



AI in Aviation – A case for India's Small Language Model (SLM) for Aviation

11 August 2026



AI solutions are being developed across the aviation value chain...



Globally, about
5.3bn is estimated
to be spent on AI
implementation in
aviation sector

Typical use cases

Level of complexity
↓



Chatbots & virtual assistant



Retail & commercial analysis

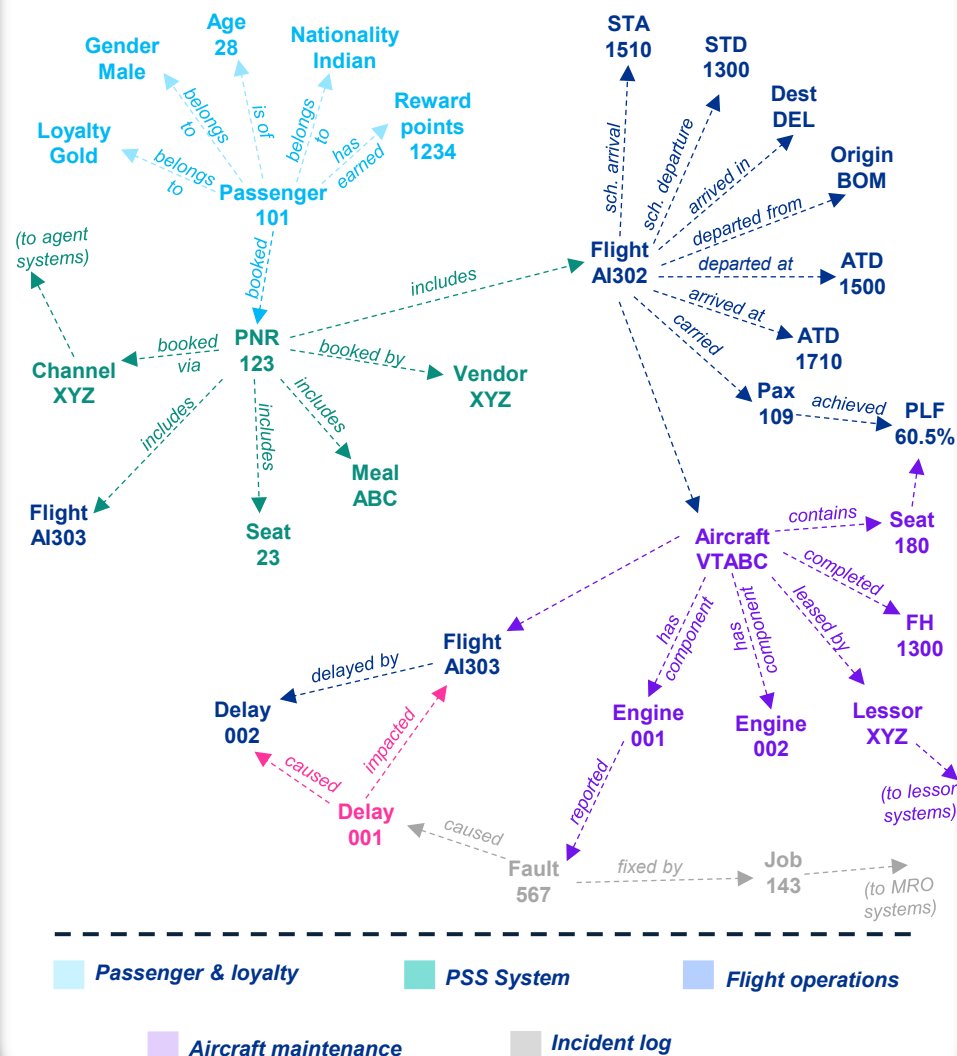


AI based monitoring & surveillance



Digital twin and predictive operations

Sample for interaction between datapoints



Enabling AI solutions require the tool to have deep understanding of domain & its business

Enabling an AI solution in Aviation requires:

- Understanding of various domain & how they integrate
- Definitions of terminologies and formulas/ calculations involved
- Understanding of the processes & deriving correlations

**But SLMs can provide the aviation domain specific
understanding and bridge the gap**

SLM & LLM to provide 'general + domain intelligence'



Focus on broad reasoning

General AI/ Large Language Models

- Broad reasoning and knowledge synthesis across domains
- Foundational intelligence layer but lacks aviation-specific context

