

UniSwap: Phase II - Gathering User Requirements

Group Name: TheSix

Group Members:

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1. Personas, Scenarios, and Hierarchical Task Analysis (HTA)

1.1 Personas (template and image sources from <https://uxpressia.com/>):

PERSONA: Akira Tanaka

NAME	TYPE
Akira Tanaka	The International Student
	Goals
Demographic	Quote
Male 24 years Tokyo, Japan → Toronto, Canada	<p>“As an international student, I don't want to buy new things that I'll only use for a few months.”</p>
	Background
	Mario is a second-year undergraduate student at the University of Toronto. He lives off-campus and struggles with balancing his academic responsibilities while managing a part-time job. Due to high tuition and living expenses, he is always looking for ways to cut costs. Mario is also interested in reducing waste and minimizing his environmental impact.
Motivations	Frustrations
<ul style="list-style-type: none"> Simplifying the process of getting essential items without spending too much. Easy access to a trusted marketplace that reduces the hassle of moving between countries. Reducing waste by passing on items to other students once he leaves. 	<ul style="list-style-type: none"> Complicated procedures for selling items or lack of options for international students. Having to spend on new items for short-term use. Concerns about finding affordable, high-quality used goods.

UXPRESSIA
This persona was built in uxpressia.com

PERSONA: Emily Carter

NAME	TYPE
Emily Carter	The Eco-Conscious Advocate
	<p>Goals</p> <ul style="list-style-type: none"> Advocate for a zero-waste lifestyle by encouraging her peers to participate in the exchange and reuse of items. Build a strong sense of community where sustainability is a shared responsibility, inspiring others to adopt eco-friendly habits. Discover second-hand, sustainable solutions that actively reduce environmental impact and promote a circular economy on campus. <p>Quote</p> <p><i>“Living sustainably isn't just a choice—it's a responsibility to the planet and to each other.”</i></p> <p>Background</p> <p>Emily is an environmental studies major with a deep passion for sustainability and environmental justice. She is heavily involved in campus organizations focused on climate action and zero-waste initiatives. Emily sees the world through an eco-conscious lens and is always seeking new ways to lower her environmental impact while uplifting her community. She not only chooses second-hand items for personal use but actively encourages her friends and peers to do the same, believing that small actions can lead to big change.</p> <p>Motivations</p> <ul style="list-style-type: none"> Minimizing her environmental footprint through conscious consumption. Encouraging others to embrace sustainability by making it accessible and community-driven. Promoting a circular economy where resources are shared and reused. <p>Frustrations</p> <ul style="list-style-type: none"> The lack of awareness or interest in sustainability among her peers. Limited platforms or tools dedicated to eco-friendly and community-based exchanges. Difficulty in finding trusted and simple ways to access second-hand items that fit her values.
Demographic	
<input checked="" type="radio"/> Female 22 years <input checked="" type="radio"/> Vancouver, Canada	

UXPRESSIA

This persona was built in uxpressia.com

PERSONA: Mario Lopez

NAME

Mario Lopez

TYPE

The Budget-Conscious Student**Demographic**

♂ Male 19 years

📍 Toronto, Canada

Goals

- Save money on essential items like textbooks and furniture.
- Find affordable second-hand items without compromising on quality.
- Contribute to sustainability by reusing items rather than buying new ones.

Quote

“

Why spend so much on new items when there are perfectly good ones being given away?

”

Background

Mario is a second-year undergraduate student at the University of Toronto. He lives off-campus and struggles with balancing his academic responsibilities while managing a part-time job. Due to high tuition and living expenses, he is always looking for ways to cut costs. Mario is also interested in reducing waste and minimizing his environmental impact.

Motivations

- Reducing his financial burden.
- Contributing to an eco-friendly initiative by reusing items.
- Easily access necessary items for his dorm room and studies.

Frustrations

- Difficulty finding affordable items that are in good condition.
- Lack of a trustworthy platform that ensures safety and verification of sellers.

UXPRESSIA

This persona was built in upressoia.com

PERSONA: Sarah Thompson

NAME	TYPE
Sarah Thompson	The Student With Disabilities

Demographic

Female 23 years
📍 Toronto, Canada

Goals

- Easily find second-hand items in close proximity to her living or study areas to minimize transportation challenges.
- Access a trusted and secure platform that ensures the sellers are verified through university credentials.
- Make sure that the process of acquiring items is efficient and safe, avoiding unnecessary physical strain.

Quote

I need a platform where I can easily find what I need near campus and trust that the sellers are real students.

Background

Sarah is a fourth-year psychology student who uses a wheelchair for mobility. She lives near campus and prefers to acquire necessary items within a short distance to avoid the hassle of long-distance transportation. Sarah is very cautious about security and privacy, especially when meeting people to pick up items. She values platforms that ensure all users are university-verified, which gives her peace of mind.

Motivations

- Finding second-hand items within a convenient range of her daily routes (home, campus).
- Using a platform that prioritizes user safety and trust with identity verification.
- Minimizing logistical challenges related to item pickup, particularly large or heavy items.

Frustrations

- Struggling to find second-hand items nearby, which requires extra effort to transport.
- Insecurity when using general online marketplaces where users aren't verified.
- The lack of accessible, user-friendly second-hand platforms specifically catered to her mobility needs.

UXPRESSIA
This persona was built in uxpressia.com

1.2 Scenario:

Scenario 1: Mario Finds Affordable Textbooks

Mario, a budget-conscious student, logs into UniSwap to look for affordable textbooks for the new semester. He uses the search filters to find textbooks within his price range using points and in good condition. After browsing through the listings, he finds a book he needs, messages the seller, who is an upper-year student in the same program as Mario, to arrange a pickup, and completes the transaction on campus, saving money without compromising on quality.

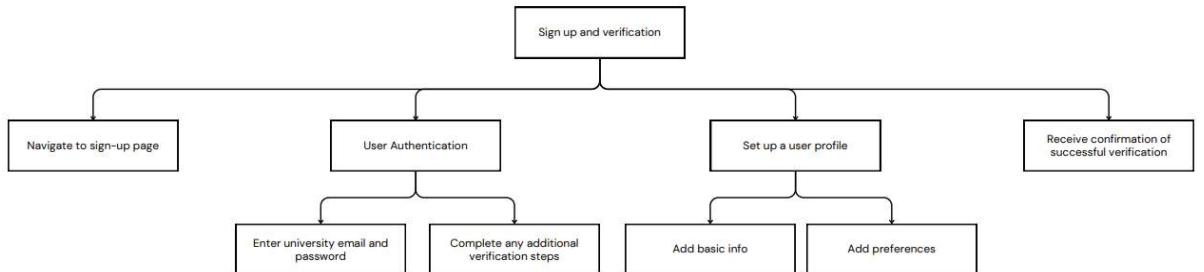
Scenario 2: Akira Sells Items Before Leaving

Akira, an international student, is preparing to return to Japan after this semester and needs to sell his furniture and kitchenware. He logs into UniSwap and lists his items with descriptions and pictures. Within a few days, he receives messages from interested buyers. Akira arranges the transfers, quickly sells the items, and earns points he can use for textbooks or other essentials in his last few weeks in Canada.

