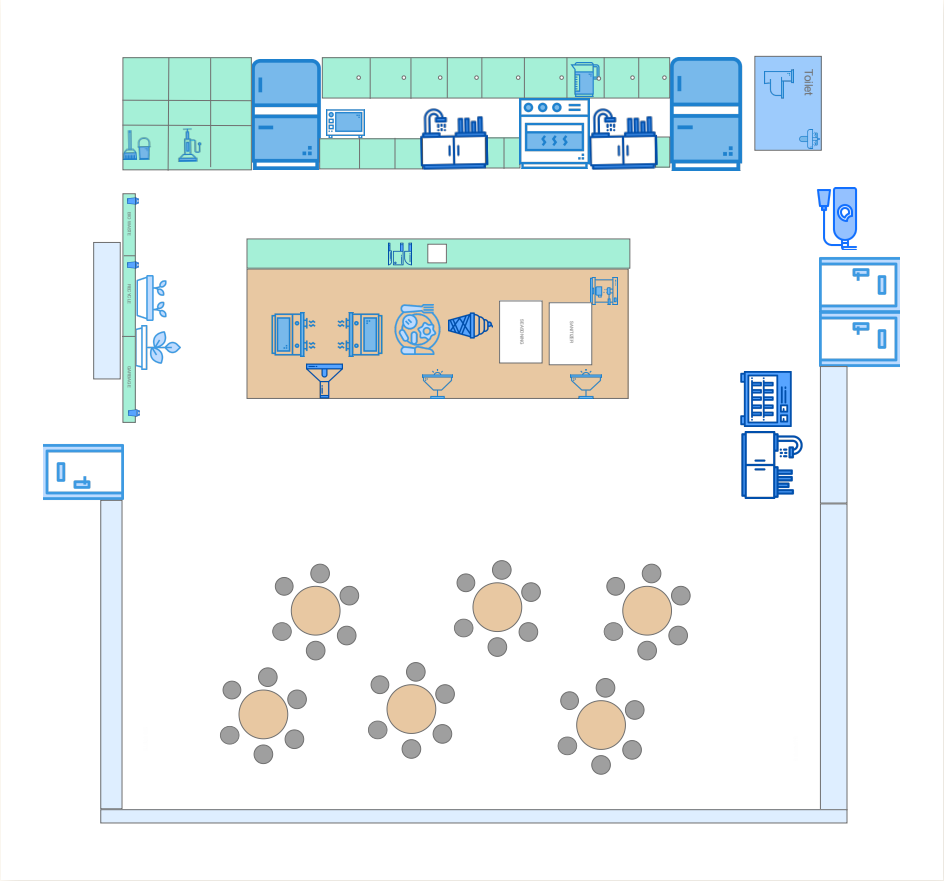


Figure 9.
Sketch of the communal kitchen

Analysis & Insights

The exercise shed light on the participants' idea of a common space and how they planned to organize and maintain it. It also provided me with the referential framework for enabling coordination and negotiation among the potential users of the knowledge-sharing platform.

Refining

Summer–Fall 2020

Based on the experiences acquired from the generating phase, I organized a sequential participatory activity spanning over 3 months in order to:

- understand my stakeholders, their pain points, and their skill set
- involve the audience in the ideation process
- map out the potential directions for the final design outcome

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OBJECTIVE

The experience of conducting workshops in the spring term of 2020 demonstrated the effectiveness of participatory activities in encouraging storytelling and idea sharing. Thus, I entered the summer semester with a plan for a more focused workshop. *Fridge Talk* invited participants to take photos of the inside of their fridge and make a list of the refrigerated foods over the course of one week. Through this activity, the participants reflected on their relationship with food and ecological matters, addressed challenges in adopting a sustainable lifestyle, and brainstormed strategies to overcome those obstacles. The proposed ideas would later give inspiration to the creation of the knowledge-sharing platform.

DESIGN PROCESS

Fridge Talk is a a sequential participatory activity made up of 3 phases: general survey, notes and photo journal, and interview.

1. General Survey

Objective

The survey aimed at gaining insights into the respondents' general attitude towards food, ecological sustainability, and community engagement. For this phase, the quantity of responses played a rather important role in detecting patterns. It also provided me with some general information useful to guiding the conversations during the follow-up interviews.

Design process

In this survey, likert scales were utilized to allow the respondents to rate their own level of engagement with food, ecological sustainability, and community activities. By enabling the respondents' self-assessment, I resisted imposing my personal perception regarding those matters. The same effort to flatten the hierarchy between the facilitator and the participants had been made throughout the research although on some occasions, certain terms needed definitions in order to navigate the discussions. For example, in this question, "Which environmental activities are you involved

likert scale

n.

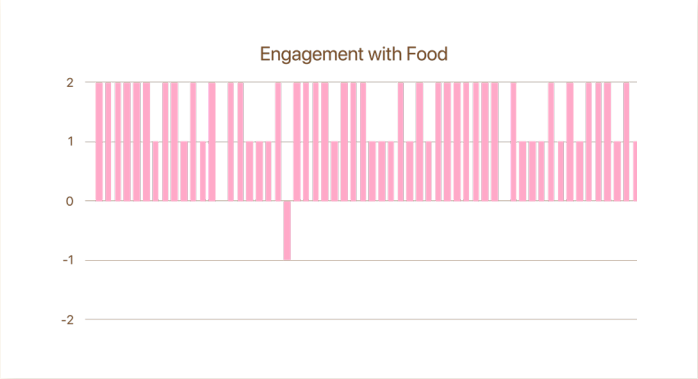
a rating scale to measure the intensity of people's attitudes or opinions

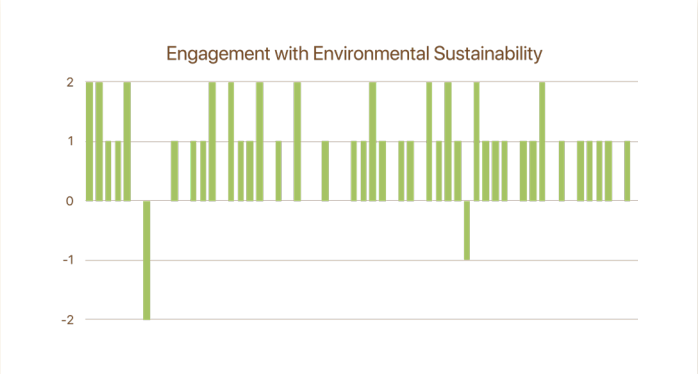
with?," I had to clarify the meaning of 'environmental activities' because this term could be interpreted in various ways and cause confusion among the respondents.

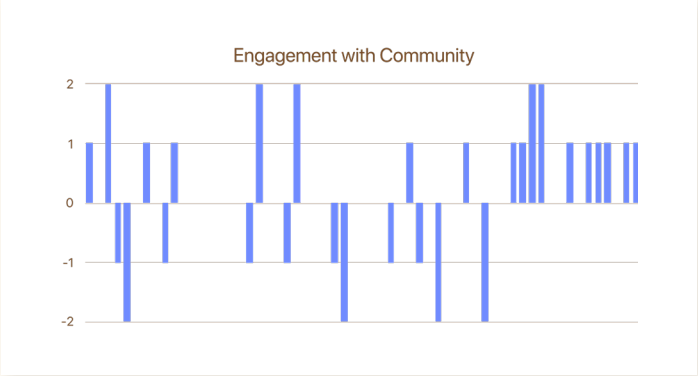
Following the likert scale questions were long-text questions asking the respondents to elaborate more on how they were engaged with or disengaged from the researched topics. The survey ended with a question about identifying the connection between environmental issues and community engagement.

Challenges

Due to the pandemic, the dissemination of the survey was limited to my circle of friends and multiple social media channels. Thus, the results did







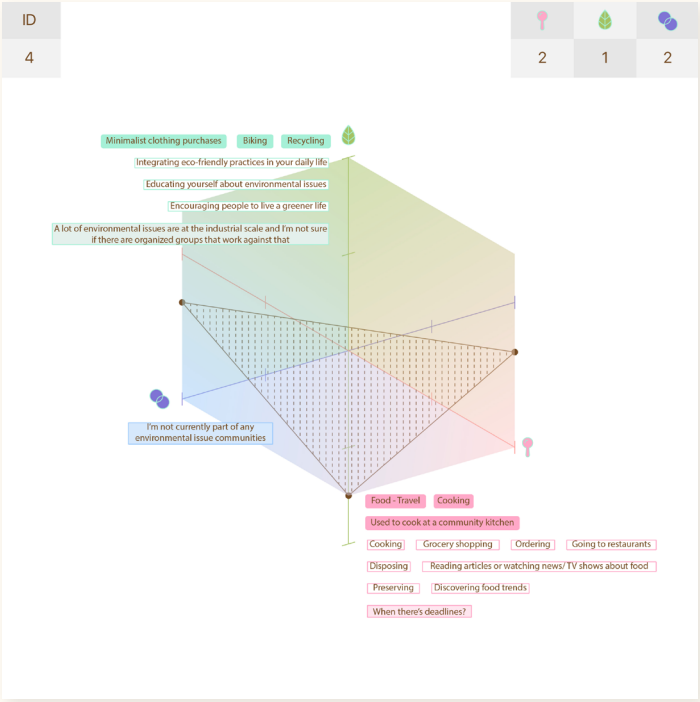


Figure 9.
Chart measuring participants' engagement with food

Figure 10.
Chart measuring participants' engagement with the matter of environmental sustainability

Figure 11.
Chart measuring participants' engagement with their community

Figure 12.
Diagram positioning an individual's level of engagement in relation to food, environmental sustainability, and community participation

not reflect the opinions of those who struggled with technology or had no online presence.

Analysis & Insights

The dataset signified that the majority of the respondents showed great enthusiasm for food and experienced it through various daily activities. Meanwhile their level of interest in environmental issues seemed to diverge more with fewer points of engagement. The disparity increased when it came to community engagement. In addition to time limitation, other factors such as social anxiety, lack of relevant communities, language barrier may account for the low community engagement.

2. Notes & Photo Journal

In this phase, the participants were instructed to take a photo of the inside of their fridge and another one 7 days later. In addition to this, they made a list of the refrigerated products on the two days when the photos were taken. This activity allowed the participants to take a closer look at their fridge and how they interacted with it. It also provided visual cues for the participants to recall what they had done with their food during those 7 days and helped set the follow-up interview in motion.

3. Interview

Objective

Unlike the general survey which focused on the quantity of responses, the semi-structured interview was meant to generate in-depth conversations with a small group of participants. This phase helped me gain insights into the participants' challenges in adopting sustainable food practices and identify potential approaches to encouraging them to lead a more environmentally friendly lifestyles.

Design process

The design of the workshop took inspiration from Hyunjae Daniel Shin and Richard Bull's model of design for sustainable behavior, in which they emphasized the understanding of the complexity involved in daily activities (2019, p. 2). Moreover, they upheld the power of decision-making in building users' strong sense of empowerment and responsibility for "their volition and choices towards practicing sustainable behavior" (p. 4). Therefore, the research process intended to avoid heading towards a one-size-fits-all solution. Instead, it involved active listening and empathy with each participant's unique living situation.

The first part of the workshop invited the participants to talk about their personal experiences with food, their interpretation of the term 'sustainability' and how it was reflected in their daily food practices. Then, they discussed the challenges as well as the factors influencing their understanding and behaviors within the realm of domestic food practices. The final

section employed a morphological matrix with the horizontal plane presenting three greatest challenges in adopting sustainable domestic food practices and the vertical plane presenting three greatest influences on their food practices. This exercise was designed to activate the participants' imagination of the possible methods that could solve their challenges while aligning with their interests.

morphological matrix

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an method of combining various aspects of a problem to generate ideas

Challenges

Because the participants could not gather in the same physical space, some of them had to do the brainstorming activity on their own, which

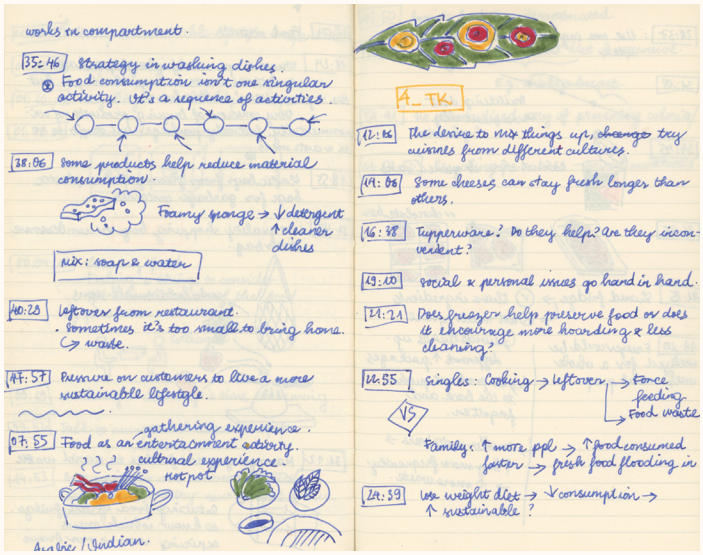


Figure 13.
Notes from the interviews with individual participants

Figure 14.
Brainstorming session with participants

Figure 15.
The morphological matrix generated by participants

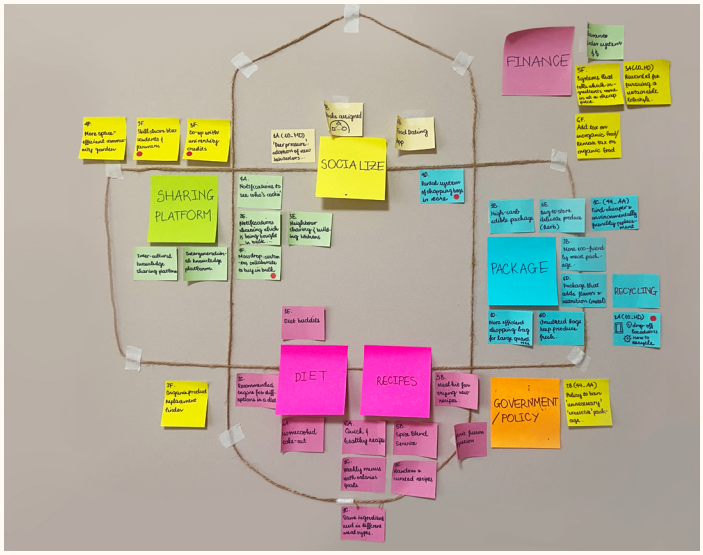


Figure 16.
Categorization of participants' ideas

resulted in less robust synergy and put more pressure on each individual. Fortunately enough, I managed to put together a small group for the brainstorming session. Here, the participants really benefited from each other's presence and energy and a lot of interesting ideas had been generated that day.