Focus on specialization and real-time data

dSLM + RAG + Tools

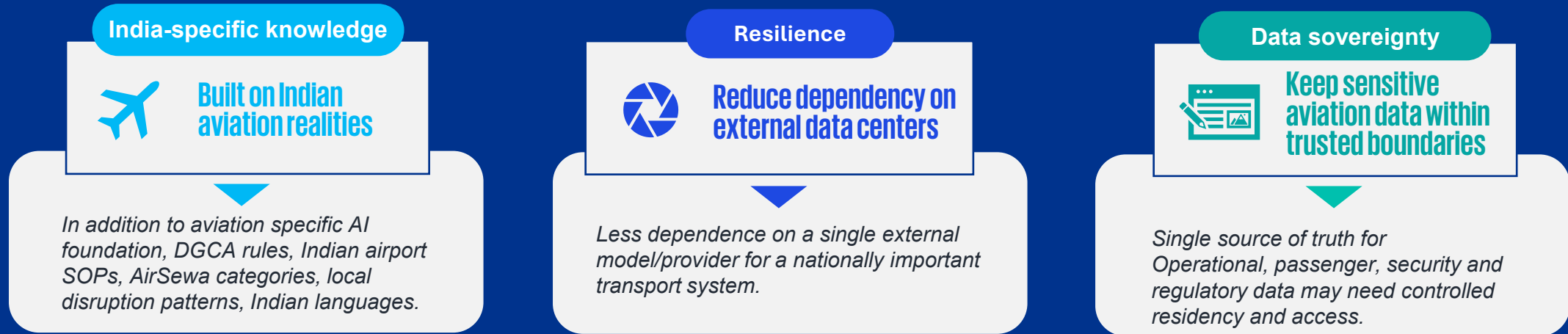
- Combines aviation models with enterprise knowledge, live data, and operational systems
- Grounds responses in authoritative sources
- Enables execution-oriented workflows, recommendations and actionable decision support

Focus on speed, cost and privacy

Aviation Small Language Models

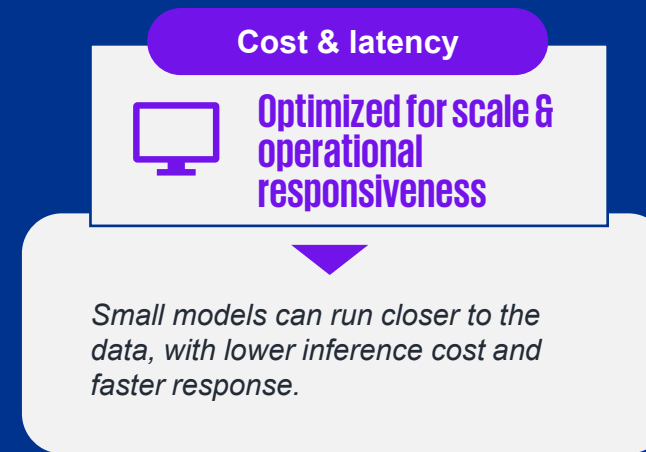
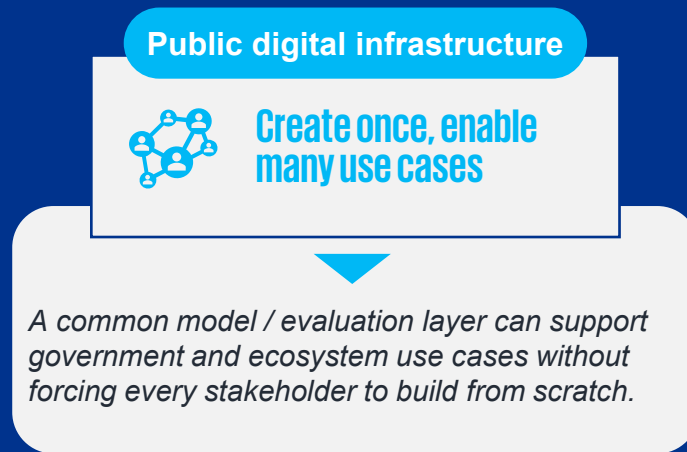
- Fine-tuned on aviation data, terminology, regulations, and operational processes
- Delivers domain-aware insights to enhance decision support

Five foundations of an intelligent aviation AI ecosystem (1/2)



Given aviation's strategic & technological importance, India can establish its own SLM as an aviation intelligence asset.

Five foundations of an intelligent aviation AI ecosystem (2/2)



Aviation requires specialized intelligence; a domain-specific SLM is essential to capture the industry's unique operational, regulatory and passenger context.



An Aviation SLM can serve as shared digital infrastructure, enabling airlines, airports, ground handlers and regulators to build and scale AI solutions on a common foundation.

AirSewa | Passenger grievances to passenger experience



29.042

Air Sewa grievances in 2025



10,804

Refund – related grievances



6,335

Flight delay grievances



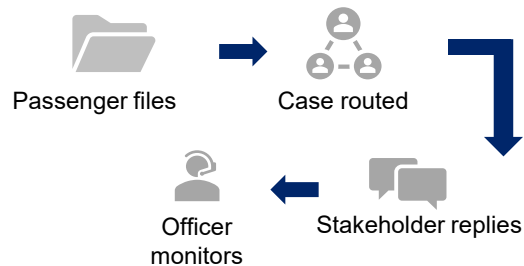
24x7

Passenger Assistance Control Room



Current Scenario

Grievances resolution platform



Useful & transparent but....