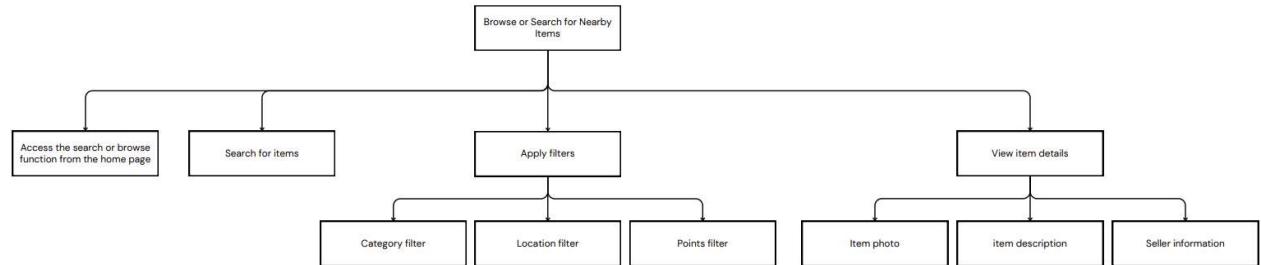
Scenario 3: Sarah Finds Items Close to Campus

Sarah, a student with mobility challenges, needs a small desk for her room. She logs into UniSwap and applies the "Nearby" filter to find listings within a short distance from campus. She finds a desk available just in the same residence area as hers, confirms with the seller through the messaging system, and arranges a convenient pick-up time. After the exchange goes smoothly, Sarah leaves a positive review for the seller, pleased with how easy and convenient the process was. UniSwap's location-based search, combined with its user verification system, gives her peace of mind by ensuring safe transactions with people nearby.

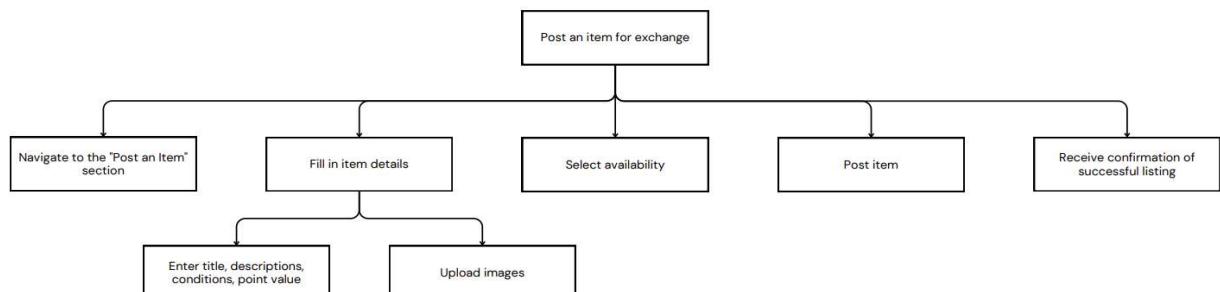
1.3 Hierarchical Task Analysis:



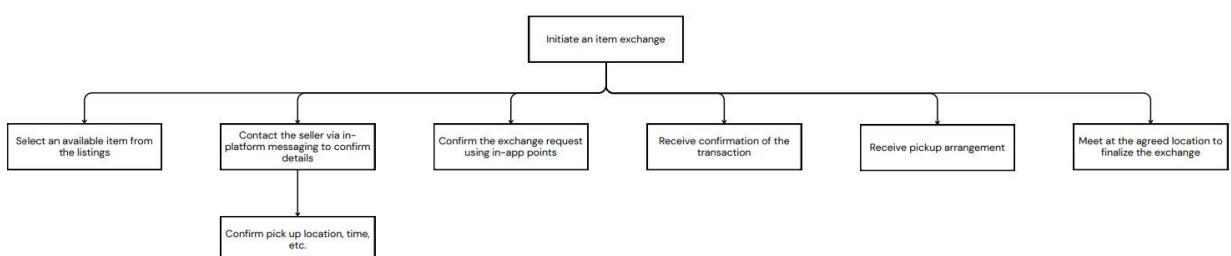
Task 1: Sign up and verification



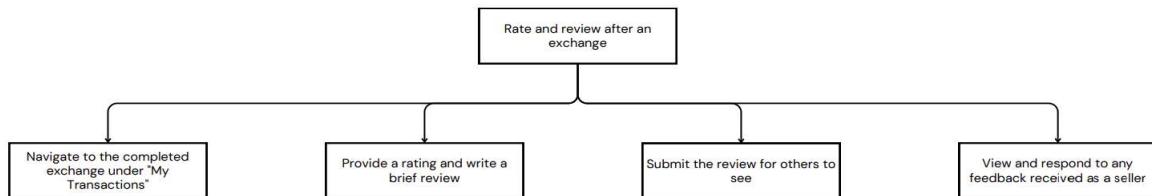
Task 2: Browse or search for nearby items



Task 3: Post an item for exchange



Task 4: Initiate an item exchange



Task 5: Rate and review after an exchange

2. Techniques Used to Gather User Requirements

For techniques, we used questionnaires, interviews and low-fidelity prototypes to gather user requirements.

2.1 Questionnaires:

Being one of the most important measurements in HCI research, surveys provide information regarding users' preferences and ideas from their point of view (Kuter & Yilmaz, 2001) which facilitate our understanding of how to develop our projects further. Online questionnaires, being easily distributed and quickly responded (Kuter & Yilmaz), were chosen as our main survey method. By targeting the groups needed and restricting the form to be limited with only single responses, we collected data directly from our user groups which increases the validity (Kjeldskov & Graham, 2003). Although web-based questionnaires could lead to a biased sample as there is no control over respondents, it provides us with quantitatively analyzed data that supports broad generalization of results.

2.2 Interviews:

To supplement quantitative questionnaires, we implemented interviews aiming to obtain richer and in-depth experiential information (Fontana & Frey, 2005). We mainly conducted unstructured interviews which are widely used during early stages of projects and are more flexible and participatory (Kuter & Yilmaz, 2001). Similar to ethnographic methods, establishing a warm atmosphere for users, interviews provide a great breadth of data as users may be more enthusiastic about sharing their experiences, but are relatively short-term (Kuter & Yilmaz). Understanding users' mood, willingness and other potential external factors help us to interpret the statistical results from questionnaires correctly as well.

2.3 Low-fidelity prototypes:

We also designed low-fidelity prototypes to gain insights from users and refine our ideas. Being able to enable designers' hypothesis testing, prototyping always plays an important role in the design process (Ali & Lande, 2019) especially UCD process. It is recommended to prototype the UI based on the input of future users (Coyette, Kieffer & Vanderdonckt, 2007). Presenting the basic UI functionalities, low-fidelity could keep users involved in the process while preventing them being distracted and thus encourages them to focus more on potential issues with primary tasks (Coyette et al., 2007). Additionally, low-fidelity prototypes facilitate communication within our group as well.

3. Type of Users Selected, Number of Users Selected, and Limitations

We targeted four main user categories for UniSwap: international students, students on a budget, students with disabilities and eco-conscious students. Students on a budget are an important demographic because many university students suffer severe financial difficulties, making affordable access to needed commodities a critical component of the UniSwap platform. These users are most likely to benefit from the app's point-based system, which allows them to obtain necessities without breaking the bank.