Analysis & Insights

The data analysis involved evaluating each participant's input and comparing them with others'. Then, I grouped all the suggested ideas according to themes. Four recurring themes among the participants' ideas included socializing, sharing, packaging, and dieting. Other themes that addressed rather systemic issues were related to finance and policy. For some participants, there existed no distinction between personal and socio-political challenges because the top-down decisions would eventually effect their everyday decisions. Unfortunately, the influence did not go both ways; as community members, the participants had limited ways to communicate their frustration and concerns and make substantial changes. A few participants commented on how the current service system made sustainable choices expensive, inconvenient, and unrewarding, thus discouraged people from pursuing them.

OUTCOMES

Based on the suggestions from the participants, I chose those that could be tackled using my current practices in communication and interaction design

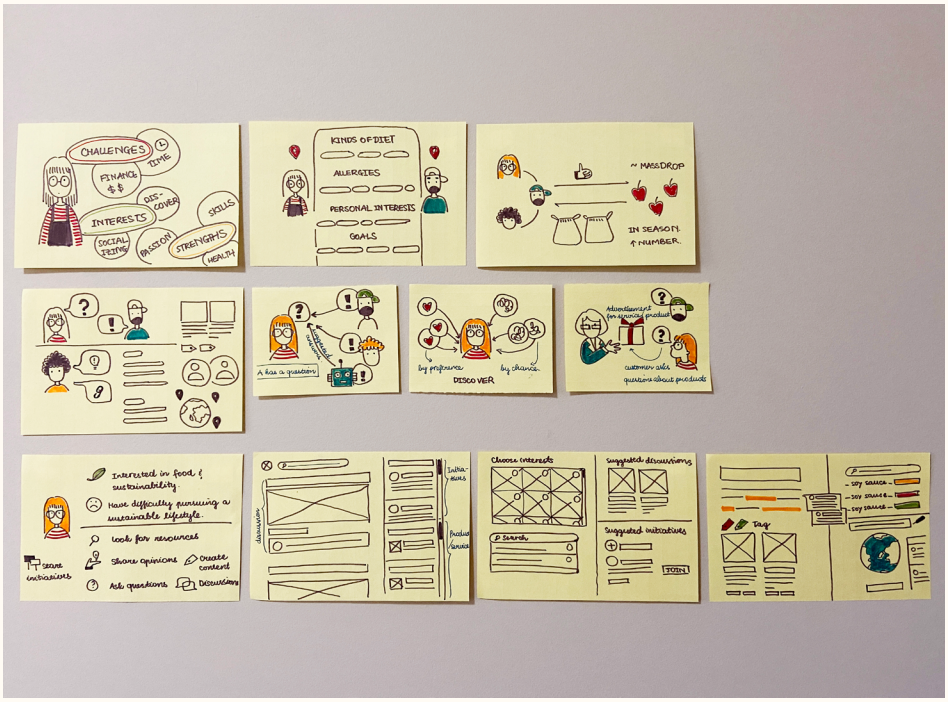


Figure 17.
Storyboards based on participants' ideas

and developed storyboards to map out their trajectories. The visualization allowed me to see which design solutions had the most potential for future growth and the point of intersection where most of them met. Therefore, instead of taking into account individuals' interests and challenges, the design outcome was a hybrid of all participants' inputs.

One of the participants' most common sentiments was their sense of helplessness in the face of the broken food system; their efforts and challenges in adopting more sustainable domestic food practices were deemed insignificant and went unrecognized in the larger food landscape. Their proposed ideas, on the other hand, suggested the yearning for connection and their ability to think creatively, especially in a group setting. As a result, the design outcome looked for ways to gather the scattered knowledge and enable their impact to reach beyond a single household unit.

In this regard, sustainable businesses could lend a hand in transforming the collective ideas of eco-conscious individuals into tangible products and services. During the interview, a participant of mine expressed her overjoy with the experience with Imperfect Foods—a groceries delivery service that set out to save misshaped produce and reduce food waste. Her voluntary conversion into the brand's evangelist showcased the perfect example of when a business objective upheld the users' values. Realizing the mutual benefits that eco-consious individuals and sustainable businesses could enjoy, I got into contact with people who worked in food services. Through these conversations, I learned about their interaction with the customers and in which way they enabled them to become active agents in the fight against environmental issues.

The analysis and idea sketches acquired through the refining stage would inform the development of the final outcome.

CHAPTER 3

Design Outcome & Future Directions

Design Outcome

Fall 2020–Spring 2021

Precedent Review

The brainstorming session with the participants inspired the creation of a collaborative platform where those interested in food and sustainability could not only contribute to *the common resource of knowledge* but also *turn this knowledge into action* by creating initiatives and getting people involved with them. In this regard, the manifestation of the idea bears some resemblance to the two biggest knowledge-sharing platforms—Wikipedia and Quora. Thus, the precedent review of these two examples served as an attempt to understand their structure and mechanism.

1. Wikipedia

Defined by itself as "a multilingual open-collaborative online encyclopedia created and maintained by a community of volunteer editors using a wiki-based editing system," Wikipedia showcases the belief in the wisdom of crowds and how they organize themselves into a functional community.

The tug-of-war between openness and restriction

One of Wikipedia's salient feature lies in its open policy to anyone's submission and editing, an idea rooted in the wiki inventor's aspiration to bring out the "story-telling nature in all of us." In an interview, Ward Cunningham says, "I wanted people who wouldn't normally author to find it comfortable authoring, so that there stood a chance of us discovering the structure of what they had to say" (Venners, 2003).

Despite the impression of being an anarchical platform, Wikipedia is anything but unstructured. Due to its very openness, the initial iteration of the platform gained the reputation as an error-ridden and untrustworthy resource. Thus, over time, Wikipedia has learned to employ "a series of consensus driven vetting processes that strive to ensure the information is accurate, is verifiable, is built on solid sources, and excludes personal opinion." The investigation goes through three phases starting with nominating an article for deletion (AfD) followed by a five-day argument and ending with the final judgment made by a Wikipedia administrator.

Based on his first-hand experience of the AfD process, Andrew McAfee, the author of Enterprise 2.0 describing the application of user-centric web tool in business—takes note of the two key elements that hold Wikipedia together. The first is "an ethic of self-governance and treating others with respect" and the second is transparency—"everyone's edits can be read and commented upon by anyone else." The code of conduct plays a crucial role in sustaining a community, whether it is virtual or not.

However, the very censorship leads to the debate of what kind of information is acceptable and what is not. McAfee recalls, "What's lost there [in the AfD process] is that some people who have a lot of energy to bring get turned off by theses deletionists trying to slam doors in our faces" (Silverthorne 2007).

End users

Wikipedia's target audience could be anyone who wishes to seek out accessible and trustworthy sources of information. The smaller and more powerful segment of end users includes administrators, registered users, and frequent contributors. Those are the people who uphold the core values of the platform and keep it running.

Information organization

The information on Wikipedia is organized into categories and subcategories. Every Wikipedia page should belong to at least one category ("Wikipedia:Categorization," 2021) Users have the ability to create new categories. Should there be proposals to delete, merge, rename or split categories, they will go under review and administrators will make the final decision. Although Wikipedia does allow a certain extent of granularity, its structure supports an expansive navigation moving from one page to another rather than an in-depth exploration moving from a broad topic to a narrower one.

How does this case study inform my design?

As I design a knowledge-sharing platform, it is helpful to learn how an egalitarian platform like Wikipedia regulated and improved itself over time. The process of developing a collection of policies and guidelines took years and depended on the administrators' receptivity to conflicting opinions. Thus, I do not attempt to create a code of conduct beforehand, but rather come up with possible solutions should conflicts arise.

The precedent review of Wikipedia also gives me insights into their audience segmentation and the power dynamics between editors and administrators. As shown in the example of Wikipedia, only a small fraction out of the enormous number of users actually make contribution to the platform. The same result could be expected from my design. Although my platform will be catered to those passionate about food and its ecological impacts, it is likely that the majority would be passive readers instead of content generators. "How to invite passive readers to start taking action" and "how to keep the content generators engaged with the initiative" are the two questions I'd like to answer through the case study of Quora.

2. Quora

Similar to Wikipedia, Quora sets out with the mission to "share and grow the world's knowledge." However, unlike Wikipedia, which focuses on the acquisition of factual information and keeps the validation process in the back end,

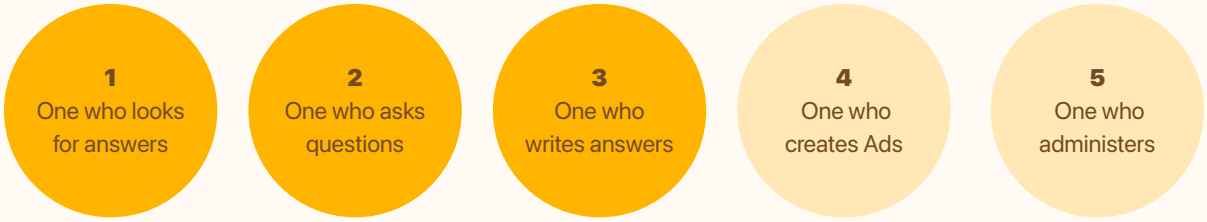
Quora makes room for personal opinions and enables users to communicate on question-answer basis.

A knowledge-sharing social network

Quora functions more like a social network platform that connects the people with knowledge to the people who need it. Therefore, it encourages users to register for accounts by limiting the actions that an anonymous user can take. The inclusion of credentials and highlights in the users' profile will also elevate the credibility of their answers, thus ensuring the quality of the content. In this regards, my design aligns better with Quora's initiative than Wikipedia's because it strives towards the balance between respecting everyone's personal experiences and opinions and producing helpful and valuable content.

End users

Quora's audience segmentation bears some resemblance to Wikipedia's although it is tied more to its business model in which users could earn income by generating quality content and brands could use the platform to promote their products. According to the case study conducted by Namrata Dhall and Mehak Kothari (2020), the users are divided into 5 groups:



For the purpose of my research, I focus on the first three groups and their interaction with the platform.

The first group of users could be anyone looking for answers through a search engine. However, they cannot view more than one thread, ask a question, or write an answer without signing up. While the second and third groups require account registration, they can choose to remain their anonymity. Their frequent prompts and imposed restriction on non-registered users suggest that having an account is essential to a platform like Quora, which aims to build an intellectual enriching environment.

A noteworthy power dynamic among the users, as mentioned in an analysis of Quora, is that super users (or users with a significant number of followers) "attract more and better answers from their followers" (p. 8). Unsurprisingly, those with such wide social network are usually celebrities, e.g. editors, actors, and CEOs. "Overall, more than half (58%) of all users have more followees than followers. A very small portion (0.1%) have 100 times more followers than followees." In this regards, a high profile is likely to leverage one's social influence on Quora. This is an almost inevitable result for a social network, but also one that I am wary about. Although some users may have more knowledge and

experience in adopting sustainable food practices than others and feel more comfortable in participating in social initiatives, I want to make sure that new users enjoy the equal chance of voicing their opinions.

Functionality

Similar to other technology platforms that strive towards improving users' experience, Quora applies a voting system to promote good answers by increasing their visibility. Although this feature helps decreasing the time of rummaging through a plethora of answers, it plays to the advantage of super users whose answers have a better chance of receiving upvotes from their followers.

Quora uses financial reward as a strategy to encourage users to not only give helpful answers but also pose meaningful questions. It also offers bloggers the opportunity to have their work published through its partnership with the world's renowned media newspapers. Besides the pursuit of knowledge, recognition and financial reward are employed as incentives for content generation.

As a social network, Quora allows its users to send each other messages and direct questions to certain people. This helps one not only expand their social network but also acquire more focused answers.

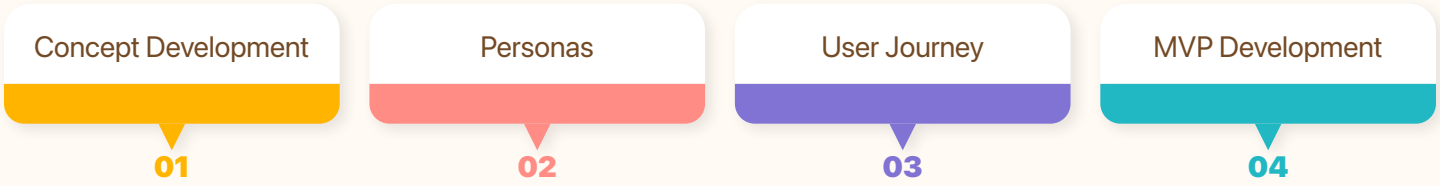
Information Organization

Quora's way of organizing information is more or less the same as Wikipedia's with parent and child topics suggesting the hierarchical relationship between topics and offering more granular categorization. In the case of Quora, however, information organization not only benefits easy navigation but also directs questions to those who are interested in the same topics and more likely to have the answers.

How does this case study inform my design?

Unlike Wikipedia, Quora allows more interaction among users with private messaging and posing questions to specific people. On the one hand, Quora provides a formal approach to organizing information with topics having clear and canonical names and edited by Quora writers community; on the other hand, there are casual spaces for sharing and discussing Quora content, links, and posts. The interplay between restriction and openness creates a structural but flexible system. I hoped to achieve such a balance with my platform.

Minimum Viable Product (MVP) Development



1. Concept Development

The imagined platform stems from the concept of ecological sustainability as an indefinitely evolving process rather than a predetermined destination. Thus, the proposed solution requires constant and sustained assessment and improvement. This idea bears resemblance to the mechanism of current technology companies which seeks to continually enhance their products by turning to their customers for error reports and feature suggestions. The user-centric strategy benefits the businesses as well as elevated users to the level of co-designers. The same method could be applied to a sustainability-focused project like mine, in which the users not only stay informed of the existing knowledge and practices but also open up undiscovered opportunities for improvement. The greatest advantage that users gain from this platform is the ability to gather collective efforts of the like-minded.

2. Personas

Personas are fictional characters build upon preliminary research to represent different user types ("Personas: A Simple Introduction," 2020). The technique is widely applied in the interaction design process in order to understand the basic information of the target audience, their needs, values, goals, and frustration. Personas are made as human as possible to evoke the sense of empathy and customer-oriented thinking. A caution, when using personas, is to not mistake them for real people because they are just the generalized version of the acquired data. Instead, designers should conduct various user testing sessions to validate or invalidate the details of the personas (Buley, 2013, p. 135).