Reactive, case-by-case resolution with limited systemic learning

With aviation SLM



Impact

- Reduce resolution time
- Improved SLA compliance



Passenger Intelligence Layer

Generate aviation-wide insights

Examples

- Weather disruptions → complaint spikes
- Emerging service quality issues across carriers

Regulatory supervision

Policy refinement

Individual intelligence layer

- Airports
- Ground handling

Various intelligence layers can be created to create ecosystem

The value compounds when intelligence **crosses organizational silos**

Passenger experience

Receive personalized, proactive, and seamless travel support through connected flight, airport, and service information



Regulator

Leverage consistent aviation intelligence to monitor compliance, assess risk, and enable data-driven oversight across the ecosystem

Airline

Improve network planning, operational efficiency and customer experience with aviation-specific insights



Airport

Optimize passenger flows, asset utilization, capacity planning, and operational resilience through shared situational awareness

Cargo

Increase shipment visibility, streamline logistics operations, and improve forecasting across the cargo value chain



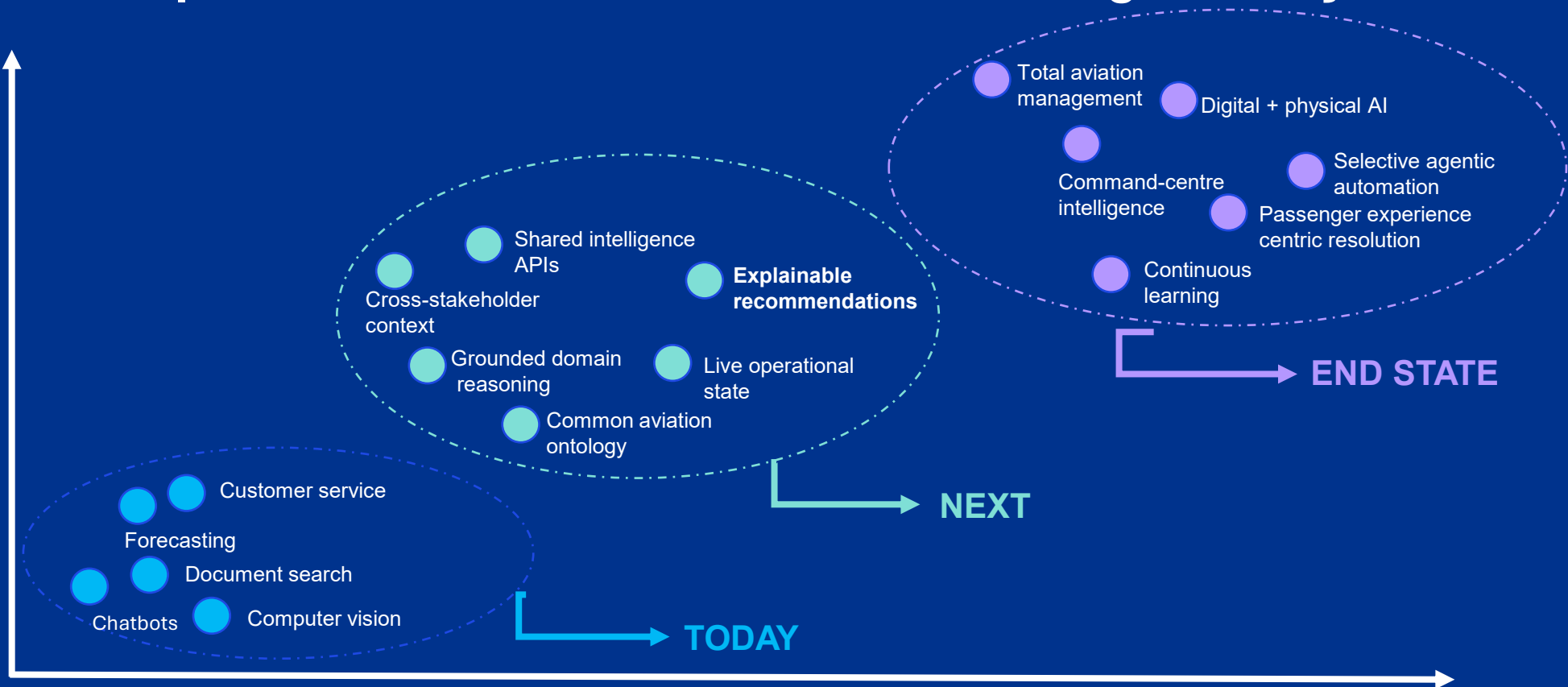
GHA and ancillary services

Enhance turnaround performance, workforce allocation, and service coordination through real-time data



Each stakeholder can retain control of its data while exposing governed insights/ APIs

