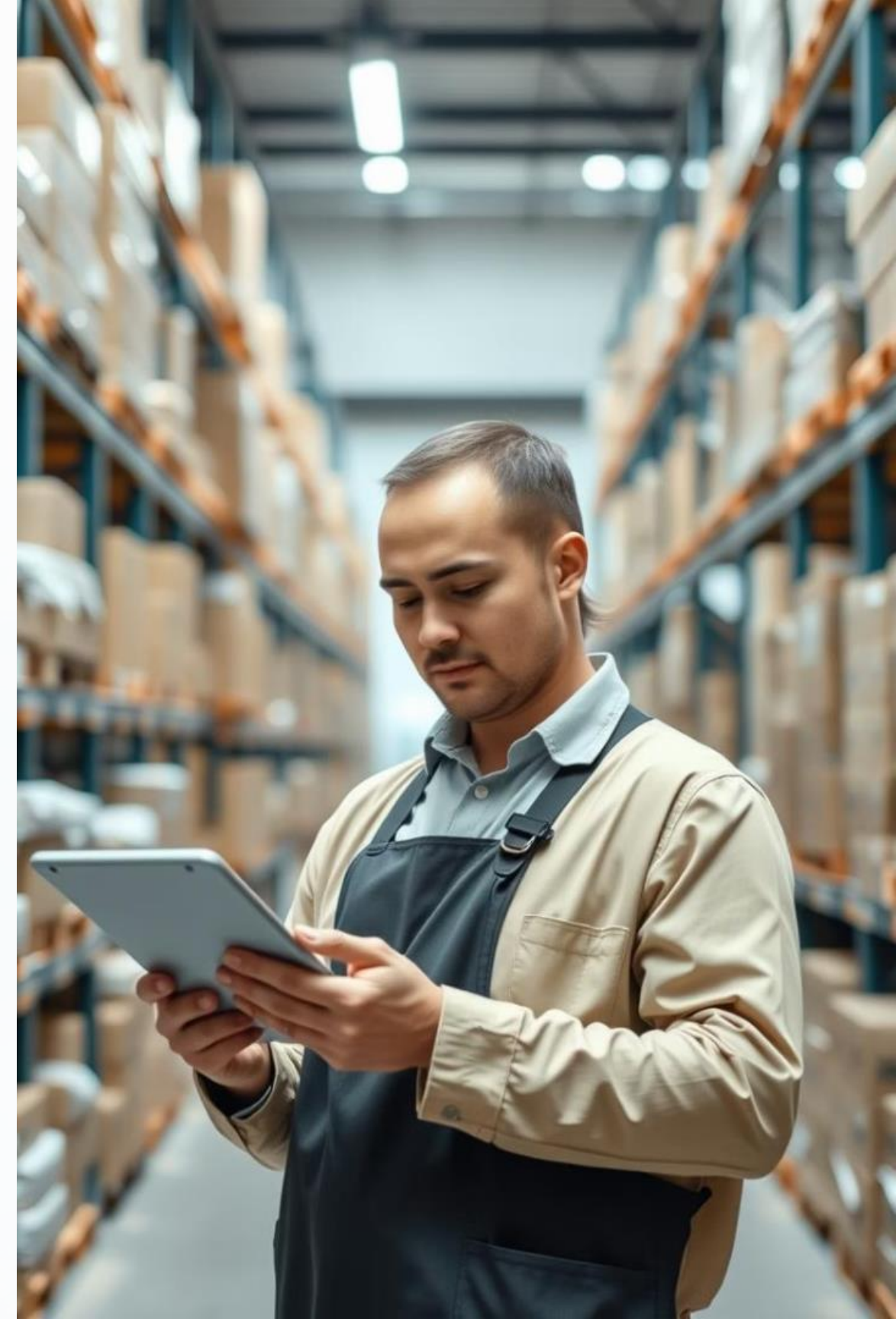# UX Case Study: Optimizing a Warehouse Packing App

This case study focuses on improving the usability of a tablet-based packing app for warehouse packers. The goal was to address challenges in high-speed workflows by introducing intuitive feedback and error correction features, ultimately enhancing efficiency and packer confidence.