Based on the participatory activities and the case studies of Wikipedia and Quora, the personas represent the group of audience who are interested in food and its ecological impacts and look for ways to integrate more sustainable food practices in their daily life. The target audience is divided into two sub-groups: readers and writers. As suggested in the case studies, readers—those searching for relevant content but contributing little to none to the development of the platform—are likely to make up the majority of the users. Writers, on the other hand, form a much smaller group but generate most of the content.

minimum viable product

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the simplest version of a product that allows a fast and inexpensive testing process of the core features

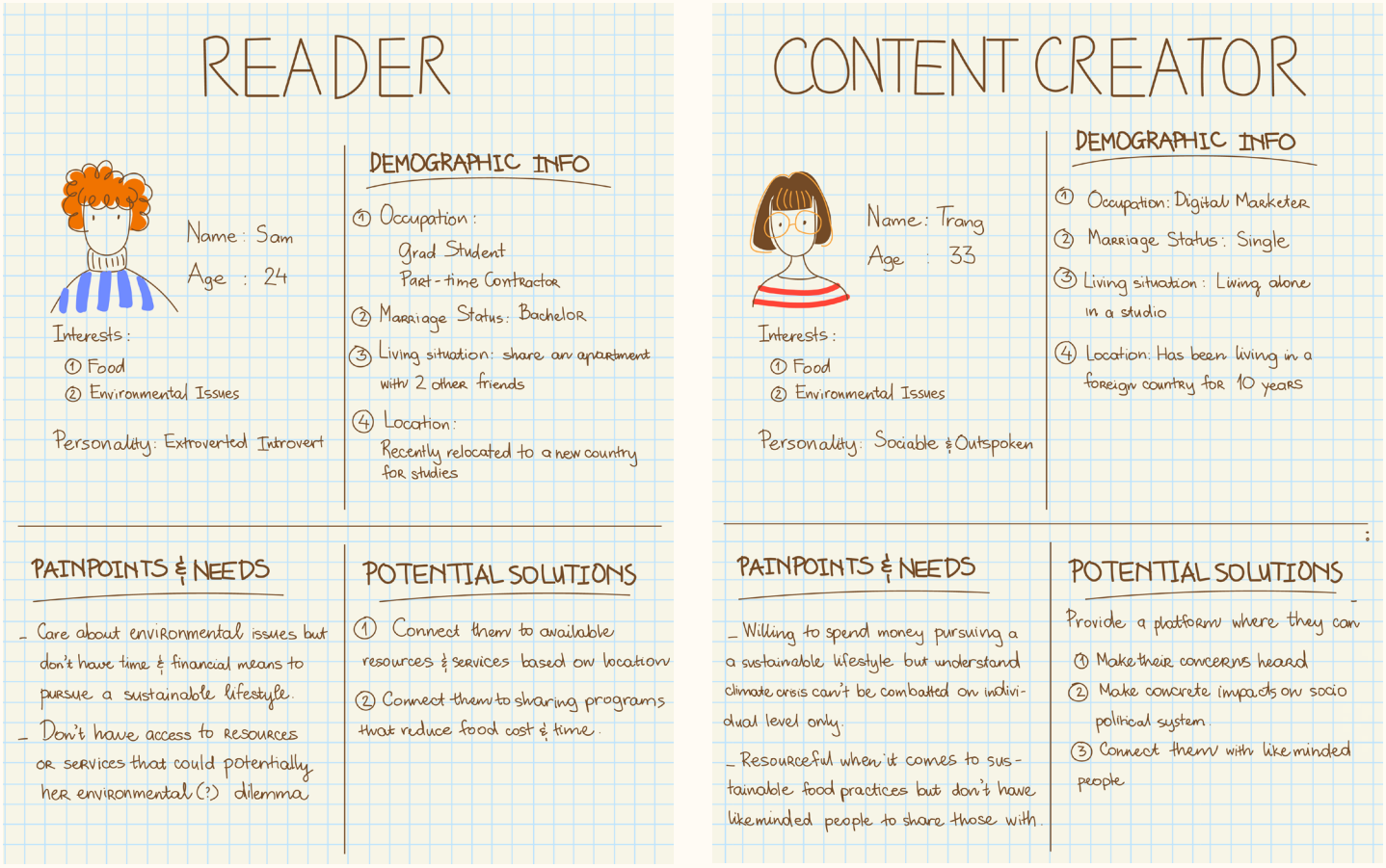

Figure 18.
Persona development

3. User Journey

A user journey is a visual trip of the user across the solution considering "not only the steps that a user takes but also their feelings, pain points, and moments of delight" (Munro, 2020). By putting the personas in specific scenarios, this technique helps gain the bird's eye view of the entire process from approaching and onboarding to converting the users into the advocates of the platform. Because the user journey was built on assumptions, it differs from the popular templates in the description of the users' emotions. Instead of showing how the users will feel, it outlines the desirable outcomes and the pain points that they may go through at each stage. As a result, the proposed solutions should ease the pain points and bring the users back to the desirable outcome. In order to optimize the proposal and show only the strategic planning, not all aspects of the journey are fully developed. This more condensed deliverable can be referred to as the Minimum Viable Product (MVP).

4. MVP Development

Popularized by Eric Ries as one of the Lean Startup methodologies , a *minimum viable product* (MVP) has just enough core features to help entrepreneurs start

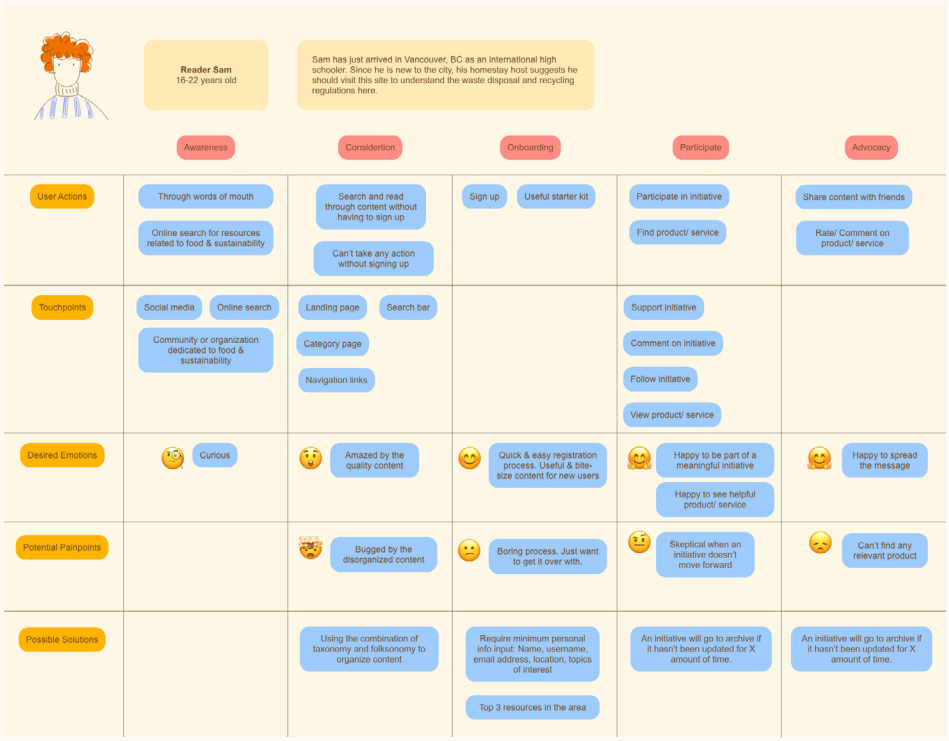

Figure 19.
Reader's user journey

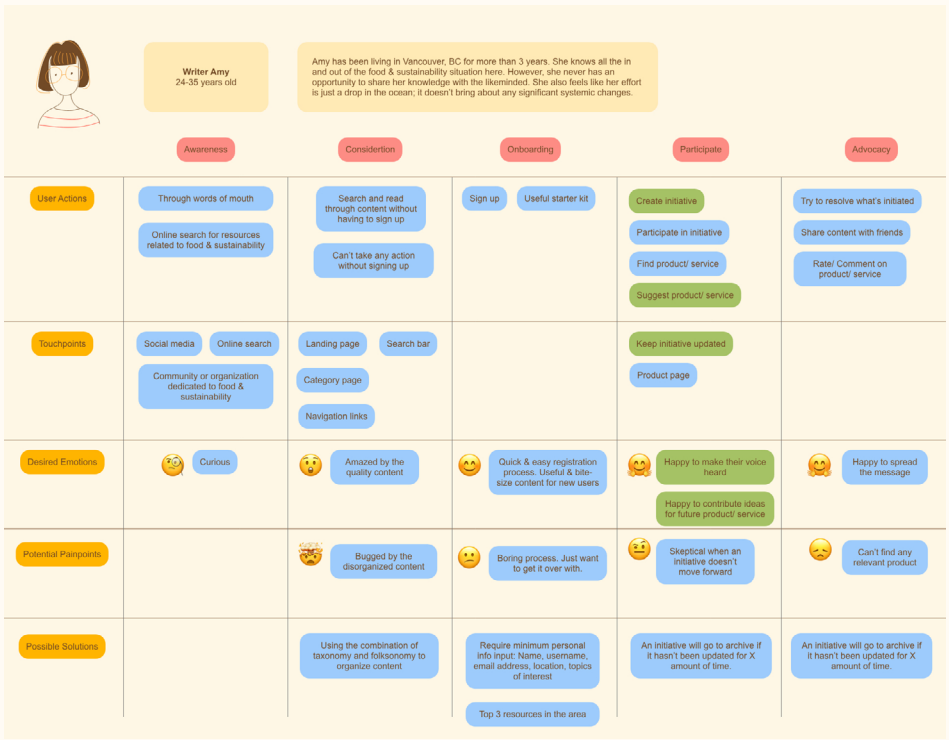

Figure 20.
Writer's user journey

the process of learning in the quickest and least expensive way possible. Therefore, my final design does not cover the entire user journey, but instead focuses on the participate stage in which the users share information and knowledge and create and support initiatives. The goal of an MVP is to "test fundamental business hypotheses."

Following 's format:

We believe that
[***doing this/ building this feature/ creating this experience***]
for [***these people/ personas***]
will achieve [***this outcome***].
We will know this is true when we see
[***this market feedback, quantitative measure, or qualitative insight***].

here is the main hypothesis that I test out:

I believe that building a knowledge-and-initiative-sharing platform

for those interested in food and its ecological impacts

will result in a more ecological thinking community and motivate them to adopt more sustainable domestic food practices.

I will know this is true when I see

the users understand the core values and functionalities of the platform and show the willingness to use it as the reliable source of knowledge and inspiration.

User Flow

A user flow presents a series of steps that users take to complete a certain task. In the case of building the knowledge-and-initiative sharing platform, I map out

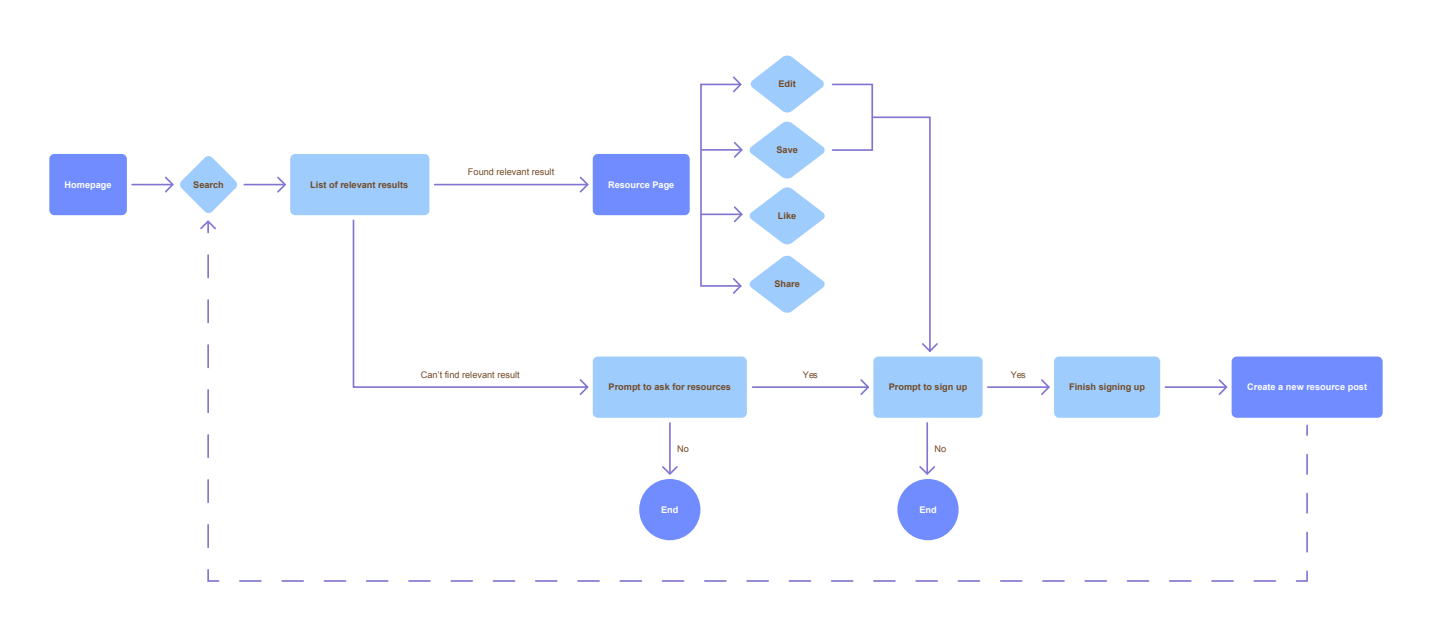

Figure 21.
Flow of first time user's searching for resources

the interaction sequences surrounding the two main features—communal knowledge resources and communal initiatives.

Wireframe & Interactive Prototype

A wireframe is a low-fidelity design that outlines the general structure of a web-page. For the knowledge-sharing platform, the wireframe development process focuses on the four main pages: home page, initiatives, resources, and products and services. Followed by that is the design of an interactive prototype to show the design elements' functionalities and the transition among the pages.