The strategic shift | From AI Use Cases to an Aviation Intelligence Layer



The Foundation for an AI-Native Aviation Ecosystem

**SAFER** Earlier signals & better decisions

**SMARTER** Cross-stakeholder intelligence

**SOVEREIGN** India-specific, controlled AI

KPMG can be trusted partner for implementing industry specific AI solutions

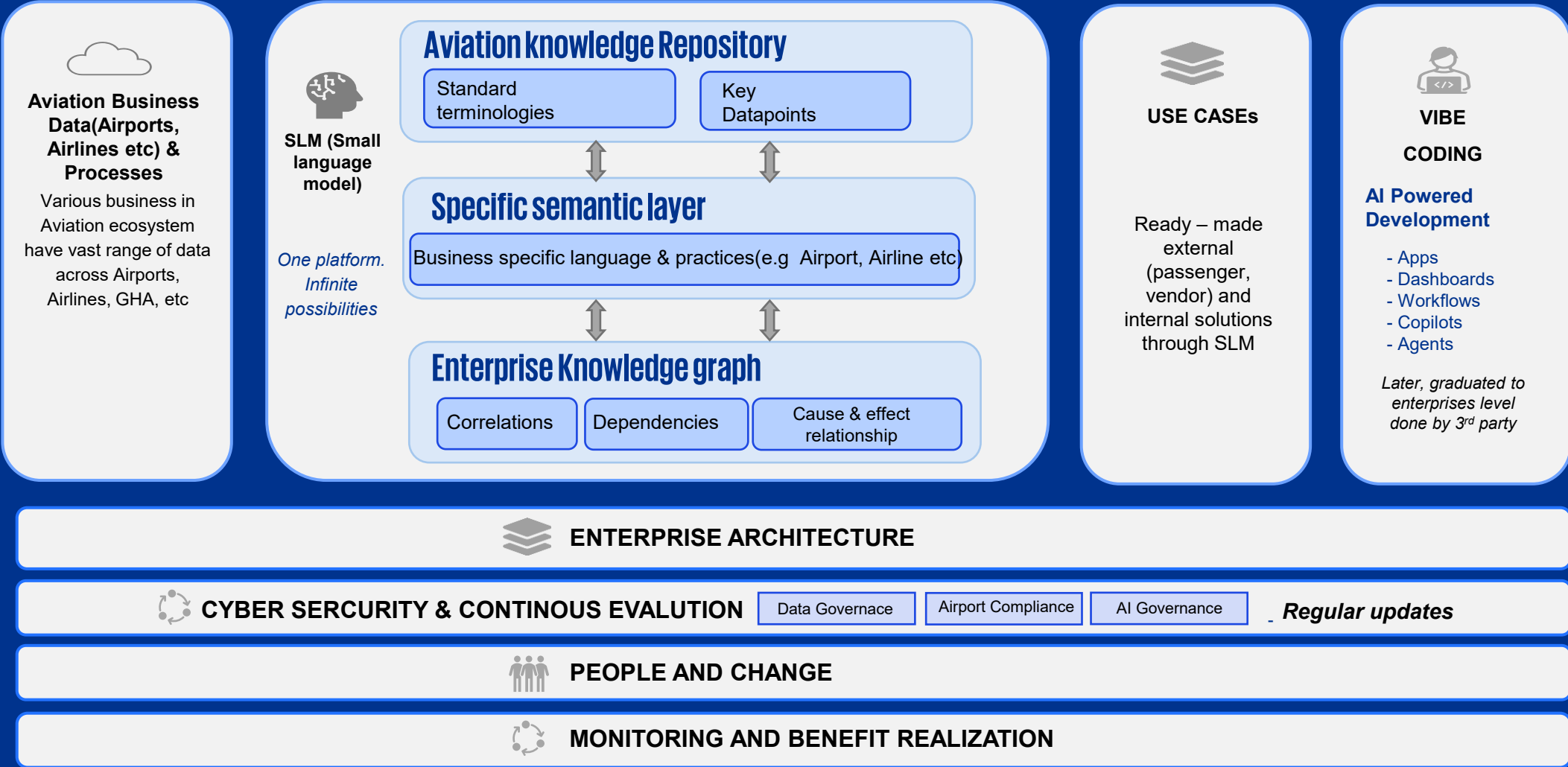


Thank You



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KPMG Aviation SLM–AI powered aviation intelligence



Select Technology Enablement



Note: Domestic traffic considered in one-way

Enhancing security and customer experience

Airport Technology



Recent experience

1

digi yatra

Business Plan, Cyber and Platform Audit and ongoing support



Digi Yatra is a revolutionary industry led initiative aimed at providing seamless, paperless and hassle-free travel experience for every passenger. Currently few airports are part of the Digi Yatra ecosystem and as more airports get added, there will be a need to review the existing functions and make it a self-sustainable organization.