Omer Farooq

Understanding the Problem

Packers faced two key challenges: unclear feedback from the "Problem" button and the inability to correct mistakes before packages reached the conveyor. This led to confusion and errors in a fast-paced environment.

1 **Unclear Problem Button Feedback**

The button's unchanged color after flagging an item caused confusion and occasional errors.

2 **Error Correction Limitation**

No way to correct mistakes (e.g., packing SIOC/SIOB incorrectly) before dispatch.

Our hypothesis was that dynamic visual feedback for the "Problem" button and an undo feature would reduce errors, speed up task completion, and improve packer confidence.
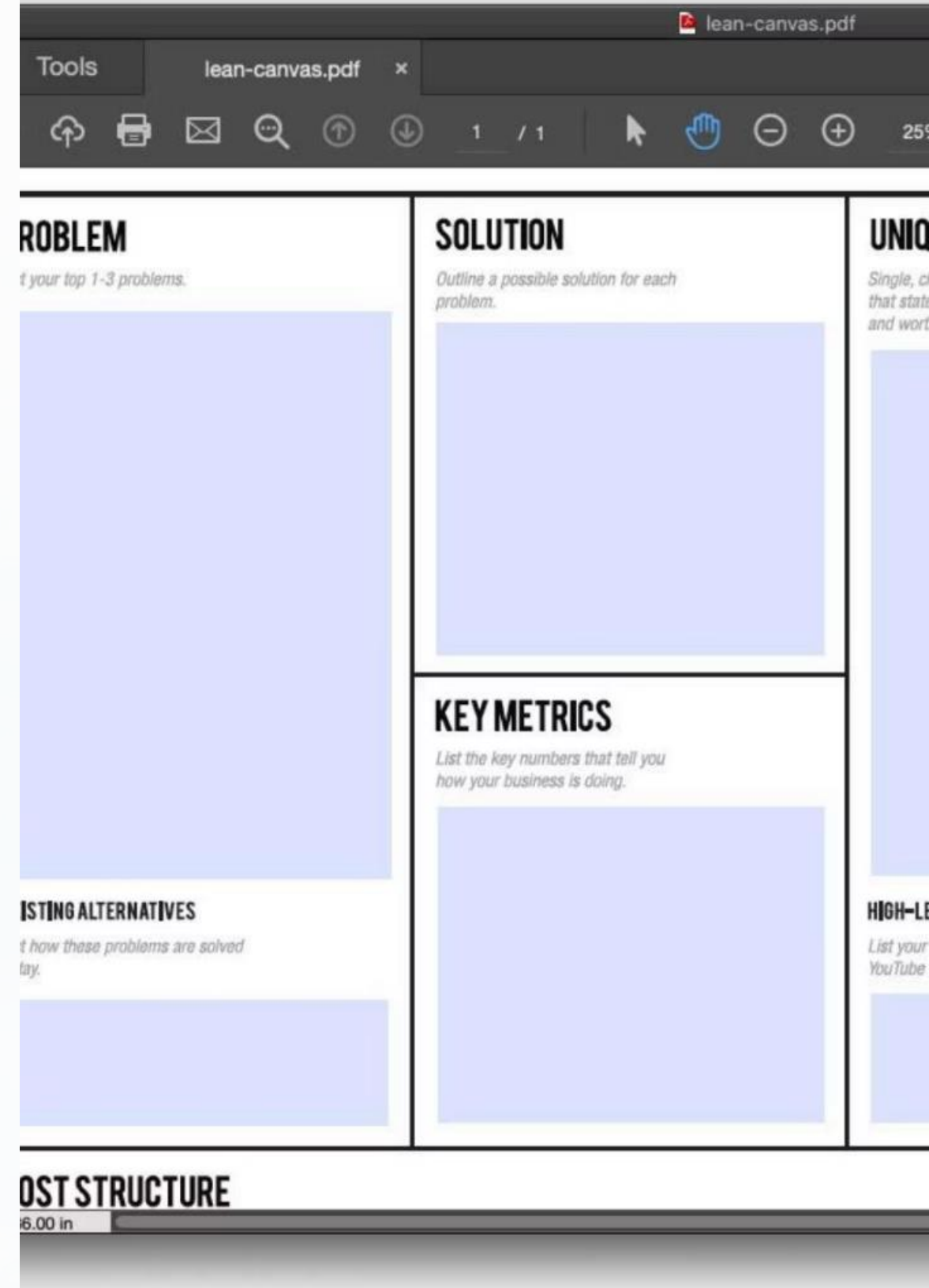
User Research Methods

