



Airline of the Future: Smart Mobility Strategies that Will Transform the Industry

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Airlines are under unprecedented pressure to produce economic results or perish as fuel, labor, and asset costs escalate and demand declines. The International Air Transport Association (IATA) reports that the airline industry lost more than US\$9 billion in 2009. In fact, with the exception of a few years and a few airlines, much of the industry has not produced a return on investment that exceeded capital costs. While industry revenues are expected to reach \$545 billion in 2010 (up from \$483 billion in 2009), with airlines eking out a profit of \$2.5 billion globally, revenues are still well below the \$564 billion achieved in 2008.¹ Furthermore, this profit comes with some important financial health warnings, according to IATA Director General and CEO Giovanni Bisignani: “First, this represents a net margin of just 0.5 percent, which is a long way from sustainable profitability. Second, a major part of the global industry is still posting large losses. A stagnating economy, labor strikes, natural disasters, and a currency crisis have left European carriers struggling with an anticipated \$2.8 billion loss.”

With the industry poised for recovery, competition is expected to intensify as low-cost carriers continue to gain market share from full-service carriers by attracting both leisure and business segments. Reduction in business-class travel outpaces that of leisure travel by 4 to 1 and is a direct result of corporate belt-tightening and the emergence of travel-substitution technologies, such as collaboration applications, high-definition video conferencing, and telepresence.

Adding to these challenges, new operating models, innovative entrants, and further airline consolidation will create new difficulties and intense competitive pressure for legacy carriers. In response, airlines have employed a narrowly focused near-term strategy—including reductions in seat capacity and product unbundling (for example, paying extra for a window or aisle seat, or for more exit-row legroom)—that could potentially have serious long-term consequences on customer loyalty, experience, and profitability from core products.

As global economies begin to show signs of recovery, so, too, will the aviation industry. Industrywide opinion, however, is that business will not immediately return to precrisis levels. Notwithstanding anticipation of an economic rebound, some airlines are beginning to shift their strategies. Rather than fixate on saving the “sinking ship,” airlines are repositioning their organizations to compete in the age of “the new normal” by seeking innovative, new service opportunities and business models. The future success of an airline will be decided, in part, by its ability to harness emerging technologies to deliver superior customer experience and engender loyalty while empowering employees and improving operational efficiencies. The timing could not be better: new products and innovations in mobility are emerging as one of the most promising areas for airlines to transform their business models and operations.

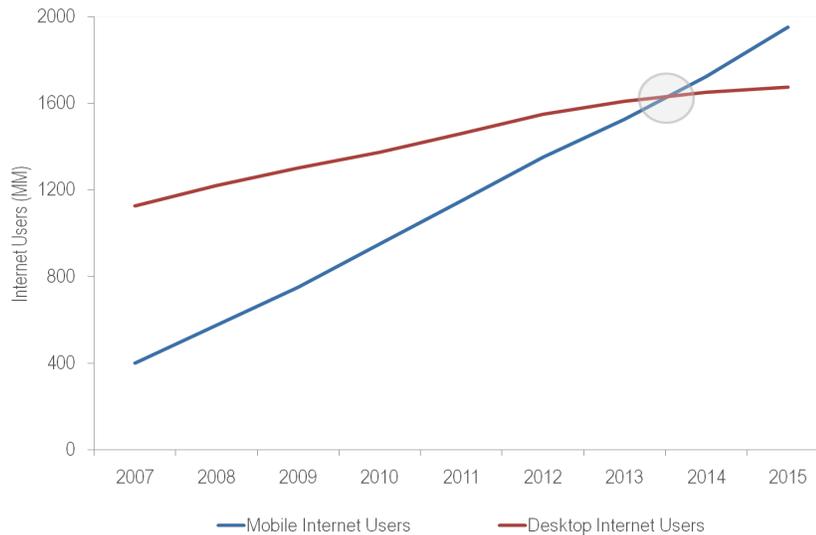
¹ “Global Aviation Returns to Profitability but Europe Still in the Red,” International Air Travel Association, June 7, 2010, <http://www.iata.org/pressroom/pr/Pages/2010-06-07-01.aspx>

This Point of View from the Cisco® Internet Business Solutions Group (IBSG) explores current use of mobile technology in the airline industry, future opportunities, and strategies that will enable airlines to harness the power of mobility to create new levels of customer experience and operational efficiencies that will help produce successful results and sustainable competitive differentiation.