The scope of work is included 3 broad areas:

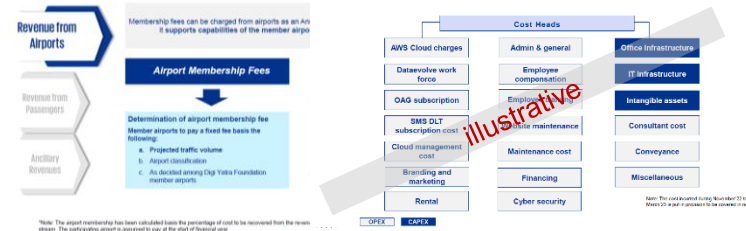
- Development of business plan
- Cyber security and architecture review
- Transition to new application

In view of the above, KPMG was engaged to develop a high level business plan and conduct cyber security/UI/UX audits



We assisted DYF to develop a 5-year business plan along with a financial model and organizational structure

- Review of the core & support functions of DYF; assessment of future requirements and defining its functions and responsibilities
- Conduct stakeholder consultation to understand the roadmap for implementation of Digi Yatra & identifying specific aspects of business plan which would need to be considered
- As-is analysis of P&L statement, estimate of expense elements for plan period; Identifying and estimating revenue streams in discussion with the DYF to offset the costs & Prepare financial model



Performed cyber security assessment, UI/UX review, performance testing & CERT-IN audit for Digi yatra application

- UI/ UX review of the application including development of application/user understanding, gathering user feedback, ideation, wireframing and accessibility audit,
- Data privacy assessment of the Digi yatra application and review of related policy
- CERT-IN audit and cyber maturity assessment of the application

Evaluating additional opportunities for implementing DYF

- The new opportunities are evaluated across parameters such as demand potential and ease of implementing DYF
- Based on above parameters the potential target timelines for implementation are assessed

	Demand potential	Ease of implementing DYF	Target timeline
Airports & Airline offices	High	High	Short Term
Travel & Tourism ecosystem - Hotels	Medium	Medium	Short / Medium-term
Entry Exit Services - Customs & Land Border	Medium	Medium	Short / Medium-term
Railways & Metros	Low	Low	Long-term

Short/Medium-term - less than 3 years
Long-term - more than 3 years

Pioneering the adoption of emerging technology

Airport Technology



Recent experience

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Bangalore International Airport | Development of Gen AI platform



Scope focusses on development and maintenance of the Generative AI platform

- Defining the objectives, Model and use cases for implementation
- Access the current systems and architecture
- Choosing the right GenAI technology and integration
- Responsible and secure AI
- Support and maintenance

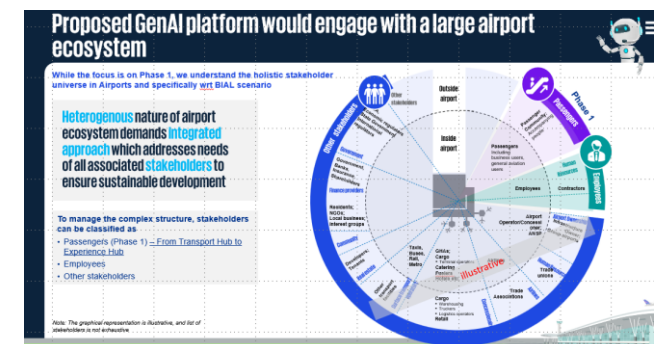
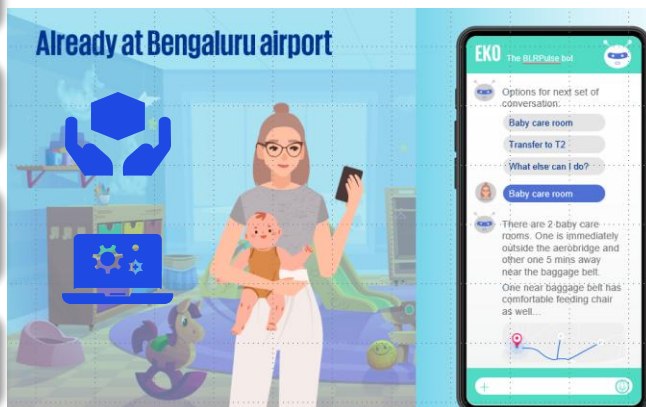
Enriched passenger experience

Optimized operations

Increased efficiency

Empowering people

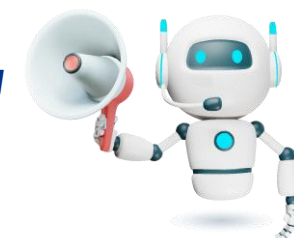
Already at Bengaluru airport



- Airline marketing data includes flight schedule, market analysis, airline agent reports, airline partnership information, traffic trends, etc.
- ARPT provides data related to trainings, daily flight schedule, CPT maintenance schedule, roster management, etc.
- Concession data includes financial records, budget, management records, etc.
- Safety related data includes incident evidence of incidents, accidents, safety breaches, training, audit reports and weather
- Procurement related data includes documents on pre-qualification, tender and post award

We need to unlock full potential of data to develop sophisticated digital platform with maximum efficiency

KPMG and Bangalore Airport (BLR) is in process for forming a strategic collaboration to develop industry first headless Gen-AI architecture to build few use cases specific airport environment. In future aspiration is to take solution globally together.