International students were chosen because they frequently relocate and require temporary or used items. UniSwap responds to their nomadic lifestyle by providing a low-cost, ecologically responsible solution for purchasing and exchanging gently used items. UniSwap addresses the physical and logistical issues of frequent relocation by focusing on this group. Students with disabilities often need a reliable way to find items that are conveniently located near campus, minimizing the need for long or challenging travel. UniSwap's location-based search filter allows them to quickly locate and connect with nearby sellers, ensuring ease and efficiency in accessing items. Eco-conscious students were also chosen because they are particularly concerned with sustainability and reducing waste. UniSwap aligns with their values by providing a platform that promotes reuse and encourages sustainable living within the university community. The focus on sustainability and the circular economy model resonates with this group, motivating their participation.

Several limitations should be acknowledged in the current study. Firstly, the small sample size of 29 participants may not fully represent the diversity of needs across the entire university population. Additionally, there is a potential bias in the sampling process. The survey was distributed to individuals known to the team, which introduces the possibility of selection bias. As a result, the responses may reflect the views of a particular demographic or social circle, potentially overlooking other important user groups within the university community. Finally, the limited generalizability of the survey results must be considered. Although the findings provide useful initial feedback, they may not be fully representative of the broader university population. Further research, including a larger and more diverse sample, will be necessary to generalize the findings and validate the identified trends.

4. Artifacts Used to Conduct User Requirements Gathering

4.1 Interview transcripts:

The consent forms of the participants are attached at the end of the file

(1) Transcript of the interview with Zaira Barron

Interviewer:

Thank you so much for joining me today. I'm really interested in your thoughts on second-hand exchanges on campus and how a platform like UniSwap could fit into student life. I'd like to start by hearing about your experiences with second-hand items. Could you tell me what types of things you've bought, sold, or exchanged, and what your motivations were for doing so?

Zaira:

Sure! Well, as a student, it's all about saving money. I've mostly bought second-hand textbooks, which can be so expensive otherwise. I've also picked up a few kitchen items, like pans, utensils, and some small furniture. I remember I got a desk for my dorm room from another student because I didn't want to spend too much on a new one, and honestly, it was in great condition. It just made sense, you know? Why buy new when someone else has something they don't need anymore?

Interviewer:

Absolutely, that makes a lot of sense. When you're looking for these second-hand items, which platforms have you used in the past?

Zaira:

I've mostly used Facebook Marketplace, Kijiji, and sometimes even Craigslist, but I'm more careful on that one. There's also a student-run Facebook group at U of T where people post stuff they're selling or giving away. It's really handy, and you know it's just students, so there's a bit more trust involved.

Interviewer:

It's great that the Facebook group gives you a way to interact with other students directly. Can you share what your experience has been like with these platforms overall? Have you faced any challenges using them?

Zaira:

Yeah, it's been mostly positive, but there have been a few hiccups. The biggest issue is sometimes the item isn't what I expected. Maybe the description wasn't clear enough, or the pictures made it look better than it actually was. Then there's the hassle of arranging meet-ups, which can be tricky because everyone's schedules are different. I've had times when the seller or buyer didn't show up, which was really frustrating. And then there's always the concern about safety—meeting strangers can feel risky sometimes, especially off-campus.

Interviewer:

That sounds frustrating. Given those concerns, how would you feel about using a platform like UniSwap that's only available to university students and staff? Would that make you feel more comfortable or secure?

Zaira:

Definitely. I think the fact that it's limited to the university community would give me more peace of mind. If it's verified through university credentials, it adds an extra layer of security, which is great. Plus, it would feel more like a service that's "by students, for students," which is a nice touch. I'd trust the people on the platform more because we all have that connection to the university.

Interviewer:

That's great to hear. UniSwap is designed to be campus-specific, so you'd only be interacting with fellow students and staff. What specific features would you want to see in a platform like this? What would be the most important things to include?

Zaira:

A search and filter system would be huge. Being able to narrow down by category, price, or location on campus would make things so much easier. I'd also really like a messaging system built into the platform so I don't have to give out my phone number or email. A rating or review system for users would be really helpful, too. If someone has a history of not showing up or selling bad-quality items, it would be good to know beforehand.

Interviewer:

Those all sound like useful features. On the topic of messaging, how would you feel about using your university credentials for verification on the platform? Would you have any concerns about privacy or security?

Zaira:

Honestly, I wouldn't mind using my university credentials for verification. I feel like it would help keep things safe and professional. If everyone is verified, you know you're not dealing with random people from outside the university. As long as my personal information isn't shared with others on the platform, I think it's a great way to ensure that everyone is who they say they are.

Interviewer:

That's a good point—privacy and security are definitely key. Now, let's talk about meet-ups and exchanges. You mentioned that arranging meet-ups can be challenging. What would make you feel safer or more comfortable about that aspect of the exchange process?

Zaira:

Yeah, meet-ups can be a bit of a hassle. I think having designated spots on campus for exchanges would be ideal. Maybe there could be "safe exchange zones" that are well-lit and monitored. That way, you know you're meeting in a secure place, and there's less worry about something going wrong. Having the option to do exchanges in common areas like libraries or student centers would make it a lot easier and more comfortable.

Interviewer:

That sounds like a great idea. Safe exchange zones would definitely add another layer of security. UniSwap also aims to foster social interactions and connections within the campus community. Do you think that's a positive aspect? Would it influence your decision to use the platform?

Zaira:

I think it's a cool idea, actually. A platform like this could bring people together who might not have crossed paths otherwise. And it's not just about the exchange itself—it's about building a sense of community. You're helping someone out, and they're helping you out. It's a positive interaction, which is nice in a big university where it's easy to feel disconnected sometimes.

Interviewer:

That's a wonderful perspective. It's true that universities can feel impersonal at times, and fostering community can help. Do you think this sense of community, along with the platform's focus on sustainability and reducing waste, would appeal to you?

Zaira:

Definitely. Sustainability is something I really care about. Reusing items, instead of buying new things all the time, is an easy way to make a difference. I like the idea of reducing waste, and if I can do that while also saving money, it's a win-win. Plus, knowing that I'm contributing to a more sustainable campus makes it even better.

Interviewer:

I completely agree. On the topic of sustainability, do you feel that your peers share similar attitudes towards reducing waste and making more eco-friendly choices? Do you think that aspect of UniSwap would resonate with them?

Zaira:

Yeah, I think a lot of students are more environmentally conscious these days. There's definitely a movement towards reusing and recycling, especially among younger people. I think UniSwap could really tap into that mindset and become something students actively want to participate in, not just for the financial benefits but because it aligns with their values. It feels good to know you're doing something that benefits the planet, even in a small way.

Interviewer:

That's great insight. It sounds like UniSwap's focus on sustainability could really resonate with students. Just to wrap things up, how important is convenience when it comes to using a platform like this? Would a campus-based search and localized exchanges make a big difference for you?

Zaira:

Oh, absolutely. Convenience is everything, especially when you're balancing classes, work, and other commitments. If I can search for items that are close to my dorm or the buildings I'm already in for classes, it would make the process so much easier. I don't want to travel far to pick up something, so having a localized search within campus would be a game-changer.

Interviewer:

It seems like convenience, security, and sustainability are all really important factors for you. Thank you so much for sharing your thoughts with me today. Your insights have been incredibly valuable, and I think they'll really help shape the direction of UniSwap.

Zaira:

No problem, I'm happy to help! I think UniSwap sounds like a great idea, and I'm excited to

see how it develops.

