Smarter Airport
An opportunity to transform Travel and Trade

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Welcome to Athens International Airport

Agenda

- T&T Imperatives
- Building the Smarter Airport
- IBM & Apple
- Delivering at Speed with Bluemix
IBM has a long history of bringing innovation to the aviation industry.

1960s – IBM & AA created Sabre, first Online Reservation System

1970 – Ticketing Kiosk AA partnership


1990s – Airline Outsourcing

2005 – Airline Process Services

2009 – NA iPhone App

2010 – Next Gen Check-in

2011 – Mobile Booking, Vacation Packages

2012 – Self Serve Bag Drop

2013 – SIMON

2014 – Enterprise Mobility

... What's Next?

Powered by IBM Watson
Travel & Transportation Imperatives

- Improve the end-to-end customer experience
- Improve operational efficiency & Turnaround improvement thru a better collaboration and information sharing
- Maximize availability of assets and infrastructure

Assure Safety & Security
### IBM Vision: “What are Smarter Airports?”

“Smarter airports are well managed integrated physical and digital infrastructures that provide optimal service in a reliable, cost effective and sustainable manner.”

<table>
<thead>
<tr>
<th>Growth</th>
<th>Experience</th>
<th>Efficiency</th>
<th>Safety &amp; Security</th>
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<tbody>
<tr>
<td><strong>Anticipate the future needs of air travel:</strong> Accommodate and connect expanding numbers of passengers and aircraft</td>
<td><strong>Provide a consistent, value-add customer experience:</strong> Increase passenger satisfaction, adding new services and enhancing airport attractiveness</td>
<td><strong>Improve operational efficiency</strong> with increased integration and the next level of stakeholder collaboration</td>
<td><strong>Ensure a safe environment:</strong> Proactively handle difficult challenges in addressing safety &amp; security threats while minimizing disruption to operations</td>
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<tr>
<td><strong>Grow revenue:</strong> Optimize fees and increase commercial (non-aeronautical) revenue as a portion of total revenue</td>
<td><strong>Provide a transportation hub:</strong> Provide expected connectivity and, potentially, a source of economic development for the community</td>
<td><strong>Lower costs</strong> while improving assets availability and infrastructure planning and management</td>
<td><strong>Drive social responsibility:</strong> Improve the airport’s environmental footprint through “green” solutions – become CO2 neutral</td>
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Airport Industry Trends – Exploring the Possibilities

When considering the future of a traveler’s airport experience, the possibilities are endless …

Smarter Commerce - Personalized Marketing & Sales Experience

Consider Future Travel

Research Travel Options

Make Decision / Purchase

Prepare to Travel

Arrive at Airport / Check In

Pass Through Security

Wait for Flight

Board Plane

In-Flight

Disembark

Retrieved Bags / Luggage

Travel From Airport to Dest.

Post Travel Issue Resolution

Reflect

Cross-Sell / Up-Sell and Ancillary Fee Pre-paids

Location, flight and individual specific notifications

TSA Wait Times & Airport Parking Data Push

Self-Tagging & Bag Drop

Speed Lane Touchless Check In

Jet Bridge Presence Monitoring

Baggage Delivery Information

Kiosk-Enabled Disruption Management

Destination Events and Ticket Information

Smarter Commerce - Service Recovery

Loyalty and/or revenue added gate area transactions

Automatic Notification & Rebooking During IRROPS

Touchless Boarding

Annette advises:

Apologies for misconnect on Miami trip

Preferred business class aisle seat

Confirms departure info and

Upgrade access to First Class lounge

Apologies for misconnect on Miami trip

Annette advises:

Upgrade access to First Class lounge

Smarter Commerce in Action

Service Recovery Example

IBM Confidential – © IBM Corp. 2012

CUSTOMER ... experienced a series of 
service issues on recent flights.  He's now 
travelling to London in Business Class…
IBM initiatives for Smarter Airports in the Digital and Mobile Era

Airport Industry Trends – Passenger Centric Operations

**Passenger Experience**

**Simple and Quick Process**

1. Self-Service Check in (Web, Mobile, Kiosk, Proximity Reader)

2. Self Service Bag Tag (with Roving Agents)

3. Self Service Bag Drop (with Roving Agents)

**Airport Operator**

**Proactive and Actionable Real-time Information**

- Mobile Task Management
- Situational Awareness, Operational KPIs, Terminal Management, IRROPs Recovery
- Security Alerts
- Traffic Management
- Disruption Management
- Smarter Commerce – Marketing, Sales, Service Recovery

