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INTRODUCTION

Improving customer service is a key business driver for 69 percent of the world's leading airlines. Cabin crew are a key part of delivering this excellent passenger experience.

Passengers typically spend more time interacting with cabin crew than any other airline employee. They can directly capture customer feedback and address concerns – before they become issues. Cabin crew can also improve operational performance by gathering passenger or aircraft information around faulty equipment.

Until recently, this potential has been restricted by a heavy reliance on out-dated, manual processes. Paper-based information can take weeks to be processed properly, slowing your ability to react to passengers' needs.

Significant growth in technologies like global connectivity and cloud computing over the last few years has begun to unlock this potential. The rising numbers of connected devices like smartphones and tablets are also playing a part. By giving cabin crew direct access to a range of passenger information, you can tailor the on-board experience directly to your customers' needs – increasing customer satisfaction, driving repeat business and ultimately growing profits.



MOVING FROM PAPER TO DIGITAL

Aircraft cabins have traditionally been dominated by paper based processes. From the passenger list, through catering orders to operational reporting, manual forms and processes require huge amounts of paperwork onboard. How these processes are managed varies from airline to airline but crew members generally submit hardcopies for manual processing.

A typical international airline's crew completes or processes the following forms:

Voyage report

Voyage reports record operational issues, medical cases and service issues associated with a specific flight.

• Customer and passenger feedback forms

Key to customer satisfaction, these capture important passenger feedback onboard. Typically performed via feedback forms or cards distributed to a sub set of passengers, they are an important source of information for future planning.

• Accident reports (flight attendant)

Accidents involving members of the cabin crew are recorded and captured centrally.

· Safety forms

Specific safety forms provide feedback regarding safety onboard.

Operational forms

Broken seats, out of order catering equipment or faulty toilets are just some of the technical issues that need to be collected by crew members and communicated to operational teams on the ground.

Flight records

Some airlines vary payments depending on the role performed by a particular flight attendant during a trip. The roles and responsibilities of each crew member must therefore be assessed to ensure correct salaries.

Cabin crew development forms

Many airlines assess their cabin crew routinely – especially new employees. This paperwork is typically completed by the customer service director (or equivalent) onboard and forwarded to crew management departments.

Flight performance audits forms

Performance audits convey information on a number of areas for improvement such as passenger boarding times or catering standards.

This multitude of forms is coupled with long lead times to process and extract real business information from the data. This combination of factors presents real problems and a huge amount of additional expenditure. By digitizing the existing paper based processes, you can reduce costs, speed up the time to capture information and dramatically improve customer satisfaction.

As an example, SITA has worked with one major global airline which processes almost 400,000 copies of various forms which are completed by cabin crew – a figure which is fairly typical for a large airline. The lead-time from a customer issue to airline management awareness was up to five weeks – too long to address an issue effectively.

Another European airline gathered the forms at headquarters, scanned the required copies, and emailed them to a business processing company in India who then typed the scanned copies into a customer service database.



DIGITIZING THE CABIN: WHAT BENEFITS CAN YOU EXPECT?

Digitizing the cabin can take many forms depending on your IT maturity or willingness to adopt new ways of working. Although the migration of existing processes from paper to electronic format brings many benefits, the management of these forms is equally important. We can help you maximize the benefits that tablets, connectivity and cloud computing can bring to these processes in a number of areas, including:

Transit passengers

Passengers transiting between flights are key to many airlines, particularly hub-and-spoke Tier One and Tier Two carriers. Connecting passengers make up an important percentage of travelers (up to 40 percent at major hub airports) and delays or missed connections can result in real issues for both your airline and the airport.

Our 2012 Baggage Report highlighted that "despite the great strides made by the air transport industry to improve mishandling over the last few years, the main – and growing – contributor to the problem is 'transfer bags'". It went on to describe how "transfer bags account for 53 percent of all delayed luggage and costs the industry at least \$1.36 billion per annum".