Interviewer:

Thanks again! Take care, and have a great day.

(2) Transcript of the interview with Stella

Interviewer:

Could you tell me a bit about yourself and your background? Like, what's your academic year, your lifestyle, and anything else that might be relevant?

Stella:

Sure! I'm Stella, a third-year student at UTSC, specializing in Management. I live off-campus, which means I have to juggle school, work, and life on my own a lot. I'm also a minimalist, so I try to keep things simple and only hold onto the essentials. Moving frequently makes it harder to accumulate stuff, and I prefer to have fewer, but more functional items.

Interviewer:

What are some of your day-to-day challenges as a student, particularly in terms of managing finances or acquiring items you need?

Stella:

Managing finances as a student can be really tough. I'm on a pretty strict budget every month, so I really have to think about how I spend my money. Between tuition, rent, groceries, and other living expenses, there isn't much left for anything else. Also, because I move a lot, I can't afford to buy a lot of things or keep things I don't use regularly. Carrying too much stuff from place to place is just a hassle. So, I try to buy only what I absolutely need, but even then, getting things like furniture or textbooks on a budget is a challenge.

Interviewer:

Have you ever used a platform to buy, sell, or exchange second-hand items? How was your experience?

Stella:

Yes, I tried using Facebook Marketplace once. I was looking for a desk, and I found one that seemed perfect. But when it came time to pick it up, the person just didn't show up. No message, nothing. It felt like a waste of my time. Plus, I felt a bit uncomfortable after that, thinking about how I was dealing with a stranger without any verification process. It really made me think twice about using platforms where I can't be sure who I'm dealing with. There's a real safety concern when there's no proper user verification. It left me feeling a bit uneasy about online second-hand exchanges.

Interviewer:

I see. That sounds frustrating. What kind of items are most important for you to buy or exchange as a student?

Stella:

Definitely furniture and textbooks. Textbooks are so expensive when you buy them new, and

a lot of times, I only use them for one semester. So getting them second-hand would save me a lot of money. Furniture is another big one because, like I said, I move a lot. I don't want to spend a ton of money on something like a new desk or chair that I'll only need for a few months before moving again.

Interviewer:

That makes sense. How would you feel about a points system for exchanges, rather than using money? Any concerns or preferences?

Stella:

I actually find that idea pretty interesting. It could take a lot of stress off students like me who are constantly worrying about spending their limited money. If we can use points instead, it would feel less like I'm constantly bleeding cash. But I do have some concerns. For example, what if someone is new to the platform and doesn't have any points yet? How do they get started? Would they be unable to get anything at first? And I wonder if the points system might end up feeling a bit arbitrary. Like, what determines how many points something is worth? Could the values feel inconsistent from item to item?

Interviewer:

Good point! That's definitely something to think about. Last question: would you prefer a platform that focuses only on transactions within your university, or one that includes the broader community as well?

Stella:

Definitely within the university. I feel like there's a built-in sense of trust when everyone involved is part of the same campus community. We're all students or faculty, so we understand each other's needs better. Plus, I think there's less risk involved—knowing that I'm dealing with someone who's also verified through the university would make me feel a lot safer. I'm not really comfortable doing exchanges with random people outside of campus, especially after my experience on Facebook Marketplace.

Interviewer:

That makes a lot of sense. Thanks so much, Stella. Your insights have been really helpful!

(3) Transcript of the interview with Isabelle

Interviewer:

Thank you for joining me today. Do you want to share a bit about yourself?

Isabelle:

Sure. My name is Isabelle and I am a third year arts management student.

Interviewer:

What would motivate you to use a platform like UniSwap for exchanging items instead of traditional methods like Facebook Marketplace or campus bulletin boards?

Isabelle:

I would be motivated to use UniSwap because I am worried about being scammed using Facebook because everyone can access those methods.

Interviewer:

Have you ever found it difficult to sell or give away items at your university? If so, what were the challenges?

Isabelle:

Yes, to be honest, I don't know if there's any official platform for university students to sell or give away items. So I have to take the risk of selling online to strangers whose identity is uncertain.

Interviewer:

How important is it to you that UniSwap has a secure login system (using university credentials) so that only verified university members can use it?

Isabelle:

Definitely important, I think it would reduce the fraud risk a lot and I would trust the platform more.

Interviewer:

What do you think about the idea of a point-based system instead of using money? Would it influence your participation?

Isabelle:

Not quite sure about this cuz I don't think I've met a point-based platform before, but it sounds like an interesting approach.

Interviewer:

Would earning points for giving away items make you more likely to participate regularly in UniSwap? What kind of rewards or incentives would keep you engaged?

Isabelle:

Still, since point stuff is really new to me I am a bit skeptical but I think gamifying buying and selling items would give me a sense of achievement.

Interviewer:

How would you feel about being rated or having user reviews as part of the UniSwap platform? Would this impact your interactions?

Isabelle:

Yeah for sure, rating and user reviews would help me with decision making as I believe people would tend to choose users with higher rates and better reviews to have transactions with.

Interviewer:

When looking for items (textbooks, kitchenware, etc.), what type of filters or search functions would you find most useful?

Isabelle:

Maybe filters about the category, like you said the textbooks and kitchenware, and also a sort based on price from both low to high and high to low, I rely on that a lot during my overall online shopping process,

Interviewer:

How important is it to you to meet other students on campus when exchanging items? Would a campus-based search be something you'd use often?

Isabelle:

Not necessary but it would be really helpful. Students need to go to school so exchanging items on campus may save a lot of time or even commuting costs for both of us, but for small items only. If there's a campus-based search, I would use it because it's nice to know more people in the same campus even if we don't make transactions.

Interviewer:

How much do you value sustainability and reducing waste on campus? Would this influence your use of a platform like UniSwap?

Isabelle:

Not quite my concern or motivation for using a platform like UniSwap, but still it would help with sustainability and reducing waste.

Interviewer:

Do you think other students at your university would be interested in a platform that encourages item reuse? Why or why not?

Isabelle:

I think so because not only myself but a lot of friends around me have this need to give out some things we don't need anymore and get something in a cheaper way. It's quite often for me to see posts for selling second-hand items on my social media.

Interviewer:

How could UniSwap make the process of exchanging items more enjoyable or rewarding for you?

Isabelle:

To make it more enjoyable, the key might need to be focused on the smoothness of the overall process? From searching to description I can see for each item, and also a chatting function with the seller. And make it easy and clear to use.

Interviewer:

What features or services could make UniSwap more appealing or useful to you and your peers?

Isabelle:

Having more language options may make it more appealing for international students I think.

Interviewer:

Are there any potential challenges you foresee in using a platform like UniSwap? How could these be addressed?

Isabelle:

Sometimes sellers may not describe the items in detail that make it difficult for me to decide, a criteria for product description may help.

4.2 Questionnaire:

The link, content and the result of the questionnaire are as follows:

Link:

https://docs.google.com/forms/d/1JOykCUXszOQD_q6m2HxI7lKwAi0qqSXFXmNhQhwe31k/edit

Content:

UniSwap Survey

UniSwap is a secure, university-based platform designed to streamline the exchange of reusable items among students and staff.

What is your age group?

