Make your customers feel special

Delivering Emotionally Enriching Digital Experience to Air Travellers

Key Service Areas

Multi-channel Commerce
E-commerce | Mobile | NDC | Ancillary | Merchandising

PSS Transformation
Post-merge Integration | Data Migration | Validation

Travel Loyalty
Collection | Redemption | Partner on-boarding | Promotions

Airports
AOCC Implementation | Commercial | Partner Integration

Digital
Analytics | Digital Experience | Cloud

Airlines Cargo Operation
Digitisation | Automation | Handling Time Reduction

In-flight Catering
Meal Planning | Equipment Handling | Galley Planning

The NIIT Technologies Advantage

- 30+ years; 18 countries
- Partner to 50+ airlines and 14 airports
- IATA strategic partner
- End-to-end services: Consulting, Technology, Digital, and Business Process Management
AIR FRANCE-KLM ROLLS OUT HUNDREDS OF KIOSKS

Air France-KLM is rolling out 765 cutting-edge kiosks at 50 airports, serving the airline’s 77 million passengers. Jointly designed by SITA and Air France-KLM, the kiosks are now in operation at Amsterdam’s Schiphol and Paris’ Charles de Gaulle and Orly airports.

Packed with the latest features, the sleek new kiosks allow passengers to quickly and easily check-in for flights, print bag tags or purchase additional services.

SITAONAIR DOMINATES TOP 20 IN ONBOARD WI-FI ANALYSIS

Independent analysis by Routehappy on the state of inflight Wi-Fi has placed 11 SITAONAIR customers in the world’s top 20 for long-haul flights.

According to the ‘Global State of Inflight Wi-Fi’ report, SITAONAIR customer Emirates topped the list, with over 35 million available seat miles (ASMs) with inflight Wi-Fi.

Routehappy calculated this was “nearly double the long-haul ASMs with Wi-Fi than any other airline.” Indeed, the report’s 11 listed SITAONAIR airline customers collectively deliver over 90 of the 165 million ASMs.

STRONG PERFORMANCE

SITAONAIR customers also performed strongly in Routehappy’s subsequent analysis into the proportion of the airlines’ long-haul fleets.

This featured nine of the top 20, including Russia’s flagship carrier, Aeroflot, in second place. Aeroflot (at 98%) was one of only five airlines to provide Wi-Fi on over 90% of its fleet.

The analysis examined 60 airlines, and the report is indicative of the importance Wi-Fi now plays in delivering a good passenger experience. See also: ‘e-aircraft pioneers,’ page 26.

MIAMI’S ‘PERSONAL TRAVEL ASSISTANT’

Miami International Airport has launched a new mobile app for passengers and all airport users. It is the first airport app in the US to use the latest technologies, including Bluetooth beacons, to get context-sensitive information to the right people.

The app, developed by SITA and described by the airport as ‘Your Personal Travel Assistant,’ gives travelers personalized updates, directions and tips based on their location and needs. See page 32.

PIONEERING WITH BEACONS IN NICE

Nice Côte d’Azur Airport is leveraging SITA’s beacon technology to put personalized information at passengers’ fingertips through the airport’s new multifunctional app.

The new app provides passengers with real-time, relevant information at each step of their journey, along with location-sensitive retail information and offers.

Airport Premier Club passengers using the app will automatically earn points as they pass through the airport.

The app was launched to coincide with the opening of Nice Côte d’Azur Airport’s refurbished Terminal 1 retail area and will support the refurbishing of the commercial area of Terminal 2 in 2016. Full story in next issue.

TWO ‘BESTS’ FOR SITAONAIR

SITAONAIR has been awarded Best Global Connectivity Provider and Best Innovation in Commercial Airline Cabins for its inflight Wi-Fi app.

The announcement, for the Inflight IFEC Awards, took place at the annual Aircraft Interiors Middle East event in 2016. See page 28.

For more:

www.sitaonair.aero
NEW TECHNOLOGY PUTS BIOMETRICS AT EVERY STEP

SITA has launched new technology that allows passengers to move through the airport and board the aircraft simply by presenting themselves for a biometric check.

Called Smart Path™, it allows passengers to use a single biometric token at every step of the journey, from entry to exit. Once verified there’s no need for the passenger to present a boarding pass, a passport or travel documents again.

FACIAL SCAN
SITA Smart Path captures the passenger’s biometric details through a facial scan at the first touch point in the journey.

The record is checked against the passenger’s travel documents, typically the passport, and a secure single token is created.

Then, at each step of the journey – from check-in, to aircraft boarding or border control – passengers gain access simply with a facial scan and without having to show their passport or boarding pass.

Unlike other offerings, the technology can be easily integrated into existing airport infrastructure and airline systems.

See ‘Have token, will travel’, page 37.
FOR THE AIR TRANSPORT INDUSTRY, COGNITIVE COMPUTING, AND IBM WATSON IN PARTICULAR, IS A SIGNIFICANT ADVANCE. IT HELPS DELIVER OUR DRIVE TOWARDS PERSONALIZATION AND IT CAN BE USED IN A MYRIAD OF WAYS.

JIM PETERS
CHIEF TECHNOLOGY OFFICER, SITA

PERSONALIZATION. THAT ONE WORD HOLDS THE KEY TO PASSENGER LOYALTY.

MAKE IT PERSONAL

“FOR THE AIR TRANSPORT INDUSTRY, COGNITIVE COMPUTING, AND IBM WATSON IN PARTICULAR, IS A SIGNIFICANT ADVANCE. IT HELPS DELIVER OUR DRIVE TOWARDS PERSONALIZATION AND IT CAN BE USED IN A MYRIAD OF WAYS.”

JIM PETERS
CHIEF TECHNOLOGY OFFICER, SITA
Today is all about delivering tailored solutions and information to meet the demands of your passengers, creating a memorable experience in the airport and onboard the aircraft. Yet delivering such highly personalized products or services is not always as easy as it seems. It requires understanding passengers’ travel behavior, preferences and requirements.

Much of this information is already available to airlines and airports through their Customer Relationship Management (CRM) databases, social media, reservation systems and numerous other sources of information.

**COGNITIVE**

The challenge is that 80% of all data available today is unstructured. And given the volume, we’re not even aware what data is available – dark data that you don’t even know is there.

The advent of cognitive computing, led by IBM Watson, has the potential to unlock this treasure trove of information. Using natural language processing and machine learning, IBM Watson is able to reveal insights, patterns and relationships across data. It’s able to answer complex questions and interpret data to provide contextual and relevant answers.

“Airlines and airports already hold huge amounts of data on their passengers that, if properly structured, would yield tremendous potential to offer unique services,” says Terry Jones, Chairman of WayBlazer – a company offering the first cognitive travel platform.

**IBM WATSON**

By leveraging IBM Watson cognitive computing capabilities, WayBlazer is pioneering technology that takes unstructured data from across the travel industry, garners insights and provides answers that are relevant and personalized.

For example, were you to type ‘Romantic getaway in Italy this summer’, most browsers will provide thousands of results that broadly fit this description. However, using its proprietary technology along with IBM Watson components, WayBlazer will deliver a relevant set of hotel recommendations that are romantic and in Italy, best visited during the summer, based on available information.

No more clues but actual personalized recommendations provided with confidence. WayBlazer trawls through all the available data – hotel sites, reviews, news reports and social media – finds the best answer and presents it in a logical way, backing up its recommendations with evidence.

**AI MEETS BI**

WayBlazer is already working with hotels and travel services to offer a range of value-added services. "Cognitive computing is the interaction between artificial intelligence and business intelligence. And that makes IBM Watson a game changer," says Jones.

"IBM Watson understands natural language and can make sense of it. It’s also a learning computer which gets better over time. It’s better old than when it’s new. And finally IBM Watson gives advice with confidence whereas other browsers merely give us thousands of clues.

"Cognitive computing gives you the edge. It puts you where your customers are and is always available. That translates to increased loyalty and revenue," he adds.

**TRAVEL OPPORTUNITY**

“Where your passengers are going, why they are traveling, when they are going and where your customers are going, is there.

"The biggest benefit of all is that cognitive computing is the interaction between artificial intelligence and business intelligence. And that makes IBM Watson a game changer," says Jones.

"IBM Watson gives advice with confidence whereas other browsers merely give us thousands of clues.

"Cognitive computing gives you the edge. It puts you where your customers are and is always available. That translates to increased loyalty and revenue," he adds.

**TRAVEL COMPANION**

By sharing their data and integrating traveler information, WayBlazer can provide passengers with travel information and recommendations beyond the airport, becoming an indispensible travel companion.

It also holds significant potential to augment ancillary revenue. For airlines and airports, it allows them to use all the data available to provide new products and services while creating deeply personal, tailored experiences for their passengers.

Understanding where your passengers are going, when they are going and why they are traveling, means being able to place services or products that are truly relevant.

**REAL-TIME RESOLUTIONS**

One of the most promising applications is the potential to use cognitive computing as a CRM tool. "Imagine if a passenger has a problem with their ticket and begins using Twitter or e-mail.

“They can actually start to have a live conversation with the airline, relying on WayBlazer featuring aspects of IBM Watson technology in the backend to resolve issues on the go and in real-time,” says Peters.

“And the biggest benefit of all these services is a passenger experience that is deeply personal which will undoubtedly encourage brand loyalty and revenue for those airlines and airports that use it.”

Artificial intelligence and cognitive computing may appear to be far off in the future but looking at applications such WayBlazer and other like-minded companies using IBM Watson technology, they are already here.

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**FULL ARTICLE ONLINE**

[www.sita.aero/air-transport-it-review](http://www.sita.aero/air-transport-it-review)
Why the strategy change for the 'new' Ryanair?

Ryanair has seen a phenomenal rise in Europe thanks to great coverage, low prices, a strong on-time departures record, the fewest cancellations and much more, as our corporate results show.

We’re now 30 years old. In fact, when Boris Becker won his first Wimbledon Tennis Championship, we were making our first flight from Waterford to Luton Airport.

It was going very well. Our simple strategy focused on excellence in coverage, choice and price – and it was paying off. In theory, we thought all smart Europeans would keep using us, and we would grow forever. While we grew, we needed to get better.

We undertook a serious rethink and developed another very simple strategy. We’re a useful airline, we thought, but now we have to be more likable as well.

To cite English folklore, and perhaps being a bit flippant, we needed to be less like the Sheriff of Nottingham and more like Robin Hood. With that, we launched our ‘Always Getting Better Programme’, with a focus on listening to customers and being nicer to them.

Is it working?

Yes, it’s working very well. The Ryanair of a couple of years ago brashly presented our CEO Michael O’Leary sitting astride a model of a Ryanair-branded Boeing 737-800 aircraft. That’s given way to a preference for showing a picture of him cuddling a puppy dog.

In the online sphere, our website – which had become an obstacle – was greatly improved with a brand new one introduced in late 2015, which has been a mammoth and very serious effort to focus better on the customer experience. On top of that we’ve rolled out a new app.

Our new approach has been working like a dream. We’re as good as fully hedged on oil prices, so all of our profitability and improvements have all come from being nice to customers. It was the only thing we changed.

As Reuters pointed out our strategy of being nicer to customers has had a bigger impact on performance than the lower oil prices which benefited some other airlines in the short term.

So the future for Ryanair is a great customer experience, at the right price, with the right choice – and all of it underpinned by technology.

What’s IT’s role?

IT is essential to our strategy of providing a great customer experience. To demonstrate how seriously Ryanair takes technology, as part of the travel experience, we set up Ryanair Labs in November 2014 to create a digital travel
team representing a state-of-the-art digital and IT innovation hub. The new post of Chief Technology Officer was introduced too.

The vision was to rip up the playbook, putting the customer at the center, and using data to drive a better experience for customers across the travel sector. Essentially, we’re an established airline. We have a user base that’s fond of us, so this is a unique opportunity to try some different things and move forward from there.

We have a new customer charter and 50% of its items are pure technology plays; I’d argue that actually probably 90% of the effort is technology-related.

So technology enables our focus on putting customers at the center of everything, not the airline, nor the airport. It has to be the customer and the customer experience – whether it’s at home in bed booking or at the airport traveling, the customer comes first.

**What trends do you see?**

Everything that’s paper is dead. It’s all in the mobile device: your pagers are going; so too are cameras and video cameras. They’re all dying technologies. In the future I see, your passport will go digital. Eventually, driving licenses will go away. Wallets are already going; boarding passes have gone digital. The future is digital.

The future is your mobile phone; it’s an immensely powerful computer in your pocket. There’s a lot of talk about wearables but your mobile is your hub, your data. What customers need is the right information, at the right time and the right location – meaning information is location-sensitive.

