GUIDELINES

FOR PASSENGER SERVICES AT EUROPEAN AIRPORTS

THE PASSENGER AT THE HEART OF THE AIRPORT BUSINESS

ACI EUROPE

AIRPORTS COUNCIL INTERNATIONAL

SECOND EDITION

Cover / Photo: Amsterdam Airport Schiphol (AMS)

FOREWORD

by Olivier Jankovec, Director General ACI EUROPE

Welcome to the latest edition of our ***Guidelines for Passenger Services at European Airports*** – a unique repository of airports' best practices and the essential components of passenger services.

Part of our mission at ACI EUROPE is to advance best practices in airport management and, from the outset, these Guidelines clearly inspired our members. The first edition – published in 2014 – quickly became the most successful ACI EUROPE publication to date. The far-reaching impacts of passenger categorisation, the "3P Approach" methodology (Premises, Processes & People) and the pyramids of passenger perception levels also reached airports far beyond Europe and indeed other aviation and non-aviation stakeholders in their quest for excellence in customer service.

In the four years since the publication of the first edition, the ACI EUROPE Facilitation and Customer Services Committee and its Task Force on the Passenger Experience[1] have amassed a breathtaking collection of ideas, practices and case studies based on the work done and experiences of participating airports. In monitoring and further developing our methodology throughout the world, they continue to observe and track the evolution of passenger-related technologies and tools, as well as policy developments. Based on all this information, ACI EUROPE has completely revised the Guidelines for this second edition.

Fans of the first edition will find a number of significant changes here. Each chapter has been updated and expanded with some major rearrangements to take account of new developments and trends – including the importance of technology and data exchange, staff engagement, landside security implications and the future of baggage handling. New chapters have also been added, notably on "Strategy and Quality Control" and "Enhancing the Passenger Experience through Technology". Annexes with case studies and testimonials complete this new edition.

With that in mind, these new Guidelines are not just a reminder but a comprehensive illustration of how the airport business isn't just B2B with the airlines but, now more than ever, B2C. **Today, the passenger is at the very heart of the airport business.**

I hope you find this publication useful and that it will inspire you to share your airport's passenger experience projects with us for the next edition!

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1. The following members took part in the Task Force on the Passenger Experience: Catherine Ballester (Aeroporti di Roma), Lorenzo Belicchi (SITA), Federico Bonaudi (ACI EUROPE), Claudia Castagnoli (Bologna Airport), Gerd Englund (Swedavia), Martine Fillon (Lyon), Arturo García (Flughafen München), Torsten Hentschel (TH Airport Consulting), Pawel Kolatorski (Zurich Airport), Giorgio Medici (SEA Milano), Antonio Pascale (Napoli), Gilles Rovirola (Aéroports de la Côte d'Azur).

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Tel Aviv Ben Gurion Airport / TLV

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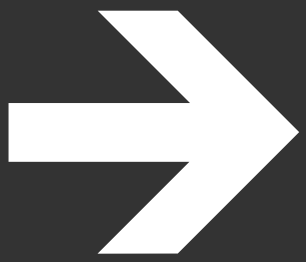

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1.1. WHY SHOULD YOU READ THESE GUIDELINES?

The Guidelines for Passenger Services at European Airports are addressed to Airport Managing Bodies seeking to enhance the services provided to passengers by identifying their changing needs, requests and expectations.

In order to achieve this ambitious goal, Airport Managing Bodies should employ the right approach and implement the recommended actions, bearing in mind all aspects that have an impact on the customer experience and avoiding side effects in other areas.

These Guidelines provide a methodology that takes into account all aspects of the passenger experience. They are also intended to be a source of inspiration by sharing success stories in the field.

This is a unique opportunity to collect all the information available in the European airport community on the passenger experience, the newest technologies, the changing needs and future trends, making them available to Airport Managing Bodies as a quick reference.

The originality of this publication lies in its attempt to question established ideas from the airport perspective, starting from the passenger's needs and expectations.

Enhancing the passenger experience is not an easy job. It requires humility as this task is essentially a psychological one where many factors interact to create a certain alchemy. That is why these Guidelines only provide a path, based on the 3P Approach, where Premises, Processes and People guide the way like cardinal points.

This document has some limitations as time and innovation proceed rapidly. That is why the need for a second edition has arisen so quickly.

The Guidelines are to be considered as a living document, an open discussion where Airport Managing Bodies, air carriers, passengers and all stakeholders are invited to share and cooperate.

1.2. HOW TO USE THESE GUIDELINES

As a passenger-focused document, the second edition of these Guidelines aims at identifying current and future trends, the role of Airport Managing Bodies and their interaction with passengers throughout their journey.

The Guidelines will act as a support tool for airports to achieve a common level of understanding on:

- Placing the passenger at the heart of the airport business
- Passengers' needs and expectations during their journey through the airport
- The effect of airport premises, processes and people on the passenger experience
- The provision of services to enhance the passenger experience
- Defining instruments for strategy and quality control
- Existing and future technologies and their benefit to the passenger experience

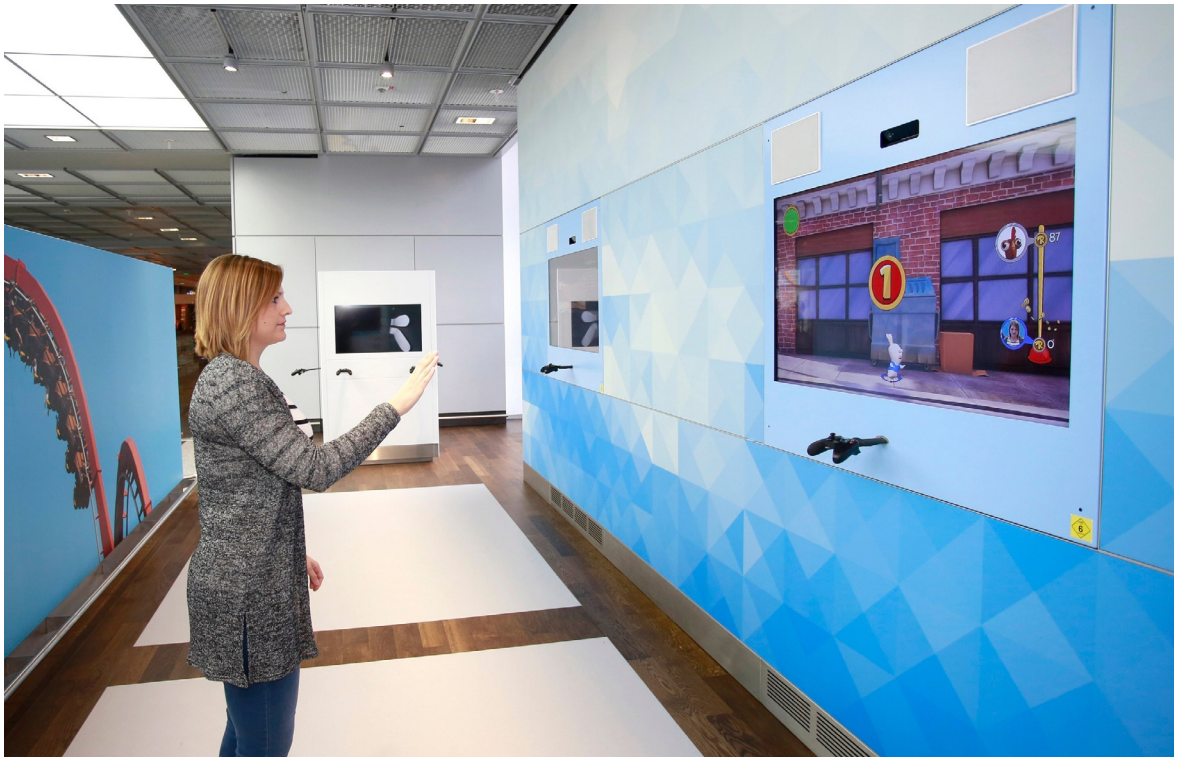
The Guidelines will explain how to evaluate the quality of the passenger services and processes and how to identify means and measures to enhance the passenger experience at an airport.

Although we recommend reading the document from cover to cover, each chapter can be approached independently, taking into account individual needs, size, traffic and location, and bearing in mind that "one size does not fit all".

Graphically, the Guidelines aim to represent airport signage and atmosphere by means of a recognisable colour scheme and iconography that not only enhance the visual appeal of the document but also contribute to making it more accessible and enjoyable. Therefore, you, the reader, will find a series of icons that identify specific elements: pictures, tables, graphs, recommendations in yellow boxes and Recommended Practice in blue boxes.

These icons should be decoded as follows:

	**PICTURES**
	**TABLES**
	**GRAPHS**
	**RECOMMENDATIONS (yellow boxes)**
	**RECOMMENDED PRACTICE (blue boxes)**



Frankfurt Airport / FRA (top) & Glasgow Airport / GLA (bottom)

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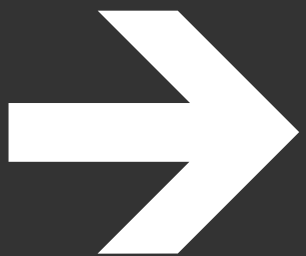
THE PASSENGER EXPERIENCE



2 2.1. THE IMPORTANCE OF THE PASSENGER EXPERIENCE

The idea of customer service relates to the genesis of trade, the Industrial Revolution, the introduction of the concept of competition and – more recently – the huge impact of telecommunications and digitalisation. These constitute important landmarks in the way businesses interact with their customers.

Airport Managing Bodies have followed this trend. The last decade has witnessed the development of the concept of the passenger experience and its importance for the industry. The passenger experience, as expanded upon in these Guidelines, addresses the end-to-end passenger journey. At the airport, it is linked to having a pleasant, predictable and seamless journey through the perception of a combination of three main factors: Premises, Process and People (what we call the 3P Approach).

Why is the Passenger Experience important?

Airport Managing Bodies operate on thin margins and aeronautical revenues do not cover operating and infrastructure costs. The commercialisation and liberalisation of the airport industry since the 1990s, the development of new business models, such as Low Cost Carriers and increasing airport competition resulted in changes to the sources of airport revenues. Increasing regulatory costs (related to security and safety, for example) have put additional pressure on airport revenues. European and national funding allocated to airports (and the whole air transport sector) represents only a fraction of the total funding allocated to other means of transport. As revenue streams have shifted, generating non-aeronautical revenues and strategies to deliver a best-in-class passenger experience through differentiation is now vital. The passenger experience is therefore a key aspect in airport **differentiation** (*vis-à-vis* competing airports and *vis-à-vis* other modes of transport as well). It also plays a vital role in **negotiations with regulators**.

The latest developments in communications and social media have provided passengers with unrivalled tools to make their voices heard, with passengers evolving from non-traditional stakeholders to holding a position of power. A good passenger experience creates a good impression, enhancing the **reputation** and **attractiveness** of the airport and the region it serves. This is particularly important in relation to **media** perception and coverage and even, potential future **investors**.

As a result of the commoditisation of air travel, the air carrier and in-flight component of the passenger journey is not the only factor that influences the decision of where to fly from. Considering that the passenger journey also includes interactions at the airport, it follows that the terminal building itself can be used to create a differentiated, and hence more price-elastic, experience offering. Thus, through the design of the **passenger terminal, the passenger experience can again be linked to airport profitability**.

The relationship between passenger experience and profit has been proven: **there is a positive link between overall passenger satisfaction and non-aeronautical revenues. A 1% increase in global passenger satisfaction – as defined in the Airport Service Quality (ASQ) Survey – generates average growth of 1.5% in non-aeronautical revenues[2].** Airport Managing Bodies should keep this in mind: investing in the passenger experience will have a positive effect on non-aeronautical revenues.

These developments have propelled the passenger experience to the top of the industry's agenda. The passenger experience is important, influential and directly linked to current airport profitability. Prioritising the enhancement of the passenger experience at the airport will have a stronger positive impact on non-aeronautical revenues and can potentially deliver a greater return on investment than those achieved through traffic increases or the expansion of commercial areas, as shown in Table 1.

TABLE 1 - **THE IMPACT OF PASSENGER TRAFFIC, SIZE OF COMMERCIAL AREAS AND PASSENGER SATISFACTION ON NON-AERONAUTICAL REVENUES**

An increase of 1% in passenger traffic leads to growth of non-aeronautical revenues ranging from 0.7% to 1%.
An increase of 1% in the size of the commercial area leads to growth of non-aeronautical revenues of 0.2%.
An increase of 1% in the global passenger satisfaction (as defined in the ASQ Survey) generates, on average, growth of non-aeronautical revenues of 1.5%.

Passenger experience management can therefore be a powerful tool in the efficient management of airports. It should not be neglected.

From an Airport Managing Body's point of view, this requires a new approach. Airports should be designed, built and operated with the passenger at their core. Coordination, cooperation and information flow amongst different partners are crucial in order to ensure the overall quality of the passenger experience.

2. ACI (August 2016), *"Does passenger satisfaction increase airport non-aeronautical revenue? A comprehensive assessment"*.

2

2.2. CHANGING PASSENGER NEEDS AND EXPECTATIONS

Passengers' needs and expectations have grown dramatically and vary for every passenger category. A once exceptional experience, air travel has today become commonplace and thus passengers are more experienced, better informed and more critical of the services provided.

Besides legislation setting minimum service requirements for a safe, secure and timely journey, passengers request hassle-free, smooth processes, the possibility to control the different stages of their journey, tailor-made services and differentiated products to meet their needs and expectations, including retail, food and beverage, entertainment and more.

It is therefore essential for Airport Managing Bodies – in their interactions with suppliers, air carriers, ground handling service providers, air navigation service providers and authorities – to be flexible and proactive enough to meet these new needs and expectations as well as predicting emerging ones.

2.3. UNDERSTANDING PASSENGER EMOTIONAL BEHAVIOUR

TABLE 2 - **THE FACTORS THAT INFLUENCE THE PASSENGER EXPERIENCE**

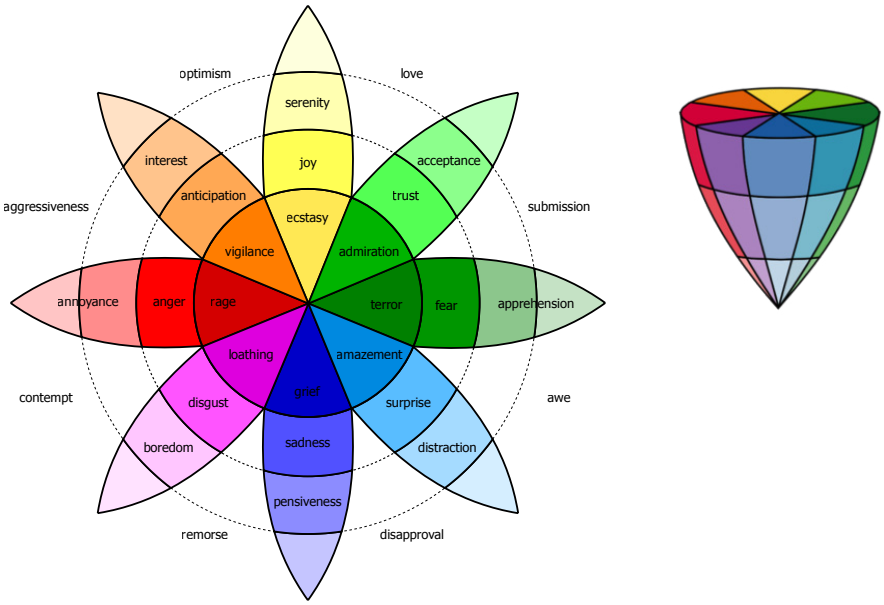
Functional factors – objective, rational and tangible indicators based on specific standards.
Emotional factors – subjective, instinctive and psychological indicators based on feelings.

Airport Managing Bodies, like other transactional and service-related businesses, have traditionally focused on functional factors. In order to improve the overall airport experience, they have recently started to become more aware of the key drivers that affect the emotional behaviours of passengers.

The analysis of emotions could be a useful tool for people (staff) to address specific situations that would otherwise be difficult to resolve using only functional skills. For instance, during incidences of disruption or emergencies, the management of emotional aspects becomes the top priority.

Robert Plutchik, in his Psychoevolutionary Theory of Emotion[3], defined eight primary emotions, as highlighted in Picture 1.

PICTURE 1 - **PLUTCHIK'S WHEEL OF EMOTIONS**



Primary: The eight sectors are designed to indicate that there are eight primary emotion dimensions. They are anger, anticipation, joy, trust, fear, surprise, sadness and disgust.

Intensity: The cone's vertical dimension represents intensity – emotions intensify as they move from the outside to the centre of the wheel. For example, a feeling of boredom can intensify to loathing if left unchecked. This is an important aspect of emotions to be aware of in relationships: if left unchecked, emotions can intensify.

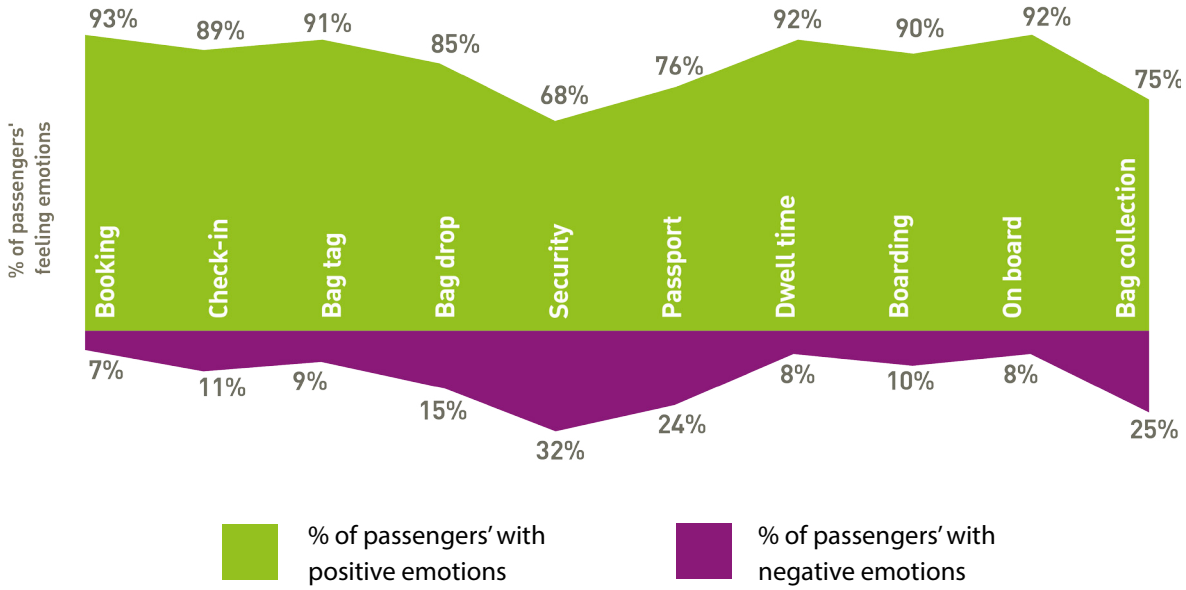
Relations: Each sector has an opposite emotion. The opposite of sadness is joy, and the opposite of trust is disgust.

Emotional factors can be combinations of positive and negative feelings. It is equally important to understand all of them, as these factors are often decoupled. For instance, reducing or minimising stress levels does not automatically create a positive emotional state.

3. Plutchik, Robert (1980), *Emotion: Theory, Research, and Experience: Vol. 1.*

The SITA Passenger Trend Survey[4] revealed that passengers are generally happy, with 85% feeling positive emotions throughout the journey (up from 80% in 2015) and with high levels of satisfaction at specific steps, such as the dwell time (92%). However, there are still some steps of the journey where passengers are less satisfied with their experience, for example, at security control, 32% of passengers felt negative emotions (anxiety and anger) and 25% of passengers felt the same in arrivals/bag collection.

GRAPH 1 - **EMOTIONAL EXTREMES DURING THE JOURNEY**



Source: SITA Passenger Trends Survey (2016)

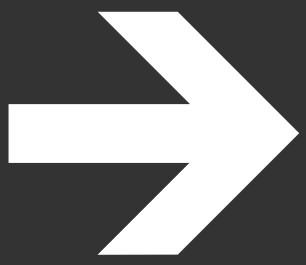
Several studies focusing on human emotions have shown that the generation of positive emotions is one of the most important key drivers of a positive customer experience. In particular, a welcoming attitude and atmosphere have a strong effect on overall satisfaction. Staff who show empathy and anticipate the needs and desires of the passengers contribute to a positive passenger experience.

Emotions give us a deeper understanding of what is important to passengers and they certainly play a key role in brand loyalty. By including emotions in the scope of the airport business, it is possible to improve the overall passenger experience and boost commercial revenues.

4. A survey of 9,000 respondents from 19 countries aimed at determining which human factors impacted passengers' use of technology at each touchpoint.

3

AVIATION STAKEHOLDERS AND THEIR INFLUENCE ON THE PASSENGER EXPERIENCE



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Passengers have increasing needs and expectations for both a smooth and tailor-made experience, especially at the airport. The airport is usually perceived as the true beginning of the air travel experience or, on arrival, the last memory of a trip by air. For foreign visitors, it also provides the first impression of the destination country. And as we all know, first impressions are the most lasting, for better and for worse.

Inconvenience caused by increased legislation and procedures (security, border control, customs, identification checks) may be mitigated through the use of self-service, automated and integrated solutions (passenger identification systems, sensor and barcode reading devices, automated border control systems, biometric systems, etc.) and better real-time communication with the passenger (SMS, social media, smartphone applications, dynamic wayfinding and location services, and other tools[5]). Closer cooperation between all stakeholders in the air transport chain is paramount if the best quality of service is to be offered.

Airport Managing Bodies are only directly responsible for a limited part of that journey, but they directly influence the overall end-to-end passenger journey by working together with each stakeholder in their specific areas of responsibility. Therefore, it is important to have a clear understanding of the role of the Airport Managing Body as well as the other key stakeholders within the airport community.

PICTURE 2 - **LEVEL OF INFLUENCE**

SMOOTH PASSENGER JOURNEY REQUIRES COLLABORATION BETWEEN ALL PLAYERS

= DIRECT INFLUENCE DECREASES

5. See Chapter 7.

3.1. THE AIRPORT MANAGING BODY WITHIN THE AIRPORT SYSTEM

3

3.1.1. AIRPORT MANAGING BODY

Airport Managing Bodies need to ensure that new terminals are designed and built taking into account not only current and future operational needs, but also a user-friendly and welcoming atmosphere for passengers.

Airports recognise that they are no longer mere infrastructure providers but also enablers of various services and facilities within and beyond their premises. As airports welcome passengers and visitors as their guests and share responsibility for the overall passenger experience, they should seek to coordinate the different stakeholders involved. This goal is partly tackled by the introduction of Airport Collaborative Decision Making (A-CDM) initiatives and is now likewise being applied to passenger processes within the airport boundaries. In the future, the scope could also encompass landside access modes (for instance, regional, high-speed train, taxi or bus).