- Under 18
- 18-24
- 25-34
- 35-44
- 45 or older

What type of user do you identify with? (check all that apply) *

- Domestic student
- International student
- New or Incoming students (Freshmen and Transfer Students)
- Student on a Budget
- Eco-conscious student
- People with special needs (Accessibility)
- Faculty/Staff
- other...

How often do you buy or exchange second-hand items (e.g., textbooks, kitchenware, furniture)? *

- Weekly
- Monthly
- A few times a year
- Rarely
- Never but interested
- Never

What platforms do you use for selling or buying second-hand items? (check all that apply)

Facebook Marketplace

eBay

Kijiji

Other social media (Red...)

In-person markets

From friends

other...

How satisfied are you with the current ways you use to find second-hand items?

1 2 3 4 5

Very Unsatisfied

Very Satisfied

What is your primary motivation for using a platform to exchange items?

Saving money

Reducing waste (Eco-friendly)

Finding unique or hard-to-find items

Helping others

other...

What types of items are you most interested in exchanging on a platform like UniSwap?

*

(check all that apply)

Kitchenware

Stationery (Textbook...)

Clothing

Accessories

Furniture

Consumer electronics(Hairdryer, Screen, Headset, Keyboard, Mouse, etc.)

Sporting goods(dumbbell,Boxing gloves,Swimming goggles)

other...

What challenges do you typically face when buying or selling second-hand items online? (check all that apply)

- Trust issues with sellers/buyers
- Difficulty finding items
- Inconvenient location for pick-up/drop-off
- Items not as described (quality/condition issues)
- High transaction or delivery fees
- other...

Which features would be most important to you in a exchange platform like UniSwap? (check * all that apply)

- Easy item search and filtering
- Secure login with university credentials
- Point-based exchange system
- Direct messaging between users
- User ratings and reviews
- Multilingual support
- Accessibility features (adjustable font size, contrast settings, etc.)
- other...

How comfortable are you using a platform that requires university credential verification to * participate?

1	2	3	4	5	
Uncomfortable	<input type="radio"/> Very Comfortable				

How important is it for you to have user profiles and ratings to assess the reliability of a buyer/seller? *

1	2	3	4	5	
Very Important	<input type="radio"/> Not Important				

How do you feel about a point-based system rather than monetary transactions for exchanging items? *

1	2	3	4	5	
Strongly Dislike	<input type="radio"/> Strongly Prefer				

Would you find a campus-based search filter useful for finding items closer to your location? *

1	2	3	4	5		
Useless	<input type="radio"/>	Very Useful				

Would you be more inclined to use a platform that fosters social interactions and connections * within your campus community?

1	2	3	4	5		
Declined	<input type="radio"/>	Strongly inclined				

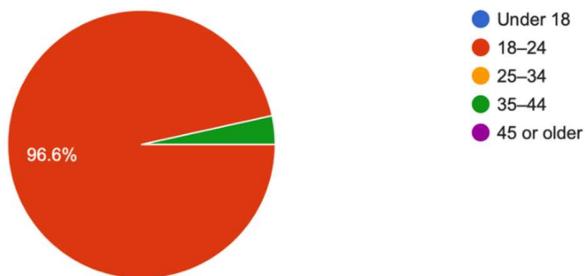
What concerns, if any, do you have about using a platform for exchanging items with other students?

Briefly answer text

Result:

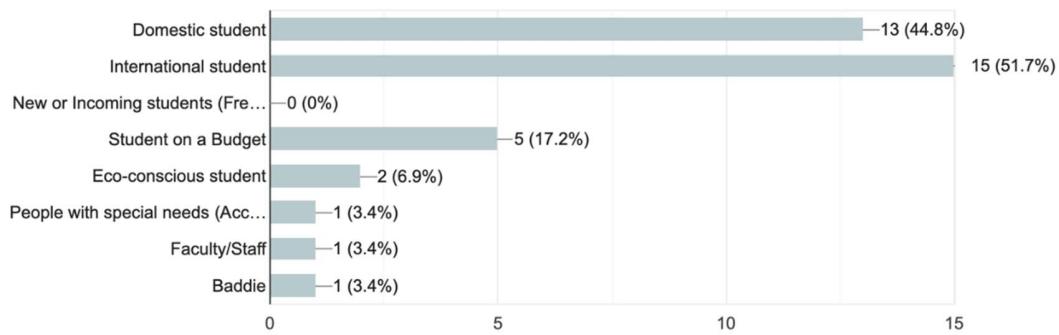
What is your age group?

29 responses



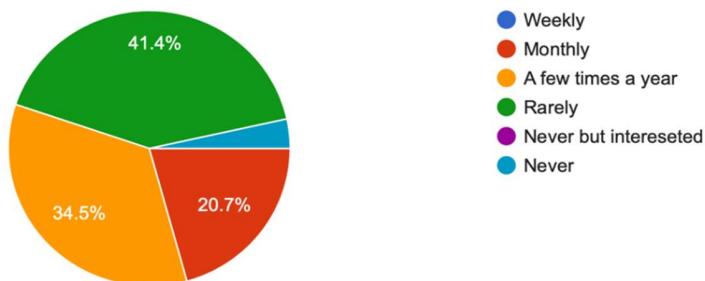
What type of user do you identify with? (check all that apply)

29 responses



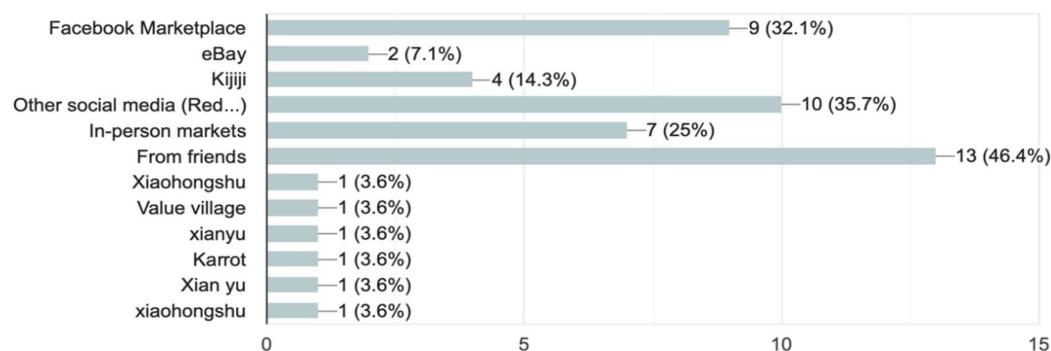
How often do you buy or exchange second-hand items (e.g., textbooks, kitchenware, furniture)?