Rise of Mobile Communications

Global adoption of mobile technology has soared in the last decade. Mobile phone subscriptions will reach 5 billion worldwide by the end of 2010;² of that number, more than 1 billion mobile devices will have mobile broadband access to the Internet.³ Overall shipments of smartphones are forecast to grow at a compound annual growth rate of 25.9 percent through 2015.⁴ There is overwhelming evidence that over the next three to five years, broadband consumption habits will change dramatically, with Internet access occurring via mobile devices rather than through PCs (see Figure 1).

Figure 1. Internet Use via Mobile Devices Versus Desktop PCs, 2007–2015 (estimates)



Source: Morgan Stanley, 2009

This massive shift in mobile adoption makes the mobile phone a critical platform for developing new services and content that improve interactions and operations, increase personalization, and empower both passengers and employees.

With new mobile communications technologies and standards such as 3G, 3.5G, and 4G either available or on the horizon, mobile phones will play a prominent role in broadband data communication. Large investments by service providers in these technologies will hasten the age of the “mobile Internet.” With broadband speeds increasing significantly (for

² “Mobile Cellular Subscriptions To Reach 5 Billion Worldwide in 2010,” *ITU News*, International Telecommunications Union, March 2010, <http://www.itu.int/net/itunews/issues/2010/02/23.aspx>

³ “IDC Predictions 2010: Recovery and Transformation,” International Data Corporation, December 2009, <http://www.idc.com/research/predictions10/predictions10.jsp>

⁴ “By 2015, the United States Will Have 149 Million Wi-Fi-Enabled Mobile Phones,” *WorldTech 24.com*, February 12, 2010, <http://www.worldtech24.com/phones/2015-us-will-have-149-million-wifi-enabled-mobile-phones>

example, Long Term Evolution, or LTE, deployments will lead to data rates of at least 100 Mbps downlink and 50 Mbps uplink), there are few limitations for rich, immersive applications that can be deployed over mobile devices. To hasten this explosive growth, many countries will focus on boosting development of national broadband infrastructures and increasing mobile broadband services over the next five years.

Like the retail, hospitality, financial services, and other customer-facing industries, airlines stand to gain enormous benefits from mobile devices in terms of operational and service innovation. Increased passenger adoption of mobility, coupled with an array of applications and high-broadband capabilities, is creating new passenger touchpoints, experiences, and capabilities to deliver relevant and personalized services.

Airline Mobility Evolution

Traditional airline business models are evolving rapidly to exploit the growth of mobility, and many airlines are beginning to experiment with mobility-enabled personalized services. According to an annual survey⁵ on airline IT trends, co-conducted by SITA, a global provider of aviation technologies and services, adoption of specialized mobile aviation applications rose dramatically over the past two years. Solutions such as websites optimized for mobile access and bar-coded boarding passes sent to smartphones are seeing double-digit growth. Based on the survey, SITA forecasts that by the end of 2010, mobility optimization for websites will grow from 15 percent currently to 51 percent. Mobile phone-based boarding will increase from 7 percent today to 31 percent, and other paper- and card-based applications such as baggage receipts, card access to premium lounges, and cash and credit card payments are also expected to be replaced by mobile applications. In the meantime, use of wireless devices by airport staff to support aircraft maintenance will grow from 17 percent currently to 31 percent by the end of 2010.

Airport and airline operations are also seeing innovative mobility enhancements in the areas of “operational messaging” (between the aircraft and airline headquarters), maintenance, pre- and in-flight services, flight planning, and asset and spare parts management. Let’s take a closer look at how mobile capabilities for airlines have evolved.

Mobility 1.0: Foundational Services

Mobility 1.0 represents mobility’s most basic and foundational capabilities. These include airlines disseminating essential operational messaging for flight plans, and “irregular” operations, such as emergency situations. Short message service (SMS) and other text messaging applications have been used extensively by airlines and widely adopted by passengers. Email has also been a staple for transmitting flight details, gate information, and rudimentary attempts at upselling and cross-selling of ancillary products and services. While useful, SMS, email, and basic messaging fell short of the rich interaction one can enjoy while accessing the Internet using a PC with broadband connectivity.

Mobility 2.0: Rich Media and Mobile Web

Higher adoption rates of smartphones with faster processors and richer operating systems/applications, coupled with faster communications speeds, paved the way for

⁵ “Airline IT Trends Survey,” SITA and *Airline Business* magazine, 2009.