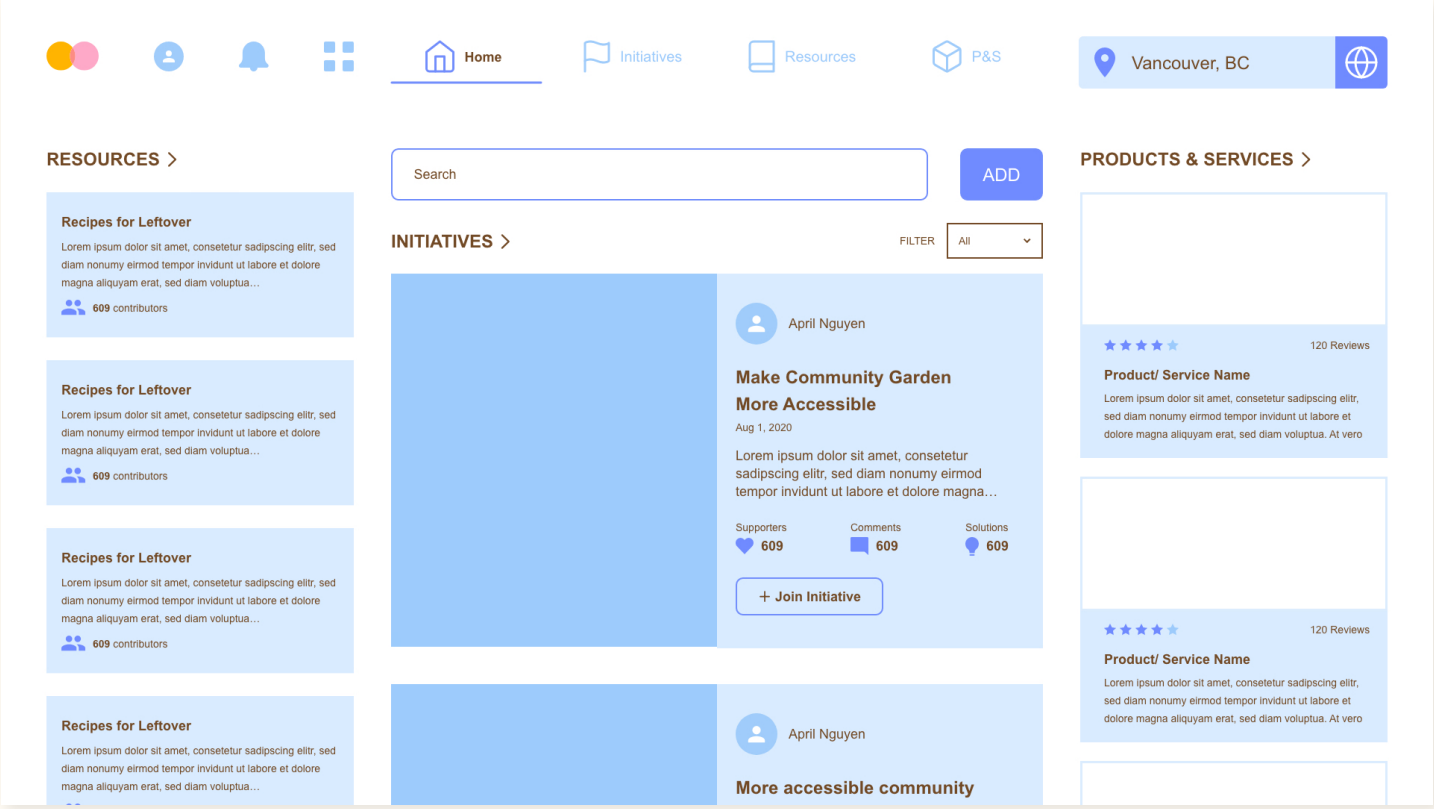

Figure 22.
Homepage wireframe

User Experience Testing

The user experience testing was conducted with three participants to assess the desirability of the proposed solution and observe how they navigated through the platform, searched for results, and created new content.

The first part, desirability testing, aimed at figuring out whether the testers understood the concept and showed interest in the idea of an actionable-knowledge-sharing platform. The results indicated that the testers found the idea straightforward and showed interest in seeing it developed further.

The second part, usability testing, helped determine whether the testers could complete assigned tasks successfully and independently. In order to understand their mental state, the testers were asked to describe what they observed and spoke out loud their decision making process. For this session, their tasks included navigating through the main pages, searching for results, and creating new content. Although the testers had little trouble with the navigation, as new users, they would prefer to see more detailed description of the platform on the welcome page as well as well additional captions under the sub-headings on the home page. This extra information would prevent confusion and give them a better idea of what they were about to click onto. Additionally, most testers had difficulty finding the call-to-action button for creating new content. Though it was intended to encourage searching before creating a new post, thus avoid overlapping information and keeping the platform organized, a more accessible 'add' function was important to the growth of the knowledge-sharing community. The usability testing also brought to attention other aspects such as the usage of icons, information architecture, and copywriting.

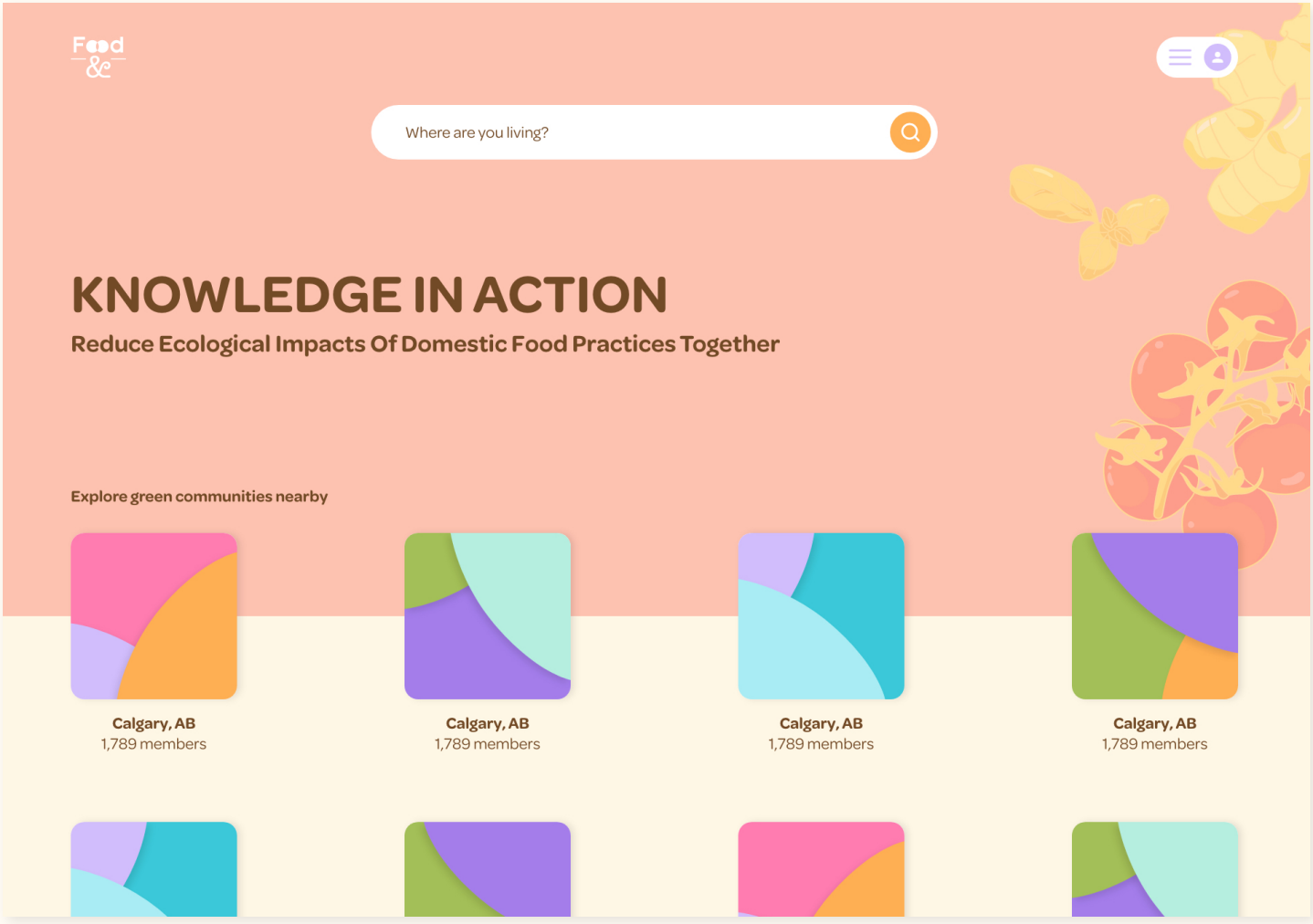

Figure 23.
The design iteration of welcome page based on the first user experience testing

Design Iteration

Developing the design of the platform further involved proposing design solutions to the testers' most commonly-made comments and delivering a high-fidelity wireframe with more elaborate interaction flows.

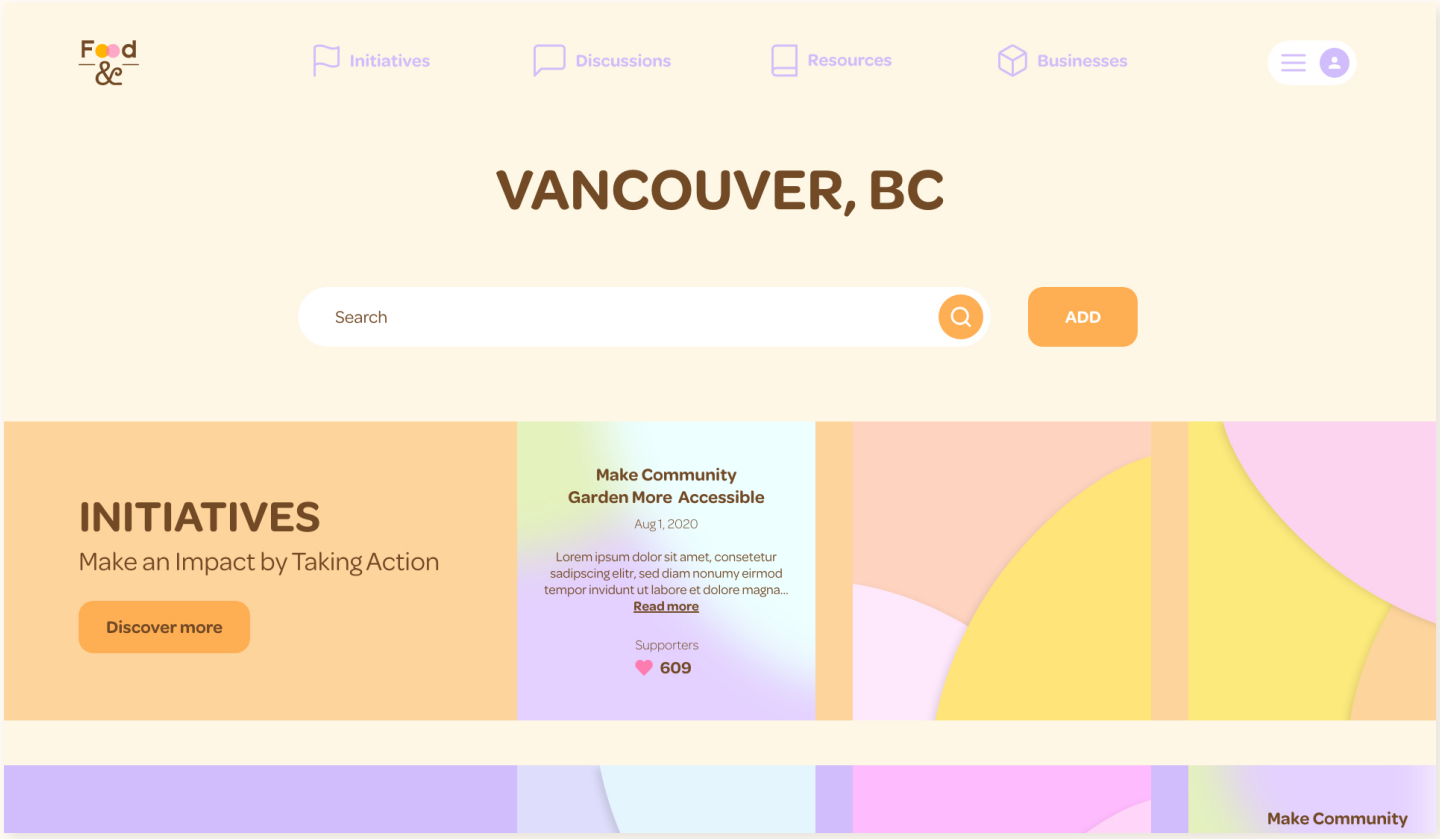

Figure 24.
The design iteration of homepage based on the first user experience testing

The first task focused on reimagining the welcome page as the simplification of the original wireframe obscured the main objective of the platform, resulting in the testers' confusion and reluctance to explore further. Similar problems happened to the home page due to the lack of description under each section. Instead of overwhelming the audience with a lengthy explanation, I opted for a rather succinct and action-based language.

The call-to-action (CTA) button for creating a new post became more discoverable by being placed next to the search bar and in-between the search results. Its visible presence provides a ready solution in case the users can't find relevant posts.

Because the platform offered multiple types of content that a person could generate, having a short description beside each type gave them a general idea of what they were about to create. For each type of content, there was a clear instruction on the steps the users needed to take before publishing a post. Since

this was an actionable-knowledge-sharing platform, more attention was given to the process of creating a new initiative. Inspired by community-based websites such as Change, Chuffed, and Kickstaters, the copy was crafted in such a way that would encourage the content generator to look from the readers' perspective to increase the engagement and support among their community.

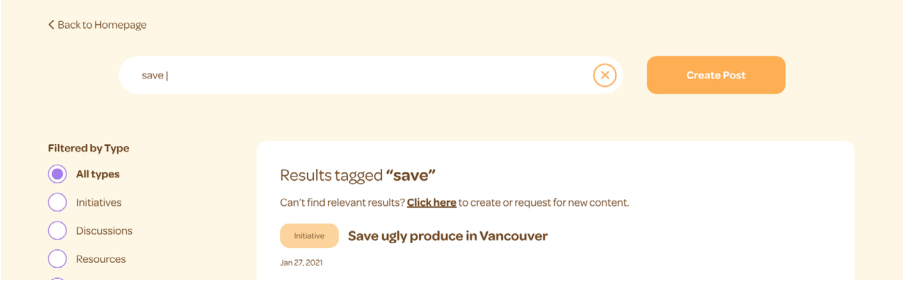

Figure 25.
The CTA button for creating a new post placed next to the search bar

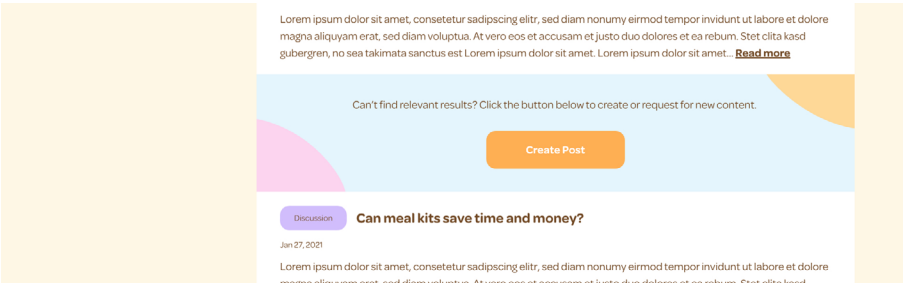

Figure 26.
On the same page, the CTA button for creating a new post placed after every five results as a reminder

Another gap identified through the user experience testing was the omission of a discussion section in which verbal exchanges took place without a specific agenda. Since discussions differed from initiatives and resources in their nature, it required a separate page for this section.