Passenger services provided by Airport Managing Bodies' own staff or subcontracted to a third party often include parking, wayfinding, baggage trolleys, information desks, flight information displays, maintenance and cleaning of public areas, as well as PRM (Passengers with Reduced Mobility) assistance and security services. They may also include lost & found in the terminals, Wi-Fi or communications, VIP (Very Important People) assistance, waiting areas, shopping and dining areas, entertainment, etc. These services, whether provided free of charge or on a commercial basis, need to be maintained under the effective supervision of the Airport Managing Body with regard to operational and quality aspects.

Naples International Airport / NAP

3.1.2. SUBCONTRACTORS

In their relationship with subcontractors, it is important for Airport Managing Bodies to clearly define terms such as:

- The level of quality to be achieved, in terms of passenger throughput, security processing, training material for PRM Assistance Providers, number of staff and attendance, or the way to best serve the passenger.
- Continuity of service, minimum service levels, hours, etc. At airports with several terminals, having multiple security operators or PRM service companies could be advantageous in order to limit disruptions, especially in case of a labour dispute.
- Contingency plans in case of major irregular operations ensuring care, information and evacuation of stranded passengers. More detailed information on contingency plans can be found in Chapter 5.2.2.
- Communication with passengers, offering clear and straightforward information, especially in cases of delays or traffic disruption.
- Full adherence to the airport's rules (security, safety…), as well as national and international legislation relating to activities at the airport, including fiscal and labour legislation.
- Audit and service level control by the Airport Managing Body.
- Specific terms and provisions regarding responsibility, liability and insurance.

These requirements need to be documented clearly by the Airport Managing Body and discussed with all third parties.

In addition, as we will see in Chapter 7, the use of new technologies may be envisaged to improve passenger flow management or even, in close cooperation with retailers, as a way to interact with passengers to promote services and commercial activities.

3.1.3. AIR CARRIERS, GROUND HANDLING SERVICE PROVIDERS AND AIR NAVIGATION SERVICE PROVIDERS

Air carriers have a real influence on journey quality as they are usually the only stakeholder with a contractual relationship with the passenger[6]. Ground handling service providers may be contracted to supply various services to their air carrier clients. It is the air carrier's decision – via their own offers or contractual obligations – to determine the final level of quality of service they will provide to their passengers. This is often difficult to match with the passenger's expectations of a unique, smooth and pleasant journey.

6. However, the passenger may sign a contract with the Airport Managing Body giving them access to different services, such as lounges, fast lanes, premium parking, etc.

The reality is that ever increasing competition between air carriers leads to a growing cost-driven product instead of quality service-driven market, particularly when it comes to economy class and Low Cost Carrier passengers. Some air carriers are opting to focus on ticket sales and other ancillary services, providing various check-in channels and boarding, rather than taking part in the overall passenger experience. While more and more air carriers consider these overall experiences at the airport to be the Airport Managing Body's responsibility, they should be ready to commit themselves to specific service quality levels implemented via Service Level Agreements.

European legislation on air passenger rights covers issues like denied boarding, delays and mishandled bags. Although it is not an Airport Managing Body's business to further regulate air carriers' business models, it would be useful to have guaranteed minimum quality service level agreements with the air carriers covering the passengers using the airport's facilities.

According to ICAO[7], the Airport Managing Body is in charge of welcoming aircraft and their passengers (and baggage/cargo). In many cases there is no specific contractual relationship between the Airport Managing Body and air carriers as well as ground handling service providers, except regarding renting and maintenance of space, IT, check-in counters or offices.

Aside from these commercial agreements, it is important to ensure that, in any circumstance, not only national and international legislation but also the airport's rules regarding the use of the airport's terminal installations are enforced, including – when necessary – Service Level Agreements (SLAs) and minimum service quality levels in ground handling services.

An example of how the relations between Airport Managing Bodies and air carriers affect the passenger experience is the so-called "one-bag-rule". Indeed, passengers, Airport Managing Bodies and airport retailers suffer from restrictive practices introduced by some air carriers limiting the cabin baggage allowance to a single piece while charging extra for any additional items, such as airport shopping. These restrictions undermine the passenger experience causing considerable emotional distress and anxiety at boarding gates where passengers are forced to choose between paying penalties or forfeiting possessions. This has caused a number of incidents at airports, leading to a deterioration of the quality of passenger services. Furthermore, the passengers' freedom of choice when shopping is clearly reduced, and consequently their airport purchases. In addition, their one-bag allowance is subject to a hefty fee. These restrictions also threaten the economic model of European airports and their viability. Indeed, 47% of European airports were loss-making in 2015 and this proportion increased to 76% for airports handling below 1 million passengers. In the same year, non-aeronautical revenues accounted for 35%, on average, of total airport revenues[8].

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7. ICAO Annex 9 – Standard 6.1.2: *"Each Contracting State shall ensure that airport and aircraft operators provide for the expeditious processing of passengers, crew, baggage, cargo and mail".*
ICAO Annex 9 - Standard 6.1.4: *"Each Contracting State, in consultation with airport operators, shall ensure that facilities and services provided at international airports are, where possible, flexible and capable of expansion to meet traffic growth, an increase in security requirements arising from increased threat, or other changes to support border integrity measures".*
8. *ACI EUROPE Economics Report 2015: https://www.aci-europe.org/component/downloads/downloads/4813.html*

3

Given the importance of commercial revenues for airports and the increasing role these revenues play in funding airport modernisation and development, a widespread implementation of the "one-bag rule" by air carriers will inevitably lead to higher airport charges.

The revision of the Air Passenger Rights Regulations[9] will hopefully put an end to these abusive practices in the European Union in the near future. European airports, however, are encouraged to implement the ACI EUROPE Recommended Practice 01/10:

ACI EUROPE RECOMMENDED PRACTICE 01/10

Airline cabin baggage limitations, airport operations and airport commercial activities
(Adopted by the Board of ACI EUROPE on 05.01.2010)

1. Airports should ensure that their Airport User's Regulations prohibit the performance of commercial activities by users at places other than those areas specifically designated for that purpose by airports. Airports should further ensure that such prohibition is fully respected.

COMMENT: Some air carriers impose restrictive one-cabin baggage rules, which prevent passengers from carrying on board aircraft, separately from their cabin baggage; goods purchased airside at the airport, unless a surcharge is paid at boarding gates. These rules, which are not safety related result in commercial activities being performed by users without authorisation outside areas specifically designated for that purpose by airports.

2. Airports should ensure that their Airport User's Regulations require users not to impose any rule or implement any practice in relation to their passengers, which may directly or indirectly affect the airport's non-aeronautical activities or operational procedures.

COMMENT : Some air carriers impose restrictive one-cabin baggage rules, which prevent passengers from carrying on board aircraft, separately from their cabin baggage; goods purchased airside at the airport unless a surcharge is paid at boarding gates. Such restrictions, which are enforced at the gate just before boarding have caused disputes at the gate and resulted in passengers returning purchased goods with retailers. They affect the development of non-aeronautical activities by airports (see. ACI Policy and Recommended Practice 1.8 "Development of Revenues from concessions"). They also can occasionally interfere with airport operational procedures.

9. Regulation (EC) N° 261/2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights and Regulation (EC) N° 2027/97 on air carrier liability in respect of the carriage of passengers and their baggage by air.

Air Traffic Control, whether operated by Air Navigation Service Providers or by the Airport Managing Body, forms a crucial part of the passenger journey and, ultimately, the passenger experience. On-time performance in all phases of the journey has been tackled by Airport Collaborative Decision Making, which is based on 16 milestones on the principle "best planned, best served". All partners – air carriers, Airport Managing Bodies, ground handling service providers, Air Traffic Management (ATM) providers – are obliged to deliver true and honest data to provide a seamless process from an aircraft leaving the stand to arriving at the stand without unnecessary waiting times either on the ground or in the air. At present, the A-CDM process only covers the airside process but there are a number of further timestamps (check-in, baggage clearing, security control), that could be used to include the terminal processes in order to achieve Total Airport Management (TAM).

3.1.4. LOCAL, REGIONAL, NATIONAL AND SUPRANATIONAL AUTHORITIES AND OTHER PLAYERS

Other authorities, in particular border guards, customs officers and police, may not necessarily have a strong commitment to a customer-oriented approach since their task is limited to applying relevant legislation on security, border control or customs matters. Consequently, they may have far less concerns about the passenger experience, even if their activities may have a great impact on it.

However, from a passenger's perspective, authorities' staff act in fact as service providers through their direct contact with them. The quality of these services is regularly assessed by Airport Managing Bodies through questionnaires (e.g. ASQ) or direct measurements of queuing times and throughput. Based on successful experiences at several airports, Airport Managing Bodies should be encouraged to involve these authorities – and especially their staff operating within the terminal premises – in discussions to ensure better throughput and thus enhance the passenger experience.

Airport Managing Bodies have limited power to influence the way authorities fulfil their role. However, they can facilitate that role by supporting them, signing Service Level Agreements (SLAs) and putting in place measures to enhance the passenger experience. A successful cooperation with the authorities should provide the following outcomes:

- Increase of throughput.
- Reduction of waiting times.
- Introduction of standards regarding friendliness/proficiency of staff.
- Resource/staff allocation in accordance with flight schedules and actual queuing times.
- Introduction of dynamic resource allocation measures based on predictive planning and real-time flight information sharing.

More information on how to control the quality of airport processes can be found in Chapter 6.

3 3.2. AVIATION STAKEHOLDER COMMUNICATION AND DATA EXCHANGE

3.2.1. COMMUNICATION

Developing an effective stakeholder communication, coordination and engagement framework has become one of the most important success factors for airport excellence both today and in the future.

Despite the different responsibilities and priorities defined for each stakeholder, it is possible to establish common goals in order to support each stakeholder to improve the quality of the overall end-to-end air travel experience.

The following management tools and best practices have been implemented successfully by the vast majority of Airport Managing Bodies in Europe as well as in several airports worldwide.

Strategic tools: these practices focus on the long-term relationships between stakeholders. The main objective for the Airport Managing Bodies when implementing these tools is to define common priorities and to build a joint airport community culture and identity with other stakeholders and their staff.

- Establishment of local Airport Users' Committees.
- Participation of the Airport Managing Bodies in all relevant local community fora, such as the Airline Operators Committee.
- Definition of a Stakeholder Responsibility Matrix among all airport users.
- Establishment of a transparent Service Level Agreement Framework with relevant agencies and contractors.
- Distribution of airport community news and updates via magazines (paper and electronic), social media and video channels.
- Development of a stakeholder engagement activities programme, with airport visits, social events, sports, etc.
- Implementation of a Continuous Improvement and Innovation Community portal, allowing stakeholders to provide improvement and innovation ideas as well as to track feasibility and operational success.

Tactical tools: these processes focus on the daily information exchange needs and coordination among all stakeholders. The main objective for the Airport Managing Bodies when implementing these tools is to gain common situational awareness and to prevent any possible incidents that may escalate into disruptions.

- Participation of stakeholder duty managers in a short daily operational briefing.
- Establishment of an Airport Operations Control Center (AOCC) with all parties and stakeholders represented.
- Implementation of real-time stakeholder feedback processes, such as online helpdesks, surveys and feedback forms.
- Establishment of a telephone and online helpdesk to centralise all ICT, engineering and maintenance needs from airport users and stakeholders.
- Develop staff pages to provide airport operational database information to different users and stakeholders based on their needs and responsibilities.
- Establishment of a stakeholder staff information-sharing smartphone application to securely and seamlessly distribute operational updates, pictures, videos or reports to relevant members of the stakeholder community.
- Implementation of real-time electronic data interfaces to provide common situational awareness of passenger and baggage status process (boarding pass issued, baggage checked, access to security, boarded, etc.).

3.2.2. DATA EXCHANGE[10]

The need for new data exchange between Airport Managing Bodies and other stakeholders involved in the passenger journey has increased over the last years. Mobile tools keep travellers connected at home and on the move. There is also a need for integrated data (including other aspects like accessibility).

An increasing number of passengers enter the terminal having already performed different airport procedures; therefore, airport users' capacity management requires updated information on passenger status. This information is necessary to manage passengers at touchpoints like bag-drop, security and border control.
Airport Managing Bodies are required to coordinate activities and run their service processes according to Service Level Agreements with challenging quality targets; more and more often they commit to such targets by subscribing Agreements with National Authorities and other relevant stakeholders.

10. Based upon the document *"The needs for data exchange between airport managing bodies and air carriers". ACI EUROPE, Facilitation and Customer Services Committee, Task Force on Data Exchange. January 2017.*

3

3.2.2.1. THE BENEFITS OF PASSENGER DATA EXCHANGE

Different types of data need to be exchanged in order to improve the passenger experience and all stakeholders' daily operations, as summarised in the following table.

TABLE 3 - **THE AVIATION STAKEHOLDER DATA EXCHANGE MATRIX**

Stakeholder	Challenges	Required data	Shared data
Airport Managing Body	Keep the SLAs Increase non-aeronautical revenues Improve operational workflow	Passenger information	Location of the passenger in the terminal Terminal situation and environment Retail offers
Air Carrier	Meet the Target Off-Block Time (TOBT)	Location of the passenger in the terminal	Passenger information
Passenger	Improve travel experience Find best deals in retail	Travel updates Live information at the airport Guidance Retail vouchers	Passenger information Current status and location
Border police	Keep the SLAs Reduce operational costs	Updated and expected passenger flow information	Resource allocation
Security company	Keep the SLAs Reduce operational costs	Updated and expected passenger flow information	Resource allocation
Ground Handler	Reduce operational costs	Baggage information	

The implementation of A-CDM and TAM methodologies, disciplines and culture is the best way to ensure the provision of services when several stakeholders are involved.

TABLE 4 - **BENEFITS OF PASSENGER DATA EXCHANGE**

1. Passenger satisfaction increases (wow factor) because:

A. Services are seamless
B. Passengers appreciate not being "bounced" between different stakeholders
C. Passengers do not easily understand that there is no one actor responsible for each touchpoint (the processing system is viewed as a whole)

2. Reduction in the number of complaints

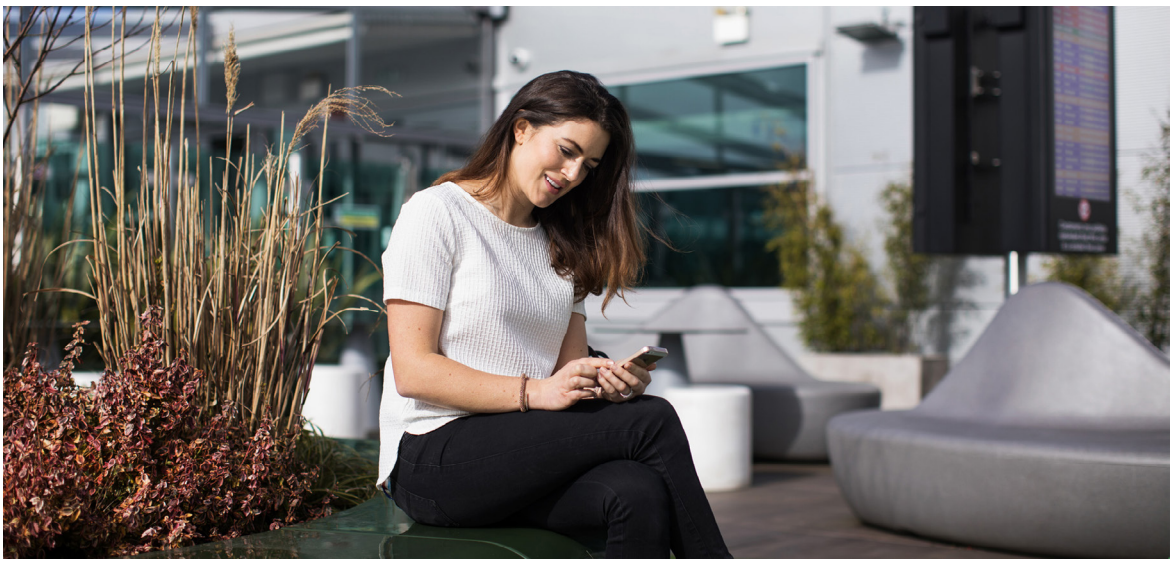
3. Reduction in the extra costs for Air Carriers and Airport Managing Bodies:

A. No need for extra staff
B. No need for extra counters/desks
C. No need for overtime
D. Staff under less pressure

4. Airport Managing Bodies and Air Carriers prevent and avoid poor service instead of "patching up" services:

A. Less overbooking
B. Reduced layover expenses
C. Less re-scheduling/re-routing of passenger flights

5. A satisfied passenger spends more money (up to 45% more than an unhappy passenger)



Bristol Airport / BRS

3

3.2.2.2. PRIORITIES FOR NEW DATA EXCHANGE

The following passenger information items should be exchanged in a secure, controlled and anonymous way among relevant airport operational stakeholders:

Passenger details (available at booking/check-in time)

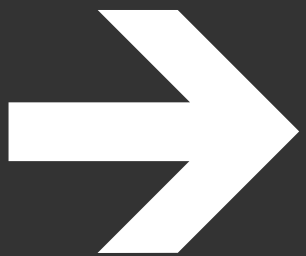
- Travel schedule (flights, connections, final destination and time schedule)
- Type of travel (business, vacation).
- Passenger category (single, frequent-flyer, family with children, group of friends, reduced mobility, elderly…).
- Baggage information (number of pieces, weight, additional cabin piece, special baggage).
- Use of bag-drop.
- Use of security fast-track/priority-boarding.
- Mode of transport to the airport (private car, car sharing, transportation network companies or public transportation).
- Passenger preferences (meal, hobbies, previous airport experiences). -> important for understanding and influencing the retail behaviour.
- Preferred communication channel (email, phone, shared app).
- Transfer rebooking in case of missed connections.

Real-time passenger location:

- Status (booked, checked-in from home, travelling to airport including estimated time of arrival – especially if late arrival, checked-in at the airport, passed security, passed border control, boarded).
- Best-known current location.

4

THE PASSENGER AT THE HEART OF THE AIRPORT BUSINESS



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In these Guidelines we discuss the different tools that Airport Managing Bodies can use to put the passenger at the heart of their business. The world has changed not only for airports but also for passengers. Various trends will have an effect on how passengers perceive the services and their expectations are.

4.1. PASSENGER TRENDS

New trends in technologies, individual services and products, will come and go, but there are three clear broader trends that greatly impact on the passenger experience: today's passengers are more informed, they want to enjoy a more personalised experience and they are far more empowered.

4.1.1. INFORMED PASSENGERS

Passengers today are more informed than ever before; information is shared among the passengers and airport users more openly and instantaneously. Therefore, the availability of up-to-date, accurate and easily shared information is consistently cited as one of the top priorities to ensure a positive passenger experience at the airport.

Helsinki Airport / HEL

Airport Managing Bodies should provide accessible, real-time and accurate information to passengers, such as:

- Flight information (including delays).
- Waiting times at different touchpoints, such as security and border control.
- Gate information (including directions and distance to them).
- Baggage claim information.
- Airport operations information (including weather or other disruptions, irregular operations, road conditions, parking availability, etc.).
- Legislation in force (including security, passenger rights and border control).
- Signage and wayfinding (including clear directions to information desks, police, toilets, leisure facilities, retail, eateries, etc.).
- Information on public transport.

It is important that Airport Managing Bodies provide information to passengers via multiple channels in order to best meet their expectations and evolving needs:

- Airport websites.
- Airport social media.
- Smartphone applications.
- Displays and information counters in terminals, parking sites, intermodal train and bus terminals, and hotels.
- Information counters (virtual or staffed).
- Mobile guides.
- Others

Airport Managing Bodies are also encouraged to work with air carriers to share information with passengers prior to disembarkation.

4.1.2. THE 'ME' PASSENGER: PERSONALISATION AND CUSTOMISATION

Passenger demographics are evolving, so Airport Managing Bodies should consider the different needs of the various types of travellers passing through their terminals. It is therefore essential that they identify the different categories of passengers in order to provide services accordingly.

Passengers want to personalise and customise their travel. They want to plan their trip according to their needs and expectations using tools that make this possible. The same person can be a business traveller today and a holidaymaker travelling with family or friends tomorrow.

Section 4.2 provides a sample of passenger categories in order to plan appropriate services for them. Section 7 explores technologies that will enable airports to further personalise information for specific passengers (for example, social media, augmented reality, context-aware solutions).

4.1.3. THE EMPOWERED PASSENGER

Knowledge is power and this is certainly true for passengers. Keeping passengers informed with accurate, real-time information empowers them to make their own personal decisions on the different stages of their journey, including time spent at the airport. Airport Managing Bodies should be able to guide passengers via online services and mobile apps to provide information and support to simplify their travel experience at all stages.

New technologies and tools can help passengers take control of their journey through:

- Web check-in
- Self-service check-in kiosks
- Bag drop counters (agent-assisted or self-service)
- Self-boarding gates
- Automated border control (ABC)
- Smartphone applications providing personalised real-time information for the airport processes as well as for general information and commercial services

However, care must be taken to ensure that the passenger experience is genuinely enhanced by adding such services. The overall impact of such technologies should be a positive one.

4.2. PASSENGER CATEGORISATION

Traditional categorisation is based on the different products offered by air carriers to passengers. These products are linked to different levels of services, for instance, waiting times for check-in, number of baggage allowed, lounge access, etc.

Another possibility is the frequency of travel. For some passengers the journey is a once-in-a-lifetime experience and so they expect good instructions and need reassurance. For others, the journey is routine and should be hassle-free. Table 5 shows the categorisation commonly used today.

TABLE 5 - **EXAMPLES OF TRADITIONAL CATEGORISATION OF PASSENGERS**

BASIS	IMPLICATION			
Air carrier products	First class	Business	Economy	Travellers on Low Cost Carriers
Personal needs	Unaccompanied Minor (UM)	Elderly	Cultural background	PRM
Travel frequency	Frequent flyers	Few times a year	Seldom	First-time travellers
Number of people	Groups	Family	Cruise hub	Alone
Process-oriented	Arriving	Departing	Transfer	Multimodal

4

Airport Managing Bodies may differentiate passenger flows depending on the time the passenger spends at different touchpoints. For most airports, less than 30% of passengers are travelling alone. For example, families and groups easily create a crowd as they speak to each other, tend to stand closer together and occupy more space than people travelling alone.

Airport premises are often designed for a single passenger at a time. If an airport is a charter destination, the airport premises should be in line with that.

PRM and people with disabilities are entitled to assistance (EU Regulation 1107/2006 and ECAC Doc 30). It is important to remember that they may also have different needs while travelling with family or alone, if they are frequent travellers or not, and for all different attributes in Table 5. A case study (in Annex 2) on elderly travellers gives more detailed information about the demands and requests from this passenger category.

A process perspective is another means of categorisation. Passengers' expectations may vary at each and every step of the process. Of course, a single person may fit into many of these categories.

4.2.1. A NEW APPROACH

Passengers can also be seen from a different perspective. We have talked about informed, personalised and empowered passengers, but the passenger experience also depends on passengers' own feelings and their mindset when they travel.

Elderly people and first-time travellers may need more personalised services. Families need more space and spend more time in security lines. Passengers with different cultural backgrounds may interpret signage differently and request different kinds of food and beverages. Airport Managing Bodies need to find ways to give information to passengers in their language and use commonly understood signs or pictograms. In some cultures, the meanings of colours or even numbers may be interpreted differently, affecting passengers' behaviour and their feeling of safety.

