**Human Computer Interaction Project**

**Phase #1**

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**Part A**

**1. Introduction: Field Studies**

In this phase, we conducted a thorough evaluation of how users interact with the Easypaisa app. Our goal was to understand the needs, challenges, and behavioural patterns of Easypaisa users through surveys, interviews, and usability testing. Using these methods, we identified key usability concerns and areas for improvement to guide the redesign of the app interface, ensuring it meets the diverse needs of its users more effectively.

* **Sample Details (User Personas, Scenarios, Cultural Probes)**
* Total Users Surveyed: 72 participants.
* Cities: Karachi, Lahore, Islamabad, Hyderabad.
* Age Range: 18–50 years.
* Gender: 84.7% Male, 15.3% Female.
* Device Usage: 85% Android, 15% iPhone.
* Occupations: 70% University Students, 20% Working Professionals, 10% Homemakers.
* 10% Homemakers
* **Context of the Study:**  
  To evaluate the different type of users’s experience of the Easypaisa app, focusing on usability, efficiency, and satisfaction, problems and errors with key functions like sending money, paying bills, and accessing non-essential services. This study can help us to identify the actual problems that users face and how to make changes in app user interface to make it more user friendly.

**Part B**

* **Identifying What Problems Users Are Facing**

Key Problems Identified from the User Responses given in the survey:

The following usability problems were extracted from the 72 survey, and interviewees responses and organized according to recurring themes and issues:

1. **Navigation Complexity**
   * Problem: Many users reported difficulty in locating essential features such as bill payments and fund transfers.
   * Relevant Survey Response:  
     "It takes too many clicks to reach the bill payment section. It should be on the main screen."
   * Usability Principle Affected: Poor mapping and visibility of critical features disrupt the user's experience.
2. **Visual Clutter and Unnecessary Features**
   * Problem: Users expressed frustration with non-essential features (like games, promotions and donations) taking up valuable screen space.
   * Relevant Survey Response:  
     "There are too many unnecessary options on the home screen. I never use games or donation features."
   * Usability Impact: Violates Hick's Law by increasing cognitive load, making it hard for users to find what they need.
3. **Inefficient Transaction Tracking and Feedback**
   * Problem: Users are unsure if their payments have been processed successfully because of poor or delayed feedback.
   * Relevant Survey Response:  
     "I don’t know if my transaction is complete until I get an SMS after a few minutes."
   * Usability Principle: Lack of real-time feedback disrupts the user’s sense of control, violating Norman’s Feedback principle.
4. **Long Transaction Times (Efficiency Issue)**
   * Problem: Users feel that sending money or paying bills takes longer than expected due to too many steps.
   * Relevant Survey Response:  
     "I have to go through multiple menus just to send money. It’s time-consuming."
   * Usability Principle: This affects efficiency and could be improved by optimizing the interface with Fitts’ Law (easier access to frequent actions).
5. **Confusing Terminology and Poor Affordance**
   * Problem: Some options, such as game icons, were unclear and led to misinterpretation. Users did not find them useful.
   * Relevant Survey Response:  
     "I thought the icon was for rewards, but it was just games. It's confusing."
   * Usability Principle: This violates affordance and highlights poor conceptual mapping.
6. **Inadequate Onboarding and Learnability Issues**
   * Problem: New users like who are not a lot familiarize with advance terms and aged found the app difficult to understand without guidance, especially during their first few interactions.
   * Relevant Survey Response:  
     "It took me some time to understand how to use it effectively and they took someone else’s help to create their account and learnt the basic functionalities from Youtube videos. A tutorial would help."
   * Usability Principle: Violates learnability principles. A lack of interactive onboarding makes the learning curve steeper.
7. **Errors and Recovery Mechanisms**
   * Problem: Users reported accidental clicks on non-essential features, such as donations, without proper confirmation messages.
   * Relevant Survey Response:  
     "I accidentally clicked on the donations option, and it went through. There should be a confirmation pop-up."
   * Usability Principle: Lack of error prevention and recovery mechanisms frustrates users and reduces satisfaction.
8. **Insufficient Customization Options**
   * Problem: Users wanted to personalize the home screen by adding or hiding specific features, but the app lacked this flexibility.
   * Relevant Survey Response:  
     "I should be able to hide features I don’t use often and keep only what’s important to me."
   * Usability Principle: Violates flexibility and user control principles.
9. **Unclear error messages**
   * Problem: Users encounter error messages that do not provide clear guidance on how to resolve the issue, leading to confusion and frustration.
   * Relevant Survey Response: "When I get an error, I have no idea what went wrong or how to fix it."
   * Usability Principle: Violates clarity and feedback principles.
10. **Server Downtime**
    * Problem: Users experience server outages that disrupt service and result in notifications to "try again later," causing inconvenience.
    * Relevant Survey Response: "It’s frustrating when the app is down; I need to access my account anytime."
    * Usability Principle: Violates reliability and availability principles.

