

Digital Business Transformation for Airports

Trends and Best Practices

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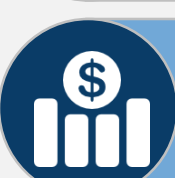

- **Martin Boyer**, Vice President and Chief Information Officer, Greater Toronto Airports Authority
- **Dheeraj Kohli**, Vice President and Global Lead, Travel & Transportation, Unisys
- **Michael Wilson**, Managing Director and North America Lead, Travel & Transportation, Accenture
- **Emre Serpen**, Global Airports Lead, Wipro

Examples of technology innovation and business impact contained in this document are taken from the following airports - YYZ, LHR, LGW, CDG, VIE, ARN, CPH, DEL, SIN – and the following other sources - ADL Research; IATA; IBM; Intervistas; GMR Airports Ltd.; SITA; Wipro Ltd.

Six Major Levers of Digital Transformation at Airports

Segment

Technology Solutions

 Customer Experience Improvements	Mobile self-service solutions, Bluetooth proximity marketing, social media integration, Intelligent interactive displays, loyalty solutions
 Passenger Flow Improvements	Location aware beacons, Real-time flow monitoring and control, Geo Location solutions providing information and access to airport facilities
 Airport Process Optimization	AODB, CDM, Mobile / NFC boarding, RFID Baggage tagging, automated building access management, real-time resource management improve asset utilization and operations efficiency
 Airport Economic Lifecycle Optimization	Integrated digital platform for end-to-end design, management and expansion of airports including use of BIM, GIS, real time and intelligent asset, utility and energy management solutions
 Revenue Optimization	Integrated platforms for omni-channel, dynamic and personalized customer interaction; passenger flow optimization to drive higher retail consumption; real-time resource allocation to match passenger flow
 Partnership Innovations	Strategic partnerships to implement business and technology transformation with little to no capital investment, with a focus on tangible top line growth or bottom line improvements

Technology has enabled agent-free execution of key travel processes, and is progressively eliminating traveler-agent interaction points at airports

Process without agent intervention	Adoption	Potential
Booking		
Parking		
Online/Curbside check-in		
Curbside baggage drop		
Security		
Border Control (Outbound)		
Boarding		
Baggage Claim		

At the Airport

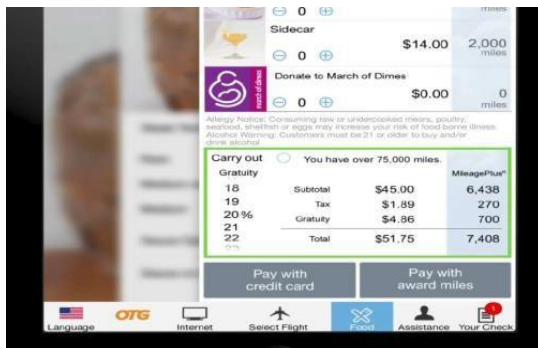
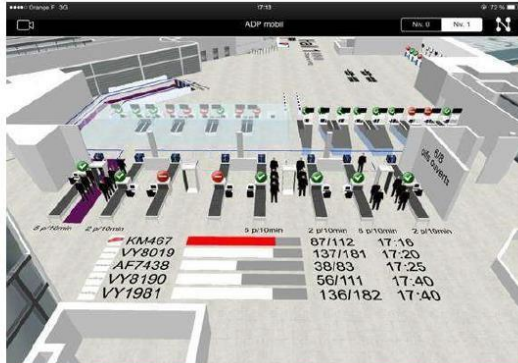
- Provide Wi-Fi, Bluetooth and mobile enabled solutions.
- Monetize traveler eyeballs using digital signage
- Automated gates using enhanced biometrics
- Augmented experience for the connected traveler using:
 - Wireless connectivity and virtual office management
 - Interactive information displays
 - Bluetooth proximity marketing
 - Location aware targeted marketing
 - Mobile based airport and destination information

Pre and Post Travel

- Social media pages to provide
 - Information on travel choices to the airport
 - Storm warnings and workarounds
 - Information on retail, F&B, Car Park and other services



Predictive analytics and enhanced biometrics helps airports proactively act on real-time information about passenger flow and make decisions related to staffing and gate assignments.