"New-generation" passengers want to customise their own travel; they want full flexibility to fit the needs of the moment. They are not followers; they want to do their own thing, in their own way.

It is essential to understand what kind of travellers are your airport's most valuable guests!

Categorisation is based primarily on people's attitudes and values, not just their behaviour at the airport.

Identify which passenger category spends time and money at your airport and develop your offers, communication and infrastructure.

TARGET GROUP IDENTIFICATION

A behaviour profile is a fictitious description of a typical user representing a target group, useful for making complex information about passengers more accessible and explicit. It distinguishes people based on their motivations, desires, problems and behaviours. A behaviour profile can be used to:

- make decisions on a strategic level concerning detailed customer and business solutions
- prioritise initiatives based on customer benefits
- adapt messages (communications)

PICTURE 3 - **EXAMPLES OF BEHAVIOUR PROFILES**

The service-demanding cautious traveller | **The cost-conscious adventurer** | **The well-planned dreamer** | **The comfort seeking luxury traveller** | **The efficient business traveller**

Source: Swedavia

4

PASSENGER JOURNEYS – THE SAME JOURNEY, DIFFERENT EXPERIENCES

A passenger journey describes a process based on the passenger's perspective, from inside and out. Its objective is to gain a deeper understanding of the passenger's situation, approach and drivers. It is a way of ensuring that people do not tackle the wrong problem or miss out on business opportunities.

- Each behaviour profile leads to a specific passenger journey
- Needs, behaviours, expectations, thoughts, feelings and experiences are given visibility in every aspect of the journey
- Highlights and lowlights are identified – this helps to prioritise measures
- Creates an overview and consensus on the passenger's needs – focus on the whole experience
- Visualises the passenger's interaction with the airport over time regardless of the channel – increased collaboration within the organisation
- Shifts focus from the organisation and departments to the passenger's reality – more accurate design of services

In addition to ASQ, ACI World has developed a set of Passenger Personas[11] as an approach to passenger categorisation. For more details, see Chapter 6.2.5. Categorisation can be based on people's behaviours, but that is only one dimension that can be attached to a passenger experience. Examples of dimensions relevant to designing the passenger experience may include the following:

→ TIME SPENT AT THE AIRPORT BEFORE DEPARTURE

- Passengers arriving at the airport a short time before departure expect efficient processes, reduced operations times (hand baggage, web check-in, mobile boarding pass) and will only use a few of the commercial offers available due to the lack of time.
- Passengers arriving at the airport well ahead of their scheduled departure time still expect efficient processes but may need more time to pass through or have planned to enjoy different services offered by the airport. They expect comfortable and relaxing waiting areas, stimulating commercial offers, communication services and possibly innovative leisure activities.

→ DURATION (NUMBER OF NIGHTS OUT)

- Three nights out seems to be a separating factor for different passenger clusters, as far as airport processes are concerned.
- Below this limit, hand baggage seems to be enough to fit the needed personal belongings for the trip; parking is usually considered affordable; online check-in is the most suitable method and security control is the first airport touchpoint.
- Above this limit, a bagdrop or traditional manned check-in desk is the first airport touchpoint; public transport or taxi could be a cheaper way to reach the airport; commercial offers make it possible to purchase items that will be useful at the destination.

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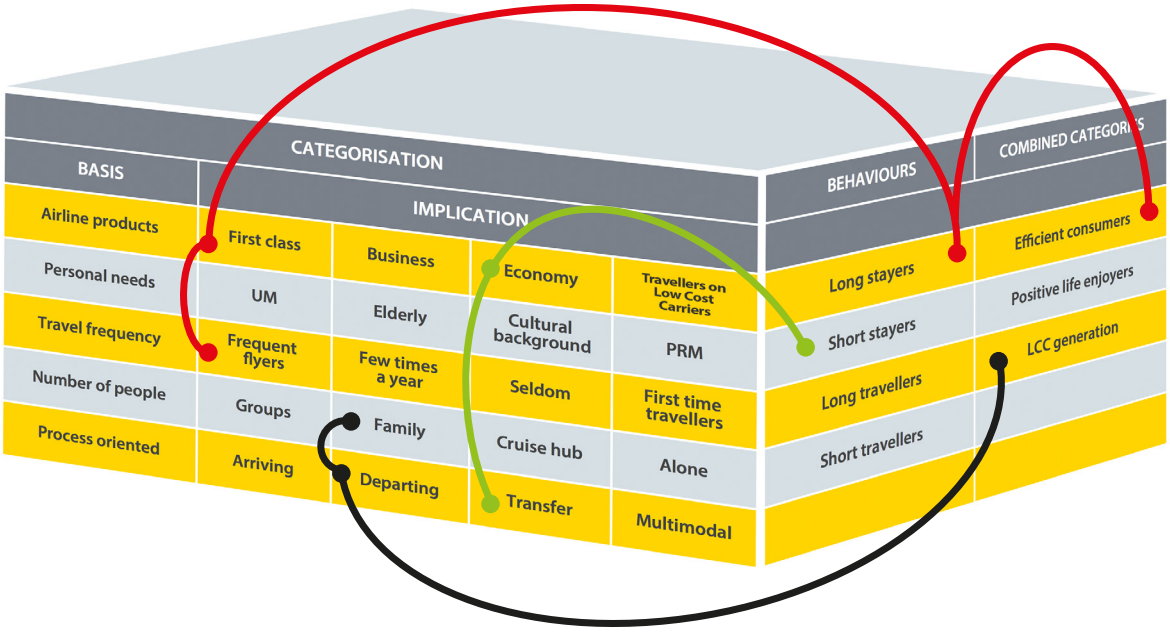
11. *ACI Passenger Personas: A New Approach to Passenger Profiling (ACI, 2017)*. This guide offers six key personas that represent different passenger profiles and allows Airport Managing Bodies to strategically create different passenger experiences to meet the needs and expectations of different passenger categories.

4.2.2. PASSENGER CATEGORISATION: MULTIDIMENSIONAL MODEL

All dimensions can be cross-referenced in order to create a map of passenger needs and expectations.

Table 5 (see page 35) can therefore evolve into the following multidimensional model:

TABLE 6 - **PASSENGER CATEGORISATION: THE MULTIDIMENSIONAL MODEL**



Any of the mapped attributes can be interrelated and are linked to the more usual passenger profile attributes: age, gender, education, occupation, reason to travel, domicile, etc.

Each Airport Managing Body should analyse its passenger community in order to better categorise it and find the main dominant profiles, that describe the reference market more accurately.

4

4.3. UNDERSTANDING PASSENGERS' NEEDS AND EXPECTATIONS

Once an Airport Managing Body has identified the categories of passengers likely to use its premises, the next step is to determine what services should be offered – based on the type of traffic (international, domestic, etc.) and applicable regulatory requirements.

Airports can be operated at the minimum level, complying with the local, regional, national and international legislation. However, in order to differentiate their services, the minimum level may not be enough. We have identified three levels of passenger perception: **required**, **expected** and **valued**. These levels can be used as tools to set goals for passenger services.

Firstly, the required level consists of the "must-do" mandatory aspects set either by authorities, Airport Managing Bodies or passengers. Secondly, the expected passenger perception level implies a series of services that an airport must deliver in order to be considered a good airport. Thirdly, the valued level consists of services that surprise passengers in a positive way. These three levels can differ from airport to airport – and from terminal to terminal within the same airport – depending on the airport's operational approach and the passengers' currently relevant needs.

REQUIRED

- The airport offers basic services to enable passenger traffic.
- Level of service meeting regulatory requirements and basic passengers' needs and expectations.
- Premises are clean, the processes meet the legal requirements and the traffic mix is supported by the necessary services.

EXPECTED

- The airport wants to support a varied mix of passengers with different needs and expectations and aims to provide a good passenger experience to all of them.
- This level presupposes that there are already some high-level services in place, in particular in the commercial offer.
- Over time some elements become expected, so constant renewal is a must, e.g. free, fast and easy-to-register Wi-Fi used to be highly valued in the past but is now an expected norm.

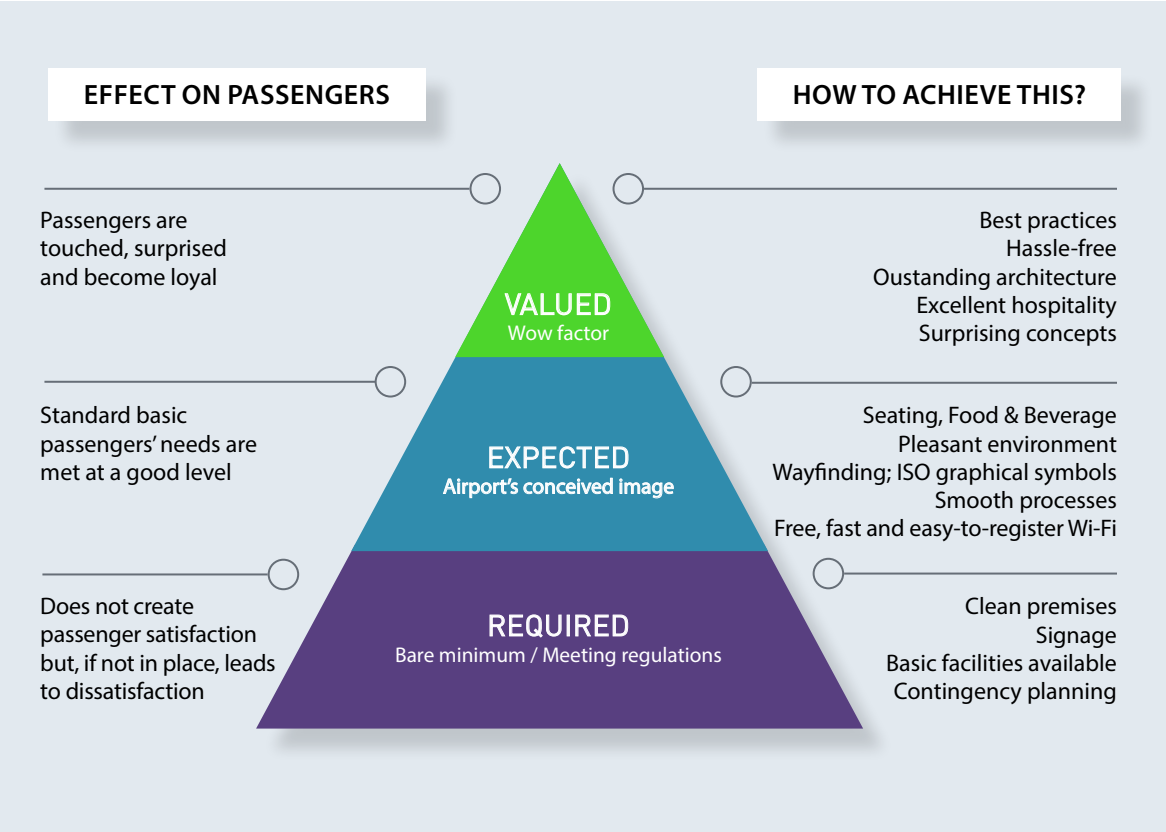
VALUED

- Value can be added by introducing new ways to go through the compulsory steps. It can mean dynamic signage or guidance via smartphones/tablets.
- The element of "wow factor" needs to be there, and this can be either a very simple differentiation tool or a major development.
- "Wow factors" could be excellent hospitality or surprising concepts.

Picture 4 provides some examples of general passenger perception levels.

4

PICTURE 4 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: GENERAL**



In the next chapters we look at the passenger experience in relation to these three levels, but also from three different angles. The passenger experience is a sum of interrelated but not inter-changeable factors; the design and functionality of the **Premises**, efficient and passenger focused **Processes** and encounters between **People**.

TABLE 7 - **PASSENGER EXPECTATIONS**

PREMISES	PROCESSES	PEOPLE
• Design, from just another airport to an airport with a character of its own • Functionality - Facilities are purpose-built, not drag and drop - Wayfinding is instinctive, natural • Agility, the ability to adopt new technologies and processes • Systems and technology to support and enhance the passenger experience	• Smooth and measured processes • Service design • Working together • Reliable and predictable processes	• Friendly and smiling • Going the extra mile • The whole airport community working for the benefit of the customer

Oslo Airport / OSL

5

ENHANCING THE PASSENGER EXPERIENCE THROUGH THE 3P APPROACH

5

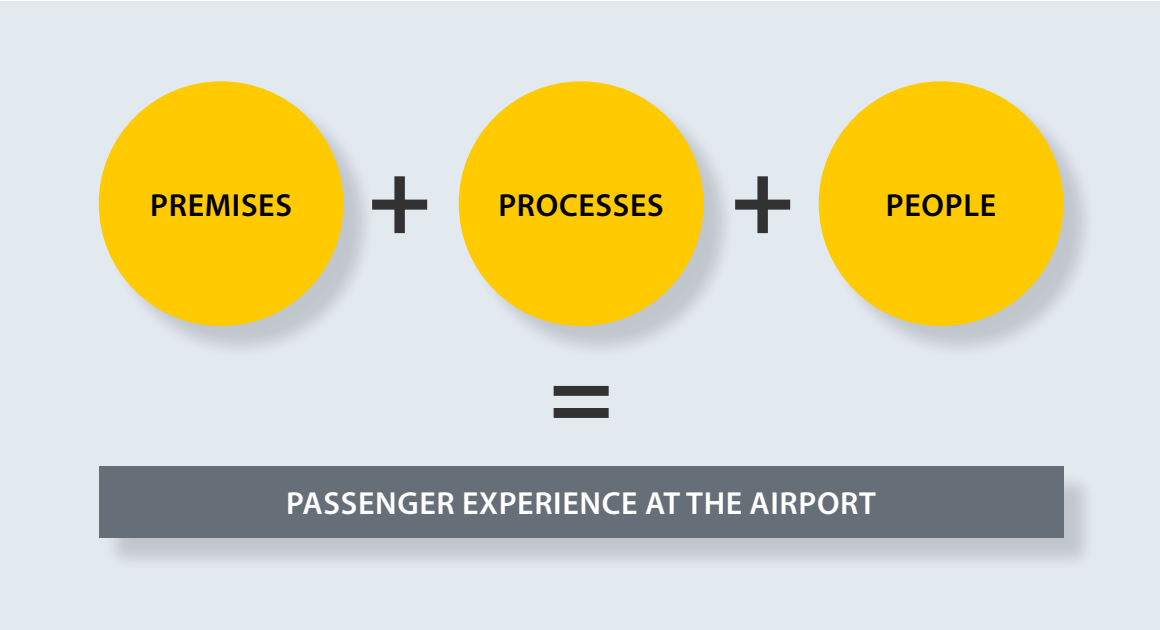
The three main elements – Premises, Processes, People – together constitute the pillars of the passenger experience.

The design of the **premises** needs to be functional, but also needs to appeal to the passenger and provide good ambience. Terminals must be clean, attractive, easy to navigate and identifiable, representative of the destination.

The **processes** at the airport must run smoothly, avoiding unnecessary steps along the way and be predictable without major negative surprises. An airport must guide the passenger through the relevant processes and communicate with passengers by all possible means.

Service is always provided by **people** to other people. Even with the introduction of self-service in different phases of the process, Airport Managing Bodies must acknowledge the need for touchpoints where staff assistance is needed and welcomed. Staff must treat passengers with respect, taking into account cultural backgrounds and the needs of different passenger personalities and special conditions.

PICTURE 5 - **THE 3Ps CONSTITUTING THE PASSENGER EXPERIENCE**



Balance between these three elements is essential. If the premises are of state-of-the-art design, but the processes are not clear and easily understood, the experience will not be good. If the processes run smoothly, but the premises are dirty and unpleasant, the experience will not be pleasant. One negative interaction with a member of staff can also ruin the passenger experience.

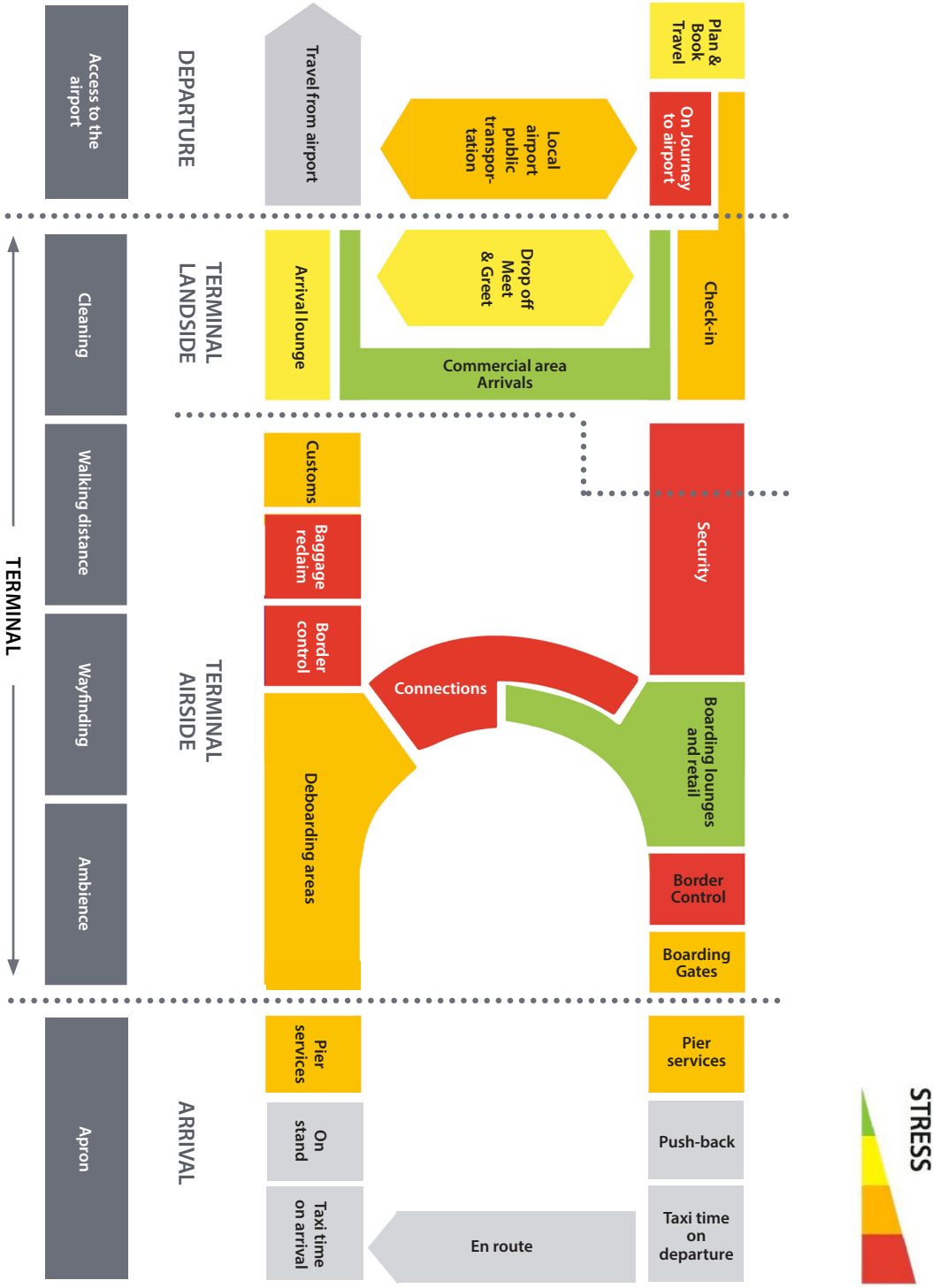
All of the 3Ps need to be addressed and optimised for each part of the passenger journey to ensure a good passenger experience.

A key aspect of the passenger experience is the stress experienced by passengers during their journey (Picture 6). On the way to the airport, within the premises and once they leave them, passengers face several touchpoints and areas where stress levels can rise and where special attention should be paid to make the journey easier. Successful initiatives addressing the most stressful situations will have the highest positive impact on passengers. Picture 6 provides an example of how the processes are generally related to stress levels. Identifying the most stressful touchpoints at each airport helps to focus on the critical processes.

The following sections discuss the three elements and show how the Pyramid of Passenger Perception Levels can be used. Examples of how Airport Managing Bodies can use the pyramid to set their goals to achieve the desired level of passenger experience are provided in the following sections. The Pyramid of Passenger Perception Levels can be applied to smaller or bigger service points in accordance with the airport's needs.

Lyon–Saint Exupéry Airport / LYS

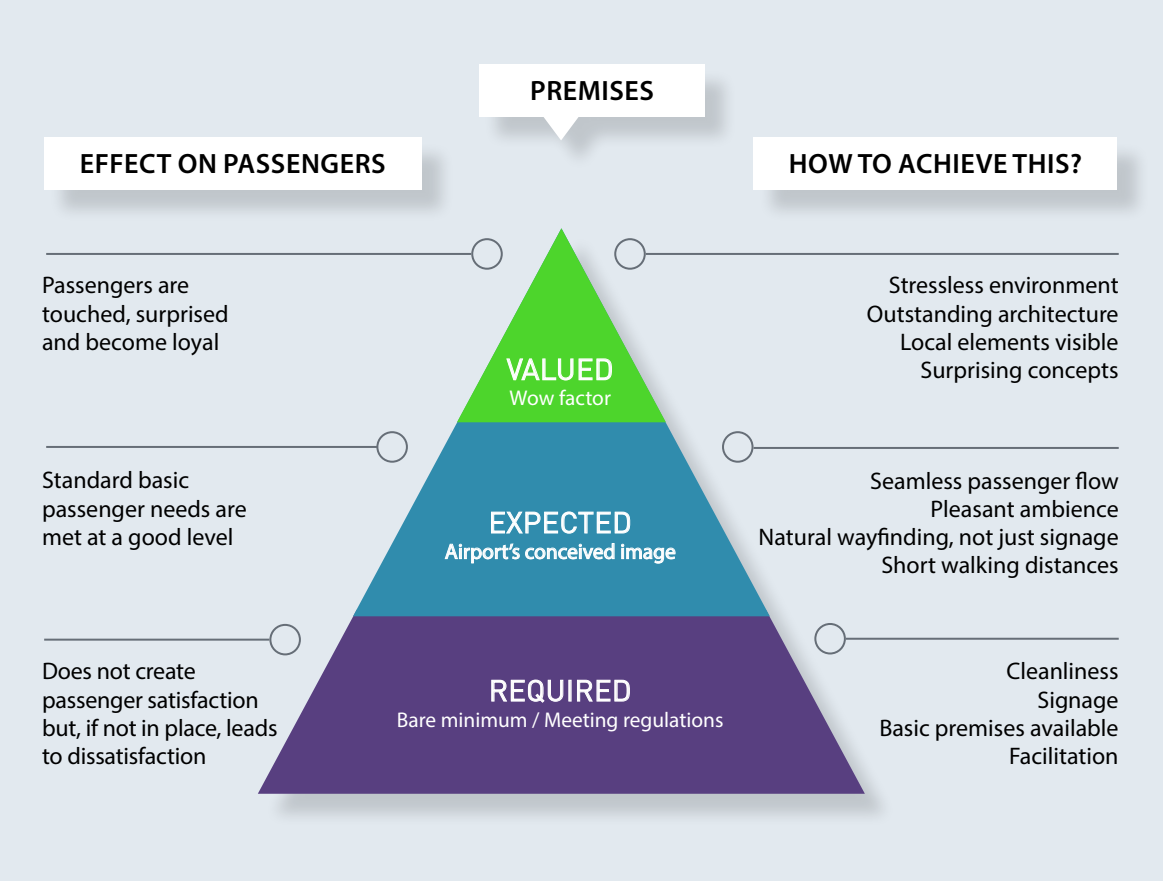
PICTURE 6 - **THE PASSENGER JOURNEY STRESS CHART**
(based on the airport process diagram designed by Marketing and Insight - Heathrow Airport)



5.1. THE PASSENGER EXPERIENCE: PREMISES

The picture below shows how to use the Pyramid of Passenger Perception Levels for the improvement of premises.