* **How These Problems Were Identified**

1. **Survey Responses:**
   * Quantitative data was gathered from 72 users, who were asked about their experience with navigation, feedback, and satisfaction while using the Easypaisa app.
2. **User Interviews:**
   * Users provided qualitative feedback, revealing pain points like delayed transaction notifications and poor learnability.
3. **Usability Testing:**
   * Task-based testing was conducted to observe users' interaction flow. It showed that users who are aged took longer than expected to complete basic tasks, such as sending money or paying bills while young people who have already used other transactions apps took less time to learn easypaisa’s basic functions
4. **Error Analysis:**
   * Reports of accidental actions highlighted a lack of error recovery mechanisms, with some users completing unintended transactions**.**

**How and What Sort of Data Was Collected:**

We collected data using the following methods:

1. **Surveys**: Quantitative data from **72 participants** through structured questions. The survey focused on ease of navigation, feature accessibility, and overall satisfaction. Users provided ratings on tasks like sending money, finding the "Send Money" feature, and transaction feedback. We also asked participants how long it took to complete certain tasks, revealing issues like **long transaction times** and **cluttered interfaces**.
2. **User Interviews**: Qualitative insights were gathered from in-depth interviews. The interviews revealed **delays, mis clicks**, and confusion during task execution, such as difficulty navigating through menus or selecting the right features. Users also reported frequent errors like accidental actions and unclear error messages, which further frustrated their experience.
3. **Usability Testing:** Observed user performing key tasks to identify usability bottlenecks.

**Part C**

* **How Current Interface is used:**

**Core Feature Usage:** Through the surveys and interviews conducted, it is crystal clear that the main usage of Easypaisa's interface includes its core features: "Send Money," "Bill Payments," and "Mobile Packages." These functions are central to users' everyday transactions and were always constantly mentioned as accessed. On the other hand, it has also been faced with a huge number of complaints regarding its clutter design, which makes these important features more difficult and slower to locate. Some of the least-used options, such as "Rs. 1 Game," "Donations," and "Easycash Loan," consume up much space on the home screen that is not utilized by any of the end users.

* **Key Feature**
* **User Registration**:
  + Quick and easy sign-up process via mobile app or website.
* **Dashboard Access**:
  + Centralized dashboard showing account balance, recent transactions, and available services.
* **Real-Time Money Transfers**:
  + Instant money transfers to other users or bank accounts with a few taps.
* **Bill Payment Functionality**:
  + Users can pay utility bills directly through the app, with options for scheduling payments.
* **Mobile Recharge**:
  + Quick and simple mobile top-ups for personal or others' accounts.
* **Merchant Payments**:
  + Payments through QR codes at retail outlets and support for online merchants.
* **Transaction Notifications**:
  + Real-time alerts for transactions, helping users track their financial activities.
* **Customer Support Access**:
  + Help center with FAQs and live chat support for troubleshooting issues.
* **Security Measures**:
  + Integrated security features for protecting user data and transactions.
* **System Downtime**:
  + Users experience service interruptions during peak times, hindering transactions.
* **Transaction Failures**:
  + Occasional failed transactions due to network issues or insufficient funds lead to frustration.
* **Customer Support Limitations**:
  + Long wait times for assistance can delay issue resolution for users in need.
* **Interface Complexity**:
  + Some users find navigation difficult, particularly when accessing less frequently used features.
* **Security Concerns**:
  + Users are vulnerable to phishing scams, raising concerns about the safety of their personal information.
* **Inconsistent Performance**:
  + Variability in app performance can lead to lag during transactions or delays in processing.
* **Unexpected Fees**:
  + Users also sometimes encounter hidden charges during transactions, leading to dissatisfaction.
* **Limited Integration**:
  + Challenges in integrating with other financial services may restrict user experience.
* **How to improve them?**

1. **Complexity in Navigation**

**Solution:**

Concerning complexities within navigation, similar features will be grouped under intuitive categories. For example, all the options that have to do with payment will be headlined under one clearly identifiable heading; for instance, "Send Money," "Bill Payments," and "Mobile Packages." Besides this, icons larger in size should be used together with crystal clear visual metaphors, which will make users instantly understand the option. This will drastically reduce the number of steps that the user conducts in order to simply perform a function, rather than improving overall navigation flow. Features with similar functions can also be categorized for users ease.

1. **Visual Clutter and Unnecessary Features**

**Solution:**

Moving non-core features like "Rs. 1 Game", “promotions ads” and "Donations" etc. from the home screen into a category titled "More with Easypaisa." This clears much-needed real estate on the main screen for more commonly used features. Additionally, the customizable home screen will also enable users to hide features they do not use and will further help them streamline their experience.

1. **Poor tracking of transactions and provided feedback is done.**

**Solution:**

Integrate mechanisms for real-time feedback that as soon as a certain transaction is executed, notifications and confirmations will let the user know. Also, do not forget to provide visual feedback when different tasks are completed, possibly through progress bars or confirmation screens.

