

## PROCESS UNDERSTANDING

1. **Understanding User Needs Phase:** This phase is placed first because it lays the foundation for the entire UX Engineering Process. Conducting surveys, interviews, and usability tests helps gather valuable insights into user expectations, pain points, and behaviors. Most processes start with this phase<sup>1</sup>. You cannot start solving a problem if you don't fully know what the problem is, therefore analysis is the first step. Identifying key personas and user journeys provides a framework for understanding the diverse needs and motivations of different user groups. By starting with this phase, UX engineers ensure that subsequent activities are informed by a deep understanding of the target users, setting the stage for designing solutions that truly meet their needs. Without a solid understanding of users, other phases risk being misaligned with user expectations and nullify the entire point of designing user experiences.
2. **Collaboration and Communication Phase:** Once user needs are understood, it's crucial to foster collaboration and communication among stakeholders. Establishing cross-functional teams and encouraging open communication channels ensures that diverse perspectives are considered throughout the design and development process. By involving both internal and external stakeholders early on, UX engineers can gather valuable insights, align priorities, and build consensus, which ultimately leads to more effective decision-making and solution development.
3. **Designing for Human-Centeredness Phase:** With insights from the previous phase, UX engineers can focus on designing solutions that are intuitive, user-friendly, and culturally sensitive. Implementing design thinking methodologies and iterating on prototypes based on user feedback ensures that the final product aligns with user expectations and preferences. This phase is essential for translating user insights into tangible design solutions that address identified pain points and fulfill user goals effectively, creating a new prototype for a *working* model created from the *expected* models of stakeholders. By considering different cultural backgrounds and preferences, UX engineers can create and finalize inclusive designs that resonate with a diverse user base, enhancing user satisfaction and engagement.
4. **Implementation Phase:** Once the design is finalized, the implementation phase begins, where the focus is on translating the design into a functional system. Adopting agile development methodologies allows for quick adaptation to changing user needs and evolving requirements, which is informed by the continuous feedback loops established in earlier phases. Regularly reviewing and reassessing project goals, along with developing comprehensive training materials, ensures that users and stakeholders understand and can effectively utilize the new system. By prioritizing implementation after gaining a thorough understanding of user needs and designing human-centered solutions, UX engineers can maximize the chances of delivering a successful product.
5. **Continuous Improvement Phase:** Finally, establishing feedback loops to gather user insights continuously and regularly reviewing and analyzing feedback enables ongoing improvement of the system. This iterative process ensures that the system remains aligned with user needs and evolves over time to meet changing requirements. It's a nonlinear process that essentially starts back at the first phase of understanding the user needs to optimize and maintain the quality of their experience.<sup>2</sup>

It's this order that should be the most meaningful and natural UX engineering process. The first three phases focus on gathering and analyzing data, preparing appropriately with relevant people and ideas, and then finalizing a design to be intuitive to the target audience or stakeholders. This design is then implemented as the fourth phase, and the final phase is to reconnect with the user base by maintaining this process continuously.

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<sup>1</sup> F. Nickols, "Problem Solving Models," *University of Arkansas at Pine Bluff*, [Online]. Available: <https://www.uapb.edu/sites/www/Uploads/Assessment/webinar/session%203/13%20Problem%20Solving%20Models.pdf>. [Accessed: March 24, 2024].

<sup>2</sup> Interaction Design Foundation, "Design Thinking," *Interaction Design Foundation*, [Online]. Available: [https://www.interaction-design.org/literature/topics/design-thinking#questions\\_related\\_to\\_design\\_thinking-27](https://www.interaction-design.org/literature/topics/design-thinking#questions_related_to_design_thinking-27). [Accessed: March 24, 2024].

## REFLECTING ON USERS

1. Details in the Alex Singh persona that would inform the design of the expense management app:
  - **Occupation and Background:** Alex's occupation as a Senior Software Engineer indicates a familiarity with technology and an understanding of complex systems. This means that the app can incorporate advanced features and functionalities without overwhelming the user. Depending on Alex's familiarity with such systems, the app can effectively range from a hyper-simple expense tracker to an updating spreadsheet that will offer improvements to his way of life.
  - **Interests:** Alex's interest in continuous learning and attending industry conferences suggests they're open to adopting new tools and technologies. The app can use this by offering features that allow users to integrate with other financial tools, access educational resources on budgeting and financial management, or receive updates on industry trends related to expense management.
  - **Personality and Goals:** Alex's personality traits of being highly organized, detail-oriented, and goal-driven can shape the app's design to prioritize clarity, efficiency, and goal-setting features. The app can provide customizable budgeting options, reminders for bill payments, and progress tracking towards financial goals to align with Alex's desire for improvement and achieving better results.
2. Additional details needed for a more relevant representation of users:
  - **Living Situation:** Knowing whether Alex lives alone or with flatmates would help tailor features specific to their needs. For example, if Alex lives with flatmates, features for splitting bills, tracking shared expenses, and communicating with roommates about financial matters would be essential.
  - **Financial Habits:** Understanding Alex's financial habits, such as budgeting preferences, spending patterns, and saving goals, would enable the app to provide personalized recommendations and insights tailored to their individual needs and objectives.
  - **Tech Savviness of Flatmates/Other users:** It would be helpful to know the tech proficiency of Alex's potential flatmates to ensure the app's usability for all users. If Alex's flatmates are less tech-savvy, the app may prioritize simplicity and provide clear instructions for use. This could influence how and why notifications pop up, how the user might log new expenses in, and if they can set limits and what the consequences of such features would be. Should the app offer a chat function as well as a clear spreadsheet? Should it suggest advertised products as cheaper alternatives?
3. Stakeholders relevant to the expense management app:
  - **Flatmates:** Users of the app who share living expenses and need a convenient way to manage their finances collectively. Understanding their needs and preferences is crucial for designing features that facilitate seamless expense management and communication among roommates.
  - **Landlords/Property Managers:** Stakeholders responsible for overseeing rental properties may have specific requirements or regulations regarding rent payments and expense tracking. Integrating features tailored to their needs can enhance the app's utility for both tenants and property managers.
  - **Financial Institutions:** Collaboration with banks or financial institutions can enable secure integration with users' accounts for real-time expense tracking, bill payments, and budget analysis. Ensuring data privacy and compliance with regulations is essential with financial stakeholders.
  - **Customer Support:** Providing effective customer support is crucial for addressing user queries, troubleshooting issues, and collecting feedback for app improvement. Understanding users' pain points and concerns helps tailor support services to meet their needs effectively.
  - **Regulatory Authorities:** Regulatory bodies or authorities may have oversight over financial management apps, particularly concerning data privacy, security, and compliance with relevant regulations. Collaborating with regulatory authorities ensures that the app meets legal requirements and maintains trust and credibility with users.
  - **Technology Partners:** Companies or individuals providing technology solutions or services integral to the app's functionality, such as cloud hosting providers, API providers, or software development platforms. Collaboration with technology partners ensures the app's reliability, scalability, and security.
  - **Advertisers/Sponsors:** If the app includes advertising or sponsorship features, advertisers or sponsors become stakeholders with an interest in reaching the app's user base. Advertisers may seek insights into user demographics and behavior to tailor their marketing efforts effectively.