PICTURE 7 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: PREMISES**



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5.1.1. AIRPORT ACCESS: INTERMODALITY

Passengers journeys rarely start or end at an airport. The airport, instead, works as an intermodal hub where passengers transfer between different modes of transportation to move from one point to another. In order to maximise the customer experience, fast, efficient and cost-effective transfers to and from an airport are essential.

For larger hub airports, good intermodal interfaces also mean that the airport will work as a multimodal hub, where train–bus, bus–bus or train–train transfers can occur on a large scale. These increased passenger flows have the potential to increase the frequency and number of destinations served by public transport.

In order to facilitate good intermodal interfaces at airports, all transport/access services need to be easy to locate and access. Good signage and real-time traffic information are key elements to facilitating good intermodal interfaces.

The integration of the transport network should be strengthened by competent authorities and other transport services providers, focusing on real and effective co-modal solutions. Airports integrate air transport, rail and road as access points of the Trans-European Transport Network. Investments in Intelligent Transport Systems (ITS) are of special interest in order to improve the customer experience. These are systems in which information and communication technologies are applied in the field of transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport (Directive 2010/40/EU).

As shown in Picture 6, the first signs of stress appear when the passenger is approaching the terminal area, either by car or by public transport, and is unsure about terminals and time. Cooperation with the intermodality partners is vital in order to make the experience good.

EMPOWERING THE PASSENGER: WHAT DOES IT MEAN FOR INTERMODALITY?

- Provide information on transfer to the airport and from the arrival airport to the final destination prior to the trip.
- Facilitate access for air passengers (e.g. typically, luggage storage spaces on-board trains are not large enough for air travellers, appropriate baggage carts, sufficient and spacious elevators).
- Signage must be very visible and clear.
- Ensure short transfer paths.

5.1.2. TERMINALS

In this section, we will use examples and insights to highlight those factors governing the management of airport terminals and opportunities to improve them. We will discuss what elements should be taken into account to guarantee passenger comfort and well-being, and to ensure that time spent at the airport is remembered positively. More than a list of dos and don'ts, we offer some individual examples and "food for thought" about how certain circumstances can be optimised.

The following areas influencing the passenger experience will be highlighted in the cited sections:

- Walking distances (5.1.2.1.)
- Natural wayfinding (5.1.2.2.)
- Ambience (5.1.2.3.)
- Cleanliness and maintenance (5.1.2.4.)

Rome Fiumicino Airport / FCO

5

5.1.2.1. WALKING DISTANCES

Walking distances are inherent to premises and primarily depend on the functional design of the terminal layout. Changes are possible through infrastructure adaptations/ modifications or different allocation of resources (e.g. gates, baggage reclaim belts, check-in counters, bag drop-off counters).

Passengers perceive walking distances differently depending on factors such as available time, passenger numbers, physical condition, number of carried items and terminal ambience, as well as services and attractions offered on the way. The difficulty reaching a certain location also adds to the perceived walking distance.

To enhance the passenger experience, walking distances should be continuously optimised. Main indicators are total walking distance from landside to the gate on departure, from the gate to landside on arrival and between gates for connections. Airport Managing Bodies need to carefully analyse the walking distances for different passenger categories and behaviour profiles. Some of them may be prioritised, such as premium passengers (commercial purpose), passengers travelling on specific flights or passengers with special needs or conditions.

In order to reduce walking distances inside terminals, the following design or operational measures are recommended:

Terminals design with:

- short concourses.
- bus-gates close to the airside shopping facilities.
- check-in and bag-drop facilities located on the way from airport access (e.g. curbside, parkings, public transportation) to the security control.
- easily accessible service facilities.
- automated people movers (APMs) to connect different concourses and terminals.
- few level changes, deflections and orientation points.

Allocation of gates with shorter walking distances to flights:

- with more passengers.
- with more premium passengers.
- with a high percentage of PRM.
- to business destinations.
- to certain air carriers.

Allocation of resources (gates, baggage reclaim belts, check-in/drop-off counters) during off-peak times with short walking distances only.

Positioning of flights with many connecting passengers close to the connecting flights.

Passengers should be kept informed of walking distances, since many of them may not be familiar with the premises. Therefore, walking times to the gates should be displayed at key orientation points in the terminal, either on fixed or customised signage, combined with other flight information. Passengers who still have enough time to reach their gate will then have the opportunity to use the service facilities and enjoy a more relaxed airport experience.

5.1.2.2. NATURAL WAYFINDING

When we think of "natural wayfinding" (also known as "intuitive wayfinding"), most of us first think of options for signals, guidance and signage to support people in finding their way. But is it enough just to post a sign on every entrance, door and hallway? The answer to this question is not easy, because natural wayfinding depends not only on the passengers themselves and the decay of their natural wayfinding abilities but also on the architectural properties of a building and/or its spaces. The more turns or changes of direction, level and buildings, or parts thereof, the more important it is to rely on a variety of influencing factors in guiding people to their destinations. In other words, one means of information presentation is not enough; several are needed.

Natural wayfinding may be incorporated into the terminal design while keeping a smooth passenger flow in mind. The minimisation of levels and direction changes as well as the number of decision points for orientation through the terminal should be one of the design objectives.

Fundamentally, process-oriented shapes and structures of buildings should promote natural wayfinding. This means that a fairly straightforward progression – from parking or drop-off to the ticket office and onward to check-in, boarding card checkpoint, security and border control and commercial areas, then to the gate – eases natural orientation and gives passengers the feeling that they are doing the right thing, since they never have to deviate from their course, which follows a logical route.

The following topics are now considered in detail:

- Human behaviour and natural wayfinding
- Predictability
- Simplicity
- Selective signage
- Intuitive human behaviour patterns

5

HUMAN BEHAVIOUR AND NATURAL WAYFINDING

When people enter an unfamiliar space and the guidance systems seem unclear, frustration and stress levels increase, especially if fear of flying or time pressures are also present. In moments like these, most people perceive their surroundings as dangerous. As a result, certain parts of the brain concentrate on pure survival and interrupt conscious and rational thought processes. In such situations, the brain stem assumes control of decision-making processes and orients itself towards its experiences and its instincts or intuition. When that happens, people react unconsciously in line with the most primitive levels of their characters.

Sounds, background noise levels, smells and sources of light are perceived more intensively and processed through the brain. The more diffuse and intense this mixture, the higher the stress level and the greater the adrenaline release.
Wayfinding systems are measured by how users experience an environment and how signage facilitates getting from point A to point B. Wayfinding information should reassure users, create a welcoming and enjoyable environment and, ideally, provide answers to potential queries before users have to ask for assistance.

PREDICTABILITY

The key is predictability. In part, this refers to the wayfinding and signage mentioned earlier. Airport Managing Bodies should make sure that such signage differs significantly from other information in the same space (e.g. through its colour, form or size) and that it is clearly visible and recognisable (e.g. through its position and type size and/or font). Recognition value is important here as it helps the passenger identify the relevant information quickly in the "information jungle" of the airport.

Most Airport Managing Bodies, if not all, have already implemented these principles successfully. However, considering signage concepts from the international passenger's point of view gives a different perspective. Global travellers go through different airports, where they must repeatedly deal with subconscious confusion, as well as adapt and re-orient themselves to the signage of each airport. Wouldn't it be helpful as regards recognition, reduced uncertainty and stress, and wayfinding to make signage look the same in all airports? Yes, indeed! But the individuality and exclusivity of each airport brand would be lost in the process, as signage is often a key element in the overall image of an airport.

Information psychology tells us that our short-term memory can store a maximum of only seven visual or acoustic elements or pieces of information (in our case, directional information or signs) at any one time. "Short-term" here means a storage duration of an average of 20 seconds to a maximum of 30 seconds. Only a repetition of this information creates a link to long-term memory and provides the confidence and confirmation that we are acting correctly, which in turn activates the neural reward system in our brain and relaxes our perception (a well-known effect in advertising, in which the company or product name is mentioned/shown several times during a short spot so that we remember it well and, hopefully, in a positive way).

→ SIMPLICITY

Thus, it follows that a point of information should contain no more than seven elements at one time (according to Miller's Magical Number[12]) in order to avoid burdening people's cognitive abilities and to avoid visual pollution. Furthermore, information points should be no more than 20 to 30 seconds apart (30–40 metres at a normal walking speed of 5 km per hour), or they should be designed and displayed for the line of sight; that is, people should be able to see and identify the next point of information from the location of the previous one (predictability).

Another aspect to take into account is spatial overview. Spatial orientation and information availability play an important role. Is the available information logical and plausible or does it confuse the passenger even more? Does it provide clear guidance or do signs point toward closed doors, hallways that are not immediately visible or other obstacles? Once information has been assimilated, it must be ensured that the path to the next piece of information is free of barriers, at least visually.

In general, successful airport wayfinding relies on a process called "progressive disclosure"[13], which provides the necessary information to lead the passenger to the next decision-making point. For example, first signs to the correct parking lot, then the terminal, the concourse and, ultimately, the right gate.

During peak hours, overhead signage is recommended. People tend to orient themselves upwards if they find themselves in congested places. It is worth noting that the existence of single or few steps or low-level changes on a walkway filled with people are obstacles for a smooth flow and may cause accidents.

→ SELECTIVE SIGNAGE

Modern airports are not only traffic hubs where passengers move from one means of transport to another, but also social and commercial places. This poses an even greater challenge for the signage and routing because each customer has a different expectation or a different goal. Following the principle of Miller's Magical Number, information should be selective and topic-specific. This has already been put in place successfully by many Airport Managing Bodies with a positive effect on passengers' stress levels. Customer surveys as well as operational and commercial KPIs showed better results after the introduction of the selective signage and confirmed the connection between good routing/signage and the company's success.

Regarding selective signage, a distinction is made between "important" and "less important" information (from a particular perspective). This can be specific to the airport on the basis of priorities and/or cultural characteristics. The division of the information can be further detailed and grouped. This depends on the airport size,

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12. George Armitage Miller (1956), *The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information.*
13. Progressive disclosure: interaction design technique often used in human computer interaction to help maintain the focus of a user's attention by reducing clutter, confusion and cognitive workload. This improves usability by presenting only the minimum data required for the task at hand.

5

the possibilities offered, and the Airport Managing Body's corporate orientation (operational or commercial focus). However, it should also be noted that too many divisions may lead, in turn, to information overflow and confusion.

Common examples show a subdivision into two to three information categories, e.g. "flight operations" as the primary, "services" as the secondary and "public" as the tertiary information group. We talk in this case about primary, secondary and tertiary signage, in which "services" and "public" are often combined in one category.

In the example on Page 53, the information is divided into three categories. The primary signage shows flight operations information; the secondary and tertiary signage include service and supplementary information. All this information is essential for the passenger. However, when looking at the airport from a visitor's perspective, the two latter categories are more important than the direct flight information.

While it is relatively easy to separate the flight-related topics from the flood of information, the distinction between the second and third categorisations is much more difficult because, depending on the passenger's perception, one topic can seem more important than the other (e.g. oratory/Wireless Local Area Network (WLAN) can be very important for a person, but it can be irrelevant to somebody else). Therefore, the required, expected and valued levels of services will differ from one passenger to another, leading to a different pyramid of passenger perception levels.

Madrid-Barajas Adolfo Suárez Airport / MAD

Example of information categories:

Flight operations

- Departure
- Arrival
- Check-in
- Baggage drop-off
- Transfer desk
- Gates
- Waiting areas
- Meeting point
- Schengen/Non-Schengen
- Security Control
- Border Control
- Baggage claim
- Oversize baggage
- Customs
- Exit
- Special Assistance/PRM

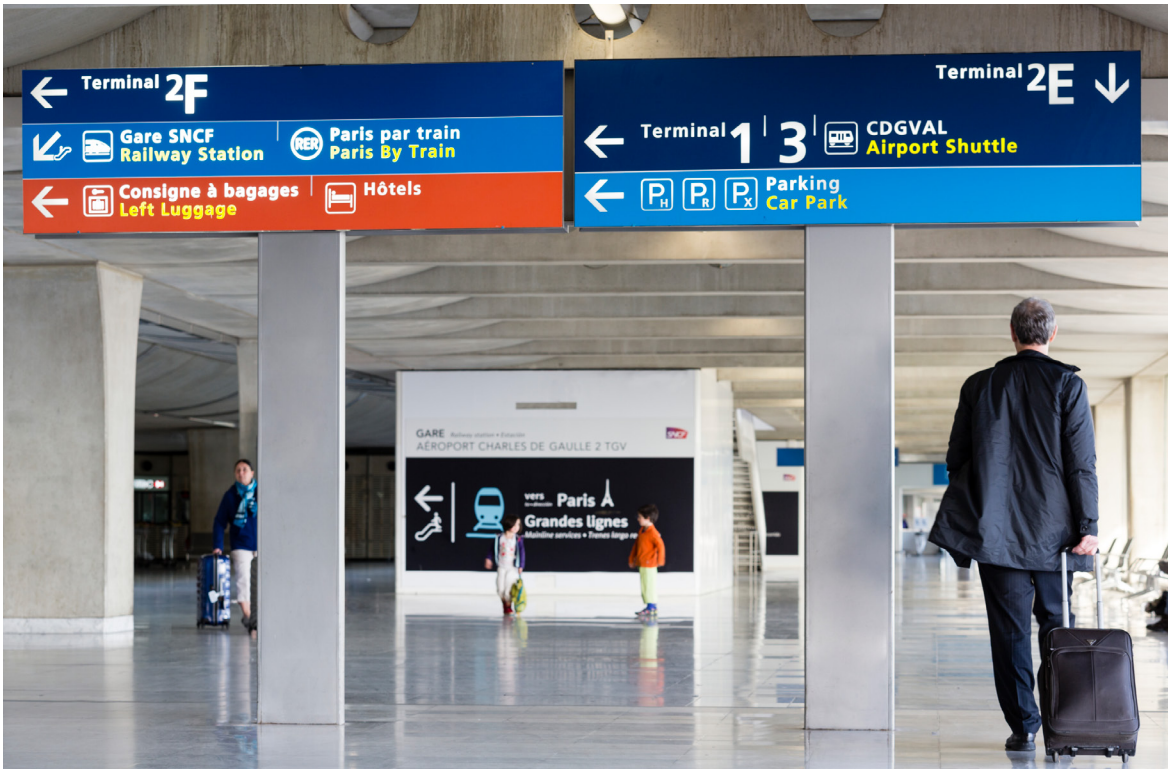
Services

- Flight operations
- Information
- Rest rooms
- Lounges
- Money exchange
- Lost & Found
- Shopping
- Restaurants/Bar
- Police
- Nursery
- Sanitary facilities/showers
- Prayer room/chapel
- Pharmacy/medical and dental services
- Baggage storage
- Smokers' lounges
- Air carriers' offices

Public

- Train, coach, car
- Taxi
- Valet parking
- Parking
- Shuttle services
- Rental cars
- Airport hotels
- Wellness/spa
- Travel agencies
- Visitors' terrace
- Internet/WLAN
- Offices of non-aviation stakeholders

Copenhagen Airport / CPH (top) & Pulkovo Airport / LED (bottom)



Paris Charles de Gaulle Airport / CDG (top) & Dublin Airport / DUB (bottom)

5 The various signage features (e.g. colour, shape, font or size) differ from airport to airport. Since the interpretation of signage is linked to passengers' cultural, social and psychological backgrounds, it is highly recommended to seek the advice of a scientific institute (e.g. psychology research centres).

→ INTUITIVE HUMAN BEHAVIOUR PATTERNS

Orientation in spaces and rooms, on the other hand, is subject to physical influential factors. People tend to move more towards light rather than darkness, thus paths or end points should be sufficiently well lit and/or set off from their surroundings. However, this may often conflict with the commercial interests of an airport. Furthermore, quiet areas are perceived as being more pleasant and stress-free than loud ones, thus people tend to circulate in or move towards quieter areas.

The use of suitable materials to break sound waves or absorb noise is recommended for passageways and hallways to give passengers a feeling of security and calmness. Wood, for example, is an expensive material, but if its surface or structure is treated it becomes a sound-deadening or sound-absorbent material that also radiates warmth and gives a natural feeling. Other materials can also be used on floors, ceilings or along the passageway to dampen noise levels. Even commercial promotion islands can have a sound-breaking or sound-absorbing effect.

Another option for simplifying wayfinding and enhancing predictability is to guide passengers by using wayfinding elements on the floor or ceiling. Paths can be marked or indicated using colour or different materials, for example. Many airports are currently testing light guides on or near the ceiling and colour nuances on the floor. However, these are expensive and relatively inflexible methods, and in complex situations they can increase stress instead of relieving it.

These are just a few aspects relating to the importance of natural or intuitive wayfinding, and they can vary greatly depending on the social or cultural context. Yet, fundamentally, human motivations for acting or reacting have always been similar, if not the same. The list of influential factors presented above is not intended to be exhaustive and should be reviewed individually by each airport. Airport Managing Bodies should devote a great deal of time and resources to this topic if they want to be remembered positively for the passenger experience. The concept and implementation of wayfinding often has a decisive influence on the assessment of an airport by passengers.

5.1.2.3. AMBIENCE

In order to describe the influence of the environment (ambience) on the passenger experience, we must first define those effects. They can be roughly divided into five categories:

- Exterior and surroundings
- Interior design
- Design and structure
- Decor
- Human variables

Four of these categories contain physical, structural and design variables. The fifth category makes it clear that people also play a role in shaping the terminal's ambience.

Amsterdam Airport Schiphol / AMS

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EXTERIOR AND SURROUNDINGS

The planned, intended or desired ambience of a place is not necessarily confined to a few square meters in a building or a room. The airport atmosphere perceived by passengers begins even before they enter the terminal. It includes, among other things, the characteristics of the building, such as its architecture, height and colouring, entrances, signs and display windows – but also the use of the terminal's surroundings, which may consist, for example, of certain businesses, streets, parking lots, green spaces and the accessibility of public and private transportation.

Passengers perceive spaces according to their needs and expectations. The greater the discrepancy between the passengers' perception and expectations, the higher the stress level.

But how can an airport influence these aspects for the passenger? The answer is simple and worth repeating: through conscious, deliberately chosen and rigorous positioning:

- Top-performing airport or mid-range player?
- What impression would the airport like to give?
- How would the airport like to be perceived by the public?

The airport already has a reputation – or would like to develop a specific one – and both the exterior and interior ambience must be adapted accordingly. If a positive ambience is created and communicated appropriately, it will directly influence the expectations and fears of future passengers and thus influence their stress levels when travelling – a situation to strive for as part of the passenger experience.

Keflavik Airport / KEF

INTERIOR DESIGN

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This category comprises the interior terminal appearance, i.e. all impressions that can be seen, heard, smelled or felt, for which the term ambient design can also be used. They include the temperature, ventilation, brightness, noise level, colour spectrum, ease of navigation and especially cleanliness.

An environment feature increasingly found at airports in recent years is background music, familiar to many from shopping centres. Slow music leads people to walk more slowly, which can stimulate passengers' consumer behaviour in commercial areas (spontaneous purchases). Fast music, on the other hand, encourages people to subconsciously move faster to the beat. However, the use of this effect at airports has more than just commercial reasons; in certain areas, it also reduces passenger (and staff) stress.

Waiting areas are a typical location for the use of quiet, relaxing, slow background music at airports. At check-in, the impatience and time pressure experienced by those waiting must be reduced. In the security area, it is important to ease stress prior to the security control conducted by authorised personnel.

Airport Managing Bodies that play music in the terminals noted its positive effects on passengers, staff and, ultimately, on the efficiency of the process. Besides background music, other means can be used to create a relaxing atmosphere. Soundscapes such as wind, birdsong or other animal sounds, flowing water, forest sounds and many other possibilities help to create a specific ambience.

Copenhagen Airport / CPH

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Colour is widely used for creating moods. However, it is important to consider cultural factors, as colours can affect people very differently. Specific colours do not have the same meaning in every culture and can cause unintended emotions in passengers. Light is likewise a tool that can be used to create desired moods. Whether concentrated, uniform, alternating, highlighting, subdued, warm or dim, lighting has a very strong influence on people's psychological and physical states. This strategy is already applied in many sectors, and light appears to be the cheapest and most efficient tool to evoke moods.

Natural mood enhancers include daylight, plants and even aquariums. Since these are familiar to us, their presence will repeatedly trigger the same mood responses, based in most cases on calm, relaxation and confidence. That may sound strange but it is important to bear in mind that most people have a healthy relationship with nature from childhood onwards. They welcome and appreciate it in their surroundings, even when they do not consciously register it. Ambient factors are just as important as acoustic, olfactory or visual ones, but we will not go into greater detail here since they should be designed with specific circumstances and cultures in mind.

Faro Airport / FAO

→ DESIGN AND STRUCTURE

Most people prefer medium-sized, clearly organised, bright rooms (daylight) or building areas, which they refer to as "pleasant". However, this often conflicts with architectural layout as well as the operational requirements and commercial interests of the airport.

Very frequently, terminals have long corridors or passageways. These connecting elements may cause stress, which can increase owing to:

- ceilings that are too low and give people the feeling of being boxed in, and
- overly narrow passageways in which oncoming or passing traffic disturbs the flow (and yet the absence of opportunities to overtake others deprives people of their decision-making power and can lead to dissatisfaction and agitation).

Individual measures already mentioned in the "Interior design" section (page 61) can compensate in part for these architectural shortcomings. Distraction, for example, is a useful tool for turning passengers' attention to other (generally positive) things (i.e. free and automatic moving items, such as swaying trees, moving shadows, running free text on the wall or even personal entertainment by clowns while queueing). Big screens or monitors in general have a huge impact on the distraction level, but the moving content is essential. If long walking distances cannot be avoided, then disguise it and distract the passenger.

More and more terminals have passages that direct the passenger in serpentine fashion through specific areas using the model of a well-known Swedish furniture retailer. From a commercial perspective, this practice has a measurably positive effect on spontaneous purchases, but psychologically passengers are forced to accept a route they cannot choose, which hinders their autonomy.

If these concepts are implemented, care must be taken to ensure route simplicity, clarity and predictability (i.e. the passenger's ability to see what lies ahead). The hallway must be wide enough (and not just for reasons of safety and security) so that passengers who wish to overtake others can do so unhindered. Everyone has their own individual tempo.

→ DECOR

Signage, product displays, pictures, wallpaper, sculptures and plants are among the objects in this category. They are the seasoning that adds interest to the dish. The small things, or just a few details, can create the desired mood. If you want to emphasise an area or give it some individuality, decorative elements are invaluable aids.