To understand packers' needs and pain points, we conducted interviews and observations.

Interviews

We conducted semi-structured interviews with 5 packers across different shifts. The objective was to understand their app experience, frustrations, and suggestions for improvement. Key questions focused on current app usage, challenges with flagging issues, and how they handle mistakes.

Observation

We shadowed packers during a 3-hour shift to observe their interactions with the app and workflow. Focus areas included steps involved in scanning, packing, and flagging issues, interaction with the "Problem" button, and instances of errors or confusion during tasks.

Key User Research Findings

The research revealed critical insights into the packers' workflow and challenges.

Problem Button Confusion

Packers couldn't remember if they had flagged a problem due to the button's unchanging state, leading to errors in high-speed tasks.

No Error Correction

Mistakes, like incorrect SIOC/SIOB packing, couldn't be undone before dispatch, causing frustration and inefficiency.

Cognitive Overload

The current interface required too many steps for single actions, slowing down the packing process.

Visual Cues are Critical

Packers rely heavily on color coding and immediate feedback due to the fast-paced nature of their work.
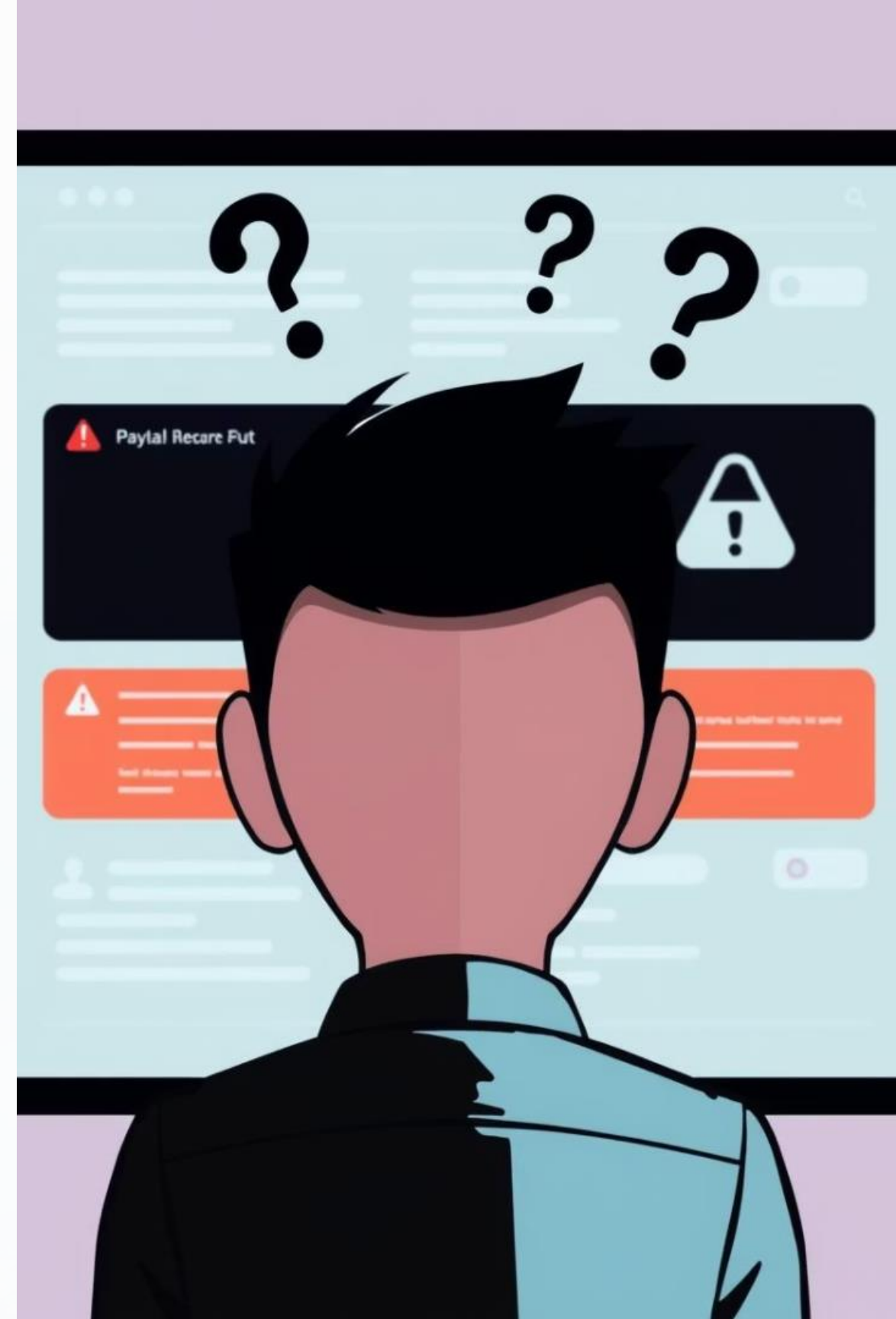
Empathy Mapping and Design Focus

An empathy map helped us understand warehouse workers' behaviors, thoughts, and emotions, identifying key pain points and design opportunities. This led to focused wireframing and prototyping efforts.

Wireframing & Prototyping

Created low-fidelity wireframes and interactive prototypes using Figma, based on user feedback.

Problem Confirmation Popup