In the Digital and Mobile Era, customer experience is more important than ever. Chatbot assistance is used to provide personalized travel information and support. Sports enthusiasts can access self-service check-ins, bag tagging, and drop-off points with roving agents to enhance their travel experience. IBM initiatives for Smarter Airports focus on passenger-centric operations, with an emphasis on providing simple and quick processes for self-service check-in, bag tagging, and bag drop. Mobile task management and situational awareness provide real-time information to operators, while security alerts, traffic management, and disruption management ensure smooth passenger flow. The Smarter Commerce strategy includes marketing, sales, and service recovery, ensuring a seamless travel experience. In May 2012, IBM Confidential – © IBM Corp. 2012
“Non Aéronautical Revenues” (NAR) possible developments for growth

Interact with the visitor

Know your customer (profile / segmentation / Behavior / expectations)

Build a comprehensive loyalty program

Optimize offer / targets

Promotion & Discount

Invent new models

Interact in real time

Growth initiatives

- Integrate parking and airport approach in the overall passenger experience
- Propose new parking plans

- Introduce a comprehensive loyalty program

- Review existing / target new brands

- Revisit airport / stakeholders partnership & business model – Shared Commercial strategy

- Add new buyer use cases: (“virtual store”, choose & delivery, “best prices guaranteed”) and address non traveler consumer (« airport city concept »)

- Promote and better advertise existing services - Invent new services based on customer insights

- Make digital signage more dynamic adding consumer information to flight information (contextual & real time based on airports operations status and flight profile)

- Improve passenger processing and reduce stress related for a better time left and mood for shopping

- Revisit airport layout (shop walk through concept)

Parking

Shops

Food & Beverage

Airports eCommerce, eTravel and Services

Advertising

Real Estate
Travel & Transportation Framework
We organize our industry solutions in five major segments

- Reservation System Modernization
- Customer Experience
- Consistent Customer Information
- Customer Analytics and Insight
- Campaign and Promotion Management
- Marketing Operations Management
- Mobile & On-Site Self Service
- Customer Tailored Offers

- Traveler Core Systems Transformation
  - Asset Management and Maintenance
  - Customer Loyalty, Sales and Service
  - Operations Planning and Optimization
  - Safety and Security

- Core Asset Management
- Operational Maintenance Scheduling
- Maintenance Efficiency Analysis
- Predictive Maintenance Analytics

- Airport Operations Management Systems
- Mobile Enablement of Operations Delivery
- Demand Driven Asset Positioning

- IBM Video Analytics
- Computed Video Surveillance
- Application Security for T&T Systems
- Safeguarding Consumer Information
- Cyber Network Security
- Mobile Security for T&T

Cloud  Analytics  Mobile  Social  Security
Qantas created an easier, smoother pre-departure process using a first-in-the-world RFID tag-based check-in and bag-drop system

**Business challenge:** Qantas wanted to introduce a new “next-generation check-in experience,” using a new frequent flyer card fitted with a smart chip.

**IBM’s solution:** IBM transformed the Qantas pre-departure process by automating check-in, baggage-drop and boarding using smart-card RFID technology embedded in its frequent flyer cards and bag tags, and by using baggage-handling technology and smart kiosks for all flyers.

**Client benefits:** By speeding passengers through pre-departure with new and innovative products, Qantas provides the individualized, premium service that its frequent flyers want and expect. Qantas now has fewer lines, better service, and better customer loyalty, as well as increased market share, better operating and capital efficiency, and more sources of ancillary revenue.