You don’t want to be walking through an airport getting pinged about various promotions if you’re close to the gate and hurrying to get there. We need to be conscious and aware of what is happening to customers.

I like to think differently about things. This is not a strategy, but some ideas we’re playing with are to look at outside travel for a second at LinkedIn, Facebook, Foursquare and so on. They’re all breaking their apps up, whereas many airports and airlines are guilty of piling on more and more features.

In doing that, your app gets very bloated, chunky, heavy and slow – and potentially buggy. You become all things to all people. But it’s actually a very poor user experience. You want one-click to get somewhere; like the Amazon model. The more features you’ve got into an app, the more complicated it becomes.

**“THE VISION WAS TO RIP UP THE PLAYBOOK, PUTTING THE CUSTOMER AT THE CENTER, AND USING DATA TO DRIVE A BETTER EXPERIENCE.”**
How might you solve that?
Maybe you could have five apps? I’m not saying we’re going to—we’re not. But to get people thinking differently, let’s just consider it. You could, for example, focus on Discovery, Day of Travel, Destination, Return and Post Trip.

With Discovery, for example, you’re looking for somewhere sunny and you don’t want to be loggin on and looking for boarding passes. You want a ‘tinder-like experience’ which presents you with images of, say, Portugal, Spain, Germany or Austria which you simply flip through and press to choose; it knows who you are, you’re then in the app and integrated with your Apple Pay and you click to book.

On your ‘Day of travel’, it’s a different experience. You might wake up to find there’s a delay on the way to the airport, or you could be facing unexpected queues at security. Micro moments like these cause panic, and your app needs to guide you.

The future has to be removing stress from people’s travel experience. And it must address all the things that are part of the travel process, like having insurance, extra bags and so forth. It must all be simple, allowing you to press a button and go from there.

And at the airport?
Then it’s a different kind of experience. Suddenly it’s almost as if the app should hand over to the new owners of the person to address what’s now needed, such as fast-track, special offers, and gate information.

At this stage, electronic points of sale must be integrated and information must be coordinated. If a person’s bought a coffee, why offer coffee again? All of these elements must be addressed, meaning we must get smarter, we have to share data, we have to become more integrated.

Then there’s in-flight entertainment to consider, as well as Wi-Fi, which is just too expensive at the moment and must become ubiquitous. Once that happens, it’ll tie everything together properly once and for all. And, of course, dealing with extra flight bags must be simpler and done digitally, going the same way as everything else – on the mobile.

And when I say mobile, that could be a range of devices, phones or tablets. Except the biggest problem with mobile is battery life. If your mobile battery runs out during your travel and you’ve been using it through the journey, that’s a huge issue.

What about the final stages?
For the Destination, Return and Post Trip your app must help with things like transfers, gifts, train tickets and car travel; and as customers move from being at the airport, we need to think of things like ‘What are the special offers? Or is there a particular event happening?’ for example.

And then for the return journey you have different worries. You know how to get home but your biggest concern might be ‘do I have milk in the fridge?’ or ‘do I need to prepare a school lunch?’ You have a different mindset, you’re a bit more anxious. The app should give you offerings, information and ancillaries to address that experience.

Our own app has buttons for check-in, boarding pass, flight info, hotels and cars – with a sixth called ‘Manage trips’, and this is where we see our activity with airports, hotels and others, which demands that they have data from everybody.

“THE FUTURE FOR RYANAIR IS A GREAT CUSTOMER EXPERIENCE, AT THE RIGHT PRICE, WITH THE RIGHT CHOICE – ALL OF IT UNDERPINNED BY TECHNOLOGY.”

RYANAIR LABS
Ryanair launched Ryanair Labs in 2014 as a ‘state-of-the-art digital and IT innovation hub’ based in Dublin, Ireland. With around 200 staff, its stated aim is to seek to ‘change the world of online travel’, through reimagining the online travel sector. The Lab is focused on digital travel products for web, mobile and ‘whatever comes next’.

So it needs a concerted effort?
Yes, we have to work together as a community to make the travel experience better. That means sharing data to better serve customers and to take the pain out of the journey so that people travel with us again.

That includes interconnections. Ryanair don’t do connections, but our savvy customers do. We’ll fly them from a destination to an airport in order to connect. They want to know about their ongoing flights, so we can’t just be looking at what’s in it for us. We have to look at the passenger and the customer from the customer’s point of view.

So as an industry we need to think about the whole experience, not all the great features in our apps that we can bombard people with. Think about simple information at the right time, to improve the person’s experience.
LET’S GET THE PRICE RIGHT

WE TALK TO TOMI HÄNNINEN, VICE PRESIDENT FOR REVENUE MANAGEMENT & PRICING AT FINNAIR, ABOUT HIS AIRLINE’S VISION AND EXPERIENCE OF SELECTING AND USING SITA’S GROUND-BREAKING PRICING MANAGEMENT TOOL, AIRFARE INSIGHT.
Tell us about Finnair

The airline was established in 1923, which makes it one of the oldest operating airlines in the world. Today, we aim to offer our customers what we describe as a unique Nordic experience, with the smoothest, fastest connections in the northern hemisphere via Helsinki and the best network to the world from our home markets.

We carry about 10 million passengers every year to and from 17 destinations in Asia and more than 70 in Europe – and we have one of the most punctual and reliable operations in the world.

Our service reflects the classic Nordic qualities of simplicity, modernity and functionality at the airport, in lounges and on board. The Finnair brand is known for quality: we have a 4-Star Skytrax rating and have won the Best Airline in Northern Europe in World Airline awards four years in a row.

Last year, we were the first European airline to fly the new Airbus A350 XWB. We have firm orders for 19 aircraft, forming the backbone of our future growth strategy and introducing a complete refresh of our cabin design and cabin services.

Why look for a new fares solution?

The forecasts for growth in the number of Asian passengers remain considerable. It’s a great opportunity for us and the investment in the Airbus A350 XWB is one indicator of our intent to benefit by delivering the best aircraft and the best levels of service – Nordic service.

To do that effectively, we must also foster a culture of continuous improvement in all areas of our operations. It’s self-evidently critical to get the best pricing strategies and tools available if we are to stack up against increased competition for the Asia–Europe space.

We recognized that we needed to get up to speed with our benchmark airlines not only in operational quality but also pricing and optimization.

And what led you to choose SITA Airfare Insight?

Once we had completed our initial search, we organized workshops with the three shortlisted vendors. They were assessed against three factors: user cases, overall attractiveness and workflow quality. There were multiple aspects in each of the dimensions that were scored after the workshops.

In user cases, Airfare Insight got the highest average score in seven out of eight aspects. Of particular note, the way the all-inclusive fares were displayed made Airfare Insight outperform the other two options.

For overall attractiveness, Airfare Insight scored highest in five out of seven aspects. Distinctive user friendliness of the solution and vendor knowledge on pricing function made Airfare Insight stand out.

Airfare Insight was also rated as best able to meet Finnair expectations in general.

For general workflow quality, Airfare Insight was graded as the best option to provide enough data in the right format and on the spot for efficient pricing decisions. Overall, SITA Airfare Insight scored measurably higher than the runners up.

How was project progress?

The project began by defining the initial data set-up for Finnair. Thanks to SITA’s excellent commitment to the project, we were able to start the process during negotiations and before the contract was signed. It meant we were able to hit the ground running.

With the right resourcing we were able to move ahead with full steam and as a result, the implementation process was completed one month ahead of schedule and was noted as one the most successful project implementations at Finnair in 2015.

Have you observed any benefits already?

It’s still early days in terms of evaluating concrete business results but our speed to market has certainly improved – for example, in terms of reactive tactical pricing.

User feedback has also generally been positive. This is particularly encouraging as one of the targets for implementing a new pricing tool was to establish a more efficient workflow for the pricing team.

How do you see IT playing a transformational role?

Every business is ultimately about people. Pricing and revenue management in the core of an airline’s commercial operation is a good example. It’s a scientific, number and system intensive area of the business – but it’s the skilled and motivated professionals who finally make the difference between competitors.

Having said that, IT is playing a major transformational role at Finnair. Digitalization is one of the company-wide must-win battle focus areas and will continue to be used to enhance customer experience in the years to come.

“IT IS PLAYING A MAJOR TRANSFORMATIONAL ROLE AT FINNAIR. DIGITALIZATION IS ONE OF THE COMPANY-WIDE MUST-WIN BATTLE FOCUS AREAS AND WILL CONTINUE TO BE USED TO ENHANCE CUSTOMER EXPERIENCE."

JET AIRWAYS’ TRUE VIEW

Jet Airways, one of India’s largest airlines, has renewed its contract with SITA for Airfare Insight, the industry-leading fares management solution that provides competitive intelligence to enable the airline to control its pricing.

Cramer Ball, CEO at Jet Airways, said: “Airfare Insight helps us evaluate pricing based on our revenue management and sales strategy, enabling us to analyze and manage fares across multiple locations and time zones, and implement decisions much faster using fully automated distribution.”

DOWNLOAD SITA’S AIRFARE INSIGHT PAPER

www.sita.aero/whitepapers

FULL INTERVIEW ONLINE

www.sita.aero/air-transport-it-review
AS THE TOUCHPOINT FOR ALL IN AIR TRAVEL, AIRPORTS ARE A HOTBED OF TECHNOLOGY INNOVATIONS, TRIALS AND TESTS.

PREPARE FOR TOMORROW
By 2034, 7.3 billion people will be traveling through our airports. That’s equivalent to today’s total world population and it’s more than double today’s number of air travelers. We’ll see a further 37,463 passenger aircraft in service, also more than double today’s global fleet1.

If airport operators didn’t already have enough stress to keep them awake at night, these figures will certainly have them questioning their strategic and master plans for the foreseeable future.

The good news is that airports are the focal point of innovation within the air transport industry.

“That has huge implications for airlines, passengers, airport operators and indeed many stakeholders involved in the steps across the journey, because the airport is where it all comes together,” says Matthys Serfontein, Vice President, Airports, at SITA.

“As such, it’s where information and communications technology (ICT) can have the greatest impact, operationally, commercially and in terms of enhancing passenger satisfaction.

**PLAN EARLY**

Of course it’s impossible to say what will happen in 20 or 50 years. Who would have predicted 10 years ago that nearly every traveler (97%) would be carrying a smartphone, tablet or laptop when flying? Or that one in five passengers would fly with all three2?

When you think the average airport master plan has a 20-30 year horizon, it’s easy to see the dilemma: how do we prepare now for the technology unknowns of tomorrow?

Paradoxically, ICT planning of new airport design projects must start in the very beginning, as any good Master System Integration (MSI) program with tell you.

Aligning technology with architecture and construction plans ensures airports will be able to roll out IT solutions in the future, mapped against clearly defined business objectives. Doing this is the best way to ‘future-proof’ the airport.

**VIRGIN AUSTRALIA**

A case in point is the hybrid desk which helps facilitate transition into a complete self-service environment, or switch to an agent-assisted traditional process. For the airport, the investment is done – there will be no need to install kiosks if self-service usage increases. This is future-proofing terminal design at its best.

At Perth Airport, Virgin Australia, with SITA, launched the world’s first single hardware common-use hybrid desks late last year, enabling the carrier to quickly switch from self-service bag drop to full-service traditional counters.

“Just as ICT has helped transform airports over the last 70 years from simply providing space for airlines to land and takeoff, to being the massive commercial and social epicenters we see today, it will be crucial to creating the future-proof airport of tomorrow,” says Serfontein.

**IMPERATIVES**

“The end game is all about a seamless, integrated passenger experience, from end-to-end,” he adds. That means preparing for technologies that are capable of meeting three airport imperatives:

- enhancing passenger satisfaction
- delivering operational excellence
- ensuring commercial and financial success

As the latest Airport IT Trends Survey shows, the vast majority of airports intend to invest in or evaluate major ICT programs through 2017, with those imperatives top of mind.

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1 Airbus, “Airbus Global Market Forecast 2015-2034.”
2 Air Transport World, SITA, “Passenger IT Trends Survey 2014.”
52% of airports plan to implement self-boarding gates by 2017.

140+ airports deployed automated border control (ABC) systems in 2015.

45% of passengers would expect self-service rebooking via kiosks or mobiles.

60 passengers vs 24 can be processed in an hour by a self-bag drop unit.

50%+ of airports/airlines have plans to implement transfer and self-boarding kiosks.

49% of airports are considering programs with NFC by 2017.

38% of airports provide assisted bag drop stations. Those implementations are expected to double by end of 2017.

50%+ of top 50 airports have investment plans for cloud and geo-location technologies by 2017.