Mobility 2.0. Smartphones untether users from PCs and are changing the game for passengers; checking flight status and length of security lines, for instance, is only a few phone buttons away. Subscribers of social media sites such as Facebook and MySpace are using these platforms to alert people about flight disruptions and airport ground holds. Usage of mobile phones to shop for best-value flights, upgrade seats, book hotels, and order taxis also has become mainstream. In many cases, passengers have faster, better, and more accurate information than the airline and its employees. The smartphone has greatly enhanced the passenger's ability to request and acquire useful information and run rich third-party applications that deliver real-time information about the operator's environment on a relatively seamless basis. Among the many Mobility 2.0 applications, the following solutions are commonly used via mobile phones:

- **Booking**—flight booking and rebooking; onboard food selection prior to boarding
- **Mobile check-in and boarding passes**—boarding pass sent to mobile phone as bar code; passenger holds phone up to bar-code reader upon boarding plane
- **Website optimization**—websites designed to accommodate various mobile device footprints (smaller displays, different font sizes)
- **Messaging**—targeted messages and advertisements sent to passengers' mobile phones based on their unique profiles

While many airlines and passengers are enjoying the power of smart mobile technology, the overall percentage of passengers using their smartphones to access travel information or perform sophisticated transactions is still relatively small. According to 2009 data from Forrester Research, roughly 10 percent to 15 percent of travelers used their smartphones to look up addresses, directions, flight schedules, and hotel room availability. Frequent business travelers—the most profitable customer segment—used their mobile phones an average of two to three times more than non-business travelers. Notwithstanding current usage rates, airlines are increasingly developing innovative strategies to take advantage of Mobility 2.0.

American Airlines' Multichannel Mobile Web Capabilities

By offering a range of communication choices, American Airlines (AA) is in contact with its passengers throughout their journey, empowering them to take greater control of their travel. Passengers can select specific services such as mobile check-in via iPhone and BlackBerry devices, along with a range of delivery options, including 1) voice; 2) SMS—a cell phone feature AA says is used by 59 percent of its passengers; and 3) an AA website optimized to take advantage of the most advanced mobile phone capabilities.

According to 2009 findings from Forrester Research, 34 percent of AA's passengers use their phones to access the mobile web at least occasionally, and 20 percent access it weekly or more. Passengers' growing interest in mobile web capabilities is clear: 9 percent of U.S. travelers who book their flights online have expressed interest in changing or canceling flights from a mobile device, and 18 percent are interested in mobile check-in.

Air France Is Early Adopter of Mobile Technology

Some airlines have moved beyond mainstream applications such as electronic ticketing and online check-in. Air France was an early adopter of Near Field Communication (NFC) technology for boarding passes that enables short-range wireless interaction with consumer electronics, mobile devices, and PCs. Air France also embraced 2D bar-code technology,

which permits passengers to clear security lines quickly, speeding up the boarding process using secure data that is transmitted to their mobile devices (see Figure 2).

Figure 2. Smartphone Bar-Code Reader Performs Mobile Check-In



Source: Air France, 2010

Emirates Airline Drives Mobile Online Innovation

Emirates Airline is driving online mobile innovation with a version of Emirates.com optimized for smartphones. Passengers who access Emirates.com from their smartphones are automatically redirected to the mobile website. The site is compatible with more than 3,000 devices, allowing passengers to interact with Emirates while on the move, from almost anywhere in the world. The mobile site (see Figure 3) provides passengers with the flexibility to manage aspects of their journey, offering many of the popular features found on Emirates.com, including:

- Booking a flight and checking fares
- Checking in and choosing or changing seats
- Viewing passenger itinerary, requesting a meal, and booking ground transportation
- Checking real-time flight status and viewing global timetables
- Looking for products and services available on any specific flight
- Learning about dedicated departure lounges

Figure 3. Mobile Emirates.com Landing Page

Source: <http://www.emirates.com/mobile.aspx>

Smartphones such as the iPhone, BlackBerry, and Android-based devices hold even greater promise—beyond some of the capabilities described in the above use cases. Some solutions deliver the robust performance of Internet-enabled PCs. For example, Tidal Pool Software earlier this year released Wanderlust, an application that enables consumers to search millions of airfares with hundreds of airlines, and then book flights directly from their mobile devices (see Figure 4).