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Nowadays, everyone is connected to the digital world, and it is common to share impressions and experiences with friends and relatives, as fast as possible. This may be done via social media platforms, by email or SMS ("selfie-culture"). In order to make a positive impression as an airport, the backdrop of the airport has to be shaped by the wow factor. Only then can the individual elements of the location be perceived, commented and shared positively. These elements must emphasise the individuality of the airport (irrespective of the city, country or local culture). They must stand out and highlight uniqueness to be perceived as such. Art as a decorative element is widespread and popular. Temporary art exhibitions are also a popular initiative to bring more visitors to the airport (i.e. on the landside) or to leave an exceptional and lasting impression on passengers (i.e. on the airside). In addition, local artists can be given the opportunity to present themselves to a wider audience. This, in turn, links the airport socially to its local environment.

Psychological and cultural aspects (depending on the passenger mix) play an important role and, therefore, initiatives and projects should be assessed beforehand by experts (i.e. perceptual psychologists).

→ HUMAN VARIABLES

People also contribute to the creation of a specific atmosphere. The variety of guests at an airport creates a specific atmosphere: attire or appearance, language or cultural background. An airport can then choose to increase its local feeling or focus on strengthening its international dimension. However, the airport's staff and other personnel employed there represent the airport through their uniforms, attitudes and behaviour, and commitment to the airport, and consequently shape the image of the airport and influence its guests' experiences. Please see Chapter 5.3. and Case Study on the Airport Helper.

Athens International Airport / ATH

5.1.2.4. CLEANLINESS AND MAINTENANCE

Clean and well-maintained premises are important factors for a good passenger experience. Although not applicable as wow factors, clean and well-kept facilities are required for passengers, otherwise a poor impression will prevail.

Cleanliness of the airport terminal in general and the washrooms in particular is part of the ACI's Airport Service Quality (ASQ) programme, a standardised survey on passenger satisfaction. The importance of cleanliness usually ranks very highly among passengers. Airports that do not provide clean terminal premises receive below average scores in the benchmark and thus are encouraged to improve.

The following measures are suggested in order to improve the cleanliness of terminals:

- Finalisation of SLAs with the cleaning companies (subcontractors).
- Implementation of strict and regular quality control measures.
- Increase in cleaning frequencies of highly used terminal areas and washrooms.
- Replacement of degraded materials since new or refurbished finishes always look cleaner.
- Placement of instant feedback devices in washrooms.

Malta International Airport / MLA

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Cleanliness should be incorporated in the design of the terminal, since certain materials (e.g. with plain surfaces) are easier to clean than others. Corners and areas where access for cleaning staff might be difficult should be avoided. Glass walls and ceilings must be accessible using specially designed equipment.

Studies show that up to 80% of all infectious diseases are spread via hands. Therefore, contactless facilities have to be ensured wherever possible. Be aware that there are more bacteria and germs on a tap than on a toilet seat. Surfaces that have to be touched after washing hands are particularly tricky. This may be the doorknob, the tap, the hand dryer or the towel dispenser, just to name a few. Despite widespread knowledge of the importance of handwashing, there is still room for improvement. In general, levers, touch panels and press buttons should be avoided in sanitary facilities. If touchpoints are unavoidable, such as for railings or handrails on escalators, high cleaning frequencies are recommended. Cleaning services during peak hours are not really welcome by passengers, guests and staff, but they give a visual impression of cleanliness.

Maintenance, although often underestimated, also contributes to the passenger experience at the terminal. Out of order lifts, escalators or moving walkways can cause major nuisance to passengers, especially when they are running out of time to catch a flight.

Geneva Airport / GVA

Technical systems (e.g. air conditioning, heating) cause a bad passenger experience when not working properly or if they have been activated too late, especially in the morning hours after the airport has been closed for the night. Other systems are essential for operations (e.g. BHS, FIDS, IT-Systems) and can lead to delays and traffic disruptions when out of service.

Well-maintained facilities and systems are less prone to failure or disruption. Nevertheless, if failure occurs, the time for reaction and repair should be kept to a minimum and passengers should be properly informed. Airport technical staff or external contractors should be informed about any failures through clear and timely communication and be available at short notice. SLAs on failure rates and reaction times with maintenance service providers help to enhance the technical reliability of the terminal premises.

5.1.3. SPACE REQUIREMENTS

The IATA Level of Service Guidelines (as published in the IATA Airport Development Reference Manual) play a very important role in passenger terminal planning. These service levels are used worldwide for airport planning projects, concession agreements and also used by IATA and individual air carriers to assess the quality of an airport.

Even though IATA and other organisations give recommendations for every functional area of an airport, it seems that this "one-size-fits-all approach" cannot be maintained in the future as the aviation market becomes more and more segmented.

Prior to defining service levels, airports should assess the actual situation in detail:

- different types of flights
- distribution of passengers arriving at the airport
- maximum number of passengers waiting in queue
- number of passengers queuing for more than 30 minutes
- ratio of peak days to average days

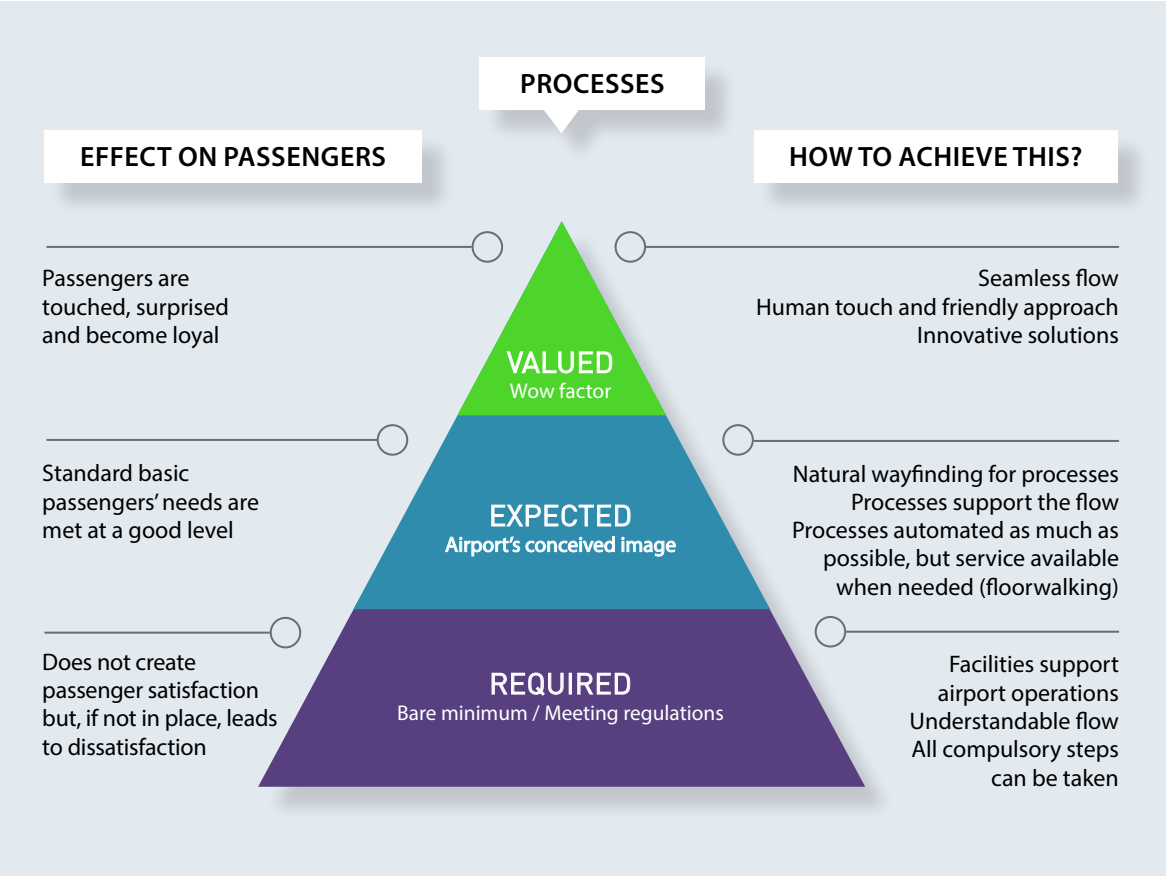
Relating the minimum space requirement to physical parameters such as number of passengers, number of bags and percentage of trolleys used does not seem to be sufficient for defining the necessary queuing space. Empirical evidence has shown that the type of flight (tourism, business, low cost) also has a significant impact on the space requirements.

Tourism flights have a high number of group travellers (i.e. families, friends), who tend to stand closer in a queue than individual business travellers (a measurement at Salzburg Airport showed that Russian tourists need about 0.8 m^2 per passenger, even if there is more space available). Passengers on Low Cost Carriers may accept lower service levels, since they do not expect high quality for the entire product they bought.

5 5.2. THE PASSENGER EXPERIENCE: PROCESSES

Airport Managing Bodies should look at the passenger experience through the airport as if they are directing a movie with highlights and calmer areas, the highlights being the wow moments, preferably at the most stressful touchpoints. Picture 8 gives examples of what the passenger experience means for the processes.

PICTURE 8 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: PROCESSES**



By processes, we mean the procedures, actions or steps taking place through the airport terminals on departure, arrival or transfer.

The passenger journey can be described from three angles: departing, arriving and connecting passenger flows. It is important to note that the stress level of passengers varies during the journey (Picture 6) and the most stressful experiences can be identified and tackled for individual airports through the process of getting to know your passengers.

5.2.1. PROCESSES ALONG THE PASSENGER JOURNEY

At departure, arrival and connections, passengers require and expect safe, secure and timely processes. To enhance the passenger experience for the processes airports need to:

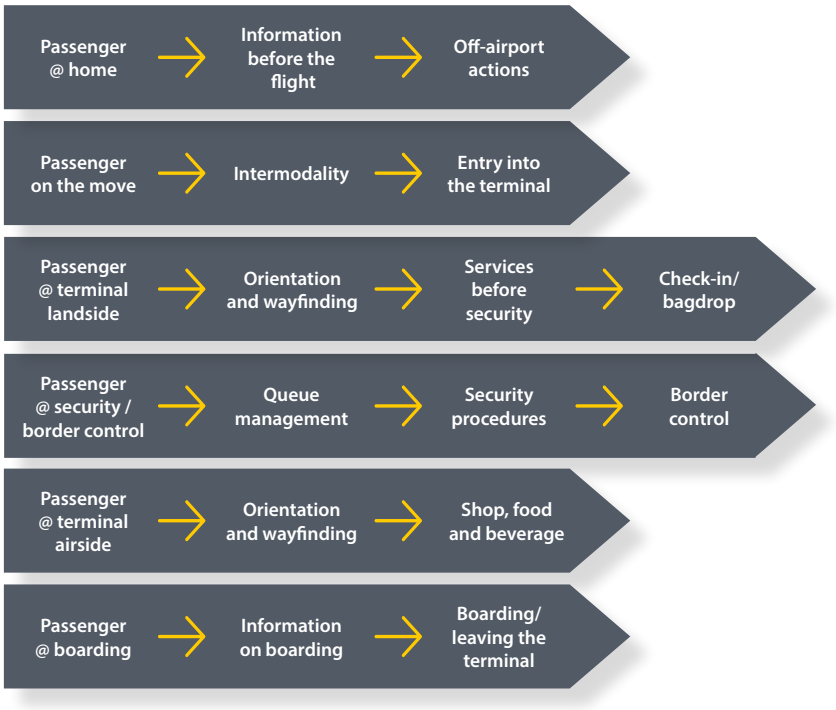
- reduce waiting times
- ensure reliability and predictability
- improve efficiency
- make processes as easy and clear as possible

Overall, a seamless journey needs to be created for all passenger categories while at the airport.

Pictures 9 and 10 show the departing and arriving passenger process chart and its relevant elements/services. These services can be provided by a number of different stakeholders and ultimately form the overall passenger experience. The transition from one part of the journey to the next must be considered with the aim of making it as easy and seamless as possible.

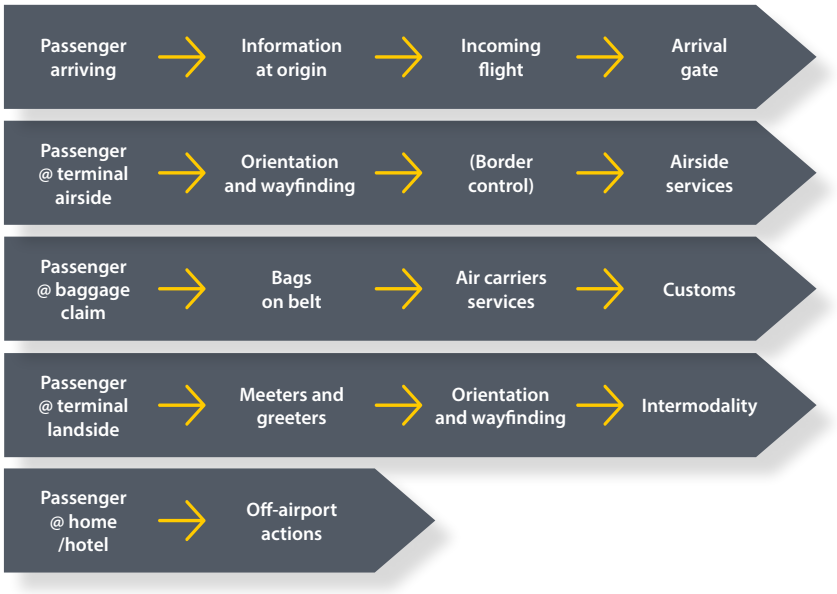
Vilnius Airport / VNO

PICTURE 9 - **THE DEPARTING PASSENGER PROCESS CHART**



Vienna Airport / VIE

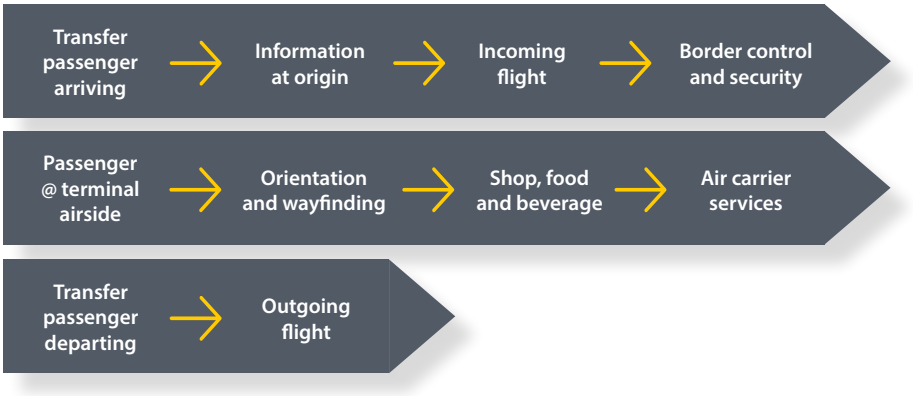
PICTURE 10 - **THE ARRIVING PASSENGER PROCESS CHART**



Vienna Airport / VIE

5 In the connecting or transferring passenger flow (Picture 11), air carriers are usually in charge of the processes, mostly via their ground handling service provider, but Airport Managing Bodies act as enablers by providing the infrastructure.

PICTURE 11 - **THE CONNECTING PASSENGER PROCESS CHART**



The way in which these objectives are reached depends on how changes in technology and market demand influence passengers' needs and expectations and allow new service provision methods. Airport Managing Bodies also need to cooperate with air carriers and other stakeholders to achieve their goals.

SELF-CONNECTIONS: A NEW CONCEPT OF FLIGHT

Air travel evolves very quickly and passengers using Low Cost Carriers also need to connect. They may therefore purchase multiple tickets from air carriers that do not necessary have interlining agreements and there is a trade-off between risks and hassle versus savings.

The first major difference compared to conventional transfer is who bares the risk: the air carrier or the passenger. The second major difference is the airport process:

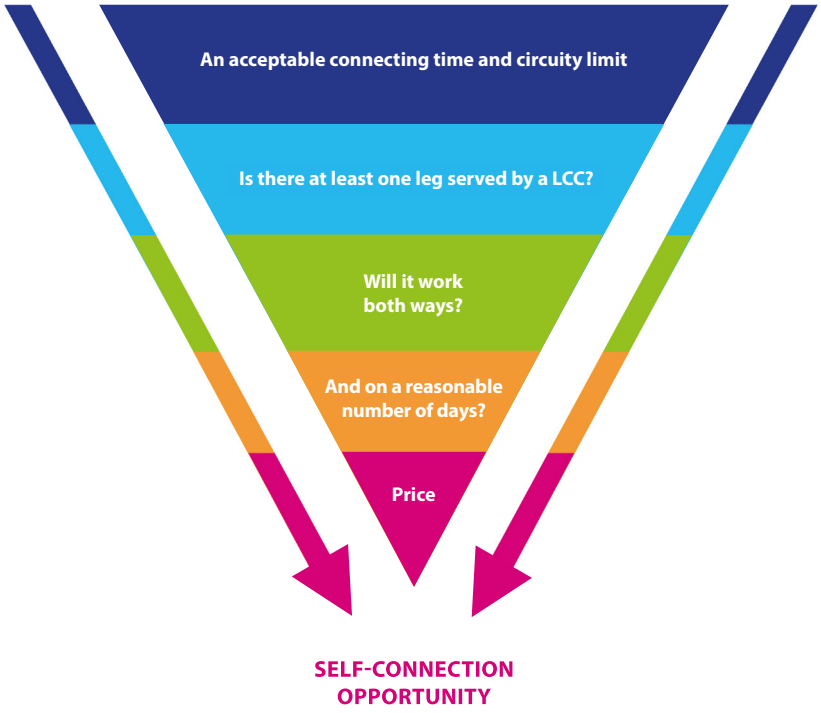
- Conventional transfer takes place airside but self-connecting requires the passenger to transfer via landside, which involves a baggage reclaim and drop-off, extra security checks and queuing.
- Depending on the premises, self-connecting travellers are advised to foresee a longer time to complete all the procedures involved.
- Self-connections are changing the way passengers fly, the services provided by the Airport Managing Bodies and the traffic that air carriers attract.

- Airport Managing Bodies can benefit from the network potential by offering a self-connection product to facilitate the passenger in this process.
- Air carriers may attract additional demand.
- Travel agents can take the role of insurance provider.
- Ancillary revenues may increase for all stakeholders, load factors might go up and travel agents could benefit from double transaction fees, for example.

As self-connections are a new development, their exact potential is still unknown. Some passengers are ready to take the risks and accept the inconveniences (multiple booking, risk of a missed connection and additional processes) in order to save travel expenses.

Some passengers are willing to pay extra for assistance, offered by, for example, a one-stop check-in service for all air carriers, a baggage service to check through any luggage and automatic rebooking in case of delay or cancellation.

PICTURE 12 - **HOW TO IDENTIFY SELF-CONNECTION OPPORTUNITIES**



GatwickConnects and ViaMilano are good examples of self-connecting services currently offered by Airport Managing Bodies. For additional information, please see case studies on self-connections.

5.2.2. CONTINGENCY PLANNING

Contingency *(Oxford English Dictionary)*

- *a future event or circumstance which is possible but cannot be predicted with certainty*
- *a provision for a possible event or circumstance*

Airport Managing Bodies need to be prepared to face unplanned events to ensure a coherent response when informing and assisting stranded passengers. Events like a volcanic ash crisis or disruptions caused by extreme weather conditions – amongst others – have shown the need for coordinated action between the different stakeholders operating at the airport.

A contingency plan implies foreseeing and putting in place a process to face different events (foreseen or sudden) and/or disruptions, by agreeing the means to face them, coordinating actions, responses and resources, while clearly allocating responsibilities. It also implies ensuring a return to normal as soon as possible. More clearly, a contingency plan should contain damage control measures and facilitate the continuity of the key operations.

Although Airport Managing Bodies must be prepared to face all types of contingencies, for the purposes of these Guidelines we will limit our recommendations to how to face multiple cancellations and/or delays of flights leading to a considerable number of passengers being stranded at the airport.

TABLE 8 - **HOW TO DEVELOP A CONTINGENCY PLAN**

• STEP 1 – IDENTIFY SCENARIOS

A) SHORT AND LONG DELAYS, OR CANCELLATIONS CAUSED BY:

EVENTS FORESEEN >48 HOURS	EVENTS FORESEEN ≤48 HOURS	SUDDEN EVENTS
• Extreme weather conditions	• Remote air disaster • Terrorist act in airport of origin • Hijacking • Remote weather/ geological event • Remote contamination or radiation	• Local air disaster • Local terrorist attack • Extreme local weather conditions • Local weather/geological event • Local contamination or radiation • Strike • Damage or failure blocking infrastructure

B) TYPES OF DISRUPTION

CATEGORY	TYPE OF DISRUPTION
Operational logistics Airside	• Major shortage of aircraft stands • Peripheral roads along the piers are closed off
Operational logistics Terminal – passengers	• Large groups of passengers are stranded for a long period of time • One or more sections of the terminal are closed off • Major disruptions in the departure and check-in processes • Responding to aircraft with medical emergencies or suspected infected passengers on board • Bomb threats • One or more information provision systems are down
Operational logistics Terminal – baggage	One or more sections of the baggage system are down
Control centres	• Airside operations control system down • Airside support control system down • Aircraft stand control system down • Control centre of the passengers department in the terminal down • Bus transport control system down • Baggage systems control down
Traffic and transport	Access roads/ rail are closed off
Power/water supply	Utilities are cut off
Communications and ICT	• Wireless communication systems are down • Office computer systems are down • Loss of entrance control

C) TYPES OF CRISIS

CATEGORY	TYPE OF CRISIS
Traffic and transport	• Aviation accident • Railway accident or major disturbance in railway underpass • Serious accident involving a bus • Road accident involving the transport of explosive, flammable, toxic or other dangerous substances • Accident involving high-pressure natural gas and kerosene pipelines
Location-specific crises	• Accident involving storage or use of explosive, flammable, toxic or other dangerous substances • Fire in day care centre or detention facilities • Fire in building taller than 30 metres (height of fire truck ladders) • Fire in building with many visitors • Fire in underground car park • Fire in the railway underpass • Flooding • Hijacking/taking of hostages and other terrorist attacks • Major disturbance of the public order
External crises	• Extreme weather conditions • Utility supply cut off (electricity, gas, water, data traffic and sewage) • Infrastructural service down (traffic, ICT, telephone, etc.) • Contagion and epidemics • Remote crisis

Bratislava Airport / BTS

- STEP 2 – **SET PRIORITIES AND GOALS**
  Ensure the coordination with air carriers, ground handling service providers, air navigation service providers (ANSPs), airport retail companies and the national, regional or local authorities when necessary in order to **provide information and assistance to stranded passengers.**

- STEP 3 – **IDENTIFY ACTIONS, TASKS AND RESPONSIBILITIES**
  The roles and responsibilities of the different entities involved should be clearly established. The Airport Managing Body should take the initiative to open a Crisis Centre/Crisis Management Group/Crisis Response Committee, identify a crisis manager and coordinate and communicate with the whole airport community (airport operational departments, airport corporate communications department, air carriers, ground handling service providers, ANSPs, police, customs, etc.). If necessary: Civil Protection, Red Cross, local authorities, civil aviation authorities (CAAs), others.