70%+ of airports plan to offer personalized services by 2017.

110% expected growth rate for mobile boarding pass.

175 million e-passports by 2019.

Data is taken from SITA’s industry surveys, as well as IATA’s Global Passenger Survey and the Acuity Market Intelligence: ‘The Global Automated Border Control (ABC) Industry Report’.

**SIGNALLING A SMARTER FUTURE**

**HAPPY PASSENGERS**

We’ve seen a raft of self-service investments to streamline processes, from kiosks for check-in, to border management, to self-bag drop and bag tracking.

They’re no doubt helping the fact that three quarters of passengers, according to SITA’s survey, say they’re generally happy with their travel experience (and happy passengers spend money).

Ensuring happy passengers and efficient operations is why many airports are introducing, trialing and testing new and nascent technologies that promise to be critical components of any smart airport of the future.

“Recent examples include the linking of traveler data, journey details and biometrics at the earliest opportunity to create a single travel token,” comments Serfontein.

Taking the idea forward with SITA are early trials with leading middle-eastern airports and flagship airlines.

**PROXIMITY SENSING**

Then there’s the proximity sensing based on Bluetooth and Wi-Fi, which can help gauge lines at bottlenecks, such as check-in and security, as well as heighten passenger communications and create revenue opportunities.

Airports were a hotbed of activity in this arena last year.

Fast emerging are beacons, hailed as a ‘game changer’ in passenger processing and retail.

Kevin O’Sullivan, Lead Architect, SITA Lab, says that: “Beacons could be the opportunity the industry has been waiting for to personalize mobile services for passengers at the airport while also giving extra information for airport management. Because beacons have motion sensors, you can put them in elevators, escalators or walkways and report if a thing that’s supposed to be moving is not moving. Put them in a baggage system and they can monitor the movement and vibration of the system. The potential uses are really extraordinary.”

Many airlines and airports are forging ahead with SITA in this area, including American Airlines and the international airports of Hong Kong and Miami. See ‘New heights for insights,’ page 29.

**PERSONAL**

“The fact that Google, Apple and Samsung are all in this space shows that the technology is here to stay.”

“Beacons could be the opportunity the industry has been waiting for to personalize mobile services for passengers at the airport while also giving extra information for airport management. Because beacons have motion sensors, you can put them in elevators, escalators or walkways and report if a thing that’s supposed to be moving is not moving. Put them in a baggage system and they can monitor the movement and vibration of the system. The potential uses are really extraordinary.”

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**NFC USE CASE**

Beacons inevitably draw comparisons with Near Field Communication (NFC), another technology clearly on the radar of airports. But their use cases are separate.

While the current focus for NFC is with payment, it remains a technology that has potential for improving passenger processing.

“The travel industry is looking closely at the many possible uses,” says O’Sullivan. “SITA Lab has gained considerable NFC experience, with a number of trials such as the Toulouse Blagnac Airport Pass premium VIP card and a Schiphol Airport CUTE NFC demo deployment.”
That’s particularly so because fewer than 10% of airports are totally satisfied with either their data quality or their ability to access and update it, according to the Airport IT Trends Survey.

NEW ERA

It’s positive, then, that nine out of 10 airports plan to make significant investments in BI over the next two years. Doing so will spawn a new era of real-time BI and analytics.

The intelligent airport of tomorrow will be one that can exploit the massive amounts of data in a proactive way to benefit its own operations, business needs, stakeholders and passengers.

As the IoT becomes the norm, the airport will be increasingly connected through all of the objects it contains: buildings, equipment, bags, trolleys – anything that can emit a status. And because passengers and staff carry smartphones, they too will be part of this connected future of travel. (See page 20.)

“The IoT gives the airport the opportunity to put a lot more sensors into their facilities to keep track of their different assets, passengers and staff,” says Jim Peters, Chief Technology Officer, SITA. “Everything from maintaining equipment to ensuring the right people are in the right spot to getting passengers on their planes on time. It’s really the beginning of the smart airport of the future.”

INTELLIGENCE

Serfontein again: “Many of these technologies are still in their infancy and they have huge potential. The same applies to business intelligence (BI). Most airports are yet to begin realizing the potential, though SITA’s new, ground-breaking Day of Travel and Day of Operations BI capabilities are providing a way forward.

“We’re on the brink of another technology revolution that will produce mountains of data, and airports must develop a strategy for what to do with it.”

That’s particularly so because fewer than 10% of airports are totally satisfied with either their data quality or their ability to access and update it, according to the Airport IT Trends Survey.

NEW ERA

It’s positive, then, that nine out of 10 airports plan to make significant investments in BI over the next two years. Doing so will spawn a new era of real-time BI and analytics.

The intelligent airport of tomorrow will be one that can exploit the massive amounts of data in a proactive way to benefit its own operations, business needs, stakeholders and passengers.

Its focus will be on the use of real-time intelligence and predictive analytics based on data from everywhere. Instead of reacting passively to events such as long lines at check-in or security, the airport will proactively influence passengers to avoid lines before they can develop.

TRAILBLAZERS

One of the industry’s trailblazers, Orlando International Airport, is using SITA’s queue management technology — SITA QueueAnalyzer — to reduce stress for travelers and enable more accurate resource planning.

Providing a real-time view of TSA checkpoints, it enables the airport to respond rapidly to unexpected conditions. It includes historical wait-time data to establish wait-time profiles for different times of the day, days of the week and seasons.

John Newsome, the airport’s IT Director, says: “We really wanted to be able to provide accurate checkpoint wait-time information to our travelers to reduce anxiety. We can do that now and the greater visibility and simplified metrics are also enabling us to plan more proactively and allocate resources effectively. SITA’s technology is also allowing us to respond more nimbly to the ebb and flow of unanticipated traffic flow.”

John Newsome
IT DIRECTOR, ORLANDO INTERNATIONAL AIRPORT

Orlando International Airport: queue management technology to reduce stress

“SIMPILIFIED METRICS ARE ENABLING US TO PLAN MORE PROACTIVELY AND ALLOCATE RESOURCES EFFECTIVELY … ALLOWING US TO RESPOND MORE NIMBLY TO THE EBB AND FLOW OF UNANTICIPATED TRAFFIC FLOW.”

John Newsome
IT DIRECTOR, ORLANDO INTERNATIONAL AIRPORT
CAPACITY ON TAP
Citing the advantages, President and CEO of Rhode Island Airport Corporation, Kelly Fredericks, says: “SITA has provided us with a solution that is hugely flexible and scalable.

“Because it is a cloud-based service, we do not have to invest in infrastructure on site here at the airport and new airlines can be up and running quickly and adding seasonal routes will be easy.”

At Brisbane West Wellcamp Airport, Phil Gregory, General Manager, says: “We expect passenger volumes to grow rapidly, and with SITA we can easily expand our capacity. And perhaps most importantly for us as a new airport, with SITA’s cloud solution there is minimal up-front investment and our costs are directly related to our passenger volumes.”

FASHION FAD?
Playing a crucial part in the technology revolution that’s taking place at airports are wearables, drones and robots.

Wearable technology is still in the infancy. But two things are certain: wearables are more than a fashion fad, and there are real use cases emerging for airports. In fact, they’re also paving the way into the IoT era.

The SITA Lab has collaborated with airlines and airports to pilot potential solutions for the industry. The work of SITA Lab with Copenhagen Airport and Virgin Atlantic Airways provides celebrated examples of early trials of wearables.

USE CASES
Another recent pilot linked the Apple Watch to SITA’s Airport Management System, allowing duty managers to receive alerts when two planes were arriving simultaneously and had been assigned to the same gate or when there was a delay at a certain gate.

In another use case, SITA Lab developed an application that enables gate agents to scan a boarding pass and passport automatically and simultaneously in less than one second using a pair of smartglasses.

Other applications have included translation services, photo-taking for documentation, and communications between duty managers.

DRONES
It’s anticipated that smart airports of the future will be a place where drones operate. Drones can reach places easily and quickly that are often difficult, time-consuming, or just plain dangerous for humans.

They can take high-definition photos and videos, and transmit them in real-time. They’re safe, nearly hack-proof, and can be programmed to perform tasks such as processing, analyzing and reporting things no human being can detect (minute temperature changes, for instance).

The very attributes that make drones ideal for military use also make them suited for use in smart airports of the future.

They could potentially perform foreign object detection on runways, around the airport perimeter, even in parking lots.

They can patrol the airport more easily than a person in a car is able to, and then provide even more detailed findings. Drones can also go ahead of first-responders to provide real-time images and video of an emergency scene.

And as demonstrated by a trial between a major carrier, Geneva Airport and SITA Lab, drones can inspect an entire aircraft in minutes where humans would take hours, saving time and money and allowing for quicker turnarounds.

ROBOTS
In the future, we’ll also see self-operating robots throughout the airport. Just as Google plans to release a completely self-driving car next year, the same technology can be implemented in the airport to perform a variety of functions – both passenger-facing and operational.

Airside, robots can bring people or parcels (self-driving luggage carts, for instance) to their gate. They can deliver bags from Point A to Point B without a groundhandler’s participation.

Curbside, robots could be the magic bullet that makes self-service bag drop a reality, thus taking the check-in process completely outside the airport. Imagine handing your bag to a robot at the curb and seeing it whisked away to the baggage system, where it will go through security screening, be loaded onto your flight (plus any transfer flights) without being touched by another human until another robot delivers it to you upon arrival.

SITA Lab is conducting several trials to determine use cases for drones and robots in the air transport industry. “One thing’s for sure,” concludes Serfontein. “As we build smart airports of tomorrow, we’ll need to be prepared to test and trial new technologies like these.

“But added to that, we’ll need airport master plans and ICT platforms that can handle ever smarter processes, more self-service and ever higher quality connectivity, with a string of tools suitable for delivering a fast and smooth end-to-end journey from curbside to airside.”

“BECAUSE IT IS A CLOUD-BASED SERVICE, WE DO NOT HAVE TO INVEST IN INFRASTRUCTURE ON SITE HERE AT THE AIRPORT AND NEW AIRLINES CAN BE UP AND RUNNING QUICKLY AND ADDING SEASONAL ROUTES WILL BE EASY.”

KELLY FREDERICKS
PRESIDENT AND CEO, RHODE ISLAND AIRPORT CORPORATION

FOR MORE
www.sita.aero/intelligent-airport

FULL ARTICLE ONLINE
www.sita.aero/air-transport-it-review
SELF-SERVICE – SMARTER AT EVERY STEP

SITA’S RESEARCH LEAVES LITTLE DOUBT THAT IMPROVING THE PASSENGER EXPERIENCE THROUGH SELF-SERVICE REMAINS A NUMBER ONE PRIORITY.

The vast majority of airlines and airports are planning to invest in information and communications technologies to make the journey an ever smarter and more seamless experience for passengers. So says a recent SITA paper, ‘The future is connected,’ which calls on research across several sources, including SITA’s Airline, Airport and Passenger IT Trends Surveys.

Over the next three years investments will be directed to more mobile services for passengers, as well as the delivery of an increasing number of self-service processes.

In the same timeframe, Fast Travel – the International Air Transport Association (IATA) program to provide passengers with a self-service suite at key steps of the journey – will reach a critical threshold, says the paper.

SELF-SERVICE RISE

The momentum for more self-service is well underway. In the coming three years, airlines and airports plan a high level of self-service activity across a growing range of the journey’s steps. They include Fast Travel’s six focus areas of check-in, bags ready to go, document scanning, flight re-booking, self-boarding and bag recovery.

AIRPORT DRIVE

What’s striking is that airport bosses worldwide are pushing ahead as rapidly as possible with their investment priorities focused on technologies that speed up passenger processing, reduce queues and keep passengers better informed.

And it looks as if the vast majority would get even more to spend – with global IT spend at more than US$ 8.7 billion for 2015, and approximately two-thirds of airport bosses expecting the same for 2016, according to the latest Airport IT Trends Survey.

CONNECTED

That bodes well for the connected passenger experience of the future, facilitated by self-service processes across the journey.

“In the next three years, more passengers will be enjoying seamless self-service travel experiences as airlines and airports scale up their self-service implementations across more stages of the passenger’s journey,” says Nigel Pickford, Director Market Insight, SITA.

“The key driver for increasing passengers’ use of self-service processes will be their ability to access or process these services on their mobile devices.”

YES, PLEASE

We know from SITA surveys that the market is there. This year, there’s a 39% increase in passenger usage of mobile devices for flight booking, 79% for check-in, 110% for boarding pass.

And it’s global: while SITA’s 2015 Passenger IT Trends Survey found that more than half of passengers surveyed in Brazil checked in at a desk, 24% said they would use mobile check-in next time.