“*The Next Generation Check-in program provides a smarter, faster check-in experience... The Q Bag Tag is a cutting-edge innovation, and Qantas is proud to be the first airline to introduce this world-leading technology.*” – CEO of Qantas

Reduced check in time for premium customers by **75%**

The program is valued estimated **$50 million**

Increased throughput in the departure concourse by almost **100%**

which nearly eliminated queues
AMS Schiphol
Grows Hub Capacity with Smarter Baggage Handling

Amsterdam Airport Schiphol
✓ 50M passengers per year (2011)
✓ Major Transfer Hub: Over 40% of Pax
✓ Average 52,000 transfer bags per day
✓ Home carrier: KLM, Air France (Skyteam)

Baggage Handling Program Objectives
▪ Increase handling capacity to 70 million bags
▪ Improve customer satisfaction
▪ Reduce handling cost per bag
▪ Improve working conditions
▪ Increase flexibility of the system
▪ Introduce baggage tracking (On / Off Blocks)

IBM Solution
➢ Integrate all baggage control and sorting systems
➢ Connect with pax. check-in and real-time flight info
➢ Automate baggage tracking and reconciliation
➢ Provide info and metrics to monitor performance
➢ Improve reliability, availability, flexibility of system
➢ Uniform operational management and process
➢ Optimize logistics concepts: e.g Buffer Storage
Milan airport, transforming Passenger Experience Management

Milan SEA airport
- 19 million passengers in 2011
- Serves as a hub for Lufthansa and AlItalia
- Leading gateway for airfreight operations in Italy
- 300,000+ takeoffs and Landings per year

Project Objectives
- Enhance passenger experience with smarter check-in processes
- Shorten check-in time and increase passenger time spent in retail area
- Increase non-aviation revenue

Prior to SEA’s launch of SEAM1 loyalty program, passengers entering the airport were anonymous. Now, each member of the program is recognised upon entering the airport and treated as a preferred guest, complete with recognition awards.

Fabio Degli Esposti
CIO of SEA Milan airport

Key Benefits
- Enables SEA to target passengers/members with specific marketing promotions and opportunities based on the data analysis provided by the system
- Can be used to manage retailers and rents based on traffic information gathered from readers throughout the airport
- Provides personalized service and benefits to passengers/members, immediately and transparently, thanks to the RFID technology behind the solution
IBM & Apple
What we announced with Apple

IBM and Apple will collaborate to address these problems with a set of new offerings tailored for the iOS experience

The five biggest challenges you will face when you build and deploy mobile apps

<table>
<thead>
<tr>
<th>Securing apps</th>
<th>Delivery</th>
<th>Data scaling</th>
<th>Contextual Quality apps</th>
<th>Troubleshooting &amp; Maintenance</th>
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Four go-to-market offers

- **IBM MobileFirst iOS Solutions**: Enterprise apps exclusive for iOS
- **IBM MobileFirst Platform for iOS**: IBM Cloud Based Services
- **IBM MobileFirst Supply, Activate, and Manage**: Procurement and Life Cycle Management
- **AppleCare for Enterprise**
100+ industry-specific apps for iOS


3. **Airport Customer Service Agent (Airline, Airport, Ground Handlers)**

4. **Freight Event Management (Freight & Logistics)**
**IBM-Apple B2B Mobile App – Passenger Care (Customer Service Agent)**

<table>
<thead>
<tr>
<th>Solution Asset Definition</th>
<th>Brief Description</th>
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<td></td>
<td>The Passenger Care app is powered by features and capabilities that provide customer service agents with real-time information that contributes to ancillary sales, personalized interactions and customer loyalty. By empowering customer service agents to handle the administrative components of their job through their mobile devices, the app offers them greater flexibility and ease in completing these tasks during their highly mobile workdays.</td>
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</table>

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<tr>
<th>Business Value</th>
<th>Designed for Mobility: Allow mobile customer service agents assist passengers with check in and in the event of an IRROPs, would be redeployed to the gates of the disrupted flight to re-accommodate passengers</th>
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<tbody>
<tr>
<td></td>
<td>Smoother, more personalized traveler experience while speeding check-in and easing airport congestion.</td>
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<tr>
<td></td>
<td>Opportunities for the Customer Service Agent app to drive bottom line revenue through the sell of ancillary services.</td>
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<td></td>
<td>Increased Workforce</td>
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**Integrated Technology**

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<tr>
<th>IBM – Apple Components</th>
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<tbody>
<tr>
<td>IBM-Apple B2B Mobile (iOS Solutions)</td>
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<tr>
<td>IBM Mobile First (Platform for iOS, Supply / Activate &amp; Manage)</td>
</tr>
<tr>
<td>Apple Care for Enterprise</td>
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**Smarter Transportation**