Figure 4. Wanderlust Enables Flight Search and Results from Mobile Devices

Source: Tidal Pool Software, 2010

This capability rivals those of fixed web-based solutions, but trumps them in terms of convenience and portability. In the not too distant future, the next generation of mobility—Mobility 3.0—will deliver far superior experiences when context awareness becomes part of the overall experience. When integrated with GPS and accelerometer systems, mobile devices could deliver services based on knowledge of where the user is and what he or she

may be doing. These unique capabilities make mobility the optimal communications platform to deliver a highly personalized, relevant interaction experience in real time across the entire passenger journey.

Mobility 3.0: The Future

New Horizons

While Mobility 1.0 and 2.0 have enabled airlines to move beyond basic and maturing services, Mobility 3.0 will ultimately empower airlines to combine 1.0 and 2.0 capabilities with context-aware applications to transform their business models, enhance their relevance to customers, and provide passengers with greater control over every aspect of their travel—anytime, anywhere, through any device.

Examples of Mobility 3.0 services and applications include:

- **Personal travel assistant**—for travel-related interactions such as alerts pertaining to all aspects of the journey, including drive time to the airport, flight times, and security line status
- **Mobile marketing**—dynamic packaging of personalized offerings and discounts
- **Mobile concierge service**—with the push of a button, access a virtual concierge whose familiarity with the user’s profile (likes, dislikes, etc.) enables delivery of a highly personalized experience
- **Mobile payment**—smartphone as a secure e-wallet, taking advantage of context-aware security capability
- **Augmented reality**—context- and location-aware applications enable an immersive, context-rich environment for the passenger
- **Real-time business intelligence for airlines**—rather than conduct analytical yield management on a batch basis, airlines can perform optimized real-time yield management based on passengers’ location, what they are doing, and what they might want

Mobility 3.0 solutions enable passengers to make far more intelligent and precise decisions about their travel to and from the airport. When combined, such capabilities create a mash-up that offers context-aware, location-based services that can notify passengers of whether they need to leave for the airport earlier or later based on real-time and predictive data of traffic, airport, and airspace conditions. Figure 5 shows a mashup of three separate services: flight tracking, TSAwait,⁶ and FAAwait.⁷

⁶ TSAwait from Tactical Logic gives users easy access to wait time statistics for airport security checkpoints across the United States. These statistics are compiled by the Transportation Security Administration (TSA) and released regularly.

⁷ FAAwait from Tactical Logic accesses a real-time airport status file maintained by the Federal Aviation Administration. This allows the application to provide up-to-the-minute airport conditions at all major U.S. airports.

Figure 5. (Left) Flight Tracking; (Middle) Real-Time Access to FAA-Maintained Traffic Conditions at U.S. Airports (TSAwait); (Right) Reported Airport Traffic Delays Provided as Mashup to Smartphones (FAAwait)



Source: Mobiata LLC, Tactical Logic LLC, and Cisco IBSG, 2010

New Business Models

Mobility 3.0 will permit new business models that enhance customer experience, facilitate new services, increase revenues and profitability, streamline airport operations, lower sales and marketing costs, boost employee productivity, and encourage further service-level differentiation. The impact of Mobility 3.0 capabilities spans the various business models of network, regional, and low-cost carriers. Figure 6 depicts a high-level smart mobility vision that, through successful execution of a mobility strategy, enables new business models and benefits.

Figure 6. Smart Airline Vision Based on Mobility 3.0



Source: Cisco IBSG, 2010

These capabilities can streamline and unburden the travel process by empowering passengers with enhanced self-service, real-time data, and context-aware services. Such services can dramatically expand the airlines' value chain with multiple opportunities to shape a rich, personalized passenger experience, creating new ways to drive profitability.

Mobility 3.0 will further accelerate the airline industry's current migration to direct sales and ticket/product distribution. Airlines expect to increase the proportion of tickets sold through online channels from 26.7 percent to 41.4 percent by 2012, and through their own websites.⁸ Smart mobile devices are a key driver of this development. This is especially true in emerging countries, where low penetration of fixed Internet access hampers direct airline ticket sales. Here, mobile phones can play a critical role in delivering new services and enabling airlines to interact with customers.

Offering smart, mobility-enabled, personalized services and products can generate new revenues, in addition to monies from the sale of core products and ancillary services/products. Such new revenues may include the sale of perishable products (for example, empty seats) through real-time auctions for aisle or window seats, or sales of overhead storage as space becomes available; commissionable products such as food, drinks, music or movies, premium airport parking and car services; or use of frequent flyer points.