In Mexico, use of mobile check-in is expected to double this year. In the US, almost three-quarters of passengers want to receive flight updates via their mobiles and two-thirds want bag collection information.

More than nine out of ten passengers are interested in flight updates via their mobile, using their phone to provide access as well as to find their way round the airport.

THAT’S FAST

Driving the trends, IATA’s Fast Travel program is clearly moving quickly towards its 2020 objective.

The program is designed to create standards and recommended practices so that airports and airlines can offer 80% of passengers a complete range of self-service options across six areas of the journey by the end of the decade – in the process delivering annual savings of up to US$ 2.1 billion for the industry.

For example, Alaska, Qantas, Air New Zealand, SAS and Hawaiian Airlines already offer four or more Fast Travel options to at least 80% of their passengers, according to the paper.

Meanwhile, Singapore’s Changi Airport Group is developing a new Terminal 4 that, when online in 2017, will feature a complete suite of self-service and automated options.

DOWNLOAD ‘THE FUTURE IS CONNECTED’ PAPER

Insights into air travel’s rapid evolution as it takes advantage of smartphones, the evolution of the Internet of Things, and the continuing rollout of IATA’s Fast Travel program.

www.sita.aero/surveys
Dubbed Fast and Seamless Travel (FAST), it will be supplemented by facial recognition technology. Steve Lee, the group’s CIO and SVP (Technology) cites “better use of manpower resources”.

“It also increases our efficiency and productivity in the face of growing passenger traffic,” he says. “For example, manpower saved can be assigned to provide personalized services to passengers at the gates, or redeployed to support other flights.”

QUICKER PACE

With the industry’s priorities firmly set on the passenger experience, the pace is quickening. More than half of airlines and airports now plan to be using self-boarding gates by 2018, while airports are expected to move quickly to deploy access information services via kiosks.

Bag self-service and recovery services are evolving rapidly too, with self-service lost bag registration expected to be established swiftly. What’s evident is that over the next three years, self-service will pass the point of critical mass and be the mainstream, with airlines and airports seeing mobile as the key channel in creating the smarter journey.

SEE OUR ONLINE FEATURES

- Let’s create a sense of place – another way to heighten the passenger experience, by:
  - Piet Demunter – Director Strategic Development, Brussels Airport
  - Pedro Casimiro – Ground Product and Ground Processes Manager, Brussels Airlines
  - Robert O’Meara – Director Media and Communications, ACI Europe

- Changes at Changi – Steve Lee, CIO and SVP (Technology) at Changi Airport Group talks about the airport’s Fast and Seamless Travel (FAST) initiative, featuring a complete suite of self-service and automated options.

- Passengers are top priority in China – how are China’s airports responding to the global move towards self-service and the use of mobile?

- How to improve the passenger experience – SITA’s self-service and mobile solutions span nine stages of the journey, playing a prominent role in IATA’s Fast Travel, InBag and Smart Security programs.

For more: www.sita.aero/air-transport-it-review
THE INTERNET OF THINGS

THE START OF A NEW AGE

BELIEVE THE HYPE AND WE’RE AT THE START OF A NEW INFORMATION AGE. AN AGE THAT WILL SEE MORE SMART OBJECTS AND DEVICES THAT WILL DRIVE MASSIVE GAINS IN EFFICIENCY, DELIVER GREATER VALUE TO CUSTOMERS AND STAFF, AND ENABLE NEW BUSINESS MODELS.
“IOT IS THE TOOL TO MAXIMIZE THE EXCHANGE OF INFORMATION TO MAKE MUCH BETTER DECISIONS, INFORM ALL COLLABORATORS, BE MORE EFFICIENT AND OFFER BETTER SERVICE. THE KEY IS FACILITATING COLLABORATION AND DATA EXCHANGE AMONG INDUSTRY PLAYERS.”

ANTOINE ROSTWOROWSKI
DIRECTOR OF AIRPORT CUSTOMER EXPERIENCE AND TECHNOLOGY, ACI-WORLD

The number of devices collecting and exchanging data has grown significantly over the last few years. Some reports suggest that connected devices will surpass 15 billion in 2015 and reach over 50 billion by 2020.

Most of the buzz is around the consumer sector. However, there’s good reason for air transport businesses to start getting excited, not least because we’re starting to see alignment in many of the core enablers.

EMBEDDED SENSORS
Placing sensors in objects allows them to be controlled, gather data and connect to other things. Just in the last few years there’s been a leap forward in technological capabilities of sensors.

Typical smartwatches, for instance, can include 1-gigahertz dual core processors and combine gyroscopes and accelerometers.

CONNECTIVITY
Widespread wireless connectivity has already been a significant contributor to the rise of the Internet of Things (IoT) using either cellular networks or Wi-Fi.

Low-power, wide-area networks, known as LPWANs, are also starting to emerge, which improve the business case for low bandwidth sensors.

These tap an unlicensed wireless spectrum known as the industrial, scientific and medical (ISM) radio band allowing sensors to be connected over distances of more than 100km and powered over 10 years with AA batteries. In addition, they’re highly secure, using AES128 encryption keys.

CLOUD
The widespread use of cloud computing provides the single platform that can handle and integrate all the data sources, including people, with the processes and systems.

And that power is now being backed up by storage systems capable of holding petabytes of data and serving it up rapidly.

Factor in data analytics and today data that was the preserve of a few can be turned into useful information and distributed to millions in minutes.

At the moment it’s still early days. But to make the most of a smart, connected world, we need to identify specific IoT use cases that will bring our industry operational or customer service improvements.

SMART AIRPORT CITIES
Airports are taking their cue from the smart city concept. Under this, advances in technology and data collection are being used to get real-time information on the surrounding environment.

That information can then be used to make efficiency gains or improve the lives of people through better services.

By embedding sensors throughout the airport environment it’s expected to improve airport operations and enhance the passenger experience.

SCHIPHOL
One airport at the forefront is Amsterdam’s Schiphol Airport. It’s working with KLM Royal Dutch Airlines and Dutch start-up, Undagrid, to track and trace non-motorized mobile assets, such as aircraft stairs and baggage carts using embedded sensors that make them visible to operators via the cloud or a dashboard.

However, most projects are currently small scale trials used to gain knowledge on what might be possible.

Miami International Airport, for example, worked with SITA to install beacons around its terminals with temperature sensors. By analyzing the data the airport could optimize air flow and reduce energy consumption. See page 32.
SILO BUSTING

Arnaud Brolly, a SITA communications specialist, has worked on several IoT projects, along with partner companies.

He believes that by integrating, optimizing and analyzing the data from multiple airport building and operational systems we can develop new types of smart applications and services for passengers, airlines and airports.

“Today a lot of data is extracted from a single system in isolation. By taking the data out of its silo and combining with other sources it becomes far more valuable.

“We can see interdependencies that were not visible before, allowing us to build algorithms and develop new applications,” says Brolly.

ACCRUATE

He continues: “For example, passengers will be able to get accurate information, such as queue lengths and time to gate, from these smart systems using mobile apps, watches and, further down the line, other wearables.

“Airport operators will also be able to proactively manage using dashboards. It will enable better decision making and faster reaction to unfolding events.”

Brolly sees automation benefits from the rise of IoT.

“With machines speaking to each other, it will eliminate the need for human intervention in mundane decision making.

“That might include slight adjustments to temperature in particular areas of the terminal, or checking the fire extinguishers are still located where they should be. Instead staff will only receive exception notifications allowing them to focus on more critical tasks.”

IOT – CRUCIAL TO A SMART AIRPORT

The Airports Council International (ACI) is in no doubt over the potential that the Internet of Things (IoT) can bring to the aviation industry.

In fact, Antoine Rostworowski, Director of Airport Customer Experience and Technology at ACI-World, believes it will be a fundamental enabler for a wide range of operational improvements.

As he explains: “IoT is the tool to maximize the exchange of information to make much better decisions, inform all collaborators, be more efficient and offer better service.”

“The key is facilitating collaboration and data exchange among industry players,” he adds.

One issue is that there are no common systems or data standards between the various stakeholders, which can make integration and sharing data that much harder.

ACRIS

To address this, ACI is driving a global program called Aviation Community Recommended Information Services (ACRIS), a framework to facilitate web-based data exchanges among the stakeholders.

AIRLINE OPPORTUNITIES

Airlines are waking up to the potential. SITA’s 2015 Airline IT Trends Survey indicated that 86% of airline CIOs believe there are clear benefits to be had from the IoT over the next three years.

In the meantime, 37% have allocated budget for the implementation of IoT projects. Much of the investment is earmarked for personalization to passengers and getting better utilization of aircraft.

For example, SITA worked with easyJet and its partner Gatwick Airport to launch an app for passengers called Mobile Host. By taking live data feeds from airport and airline systems and overlaying location details on Google indoor maps, the airline is able to offer personalized notifications and updates.

GATEWAY

One gateway technology for IoT is beacons. Placing them throughout airports can trigger an action on the mobile device of a passenger as they pass within range.

The SITA Lab has been working with Sigfox to evaluate low cost infrastructure for the IoT, which could open the door for the global air transport industry.

“The challenge is being able to deploy a standard,” he explains. Several projects, such as Airport Collaborative Decision Making (A-CDM) and Seamless Travel already use the ACRIS framework to exchange data among multiple entities.

SECURITY

Data sharing is bringing improvements in other areas as well. Rostworowski cites as an example Smart Security, a joint ACI/IATA project to develop the next generation of passenger screening.

“Checkpoint management solutions enable airports to collect and integrate real-time performance data from checkpoint lanes.

“The networking of security checkpoints also facilitates Centralized Image Processing (CIP). These ideas have been shown to significantly improve throughput, and are indicative of the need for connectivity throughout all airport systems.”

Looking forward Rostworowski expects greater use of identity management, biometrics and passenger data to deliver further benefits.

See full online article at: www.sita.aero/air-transport-it-review
The next step for our industry is to eliminate the silos so that data from passengers and operations can be aggregated and shared to unlock the value. Doing this will spur innovation and create completely new types of applications and services for passengers and staff along the value chain.

In addition, the information that devices and sensors gather will give machines the ability to communicate directly with each other and learn as they go along. This is where O’Sullivan sees the real value. “The data provided by these sensors will become even more useful when we apply algorithms to it to generate forward looking information. This will allow proactive operational decision-making at a speed that we have never seen before.”

SMART BAGS
Another opportunity is to relieve the anxiety felt by passengers about whether their bags made the flight. Airlines are looking at smart bag tags which would allow passengers to track their bags through a mobile app. It could even let passengers know which carousel to collect their baggage from and how long it will be.

MRO
There are also maintenance, repair and operations (MRO) opportunities. Real-time data from the aircraft means maintenance can be performed when the aircraft actually needs it rather than based on pre-determined schedules.

By analyzing the data mid-flight rather than waiting to download upon landing, operational staff can alter flight paths to avoid bad weather. They can take advantage of better winds on a slightly different course and set up maintenance actions on the ground so that crews are equipped with the correct parts in advance of the aircraft’s arrival. Systems will also be able to notify suppliers of parts that need to be re-ordered.

INFRASTRUCTURE
Nonetheless, without a reliable and secure network connection to power the potentially large number of devices, IoT will fail to deliver value.

Kevin O’Sullivan, SITA Lab’s lead on the project, believes low power networks could open the door for IoT within air transport. “One antenna and base station can cover the whole airport campus so an LPWAN network could be a viable alternative for sending low bandwidth messages. Distances between base stations can be as much as 100km,” he says.

He continues: “As data throughput is small it is ideally suited to low bandwidth use cases where objects may only periodically need to transmit a limited data set. One example could be a bag tag indicating its location from time to time, which would be picked up by the network at the departure and arrival airports.”

VALUE DRIVER: DATA
The IoT is going to greatly expand big data. However, ownership of the data sources will be spread across a varied group of stakeholders.

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You created us when you needed a guiding light. Someone you could rely on to blaze a trail. To think bigger. To aim further. Our spirit of innovation has already achieved amazing things. We’re transforming air travel through technology, connecting travelers and leading our community into the future. And the best part is, this is just the beginning...

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SMART CONNECTIVITY – IN THE AIR

E-AIRCRAFT PIONEERS

AS SITAO.NAIR CELEBRATES THE LAUNCH OF HIGH-SPEED BROADBAND CAPABILITIES AND A COUPLE OF INDUSTRY AWARDS, WE DISCUSS 2016 WITH THE COMPANY’S CEO, DAVID LAVOREL.

We’re at an inflection point in the way we’re connected. Is this happening in the air as much as on the ground?