  NOTE THAT THE PRIMARY RESPONSIBILITY FOR THE PROVISION OF INFORMATION AND ASSISTANCE TO PASSENGERS REMAINS AIR CARRIERS' WHICH MAY NOT REDUCE THEIR OBLIGATIONS IN THESE CASES.

SOME EXAMPLES OF STANDARD ACTIONS IN CASES OF DISRUPTION:

a. INFORMATION
General information on passenger rights (via posters, leaflets provided by the European Commission), communication to passengers, visitors and media via public address calls, FIDS screens, ad hoc communication via social media, corporate communication via media (TV, radio), website updates, operational information and updates on the airport operational blog (blog available for operational stakeholders with on-time information on status and actions at the airport).

b. ASSISTANCE
Provide meal vouchers, distribute bottles of water, provide accommodation or sleeping facilities (stretchers + blankets), provide shower and toilet kits, provide health services if necessary.

c. OTHER
Facilitate temporary visas, facilitate contacts with embassies or other officials, facilitate evacuation of passengers (buses, extra public transport capacity), increase 24h security by police/security services.

The evacuation of passengers deserves special attention. ACI EUROPE and the Community of European Railway and Infrastructure Companies (CER) agreed on the following Recommended Practice:

ACI EUROPE/CER RECOMMENDED PRACTICE 01/11

Disruption of traffic
(Adopted by the Board of ACI EUROPE on 16.12.2011)

1. The airport operators should communicate the contact details of their crisis managers to the relevant railway.

2. The railways are invited to indicate to each relevant airport operator manager (and crisis manager) the name and contact details of the relevant "Duty Control Unit(s)" whom to contact in case of a major crisis. This (These) "Duty Control Unit(s)" must be able to take operational decisions and take any action as necessary.

3. When a crisis is likely to affect a significant number of passengers in an airport, airport operators are invited to liaise with their nominated railway "Duty Control Unit(s)" at least one day in advance of the foreseen trouble. If the crisis is not predictable, they should inform the railway Duty Control Unit(s) as soon as possible.

4. Airport operators will endeavour to provide the relevant railways "Duty Control Units" with regular information on the estimated number of stranded passengers and their regions of destination at least on a daily basis as long as airlines provide this information to airport operators.

5. Airport operators are invited, after agreement of concerned station manager(s), to provide train timetable information from the nearest main railway station(s) on dedicated screens or otherwise, including information on how to reach the station(s). In addition, and if available, they may display the number and/or website address of a rail information service to contact.

6. The railways are invited to inform airport operators' crisis managers of possible additional seats / coaches / trains on relevant origin-destinations.

7. Railways are invited to provide at a number of predefined stations situated in the vicinity of an airport, information on major airport disruptions with advice to passenger to check flight availability with relevant airlines, in order to avoid unnecessary influx of passengers to the airport.

8. A representative of the airport operator may be invited in the same crisis room as the railways' crisis management centre for better coordination between air and rail.

9. Crisis simulation exercises should be encouraged at local level in order to foster and test relationship. These simulations can involve relevant airlines.

- STEP 4 – **ALLOCATE RESOURCES**
  Depending on the level of the contingency, and according to the agreed procedures, the Airport Managing Body should be able to quickly carry out its actions and tasks as foreseen in the plan. Depending also on each airport's resources, a fund to cover contingencies and additional staff should be budgeted.

- STEP 5 – **DEFINE PROCEDURES**
  Smooth communication and coordination between the Crisis Centre (or equivalent), the terminal management, the call centres, information desks and field assistants of ALL stakeholders involved should be guaranteed.

- STEP 6 – **ENSURE TRAINING**
  The Crisis Centre/Crisis Management Group/Crisis Response Committee as well as the rest of the staff should be trained to face contingencies and provide assistance to stranded passengers. Make sure the other stakeholders, national authorities and other relevant organisations are involved and actively participating.

- STEP 7 - **COMMUNICATE**
  Communicate the contents of the contingency plan and any amendments to it to the National Enforcement Body defined by each European Member State according to Regulation 261/2004 and its revision.

Heathrow Airport / LHR

5 5.3 THE PASSENGER EXPERIENCE: PEOPLE (STAFF)

A HUMAN TOUCH

Whilst passengers welcome technology to customise services and manage each aspect of their journey, they still need to know that behind automatic processes there is a human being looking after them. Automation will never be able to cover every situation a passenger could face: when problems happen, humans prefer and indeed need other humans to provide a solution. Furthermore, it is important to bear in mind that, behind machines, there is always a human being facilitating their use.

One of the key factors of a pleasant passenger experience is people (staff) working together, aware of the importance of their role and personal involvement in meeting every passenger's needs, in compliance with the values shared between the Airport Managing Body and its stakeholders.

PICTURE 13 - **INTERACTING FEELINGS IN THE RELATIONSHIP BETWEEN STAFF AND PASSENGERS**

Throughout their journey, passengers use services provided by different stakeholders and come into contact with people (staff) whose attitude plays a key role in their whole experience. From a passenger's perception, it is impossible to separate the role and responsibilities of each of them. They expect a seamless experience with immediate answers to their needs.

Therefore, all stakeholders should cooperate and work together with the same goal and values. This is a window of opportunity for all people working within the airport platform – contributing to passenger satisfaction, to the image and success of the airport and being proud of belonging to the airport family. People feeling well at work naturally provide the best service and, as the ambience in a workplace is contagious, thus enter into a virtuous circle.

As the airport is the gateway to a country and airport staff are natural ambassadors, they should have a good sense of hospitality to welcome passengers as guests. Courtesy has proven to be a key driver of passenger satisfaction. The right attitude is likely to build a good image of the airport.

5.3.1. WHAT DO PASSENGERS EXPECT FROM PEOPLE (STAFF)?

Passengers require and expect secure, safe and timely journeys. A quick look at the passenger journey stress chart (Picture 6) shows that passengers expect a minimum level of availability of staff at key touchpoints, who are able to give them a quick, clear and correct answer and to assist them when needed.

In order to create the right conditions for a good passenger experience, these statements should be taken into consideration:

- A minimum number of staff at the right time and at the right place.
- Easily identifiable staff.
- Uniforms make staff look and feel professional and proud of the airport.
- Foreign language skills for first-line staff are essential for good communication.
- A high level of reliability and competency is essential when interacting with passengers.

Empathy is key to a good interaction and helps passengers feel comfortable when explaining their needs and understanding the information received. Most passengers expect to be treated as guests. Hospitality also helps them feel at home. As all people are unique, cultural backgrounds and sensitivities should also be taken into account.

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5.3.2. APPROACH AND TOOLS TO ENGAGE PEOPLE (STAFF)

5.3.2.1. INSPIRED AND DEPLOYED UNDER THE COORDINATION OF THE AIRPORT MANAGING BODY

Airport Managing Bodies have developed long- or medium-term strategies, where they coordinate stakeholders that play a key role in the passenger experience.

Success can only be achieved through a clear vision of the strategic passenger orientation.

Airports of a certain size have defined a vision, mission and values to inspire and guide the passenger-oriented approach. This orientation is mainly stated in documents such as the Service Charter, Public Customer Commitments or Customer Policy. Most Airport Managing Bodies have defined the type of passenger experience they want to develop in order to be a positive actor in the local economy.

However the organisation is explained to the public and shared with stakeholders, the Airport Managing Body's leadership and guidance allows all the staff to put in place the right service attitude with confidence. Being aware of values such as kindness, the importance of a smile, the sense of hospitality, proactivity, pride, sharing success and problems, and recognising "the right to make a mistake". This provides a solid reference to staff in their relationships with passengers.

Václav Havel Airport Prague / PRG

5.3.2.2. SHARING AND GUIDING THE CUSTOMER ORIENTATION WITH OTHER STAKEHOLDERS

In order to deploy the customer orientation, the Airport Managing Body needs to share it with the stakeholders, as explained in Table 9.

TABLE 9 - **CUSTOMER ORIENTATION AND DIFFERENT STAKEHOLDERS**

Airport staff: Each employee in direct contact with passengers should behave as an "ambassador" for the airport and its region. The customer orientation component should ensure a pleasant passenger experience.
Subcontractors: The appropriate behaviour, dress code, language skills and personal touch of staff in contact with passengers should be indicated in each contract, included in the Service Level Agreement and assessed during regular performance reviews. Please see Chapter 3.1.2.
Air carriers, ground handling providers and air navigation service providers: The customer orientation can be discussed in the Users' Committee meetings. Workshops, taskforces and training sessions could be organised to share the content, largely at the initiative of the Airport Managing Body.

5.3.2.3. DEVELOPING STAFF ENGAGEMENT

In order to engage people, Human Resources management relies on three main pillars: recruitment, training and communication. An essential but not exhaustive list of tools to develop a customer-oriented attitude and build an active community is presented below.

RECRUITMENT

In the recruitment process, particular attention should be paid to specific skills that are essential to customer service:

- Language skills
- Cultural diversity awareness
- Attitude (dress code, gesture...)

5 TRAINING

Training contents should be set according to staff category and goals pursued.

Integration of new employees
An integration plan for each new employee can be shared, in part, with stakeholders on the following basis:

- Provision of a welcome booklet to introduce the employees to the airport's values, customer orientation, airport site and services
- Access to on-site visits
- Access to internal website, social networking...

All airport employees
Training modules for all airport staff should ensure:

- Basic knowledge of the key airport touchpoints (check-in, security, tax refund, border control, customs, air passenger rights...)
- Learning about other jobs at the airport in order to get a good overview and understand the impact of proper activities on other processes
- Knowledge of quality policy
- Learning of "welcoming attitude"

Front-line staff
Front-line staff may be subject to "burn out" as a consequence of continuous exposure to passengers. This issue should be addressed through prevention: planning front-line staff turnover to back-end or administrative positions could help.
Beyond perfect knowledge of the key airport touchpoints, front-line staff training should focus on:

- Courtesy, hospitality and sensitisation to cultural and religious backgrounds
- Constant awareness of PRM and passengers with special conditions and needs
- Use of technology to send updates and useful information to passengers

Innovative training
Training is subject to constant innovation; some innovative tools have proven to be efficient and attractive to staff, for example, Kaizen approach, lean management workshops and learning by doing. Involving people in innovative processes is likely to generate ideas as well as contributing to staff satisfaction and their sense of commitment.

Coaching and empowerment
Throughout professional life, it is essential to combine personal objectives with corporate goals in order to ensure staff commitment: for this purpose, coaching plays a major role. Furthermore, staff empowerment – i.e. providing tools and training whilst encouraging people and placing trust in them – enables problem solving.

Training stakeholders' staff
As passengers come into contact with staff from many different stakeholders, training or sensitising stakeholders' staff to the same values and service attitude is vital. Some Airport Managing Bodies have created a University of Service or a training academy in order to create a culture of service within their airport. Others work in partnership with universities and build the tools for progress together with their stakeholders (see Case Studies).

Furthermore, the development of communities to integrate the different "airport families" is an important step in that direction (see "Airport Helper" case study). It is also important to constantly check language skills and airport knowledge and to schedule regular refresher training sessions as airports are rapidly changing environments.

COMMUNICATION

Showing and sharing the airport's values and commitment to passengers and all staff is a simple and effective way to strengthen quality policy.

- Communications tools for frontline staff
- Dissemination of information to stakeholders
- IT tools for communication
- Complaint management

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5.3.2.4. CONSTANT QUALITY CONTROL

There are different ways to ensure that the approach and tools used deliver good results. It is important to combine two different categories of indicators, based on the Balanced Scorecard Method[14], looking at key performance indicators as well as at the passenger perception.
In order to accurately monitor performance, constant measurement is a must, using traditional metrics indicators on personnel as well as specific customer focus parameters:

- Turnover, absenteeism, rate accident (frequency and gravity).
- Number of trained staff.
- Capacity to offer/share a job/time to find another job (employability).
- Number of complaints and congratulations regarding courtesy.
- Number of active people in the community.
- Number of bad situations (mystery visitor).

The full range of customer satisfaction tools (passenger surveys, mystery visitors, smiley boxes, complaints) should be used in order to measure service attitude and hospitality. Using perception indicators is a must as values such as courtesy and empathy belong to the psychological sphere. The following indicators are commonly used at airports:

- Courtesy and helpfulness of check-in, airport, inspection, or security staff, for instance in the ACI "Airport Service Quality" (ASQ) survey.
- At some airports "hospitality" is included as a single question in the general customer satisfaction survey or object of a specific survey.
- Other airports have introduced Quality Check Index, a combined index to measure and benchmark customer satisfaction regarding the courtesy, efficiency and expertise of front-line staff.

In order to measure staff commitment, many airports use regular "social barometer" surveys to assess employee satisfaction. The "feeling well at work" indicator is essential for evaluating both staff and passenger satisfaction, because, as Richard Branson says, *"if you take care of your employees, you take care of your customers".*

For further information on Quality Control, please see Chapter 6.

14. Balanced Scorecard Method: strategy performance management tool, a semi-standard structured report, supported by design methods and automation tools, that can be used by managers to keep track of the execution of activities by the staff under their control and monitor the consequences arising from these actions (*2GC Balanced Scorecard Usage Survey*, Active Management 2GC, 2017).

5.4. APPLICATION OF THE 3P APPROACH

5.4.1. SECURITY CONTROL

The airport security checkpoint is the one point that touches all passengers and, as a consequence, it is of utmost importance to ensure the most efficient and customer-friendly atmosphere, while providing a secure and safe environment. As a process, security control is regulated by European and/or national legislation. Owing to the nature of the process and the fact that personal space may be invaded, the stress levels of passengers entering a security checkpoint are often high. Likewise, the checkpoint is one of the major focal points within the airport where premises, processes and people come together to shape the passenger experience in a significant manner. Key factors for a better passenger experience at security control are efficient communication and early collaboration among all relevant stakeholders, including the airport, the national authorities, the respective security service provider, as well as relevant unions.

According to an IATA survey[15] revealing new air transport trends, passengers identified airport security and border control processes as two of their biggest pain points when travelling. The top frustrations in this regard revolve around the wide variation in security screening procedures at different airports and the intrusiveness of applied procedures.

Thus, the ultimate goal is to sustainably design premises and processes in accordance with the need for a service that allows passengers to proceed through security control as smoothly as possible, without compromising the level of security. The implementation of Smart Security concepts as a joint initiative of the International Air Transport Association (IATA) and Airports Council International (ACI) will revolutionise security via the introduction of risk-based security concepts, advanced screening technologies and security process innovations. With the combination of these elements, Smart Security seeks to deliver:

- **Strengthened security** – Focus resources based on risk, increase unpredictability, make better use of existing technologies and introduce new technologies with advanced capabilities as they become available.

- **Increased operational efficiency** – Increase throughput, optimise asset utilisation, reduce cost per passenger, better deployment of resources, increase revenue opportunities through reduced wait times, and maximise space and staff resources.

- **Enhanced passenger experience** – Reduce queues and waiting times and use technology for less intrusive and time-consuming security screening. Passengers benefit from faster, more convenient and less intrusive security screening.

15. *IATA Global Passenger Survey (October 2016).*

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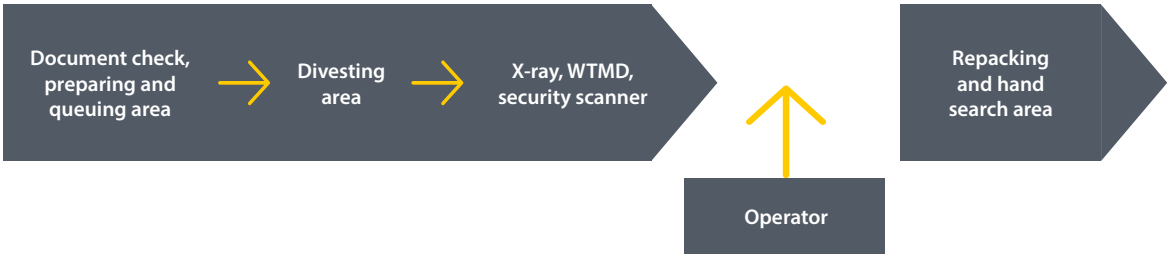
To facilitate understanding of the security control process in general, we have identified the following stages, which are critical for the passenger experience and need to be optimised systematically and together:

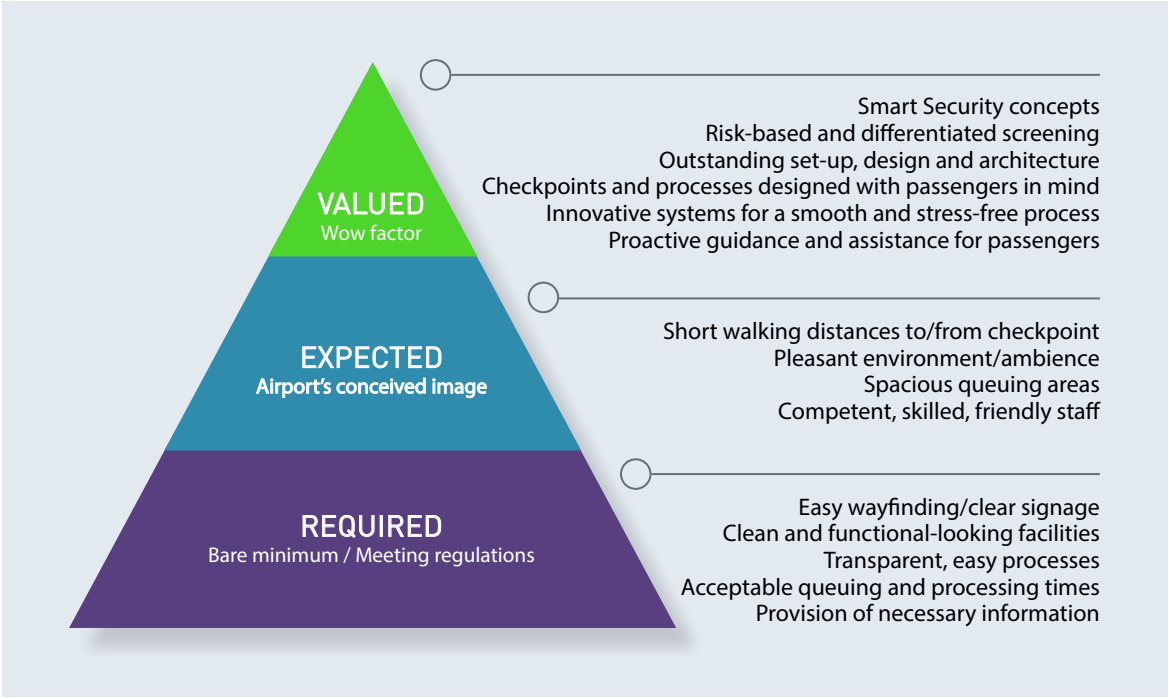
- **Queuing area**, which may include document checks, either manually or electronically.
- **Divesting area**, which is crucial for a smooth process and can be managed by passengers (e.g. preparation areas) and/or by security staff.
- **Cabin baggage X-ray/walk through metal detectors/security scanners** for the technical searching of passengers and their bags.
- **Secondary search areas** for passengers and their bags.
- **Re-packing area** for passengers.

PICTURE 14 - **SECURITY CONTROL PROCESS CHART**



In order to thoroughly examine the requirements for the optimum checkpoint, value needs to be attached to passengers' needs and expectations by developing a specific pyramid of passenger perception levels (see Picture 15).

PICTURE 15 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: SECURITY CONTROL**



Helsinki Airport / HEL

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Recommendations for the ideal security control checkpoint:

PREMISES

- Designed to accommodate peak passenger flows to meet required SLAs, while allowing for traffic growth.
- Enhancement of the checkpoint ambience with an emphasis on architecture, sound, temperature, ventilation and noise levels, as well as ambient lighting and the use of different coloured screening equipment to make the area less sterile looking and help passengers to feel more comfortable.
- Careful definition of space requirements by setting KPI's to enhance the passenger experience and, at the same time, the utilisation of space.
- Installation of sufficient space for divestment and re-packing, noting that re-packing takes longer than divesting and needs more space; this should include chairs, tables and suitable benches away from the checkpoint.
- Mature and cost-effective technological developments to reduce the amount of divestment for passengers (security scanners, dynamically adapting screening lanes) and their cabin baggage (advanced cabin baggage systems), although the overall space requirements are likely to remain unchanged because new equipment tends to be larger than the equipment it replaces.
- Provision of passenger information screens with waiting times and process information.
- Incorporation of short and visible access to security from the terminal entrance and check-in/baggage drop-off; provision of clear signage as well as minimisation of orientation points and level changes to reach the checkpoint in order to facilitate a seamless journey from landside to airside.

Zürich Airport / ZRH

PROCESSES

- Efficient flow management that supports the ability to reduce queueing and process times and move the passengers through the checkpoint quickly and comfortably.
- Where space allows, creation of special family/PRM checkpoints or lanes with appropriate fittings (for example, Gatwick South Terminal).
- Possible introduction of "low risk" lanes for trusted travellers requiring a different equipment set-up (subject to regulatory requirements) and less procedural processes.
- Deployment and use of advanced screening procedures and technologies to improve the security experience and operational efficiency, including Centralised Image Processing (CIP), Radio Frequency Identification (RFID) chips, Closed-Circuit Television (CCTV) cameras, Explosive Trace Detection (ETD).
- Continuous process optimisation based upon pre-defined KPIs (e.g. throughput per staff/lane/space, queueing and process times, detection and rejection rates).
- Efficient planning of airport resources via a Checkpoint Management System (CMS) to provide a holistic view of the checkpoint operations via the integration of data streams produced by the various screening equipment and software.

PEOPLE

- Focus on the working conditions and motivation of the security officers in a collaborative effort to achieve job satisfaction and hence improve accountability and hospitality.
- Reliance on employees and managers who stand out thanks to their ability to instantly connect with passengers (smile, outfit, charisma, etc.) as well as their behaviour, attitude, friendliness and integrity in groups.
- Predictive and proactive provision of information, guidance and assistance to passengers proceeding through the checkpoint.
- Incorporation of newly defined job specifications in accordance with smart checkpoint and processing concepts as well as clear and simple procedures (for example, Copenhagen Airport).
- Regular training of security personnel to develop professional and social skills so as to optimise and balance security provision, passenger experience and operational efficiency.

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5.4.2. LANDSIDE SECURITY

The *ICAO Aviation Security Risk Context Statement* assesses landside threats to airports as medium-high, depicting one of the highest threats to civil aviation in general. Only recently, the ICAO as well as the Security Council of the United Nations articulated additional resolutions which, among others, call upon all states to ensure the thorough definition of any vulnerable landside area, and the likewise establishment and coordination of suitable security measures, in order to mitigate the identified risk and to prevent all possible acts of unlawful interference.

The increasing number of travellers and visitors prone to congestion in public airport spaces calls for better planning, collaboration and experience sharing. Proactive behaviour and mitigation measures are required in order to sustainably match the risks of new and emerging threats. Indeed, an airport's landside is an essential area for both the airport operator and for passengers. It is the first touchpoint with regard to the passenger's journey through the airport system, the first area he or she enters and experiences.

