QueuelQ Project Proposal

Team Members

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Agenda

Problem statement

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Problem statement

Service organizations such as walk-in clinics, government counters, and campus desks face a common crisis: unpredictable arrival peaks that overload staff and frustrate users.

Managers are forced to make staffing decisions based on intuition rather than evidence. This leads to severe operational inefficiencies, including SLA breaches, long wait times for critical services, unfair routing during high-stress periods, and insufficient staff management. QueueIQ fixes all these problems for the management, staff, and users.

Introduction

QueueIQ is an AI-powered decision-support system designed to predict wait times and optimize staffing and queue routing for walk-in service environments such as walk-in clinics, government service counters, and campus administrative offices. The goal is to reduce customer wait times, improve service efficiency, and support operational decision-making using data-driven insights.

Use Cases

Walk in clinics

Hospital emergency rooms

Immigration applications

Police stations

Call centers

Purpose

Why QueuelQ Exists

- To reduce long and unpredictable wait times in walk-in service environments
- To support data-driven staffing and queue management decisions
- To improve customer experience while reducing staff burnout
- To help public and private service organizations operate more efficiently

Vision

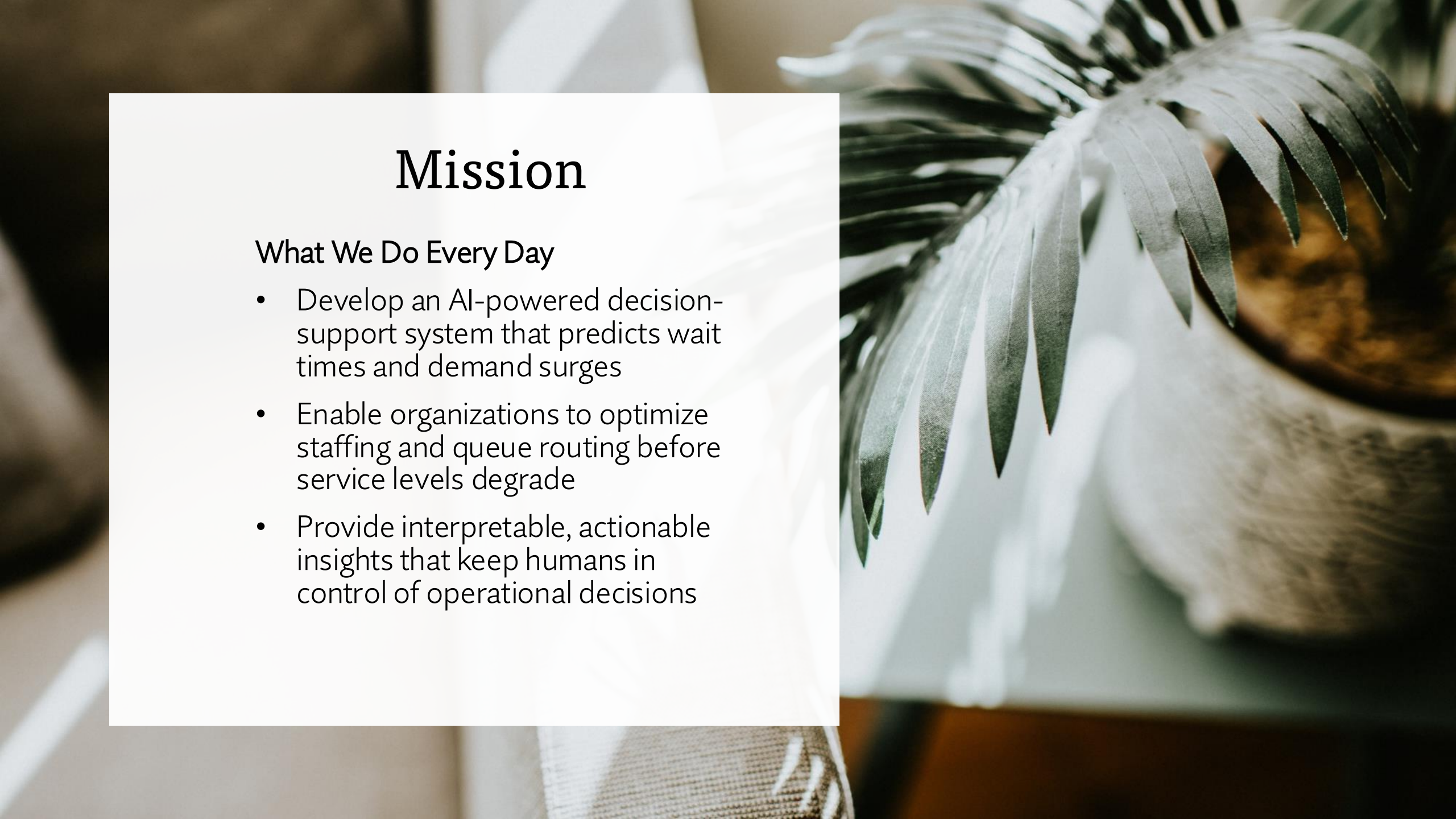
What We Aspire To Achieve:

A future where service environments proactively manage demand, eliminate excessive wait times, and deliver fair, efficient, and predictable customer experiences using AI-driven insights.

Strategy

How We Achieve the Mission

- **Predictive Analytics:** Forecast short-term arrivals and wait times using time-series and machine-learning models
- **Queue Intelligence:** Apply queueing theory models to estimate service performance under different conditions
- **Scenario Simulation:** Allow managers to test staffing and routing decisions before implementing them
- **Human-Centred Design:** Deliver clear, explainable insights rather than black-box automation
- **Ethical & Privacy-First Approach:** Use anonymized or public data with full human oversight



Mission

What We Do Every Day

- Develop an AI-powered decision-support system that predicts wait times and demand surges
- Enable organizations to optimize staffing and queue routing before service levels degrade
- Provide interpretable, actionable insights that keep humans in control of operational decisions

Tactics

What We Execute to Deliver the Strategy

- Collect and preprocess public and synthetic service-queue datasets
- Build time-series forecasting models for arrival rates and service times
- Implement queueing models (e.g., M/M/c) to estimate expected waits
- Develop simulation tools for “what-if” staffing and routing scenarios
- Evaluate performance using MAE, quantile loss, and service-level targets
- Present insights through dashboards and decision-support visualizations

Thank you