Five years ago you wouldn’t choose a car depending on how well it connects with your phone. You wouldn’t expect to wake up in the morning and find your car has completely changed thanks to an overnight software upgrade. In its ability to leverage technology, bring new services and new propositions, where the car is going today, we believe air transport goes tomorrow. All of the major motoring brands are on to this: the connected car is there. Now it’s our turn. Real connectivity is coming to the aircraft.

It’s great news for us because, as pioneers, we believe we have all the assets already in place to help the connected aircraft become a concrete reality. We’re leading the way in this young market. It’s a huge opportunity for the air transport community to embrace digital transformation and the associated business benefits.

We already have a very strong footprint thanks to our cockpit business (aircraft services, including AIRCOM) and we’ve been pioneering connectivity in the passenger cabin, not only in response to passenger demand, but even in the early days before expectations were there.

We’ve extended our capabilities further to provide complete nose-to-tail connectivity – whether for passengers, cabin, cockpit – and now including air traffic navigation, maintenance, airline operation centers.

All of these areas have previously largely kept themselves to themselves, perpetuating the risk of silo mentalities between industry players’ departments and data. We can make the aircraft a live technology and data platform within the air transport ecosystem. It’s a revolution in the way aircraft are managed and the way people and systems communicate onboard.

Is this enabled by new satellites?

The introduction at the end of last year of Inmarsat’s new Global Xpress (GX) constellation, formed of three Ka-band, high-speed mobile broadband satellites, is pivotal. It opens the door to global high-speed broadband at up to 50Mbps.

This will allow us to introduce a new generation of passenger and cabin services. For the first time, all over the world there’ll be nearly no difference between being in the air and being on the ground: the onboard Wi-Fi will reflect what most people are used to in their office or at home.

Singapore Airlines and an undisclosed Middle East airline have already committed to upgrading their services in line with the new capabilities. We expect more airlines to follow in the months ahead.

But it’s not only about connectivity in the air. In many ways it’s more important to think of it as an open channel that allows airlines to make the most effective use of the opportunities for digital services and transformation provided by the technology in new generation aircraft.

Unless you have the expertise and infrastructure in place to manage the complex aircraft data sets, and feed the smart systems and enable associated business benefits, then you’re wasting resource.
So nose-to-tail connectivity and digital transformation are as much a principle, a way of working, as they are about the technology and business transformation that makes it happen. That’s why we were so pleased at the end of last year to agree a new end-to-end aircraft data management service with Rolls-Royce. This will create a Dropbox-kind of service for aircraft data, making it easier both to download and then to access the mass of useful data produced by the engine onboard new generation aircraft and power optimized engine operations.

**What are your portfolio priorities for 2016?**

First, from our experience and relationship with airlines we can see that they want to embrace this digital transformation, especially onboard. That touches passengers, retail processes, customer care, re-accommodation and so on.

So we need to continue to build capabilities in our applications and services to support the airlines in unleashing the full potential of that transformation. Second, we will continue to innovate in the area of end-to-end aircraft data management. We believe this is a key industry topic and one that is well suited to SITA’s DNA – enabling people who work around the aircraft to communicate together, to share information in a controlled and secure manner, and hence invent new and more efficient ways of working.

To do that, we must leverage the adoption of broadband satellite technology. So we’ll put a lot of effort this year into securing delivery and market entry with those products.

And third, looking at the other element of the portfolio, the flight deck, we will continue to work with the market in enabling the next generation of airline operations and air traffic control.

To succeed in all of those areas, we’ll be relying on and leveraging SITA’s air transport dedicated infrastructure services, especially the ATI Cloud, as well as airport wireless services. It’s a unique asset that enables very strong synergy between SITA’s infrastructure and our aircraft portfolio for the benefit of our customers.

**WI-FI BOOST WITH NEW GEN APP**

SITAONAIR has boosted inflight Wi-Fi usage with a new generation inflight Wi-Fi app, optimized for mobile phones, to streamline Wi-Fi access. The company is also making it easier for airlines to encourage inflight Wi-Fi usage by exploiting beacons in both the airport and onboard the aircraft.

Introduced with [www.developer.aero](http://www.developer.aero), the SITA Application Programming Interface (API) platform, the new app can be fully customized for each airline and even integrated into the airline app.

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“IT’S A REVOLUTION IN THE WAY AIRCRAFT ARE MANAGED AND THE WAY PEOPLE AND SYSTEMS COMMUNICATE ONBOARD.”
Airlines have obvious business concerns in trying to manage more traffic, to add greater density to their operations, while maintaining safety. That’s a big topic of focus for airlines and it’s an area where our nose-to-tail connectivity approach and digital transformation can definitely help.

What do you need to do to achieve your ambitions?

In the cockpit, we’ll continue to expand beyond our traditional customer base while also leveraging and up-selling our applications portfolio.

In the cabin, we’re seizing the opportunity provided by the introduction of Inmarsat’s GX broadband service. It’s a complete game-changer and will stimulate demand from passengers and crew alike.

We’ll continue leading innovation with the provision and handling of aircraft data through end-to-end data management. This includes reaching out to OEMs and aircraft systems manufacturers as well as airlines.

Our approach for every element of our work is to focus on what the community needs as a whole, rather than any individual airlines and their operating partners. The result is always better for everyone.

And this approach is essential if we’re going to develop the kind of open platform that is so essential to achieving genuine nose-to-tail connectivity and adoption of innovative digital transformation practices.

Speed is also critical. It used to take years to bring new ideas to fruition. Now we’re trying to bring to maturity in months. It adds an extra dimension to our approach and it’s an exciting journey to be on.

E-AIRCRAFT BENEFITS TO ADDRESS AIRLINE CHALLENGES

**IMPROVE PASSENGER EXPERIENCE**

- Inflight broadband internet and mobile phones experience
- On-demand IFE experience (wiless or in-seat)
- Personalized passenger services

**GROW ANCILLARY REVENUES**

- Generate ancillary revenue with on-board retail module
- Enhance passenger loyalty and airline brand image

**IMPROVE OPERATIONAL EFFICIENCY**

- Digital paperless processes
- Real-time updates
- Inflight optimized routings
- Fuel savings
- Predictive maintenance
- Reduced turnaround times, protected OTO
- More efficient MRO scheduling
- Greater aircraft utilization
- Improved completeness of data
- Simplified data collection; multi-fleet, multi-OEM

**IMPROVE AIRLINE & PASSENGER SAFETY**

- Enroute weather updates;
  enhancing safety
- Flight Tracking
- Messaging dialogue between pilots and air traffic control
- PAX safety

**SITAONAIR KICKS OFF 2016 WITH DOUBLE AWARDS**

The Harris Corporation awarded the prestigious DCIS Diamond Award to SITAONAIR in January, for the company’s work on the Data Communications Integrated Services (DCIS) project, which is a cornerstone of the Federal Aviation Authority’s (FAA) NexGen programs.

In February, SITAONAIR was awarded Best Global Connectivity Provider at the Inflight IFEC Awards, announced at the Middle East’s only aircraft interiors event, AIME.

**FRONT RUNNER**

The latest generation inflight Wi-Fi app was also awarded Best Innovation in Commercial Airline Cabins "for its mobile-centric, clean and ergonomic design – making the experience hassle free and useful by contextualizing and personalizing the user experience for each passenger”.

“SITAONAIR was a clear front runner in each category. What particularly impressed the judges was a combination of widespread coverage in the Middle East and the speed of connectivity solutions, as well as ease of installation,” said Mark Howells, owner of HMG Aerospace, the publisher of Inflight.

“Connectivity goes beyond the cabin now, and SITAONAIR is keeping pace with the evolution of the market, ensuring aircraft can be fully connected from nose to tail.”
NEW HEIGHTS FOR INSIGHTS

INSIGHTS GAINED FROM EXPLOITING VAST AMOUNTS OF DATA WILL BE A ‘GOLD MINE’ TO AIR TRAVEL ORGANIZATIONS.
Constantly connected and armed with mobile devices, passengers are demanding better personal services. Long queuing times aren’t acceptable; and choice in everything from check-in to retail selection is assumed. That’s a big factor in driving the move towards smarter and more digital ways of working for airlines and at the airport.

Arthur D. Little expect to see an increase of about 40% in airport expenditure on digital-based solutions by 2020 versus 2014.

The consulting firm cites evolving airport models and technology clusters that need to be optimized to increase the capacity of existing facilities, lower operational expenditure and boost revenues.

COLLABORATION

It’s an evolution that demands the closest collaboration between airports, airlines and tenants. It requires that they capture data and pro-actively furnish intelligence that optimizes airport operations, while engaging with passengers, readily serving up information about where to go, for example, at what time and how to get there.

That explains why nearly 90% of airports will use Business Intelligence (BI) by 2017 to analyze areas such as airport service quality, capacity and passenger flow, according to the Airport IT Trends Survey.

BIG DATA

“If airports are going to be able to make the most of the opportunities available through analytics, they need access to a huge range of critical data,” says Ron Reed, BI Portfolio Director at SITA. “That means effectively exploiting the big data that surrounds us … and as we know, our industry creates a lot of this data from many, many sources. “We need to be able to aggregate this data, interrogating and correlating it so we can monitor the airport’s wellbeing, identifying issues and recommending corrective action, and predicting future problems,” he adds.

CRITICAL MEASURES

For airports, the answer is to put in place a set of integrated analytics tools to unlock data and drive business value and operational efficiency from the insights it uncovers.

Reed again: “For a start, airports need real-time access to key operational metrics and the ability to predict and simulate based on live data.

“They must be able to understand the implications of operational chokepoints and passenger flows. They need access to whole-of-airport BI dashboards. And, crucially, they must be able to collaborate openly with partners through shared views and data.”

WE EXPECT THAT VERSION 2 OF OUR MOBILE APP, INTEGRATED WITH OUR 500-PLUS BEACONS, WILL DRAMATICALLY ENHANCE THE PASSENGER EXPERIENCE AT THE AIRPORT WITH ITS TURN-BY-TURN DIRECTIONS, ESTIMATED WALK TIMES AND LOCATION-AWARE TECHNOLOGY, AND IT WILL BECOME A PERSONAL TRAVEL ASSISTANT FOR OUR PASSENGERS.”

MAURICE JENKINS
DIRECTOR, INFORMATION SYSTEMS & TELECOMMUNICATIONS,
MIAMI INTERNATIONAL AIRPORT

BIG DATA AND BUSINESS INTELLIGENCE

A FINGER ON THE PULSE – DAY OF OPERATIONS

Monitoring the airport’s pulse: SITA’s Day of Operations Services. Accessed through the AirportPulse portal, the cloud-based BI services include:

- QueueAnalyzer – a real-time analytics tool for monitoring and reporting customer flow and queuing at airport presentation points. Thanks to QueueAnalyzer, a number of airports have already achieved an average increase of 3% in retail sales, along with improved operational efficiencies and customer experience.

- FlowAnalyzer – providing visibility, knowledge and insight on where customers wait, walk, flow, dwell, visit, engage and shop. By understanding the best locations for saleable advertising space, one airport has increased advertising revenue by 4%.

- FlowPredictor – continually identifying the imminence of adverse conditions, issues and challenges before they happen, and informing the business as appropriate. One leading European airport has used this tool over the past four years to gain a 20% reduction in passenger waiting times at key processing points, with a consequential 10% improvement in overall customer satisfaction.

- OperationsAnalyzer – presenting key airport operational statistical and management information. Faster data access and analytics capability have delivered up to 48 man days a year of savings for airport operational staff.

- DataExplorer – giving airports world-class BI capabilities and the power to interrogate and shape data, analyze issues, present information, and drive innovation. It delivers a 10-fold improvement in the time it takes to make data searches, which helps drive more informed decisions.

- CommonUseAnalyzer – generating insights and real-time statistics on CUTE data and service levels.
DAY OF OPERATIONS
The introduction of SITA’s Day of Operations cloud-based BI service harnesses complementary underlying Internet of Things technologies.
These include Bluetooth sensors, Wi-Fi infrastructure and other data sources such as video images to aggregate and analyze real-time data from passenger flow, and queue wait-time monitoring data from common-use platforms, such as bar-coded boarding passes and kiosks.

AIRPORTPULSE
Aiming to provide a dynamic view of the airport ecosystem at a strategic and operational level, Day of Operations is accessed through AirportPulse – an intuitive, digital portal that delivers a single dynamic central view of the airport ecosystem, and is a catalyst for change.

It’s a consolidation of airport specific tools that use common data to deliver real-time, fact-based intelligence by monitoring, measuring, predicting, visualizing, reporting and supporting key airport performance metrics.

Each area of the airport is provided with information, insights and predictions that enable pre-emptive, corrective actions and plans to be implemented, in real time.

