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Human Computer Interaction
CSE 4451
Section A

Index

1. Problem Statement:

In the realm of e-commerce, there is an urgent requirement to enhance the user experience for online shoppers using technology. This study aims to investigate the specific challenges and opportunities in e-commerce platforms, with a focus on users who frequently engage in online shopping [1][3][4][5][7].

1.1 Target group(Who): Online shoppers [1][3][4][5][7].

1.2 Background: This demographic is tech-savvy, heavily reliant on smartphones, and deeply engaged in social media [1][3]. They often seek convenience, speed, and personalized experiences when shopping online [3]. They have diverse preferences in terms of products, ranging from fashion and electronics to services like streaming subscriptions and food delivery [5].

1.3 Challenges They Face(What):

1. Mobile Experience: Many e-commerce platforms struggle with optimizing their websites or apps for seamless mobile experiences [1][3]. Navigation, load times, and checkout processes might not be optimized for mobile devices, leading to frustrations [1][3].
2. Personalization vs. Privacy: While young adults appreciate personalized recommendations, they're also cautious about data privacy [1]. Balancing personalization without making them feel uncomfortable with data usage is a challenge [1].
3. Information Overload: With a vast array of products available online, users can feel overwhelmed by choices [1][3]. They might struggle with finding relevant information quickly and making informed decisions [1][3].
4. Security Concerns: Trust issues regarding payment security and the overall reliability of e-commerce websites exist [4]. Any perception of insecurity could deter them from completing transactions [4].
5. Returns and Customer Service: Dealing with returns, exchanges, or inadequate customer service can significantly impact their shopping

experience [4]. Lack of responsive customer support or complex return policies might discourage repeat purchases [4].

6. Delivery Process: Meeting speed expectations, providing transparent tracking, and managing shipping costs efficiently [1][4][5].

7. UI: Simplifying navigation, ensuring consistent design, and organizing information for easy user understanding [1][3][7].

1.4 Literature Review:

Author & Year	Study Description	Method Adopted
Agrawal, M., Dhar, D. (2021)	Case study on enhancing user experience in Indian B2C e-commerce apps	Case study analysis of B2C applications in the Indian market
Ifeoma (2016)	Improving e-commerce UX with personalized persuasion & social network analysis	Utilization of data-driven personalized persuasion & social network analysis
Kumaresh, S., Haran, R., Jarret, M.M. (2021)	Analytics of e-commerce platforms based on UX	Analytical assessment of e-commerce platforms focusing on user experience
Cao, Y., Ajjan, H., Hong, P. (2018)	Impact of post-purchase shipping & customer service on satisfaction	Empirical study comparing post-purchase experiences in online shopping
Felix, A., & Rembulan, G. D. (2023)	Analysis of factors for improved customer	Examination of key factors enhancing customer

	experience & loyalty in Indonesian e-commerce	experience, engagement, and loyalty
Adaji, I. (2017)	Enhancing e-commerce UX using personalization & persuasive technology	Emphasis on improving user experience through personalized and persuasive technology
Alamdari, Pegah et al. (2020)	Systematic study on recommender systems in e-commerce	Systematic analysis of recommender systems employed in e-commerce

1.5 References:

1. *Agrawal, M., Dhar, D. (2021). Enhancing User Experience of E-commerce Platforms—A Case Study of B2C Applications in the Indian Market. In: Chakrabarti, A., Poovaiah, R., Bokil, P., Kant, V. (eds) Design for Tomorrow—Volume 1. ICoRD 2021. Smart Innovation, Systems and Technologies, vol 221. Springer, Singapore.*
2. *Adaji, Ifeoma. "Improving E-Commerce User Experience with Data-Driven Personalized Persuasion & Social Network Analysis." User Modeling, Adaptation, and Personalization (2016).*
3. *Kumaresh, S., Haran, R., Jarret, M.M. (2021). Analytics of e-Commerce Platforms Based on User-Experience (UX). In: Peng, SL., Hsieh, SY., Gopalakrishnan, S., Duraisamy, B. (eds) Intelligent Computing and Innovation on Data Science. Lecture Notes in Networks and Systems, vol 248. Springer, Singapore.*
4. *Cao, Y., Ajjan, H. and Hong, P. (2018), "Post-purchase shipping and customer service experiences in online shopping and their impact on customer satisfaction: An empirical study with comparison", Asia Pacific Journal of Marketing and Logistics, Vol. 30 No. 2, pp. 400-416.*