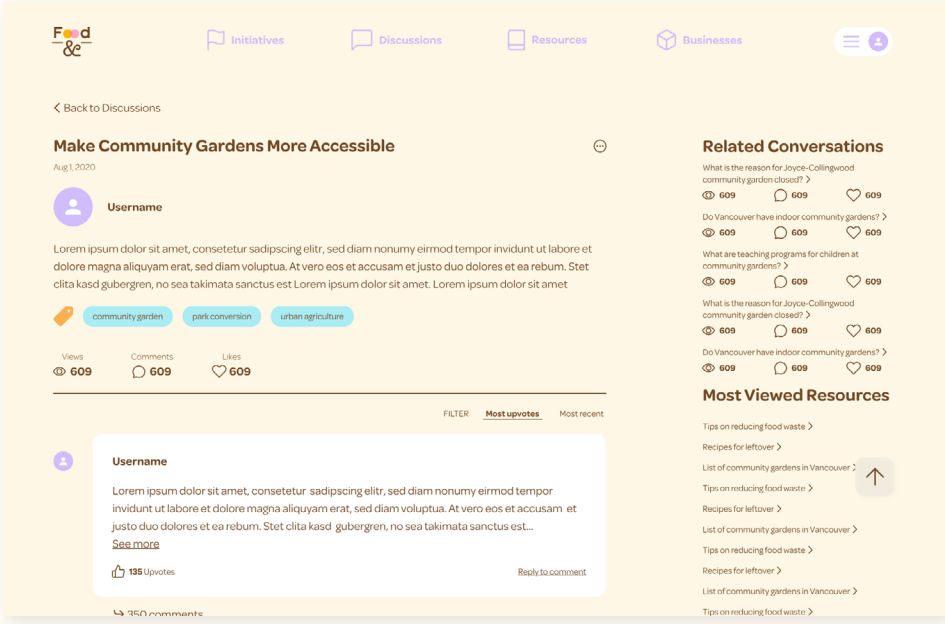

Figure 27.
An example of a discussion post

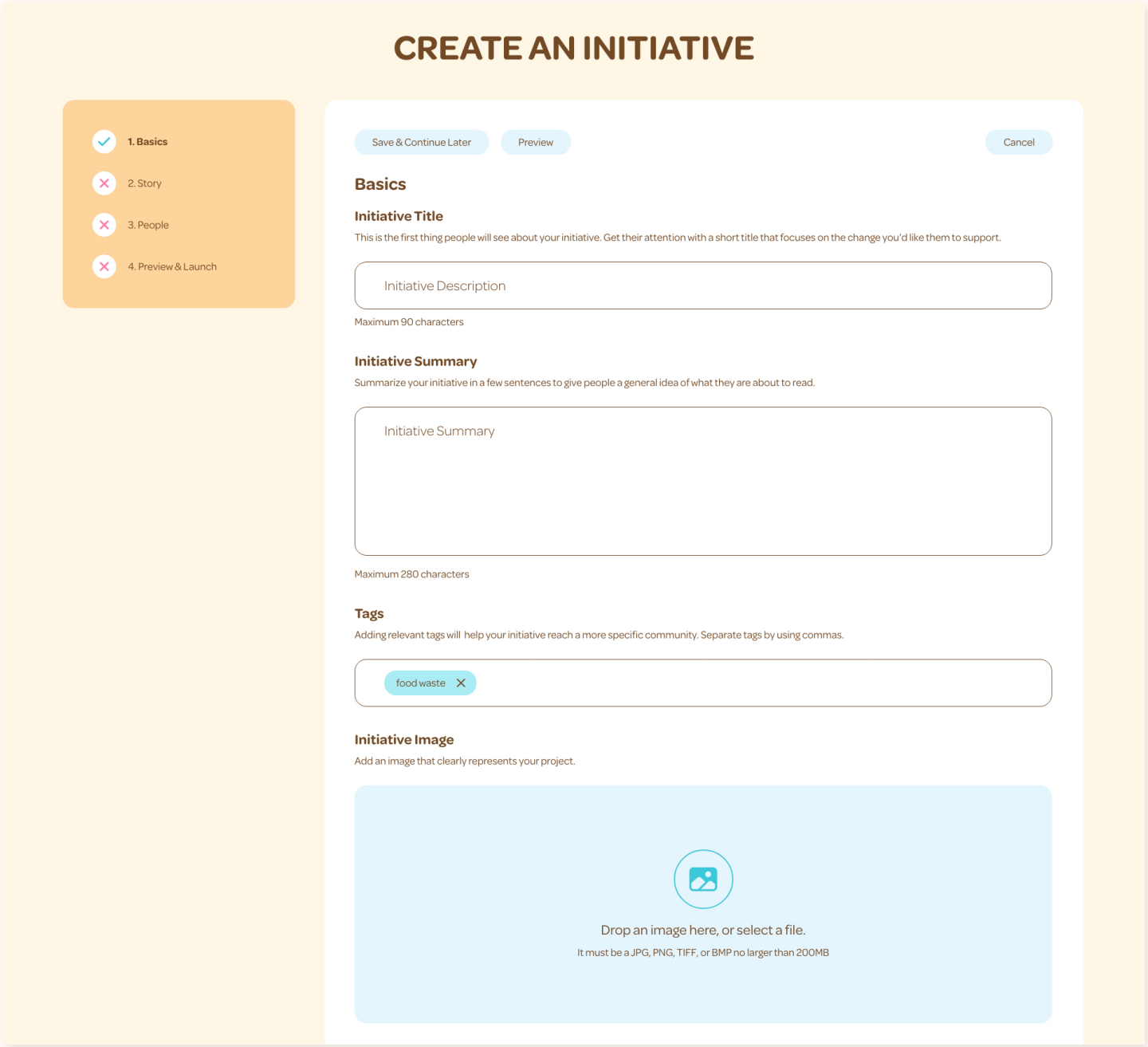

Figure 28.
The first step in creating an initiative

For the most recently updated prototype, please click **here** to experience the interactions and leave your comments for future improvement.

Future Directions & Conclusion

Future Directions

Content Generation & Code of Conduct Development

The first testing session indicates that users' engagement with the platform depends on the quality of its content. The majority of the testers expressed their wish to see one or two examples of complete posts in order to determine whether they should revisit the page. This aspect could not be addressed in the final deliverable because only when the platform is launched, will actual content generation be possible. Similarly, although the current design provides a general framework for information organization, its manifestation depends largely on the content generated.

The same could be said about the code of conduct development. As proven in the case studies of Wikipedia and Quora, an established code of conduct determines how these user-driven communities function. Thanks to the prevalence of social media over the past decades, there has been a basic framework for building a code of conduct and how it will hold both the users and the administrators accountable for maintaining the integrity of the shared platforms. Nevertheless, the formation of the code of conduct will require the contribution from a larger group of users and its legitimacy needs to stand the test of time. Because these factors fall outside of the scope of this research, the design outlines some simple functionalities for users to begin drafting their code of conduct. However coarsely designed these features may appear, they are created with the aim to encourage an egalitarian and respectful discourse among users in reaching a mutual agreement.

Customers & Businesses

The design created in this research project targets citizens with concerns about food and its ecological impacts. It could, however, be extended to entrepreneurs hoping to build their businesses around food and sustainability because their success depends largely on the growth of a loyal customer base. In order to offer competitive price point against food industry giants, these businesses may have to cut down their marketing expenses. This platform is the place where sustainable food businesses could promote their products and reach out to more focused audience without the investment in multiple media channels. Since the platform exists separately from other e-commerce channels, the credibility reviews will be approved or challenged by customers. In this way, the platform not only brings customers and businesses closer but also acts as an autonomous channel for customers to hold businesses accountable for authenticity and transparency. Moreover, this relationship would help drive customer-initiated projects forward. Despite their ability to come up with innovative ideas,

prospective customers may lack the technical capacity and financial resources to turn them into reality. Entrepreneurs could connect and collaborate with those eco-conscious customers to generate more human-centric solutions.

Multi-lingual & Multi-regional Resources

A feature that has not been fleshed out in the final design outcome is the ability to toggle between multilingual resources related to food and sustainability. This is the feature that knowledge-sharing platforms such as Wikipedia and Quora have adopted to invite more culturally diverse resources, although the content is still predominantly written in English. Should the language barriers be overcome with the help of translation tools and volunteers' contributions, the cross-cultural information exchange enabled by multi-lingual options will become more inclusive and robust. For example, once, out of curiosity, I translated an English-written article about food and sustainability and uploaded it to a Vietnamese page dedicated to the matters for an open discussion. To my surprise, the post attracted significant participation from the page members whose opinions were shaped by their social and cultural backgrounds and differed from the mainstream English sources. The instance strengthens my belief in the necessity of integrating a multi-lingual aspect into the platform.

Green User Experience (UX) Design Strategies

In order to further the sustainable initiative, the implementation of the platform will consider applying green user experience design strategies to lower the website's carbon footprint. According to Tim Frick, the author of Design for Sustainability, front-end components "comprised between 76 to 92% of total page load time." (2016, p. 195) Because the loading time of a web page is directly proportional to the amount of energy it consumes, front-end designers play a critical role in coming up with optimized solutions. The majority of their impact lies in the choice of font and the formats of images and other graphical elements. Understanding imagery as an important part of communicating content, Low-tech Magazine–a solar-powered site of technology publication introduce dithering, a technique traditionally used to create the illusion of color depth in images with a limited color technology (Low-tech Magazine, n.d.). Without images in full-color high resolution, the loading speed of a web page will increase significantly. Other resolutions include offering dark mode feature which cuts down the amount of power a display uses (Tung, 2018) and avoiding frivolous user interface animations (Baskanderi, 2018). Furthermore, my platform could reduce its environmental cost by selecting a hosting provider that uses renewable energy as opposed to fossil fuel. There exists a wide range of approaches that a green UX designer could take to reduce the carbon emissions of their websites. In the case of my knowledge-sharing platform, the decision will depend on the balance between aesthetic values, meaningful interactions, and the ecological implication of the design elements.

Conclusion

Through the application of participatory approach, the project found out that even those who try to adopt eco-friendly domestic food practices encounter multiple challenges in pursuing a sustainable lifestyle and making concrete impact. While the conversations and workshops with these individuals showed their struggle, frustration, and yearning for connection with the like-minded, they also revealed their wealth of knowledge and practices waiting to be discovered and shared. Therefore, the development of an actionable-knowledge-sharing platform hopes to provide a space for environmental advocates to hold discussions, share ideas, and move sustainable initiatives forward. The companionship and collaboration will enable this eco-conscious community to untangle the complexity of our current food system and bring about meaningful changes to the ecological environment.

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Appendixes

Emily Carr University Research Ethics Board (ECU-REB)
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ethics@ecuad.ca

CERTIFICATE OF RESEARCH ETHICS APPROVAL

The Emily Carr University Research Ethics Board approves the following project:

File #	Title	Principal Investigator:	Other Investigators
100389	Food& - Food as the Gateway to Community Engagement and Ecological Thinking	Dr. Katherine Gillieson	Ms. Nhat Anh Nguyen

The current approval dates are:

Approval Date	Expiration Date
August 31, 2020	May 31, 2021

The nature of the approval is as follows:

Type of Event	Type of Review	Approved Documents
New Approval Process	Delegated Review	Anh (April) Nhat Nguyen_Survey Questionnaire edited [August 27, 2020 version] Anh (April) Nhat Nguyen_Research Invitation & Consent Agreement_edited Anh (April) Nhat Nguyen_Recruitment Materials Anh (April) Nhat Nguyen_Participatory activity guides

It is the researchers' responsibility to meet all research ethics requirements in the jurisdictions in which the research takes place. The procedures and protocols described in this certification must be followed closely. Note the following conditions associated with this approval:

- For multi-site or partnered research, researchers are required to comply with all research ethics requirements that apply. Researchers are expected to share notice of this approval with partners, sites of research, or other research ethics review boards, as applicable.
- If changes to the approved application and documents are required by new partners, sites of research or other research ethics boards, researchers are required to inform the ECU-REB of these changes.

Researchers are required to report anticipated changes, adverse incidents, and project completion for further research ethics review. All reporting is managed through the research portal on the Research Management System Process Pathways Romeo - https://ecuad.researchservicesoffice.com/. Login and complete "event" reports for changes, adverse conditions, renewals, and the completion of this research ethics file.

This research ethics approval is in compliance with Tri-Council guidelines (TCSP2 2018) and Emily Carr University policies and procedures.

Keith Doyle
Chair, Emily Carr University Research Ethics Board
Emily Carr University of Art + Design