Development of integrated data platform for DXB

Airport Technology



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Dubai International Airport | Integrated data platform

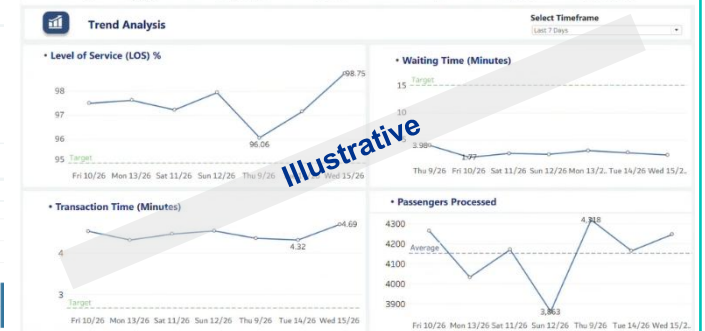
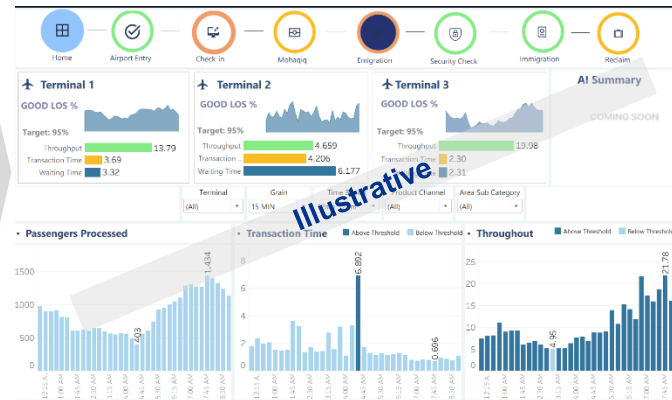


Dashboards for passenger flow

- Identified major gaps in existing data products and listed potential use cases to address the same
- Prepared integrated databases capturing information from various sources such as XOVIS, check-in data etc.
- Developed data structures in snowflake for products to capture information for dashboard development
- Prepared Power BI dashboards for leadership to consume

Key products

Check in performance | Flight load | Aircraft on ground | Monthly traffic report



KPMG has supported the Dubai International Airport in upgrading their existing databases and Power BI dashboards to capture more insightful information by merging multiple data sources



Pioneering the adoption of business process management

Airport Technology



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Bangalore International Airport | Workflow Management System (WMS)



Scope focusses on development and maintenance of the WMS platform

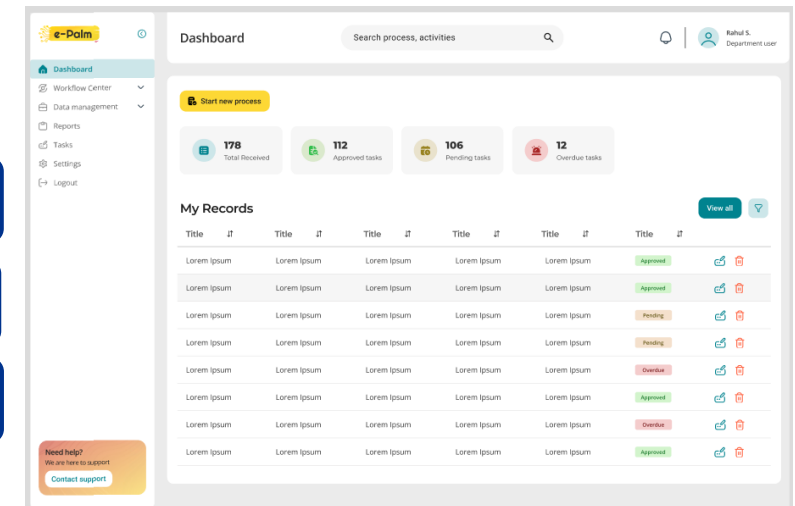
- Process optimization across functions like Procurement, Finance, Treasury, Sales & Billing etc.
- Design & development of business workflows on a LC NC Platform
- Transition led migration, support of current Azure Infrastructure and code repository
- Available and a web app and PWA
- Support and maintenance

Enriched employee experience

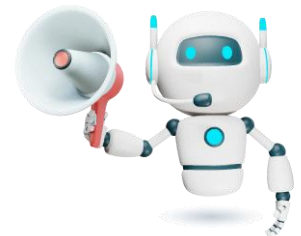
Optimized operations

Increased efficiency & audit logs

Reduced L1 tickets



KPMG is working closely with Bangalore International Airport to revisit over 200 workflows, redesign the same and implement a state of the art, Gen AI empowered work flow management tool. KPMG will develop the workflows and maintain the app for 7 years after the implementation



Driving efficiencies and predictability through digital twins

Airport Technology



Recent experience

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YVR Airport | Digital Twin Partnership

See your operation from all your sources of data (i.e. IoT & sensors etc.) aggregated into one unified user experience accessible by multiple stakeholders.