New Operations and Processes

Airlines traditionally operate in a highly siloed fashion where specific processes necessary to support extremely efficient operations are departmentally isolated. Because of this, sharing cross-departmental information is typically not a priority. To extract maximum value from smart mobility, airlines must achieve a greater level of information sharing. To achieve this, they must retool their operational processes to support a passenger-journey-centric framework instead of the existing "seat-production" model. Airline operations that can benefit from smart mobility include:

- **Collaborative ramp management**—Mobility 3.0 solutions can enable employees to collaborate based on real-time information such as gate changes, leading to a reduction in aircraft turnaround times.
- **Innovative asset management**—Smartphone solutions can provide ramp workers with up-to-date information required for their specific task. For example, lost luggage is an ongoing concern for passengers. Using smartphones to manage luggage along its journey, airline baggage agents can trace baggage by accessing and logging real-time information about the luggage's location. This capability leads to faster problem resolution and asset identification, and improved passenger satisfaction.
- **Workforce management**—Airline crews (both on the ground and in the air) are dispersed around the world. Using smartphones, employees working on the ground, for example, can access real-time information from flight crews to handle passenger requests (such as flight delays) more efficiently.
- **Airport footprint**—Smartphone capabilities will also allow airlines to reduce their airport footprints (personnel, counters, kiosks, real estate, and more). Airlines typically have relied on self-service capabilities delivered by the web and airport kiosks to lower costs and, in many cases, improve customer experience. Kiosks are expensive

⁸ "Airline IT Trends Survey," SITA and *Airline Business* magazine, 2009.

systems to deploy and maintain, and web solutions address only a narrow portion of the passenger journey.

Smart mobility-based operations will enable systematic cost reductions by simplifying the airline, airport, and passenger value chain. In this way, the industry should realize immediate cost impact on airline/airport operations and passenger services, and the ability to monitor, manage, and control existing and new operational metrics.

New Opportunities in the Extended Passenger Journey Value Chain

Mobility 3.0 promises to transform how airlines interact with passengers beyond the domains of airplanes and airports. Using a range of services and smart solutions, airlines can maintain contact with passengers at various touchpoints along their journey, delivering real-time, relevant, and value-added information, offers, discounts, and personalized services that help build a trusted relationship.

The impact of Mobility 3.0 on efficiency will be equally significant. Mobility-based check-in empowers passengers to conduct self-service activities faster and more cost-effectively than agent-assisted and kiosk-based solutions. This shift will result in better and faster services, creating huge efficiencies in labor. Figure 7 details a multitude of new passenger interaction touchpoints that can be targeted for mobile interaction.

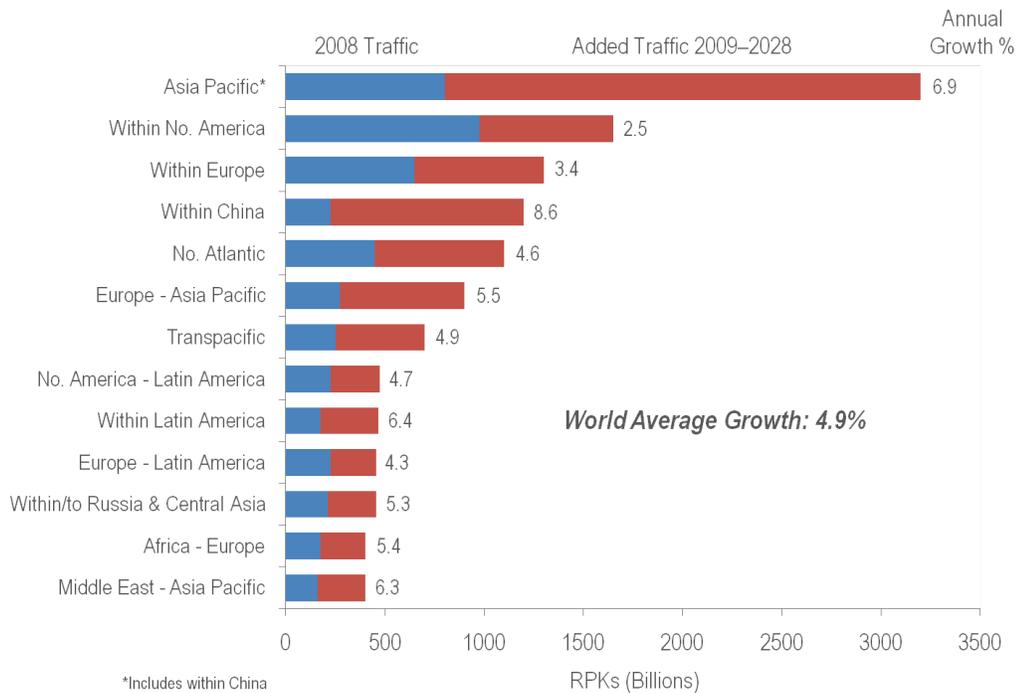
Figure 7. Mobile Touchpoints Along the Passenger Journey