   Felix, A., & Rembulan, G. D. (2023). Analysis of Key Factors for Improved Customer Experience, Engagement, and Loyalty in the E-Commerce Industry in Indonesia. Aptisi Transactions on Technopreneurship (ATT), 5(2sp), 196–208.

5. *Adaji, I. (2017). Towards Improving E-commerce Users Experience Using Personalization & Persuasive Technology. Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization - UMAP '17.*
6. *Alamdari, Pegah & Navimipour, Nima & Hosseinzadeh, Mehdi & Safaei, Ali & Darwesh, Aso. (2020). A Systematic Study on the Recommender Systems in E-Commerce. IEEE Access. PP. 1-1.*

2. Data collection process

2.1 Research methods :
Our research will be based on "Focus group" and "Surveys".

Focus group because we have to target those people who shop online, if we found those people who shop regularly it will become great. Those people don't shop online, if we target them then they will not get a valid answer.

Surveys will be preferred because though it is online and also it is available anytime so, the person who gets free he or she can participate on that time.

2.2 Reach target user groups
We reach our target user group through an online platform. All the users like to buy from online so they also like to communicate using online platforms so we find them from the online product review portion and also communicate with some of our friends who like to shop from online platforms and then we provide them a survey so that we can collect data from them. And also we arrange a meeting for a group. The group has five members and we collect data from them by discussing some problems, methods and processes.
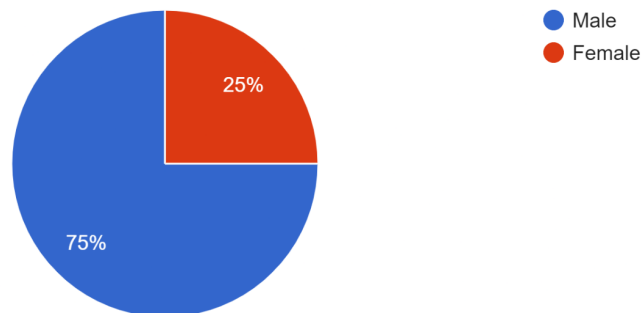
2.3 Demographics participants

What is your age?

20 responses

Legend:
- Below 20
- Between 20 and 30
- Between 30 and 40
- Above 40
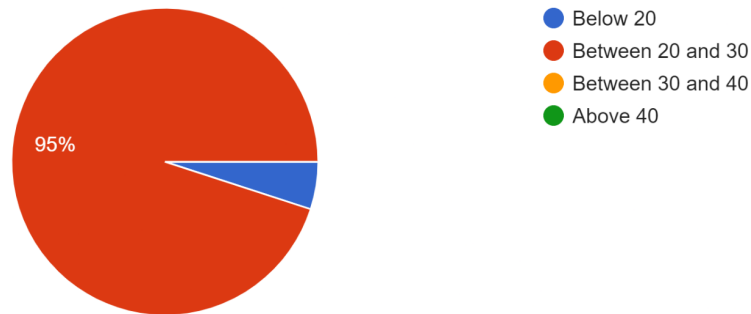
In survey, total responses 20 from there 5% people who less than 20 age and 95% people whose age was belong 20 to 30 age.
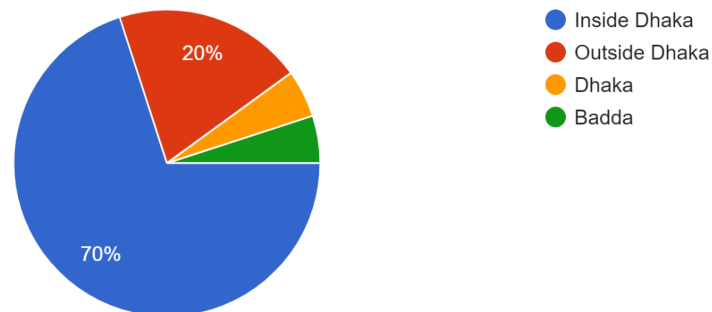
What is your gender?