Figure 29.
Research ethics approval

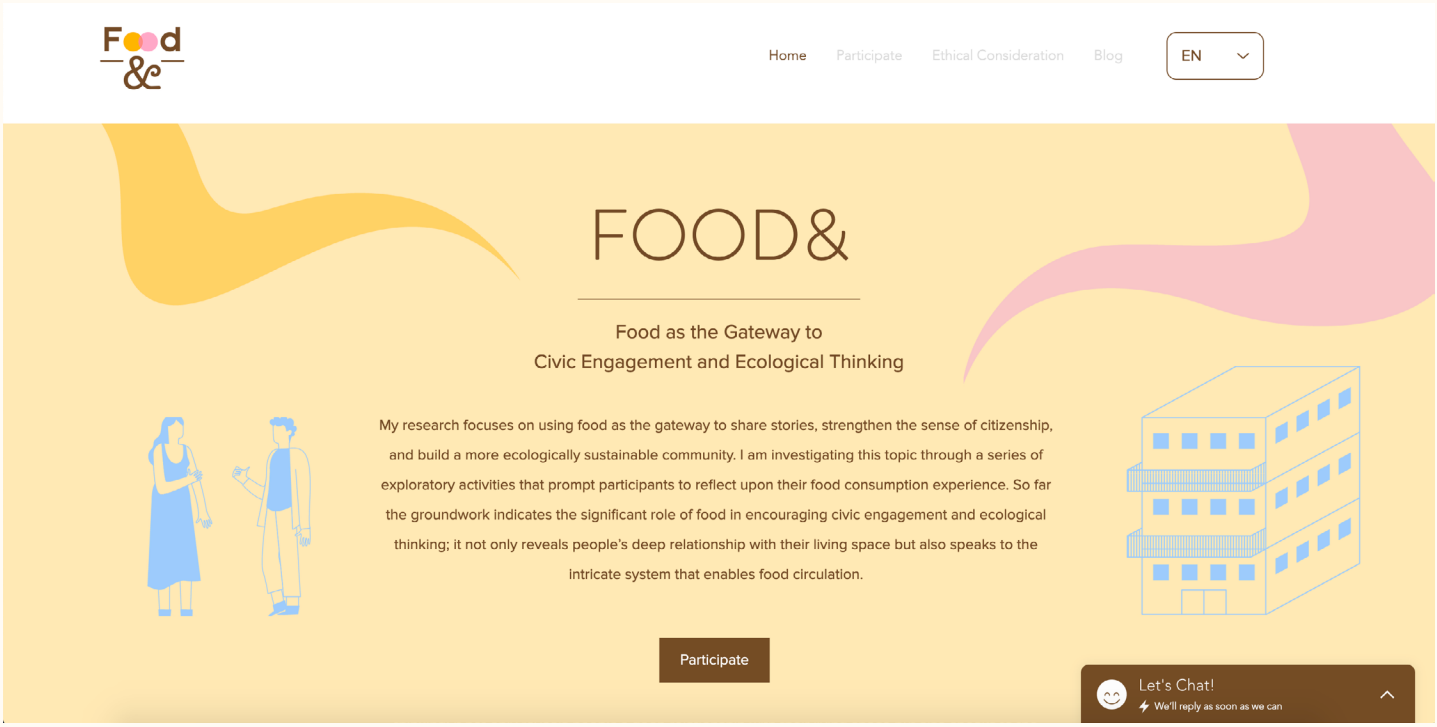

Figure 30.
Research website homepage

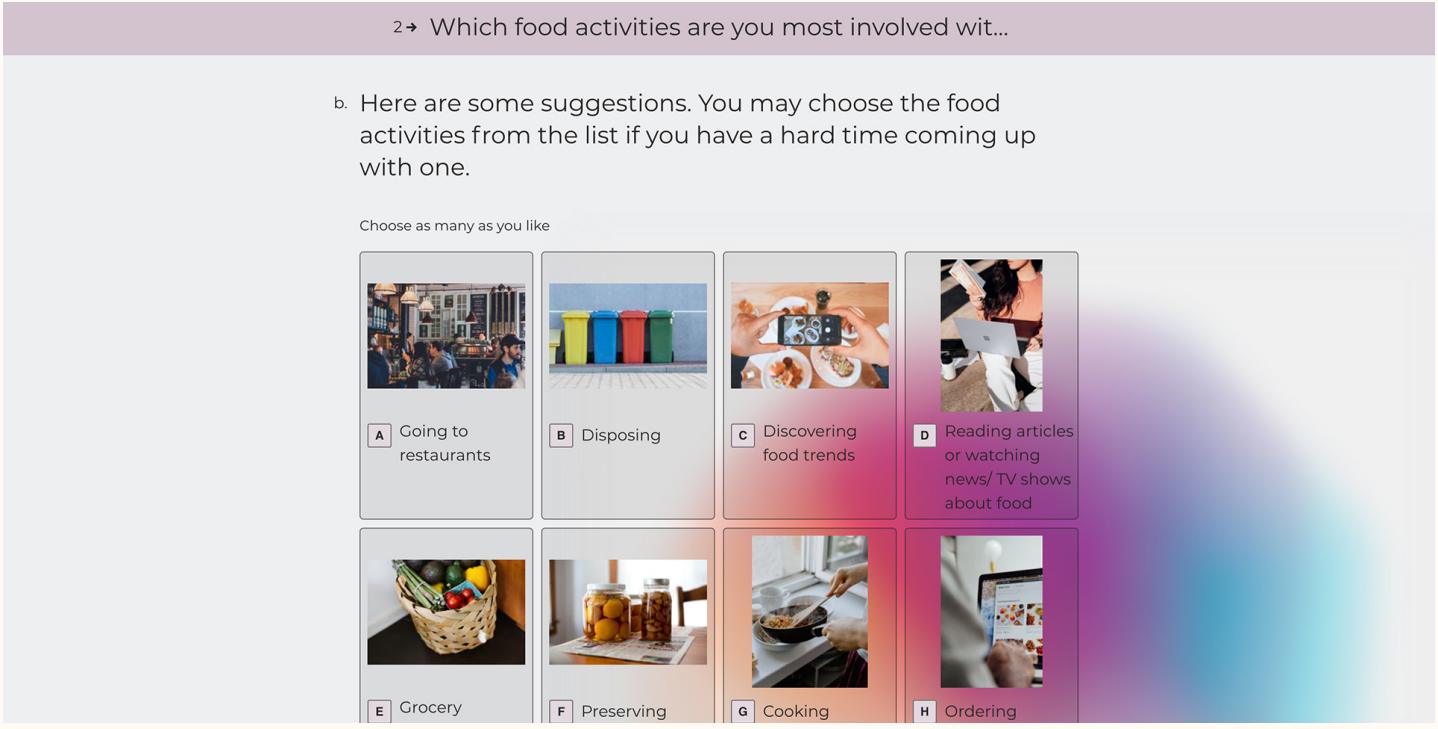

Figure 31.
Fridge Talk's General survey

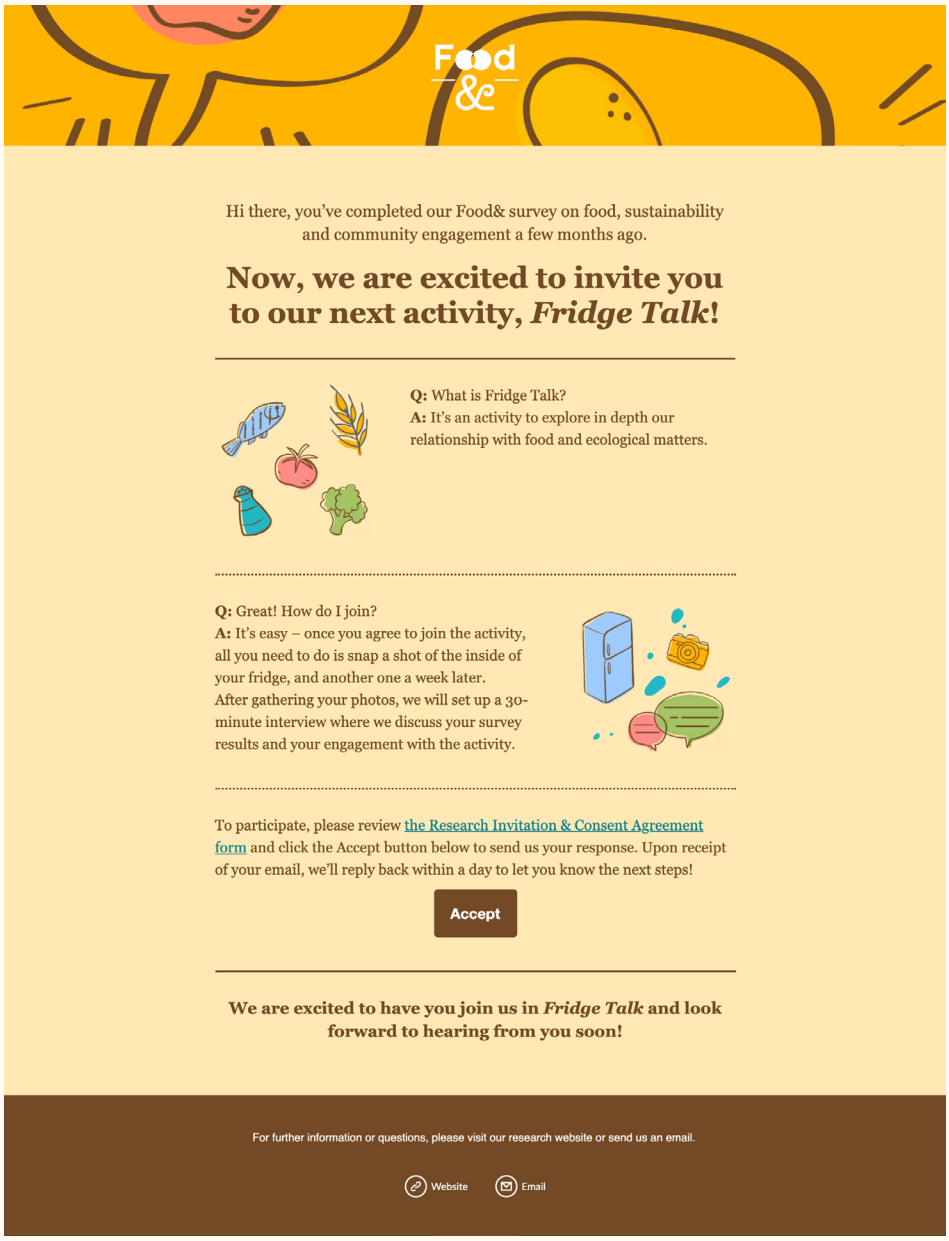

Figure 32.
Newsletter for participant recruitment

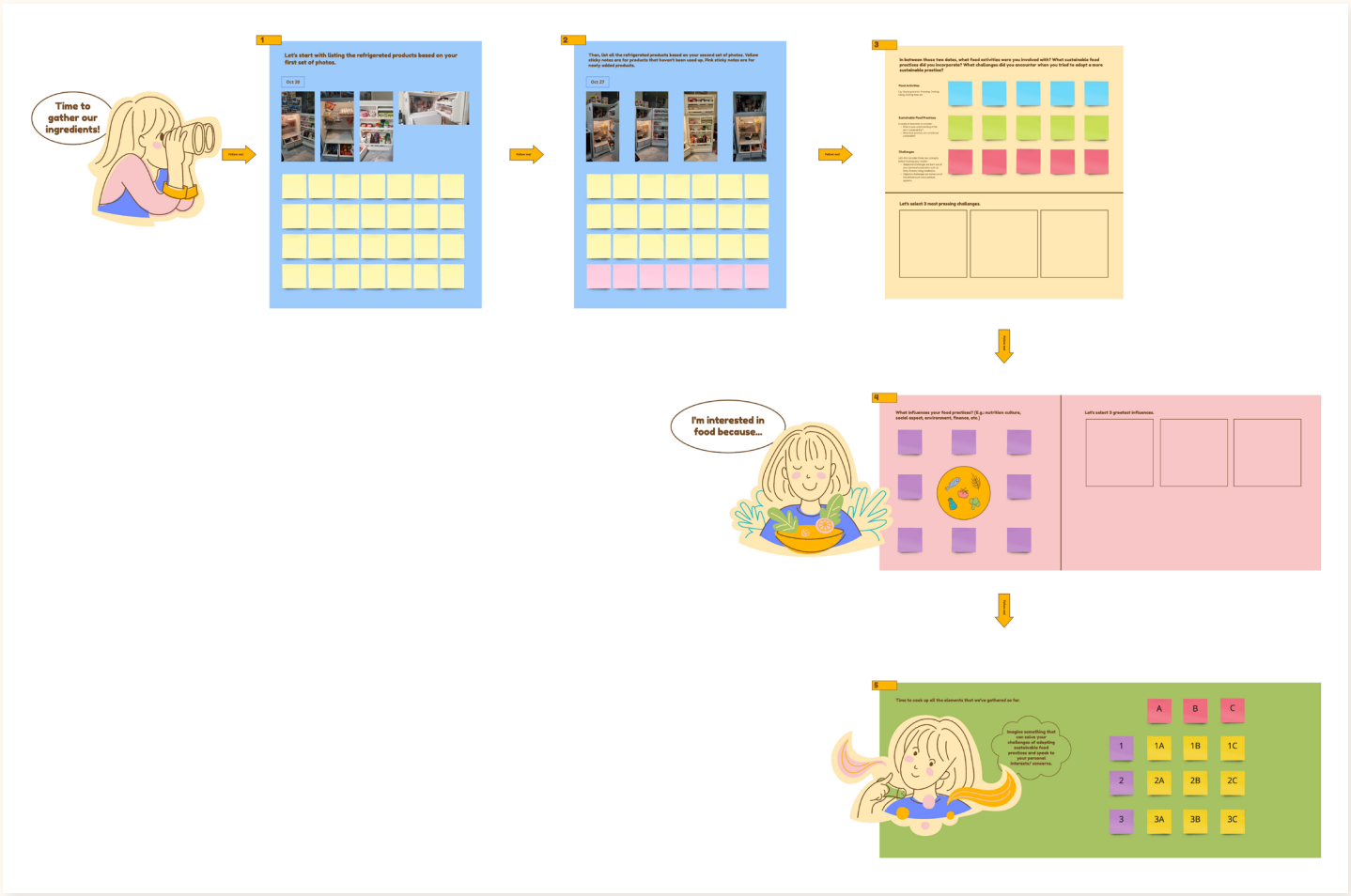

Figure 33.
Fridge Talk's interview format

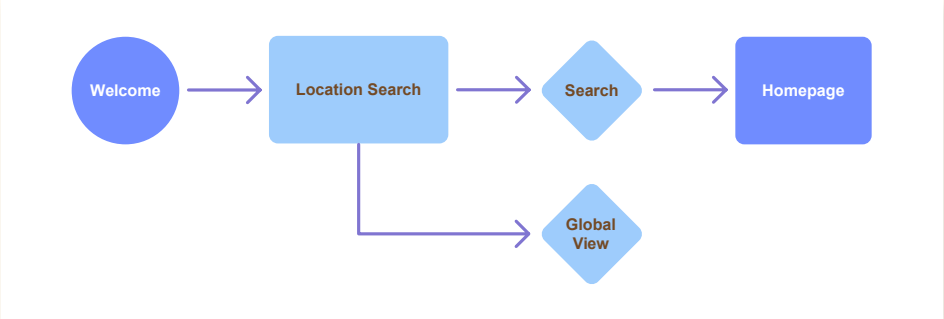

Figure 34.
Flow of first time user's welcome page