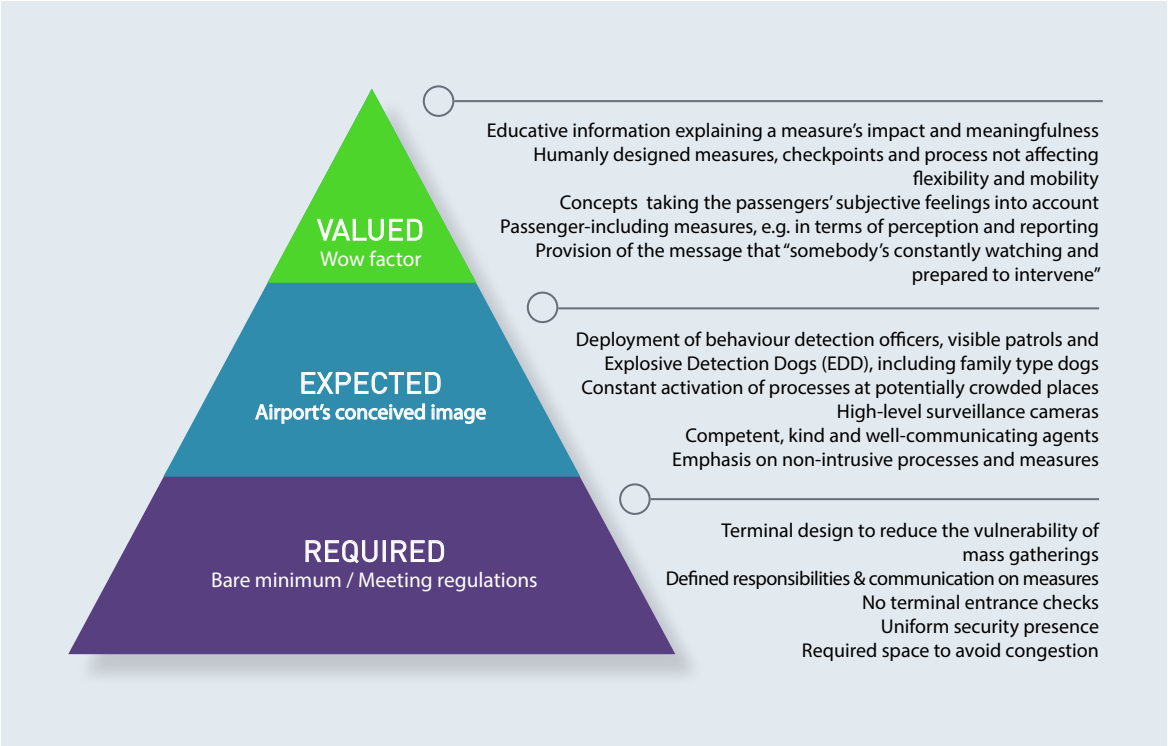
Main threats to the airport's landside area include *improvised explosive devices (IEDs),* which may be *person borne (PBIED)*, meaning carried on or next to a person and often associated with the suicidal intent of that person, or *vehicle borne (VBIED),* carried in or on a vehicle typically containing a large amount of explosive materials. In addition, vehicles may themselves be used as weapons to cause mass casualties (VAAW). Of course, general weapons like knives and guns, as well as any form of chemical, biological or radiological (CBR) attack constitute further major threats.

The *reactive regulatory approach* will continue to enable those with intent to attack the airport system and cause mass casualties. This is because they can continuously identify security gaps and vulnerabilities. Therefore, the industry needs to move to a *layered security approach,* while continuously defining, implementing, changing and updating the respective security layers. The question is how to best implement security initiatives within this public area to achieve both, the increase in landside security and safeguard the passenger experience at the same time.

Perceived security at landside is a basic customer need with regard to security service delivery. Subjective security correlates positively with gender, age, type of security and the number of passengers present in a particular situation. The acceptance of a particular landside measure is positively correlated with its perceived effectiveness, the improvement of experience and perceived feelings of security. The higher the acceptance of a particular measure, the higher the chance that the final experience of the passenger is positively influenced. An approach to win customers' confidence is the provision of visible police patrols and behaviour detection officers, the installation of technical solutions, as well as subtle communication measures to passengers (and staff).

In order to further examine the requirements for the optimum set-up, value needs to be attached to the particular initiatives and measures by means of developing a specific pyramid of passenger perception levels (an example is shown in Picture 16) reflecting associated recommendations and best practices.

PICTURE 16 - **THE PYRAMID OF PASSENGER PERCEPTION LEVELS: LANDSIDE SECURITY**



Warsaw Chopin Airport / WAW

5 **Recommendations for landside security measures to simultaneously maintain the passenger experience:**

PREMISES

- Designed to reduce the general likelihood and vulnerabilities associated with mass gatherings, crowds and queues.
- Where longer walking distances are needed to reach the terminal for security reasons, pleasant design of pathways and assistance for PRM or passengers carrying luggage are recommended.
- Easy wayfinding and provision of information, which should also contain selected information on benefits and meaningfulness of security measures.
- Installation of purposefully visible high-level surveillance cameras to help identify possible suspicious behaviour or terrorists.
- Design in order to facilitate passenger flow, in particular for elderly travellers at the landside, owing to their tendency to remain within the public spaces for longer times.

PROCESSES

- Processes to commonly revolve around the reduction of waiting and processing times associated with any form of security screening.
- Avoidance of any additional passenger touchpoints that imply high stress levels.
- Deployment of procedures to assess psychological consequences to passengers prior to the execution of measures in order to leverage positive correlations with acceptance, security feelings and the passenger experience.
- Concentration on police patrols (in general, uniformed officers are more accepted than plainclothes officers) and camera surveillance backed up by state-of-the-art technology, such as facial recognition, whose proceedings are centralised and remotely assessed 24/7 (where appropriate).
- Deployment of predominantly invisible measures, such as behaviour detection officers and random checks, to replace permanent and static terminal entrance checks.
- Vehicle checks – if at all applicable – should be based upon the threat situation and be carried out as random, or only occasional, measures.
- Processes to generally not result in any restrictions with regard to private mobility and parking possibilities or the necessity to arrive at the airport earlier than already required.

PEOPLE

- Alignment of communication with an educative approach that explains the meaningfulness and benefits of visible security measures from the passengers' point of view.
- Pre-defined competences, responsibilities and ways to approach passengers to guarantee execution based upon objectivity, as opposed to biased, racial or religious profiling.
- Consultation with experts from other customer services on hospitality to benefit the passenger experience.
- Installation of a centralised, common system and mechanism for recognition and reporting.
- Besides air carrier representatives and airport neighbours, inclusion of passengers in some kind of security awareness programme, at least those previously designated as trusted frequent travellers.
- Deployment of dog patrols, as people react positively to family-type dogs and perceive them as an add-on to their experience; the usage of guard dogs should be avoided in favour of Spaniels or Labradors.
- In case of interviews, addressing people by means of basic, non-aggressive, non-intrusive, ordinary and customer-oriented questions in a pleasant, non-threatening way, accompanied by a respective proof of identity by the particular interviewer.

RESPONSIBILITIES

- The preliminary responsibility for implementing landside security measures to be ideally shared within an interactive, joint and predominantly consultative approach and framework.
- Airport Managing Body assumes the role of the discussion leader.
- The higher the Airport Managing Body's responsibility share, the higher the consideration of the passenger experience is.
- Application of joint risk, threat and contingency assessments to include each and every stakeholder that is generally involved in the service provision at an airport.
- Airport Managing Body to share responsibility internally among the security and operations and commercial departments.
- Airport Managing Body to implement surveillance processes with KPIs that balance the passenger experience and landside security.

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5.4.3. BORDER CONTROL

A single area without internal border checks – the Schengen Area – requires a common policy on external border management. The European Union has established common standards with regard to controls at its external borders and is gradually putting in place an integrated system for the management of those borders.

Border management policy has witnessed considerable developments, with the creation of instruments and agencies such as the Schengen Information System, the Visa Information System and the European Border and Coast Guard Agency. The challenges linked to the increase in migration flows into the EU, as well as heightened security concerns, have triggered a new period of activity, with a shift towards more direct operational support and the Europeanisation of border management policy. This has resulted in new legislation aimed at strengthening the controls at the Union's external borders, which leads to longer processing times at border control. New European legislation includes checks against relevant databases for EU and non-EU citizens, the Entry/Exit system and the ETIAS (European Travel Information and Authorisation System).

Border Control means the activities carried out at the Schengen external border in response to an intention to cross or the act of crossing that border, consisting of border checks and border surveillance. It is a compulsory step at European airports when passengers enter or exit the Schengen/EU area.

According to European legislation, Border Control is the responsibility of Member States. The Schengen Border Code establishes in Chapter III, article 15:

> CHAPTER III
> Staff and resources for border control and cooperation between Member States
>
> Article 15
> Staff and resources for border control
> Member States shall deploy appropriate staff and resources in sufficient numbers to carry out border control at the external borders, in such a way as to ensure an efficient, high and uniform level of control at their external borders

At Border Control, the stress levels of passengers often rise. While making sure that the immigration/emigration requirements are met, it is equally important that the process is facilitated as much as possible. Border Control process can benefit from exchanging information (e.g. API) between air carriers and competent authorities, as well as border control being designed so that the process runs as smoothly as possible.

The number of manned counters per passenger type, the planning of daily traffic peaks in cooperation with the border authorities, as well as introducing automated services where possible are the tools that can be used improve the process.

As for space, the requirements for Border Control are similar to those for security controls. Providing enough functional space improves the process. Increasingly, the Border Control areas comprise Automated Border Control (ABC) solutions, which allow expedited checks facilitating passengers' journeys.

ABC is a fully automated system that performs border checks. The basic functions of the system are to authenticate the travel document, establish that the traveller is the rightful holder of the document, query border control records and, on this basis, automatically verify the entry conditions for Schengen area citizens and third country nationals.

An ABC component is the e-gate consisting of the following main components: (i) an electronic passport reader, (ii) biometric readers, (iii) an electric door opened by electronic means, and (iv) a device to display visual instructions, which guide the passenger through Border Control. An e-gate may also be called an ABC-gate. The operation of an ABC system can involve one or two physical barriers (e-gates), which may have swinging or sliding doors. To read the traveller's document and capture the facial image, a document reader and several biometric capture devices are used. Monitors, LEDs, signals and audio devices are integrated in the user interface. Processing units and the network devices allow the system to be connected with the central database.

With regard to the ABC/e-Gates and space requirements, their footprint should be minimised in length and width in order to maximise the number of gates that can be used in parallel, resulting in facilitation for passengers and efficiency gains for airport operations.

Rome Fiumicino Airport / FCO

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Recommendations for ABC gates:

- Clear signage should provide information on passengers allowed to use ABC gates (EU nationals, Member State nationals, third country nationals, others) as well as the travel documents accepted and their requirements (ID card, biometric passport, others).
- Information displays with real-time information on waiting times should be provided.
- Airport staff (or subcontractors) should help passengers familiarise themselves with the system and provide assistance, if needed. This does not mean substituting border guards, with whom good coordination remains essential for efficient queuing.
- Traditional manned Border Control booths should be placed in the vicinity.
- The design of ABC/e-Gates should allow for minimal cluttering of the visual field. It is recommended in this regard that ABC/e-Gates designs should use transparent materials as much as possible, for the lateral panels as well as for the doors.
- ABC/e-Gates should have a modular architecture allowing easy upgrades or evolution by replacement of given modules within the same original footprint (e.g. upgrade of the document reader or biometric capturing device or installation of an additional biometric technology).
- In order to prevent the buildup of queues that crowd the Border Control space (but also to increase the return on investment), the technologies used in ABC/e-Gates should maximise passenger throughputs and use ergonomic interfaces and signage to guide the passenger though all the steps through the process.
- Particular attention should be paid to the passport insertion and reading process, a step reported to generate a substantial number of failures in using ABC/eGates. The interfaces pertaining to insertion and reading of passports should encompass live visual feedback for the passenger, informing her/him whether the passport is properly positioned and guiding her/him to achieve proper positioning.

Finally, as already mentioned, the new European legislation reinforcing the checks at the Schengen external borders results in longer processing times at Border Control. This means that, in order to guarantee an acceptable passenger throughput, minimise the inconvenience caused to passengers and preserve the connectivity of European airports:

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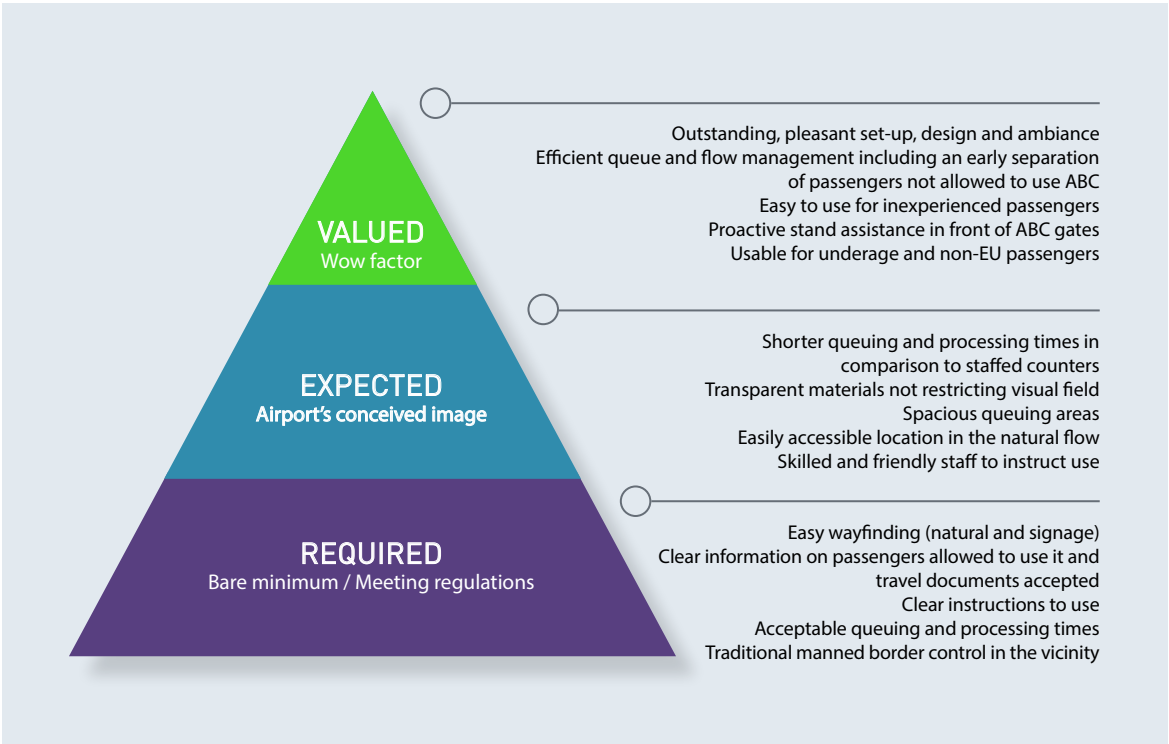
- Airport Managing bodies should foresee – if possible – the necessary space to add Border Control (manual and automated) booths.
- Member States (in accordance with the Schengen Border Code) shall deploy sufficient staff and equipment to guarantee an efficient, high and uniform level of border control at all European airports.

PICTURE 17 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: BORDER CONTROL**



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5.4.4. BAGGAGE HANDLING

Passengers' calls for an effortless journey are increasing. Regarding baggage, this implies that passengers expect to have a seamless bag drop and pickup experience. 10 years ago, this experience was perceived as a 'valued' quality. Now it is becoming more and more 'expected' by passengers. In the near future, a hassle-free passenger experience will feature among the 'required' area of the pyramid of passenger perception levels; it is becoming an important commodity.

One way to ensure an effortless journey is minimising the actions required from passengers to drop off and pick-up baggage. According to the Baggage as a Service 2040 vision[16], it is expected that less and less passengers will take their own hold baggage to the airport. More and more "door-to-door" services, such as home pickup, will enable passengers' baggage to travel independently, either directly or through the airport. Passenger experience is the paramount concern.

For passengers, Baggage as a Service seeks to deliver:

- **A seamless travel experience**: Reduced passenger stress levels by optimal baggage handling support. Passengers benefit from a faster, smoother and more hassle-free baggage drop and pickup experience.
- **Flexibility**: For passengers and their wishes, whether they want to travel baggage-free or prefer to have their baggage within reach at all times, a flexible solution should be provided. Passengers want to be in control!
- **Clear communication:** Only case-specific information is personally presented to the passenger via multiple means (e.g. applications). Full baggage tracking and tracing is an example of such a service.

For the Airport Managing Body, Baggage as a Service seeks to deliver:

- **Peak shaving:** By handling baggage at the non-peak moments, usage of the baggage system resources is optimised.
- **A more secure environment:** When passengers do not have to bring their large baggage items to the airport, it is easier to keep the departure hall secure.
- **More space to grow:** A passenger with baggage requires 1.5 times the space in the departures hall than a passenger without large baggage items. This provides space for passenger growth, and terminal expansion can thus be postponed.

For air carriers and ground handlers, Baggage as a Service seeks to deliver:

- **Increased operational efficiency:** Door-to-door baggage service makes busy periods easier to handle because a more constant baggage flow can be managed.
- **Improved passenger experience:** Smooth traveling increases customer satisfaction.

16. www.baggageasaservice.com

These door-to-door services are likely to have a significant impact on the value proposition of the different stakeholders. By becoming part of this supply chain, value can be added for the airport, the air carrier, the ground handler and the passenger. The future will tell how each stakeholder will fulfil these changing roles. It is clear that changing the way baggage drop and pickup is handled will not only affect airport logistics.

For easier understanding, the current baggage handling process is outlined in Picture 18. The following stages can be recognised:

PICTURE 18 - **BAGGAGE HANDLING PROCESS CHAIN**

- **Check-in and bag drop:** The passenger's travel documents are checked (manually or electronically) and baggage is dropped, either at a manned or unmanned bag drop location, either in the departures hall or remotely, such as in a car park or train station.

- **Screen, store and sort:** Bags are screened to ensure clearance to the correct security level and transported/sorted to an output point. In case bags cannot (yet) be sorted to the output point, e.g. because they are early, they can temporarily be stored in the system.

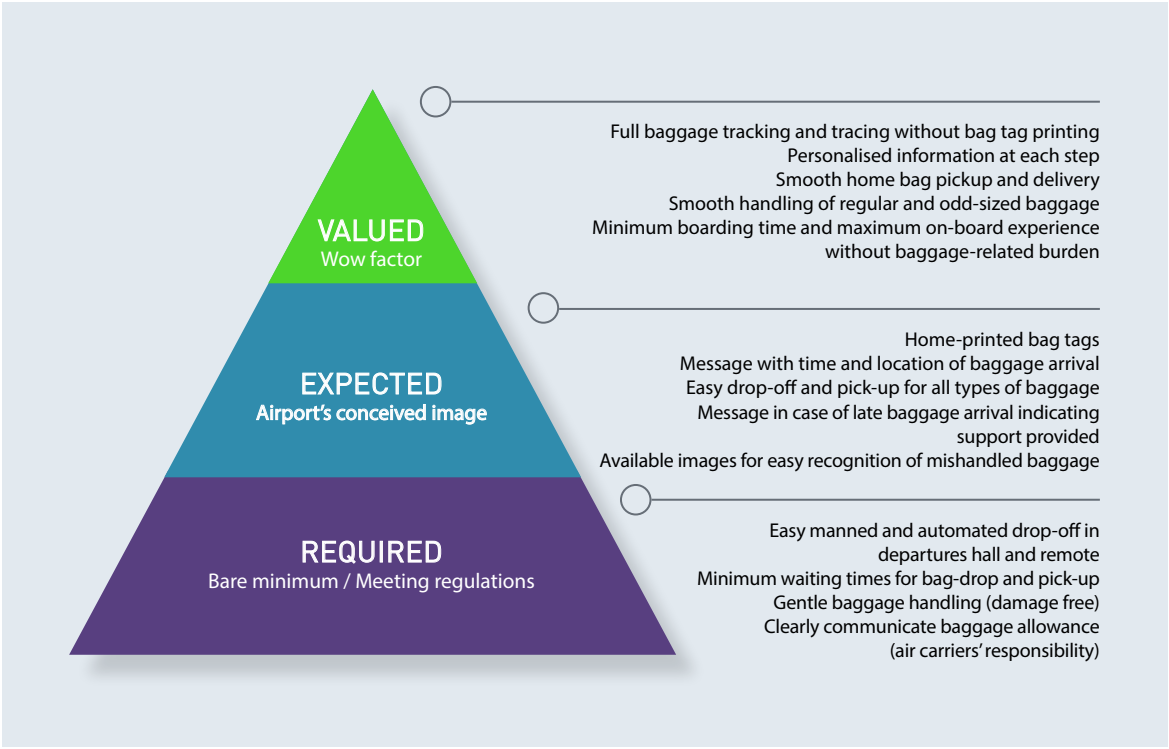
- **Make-up and load:** At the output point (the make-up location), bags for a flight are loaded into carts or containers. These are then transported to the aircraft stand and loaded onto the aircraft. Today's technology applies to IATA Resolution 753 and can ensure full tracking and tracing of bags.

- **Unload and reclaim:** At the arriving airport, the bags (loose loaded or in containers) are unloaded from the aircraft and taken to the reclaim carousels. Passengers are informed about the arrival of their baggage and can reclaim them.

  For a connecting passenger with transferring baggage, an extra step of unloading and loading bags takes place. Sometimes the passenger needs to go through a separate reclaim and check-in/bag drop process at the transferring airport. However, more often, the transfer of the bag is taken care of without the passenger's involvement.

Looking at the required, expected and valued aspects in the passenger experience regarding baggage, the pyramid in Picture 19 summarises the developments to be considered. These can be categorised into four main subjects: information provision, all actions regarding baggage drop and pickup, time management and baggage dimensions.

PICTURE 19 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: THE FUTURE OF BAGGAGE HANDLING**



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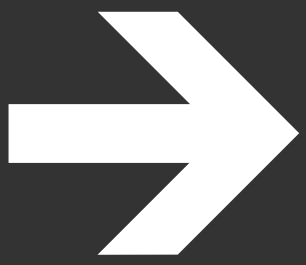
STRATEGY AND QUALITY CONTROL



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Needs and expectations differ from one passenger category to another. With new technologies, processes and requirements, needs and expectations change rapidly. Keeping up with that ever-shifting level of expectation has now become an essential part of running an airport. When passengers feel comfortable at the airport, their willingness to re-visit and use the non-aviation offers increases tremendously. It is therefore in the Airport Managing Bodies' interest to define a successful strategy to enhance the passenger experience for their target passenger groups. With a strategic focus on the passenger experience, airports can systematically develop new business opportunities. The link between passenger satisfaction and non-aeronautical revenues has already been detailed in Chapter 2.1.

At the core of this strategy, objectives that target the whole passenger journey as well as the 3P Approach (Premises, Processes, People) need to be developed. Through measurable KPIs addressing these objectives, the quality of the passenger experience can be continuously monitored and improved – making service quality management one of the keys to reaching strategic objectives. Hence, the quality control of the passenger experience is one of the keys to reaching the strategic objectives.

Successful quality management – supported by real data based on passengers' perceptions and expectations – ensures a continuously improving travel experience.