By accessing flight information from departure control systems (DCS), cabin crews have an immediate view of transfer passengers on a particular flight. On some airlines, cabin crew use tablets to proactively move passengers to the front of the aircraft if a delay is likely to put a connection at risk. Flight attendants say that the simple reassurances result in positive customer feedback from anxious passengers, once they realize that connections won't be a problem.

Staff training

In addition to improving customer satisfaction, wireless tablets connected to central systems can play a role in delivering training.

A number of governments enforce strict certification regimes for flight attendants, such as the "Certificate of Demonstrated Proficiency" issued by the Federal Aviation Authority (FAA). A number of agencies also require that training is updated on a regular (typically annual) basis.

Tablets coupled with cloud storage and connectivity allow staff to update and refresh their skills in a variety of locations, at any time. By giving flight attendants access to online videos, reading material or assessments, you can reduce training costs significantly. This is achieved through the flexibility to carry out the training at any time or place.

Internal communications

Cabin crews are by their nature dispersed and difficult to communicate with easily. This can lead to a lack of awareness of company news, corporate updates and a more general disconnection. In the worst case scenario this could lead to low morale and even to industrial action in some cases. Given the flight attendant's customer-facing position and their operational role, any disruption can be costly both financially and in terms of passenger satisfaction.

On an operational level, one recent example of the need to improve internal communications was highlighted in the UK. In 2010, the heavy snow caused major disruption to airports across London. The airports were all but closed and hundreds of flights were cancelled. Cabin crew from a number of airlines reported severe problems getting information on flight availability. Some resorted to checking their respective airline's social media pages in an attempt to understand the situation.

By using wireless tablets, airline management could connect directly with cabin crew. It would allow them to distribute emails, videos and news immediately, ensuring consistent messages across the company.

THE KEY ELEMENTS OF A **DIGITAL STRATEGY**

Before implementing a strategy to digitize the cabin, there are a number of elements to consider.

End-to-end solutions

All good mobile strategies should start with identifying the business outcomes and business processes that need updating. Clearly understanding what you want to achieve



SELECTING THE RIGHT DEVICE

Selecting the correct device for any cabin solution is subject to a number of considerations. The first consideration is usability, which has driven uptake of tablets. This market is currently dominated by Apple with Samsung, Motorola, HP, Blackberry and a number of other manufactures also developing devices.

The increased usability of smartphones and tablets has pushed the adoption of consumer technologies into the enterprise environment. This presents a host of opportunities for users with corresponding challenges for IT departments.

Although iPads have a huge application infrastructure, user appeal and market-leading form factor, they are fragile and some manufacturers, like Motorola, have seen an opportunity for a more ruggedized device tailored to airline operational environments. We are early in the lifecycle of tablets in operations and the question of whether consumer tablets can cut it in an enterprise environment remains.

Device selection will be driven by a number of factors but airlines and airports should consider the following:

- Durability: in an air transport environment, this is a key driver of costs and hence returns on investment. Consumer devices are not designed to operate across the temperature and humidity ranges many aircrafts experience and are not ruggedized to withstand multiple drops or spillages. A range of toughening accessories is coming to the market but failure rates (particularly on screens) will be a key measure to watch over the coming months and years.
- Accessories: these include credit card readers, barcode scanners, passport readers and magnetic stripe scanners. They are commonplace across the ATI, yet support in consumer devices is limited. As consumer device adoption increases, the range of accessories shall inevitably widen but today their availability is a key consideration when selecting the right device.
- Battery lifetime: charging options are key for shifts that may last 8-12 hours. Charging bays, hot swappable batteries and long life have become the norm in ruggedized devices over the last few years, but may not have been replicated in consumer devices.
- Multi-user log-on: this remains rare in consumer devices where tablets are shared across multiple individuals or teams. Some providers are building this functionality at the application level or tailoring Android to meet their requirements.

- **Security:** this is paramount, especially in mobile devices that may be required to take payments. Consumer devices may face some challenges in this area. You need to ensure compliance with the stringent industry security regulations that protect credit card and passenger information from the device, right through to connectivity and applications.
- Management: often cited as the single largest mobility cost that an airline or airport has to bear. Consumer Android and iOS devices require end users to opt-in to receive device updates. This is not an ideal situation for enterprise devices. IT departments need to be able to push out critical updates to devices without relying on end user actions.