TRAVELERS
Then there’s the passenger perspective, and the need to cater for the personalized and essential information required to embark on the journey smoothly, whether starting out from home, at the hotel, or anywhere else.

The key, at the individual app level, is to provide “a single point of truth at airports,” according to SITA VP, Airports, Andrew O’Connor, quoted in SITA’s recent paper ‘The future is connected’.

As an example, the paper cites SITA work with easyJet, whose Mobile Host app delivers gate status and baggage reclaim information at the same time as it’s available locally on airport screens, initially as a proof of concept with a plan to cover top European airports.

The personalized app experience is vital, according to O’Connor: “If you’re able to track people around the airport, and know they’ve spent 45 minutes in a restaurant, there’s no point sending them a voucher to eat in another airport restaurant. The more precisely you can target offers, the more likely you are to be successful.”

Reed agrees: “Passengers are looking for a whole host of contextual information, relevant to the steps of their journey. It needs to be placed at their fingertips, such as flight status, navigation and way-finding, wait times and so much more.

“SITA Day of Travel Services offers airports the ability to develop a device-native mobile app built to specific needs and brand requirements.”

It includes SITA’s Application Programming Interfaces (APIs), a powerful way to unlock big data to gain insights into the airport’s operations. See ‘API advances’, page 33.

A SMARTER PERSONAL JOURNEY – DAY OF TRAVEL
Make way for the smarter journey. SITA’s Day of Travel Services includes:

- **Airport App** – a device-native app, which can be branded and made available in different app stores. Contextually aware and smart, it presents information to passengers at the right place, at the right time.

- **Airport Maps** – used in the app, website, way-finding kiosks or other digital media, these maps provide an accurate, detailed and searchable view of all facilities at the airport, automatically generating the fastest route to get there, based on distance and intermediary factors such as queue wait times.

- **Application Programming Interfaces (APIs)** – providing air transport-related app developers with internal and external data to build applications, covering flight, weather, estimated wait time and more.

- **Beacon Services** – to trigger marketing messages or alerts based on the passenger’s location in the terminal building. The proximity technology available for Internet of Things sensors is: Bluetooth low energy (BLE), global positioning system (GPS) and Wi-Fi.

SEE OUR ONLINE FEATURES
- ‘Beacon pioneers light up the way’ – American Airlines, Singapore Airlines, United Airlines, and the airports of Hong Kong, Miami and Nice. These are just some of the beacon pioneers striving to improve operations and passenger experiences.

- ‘Leading airport pilots queue and flow technology’ – a US airport has been piloting SITA’s queue and flow management technology to monitor its escalators and moving pavements, with good results.

- ‘Orlando goes real-time’ – the international airport is reducing traveler stress and enabling better resource planning with SITA’s intelligent queue management technology.

- ‘Evolving airport models’ – on the digital scale of things, what’s the difference between Airport 1.0 and Airport 4.0? For more: www.sita.aero/air-transport-it-review
MIAMI’S ‘SMARTEST APP IN THE AIRPORT’

Traditional airport apps don’t know when you’re flying or where you are, how you’re getting to the airport, or what you want to do once you arrive...they’re passive.

SITA’s Day of Travel Airport App is the smarter airport app, helping Miami International Airport (MIA) to become the first in the US to use latest technologies in a mobile app – including Bluetooth beacons – to get the right information to the right people, when and where they need it.

The airport’s new mobile app, designed for passengers and all airport users, gives travelers personalized updates, directions and tips based on their location and needs – all through a highly intuitive interface.

YOUR PERSONAL TRAVEL ASSISTANT

Described by the airport as ‘Your Personal Travel Assistant’, the MIA Airport Official app can be used on iOS and Android devices from anywhere in the world, and is available now in the Apple App Store and in Google Play.

Once opened, it offers options based on location, so a user in Miami will get a different experience than someone opening it in London, Bogotá or New York.

As travelers make their way through the airport, the app provides information and support relevant to their individual journey. It includes updates on gate, flight times and baggage collection, as well as nearby food and retail outlets, prioritizing suggestions based on current location.

“We expect that version 2 of our mobile app, integrated with our 500-plus beacons, will dramatically enhance the passenger experience at MIA with its turn-by-turn directions, estimated walk times and location-aware technology,” says Maurice Jenkins, Director, Information Systems & Telecommunications, MIA. “It will become a personal travel assistant for our passengers.”

MAPS

The app presents the most accurate and up-to-date indoor maps. And with ‘blue-dot’ functionality, map rotation, turn-by-turn directions, ‘walk times’ and a ‘near me’ feature, they allow passengers to quickly locate virtually anything inside the airport.

“MIA Airport Official 2.0 is the latest example of how we are leveraging new technology to make travel through our airport easier than ever,” according to Miami-Dade Aviation Director Emilio T. González.

“Thanks to the installation of data beacons, our mobile app can now guide you from your driveway to the runway with personalized, user-friendly instructions.”

See full online article at: www.sita.aero/air-transport-it-review

SMARTER APP

One of the first to embrace Day of Travel is Miami International Airport. The initiative exemplifies the importance of delivering personalized and contextually aware information for airports to interact with passengers – in essence, in the right place at the right time.

Unlike traditional apps, it’s smarter because it’s not passive: it recognizes the user and makes sense of the vast amounts of data available at the airport adding real-time business intelligence to create an outstanding user experience. It uses data delivered via SITA’s industry-leading APIs. See ‘API advances’, page 33.

Mathys Serfontein, VP, Airports, SITA, says: “There are a multitude of airport and travel apps but we’ve taken the initiative to develop one that provides a truly personal experience.

“We’ve incorporated the latest technologies, including Miami’s beacon infrastructure and a selection of SITA’s industry APIs, to provide a context and location-aware experience.” See ‘Miami’s smartest app in the airport’.

EMILIO T. GONZÁLEZ
MIAMI-DADE AVIATION DIRECTOR

THANKS TO THE INSTALLATION OF DATA BEACONS, OUR MOBILE APP CAN NOW GUIDE YOU FROM YOUR DRIVEWAY TO THE RUNWAY WITH PERSONALIZED, USER-FRIENDLY INSTRUCTIONS.”

Reed again: “Not only does this greatly improve the passenger experience and operational performance, but it also helps airports increase non-aeronautical revenues by monetizing data and making it available to other industry-related application developers.

“Now we have the means to drive a whole new level of insights and real-time improvements,” he concludes.
NO MATTER WHAT THE PLATFORM, APPLICATION PROGRAMMING INTERFACES CONTINUE TO UNLOCK DATA AND ADVANCE TECHNOLOGY-DRIVEN SERVICES.

API ADVANCES
We may think of Application Programming Interfaces (APIs) as being part of the mobile phone revolution, the driving force behind the 1.5m-plus apps available on iPhone and the 100bn-plus downloads recorded since 2009. Yet APIs were originally introduced for use with web applications. The first to employ APIs was salesforce.com, in February 2000. Then came eBay and Amazon. But it wasn’t until the introduction of the social web that things really took off for APIs.

In 2004, the introduction of the RESTful1 API gave Flickr the boost it needed to become the platform of choice for early social media enthusiasts, followed by Facebook and Twitter. The Google Maps API was made available in 2005 to allow developers to integrate Google Maps into their websites. Amazon began to use APIs to present cloud computing services. Along came the iPhone and the API became mainstream for both mobile and web services.

DEVELOPER.AERO
SITA launched its own API site, developer.aero, in 2012. It gives air transport developers access to data and processes to expedite innovation for the benefit of the community and its customers via the cloud.

"Exposing RESTful APIs on the developer.aero site allows developers to focus on building their own apps. The site now handles millions of API calls a day," says Benoit Verbaere, Portfolio Director, Cloud Platforms and Solutions, SITA.

UNLOCKING DATA
Above all, APIs provide a channel into the vast amounts of rich data that’s generated and required by airlines, airports and travelers. SITA’s APIs open up endless possibilities for breakthrough advances – from passenger travel planning and booking, to airport operations and security, baggage, aircraft connectivity and in-flight cabin and cockpit operations.

"We’ve set out to make the whole process of accessing and using our APIs as simple as possible", explains Verbaere, who’s responsible for SITA’s API Center of Excellence.

"We’re stimulating the developer community to design and publish new apps and services by making industry data more easily available through APIs.

"The opportunities are endless, from the simple to the complex. For example, SITA’s Day of Travel Services offers a complete package for the development of the world’s first location-aware airport app." It works by bringing together a suite of APIs and combining them with Airport Maps and Beacon Services. (See 'New heights for insights,' page 29.) Airlines and airports can integrate these powerful contextual passenger services into their own apps, says Verbaere.

"Crucially, the introduction of new apps not only drives new revenue opportunities for the airport or airline. It also provides invaluable business intelligence on passenger flow and other elements that impact on staff and asset deployment, aircraft movement and other key operational decisions."

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1 REST stands for Representational State Transfer, an architectural style for networked hypermedia applications, primarily used to build Web services that are lightweight, maintainable, and scalable. A service based on REST is called a RESTful service.
API PLATFORMS

It’s not just mobile apps on which developers have set their sights. Interestingly, a 2015 Singapore Airlines and Changi Airport Group hackathon showed the diversity of platforms that APIs can target. Kiosk technology featured in the winning entries in both categories.

An Automated Form Kiosk allowing travelers to scan their boarding pass and passport to generate a prefilled immigration card was one of the prize winning entries in the ‘Start-up category’. Overall winner in the category was a virtual customer service desk powered by artificial intelligence.

Meanwhile, for example, SITA’s Boarding Pass API is embracing a whole host of gadgets and apps, enabling airlines to deliver boarding passes to many different channels using a single service.

That includes the traditional ‘print at home’ boarding pass, mobile web, smartwatches, native airline app, Evernote, Apple Passbook, Google Now, Google Wallet, NFC, and more.

BUILD APPS FAST

The 10 APIs on developer.aero have already spawned numerous applications and solutions across all airline and airport operations.

The portal will see the continuous addition of new APIs, along with sample code, case studies, data registries, and other services that will help software developers build new apps fast and efficiently.

SITAONAIR

Late last year saw SITAONAIR launch its first API through developer.aero. Its Inflight Wi-Fi Voucher API encourages onboard Wi-Fi usage – by enabling airlines, GDSs and other agents to sell Wi-Fi sessions, both as part of the booking process and during the flight.

A promotional code retrieved during booking or purchase is used by the passenger to activate the Internet session on the plane. The API can be integrated directly into the booking flow of airlines, GDSs or other agencies as one of the additional value-added services that can be sold to passengers as part of a flight booking.

The company is pioneering the adoption of beacon technology to remind passengers to purchase Wi-Fi credit or to activate their previously purchased credit.

AIRCRAFT API

Now being explored is the use of APIs to provide real-time interaction for the development of the next generation of nose-to-tail connected aircraft solutions.

An API platform offers airlines and maintenance, repair and operations (MROs) organizations more tools to enable aircraft to fly more efficiently and more cost effectively while ensuring that safety is never compromised.

APIs can leverage the wealth of data transmitted during flights via sensors, avionics and flight crew interaction, and enable the development of practical applications for predictive aircraft maintenance, flight tracking, air traffic management, improved weather forecasting, fuel consumption management and load balancing.

SITA’s developer.aero APIs are already in use by the SITA CrewTablet cabin management solution, to enable cabin crews to efficiently perform inflight and post-flight passenger and crew management procedures and operations.

The application uses APIs to integrate with Departure Control (DCS), Reservations (RES), baggage and weather systems.

MARKETPLACE IN THE CLOUD

In a first for the industry, SITA has opened an on-demand cloud service marketplace (www.marketplace.aero) for developers to distribute their generic and industry apps to the air transport community.

It offers new opportunities for the air travel community to benefit from a range of technologies through a simple-to-access consumer portal.

“As a cloud-based one-stop shop for air transport community organizations and professionals, Marketplace.aero is a virtual store offering access to generic and industry software, applications, cloud and other services,” says Benoit Verbaere, Portfolio Director, ATI Cloud Platforms & Solutions, SITA.

VENDORS

“We’re starting off with a small selection of vendors who provide fantastic applications and services in certain key domains and we’ll be adding more on an ongoing basis,” he adds. Current vendors include:

- Testia Online Maintenance Assistance – a browser-based platform for live communication between aircraft experts and technicians in the field.
- Genaker – an IP-based solution allowing ground operations staff to utilize secure and real-time walkie-talkie type communications over cellular and Wi-Fi networks using smartphones, ruggedized handsets, and IP-based two way radios.
- GCR AirportIQ Safety & Operations Compliance System – a suite of products designed for daily airport operations to meet aviation authority standards.
- CCD Ergonomics & Design – expertise designing for wayfinding, self-service, user and passenger experience.

