

Future of Airports: Dynamic Customer Experience and Cognitive Operations

Executive Summary

Airports are unique ecosystems that must deliver on their wide-range of commitments including a safe and secure passage for people and cargo, environmental sustainability, and community and regional growth. With increasing public-private partnership, it is also crucial for airports to enhance financial performance and drive exponential value to investors. They not only need to evolve strategies to drive efficiency and predictability in operations but also need to differentiate themselves as a preferred port of travel. This requires airports to have a deeper understanding of traveler's activities and preferences to provide personalized experiences.

However, most airport innovation initiatives have a topical application yielding incremental benefits. Sustainable, holistic improvement to airport performance means leveraging an experienced, centralized system of engagement that offers newer levers for revenue growth, operational efficiency, and cost control, and overcomes constraints imposed by the current airport process and engagement design. This paper throws light on how airports can achieve this and create sustainable revenue streams by using strategic levers.

Exploring Newer Sustainable Revenue Streams

According to the recent ACI report on airport economics,¹ an airport’s financial sustainability significantly depends on newer revenue streams with traditional aeronautical revenues covering just 52% of the cost of airport operations. For instance, airports rely on non-aero revenue streams such as car parking, retail, and food and beverage concessions to make up for the shortfall and drive profitability. But airports still fail to deliver on their true potential due to a highly segmented, departmental approach to products, services introduction, and guest management. This hampers the provision of omnichannel personalized interactions across guest touchpoints, throughout the airport. At the same time, inadequate collaboration within the travel ecosystem results in poor utilization of facilities and resources, thereby leaving untapped value from capital investments.

An internal study of the annual reports for 64 leading airports for the financial year 2018-2019 by TCS’ Strategic Initiatives Group for the Travel and Hospitality vertical highlights a major focus area for airports is to improve passenger experience and operational efficiency. Airport operators are looking at digital transformations to include all areas of operations from baggage and passenger flow to safety and security, and even fostering of community values. However, they still lack new ways of collaboration and commercial arrangements. In addition, most of the transformative initiatives are mere additions to existing business

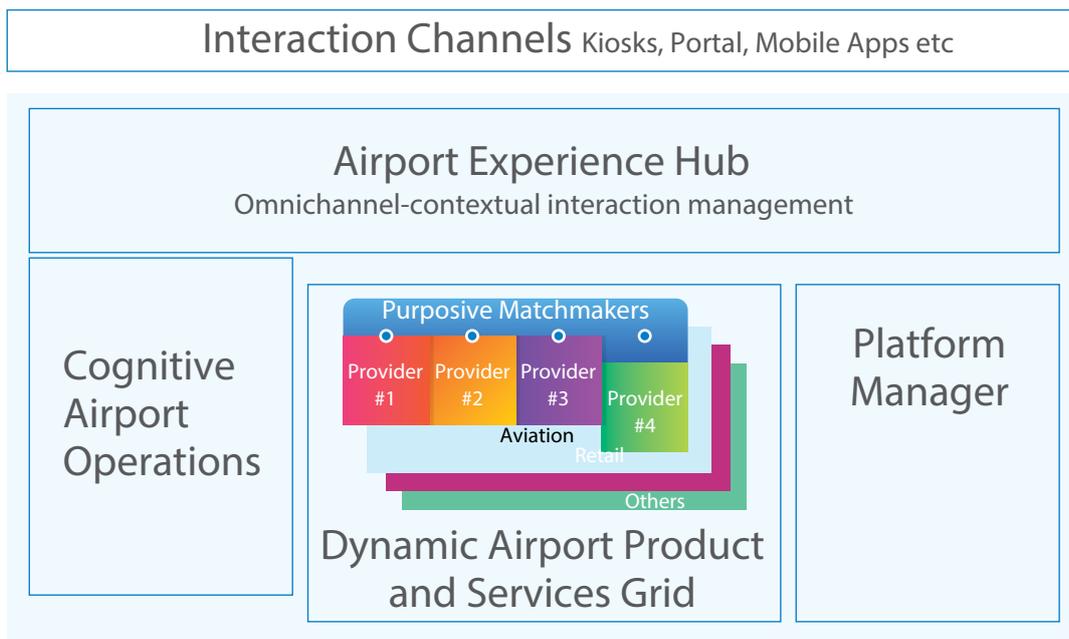


Figure 1: Future Airports Strategic Capability Map

[1] ACI, Airport Economics 2019 Highlights, <https://store.aci.aero/product/airport-economics-report-2019/>

models and fall short in providing a robust approach to long-term, sustainable airport performance.

Roadmap to Dynamic and Cognitive Operations

For airports to gain greater control on operational performance, become future-ready, and drive sustainable growth, they need to develop the capability to deploy agile and nimble transformative business models (see Figure 1). underpinned by use of technology.

Interaction channels: A wide range of applications for passengers and enterprise users helps improve collaboration and experience.

Platform manager: Platform management capabilities for enabling partner on-boarding, mapping customer journeys, creating configurable offers for consumer interactions, building product catalog, and ensuring necessary platform administration, security, and device management.

Experience hub: Channel independent journey management through a consent-based digital journey token that can help analyze interaction context and provide personalized offers.

Dynamic airport product and services grid: Dynamic model-driven offer management that matches the the resolved set of contextual demands based on available offers.