Mobile device management

As the demand for mobile devices has grown, so has the requirement to manage these devices. Bring Your Own Device (BYOD) presents significant issues on data security and integrity, which makes proactive device management key.

As a result of these challenges the market for mobile device management (MDM) systems is growing strongly. IDC predicts this market will grow by a 9.2 percent compound annual growth rate (CAGR) over the next five years.

A standard MDM solution provides a number of remote "over the air" features such as:

- **Distribution of applications:** software installation, updates and patches.
- Configuration management: inventory management, device and connectivity settings.
- Monitoring: supporting and controlling devices to troubleshoot issues.
- **Security policy application:** access right, device lock and user authentication.

Device management solutions can also provide analytical data of devices usage and applications. This data allows processes such as turnaround or boarding to be analyzed and refined.

The key to successful mobile device management deployment is to view any system within a complete end-to-end mobility solution. Many airlines are already outsourcing this functionality to their mobility integrators in the same way they leave network management to third parties.



For tablets to be really effective, they need to connect seamlessly to your core infrastructure. The real benefit of replacing paper-based system with tablets is the speed which connectivity allows information to be gathered and systems to be updated. Faster information means lower operational costs and more agility.

You have two main connectivity options: 2G/3G cellular networking or Wi-Fi. Cellular networks give low-speed global coverage while Wi-Fi gives higher-speed and local coverage. There are two factors that you need to consider, including:

Speed and bandwidth

In a recent report "Predicts 2012: Mobile and Wireless Technologies Rise", Gartner highlights the continuing growth of mobile connectivity. The analyst forecasts cellular data in developed countries will grow at a 91 percent CAGR. This will be driven mainly by video applications and more content stored in the cloud.

This huge growth is a real threat to available cellular data capacity. Although peak rates have increased by 200 percent on some new technologies, the average rates have only risen by 20 percent by the same evolution. This capacity and speed restriction means that analysts predict that more and more traffic will be offloaded to Wi-Fi over the coming years.

The challenge is to find the right connectivity mix to adapt to business critical applications. Each application has different requirements when it comes to bandwidth. For example, sending passenger lists requires a very different connection to in-flight entertainment (IFE) content.

Coverage

Having coverage across your entire route network is vital. You could use multiple Wi-Fi providers in multiple countries for multiple airports to achieve low bandwidth prices. However, the cost of managing large volumes of suppliers (sometimes more than one per airport) can make having a cellular provider a cheaper overall option.

Although using fewer providers has meant lower costs, bandwidth has suffered. End-users expect connectivity to be ubiquitous. As a result, solutions now incorporate connection managers that enable networks to become transparent for the applications and devices.

For network access, a blend of Wi-Fi and 2G/3G technologies is becoming standard across the industry. Cellular technologies covers secondary airports and off-airport locations (crew hotels for example), while Wi-Fi is used for key airports and high volume locations.

One key challenge is in-airport Wi-Fi coverage. Most of the world's airports now have reasonably good coverage across the passenger areas such as at check-in desks or airport lounges. Operational areas such as maintenance hangars, under the wing, or at the gate have noticeably poorer coverage. This needs to be taken into account when you replace paper processes with tablets or other devices.





SITA'S MOBILE WORKFORCE SOLUTION

A PORTFOLIO TAILORED TO THE NEEDS OF THE ATI SUPPORTING MANY FUNCTIONS RANGING FROM OPERATIONAL WORKFORCE TO CHECK-IN AND BOARDING STAFF, CORPORATE STAFF, PILOTS AND CREW.

DEVICE

• Managed Mobile Devices

CONNECTIVITY

- Wireless@Airports
- Mobile Data Access
- Managed Connectivity

APPLICATION

Application Integration Services

TRANSFORMING YOUR CABIN CREW PROCESSES

Although implementing a digital cabin can start with simple form replacement, you should look at all processes to maximize the benefits. Our approach goes beyond the simple provision of a set of tools and products. You can leverage our extensive experience in providing business processes to customers to increase profitability. We can help you re-engineer cabin crew processes to reduce costs and improve customer satisfaction.