<table>
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<tr>
<th>Proof points</th>
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<tbody>
<tr>
<td>• Access personal dashboard</td>
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<tr>
<td>• Access passenger data, Provide flight, gate, baggage, destination information</td>
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<tr>
<td>• Re-accommodate disruptions; Issue vouchers during IRROPs</td>
</tr>
<tr>
<td>• Sell ancillary products and services</td>
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<tr>
<td>• Monitor/help with self-service</td>
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<tr>
<th>Powered by Analytics: Provide Next Best Action</th>
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<tbody>
<tr>
<td>• Access duty hours, training, certification, policies/procedures, agent collaboration</td>
</tr>
<tr>
<td>• Receive Airport Information Alerts</td>
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<tr>
<td>• Accept task assignments</td>
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Delivering at Speed with Bluemix
What is the WASTE we are trying to remove?

<table>
<thead>
<tr>
<th>Manual Efforts</th>
<th>Long Wait Times</th>
<th>Unproductive Work</th>
<th>Poor Visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Deployments require human intervention</td>
<td>• Teams waiting on manual handoffs</td>
<td>• Using static environments</td>
<td>• Reliance on spreadsheets, meetings, con calls to know status</td>
</tr>
<tr>
<td>• Reliance on scripts</td>
<td>• Resources not available when needed</td>
<td>• Deploying things that have not changed</td>
<td>• Limited understanding of deployment dependencies and status</td>
</tr>
<tr>
<td>• Environment configuration is done on an “as-needed” basis</td>
<td>• Delayed time-to-test</td>
<td>• Managing infrastructure &amp; apps separately</td>
<td>• Long Outage windows</td>
</tr>
<tr>
<td></td>
<td>• Insufficient notification</td>
<td>• Not leveraging virtualization &amp; cloud correctly</td>
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IBM DevOps point of view

Enterprise capability for continuous software delivery that enables organizations to seize market opportunities and reduce time to customer feedback

Accelerate software delivery – for faster time to value

Balance speed, cost, quality and risk – for increased capacity to innovate

Reduce time to customer feedback – for improved customer experience
Bluemix is the platform for innovation

By dramatically increasing the speed at which new apps can be prototyped and deployed, and by which new services and features can be added, Bluemix can be central to any organization’s innovation strategy.

About Bluemix
- Run apps in any language
- Built on open standards
- Integration services to systems of record
- Designed for mobile
- Provides DevOps services

Bluemix services include:
- DevOps
- Big Data
- Mobile
- Cloud Integration
- Security
- Internet of Things
- Business Analytics
- Database
- Web and application

Composer applications from a rich library of IBM, 3rd party and open source runtimes, services and APIs.

Deploy and scale new applications and services with infrastructure services from IBM SoftLayer.

Code with confidence knowing IBM's cloud platform is built on a foundation of open standards.

Smarter Airport

http://www.ibm.com/cloud-computing/bluemix/
A groundbreaking start for Bluemix
Currently growing at a rate of ~1000 new external users/day!

If any doubt still lingers about IBM’s true commitment to cloud, they should be shelved for now
- James Staten

Bluemix could transform the Platform-as-a-Service market
- Gary Barrett
  Ovum Research

It’s an unlikely combination but a very strong one if they can pull it off
- Van Baker
  Gartner

Key Stats
- 50+ services available
- 15 3rd party partners
- 95 planned CC countries

Why Bluemix?
- PaaS – focus on apps, not infrastructure
- Open/Cloud Foundry – a powerful platform, community and language flexibility
- SoftLayer – global reach, private network, bare metal
- IBM Design – 1st class user experience
- IBM Tech – an incredibly rich swg portfolio we can bring into the Bluemix context

Smarter Airport
Hackathons and University Outreach

- Execute **Bluemix Hackathons** at 100 universities by the end of 2014
  - 55 out of 100 are being hosted at U.S. Universities

- Establish **Bluemix U Ambassador Program** at U.S. Universities throughout 2H 2014
  - Students will have to complete specific actions to move up the “ranks” (Ex. referral links, GitHub code contribution)
  - Students earn rewards (Ex. IBM mentoring, networking opps)

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**Timeline**

- **Aug. 1 2014**: Launch Bluemix U Ambassador Program
- **Sept. 1 2014**: Hackathon pitch to CIOs roll out
- **Dec. 31 2014**: Hackathons executed at 100 Universities around the world

**IBM Bluemix** Ambassador Program

**Bluemix U Ambassadors**

250 registered
Thank You

May 2015