20 responses

Legend:
- Male
- Female

And here the orange color represents female and blue color represents Male participants. Female and male have equation 3:1 type like male have 75% and female 25%.

Where do you live?
20 responses

- ● Inside Dhaka
- ● Outside Dhaka
- ● Dhaka
- ● Badda

20%

70%

In this picture we can see the participants who are inside dhaka. And who is outside from the dhaka. Here the orange color represents the outside of dhaka. And the rest of all inside of dhaka.

Which application you like for visit e-commerce to purchase?
20 responses

- ● Web application
- ● Software application

40%

60%
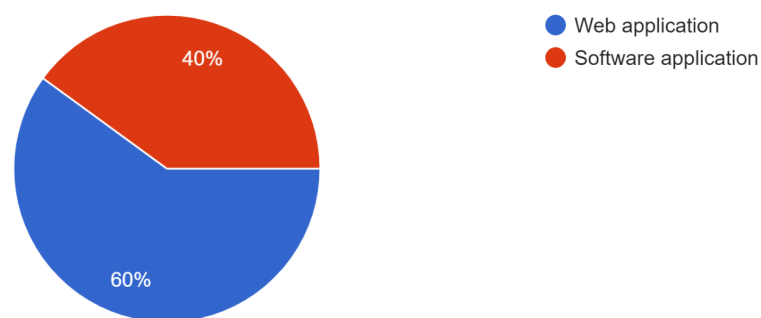
In this picture we can see whose platform is comfortable for users. We can see that, red indicates software application and blue represents web application. As the percentage of web applications is greater than 20% from mobile phones, we can say that web applications are much better than software applications.

2.4 Data Collection Process

Our data have both Quantitative and Qualitative. Because our information is collected from users that are both numeric and non-numeric.

2.5 Record collected data

After taking permission from participants, we collect data by using notes. We take keyword type notes so that it is a faster process and understandable and remember-able data.

2.6 Challenges

Challenges faced

- Finding person who buy from online always
- User not completing survey
- Less response
- Focussed group finding

Overcome

- Online review and command section from any site
- As there are many questions and many openhanded questions, it's very difficult for users. So, we make short questions and also make less openhanded questions to solve those problems.
- As the survey is too long, participants are left after filling half of the survey. So we make low options and we reduce questions from surveys.
- We talk with some of our friends and we make decisions and they arrange some other people and from them we make an online meeting for data collection.

3. Briefly describe data analysis process

We collect data by using surveys and focus groups through an online platform. It makes very easier process and also comfortable for persone those who response because they use to with online platform and they use to.

3.1 Final insights
- Image based search
- Auto suggestion(AI)
- Try before buy
- Reward
- Wishlist

3.2 Didn't know already
- There is a process of try before buy that can be visualized by using a 3d view or simulation.
- From total user 6:4 equation of web:software.
- After the payment the site showed an error but the amount was deducted from my account.
- Artificial intelligence companions can make online shopping extraordinary.
- Auto style with components using AI.

3.3 Confirm that suspected
There are a lot of issues and problems with the current system. Such as, loading issues, glitches, scrolling issues and also a lot of issues. And they also want more offers, help and benefits and also product validation. Also they wanted good services and delivery and response-able site. So users are not happy with the current system.

3.4 Affinity Diagram on Miro:
Group A
https://miro.com/app/board/uXjVNfrrTzk=/

4. User Personas

4.1 User Personas 1

Salman Rahman

- *Age:22*
- *Gender: Male*
- *Occupation: Student*
- *Location: Mirpur, Dhaka*

Background

Salman is an engineering student in Dhaka, balancing academics with a part-time barista job. He likes things to be efficient and convenient, especially given his busy schedule. Salman's role as a barista shows he values creativity and self-expression in his personal style.