Our experience in implementing mobile solutions has identified a number of key areas:

 Align system functionality with processes and ways-of-working There are two areas where business transformation requires careful analysis:

The first is a complete overview of all operations within the cabin. This business process improvement analysis covers what you do now and where changes could be applied. The process looks at overall solutions which may focus on specific processes within the cabin.

The second is a specific business process analysis that is required when you are mobilizing a specific end-to-end process. This analysis includes how the various data used by flight attendants today is crunched, scheduled, formatted and presented.





The business process improvement covers a complete overview of all cabin crew operations both in the plane and pre and post flight. The analysis will essentially cover the following points:

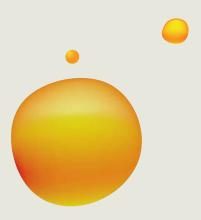
- Getting process and systems aligned so that high performance can be delivered: A key area for consideration is whether you will adapt your cabin processes to the chosen solution, rather than adapt the chosen solution to how you currently operate. The underlying imperative is to improve business performance as soon as possible.
- **Gap analysis:** The process that you undertake in the selection of a supplier should ensure that the processes it wishes to implement and the corresponding systems are a good fit. Any significant gaps should therefore be identified and resolutions agreed prior to contract.
- Effective training: Flight attendants who operate the new systems and work with the new processes will need to undergo effective training. This will ensure they understand the new system within the context of the new processes being implemented. Our experience shows that an approach where key flight attendants are trained to train their colleagues delivers effective role models and expertise within the organization. It also enables cost effective training post-implementation
- Business continuity: It is imperative to ensure continuity
 of business during the transition to new cabin crew
 systems.
- Achieve stakeholder buy-in: A successful outcome requires that all stakeholders buy into the project and understand the implementation plan, including their role within it. A strong communications strategy is paramount throughout the implementation process, including clear two-way communication to share opinions.
- Business transformation methodology: We are the only vendor who offers business process support as part of our standard implementation and migration methodology. Our implementation program is always structured around agreed business objectives and benefits.
- **Industry best practices:** As part of the implementation we can ensure adherence to industry best practices within the process.

- Developing new business processes: Where there are
 manual business processes required as part of the
 implementation, our team will help to develop these new
 business processes. Our business consulting team will
 point out where you can gain efficiencies in the process
 and what is industry best practice.
- Understanding the need for business change: Business change is incorporated into how the program is delivered.
 Our approach is unique as the program is designed around the cabin crew solution being implemented and your business objectives. We understand that the implementation is not just about delivering an IT system.

Each step in our methodology lays the foundation for the next step to enable change by:

- Justifying the case for change and clearly identifying the business benefits to be achieved.
- Preparing the people, processes and organization for the change by developing the new processes and planning for implementation.
- Implementing the plan while ensuring good communications with the business and stakeholders so there is transparency and trust.
- Reinforcing the new processes that have been implemented while reflecting and measuring the effectiveness to ensure targeted benefits are achieved.

By taking these steps and following these principles through the preparation and implementation of the system, flight attendants and ground staff will understand what the future will be like. This eliminates uncertainty and helps gain their acceptance early on.





We provide a full range of managed ruggedized mobile and tablet devices suitable for your operational and commercial environments. Our solution aims to lower your total cost of ownership by managing the device during its entire life-cycle. This includes staging, transportation, customs, support and break & fix. We provide handheld terminals and accessories, which are specifically aligned to airline, airport and ground handlers' business requirements.

Over the last five years, we have sourced, staged and supported thousands of mobile devices worldwide and currently support these devices globally.

Devices

Through our tier-one partnership with Motorola and distribution arrangements for tablet devices, we are able to provide a full range of suitable mobile devices suitable for the ATI.

For operational environments we can leverage our Motorola Tier 1 partnership to deliver and integrate best-in-class ruggedized mobile devices. We also provide a single point of contact for a complete range of accessories such as credit card readers, Bluetooth printers and fingerprint scanners.