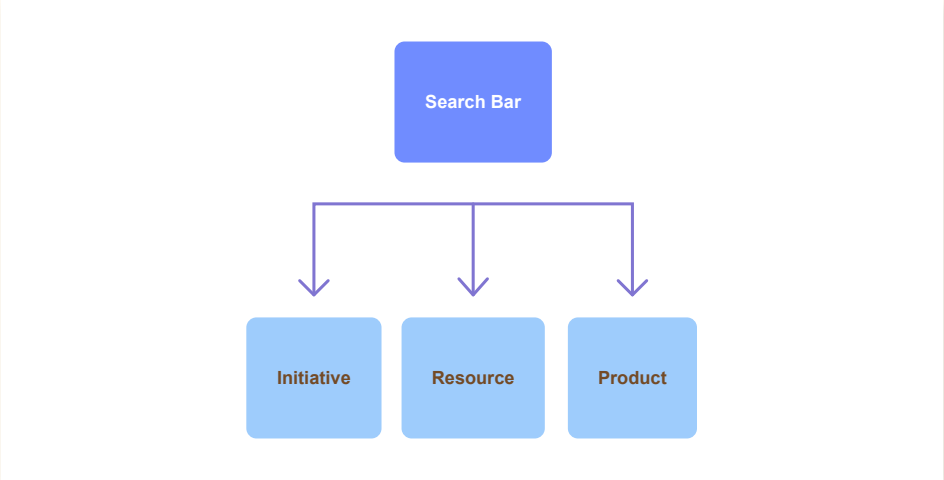

Figure 35.
Search bar

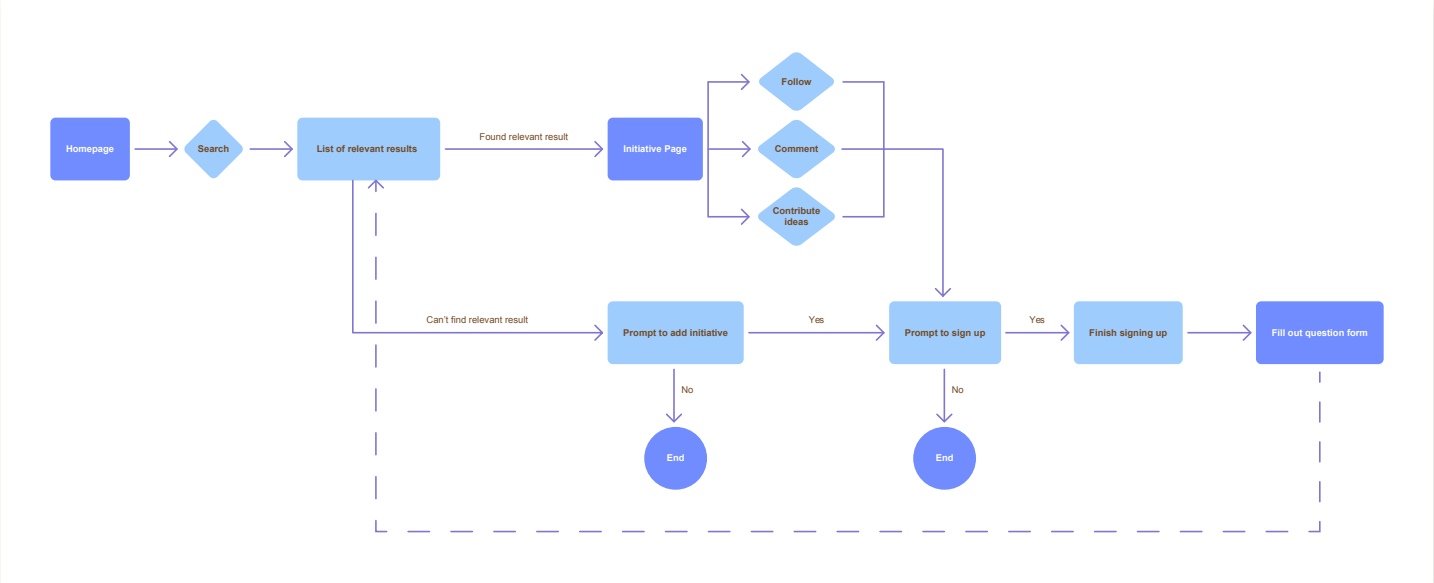

Figure 36.
Flow of first time user's searching for initiatives

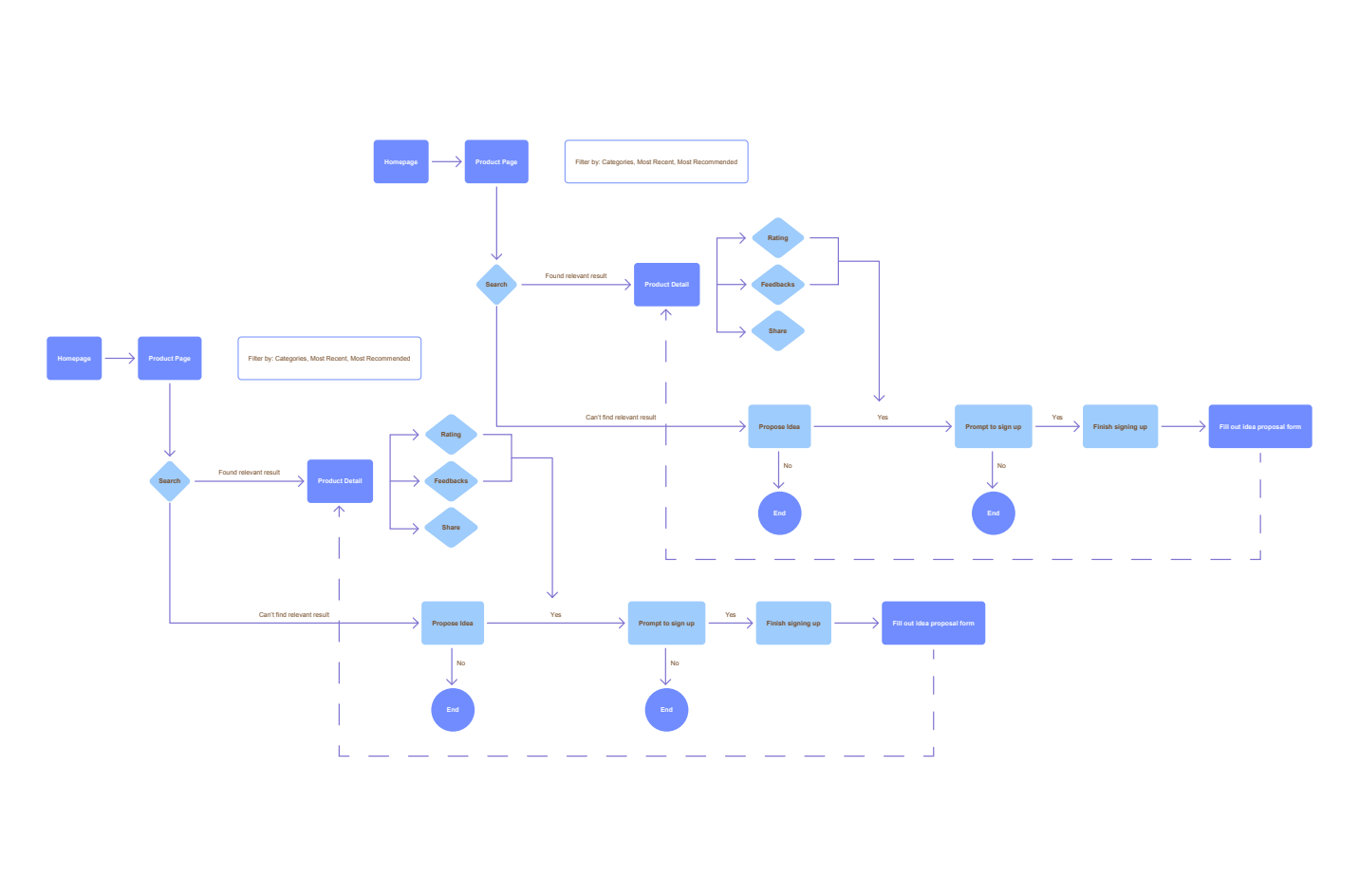

Figure 37.
Flow of first time user's searching for products and services

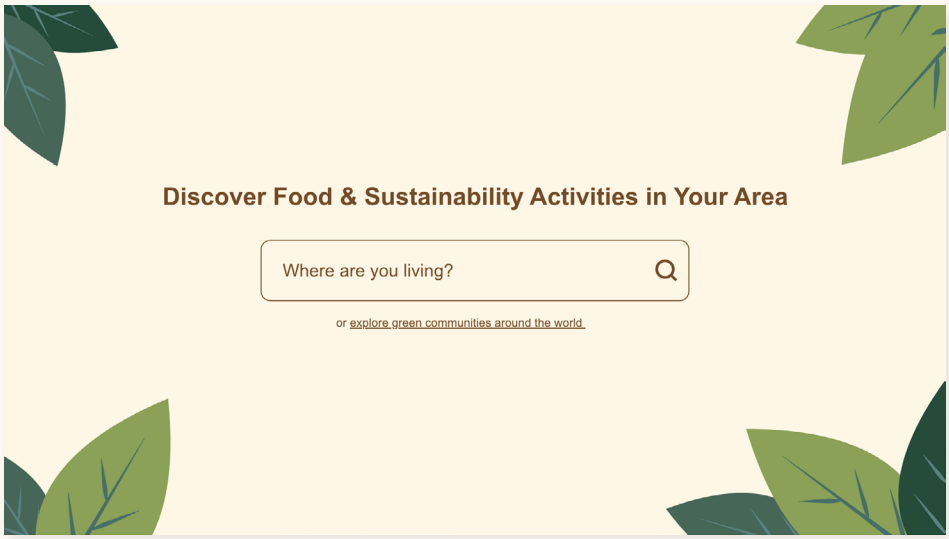

Figure 38.
Welcome page wireframe

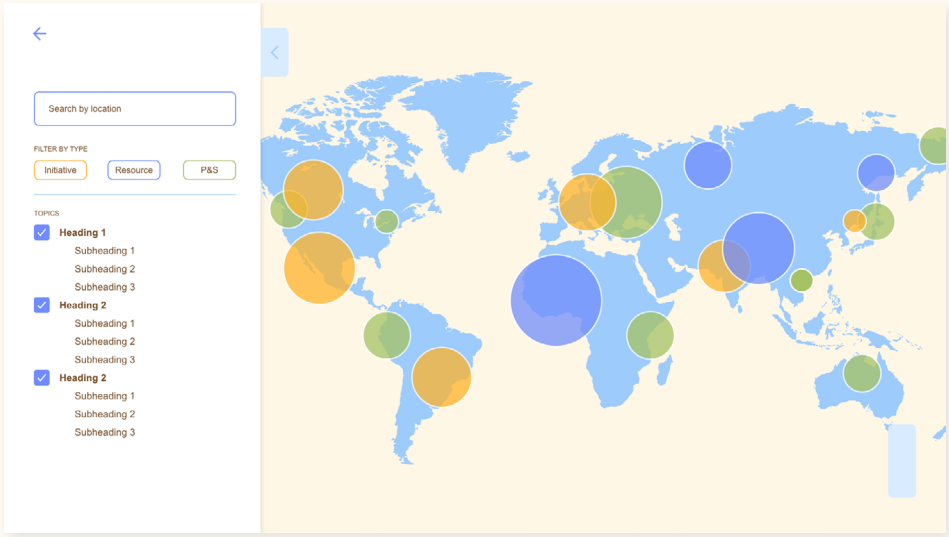

Figure 39.
Global view wireframe

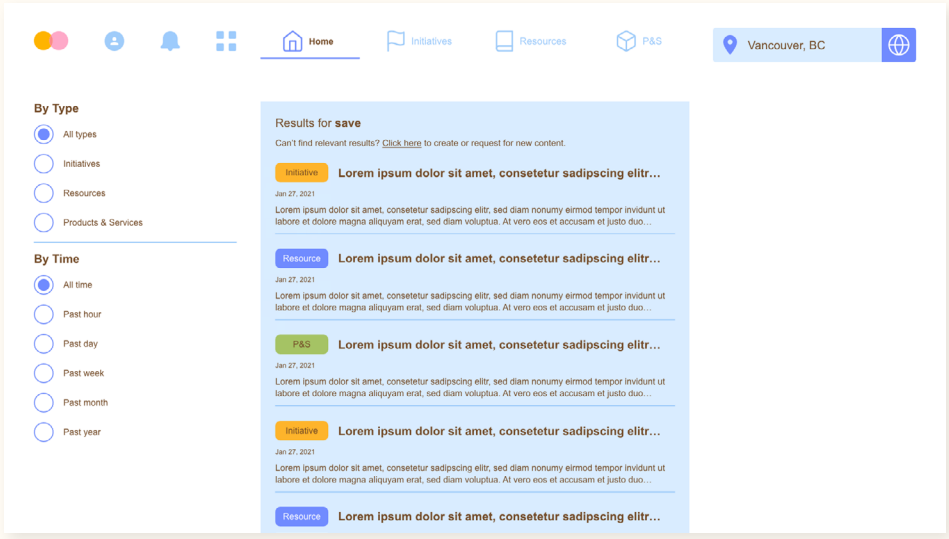