1. **Long Transaction Times - Efficiency Issue**

**Solution:**

We will reduce transaction times by lessening the number of steps taken to conduct common actions. A feature such as "Send Money" would be available on the home screen itself, and users could Favorite the contacts or banks for faster access. By applying the principles of Fitts' Law, we will be making surface-level features that are more frequently accessed larger and easier to click on in order to hasten the process.

1. **Bad Terminology and Affordance**

**Solution:**

This product will have better iconography and labelling for increased affordance while understanding and minimizing misinterpretations. Each will have a more intuitive icon and a label reflecting its real purpose. As an example, rewards and games will have different meaningful icons, which will not allow any confusion.

1. **Poor Onboarding and Learnability Issues**

**Solution:**

Engage new users by offering an interactive onboarding tutorial. This tour will walk them through the main features using tooltips and hints until they get familiar with the interface. Another crucial element in this improvement would be a help menu tab that also includes FAQ-related elements, together with customer support.

1. **Slips and Recovery Mechanisms**

**Solution:**

We will implement confirm pop-ups for sensitive activities like donations or large transactions. These will ensure that the user gets to review an action before committing to it, and adding an "undo" option will help recover from accidental clicks.

1. **Lack of Customization Provided**

**Solution:**

The home screen would be customizable, allowing the user to choose and reorder the features they use most often. Users will be able to hide infrequently used options and highlight those they need, placing them in order for easy access. The flexibility will enable users to manage more about their interface and have less clutter.

**Part D**

* **What models are you proposing for designing the new solution for different types of users?**

To address the diverse needs of Easypaisa's user base, we propose the following models tailored to each user group, ensuring usability, accessibility, and efficiency across the interface:

**1.Frequent Users (Tech-Savvy)**

* **Proposed Model: Customizable Interface**
  + **Overview:** Frequent users want fast and efficient ways to access functionality that they use regularly. The design of a customizable home screen will facilitate the prioritization of, and easy rearrangement of, key features like "Send Money" or "Bill Payment" while minimizing or hiding infrequently used features.
  + **Example in Interface:** Tech-savvy users can place their most-used features on top of the screen and access it directly, rather than having to scroll through services that they do not use.
  + **Design Principle Applied:** Flexibility and user control, following Jakob Nielsen's Usability Heuristics.

**2. Elderly Users and Users with Disabilities**

* **Proposed Model: Simplified, Accessible Interface**
  + **Overview:** Elderly users and those with visual, motor, or cognitive challenges will find the app much easier to use with simplified navigation, larger, easy-to-see icons, and high-contrast colors. Additionally, voice-command integration will allow them to navigate the app without relying on manual actions, reducing the effort required and making the experience smoother and less stressful.
  + **Example in Interface:** Larger, clearly labeled icons for essential functions (e.g., "Send Money," "Check Balance") and voice-assisted commands to navigate the app hands-free.
  + **Design Principle Applied:** Accessibility and usability for all, complying with W3C accessibility standards and Fitts' Law for making clickable targets easier to interact with.

**3. Less Tech-Savvy Users (First-Time Users)**

* **Proposed Model: Guided Onboarding and Interactive Tutorials**
  + **Overview:** New or less tech-savvy users will find it much easier to get started with a simple, step-by-step guide. Interactive tutorials will walk them through essential tasks, like sending money or paying bills, helping them quickly understand how to use the app without feeling overwhelmed. This extra guidance will make their experience smoother and more intuitive from the very beginning.
  + **Example in Interface:** New users will be guided with pop-up instructions as they navigate, such as how to make their first transfer or how to recharge their mobile balance.
  + **Design Principle Applied:** Learnability and guidance, preventing errors and fostering confidence in the interaction.

**4. Users with Limited Cognitive Load Capacity**

* **Proposed Model: Minimalist Design with Grouped Features**
  + **Overview:** For users who may struggle with processing too much information, a minimalist design that emphasizes essential functions and groups related features together is ideal. Reducing clutter and organizing the interface around tasks rather than numerous services will make navigation more intuitive.
  + **Example in Interface:** Payment-related features such as "Send Money," "Bill Payments," and "Mobile Packages" will be grouped under a single section, with clear labels and larger icons, reducing confusion.
  + **Design Principle Applied:** Cognitive load reduction through simplicity, supported by Hick's Law, which states that decision-making is easier with fewer choices.

**5. All Users: Adaptive Interface with Real-Time Feedback**

* **Proposed Model: Real-Time Feedback and Confirmation**
  + **Overview:** Across all user groups, providing clear, real-time feedback for every action is critical. Implementing confirmation screens after transactions, progress indicators during loading times, and success messages ensures that users are never left wondering whether their action was successful.
  + **Example in Interface:** After a user transfers money, a success screen appears instantly, confirming the transaction with details, followed by options to repeat the action or return to the home screen.
  + **Design Principle Applied:** System feedback and visibility, in line with Norman's Feedback Principle, ensures that users are aware of the status of their actions at all times.