29 responses



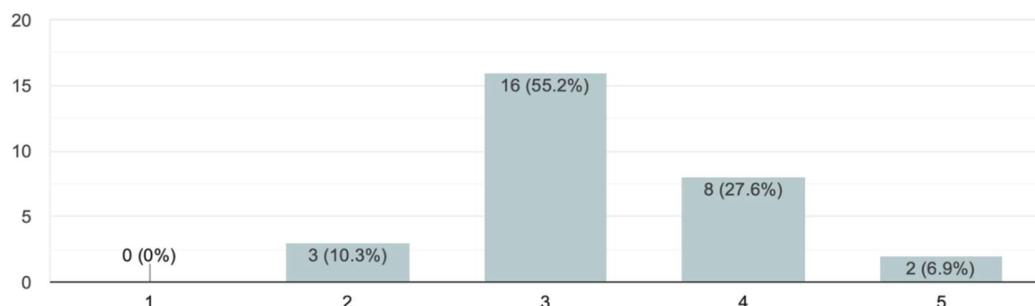
What platforms do you use for selling or buying second-hand items? (check all that apply)

28 responses



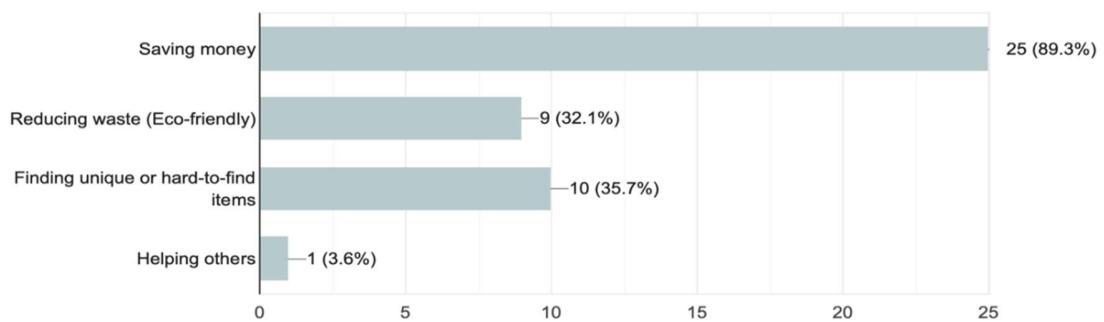
How satisfied are you with the current ways you use to find second-hand items?

29 responses



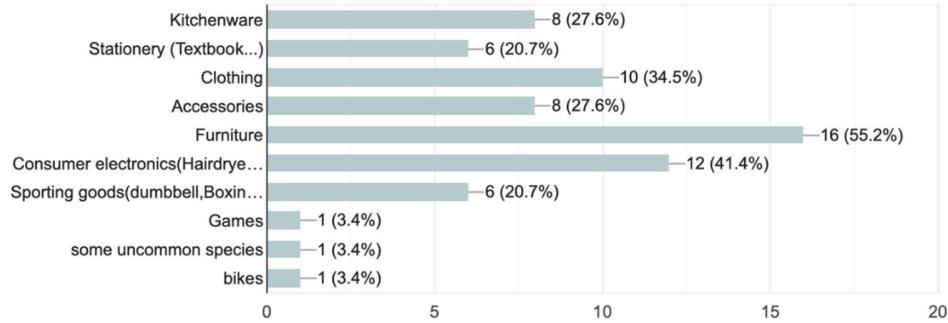
What is your primary motivation for using a platform to exchange items?

28 responses



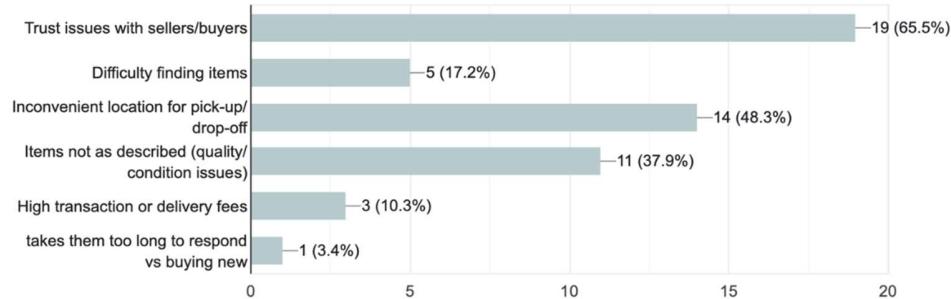
What types of items are you most interested in exchanging on a platform like UniSwap? (check all that apply)

29 responses



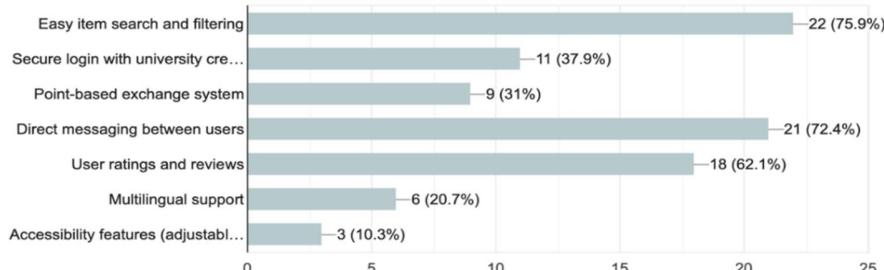
What challenges do you typically face when buying or selling second-hand items online? (check all that apply)

29 responses



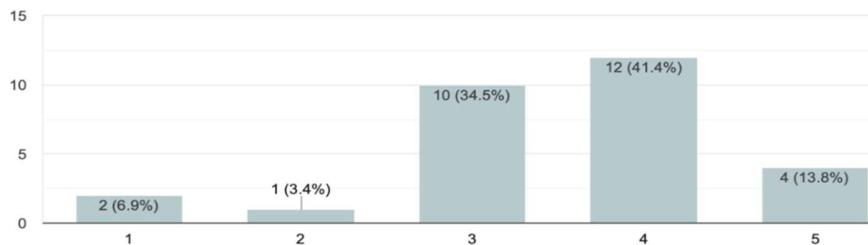
Which features would be most important to you in a exchange platform like UniSwap? (check all that apply)

29 responses



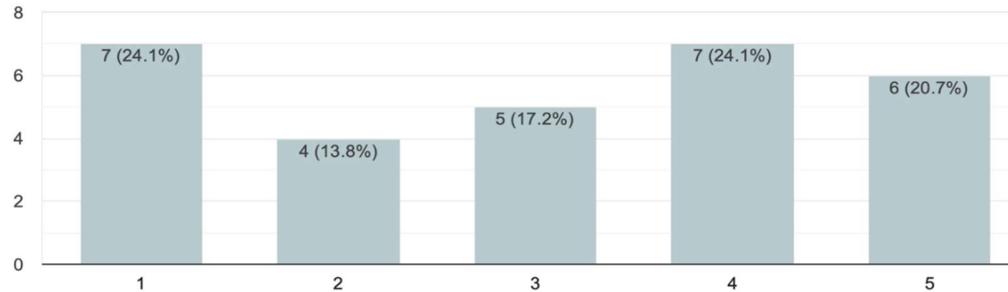
How comfortable are you using a platform that requires university credential verification to participate?

29 responses



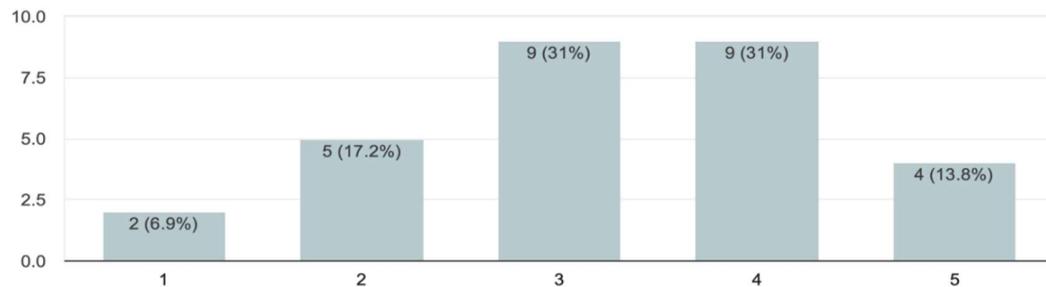
How important is it for you to have user profiles and ratings to assess the reliability of a buyer/seller?