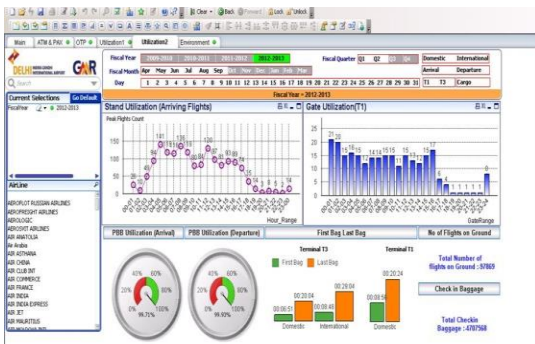
At the Airport

- Mobile check-in technologies accelerate check-in and boarding
- Real-time flow monitoring and control ensures:
 - Passengers spend less time in non-value added activities
 - Revenue is maximized by allowing time for retail, leisure and shopping
- Video analytics from surveillance cameras used to open gates and adequately staff security and border control lanes
- Location aware beacons provide real-time wayfinding solutions to optimize passenger flow

Pre and Post Travel

- Self-printing and tagging of baggage tags
- Smart parking with mobile pre-booking
- Real-time notifications about bottlenecks, storm warnings and delays, destination issues, etc.
- Integrated transportation applications

Optimize operations to reduce operations costs, improve capacity utilization, improve physical security and reduce issues related to loss and pilferage



Flight No.	Carrier	Class	Seat	Time	Status	Remarks
610	AI	Y	10A	10:00	On Time	
610	AI	Y	10A	10:00	Delayed	
610	AI	Y	10A	10:00	Cancelled	

- Airport Operational Database System (AODB) to integrated data from passenger, airline and airport operations
- Predictive analytics using data from AODB helps in operational and executive decision making:
 - Maximizes utilization and throughput of space, check in counters, security and immigration lines, gates
 - Optimizes staff deployment via forecasting and seasonal planning.
 - Reduces airline taxi times and turnaround times
 - Reduces connection times Integrated capacity management across runways, gates and passenger checkpoints
- RFID baggage tagging reduces rate of lost or misplaced baggage
- Roaming agent applications help airline and security agents to authenticate travelers
- Centralized command and control center receives and intelligently processes security feeds
- Mobile/ tablet based hand-held field data entry systems for ground staff, to facilitate visibility of:
 - Support equipment and supplies
 - Power
 - Maintenance

Integrated analytics across asset utilization, capacity and maintenance can drive significant lifecycle savings in airport operations, including supporting higher capacity with existing assets



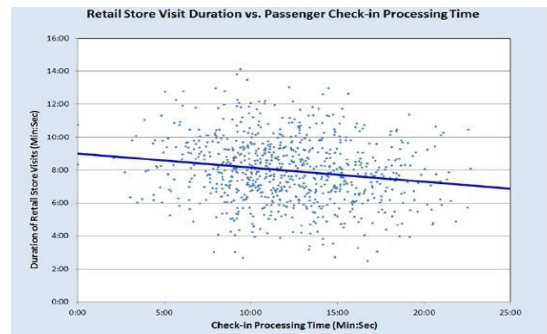
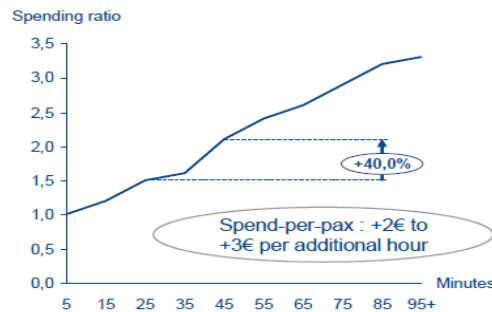
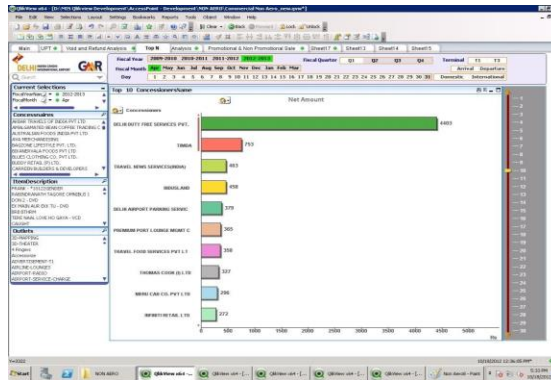
Asset management benefits