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Apply AI and Machine Learning to provide predictive and prescriptive operational recommendations.

Multiple scenarios can be simulated virtually, enabling more effective planning.

Operational
Situational
Awareness

Pivot from Reactive to
Prescriptive
Operations &
Simulation

Real-time
Alerts and
Notifications

Multiplayer collaboration tools that allow operators to react and respond in real time in support of operations.

The Value of Digital Twins for Complex Asset Operators :
Increasingly complex operating environments require a new set of tools to enable visibility, encourage data-driven decision-making and support more robust simulation and planning efforts.



“ KPMG and Vancouver International Airport (YVR) have formed a strategic collaboration to bring the power of digital twins to clients in search of the next generation of technology to solve complex operational challenges and redefine industry standards. ”

Pioneering the adoption of business process management

Airport Technology



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Bangalore International Airport | Development of business cases for ICT initiatives



Scope focusses on business case development for ICT initiatives & cost benchmarking

- Studied over 15 different initiatives being planned by the airport and helped the airport build cases for submission to regulator
- Benchmarked the initiatives with global standards and helped the airport quantify the benefits that can be expected
- Developed a financial model to estimate the investment to be made by the airport for the initiatives over the next 10 years
- Rationalized the costs involved with the help of primary interactions with industry experts



KPMG has supported the Bangalore International Airport in the development of business cases and a detailed financial model for submission AERA as part of its Multi Year Tariff Proposal for the 4th control period



Key initiatives involved:

AODB replacement | TAM | Digital Twin | AI implementation | Etc.



Smart hub initiatives



IoT based asset tracking



Digital airport asset management & maintenance solution



Total Airport Management (TAM)



Artificial Intelligence



System refresh



Cyber security upgrade



Refresh of servers and networks



Licenses and software refresh



Refresh of end user assets



Network refresh



Data center modernisation



AODB replacement



Innovation



Innovation & pioneering projects



Digital & ESG projects



Virtual lab environment

Empowering airport customer experience through technology

Airport Technology

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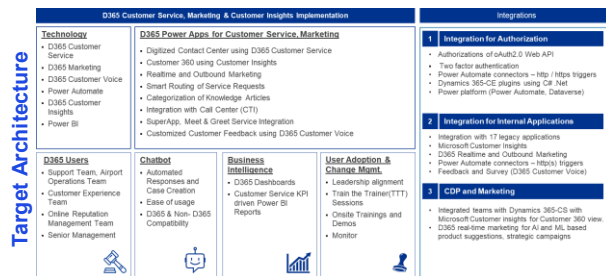
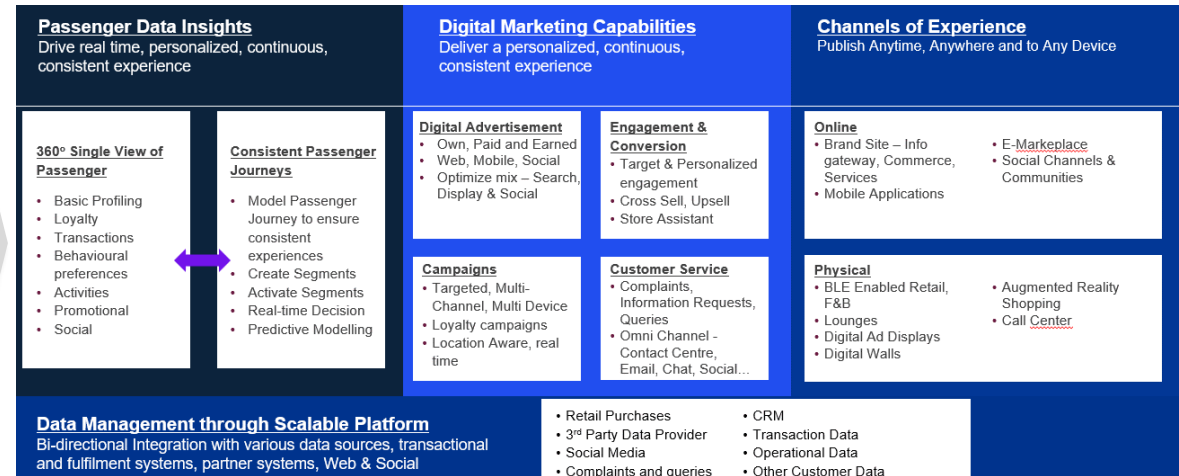
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7 Adani operated airports | CRM Tool

