AIRPORT OF THE FUTURE
Airport of the Future

Which airport is ready for the future?

IATA has launched a new activity, working with industry partners, to help define the way of the future for airports.

There are many initiatives linked to the term ‘Airport of the Future’. Whether they are studies by consultants, airport engineering firms, or individual airports, this is clearly a topic on many minds.

The following explains why we are looking into this important subject, what we see are the main opportunities and why we think there is a need for an industry-level collaborative approach.

The current concern

A starting point to determine whether we are on the right track for the future is to understand the passenger traffic forecast:

When we look at the passenger forecast to 2035, we see traffic is set to double in 20 years. Naturally, we wish to ensure that all those who need and wish to travel can do so. Similarly, the cargo industry needs to prepare for change to support the expectations we now have. It is anticipated that by 2035, there will be 30% more freighters flying. We want to be able to deliver goods faster, reducing the processing time on the ground and provide greater predictability.

So where will these passengers and cargo fly to and from - will we have the right airport facilities to support this traffic?

We must set this in the context that passengers and cargo customers are becoming increasingly impatient and have far more demanding expectations of the level of service they should receive. Are airports, as we know them today, able to accommodate this level of growth?
Not surprisingly our top 100 busiest airports by passenger volume do not have much excess capacity. This means that all but 4 are likely to have major infrastructure development programs within the next 10 years. In fact 45 of these 100 airports currently have an issue, either in terms of insufficient runway or terminal capacity.

Can we provide for more demanding passenger needs and the necessary capacity, if the concept of infrastructure and operations at airports remains fundamentally the same?

Is today’s path for airport infrastructure development creating the future we want?

How can we build airport capacity within land use and environmental restrictions?

The planning, design and management of airports is essentially a local affair, whereas airlines need modern, efficient infrastructure, technologies and processes for global operations – like the aircraft they buy.

Is the assumption to continue building bigger and bigger airports - as we are today - valid?

Should we assume we can handle the traffic needs of the future with more and more complex passenger, baggage and cargo processing in one airport site?

How is this going affect aircraft turnaround times?

How do we address increasing congestion on the ramp?

Did you know that US$1.2-1.5 trillion is expected to be spent on airport development over the next 15 years?

Of course it is crucial to make sure capital is well spent and changes our industry for the better. We seek to better influence local decisions to help drive a step change for the right reasons and for the benefit of all – airports, airlines, passengers and cargo.
IATA’s globally, coordinated approach

Can the industry work better together to facilitate this change with greater speed? To trigger a change in airport design and operation requires a globally coordinated approach for many aspects. Many innovations are current constrained and do not capitalize on advancements made in other domains and/or locations. Some developments may benefit from or even require standardization across airports. We also recognize that regulatory policy may need to be reconsidered in light of new approaches and technology use.

IATA is now investigating a vision for airports to provide better advice on airlines’ needs from airport facilities in future but also to work with the airport industry to determine workable solutions for all.

IATA’s globally, coordinated approach shall facilitate change

Implementation of pioneering solutions may be accelerated with
- Wider stakeholder engagement
- Enhanced collaboration and shared R&D investment
- Standardization
- Regulatory development

First steps

A key opportunity is to bring together and coordinate the wide range of IATA initiatives which already have an impact on the airport space – currently these are considered under 10 different areas:

- Airport Infrastructure Design
- Security
- Passenger
- Cargo
- Ground Operations
- Baggage
- Financial Systems
- Information and Technology
- Safety and Flight Operations
- Environment

However, this is really about working with the broader industry to see what is already being progressed at present, what may be Probable (between 2020 and 2035) and what is Possible beyond that.

We seek to determine what we could see implemented over the next 20 years that provides the change we need. And as we define this, what can be accelerated due to synergy (e.g. with common data and tracking capabilities) and where are the overlooked opportunities?

The idea is to outline concepts across the entire airport space - to define those facilitators which will provide a seamless end-to-end journey for passengers, baggage and cargo.
Emerging themes

Using this Present, Probable, Possible framework, we have already undertaken a preliminary review here in IATA. We see there are some strong themes which could allow some major changes.

We should be more flexible on what can happen ‘off-airport’

Where appropriate, why not have distributed secure entry gates within cities - with necessary secure multi-modal links?
Let’s make best use of the time the passenger spends travelling to the airport instead of centralizing all processing at the airport terminal

Why not allow separation of baggage based on the choice of the passenger?
Let’s give the passenger the choice of where and when their bags should be picked up or dropped-off

Can we make the best use of e-commerce?
Passengers should have more choice and flexibility to buy goods during the whole journey making the most use of smart technologies which they already use in daily life

It’s time to move forward with ‘advanced processing’

Why can’t the passenger experience walking-paced processing through the airport?
Passengers should no longer have to stop and queue multiple times only to show the same identification documents

Is it time to facilitate automation for airside ground operations?
Where possible new technologies should allow automatic docking with optimal coordination of airside ground service operations related to cargo, baggage, fuel, catering and de-icing

Are environmentally friendly operations already a reality?
Electric powered ground vehicles, minimal environmental impact during taxing, net-zero impact facilities, are becoming part of today’s world

And link all that together with more interactive decision-making

What about the use of predictive modelling to better plan airport operations and aircraft turnaround?
Let’s address delays and ensure all parties have the right information to make informed decisions

Why not give more choice for the passenger on how they want to tailor their airport journey?
Let the passenger choose which airport facilities they would like to use when booking the ticket and allow airport and airlines to best cater for new demands for services

And don’t we all want peace to mind during the journey as to whether our bags or shipments will arrive as planned?
It’s time to give access to real time tracking of baggage and shipments so we can know if everything is on track or if any changes need to be made to our plans.

<table>
<thead>
<tr>
<th>Off-Airport Activities</th>
<th>Advanced Processing</th>
<th>Interactive Decision Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed, secure entry gates located within cities</td>
<td>Walking pace processing through airport terminal</td>
<td>Predictive data analytics for optimum airport management</td>
</tr>
<tr>
<td>Choice for baggage drop / collection</td>
<td>Automation used for ramp operations</td>
<td>Passengers personalize the journey from home to destination and back</td>
</tr>
<tr>
<td>Use of smart technologies and e-commerce</td>
<td>Environmentally friendly facilities and operations</td>
<td>End to end tracking of shipments and baggage</td>
</tr>
</tbody>
</table>
From an initial assessment to agreed concepts

The work really now begins as we engage with industry partners in 2017 and together determine what would be the right themes for the vision and make the much needed step changes.

IATA is seeking to collaborate with other associations, individual airports, other service providers, engineering firms, manufacturers and our member airlines

With their participation, we can develop industry level solutions and options for future direction on airport investment. The primary objective in 2017 is to review and verify key themes, determine R&D standardization or regulatory development needs and then to roll-out work streams to make it happen. That means working with key airports on implementation of themes to demonstrate the way forward.

IATA hopes that with this common effort we can drive the changes now to shape the industry for the airports we need in the future.