For more: www.marketplace.aero

PRIME PLAYERS

A growing body of knowledge and experience of using SITA’s APIs is accumulating as developers, airlines, airports and other industry players take advantage of the opportunities offered by this relatively new technology.

Prime examples are in place at Virgin Atlantic, JetBlue and Malaysia Airlines.

VIRGIN ATLANTIC

Virgin Atlantic wanted to enhance passenger check-in by enabling passengers to send boarding passes to their mobile phones via e-mail or SMS text message – and selected the SITA Boarding Pass API to integrate with its own web check-in application.

The passes are designed to meet TSA requirements and support the Apple Passbook electronic wallet application, while passengers with Gmail addresses get real-time flight status information and have their boarding passes displayed automatically on their smartphones.
DEVELOPER.AERO APIS ARE ALREADY USED BY THE SITA CREWTABLET CABIN MANAGEMENT SOLUTION, TO ENABLE CABIN CREWS TO EFFICIENTLY PERFORM IN-FLIGHT AND POST-FLIGHT PASSENGER AND CREW MANAGEMENT PROCEDURES AND OPERATIONS.

The API system gave Virgin Atlantic full creative license in developing the application to suit their own business requirements and workflows, including the novel ability to issue separate boarding passes for infants with an ‘INF’ code as a seat number.

The airline is well-known for its headline-grabbing collaborative trial with SITA of Google Glass technology to enhance customers’ travel experiences and improve efficiency, which used an API to get passenger data to the Google Glass screen.

JETBLUE

JetBlue wanted a self-service mobile boarding pass solution that could be tightly integrated with its own customer mobile IT platform and strategy. The airline wanted to retain control over branding, design and targeted distribution of the boarding passes, as well as integration of the system into its own IT infrastructure and processes.

Using SITA’s Boarding Pass API, the app complies with TSA requirements and supports Apple Passbook and is fully integrated with other mobile apps available to JetBlue passengers, including mobile booking, check-in, flight status, and more. Passengers are also notified of real-time flight updates within the apps and via push notifications.

The ability of the boarding pass to work on Apple Watch led JetBlue CEO Robin Hayes to cite its benefits in a CNBC television interview. “I’m wearing my Apple Watch … and I’ve got my boarding pass on here. … with this technology, now everything’s on [the Apple Watch] – departure time, your gate – it really takes a lot of stress out of traveling.”

MALAYSIA AIRLINES

In 2015, SITA introduced WorldTracer Tablet, following successful trials by Malaysia Airlines at Kuala Lumpur International Airport. A mash up of a number of SITA APIs including iTravel, BagJourney and WTR APIs, the management module’s intuitive graphical user interface is the perfect way for agents to offer passengers more personalized services.

Mobile agents can roam the airport to help passengers at baggage carousels or wherever they are to report mishandled baggage and trace their status. Agents can help make potentially stressful situations bearable and manageable.

APIs started life as a neat way to add functionality to web-based software. “Today, they’re the day-to-day building blocks of our platform-agnostic connected world,” says Verbaere. “For the air transport community, developer.aero is driving some of the most exciting advances to services in a way that’s highly accessible and across many different platforms.”
HAVE TOKEN, WILL TRAVEL

THE EMERGENCE OF ‘SINGLE TOKEN TRAVEL’ OVER THE NEXT FEW YEARS IS PROBABLY THE MOST EXCITING DEVELOPMENT FOR PASSENGERS HOPING TO FAST TRACK THROUGH THE AIRPORT.
BIOMETRIC IDENTIFICATION

By capturing passengers’ biometrics and travel information into a single digital record, travelers will soon be able to use this token as identification at each step along their journey. It will also provide the ability to combine some travel steps into a single interaction, vastly speeding up the time needed to complete these formalities.

WALKTHROUGH EXPERIENCE

“This is the future of air travel where we can really begin to provide a walkthrough experience, from check-in to the aircraft door,” says Matthys Serfontein, VP Airports, SITA.

The technology allows a passenger’s biometric details to be captured through a facial scan at the first touchpoint in the journey. The biometric record is checked against the passenger’s travel documents and a secure single token is created.

Then, at every additional step in the journey – whether it’s during self-bag drop, at border control or aircraft boarding – passengers simply complete a facial scan without having to provide their passport or boarding card.

“The key to single token travel is gathering and verifying data as early in the process as possible in order to establish a robust token. This includes both biometric and biographic information. And then if necessary to update it with more detailed information at various steps in the journey,” says Serfontein.

TRIALS UNDERWAY

Numerous products using single biometric tokens are being trialed and tested around the globe. This includes SITA Smart Path™ which is now being trialed at a major airport hub in the Middle East – one of the world’s fastest-growing airports.

“This is the future of air travel where we can really begin to provide a walkthrough experience, from check-in to the aircraft door.”

MATTHYS SERFONTEIN
VP AIRPORTS, SITA

At this airport, the Smart Path™ system captures passengers’ biometrics at automated access gates at the transfer security checkpoint.

CLEAR, ACCURATE

When the passenger goes to board their connecting flight, the biometric information is cross-referenced with the government systems, providing a clear and accurate entry and exit record.

A mobile system will also capture biometric details from e-passports using a hand-held smart device, allowing checks to be conducted anywhere in the airport by roving immigration agents.

With the majority of travelers connecting to another flight at this airport, the use of a single token will help dramatically improve security oversight by providing a verified exit check for transfer passengers.

GROUND-BREAKING

“This is ground-breaking work at a major airport and the first time that Smart Path has been incorporated into the passenger journey; a single travel token that can connect across airline, airport and border management systems,” says Serfontein.

“Next we will work with a similar-sized major international airport, also in the Middle East, to use the single token across the entire journey from check-in to boarding.”

INTEGRATED

A key advantage of the new technology is the ability to use and integrate with existing airport infrastructure – including industry standard common-use self-service equipment, such as SITA’s Airport Self-Service Gates and Automated Border Control (ABC) Gates.

This makes rapid deployment easy and cost-effective. Smart Path™ also integrates with government systems and databases, providing a full picture of each passenger.

“What’s this is the future of air travel where we can really begin to provide a walkthrough experience, from check-in to the aircraft door,” says Serfontein.

SITA Smart Path allows us to build on these systems to create a single, self-service process using existing common-use infrastructure to simplify passenger processing for all airport stakeholders.”

ADVANTAGES

It’s not difficult to see why airports and airlines would embrace this technology so enthusiastically. It will improve security oversight and elevate the passenger’s travel experience while speeding up passenger processing and reducing the resources needed to manage the travel journey.

Looking further into the future, Renaud Irminger, Director of SITA Lab, sees this technology developing even more.

“For us the ultimate goal is to have the single identity token permanently and securely stored on your phone and you simply swipe your device at each step of the way at any airport in the world,” says Irminger.

NEXT STEP

“There’s still a lot of work to be done in agreeing the global standards and security protocols needed to use the mobile application across all airports but clearly this is the next step,” he adds.

While the full potential of single token travel will continue to evolve over the next few years, SITA Smart Path puts a truly walkthrough experience within reach of airports sooner than expected.
TECHNOLOGY IS TAKING ZAMBIA’S AIRPORTS INTO THE FUTURE, BEING AT THE HEART OF THE ZAMBIA AIRPORTS CORPORATION’S (ZACL) STRATEGY AND VISION. WE SPOKE TO THE AIRPORT OPERATOR’S DIRECTOR OF AIRPORTS SERVICES, AGNESS CHAILA.

In its quest to develop smart airports for the future, Zambian airport operator ZACL places information and communications technology (ICT) at the center of its ambitions. “ICT is critical to the future success of our airports,” says Agness Chaila, the state-owned operator’s Director of Airports Services.

“We see it as a business enabler that’s helping us strive towards our vision of being a leading provider of world-class airports, based on the concept of ‘intelligent or smart airports’. We’re making massive project investments across the airports we operate,” says Chaila.

That includes major investment programs to develop the International Airports of Kenneth Kaunda (Lusaka), Harry Mwaanga Nkumbula (Livingstone), Simon Mwansa Kapwepwe (Ndola), and Mfuwe, as well as the provision of air navigation services throughout Zambia.

Chaila cites the role of ICT in these programs, as “making airport operations and dealings with passengers a lot ‘smarter’ than they were before, with processes that have become faster and more efficient, while helping to add capacity and enhance service.”

THE PAYOFFS

“We’re seeing the payoffs every day,” she adds. “Check-in is quicker. Self-service check-in is available to avoid queues. Electronic readers scan passports more easily. Scanners and metal detectors stop illegal items passing through security checkpoints; and display screens offer flight information metrics around the airports.

“So we can now handle increased traffic efficiently and generate more revenue for the airport. Customer satisfaction about our service delivery is evident from the very few complaints we receive.”

PRESSURE

One of ZACL’s flagship projects was the modernization of Livingstone’s Harry Mwaanga Nkumbula International Airport, giving it the capacities and efficiencies to cope with the country’s thriving tourism market.

The airport operator chose to work with SITA, because as Chaila says, “SITA was the only expert partner who could deliver all the technology upgrades our new airport terminal needed on time.”

“With our airports relying on technology, we knew the importance of preparing early for IT in our new terminal construction. So the project involved planning for IT at the outset, which required Master System Integration (MSI) with SITA.”

SMART ACHIEVEMENT

“I’d say our newly constructed international arrival and departure passenger terminal building has been one of our biggest achievements so far.

“Built on the smart airport concept, it uses ICT to enhance tenant satisfaction and create new revenue opportunities. Importantly, as with any smart airport, it facilitates collaboration among tenants and stakeholders.

“Building on that success, we’re providing fast and reliable Internet and Voice services to all tenants, which will enhance efficiencies and passenger experience but will also be a source of revenue for our corporation.”

SMART PRINCIPLES

“We’re carrying the same smart airport principles across all our airports, ensuring an integrated ICT framework approach to implement systems effectively.”

MSI – THE SOLUTION

SITA Airport MSI (Master System Integration) is a customizable blend of integrated professional services and technology, tailored to meet the needs of a new terminal or airport construction.

Airport MSI includes a range of SITA and third party airport terminal IT and communications technologies along with a single program management and master system integration capability to deliver them.

FULL ARTICLE ONLINE

www.sita.aero/air-transport-it-review
LATAM’s Real-Time Baggage Status

LATAM Airlines Group, Latin America’s largest airline group, is introducing a new baggage system that will give real-time status reports on passengers’ baggage across 12 airports.

The airline handles more than 30 million bags a year and the new SITA technology will be instrumental in reducing the number of mishandled bags and quickly resolving baggage issues.

Data at the Fingertips

As part of the six-year deal, the group will roll out 350 handheld devices to its baggage team to facilitate the loading, tracking, tracing, reconciliation and management of baggage across airports in seven countries.

SITA’s technology is able to put the same baggage data at the fingertips of every ground handling employee at all airports in real-time, making it possible to track baggage no matter where it is along its journey.

For more: www.sita.aero/air-transport-it-review

Smarter Baggage Systems

Like automated bag drop will help take the pain out of baggage check-in for passengers.

Airport queues make flying stressful, so that holiday feeling can often be elusive until you’ve successfully negotiated security.

One man on a mission to change that by taking the tedium out of pre-security airport processing is Jacques Morgenegg, Project Manager (Landside) at Geneva International Airport.

His airport has been at the forefront of self-service in Europe with a number of pioneering projects designed to help passengers make the most of their time at the airport and improve the overall experience.

Queue Cutting

Air Transport IT Review discussed with Morgenegg his airport’s latest queue busting innovation ‘Scan&Fly’, an automated bag drop solution that helps take the pain out of baggage check-in for passengers.

“Geneva is a fast expanding airport handling more than 15 million passengers a year, but we have limited terminal capacity.

“Baggage check-in was a growing frustration not just for passengers, but also for the airport and airlines. We needed to remedy the situation, so we worked closely with airlines from the Star Alliance, particularly SWISS, and with our technology partner SITA, to define a solution.”

User-friendly

The answer was not simple as the airport wanted a hybrid solution that worked both for customers wanting self-service and those who needed staff support.

Ultimately though, it was about improving the process for as many passengers as possible, so it had to be an intuitive and user-friendly solution.

Scan&Fly

SITA’s Scan&Fly was able to meet the airport’s needs. The passenger places their bag on the belt next to the bag drop counter and simply has to scan their boarding pass or bag tag using a handheld scanner.

If the bag satisfies the carrier’s size and weight rules, it’s automatically deposited into the baggage handling system.