- Labour utilization, 10 to 20% increase
- Asset availability, increase 3 to 10%
- Decrease in new purchases, 3 to 5%
- Warranty recovery, up 10 to 50%
- Inventory reductions, 20 to 30%
- Reduced inventory carrying costs, up to 20%
- Material cost reductions, 5 to 10%
- Purchasing cost reductions, 10 to 50%



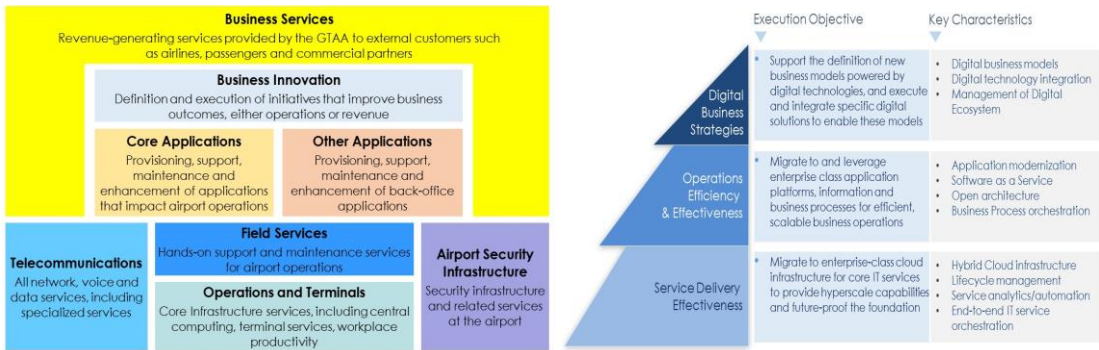
- Integrated Asset Management and Resource Management systems to :
 - Maximize utilization and throughput of fixed assets
 - Minimize maintenance and pilferage
 - Ensure environmental compliance
 - Assist in recovery from disturbances
- Ensure efficient design, management and expansion of airports using
 - Building information modeling
 - Asset Management
 - Real time and intelligent asset, utility and energy management solutions
- Utilize analytics to define strategy for:
 - Optimization of use of current assets to defer expansion
 - Expansion of fixed assets (terminal, gate, stand, check-in, carousel etc.)
 - Preventative maintenance of assets

Targeted passenger segmentation, dynamic passenger flow management, personalized offers and alternative fulfillment strategies can drive increases in non-aeronautical revenues



- Passenger flow management to optimize dwell time in retail zones
- Integrated omni-channel retail platforms
- Targeted offers based on individualized segmentation
- Tablet and mobile applications to replace inefficient human interactions
- Dynamic allocation of airport resources to match profile of passengers
- Dynamic gate allocation to match passenger profile and flow to retail outlets
- Pre-order from flights for pick-up-on-arrival
- Ship-to-home, ship-to-flight and pick-up-on-return fulfillment models

Innovative strategic partnership such as Zero-Cost Transformation™ and Digital Ecosystem Partnerships™ drive focus on Net Economic Value Added™ from transformation



Traditional Transformation Approach	Zero Cost Transformation™ Approach	Traditional TCO Approach	NEVA™ Approach
High one time capital investment, often a barrier to innovation	No up front investment	<ul style="list-style-type: none"> Ongoing IT Services <ul style="list-style-type: none"> Ongoing cost of services Costs of software and hardware Costs of third party contracts Lifecycle management costs One time costs <ul style="list-style-type: none"> Transition costs Transformation projects <p>Race to the bottom for costs equal to ~3-5% of total revenues</p>	<ul style="list-style-type: none"> Business Value Added <ul style="list-style-type: none"> Incremental revenues from digital initiatives Process cost reduction from transformation initiatives Costs of Enabling Capabilities <ul style="list-style-type: none"> Utility costs of converged IT services One-time transition and transformation costs (ideally, zero) Gain share payments Maximize impact on 20-25% of revenues and 40-70% of costs
Complex and expensive product lifecycle management	Lifecycle management embedded in core services		
Long lead times for project planning and capital budgeting	Eliminate capital budgeting and focus on business valuation		
Compensation on project milestones, before business benefits realized	Vendor compensation linked to demonstrated business outcomes		
High failure rate of initiatives, over 65% are over schedule or budget	Over 80% of initiatives are executed on schedule		
Client benefits not measured or tracked in over 80% of initiatives	100% of initiatives lead to measurement of tangible client benefits		