Home	Transit	Airport and Journey						Transit	Destination	
		Departure		Flight		Arrival				
Research	Taxi	Check-in	Food	Gate	Retail	Immigration	Banking	Taxi	Hotel	
Booking	Car	Baggage	Retail	Boarding	Catering	Baggage	Retail	Hire Car	Resort	
Payment	Metro/Train/Bus	Passports	Entertainment			Customs		Metro/Train/Bus	Retail	
Check-in	Parking	Security	Banking							Dining
Way-Finding, Flight Information, and Alerts										

Source: Cisco IBSG, 2010

New Opportunities for Emerging Economies

Mobility 3.0 capabilities are important for airlines in emerging countries that will experience significant growth in air travel (see Figure 8).

Figure 8. Air Travel Growth by Market

Note: Market is measured in RPKs (revenue passenger kilometers).

Source: The Boeing Company, 2009

Air travel is booming in regions such as the Middle East (25.8 percent growth), Asia (13.5 percent), and Latin America (8.5 percent) compared to Europe and North America, where travel growth is still relatively weak (4.3 percent and 4.4 percent, respectively).⁹

Air-travel growth in emerging countries is being driven largely by increased GDP, growing populations, and a rise in tourism. With burgeoning demand for air travel, and with airports operating at maximum capacity, billion-dollar investments are under way to modernize the aviation infrastructure by building new airports and making upgrades.

In many emerging countries, computers and fixed broadband access are not pervasive. Because of this, mobile phones are the *only* devices with which to access the Internet—usage in emerging economies is 31 percent compared to 14 percent in the United States.¹⁰ McKinsey & Company estimates that mobile broadband could support an additional 2 billion to 3 billion users globally by 2012, being the only viable access technology for many of these subscribers (most live in emerging countries).

Given this growth, airlines must focus on their mobility strategies to capture new opportunities and build relationships, especially with the next generation of passengers.

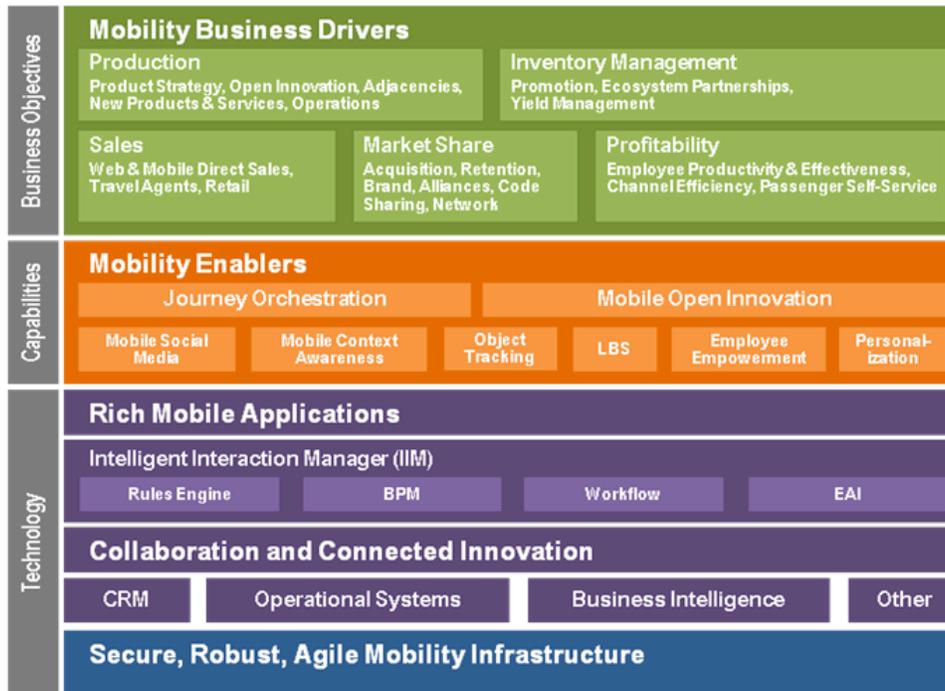
⁹ "Strong Airline Demand Emerges in February: IATA. Mindset Shift Needed for Booming Emerging Markets," Centre for Asia Pacific Aviation, March 31, 2010, <http://www.centreforaviation.com/news/2010/03/31/strong-airline-demand-emerges-in-february-iata-mindset-shift-needed-for-booming-emerging-markets/page1>