29 responses



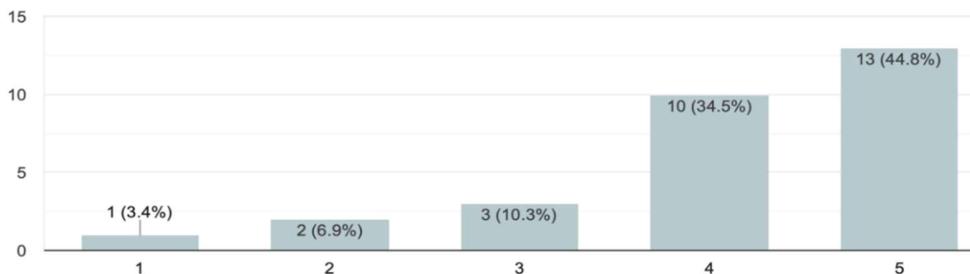
How do you feel about a point-based system rather than monetary transactions for exchanging items?

29 responses



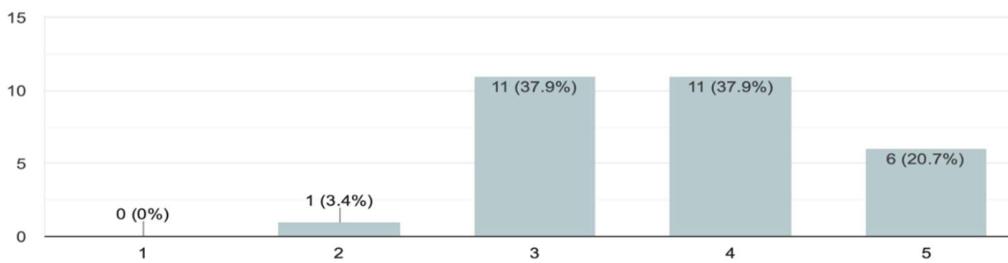
Would you find a campus-based search filter useful for finding items closer to your location?

29 responses



Would you be more inclined to use a platform that fosters social interactions and connections within your campus community?

29 responses



4.3 low-fidelity prototypes:

The figure displays six low-fidelity prototypes (1-6) for the Uniswap application, illustrating its user interface and functionality.

- Prototype 1:** Login screen titled "Select your school to sign in to Uniswap". It shows a search bar with "toron" typed in, and a dropdown menu listing "Keystone Toronto Online School", "Toronto District School Board", "Toronto Metropolitan University", and "University of Toronto".
- Prototype 2:** Login screen featuring the University of Toronto logo and a "Sign in with Quercus" button. Below it, text says "Or sign in with your email address and Crowdmark password by clicking the button below." A "Sign in with email" button and a "Back to sign in" link are also present.
- Prototype 3:** Homepage with a top navigation bar showing a user profile (Tom), a search bar, and icons for shopping cart (0), points (82), and notifications (1). Below the bar is a grid of categories: Furniture, Stationery, Clothing, Accessories, Consumer Electronics, and Sporting goods. A "More" button is at the bottom right. At the bottom are links for Home, Category, Chat, and Profile.
- Prototype 4:** Profile page for user Tom Huffman. It includes sections for Personal info (Name: Tom Huffman, School: UTSC, Email: [redacted], Password: [redacted], Points earned: 82, other info....), Swap history, Friends list, Black list, Post a sharing, Manage my sharings, rate & review, and other functions. At the bottom are Home, Category, Chat, and Profile buttons.
- Prototype 5:** Item description page for a shared item. It shows a placeholder for "Item's picture", the title "Title of the item", a brief description box ("Brief description (Cost of points, degree of use, etc.)", "Owner's information (rate, school prefer, etc.)", "Detailed description of the item (price, pickup location, condition of the item, etc.)", and "Recommendation of similar items". At the bottom are Home, Category, Chat, and Profile buttons.
- Prototype 6:** Chat page between users Tom and John. It shows a message from Tom: "Hello John, I am interested of the headphone you shared, but the pic only shows its front, may I take a look at the back of the headphone?". John replies: "There you go.". Tom then says: "Picture of the back of the product". John replies: "Thank you! I think I will take it. On what day will you be available? I can meet you in college...". At the bottom are Home, Category, Chat, and Profile buttons.

Page 1-2: Login page of Uniswap, users must use school authorization to log in to ensure security
 Page 3: Homepage that includes items category, search page, brief personal information, etc.
 Page 4: Profile page of an Uniswap user, information and functions are shown in the figure.
 Page 5: Item-description page of a shared item of Uniswap
 Page 6: Chat page between 2 Uniswap Users

5. Summary of Results and Impact on Design Decisions

The user research conducted through a combination of interviews, surveys, and low-fidelity prototypes has provided crucial insights that will guide the development of high-fidelity prototypes for UniSwap. The feedback, gathered from diverse participants—including budget-conscious students, international students, eco-conscious advocates, and students with mobility challenges—has given us a nuanced understanding of their specific needs. This research has highlighted essential features that must be implemented to ensure that UniSwap is a user-centered platform that directly addresses the varied preferences of its target audience.

(1) Security and Trust

Security emerged as the top concern across all participants. According to the survey results, over 65% of respondents indicated that security was their highest priority when considering the use of an online exchange platform. This was further reinforced during interviews with participants like Mario, representing budget-conscious students, and Sarah, a student with mobility challenges. Their experiences on general platforms like Facebook Marketplace underscored the risks associated with interacting with strangers. Concerns about fraud, scams, and safety were raised repeatedly, especially by students like Sarah, who place high value on secure, accessible exchanges where trust is built into the platform.

The interview with Zaira illustrated the importance of a university-verified system. She expressed a strong preference for a platform where users could be verified through university credentials, which would provide her peace of mind, knowing she was interacting solely with fellow students and staff. Such a system would not only address common trust issues but also foster a stronger sense of community within the platform, as users feel more comfortable interacting with people from their academic institution.

As a result, a robust verification system will be integrated into UniSwap, requiring users to log in using their university credentials. This will ensure that only verified students and staff can access the platform, addressing the security concerns of more than 65% of respondents. By creating a safe, trusted environment, users will feel confident in engaging in transactions. Additionally, UniSwap will introduce monitored, well-lit "safe exchange zones" on campus, allowing users to complete transactions in controlled, secure locations. This feature will be especially crucial for students like Sarah, for whom security and physical safety are top priorities.

(2) Convenience and Accessibility

Convenience was another key factor that significantly impacts user adoption of UniSwap. According to the survey, 48.3% of respondents highlighted the importance of proximity and accessibility when using an exchange platform. Many users, particularly those with mobility challenges, emphasized the need for a system that allows them to quickly find items nearby to avoid logistical difficulties. This was echoed in interviews with Sarah, who requires accessible exchanges due to her mobility issues, and with Stella, who expressed frustration over the difficulty of coordinating meetups off-campus.

For users with demanding schedules, such as international students like Akira, convenience is equally important. He stressed the need for efficient exchanges without the hassle of long-distance travel or complicated logistics, particularly for short-term use items such as furniture or kitchenware. In Sarah's case, where she needed a small desk, the ability to filter searches based on proximity to her campus residence was deemed essential.

