

Case Study: Optimizing Operations at Mysore Airport

Format Style: Inspired by BCG & Deloitte Consulting Deliverables

Client: Mysore Airport Authority

Industry: Aviation & Public Sector

Location: Mysuru, Karnataka, India

Duration: 8 Weeks

1. Executive Summary

- Mysore Airport faced operational challenges due to rising passenger footfall post-2023.
 - Key issues included long queues, baggage handling delays, and inefficient counter allocation.
 - A data-driven approach was applied to identify inefficiencies, optimize resource allocation, and enhance passenger experience.
 - Within 8 weeks, key KPIs such as baggage wait time and security clearance duration were significantly improved.
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2. Client Background

- Mysore Airport is a regional airport in South India serving both domestic tourists and business travelers.
 - Passenger traffic increased by 47% YoY due to improved connectivity and regional tourism campaigns.
 - Infrastructure was not scaled proportionally, leading to visible strain on operations.
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3. Problem Statement

The client sought to identify the root causes behind:

- Long queues at check-in and security,
- Delays in baggage claim,
- Low staff utilization during off-peak hours.

The goal was to create a scalable, tech-enabled solution to improve process efficiency and customer satisfaction.

4. Engagement Objectives

Objective	Description
Diagnose Bottlenecks	Map the passenger journey and identify process delays
Optimize Resource Allocation	Use predictive analytics to balance manpower and counters
Improve Passenger Experience	Reduce overall journey time inside airport premises
Build Dashboard & Alerts	Enable real-time monitoring and decision-making

5. Approach Overview

Phase 1: Discovery & Data Collection

- Mapped stakeholder expectations through interviews
- Collected 6 months of operational data including:
 - Hourly footfall logs
 - Counter occupancy reports
 - Baggage handling timestamps
 - Feedback survey data

Phase 2: Data Analysis

- Used Python & SQL for EDA and pattern detection
- Clustered peak vs off-peak traffic using time series clustering
- Identified congestion points and underutilized counters

Phase 3: Recommendation Design

- Counter staffing based on hourly predictions (linear regression model)
- Mobile queue management system proposal
- Redesigned baggage routing using process simulation tools

Phase 4: Implementation Support

- Piloted the recommendations in selected terminals for 3 weeks
- Created a real-time Power BI dashboard for airport managers
- Finalized a change management plan and SOPs for rollout

6. Data-Driven Insights

Area	Insight	Impact
Check-in Counters	Counters were underutilized 32% of time during peak hours	Staff misalignment led to longer queues
Security Clearance	65% of delays occurred between 10 AM – 1 PM	Suggested shift realignment
Baggage Handling	Avg retrieval time = 23 mins (industry benchmark = 15 mins)	Introduced dynamic sorting queues
Passenger Feedback	NPS dropped to 58 during festive periods	Tied spikes to footfall patterns

7. Recommendations

Recommendation	Description
Dynamic Counter Allocation	Counters open based on hourly passenger predictions
Real-time Dashboard	For tracking congestion and adjusting ops live
Smart Queue System	QR-based queue tickets for security and baggage
Staff Scheduling Optimization	Reworked shift plan to align with actual footfall
Feedback Loop Automation	Connected NPS forms to backend analytics for quick resolution

8. Power BI Dashboard Snapshot *(sample mockup)*

- Live view of footfall and counter utilization
- Alerts for congestion zones
- Heatmaps showing terminal traffic intensity

9. Impact Delivered (Within 2 Months)

KPI	Before	After	Improvement
Avg Baggage Wait Time	23 min	15 min	↓ 35%
Security Clearance Time	18 min	13 min	↓ 28%
Counter Utilization	68%	88%	↑ 20%
Passenger NPS	58	70	↑ 21%

10. Implementation Roadmap

Week	Milestone
Week 1	Finalize recommendations and secure executive buy-in
Week 2	Begin data integration for the Real-time Dashboard
Week 3	Implement Dynamic Counter Allocation pilot
Week 4	Roll out Smart Queue System to all terminals
Week 5	Optimize Staff Scheduling based on footfall data
Week 6	Automate Feedback Loop with NPS integration
Week 7	Review initial impact and adjust strategies
Week 8	Complete implementation and monitor long-term trends

Week 1–2 Data Collection & Stakeholder Interviews

Week 3–4 Analytics & Dashboard Setup

Week 5–6 Pilot Implementation

Week 7 SOP Training & Feedback

Week 8 Full Rollout & Transition Handover

11. Sustainability & Scalability

- Recommendations designed to scale for Tier-2 and Tier-3 airports in India
 - AI-based demand forecasting can plug into AAI's national airport network
 - Modular dashboard can be deployed across terminals with minimal configuration
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12. Tools Used

- **Python** (Pandas, NumPy, Seaborn, scikit-learn)
 - **SQL** (Data extraction and aggregation)
 - **Power BI** (Interactive dashboards)
 - **Excel** (Initial data wrangling)
 - **Jira/Confluence** (Task management & documentation)
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13. Client Testimonial (Fictional)

"The consulting team helped us identify bottlenecks we weren't even aware of. The data dashboard alone has transformed how we make daily decisions."

– Airport Director, Mysore Airport Authority

14. Appendix

- Sample dataset used for modeling
- Code notebooks & queries
- Dashboard screenshots
- Team structure & responsibilities