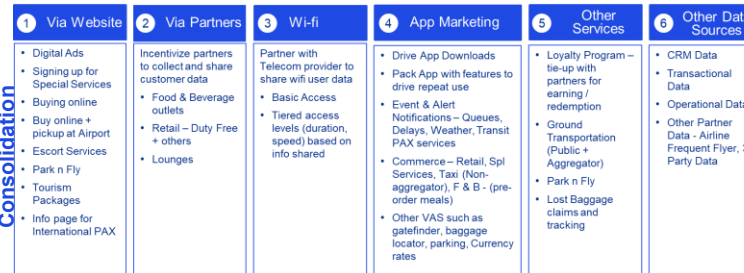


Scope focusses on development of an end-to-end customer relationship management tool

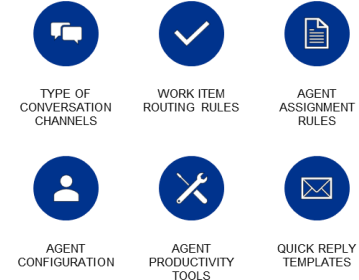
- Developed integrated end to end customer relationship management tool by implementing D365 for customer service, marketing & customer insights
- Created an omnichannel flow for the customers & agents integrating various channels such as mail, chat, call etc.
- The tool acts as a single point of truth for all business intelligence taking inputs from across sources
- Scalable solution with capabilities for integrating with other platforms



Data Acquisition & Consolidation



Envisaging Omnichannel Experience



Resolving customer issues with technology tools

Airport Technology



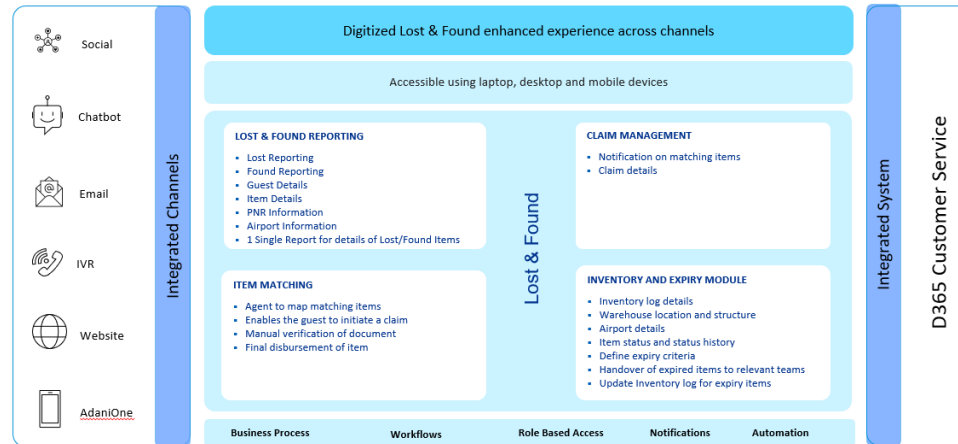
Recent experience

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Mumbai International Airport | Lost and found reporting

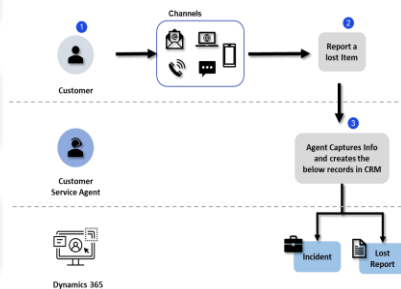


Scope focusses on development of lost & found reporting tool

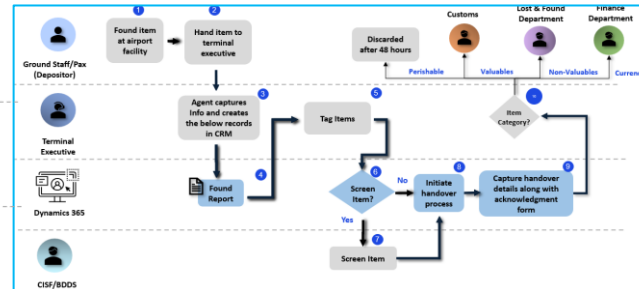


- Developed a lost and found reporting platform leveraging the D365 tool
- Identified key personas and developed process flows for lost item storage and retrieval
- Integrated the D365 platform with multiple channels for interaction with customers & employees for reporting purposes
- Implemented AI builder to enable automated categorization of lost and found items
- Developed detailed dashboards and reports for tracking of lost and found items
- Provided hands on training to the employees on how to use the application

As-is assessment



To be design



Understanding customer personas



Thank You