¹⁰ "Connected Life Market Watch," Cisco IBSG, 2009.

Mobility 3.0 Architecture

While Mobility 3.0 offers enormous benefits, it also requires a new approach and a fundamentally different business and technology architecture. This overall architecture, shown in Figure 9, consists of three layers: business objectives, capabilities, and technology. These layers define specific organizational building blocks often discussed as part of a company's strategy and execution framework. While not prescriptive or exhaustive, the architecture offers airline executives a useful construct from which to begin thinking about reorienting their airline visions, strategies, and investments.

Figure 9. Mobility 3.0 Architecture



Source: Cisco IBSG, 2010

Business Objectives

The Business Objectives layer summarizes the business drivers for Mobility 3.0, using an industry standard taxonomy from which the necessary capabilities can be inferred. Profitability, the keystone business driver, is maximized when production, inventory management, sales, and market share strategies are aligned to maximize revenue and minimize cost through effective use of mobility.

Capabilities

The Capabilities layer depicts the services and functions an organization needs to achieve the business objectives. Journey orchestration provides a consistent, end-to-end passenger experience by delivering relevant contextual information to passengers throughout their travel—pre-check-in, en route, and post-travel. This capability enables airlines to assemble multiple service elements into a growing repertoire of unified experiences that can adapt to meet changing airline and environmental needs and business conditions.

The service elements that are the building blocks of these unified experiences include mobile social media, personalization, object tracking, location-based services (LBS), employee empowerment, and mobile context awareness. The latter deserves special attention because it enables the delivery of services based on detailed contextual information, including location, customer preferences, and customer history.

Open innovation is also important due to the rapid pace of change in mobile technology and the airline industry. Mobility provides new ways to accelerate this innovation, tapping new sources of ideas and managing their development more effectively.

Technology

The Technology layer identifies the specific technical components required to deliver rich, responsive mobile applications. Emerging technologies such as HTML5—the next major revision of HyperText Markup Language—promise to enhance the rich functionality of the mobile web in the near future, making possible cross-platform mobile applications that require only a mobile browser to exploit an expansive portfolio of services.

Mobile device applications will likely take advantage of powerful features such as video cameras, accelerometers, GPS, high-resolution displays, multiple wireless radios, powerful processors, and large, solid-state memory solutions to create rich and engaging interaction for passengers, partners, and employees. Augmented reality, which combines elements of real and virtual worlds, will also be a powerful enabler of new mobile experiences that provide directions to destinations, information about points of interest, baggage clearance and routing information, and specials on travel-related goods and services—in a more intuitive and engaging fashion for both passengers and employees.

Because of the massive legacy infrastructure that exists with most airlines and the diverse range of passenger devices, mobile applications must gracefully accommodate older or simpler mobile devices that may lack the latest features.