Goals and Motivations

- **Time Management:** With the demands of both academics and work, Salman is always on the lookout for time-saving solutions. A streamlined and efficient lifestyle is crucial for him.
- **Unique Style:** Salman values products that allow him to express his individuality. Whether it's clothing, accessories, or gadgets, he seeks items that reflect his distinct taste.
- **Career Aspirations:** As an engineering student, Salman is focused on building a successful career. He seeks products that complement his professional aspirations.

Challenges

- **Limited Budget:** Balancing education and work means a tight budget. Salman is always looking for affordable yet stylish options.
- **Time Constraints:** Between classes and work, time is a precious resource. Salman needs a website that streamlines the shopping process.

Technology Usage

- **Devices:** Primarily uses a laptop (HP Spectre) for academic work and a smartphone (iPhone 11) for communication and on-the-go tasks.
- **Social Media:** Actively engages on platforms like Instagram and Pinterest for style inspiration and staying updated on trends.

How our products fit into his life:

Our e-commerce website's user-friendly interface and a curated selection of affordable and trendy products align perfectly with Salman's needs. Offering a variety of discounts, a straightforward checkout process, and a commitment to sustainability, our platform provides Salman with a convenient and enjoyable shopping experience that complements his busy lifestyle.

4.2 User Personas

HASAN ALI

AGE: 32
GENDER: Male
OCCUPATION: Software Developer
LOCATION: Chittagong, Bangladesh

ABOUT

Hasan is a tech enthusiast with a passion for innovation. He has a keen interest in gadgets, electronics, and the latest tech advancements. As a software developer, he is constantly seeking efficiency and functionality in both his professional and personal life

GOALS

- **Efficiency and Functionality**: Hasan prioritizes efficiency in everything he does. He seeks tech products that enhance productivity and simplify tasks.
- **Tech Innovation**: Hasan is always eager to explore the latest tech innovations and gadgets, often seeking products that are cutting-edge and offer unique features.
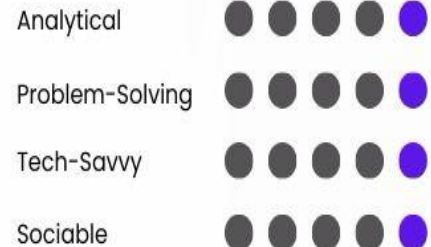
SKILLS

Communication

Software Development
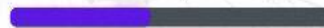
Networking and Security

PERSONALITY

Analytical

Problem-Solving

Tech-Savvy

Sociable

PAIN POINT

- **Limited Access to Cutting-Edge Technology**: Hasan might find it challenging to access the latest technology or software tools due to limited availability or affordability in the local market.
- **Limited Local Tech Communities**: While Bangladesh has a growing tech community, Hasan might find it challenging to connect with a diverse range of professionals or attend specialized tech events that cater to his specific interests or niche areas.

FAVORITE BRAND

## 5. Scenario and Storyboard

5.1 Scenario:

Afroza Sultana, a sprightly 75-year-old grandmother, has recently discovered the joys of online shopping for unique teapots. However, navigating through the e-commerce marketplace proves to be a bit challenging for her. Despite her best efforts, using filters and typing exact keywords becomes a daunting task, leading to frustration. As she clicks through various categories and attempts different search terms, she can't shake the feeling that the perfect teapot she envisions is slipping through her digital grasp. Hence, she wishes if she could just provide the image of the teapot that she is looking for in the e-commerce, and the marketplace could suggest to her the similar listing would be life changing for her.
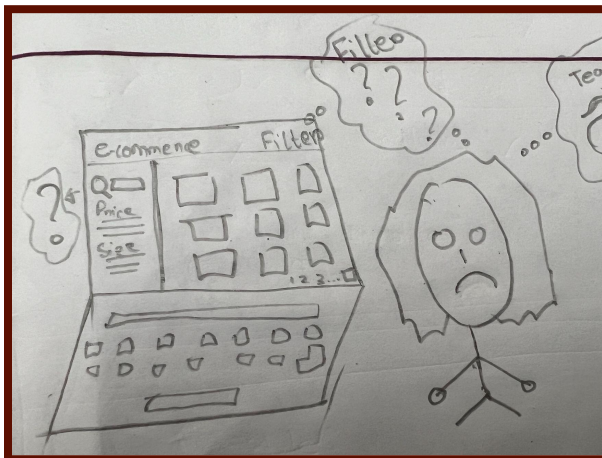
*[**Storyboard Drawn on the next page**]*