Cognitive operations: An enterprise digital twin, built on a robust data and analytics workbench for enabling advanced visualization, impact analysis, and decision management for implementing truly nimble operations designed for public transportation infrastructure contexts.

Transforming Airports: 3 strategic levers

Lever # 1 - Address missing links in the travel value chain

Airlines have been increasingly investing in upstream digital engagement for travel products and services. However, process legacies and the lack of adequate information sharing capabilities between ecosystem partners hampers integration of product delivery. This in turn results in poor traveler experience and unmet traveler needs. Opportunities include packaging and distributing airport and local entertainment products, enabling airport spoking services such as secure bag pickup and drop services, and fast-tracking passenger processing products for business travelers. It is also crucial to personalize airport touchpoints to cross-sell and upsell concessions, parking, and ground access products, and provide concierge and service recovery services such as alternate connections and hotel accommodation.

A flexible engagement platform underpinned by the proposed capabilities such as experience hub, dynamic process and services grid will enable flexible travel participation across the value chain. This will help build a well-orchestrated, collaborative approach across players in the travel value chain and contextualize product or service matching. This will ultimately drive personalized customer experience, enhanced customer satisfaction and enable the airport's non-aero revenue prospects.

Lever # 2 - Reimagine airport commercial

Airport commercials have significant potential to drive value by reducing the entry barrier to concessionaires and providing greater access to consumer touchpoints to dynamically package and market products and services. Greater inclusion of regional micro, small and medium enterprises (MSMEs) for authentic products or services can render unique shopping, hospitality, tourism, and other experiences. This helps mitigate the risk of losing sales to other hub airports.

For instance, low cost, faster onboarding of region specific MSMEs into the airport retail ecosystem with contextual marketing enablement of their products can help MSMEs promote them to a wide range of travelers, especially foreign tourists. This helps combat funding and production challenges, while enabling product differentiation, improved packaging, brand building, product display and clientele building. This in turn can boost retail shopping spend significantly by foreign tourists.

Airports should also transcend into a multi-faceted guest experience arena while providing efficient travel services such as a smart airport cities that integrate diverse capabilities. This helps drive exponential value from infrastructure investments. To minimize risk and exposure to aviation businesses, it is also important that smart airport cities are designed for multi-purpose activities such as retail marketplace, special economic zones, multi-modal transportation, entertainment arenas and MICE (Meetings, Incentives, Conferences, and Exhibitions) while supporting off-airport activities providing travelers greater control of their time. Reimagined airport commercial needs robust customer experience management and a nimble approach to offer products and services by a variety of providers through strategic capabilities such as experience hub and dynamic product or services grid.

Lever #3 - Move from lean operations to nimble operations

Airport operations should now shift from a lean model delivering on a planned schedule to a nimble model that provides greater adaptability to dynamic situations and greater accountability to the ecosystem partner's

performance. For instance, global pandemics such as COVID-19 require improved resilience and adaptability to withstand the situation and recover stronger than ever. This underscores the necessity for greater collaboration between ecosystem players to drive holistic value to customers centered around their safety and wellbeing. ICAO² projects that approximately 30% of airline operating expenses are spent on ground operations. However, there is still a need for shared situation awareness and greater operational collaboration for mutual benefit. A transparent and insights driven approach based on proposed cognitive operations provides significant impetus for collaborative and intelligent airport operations. This ensures multi-horizon tactical planning, real-time impact analysis and data-backed response management environment.

Ensuring Customer-centricity for Exponential Growth

By embracing strategic cognitive and collaborative capabilities, airport authorities can uplift non-aeronautical revenue and improve customer experience through seamless onboarding, dynamic integration of products or services with contextualized offers, improved self-service, process interoperability, and flow efficiencies. Additionally, cargo revenue can be improved through a combination of marketplace style trading slots, resources and better forecasting of data driven insights. This in turn helps improve operational transparency and boosts collaboration, and aids advanced operational decision management for driving responsive operations and IT and resource cost optimization for reduced total cost of ownership

Airports can drive exponential value by developing a targeted value proposition for different consumers within the platform. This will require restructuring partnership agreements and propositions for mutual value and incentivizing adoption. The primary intent should be eliminating economic friction through democratizing access to products and services available within and around the airport while ensuring contextual packaging. This approach not only opens newer avenues for the ecosystem partners to transcend competition and co-create new value, but also helps create better guest experience, conduct collaborative operations, and build sustainable commercial models.

[2] ICAO, *Airline Operating Costs and Productivity*, 20-23 Feb 2017
<https://www.icao.int/MID/Documents/2017/Aviation%20Data%20and%20Analysis%20Seminar/PPT3%20-%20Airlines%20Operating%20costs%20and%20productivity.pdf>

About The Authors

Biju Manghat

Biju Manghat is a Consulting Partner with Travel, Transportation and Hospitality business unit at Tata Consultancy Services. He has 21 years of IT experience involving end to end solution implementation, project management and consulting for TCS clients across industries such as BFSI and TTH. He is passionate about digital transformation and enabling organizations to deliver value through the same.

Subramaniam Balakrishnan

Subramaniam Balakrishnan (Subbu) is an Industry Advisor within Travel, Transportation and Hospitality business unit at Tata Consultancy Services. He has close to 18 years in working with commercial aviation industry enabling diverse transformation projects. Subbu firmly believes that airports can significantly accelerate value creation through adopting a platform driven approach for eco-system convergence and through embracing cross-industry best practices.

Contact

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