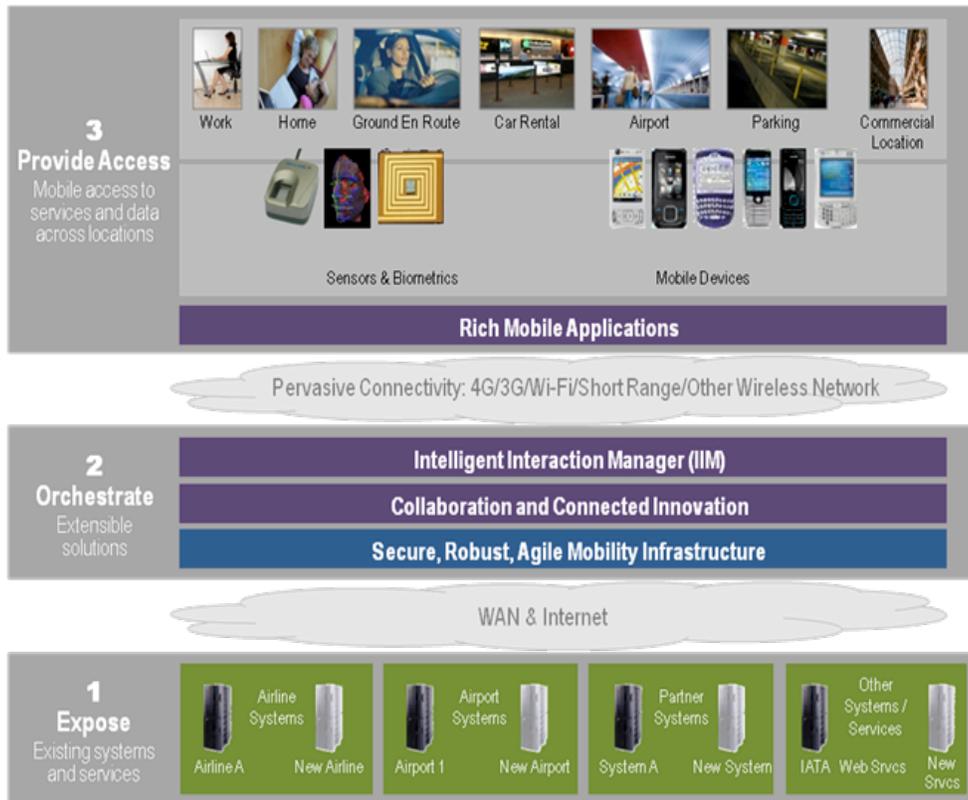
Mobility solutions will rely heavily on collaboration applications, including messaging, conferencing, informing (wikis and blogs), social networking, and presence services to promote efficient and effective interaction, empowering passengers, partners, and employees to connect and engage productively.

Finally, an Intelligent Interaction Manager (IIM) service that coordinates the flow of information from an extensible list of sources, applies business rules, and routes results to the desired users or endpoints enables the required journey orchestration capability. IIM allows airlines to introduce new mobile experiences to maintain leadership.

Mobility 3.0 Roadmap

Given the rapid pace of change in mobility technologies, a modular and service-oriented approach offers an open, evolving, and agile platform critical to maximizing reuse and interoperability. It is also important for establishing speed to market for new mobility solutions as needs and opportunities arise, as markets change, and as passenger expectations shift. Figure 10 depicts a technology platform that can be deployed in three distinct steps to achieve a smart mobility architecture.

Figure 10. Three Steps to Mobility 3.0



Source: Cisco IBSG, 2010

Fortunately, for providing mobile access, airlines can benefit from existing and rapidly improving mobile broadband coverage, and should focus connectivity investments where 1) service providers are not likely to provide connectivity—for example, in shielded areas—or 2) where enhanced connectivity is required—in places where large concentrations of passengers are likely to demand high bandwidth simultaneously, such as in passenger waiting areas. Capacity planning and performance engineering should also be a priority so that mobile applications deliver a smooth experience from the first impression.

Finally, airlines should nurture an open community of developers who can create value-added mobile applications as part of an open innovation network.

Getting Started

The global rise in mobility and smartphone adoption presents a unique transformational opportunity for airlines to push the innovation envelope in regard to passenger experience and employee empowerment. The following recommendations from Cisco IBSG will enable airlines to develop a Mobility 3.0 strategy and architecture that will transform the passenger experience and create dramatic improvements in operations and employee productivity:

- Understand how mobility can be integrated into the airline's business as a core strategy
- Understand current strategy, process, and organizational requirements in regard to mobility capabilities

- Envision the future business and technology architecture—identify what should change in regard to passenger experience
- Build the architecture—align ecosystem partners (such as airports and smartphone application developers) to create and deploy solutions; align internal resources
- Develop a clear framework for measuring results and success—identify short-term pilots to validate a hypothesis and capture timely opportunities

Inflections in the airline industry can be massive. Rarely are these transitions easily predicted or revealed to the casual or sometimes even careful observer. Companies that recognize subtle market transitions before others and are willing act, invest, and execute have a rare opportunity to gain a breakout competitive advantage that will be difficult for the latecomer to match. Mobility 3.0 is the quantum shift that will create winners and losers. The choice is yours.

For more information regarding mobility strategies for the airline industry, please contact:

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