5.2 Storyboard:
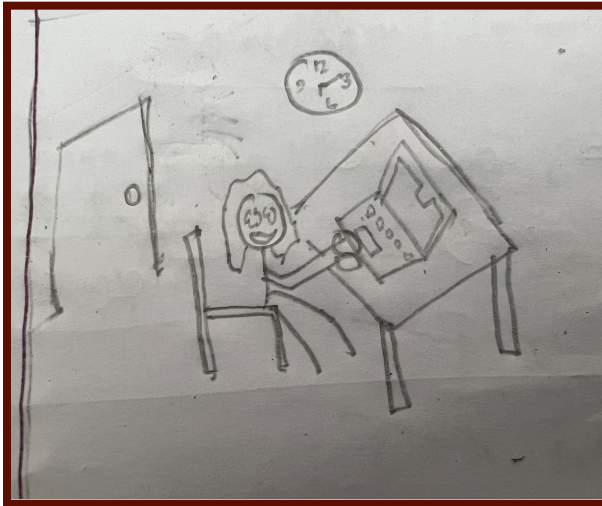
1. Twinkle in Afroza's eyes as she explores the world of online teapot shopping. She eagerly clicks through the e-commerce marketplace for a delightful journey.
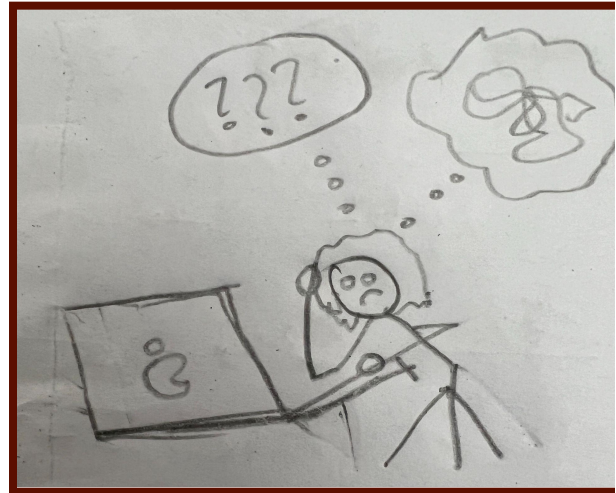
2. Afroza's excitement fades as she encounters the complexities while searching for Tea-pots

3. She got confused on different search-terms, and Filters. Couldn't able figure out her tea-pot
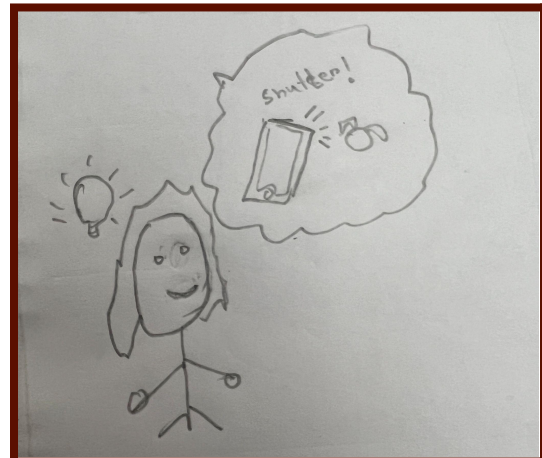
4. She envisions herself uploading an image of the desired teapot, hoping for the e-commerce to magically present similar listings.