Global delivery

Our global support organization leads the market in terms of mobile device support and delivery. We offer a number of standard options including:

- Logistics and supply chain management: Transportation from the factory to requested customer locations including customs handling, taxation and regulatory administration.
- Standard staging: Hardware handling, dead on arrival (DOA) checks and specific country variations (settings, power supply plugs, etc).
- Advanced staging: SIM card insertion, network and mobile set-up, software upload and testing.
- **Remote device management:** Remote staging, monitoring and software provisioning.
- **Single delivery/support team** for multiple SITA products.

We can also manage the entire hardware life-cycle including repair processes, break and fix, battery replacement and service contract renewals. This life-cycle support is coupled with a market leading support infrastructure, including:

- Global 24/7 level-one support through the SITA Command Center
- Expert level-two support through the SITA Mobility Center of Excellence
- Complex troubleshooting (including multiple solutions) via level-three engineering support

All of these leverage Motorola repair centers and associated service contracts in more than 100 countries. We also have the capability to offer on-site dedicated support on a case-by-case basis.

Device management

Device management is an important part of any managed device solution and we offer a range of tools to help our customers provision, track, manage and report on their equipment. We can help secure your data with advanced security, data sync and a corporate app store that allows custom application provision.



SEAMLESS CONNECTIVITY

As you implement digital cabin crew strategies, more processes will move from paper to digital systems. This migration means that global, seamless connectivity is becoming increasingly mission-critical to your operational and corporate environment.

Ensuring employees have the connectivity they need, at a price you can afford has seen some carriers forced to manage multiple mobile and Wi-Fi providers spread across multiple countries or regions, which is a complex and expensive process.

By providing seamless global coverage from a single offering, we deliver a solution tailored to your application requirements and cabin crew needs.

Our global connectivity solution includes:

- Global coverage and connectivity to over 180 countries:
 Delivered via a combination of premium 2G/3G solution specifically designed for data traffic and ATI specific Wi-Fi coverage at airports.
- Business class security: A dedicated core network for optimum switching coupled with secured MPLS VPN tunnels means critical data does not touch the Internet.
- Maximum business continuity: The ability to roam across
 multiple in-country providers on mobile networks coupled
 with resilient Wi-Fi infrastructure ensures users can
 benefit from maximum domestic and global coverage.
 This is combined with our highly secure, dedicated service
 management platform and core network redundancy to
 provide seamless connectivity.
- Straightforward service management: Our management portal will allow you to centrally manage ordering, activation and configuration across your mobile network.
 It also provides near-real time monitoring of network and SIM performance.
- **Simpler cost control:** Easily control cabin crew connectivity costs with simple fixed monthly fees based on the number of users.

An integrated solution

Our connectivity solution is built on a number of technologies which are integrated together for global coverage:

SITA Mobile Data Access

This ensures flight attendants are able to link directly to the corporate network via 2G or 3G connectivity. No specific software is required and the service is delivered to cabin crew via a standard SIM card, which they can insert into their laptop, smart phone, ruggedized device or tablet.

Once the SIM is inserted the device connects to the local network provider. We offer "in-country roaming", which automatically selects the best performing network at a particular remote airport or hotel. The service's core network interconnects to over 200 providers in 180 countries, transporting the data traffic through a high performance, secure SITA IPVPN network or via a low-cost Internet link.

SITA Wireless@Airports

This offers end-to-end secure connectivity from airports' wireless infrastructures to your private network. We work with airport wireless operators across the world to secure access to your infrastructure. As well as ensuring a robust contractual framework is in place with each provider, we focus on ensuring this is backed up by the right service levels at each airport.

We also roll out specific infrastructure to each airport in which the service is deployed. Our standard infrastructure is adapted at each airport in order to seamlessly integrate with your requirements for capacity and coverage.

SITA Advanced Connection Manager

The Advanced Connection Manager brings a unique layer that helps you to free applications from connectivity restrictions. The solution manages the switch from Wi-Fi to 3G or between network providers to improve performance or optimize costs. The Advanced Connection Manager is essential with increasing data volumes, and meets the requirement of cabin crew who travel extensively and use multiple networks and providers.