To get to this point passengers follow either a one-step or two-step process depending on whether they have already checked-in before arriving at the airport.

As Morgenegg explains: “Those passengers who have already checked-in off-airport can go directly to the bag drop unit to print the bag tag and deposit their bags.

“Passengers who need to check-in start the process at a kiosk where they print the bag tag, before going to the bag drop unit.”

Keep it Simple

Geneva Airport was the first to implement a Scan&Fly system that combines the one and two-step options into a single process. Morgenegg believes the decision to do this has proved correct.
“In fact, the initial aim was to go with the one-step option to help web check-in passengers, but we believed it would also be beneficial to expand the service to those passengers who had not checked-in. “We made a good choice, because after two years of operation we have approximately half of the passengers using the one-step and half of the passengers using the two-step option.”

**STAR ALLIANCE**

Today, seven Star Alliance airlines are using Scan&Fly, and the airport plans to extend the self-service bag drop offer to more airlines. “Passengers want a fast, stress-free journey through the airport and we also have constraints with our terminal capacity,” says Morgenegg. “To solve these two needs it is clear bag drop is the direction we must go in. Our aim is to implement a common-use self-bag drop area for all carriers using the airport.”

**GROUND-BREAKING**

It’s a ground-breaking change for the airport from the days of lengthy queues at a check-in desk, but was it easy to introduce such radical innovation over such a short time? “There were a number of different stakeholders, including airlines, ground handlers, technology suppliers, and most importantly, the passengers. “So managing and communicating with the stakeholders is one of the most important elements for success in this type of project. We had strong support from the airlines and ground handler involved. This was crucial,” advises Morgenegg.
We also relied heavily on SITA to integrate the technologies and properly train IT maintenance staff and ground agents to understand and use the system.

“We can’t afford to have the system not working for any length of time and while it is working we need it to run as smoothly as possible.”

SCAN&DIVIDE

To help with Morgenegg’s last point, SITA worked with Geneva Airport to develop a new product that helps ensure passengers follow the fastest process for their circumstances.

As Morgenegg explains: “At the moment not all types of passengers can be served by the self-service bag drop system. This might be people with extra large bags, for example, or pets.

“To make sure only eligible passengers go to the bag drop we are testing a system called Scan&Divide. With this, ground staff scan the boarding pass at the entrance to the process and select only passengers with the right profile to use the bag drop.

“Other passengers are directed to an assisted baggage check-in desk. It is very helpful because it speeds up the bag drop process and avoids queues.”

PASSENGERS LIKE IT

After two years of operation how does Morgenegg assess the performance of the new bag drop?

“We are very happy with the result so far. The bag drop units are very simple to use. The reduction of queues is definitely the easiest way to observe the difference.

“Furthermore, we see in our surveys that the passengers rate the entire experience better than before self-bag drop,” he points out.

“Seasoned travelers can offload their bags quicker and without human interaction, leaving airport staff to focus on those who need help.”

THROUGHPUT

“With throughput higher from using the same space, we have been able to increase capacity to meet our business goal,” adds Morgenegg.

To underline the success, the airport has expanded its number of self-bag drop units and continues to invest in new infrastructure and technologies that can help it efficiently manage the millions of checked-in bags it handles each year.

“We’re gearing up for airport 3.0”

Geneva Airport will feature in our next issue as this year it begins one of its biggest expansion projects in more than 40 years that will change the face of the airport – and technology will play a vital role. We speak to Massimo Gentile, the airport’s Head of Information and Communication Technologies.

FOR MORE

www.sita.aero/airports


$305m

10 years

During the next decade it’s expected that most check-in desks will be turned into self-bag drop units.

1300

Self-bag drop units installed globally today.

20,000

Self-bag drop units predicted by 2020 (estimate)
How is technology changing your day-to-day life?

I’m accountable for safety and security, efficiently run ground and crew operations, ensuring compliance, handling risk analysis and quality assurance and negotiating third party operational contracts – as well as controlling operating costs and procedures. It’s primarily about people having the training, processes and tools to do their jobs well. But information and communication technologies underpin everything. Let me give three examples where technology is having a major impact.

At the time of the 2010 World Cup, the Government agreed to implement SITA’s iBorders®. It was the first interactive advance passenger information system to be introduced in Africa and it effectively moved South Africa’s borders to the point of departure. It meant passengers could be welcomed and processed more quickly and efficiently on arrival. It helped us reduce admin and turnaround costs.

Second, our ground staff benefit from the use of mobiles across the airport, whether they are engineers or passenger-facing staff. Increased mobile use increases speed of response and flexibility.

And third, our passengers are now connected via their own mobile phones – and increasingly, with smartphones. So, for example, our range of check-in options makes full use of the opportunities – including online, mobile, kiosks and social. Technology is impacting every element of our work, making the benefits of technology available to passengers, airports and airlines. And because it’s handling technology that covers every element of travel, SITA is uniquely positioned to link it all together.

You’ve taken a strong stance on employment of women.

In South Africa, gender discrimination is outlawed. However, in many sectors – including aviation – the field still favors men. This is frustrating and short-sighted: our industry offers a wide range of career opportunities and women have the same levels of passion, aptitude and dedication as men. There are exemplars we can learn from. For example Airports Company South Africa, which manages nine airports in South Africa, including our three main international gateways at Johannesburg, Cape Town and Durban, now has an equal 50/50 female/male Board and their management is showing similar progress.

My own airline has also recognized the need for action. In August last year we ran a flight between Johannesburg and Cape Town with an all-female crew. We now have women working as technicians, flight deck crew, cabin crew, and in key operational and support areas throughout the SAA Group. Our pilot academy is beginning to turn out women pilots.

But these are the exceptions. Our industry should recognize that diversity is a uniting factor. We must stand together to promote awareness, to develop, to nurture, to celebrate and to empower women in our industry. Africa should be the catalyst and women should be the symbol of empowerment!

FULL INTERVIEW ONLINE
www.sita.aero/air-transport-it-review
**AIR TRANSPORT PLAYERS NEED RADICALLY SMARTER WAYS TO ENABLE AN EVER MORE CONNECTED COMMUNITY.**

**THE CONNECTED COMMUNITY**

Powerful trends are shaping a new generation of air transport community requirements, not just for greater bandwidth but for ever greater connectivity on demand.

"With the continued adoption of mobile communications, travel-related apps, e-aircraft and more, it’s clearly evident that we’re witnessing the dawning of a new era in the community’s connectivity needs and expectations," says Dan Ebbinghaus, SVP Communications & Infrastructure Solutions, SITA.

**GIGANTIC CHANGE**

To cater for air transport’s fast emerging and future connectivity needs, a transformational communications program – specifically aimed at community requirements – has been underway at SITA to deliver new levels of global and local network services.

As the hub of community communications, the airport will undergo gigantic change as it becomes ever more connected. By 2030, 18,000 potential communications users will be present at the world’s airports. We’ll see 500 new airports – a 30% increase over today – and a 40% capacity growth in existing airports. See ‘A new era of connectivity’.

**ON DEMAND**

Yet one of the community’s biggest bugbears has been the achievement of reliable, secure, high performance communications – consistently across the world’s airports – whether for airlines, ground handlers, maintenance companies, other airport tenants, or indeed the airports themselves.

"Wherever they fly, low cost, hybrid and flag carriers all need high levels of connectivity on demand," says Ebbinghaus.

"So do all the other airport tenants, be it at the airport or for back office systems off the airport. Ubiquitous usage of cloud-based applications has heightened community demands, as has the need for wireless mobile connectivity at hub and destination airports, for mobile devices and next generation e-aircraft."

**COMMUNITY REMIT**

To meet the global need, SITA has continued to roll out a massive and unique airport communications program over the last couple of years. Called AirportHub™, as an airport-wide shared connectivity platform it ensures airports can provide their airlines, ground handlers and other tenants with secure and reliable bandwidth, including wireless connectivity to access off-airport applications.

"It’s in every airports’ interest to have AirportHub to connect their entire communities," adds Ebbinghaus. "Importantly, it also helps to reduce the total cost of ownership through shared infrastructure and community solutions around the world, as part of SITA’s remit to provide value to the community."

**SCALE**

The program’s scale is truly global, with over 260 airports already deployed, delivering around 2,700 connections across the world. The plan is to cover 700 airports, dramatically expanding airport coverage and reaching 80% of airlines’ international destination airports, in the next three years.

"There’s nothing else like it," says Ebbinghaus. "Making available this standard of communication across the whole community really sets apart the AirportHub program. Again, it underlines SITA’s community role as the backbone and leader in providing air transport communications."
“WE NEEDED TO GREATLY ENHANCE AND SIMPLIFY COMMUNICATIONS AT OUR AIRPORT. THE TENANT OFFERING IS NOW A MAJOR IMPROVEMENT OVER EXISTING DEDICATED NETWORKING - GETTING RID OF A TANGLE OF MULTIPLE ROUTERS AND CIRCUITS, WITH ALL THE ASSOCIATED COMPLEXITY AND COST.”

LORENZO PASSARO
ICT SERVICES COMMERCIALIZATION, LEONARDO DA VINCI-FIUMICINO AIRPORT

“...In addition to cost savings through shared and common use infrastructure, there are vast savings in the time and hassle of sourcing from local telecom companies, managing multiple suppliers and having to cope with long lead times.”

EMBRACED
Among the 260-plus AirportHub airports are Rome’s Leonardo da Vinci-Fiumicino and Moscow’s Domodedovo, who cite the advantages they’re delivering to airlines and other tenants.

Responsible for ICT Services Commercialization, Lorenzo Passaro at Leonardo da Vinci-Fiumicino Airport cites the need “to greatly enhance and simplify communications at our airport. “The tenant offering is now a major improvement,” he adds, “getting rid of a tangle of multiple routers and circuits, with all the associated complexity and cost. As a cost-effective shared platform, AirportHub achieves this at the airport for all tenants.”

Meantime, Igor Borisov, Director Domodedovo Airport, says that that AirportHub’s wireless deployment “is great news for our airline partners. Many of them already use this service at other international airports, now it is available in Domodedovo too.”

GAME CHANGER
Ebbinghaus again: “SITA’s AirportHub is a crucial part of our evolving new generation communications services for connecting the air transport community. “These are game-changing capabilities, for full service carriers, hybrids and LCCs alike – as well as almost any airport and tenant in every corner of the globe.”

A NEW ERA OF CONNECTIVITY
In a major transformational program, SITA is delivering next generation connectivity services specifically for air transport community requirements.

The program includes SITA Connect which offers integrated network services, a variety of Internet access and cloud solutions, and services for seasonal bandwidth and bandwidth on demand – catering for the various business models of low cost carriers, hybrids and full service carriers.

GLOBAL, REGIONAL
Agreements with global network partner Orange Business Services and leading regional providers ensure competitive services and expertise on the ground, whether at the airport or in remote offices, building on SITA’s unrivalled airport footprint of 1,200 different airports served by 700 airlines.

Full article at: www.sita.aero/air-transport-it-review

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RECOGNIZING MEMBERS

As a membership organization, cross-industry collaboration has been a driving force for SITA throughout its 67-year history.

In 2015 we welcomed six new members and saw a number of member anniversaries. During 2016, we’ll present over 50 awards.

In particular, we have four members marking 60 years as SITA members – Air Serbia, Middle East Airlines, Pakistan International Airlines, and Qantas. In May they’ll be invited to a special ceremony, along with four members celebrating 50 years, at SITA’s Annual General Assembly and Air Transport IT Summit.

SITA presented two of South America’s largest airlines – Copa Colombia and Avianca – with awards in 2015 at the ALTA Airlines Leaders forum, San Juan, Puerto Rico.

Also receiving an award (25 years), in 2015 was Frank Brenner, Director General of EUROCONTROL: “I am happy that EUROCONTROL could ... contribute to the work done by SITA in developing and implementing high-end IT solutions at a global level. SITA is contributing to the continuously ongoing technical evolution that helps the European aviation industry to operate smoothly and efficiently,” he said.

SITA welcomed six new members during 2015

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<tr>
<th>New Members 2015</th>
<th>Business Area</th>
<th>Country</th>
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<td>Aerospace (Beijing) Logistics Co.</td>
<td>Air Freight</td>
<td>China II</td>
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<tr>
<td>AirAsia (India) Private Ltd</td>
<td>Airline</td>
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<td>Eastern Air Lines Group Inc</td>
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<td>USA II</td>
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<tr>
<td>Lion Air Cargo Tanzania</td>
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<td>TopBrass Aviation Limited</td>
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Members reaching long-serving milestones in 2016

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<tr>
<th>Members</th>
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<td>United Airlines</td>
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