Figure 40.
Result page wireframe

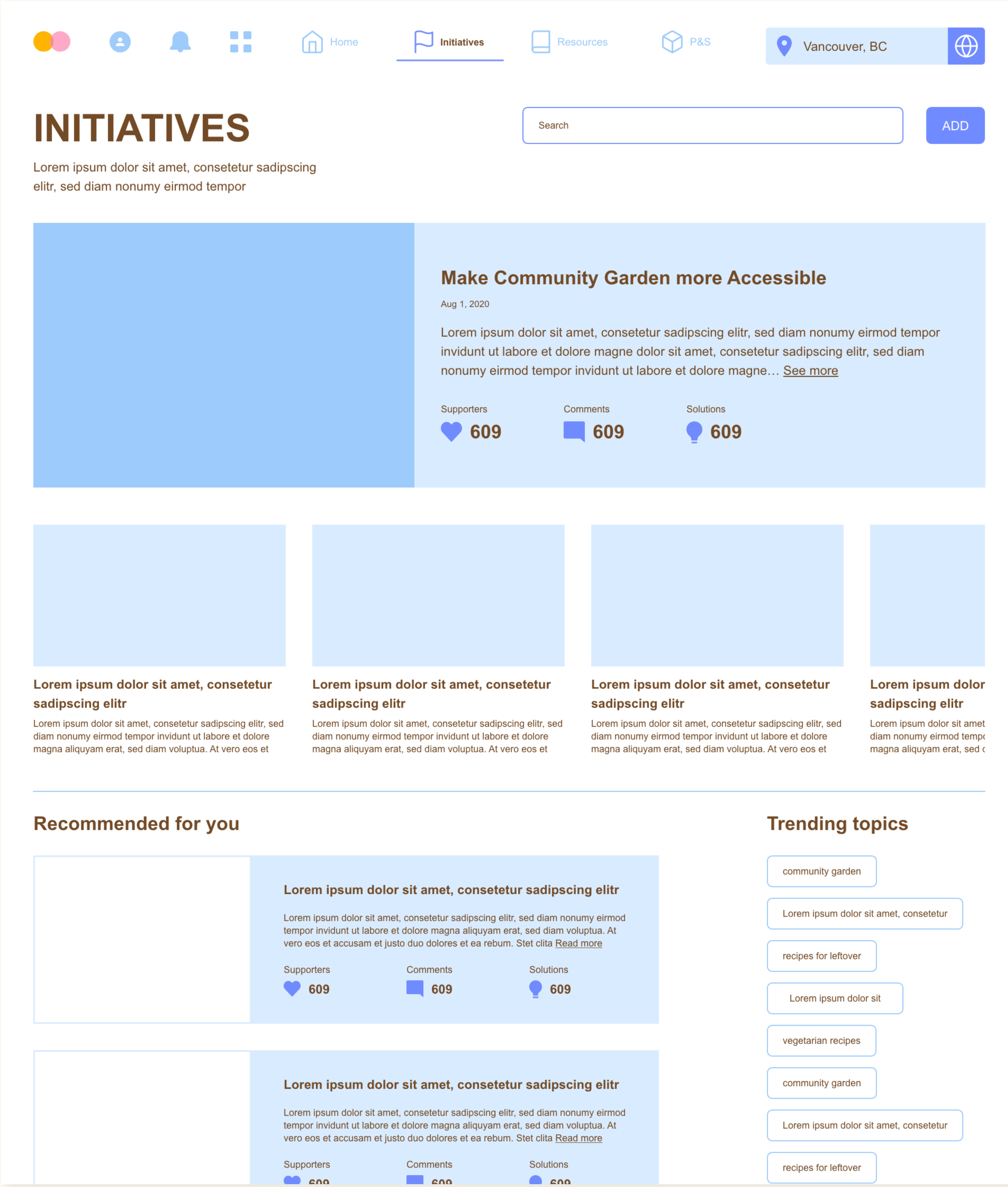

Figure 41.
Initiatives page wireframe

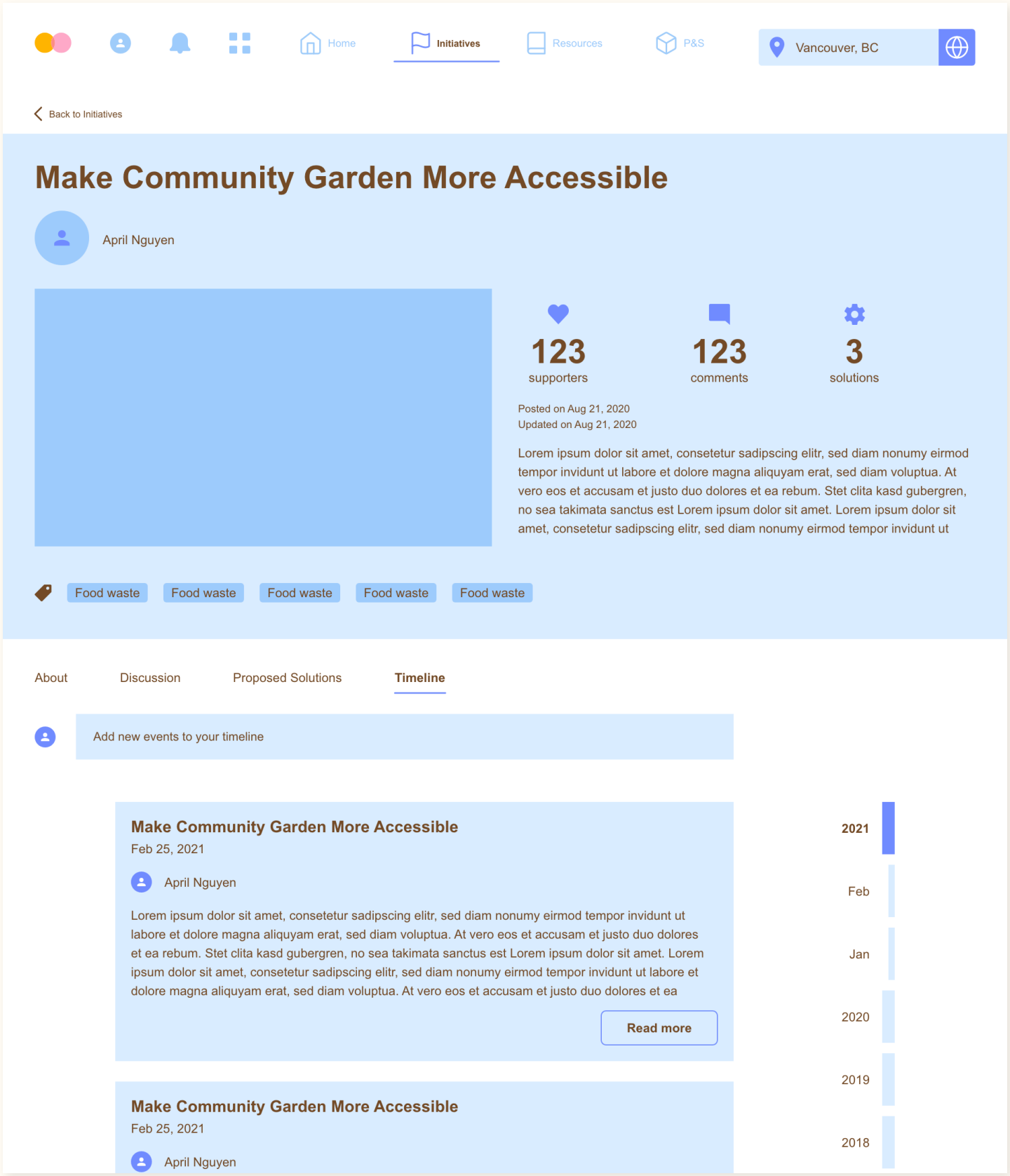

Figure 42.
Initiative post wireframe

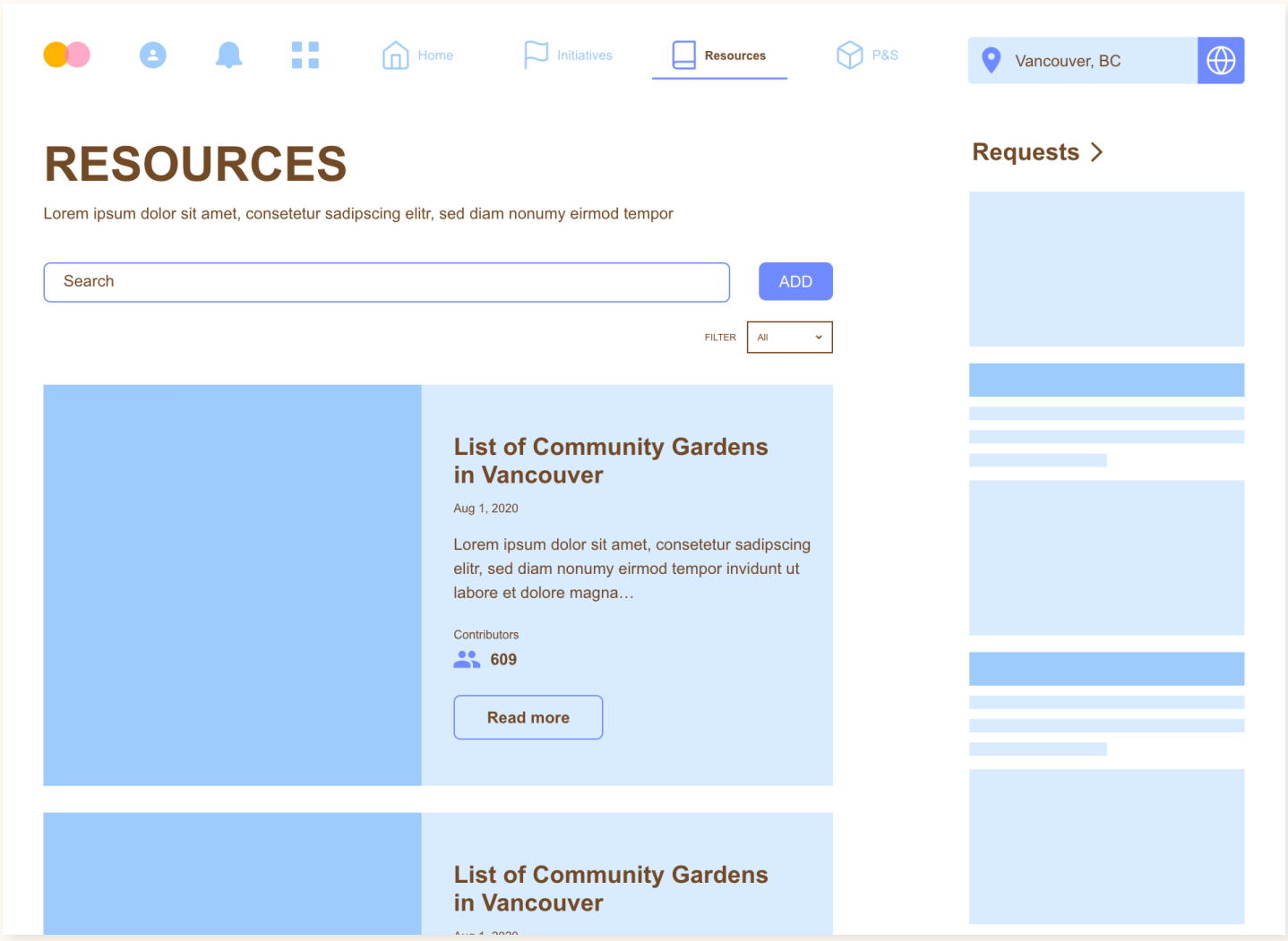

Figure 43.
Resources page wireframe

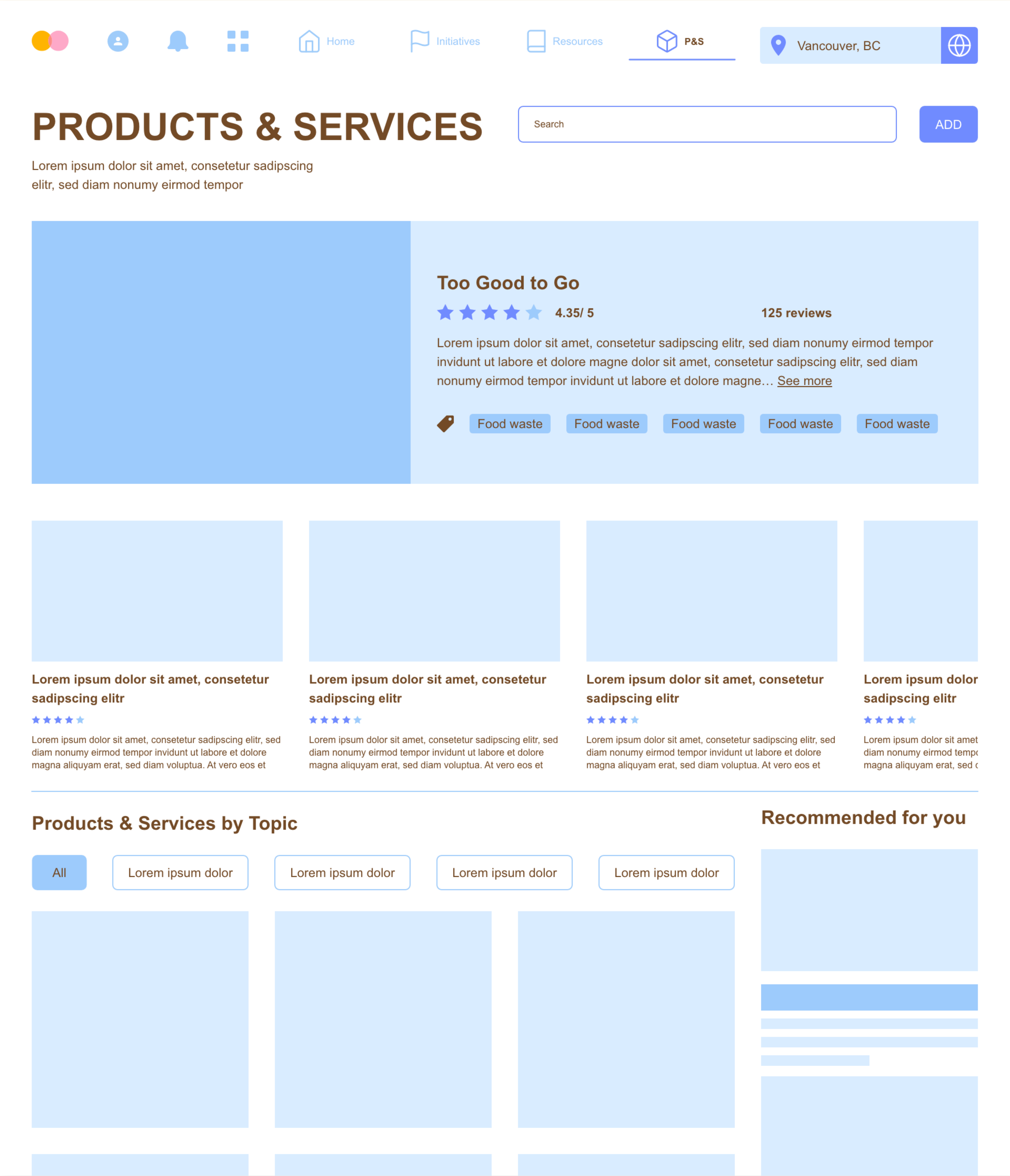

Figure 44.
Products and services page wireframe

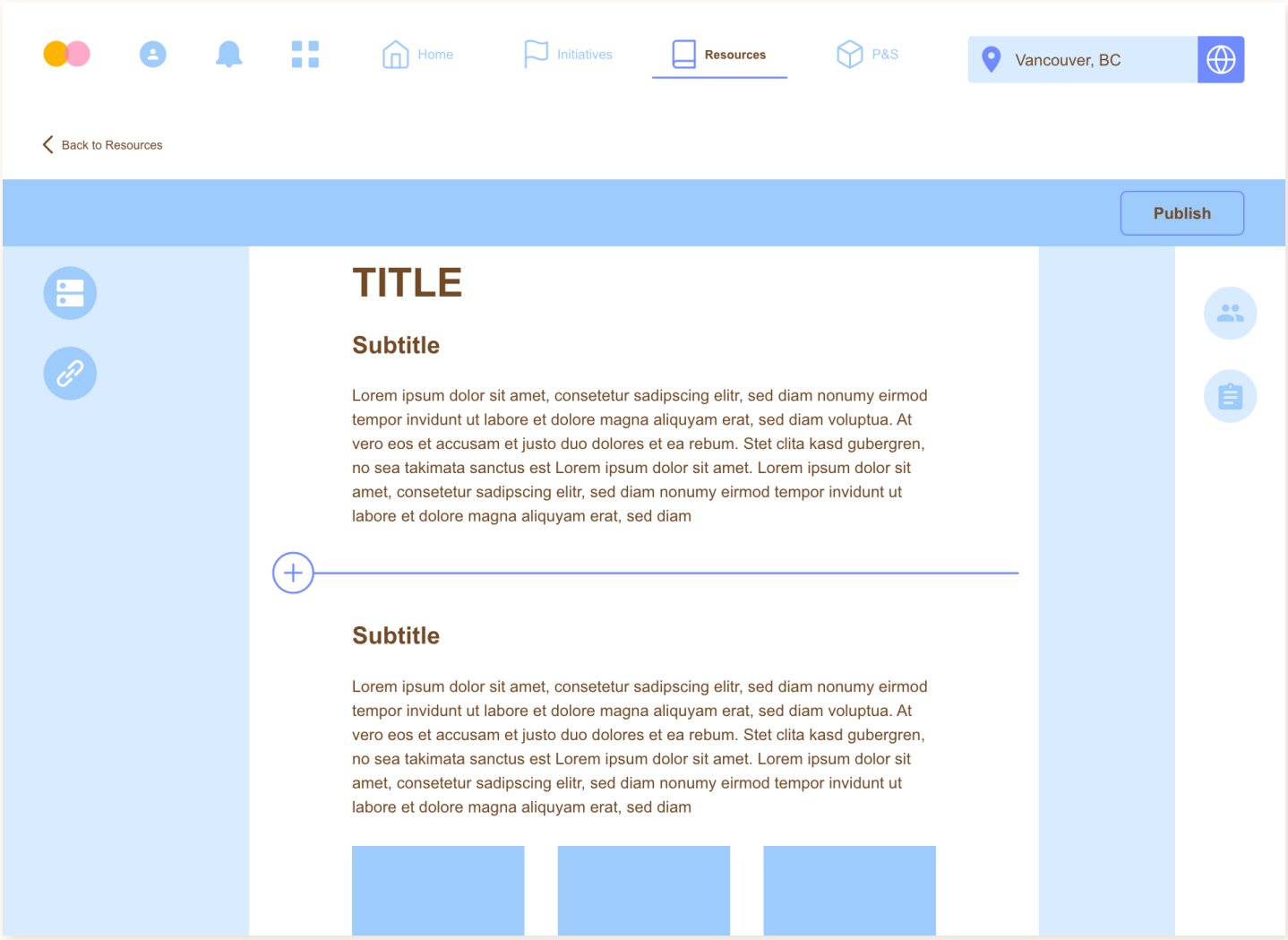

Figure 45.
Create new content page wireframe