Designed to provide clear visual feedback and confirmation for flagged issues.

Undo and Review Screen

Developed to allow corrections for recent actions before package dispatch.

Usability Testing and Key Findings

Usability testing validated design hypotheses by observing 5 warehouse packers interacting with both existing and redesigned flows. Tasks included scanning, packing, flagging issues, and correcting mistakes.

Problem Button Feedback ──── **1**

Before Redesign: Button did not change visually, causing uncertainty.

After Redesign: Button dynamically changes color (red) with "Problem Flagged" label, confirming action.

2 ──── **Undo Feature**

Before Redesign: No undo option available for incorrect packing.

After Redesign: Added an Undo feature directly accessible from the main screen.

Refinement and High-Fidelity Design

Based on usability testing feedback, we refined the designs to align with company branding and UI guidelines, ensuring optimal accessibility and user experience.

Adjust Button Sizes & Placement

Improved accessibility for better interaction.

Enhance Confirmation Popup

Improved visibility and timing based on user observations.

Align with Branding

Ensured designs matched company UI guidelines.

Implementation and Collaboration

Close collaboration with the development team was crucial to ensure design fidelity during implementation. This partnership ensured the final product was technically feasible and effectively delivered the intended user experience improvements.

Technical Feasibility

Worked closely with developers to ensure designs could be built efficiently.

Effective Implementation

Ensured the final product accurately reflected the high-fidelity designs.

Continuous Feedback Loop

Maintained open communication for ongoing adjustments and improvements.