In response to these insights, UniSwap will feature a campus-based search filter that allows users to search for items within specific geographic ranges, such as residence halls or academic buildings. This feature will provide users with localized results, saving them time and eliminating the stress of long-distance travel for pickups. Additionally, the platform will introduce designated "safe exchange zones" on campus, streamlining the exchange process by providing secure, convenient locations. These zones will be particularly beneficial to students like Sarah, but will also appeal to students like Stella and Akira, who prioritize ease and accessibility.

(3) Sustainability and Community Engagement

Sustainability emerged as a key theme, with over one-third of respondents stating that environmental impact is a major motivating factor in their decision to use a second-hand exchange platform. Eco-conscious students, like Emily, are drawn to UniSwap's potential to reduce waste and promote sustainable practices. Emily's persona reflects the values of many students who are increasingly aware of environmental issues and actively seek out ways to participate in a circular economy. This sentiment was echoed in the interviews, where Isabelle mentioned the growing interest among her peers in reusing items rather than purchasing new ones, highlighting a broader campus-wide movement toward sustainability.

Many participants expressed a strong desire to engage in a community-oriented platform that encourages responsible consumption. UniSwap, with its focus on reuse and recycling, aligns well with this demand, offering students a way to exchange goods in a manner that benefits both their wallets and the environment.

To cater to this eco-conscious user segment, the high-fidelity prototype will integrate features that not only highlight the sustainability benefits of using UniSwap but also actively track and quantify them. One of the core features will be an "eco-savings" tracker, which will allow users to see the positive environmental impact of their transactions in real-time, such as the amount of waste avoided or carbon emissions reduced through their exchanges. To further incentivize sustainability, the platform will include badges or rewards for users who make significant contributions to waste reduction, fostering ongoing participation and a sense of accomplishment. These features will resonate with users like Emily, who seek both personal and environmental rewards from their engagement with UniSwap.

(4) Gamification through Point System

While the point-based system was generally well-received by survey respondents, 24.1% of users raised concerns about its implementation, particularly regarding fairness and ease of use for new users. Participants like Stella expressed worries about how new users without points would be able to participate meaningfully in the platform, and there were also questions about how points

would be allocated for items of varying value. Fairness in point distribution and allocation emerged as a concern that needs to be addressed to ensure that the system is transparent and accessible to all.

To address these concerns, the high-fidelity prototype will feature a structured point system guide that clearly explains how points are earned, spent, and allocated for different items. To ensure inclusivity, new users will receive an initial allotment of points upon signing up, allowing them to participate in the platform without feeling excluded due to a lack of points. Additionally, the system will be designed to ensure consistency in how points are assigned based on item value, with guidelines established to maintain fairness across transactions. This transparency will alleviate concerns and encourage new users to engage with the platform immediately.

(5) User Interface and Experience

A well-designed user interface is critical for the success of UniSwap. According to our survey, over 70% of respondents emphasized the importance of having advanced search and filter functionalities to streamline the process of finding items. Participants frequently expressed the need for efficient search tools that allow them to quickly narrow down options based on criteria like item type, price, and location. This sentiment was echoed in interviews with Isabelle, who highlighted how important it is to be able to sort items by category, price, and location to make the shopping experience more efficient.

Many users also stressed the importance of seamless communication, especially in managing exchanges. Participants wanted to be able to coordinate directly with sellers without having to exchange personal contact information, which they viewed as both inconvenient and potentially unsafe.

In response to these needs, the high-fidelity prototype will feature a clean, intuitive user interface with advanced search filters that allow users to sort items based on category, price (in points), proximity, and user ratings. A built-in messaging system will be integrated into the platform to enable buyers and sellers to communicate directly within the app, protecting user privacy by eliminating the need to share phone numbers or email addresses. User ratings and reviews will also be included to ensure transparency and build trust within the community, as users can assess the reliability and reputation of sellers before engaging in a transaction. This feature will contribute to a smoother, safer, and more enjoyable user experience overall.

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- Coyette, A., Kieffer, S., & Vanderdonckt, J. (2007, September). Multi-fidelity prototyping of user interfaces. In IFIP Conference on Human-Computer Interaction (pp. 150-164). Berlin, Heidelberg: Springer Berlin Heidelberg.

Attachment

Interview Consent Form

Title of the Study: UniSwap User Requirements

Researchers:

Name: Qiushi Chen, Cheryl Zhang, Yuqi Gao, Siyun Gu, Xinyu Liu, Shanni Li

Contact Information: cher.zhang@mail.utoronto.ca, raymondakayuqi.gao@mail.utoronto.ca,
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johnsongiu.chen@mail.utoronto.ca

Affiliation: University of Toronto Scarborough

Purpose of the Study:

You are being invited to participate in an interview as part of a research project. The goal of this study is to gather insights about university students' experiences with peer-to-peer item exchanges.

What Will Be Asked of You:

If you agree to participate, you will be asked to answer questions about your experiences using item exchange platforms or your views on sustainability at universities. The interview will last approximately 30 minutes and will take place in person.

Voluntary Participation:

Your participation is completely voluntary, and you may withdraw at any time without penalty or explanation. You can also choose not to answer any questions you do not feel comfortable with.

Confidentiality:

The information you provide will be kept confidential. Your responses will be anonymized, and no identifying information will be used in any reports or publications resulting from this study. Only the researcher(s) will have access to the interview data, which will be securely stored.

Risks and Benefits:

There are no known risks associated with this interview. While there are no direct benefits to you, your responses may contribute to valuable insights in enhancing peer-to-peer exchange platforms.

Contact Information:

If you have any questions or concerns about this study or your rights as a participant, you may contact:

Researcher: Qiushi Chen, Cheryl Zhang, Yuqi Gao, Siyun Gu, Xinyu Liu, Shanni Li

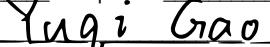
Consent:

By signing below, you are acknowledging that you have read and understood the information provided and that you agree to participate in this interview.

Participant's Name: Zaira Barron

Participant's Signature: 

Researcher's Name: Yuqi Gao

Researcher's Signature: 

Date: _____ 05/10/2024 _____

Interview Consent Form

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Researchers:

Name: Qiushi Chen, Cheryl Zhang, Yuqi Gao, Siyun Gu, Xinyu Liu, Shanni Li

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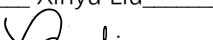
Consent:

By signing below, you are acknowledging that you have read and understood the information provided and that you agree to participate in this interview.

Participant's Name: _____ Stella _____

Participant's Signature: 

Researcher's Name: _____ Xinyu Liu _____

Researcher's Signature: 

Date: _____ 04/10/2024 _____

Interview Consent Form

Title of the Study: UniSwap User Requirements

Researchers:

Name: Qiushi Chen, Cheryl Zhang, Yuqi Gao, Siyun Gu, Xinyu Liu, Shanni Li

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Consent:

By signing below, you are acknowledging that you have read and understood the information provided and that you agree to participate in this interview.

Participant's Name: _____ Isabelle _____

Participant's Signature: _____

Researcher's Name: _____ Cheryl Zhang _____ Siyun Gu _____

Researcher's Signature: _____

Date: _____ 06/10/2024 _____