Digital Ecosystem Partnerships™

- Integrated partnerships for technology services across sustaining operations, business operations optimization and digital business innovation
- Operational integration with airlines, retail concessions, transportation partners and government agencies to realize benefits of technology innovation

Zero-Cost Transformation™

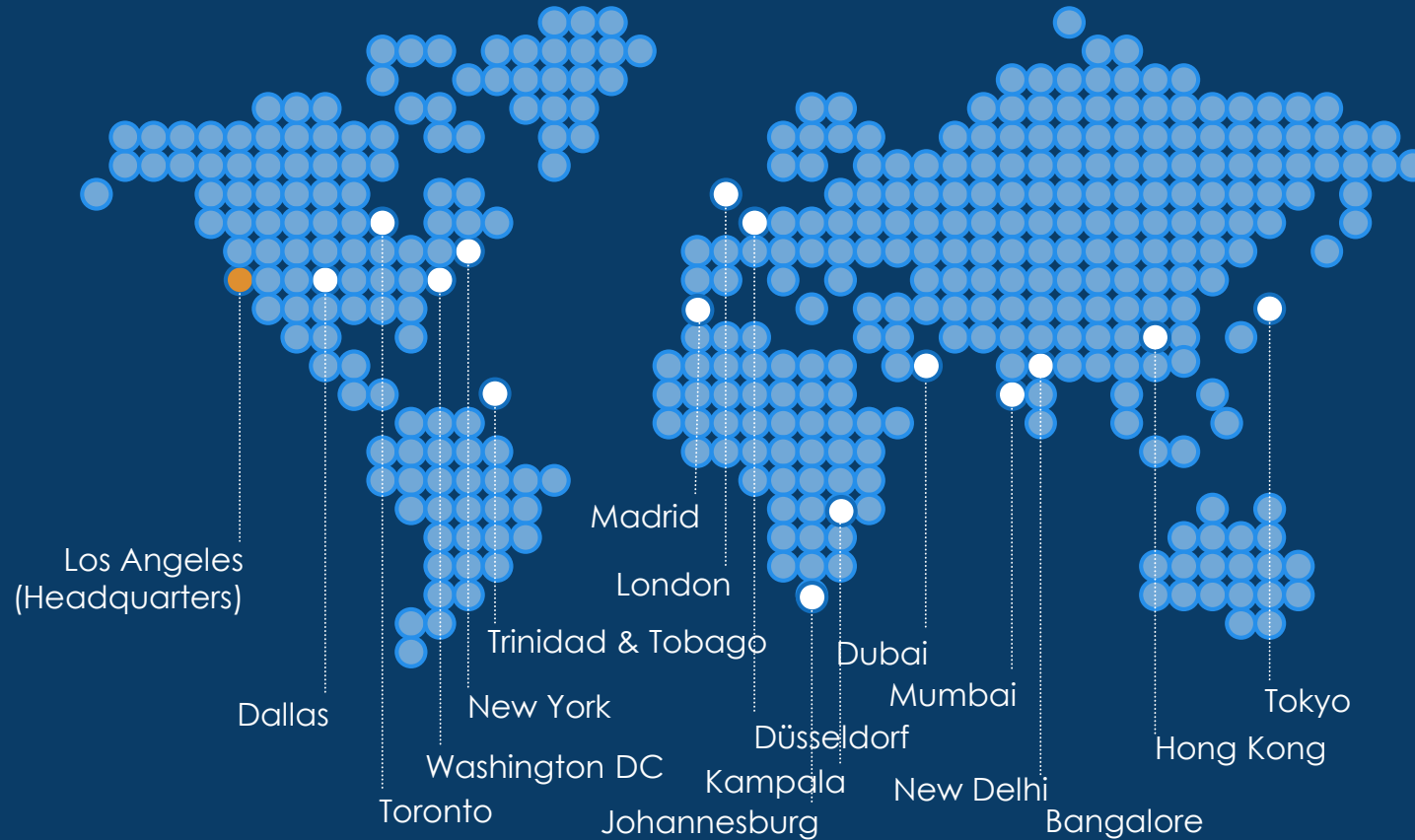
- Implementation of business and technology modernization at little or no one-time investment
- Gain-sharing models with strategic partners - airlines, retail concessions, transportation partners, government agencies, technology providers - based on tangible revenue growth or cost reduction targets

Net Economic Value Added™

- Focus on tangible economic value in terms of revenue growth and/or cost reduction
- Move away from traditional TCO approach to technology cost optimization



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