INTEGRATED APPLICATIONS

With several decades of experience providing systems to the ATI, we are ideally placed to provide, manage and operate applications. We firmly believe we are the only player in the market that can combine industry knowledge with application experience and end-to-end mobility expertise.

Managed applications

We specialize in being the leading systems integrator and managed service provider for airlines across the globe. We harness hundreds of third party relationships, including airport operators, ground handlers, maintenance providers and application providers. This means that we can act as a true single point of contact for all aspects of your mobile solution.

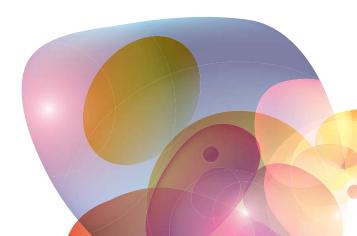
You just need to speak to one team for your business planning, design, delivery, implementation and operational support. This simplifies new deployments, supports and drives end-to-end efficiency. We work with third-party application providers to develop business focused KPIs and service levels, which cover all aspects of our managed mobile service. Our vendor management practice liaises with third-party application providers to manage the direct and indirect relationships, thus removing the need for you to deal with multiple mobility suppliers.

SITA Labs and R&D

The needs and concerns of the air transport industry drive our product development and strategic direction. We are the only provider to work with, and be part of, the industry. We invest significantly in R&D and product development and have established a SITA Innovation Lab to collaborate with the industry on innovations, to provide technology leadership and direction.

Our innovation is focused on critical industry areas, including aircraft turnaround, transformation at the airport (including airside operations, aircraft and passenger management and next-generation communications), passenger self-service, air traffic management, security and border control, climate change and the environment, workplace mobility, disruption management. Our innovation teams are involved in developing our cabin crew solutions.

Our software development services for mobile applications include custom, packaged, and hosted client, client/server and cloud-based solutions with support for all leading mobile operating systems and cloud platforms.



CONCLUSION

The cabin is moving from paper to digital in a reflection of the recent boom in technological innovation and increasing use of connected devices.

As the face of the airline brand, cabin crews need to embrace digitization as a way of ensuring that customer service remains at a high level, and all in-air activities can be delivered seamlessly and efficiently. Technological tools and devices can be used to empower them to ensure that this ideal can be realized.

When implementing a mobile strategy for cabin crew, you need to think about four main areas:

- Building or integrating the right application
- Selecting the appropriate device
- Ensuring the devices have seamless connectivity
- Integrating all these elements together

We have expertise across all these areas and can work with you to update your cabin processes and deliver end-to-end mobile solutions to support your business.

By digitizing the existing paper based processes, you can reduce costs, speed up the time to capture information and dramatically improve customer satisfaction.

Discover the real strength of mobilized workforce Visit: www.sita.aero/crew-mobility
Email: MobileWorkforceSolutions@sita.aero









SITA AT A GLANCE

The air transport industry (ATI) is the most dynamic and exciting community on earth – and SITA is its heart.

- Our vision is to be the chosen technology partner of the industry, a position we will attain through flawless customer service and a unique portfolio of IT and communications solutions that covers the industry's every need 24/7.
- We are the innovators of the industry. Our experts and developers keep it fuelled with a constant stream of ground-breaking products and solutions. We are the ones who see the potential in the latest technology and put it to work.
- Our customers include airlines, airports, GDS vendors and governments. We work with over 550 ATI members and 3,200 customers in over 200 countries and territories.
- We are open, energetic and committed. We work in collaboration with our partners and customers to ensure we are always delivering the most effective, most efficient solutions.
- We own and operate the world's most extensive communications network. It's the vital asset that keeps the global ATI connected.
- We are 100% owned by the ATI a unique status that enables us to understand and respond to its needs better than anyone.
- Our annual IT surveys for airlines, airports and passenger self-service are industry-renowned and the only ones of their kind.
- We sponsor .aero, the top-level internet domain reserved exclusively for aviation.
- In 2010, we had consolidated revenues of US\$1.49 billion.

For further information, please visit www.sita.aero



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