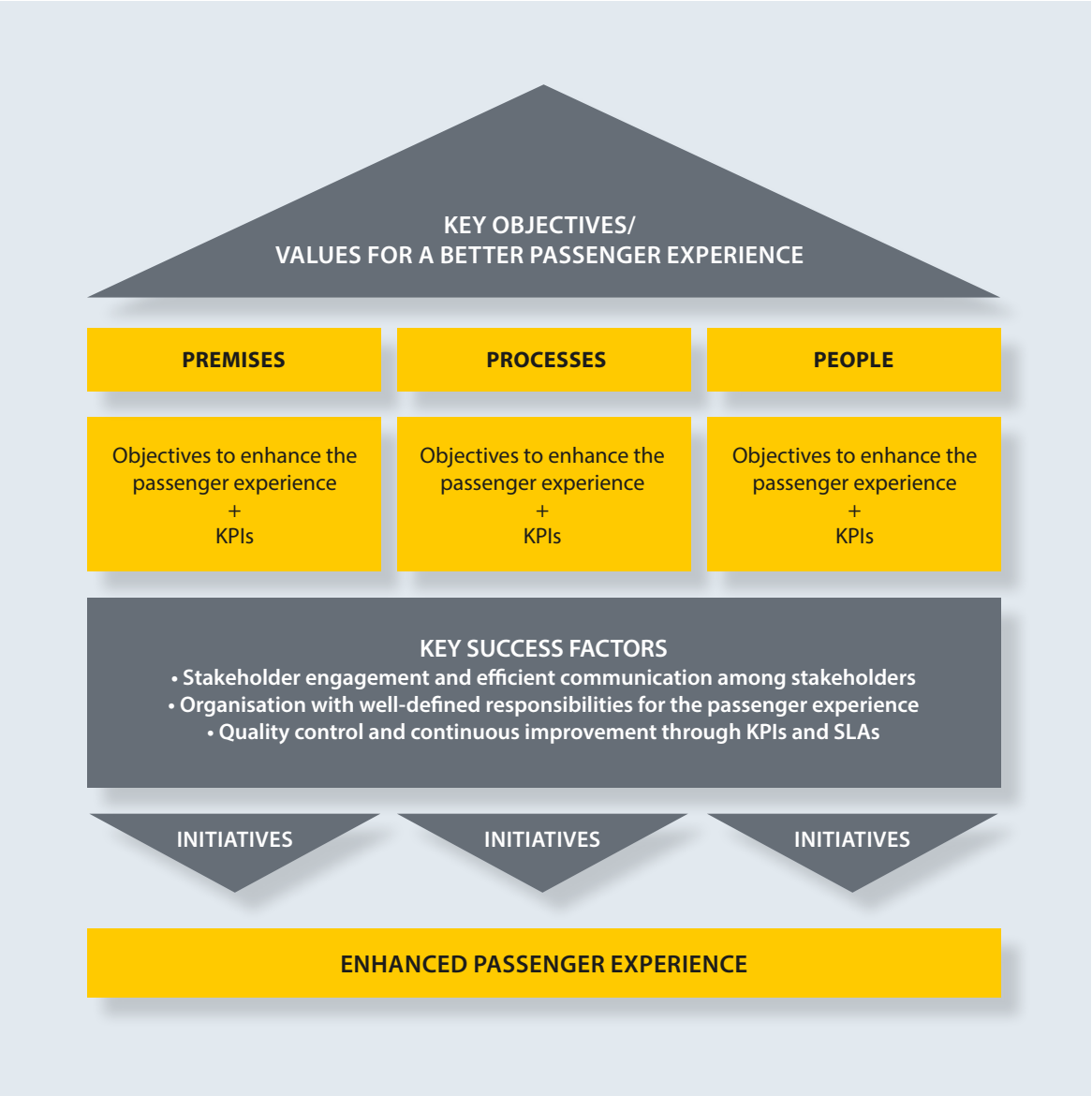
In the following sections, we outline a general framework for a strategy to enhance the passenger experience (Chapter 6.1) and the principles and elements of successful quality management (Chapter 6.2).

Nice Côte d'Azur Airport / NCE

6.1. FRAMEWORK FOR A STRATEGY TO ENHANCE THE PASSENGER EXPERIENCE

Placing the passenger at the heart of the airport business requires the formulation of key objectives and values to achieve the highest satisfaction levels. The 3P Approach provides you and your airport with a unique technique and guiding methodology to define strategic objectives for each element of the 3P, as illustrated in Picture 20.

PICTURE 20 - **FRAMEWORK FOR A STRATEGY TO ENHANCE THE PASSENGER EXPERIENCE**



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High-level business objectives are a vital part of any business plan and the most important element to be shared across all company levels. Besides constituting a statement of specific, realistic, measurable goals aligned with a time component, they lead the airport towards the desired targets. Therefore, these objectives give a company direction and may span across all departments by actively involving all people (staff), increasing the overall awareness and contributing to the company's corporate culture. For this reason, high-level business objectives for a better passenger experience commit everybody right from the beginning to pursuing that specific goal, and can often create a subsequent competitive advantage in the business environment. In addition, core values support the objectives and overall vision. Through mutual interaction, they shape the company's culture, represent its identity and help in decision-making processes.

The objectives and values for each of the three elements in Picture 20 are targeted to enhance the passenger experience while keeping in mind the different needs, expectations and preferences of the various target groups at your airport. The development of KPIs is crucial in this regard and lays the foundation for monitoring the passenger experience and making it measurable. For all 3P objectives, possible initiatives can be set, ultimately leading to an enhanced passenger experience.

Key success factors are those strictly required for an enhanced passenger experience and that influence the overall airport strategy. The common key success factors identified in Picture 20 require **efficient communication among all relevant stakeholders**, with well-defined responsibilities, quality control and continuous improvement through pre-defined, process-specific KPIs and SLAs:

Malmö Airport / MMX

Stakeholder engagement and efficient communication

Efficient communication:

- Includes permanent information exchange in different operations, committees and meetings. Key measures should abolish isolated thinking and put the passenger at the heart of the business.
- Should be supported by an improved flow of short-, medium- and long-term data as well as the establishment of operation centres to build a centralised data-sharing and coordination platform.
- Established at working and management levels.
- Provides the prerequisite for a target-oriented definition of objectives and key values for the passenger experience. A way forward to more efficient communication is the implementation of the "Ground Coordinator Concept".

More solutions are detailed in Chapters 3.2, 7.4 and in several case studies presented in Annex 2.

Well-defined roles and responsibilities:

- The passenger experience formed by the 3P is made up of various touchpoints at which the experience is finally built.
- Airport Managing Bodies should clearly define management responsibilities for all those touchpoints. As a result, people (staff) in direct contact with passengers require a complete description and definition of their responsibilities in order to predictively and proactively provide information, guidance and assistance.

Quality control and continuous improvement through KPIs and SLAs:

- Quality control should be designed and implemented to monitor performance, analyse data and provide feedback to contribute to improved process efficiency and an enhanced passenger experience. Please see Chapter 6.2.

The preparation and analysis of the airport's key success factors based upon its high-level business objectives provide the foundation to initiatives and actions aimed at enhancing the passenger experience. This enables existing gaps between the current situation and the ideal one to be identified.

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6.2. QUALITY MANAGEMENT

The increasing competition and ongoing development of new technologies in the aviation industry have empowered passengers (see Chapter 4.1). Passengers want to choose, be listened to, and influence the offer. This is why the first objective for Airport Managing Bodies is to meet their passengers' needs and expectations. When a better passenger experience is the goal, performance and service quality need to be both monitored and controlled in order to be improved.

Quality management is a global view that allows Airport Managing Bodies to evolve from a B2B approach to a B2C approach. The collected data gives them the opportunity to plan improvements or projects in those areas where customer satisfaction is lower.

As shown in Chapter 2.1, there is a positive link between the overall passenger satisfaction and non-aeronautical revenues: a 1% increase in global passenger satisfaction generates an average increase of 1.5% in non-aeronautical revenues. Quality management should be based on real, concrete and objective data, and use statistical methods.

6.2.1. SERVICE LEVELS

By comparing indicators adopted by major European airports to monitor their performance, we can identify a minimum common set of parameters used to manage the level of passenger-facing services, as shown in Table 10.

TABLE 10 - **SUMMARY OF THE INDICATORS USED IN EUROPE**

- Waiting time at border control queues (in minutes)
- Waiting time at security control queues (in minutes)
- Waiting time at check-in queues (in minutes)
- First baggage delivery from block-on (in minutes)
- Last baggage delivery from block-on (in minutes)
- Left-behind bags

In addition, the overall punctuality of departure must be included as a key performance indicator.

If a common set of indicators is used amongst airports, the way in which these indicators are achieved can vary considerably. Usually, these indicators are monitored at airports, but targets are not always public, nor part of a SLA with air carriers.

In some cases, a target is defined and declared in official documents. Economic Regulation Agreements (ERA) are increasingly signed between Airport Managing Bodies and national authorities to link the level of airport charges with the level of services provided. As most of the six indicators shown in Table 6 are not under the responsibility of the Airport Managing Body (typically ground handling service providers or police are responsible) they are included only as "monitored" but are not linked to any agreed economic targets.

The mechanism for definition of airport charges is evolving towards a more quality-oriented approach and a "pay according to service quality levels" approach. This will make the target definition, the data quality and certification process, and the bonus malus mechanisms negotiation key aspects of managing airport businesses, harmonising the passenger experience, commercial relationships with air carriers and profitable airport businesses.

The setting of target values can be approached in several ways:

- Measurements refer to average values within a period, while targets are defined as a percentage of observations or time within which the minimum standard must be met (typically 90%, but also 85%, 95% and 98% are assumed).
- Often a minimum standard is set as a limit that must be met at all times, without exception. This is known as a "minimum" level of service, used as an alert to serious problems in service delivery.

To sum up, an indicator should be linked to three target values with different meanings and uses:

- Average value within a given period (e.g. average first baggage delivery time per month or year).
- Maximum value within a given period, for a given percentage of time or observations (e.g. first baggage highest delivery time in 90% of measured cases on a monthly or yearly basis).
- Maximum allowed value (e.g. first baggage delivery time not to be exceeded in 100% of cases).

From the point of view of managing airport processes:

- The average and maximum values in a particular percentage of events will be used to set general performance standards.
- Actions and possible penalties.

All of the above can be used to define service standards and to manage Service Providers. The last parameter is defined as a "minimum" in all discussions with and about ground handling service providers. Minima have to be considered to make sure that any commercial agreements between air carriers and service providers at an airport are valid.

In any case, if Airport Managing Bodies want to manage the level of services under their own responsibility or services provided by other stakeholders, the nature of the methodology adopted must accurately represent the service delivery process in question – including passengers' needs and expectations, as well as external constraints.

Continuous improvement, sometimes claimed as a goal by regulators, should not be mandatory. A stable level of service even when traffic grows is a great result. Systematically looking for unlimited improvements is clearly unreasonable, not cost effective and/or possibly not even requested by passengers.

Whether measurements are based on sampled or continuous data collection, the following conditions must be met:

- Measurements should allow delivery of products/services as defined in commercial specifications agreed by passengers and air carriers.
- Measurements should reflect passengers' expectations.

When setting measurements, due consideration should be given to local external conditions. Measurements must be commensurate to the service received by the passenger, as shown in Table 11.

TABLE 11 - **THE USE OF KPIs AT SELECTED TOUCHPOINTS**

No.	Passenger Journey	KPIs to measure the Passenger Experience	Methods of Measurement	Measures to enhance the Passenger Experience
1	Passenger @ home			
2	Passenger on the move			
3	Passenger @ terminal landside			
3.1	Orientation and wayfinding	Ease of wayfinding	ASQ survey	Indoor navigation systems
		Number of orientation points, level changes	Analysis of passenger flow	Optimisation of terminal layout
3.2	Services before security control	Quality and variety of services	Passengers surveys	Provision of tailor-made services to specific passenger categories
		Internet access/ Wi-Fi	- ASQ survey - Instant feedback	Free Wi-Fi
3.3	Check-in/ bagdrop	Queue waiting times (min)	- ASQ survey - Instant feedback - Measurement of queuing time	- Self-service bagdrop - Common use facilities - Home-printed or permanent bag tags
		Courtesy and helpfulness of check-in staff	- ASQ survey - Instant feedback	Hospitality programmes
4	Passenger @ security/border control			
4.1	Security control	Queue waiting times (performance and perception)	- ASQ survey - Instant feedback - Measurement of queuing time (e.g. Wi-Fi, BPass scan)	- Self-service bagdrop - Common use facilities - Home-printed or permanent bag tags
		Courtesy and helpfulness of staff	- ASQ survey - Instant feedback	- Self-service bagdrop - Common use facilities - Home-printed or permanent bag tags
4.2	Border control	Queue waiting times (performance and perception)	- ASQ survey - Instant feedback - Measurement of queuing time (e.g. Wi-Fi, BPass scan)	- Self-service bagdrop - Common use facilities - Home-printed or permanent bag tags
		Courtesy and helpfulness of staff	- ASQ survey - Instant feedback	- Self-service bagdrop - Common use facilities - Home-printed or permanent bag tags
5	Passenger @ terminal airside			
6	Passenger @ boarding			

6.2.2. MEASURING CUSTOMER SATISFACTION

There are different ways to measure customer satisfaction and the choice of tools is driven by different needs. The main tools are customer surveys, through which airports can obtain crucial information about their passengers' needs and expectations.

6.2.2.1. CUSTOMER SURVEYS – USEFUL FOR MEDIUM- AND LONG-TERM IMPLEMENTATION PLANS

As highlighted by McKinsey & Company[17], companies focused on maximising satisfaction, with regard to the entire customer experience, have the potential to increase customer satisfaction by 20%.

Essentially, in order to improve customer satisfaction, focus should be put on the whole customer experience. The report suggests that it is no longer good enough to focus on individual interactions with customers. Instead, think in broader terms and look at the big picture. The customer satisfaction survey investigates all the customer touchpoints and global satisfaction (total, vs. expectation, vs. ideal).

The "what-if" analysis[18] allows single quality service elements to be linked to the customer satisfaction with the overall experience thanks to a consistent system of cause–effect indicators. Cause-effect model results can be considered strategic tools for the airport management in order to identify variables of greater impact on the satisfaction and to plan investments accordingly.

Customer satisfaction analysis needs a set of synthetic indexes by which the evaluation is extended to every single part of the travel experience. An interesting example is the **CSI (Customer Satisfaction Index),** recently applied by a few European airports and already largely adopted by the aviation industry in the USA and the UK. It is particularly useful to measure the 'gap' from the currently provided service quality levels and passengers' expectations.

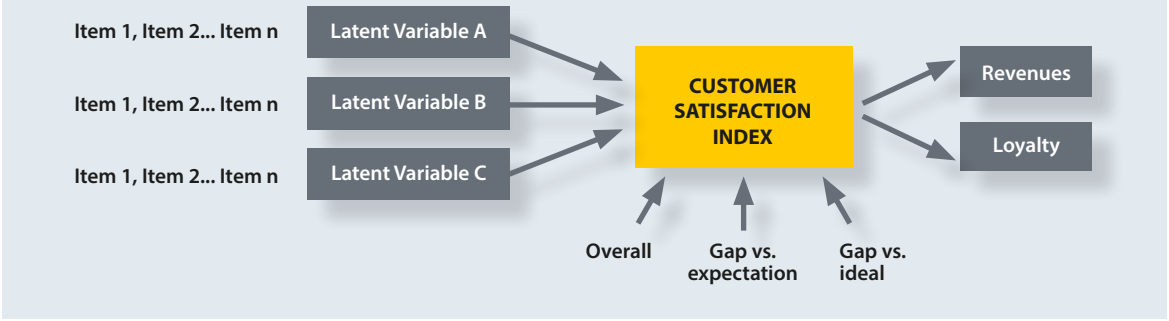
The CSI is calculated by weighting the answers to three questions about:

- overall satisfaction
- gap compared with passengers' expectations
- gap compared to their ideal airport

The weighting system is derived from the impact coefficients of all basic items and their aggregation to new variables (said latent variables) for satisfaction. The weighting system allows the measurement of the impact on the global CSI of a single item or of a latent variable and consequently to identify areas where action is needed (see Picture 21).

17. McKinsey & Company (March 2014), "*The 3Cs of Customer Satisfaction: Consistency, Consistency and Consistency*".
18. What-if analysis: the process of determining the effects of outcomes through systematic changes in the input.

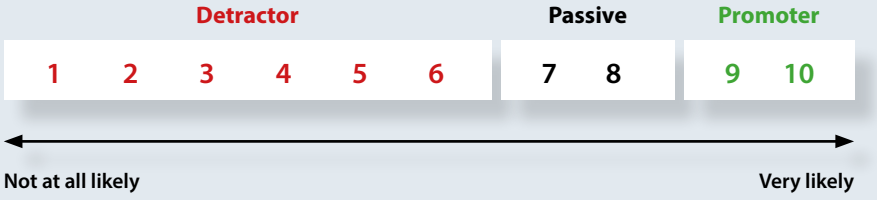
PICTURE 21 - **THE CUSTOMER SATISFACTION INDEX**



Another tool used by some airports is **NPS (Net Promoter Score)**. It measures if a passenger would recommend an airport to relatives or friends. This method is based on the idea that when somebody is satisfied, they will tend to suggest the same experience to others. In other words, it allows passenger loyalty to be measured.
NPS scale in use is as follows:

PICTURE 22 - **THE NET PROMOTER SCORE**

How likely is it that you would recommend this airport to a friend or colleague?



Customer answers are classified as follows:
0–6 = Detractors – unhappy customers who can hurt your brand through negative word-of-mouth
7–8 = Passives – satisfied but indifferent customers who could be swayed by the competition
9–10 = Promoters – loyal customers who will keep returning to the airport and referring others

The equation for calculating a Net Promoter Score is:

$$\frac{\text{(Number of Promoters - Number of Detractors)}}{\text{(Number of Respondents)}} \times 100$$

A focus on indexes:

CSI (CUSTOMER SATISFACTION INDEX)

- It provides more detailed information than the traditional systems. This system, for example, considers satisfied passengers as those having answered "excellent or good" to the question about their overall satisfaction.
- In addition to providing satisfaction levels, it identifies airport services with a higher impact on passenger satisfaction. This provides concrete support for both the definition of clear strategies and the promotion of improvement actions.
- CSI is a total customer satisfaction measurement, enabling companies to benchmark all aspects of the customer experience with industry peers and best-in-class companies in other industries. Some air carriers are already using this index[19].

NPS (NET PROMOTER SCORE)

- Applied and appreciated by Airport Managing Bodies that are in direct competition, such as those where transit passengers represent a significant share of traffic. In this case, passengers' purchase choices can be affected by previous experiences.
- Used by companies around the world so it is easily comparable among main cross-sector competitors.
- Results do not give the reasons for the passengers' feedback, whether it be positive, neutral or negative.
- Evaluations in general can be affected by cultural backgrounds linked to the different kinds of scales in use around the world and, consequently, different interpretations of results.
- Empirical observations have demonstrated that a high percentage of NPS detractors could be classed as silent customers. This means that even if they do not consider that the airport meets their expectations they would continue to be users.

To summarise, as NPS and CSI allow Airport Managing Bodies to obtain different kinds of data and are usually used for different objectives, it is essential to focus on the competitive scenario in order to choose the best methods.

19. See details here: www.theacsi.org

6.2.2.2. INSTANT FEEDBACK – USEFUL FOR OPERATIVE IMPROVEMENTS

NPS and CSI are just two of the most used instruments to provide guidance in the medium-to-long run, but it is important to put in place other measurement tools that allow operative monitoring and instant feedback on single services/touchpoint on a 24h/7day basis. This kind of measurement is useful for day-to-day resources management, including the human resources that most affect the passenger experience, such as cleanliness, staff courtesy, toilets, etc.

Over the last few years, devices that collect customer opinions on the spot, immediately after having used a service, have progressively been introduced at airports. The most common devices display three to five keys, with different colours on a scale from red to green. They allow passengers to rate a service or a product by selecting one of the keys: intuitively, red stands for negative and green for positive, whereas intermediate colours (yellow or light red/green) indicate intermediate ratings. Emoticons (smiling or sad faces) can be used with a similar meaning either with or without a colour code.

Barcelona-El Prat Airport / BCN

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Keys can be physical buttons or touchable icons on a screen. The choice of how many keys/options should be given to the customer is an essential decision: odd number of options lead to an intermediate opinion, which can reduce the possibility of identifying the perceived quality of a given service. Even numbers of options force the customer to choose between positive and negative. An analysis of the process is required to make the right choice between both options.

Devices with physical keys are more attractive and, usually, facilitate the collection of a large amount of feedback. Touchscreen devices could be less effective but they make it possible to ask additional questions after a first-level rating by the customer: when a negative or positive opinion needs to be detailed with additional information, this kind of device is the right one. Nevertheless, the customer is asked to concentrate on questions, make additional choices and stop for slightly longer in front of the device. Once more, the objective of the data collection should be well defined to determine the best alternative.

Instant feedback devices can offer event-driven alarms and be useful to call for immediate reaction by the organisation: cleaning of toilets, staffing of security control lanes, reduce crowdedness in an area, etc.

The tools used for relevant feedback will be useful if designed and deployed according to some criteria:

- They should be very engaging and easy-to-use; those that look like children's games and use emoticons in bright colours, similar to those of traffic lights (a worldwide standard), will attract passengers and facilitate the collection of huge amounts of feedback.
- Asking the passenger to add additional information beyond the simple 'rating' reduces the feedback rate (it takes time, requires a minimum consideration of the question and requires a minimum understanding of how the device works) and should be done only for selected processes, when the passenger is expected to have time to be engaged and where there is a clear added value.
- The deployment of an instant feedback device should be carefully prioritised: it goes without saying that monitoring by instant feedback gives a clear idea of the overall passenger experience before it is confirmed by passengers' interviews.

The integration of instant feedback results with other quality parameters (such as waiting times) is possible and could be worthwhile. For example, in the case of security service evaluation, the passenger satisfaction results can then be cross-analysed with the waiting times. This allows people (staff) to be better allocated and to define appropriate waiting times.

A cross-analysis of instant feedback quality data and level of service can be a powerful instrument to detect the effects of staff behaviours or hidden premises' defects, which are otherwise hard to catch.

The successful adoption of these tools comes from an integrated use of all the different methodologies presented in this chapter. Altogether they can provide the full picture of the actual passenger experience offered by the airport.

6.2.2.3. SOCIAL MEDIA – COLLECTING MORE DETAILED FEEDBACK

Social media have become common communication tools used by passengers for complaints, information requests and congratulations. It is important to constantly monitor all social media channels, such as the airport's official Facebook page, Twitter accounts and all pages dedicated to passenger comments. In particular, complaints should be given more importance, sharing them with the concerned people (staff). As these elements have strong emotional contents, they are more likely to influence brand awareness and image. Please see Chapter 7.1.

6.2.3. QUALITY MEASUREMENTS IN ACTION

The definition of a customer satisfaction index is useful to reach the objective of quality management. As a result of this total quality approach, the airport as a whole is committed to supporting continuous improvement. This means that processes are always to be carried out with consideration for passengers' expectations, which requires a global approach. This is why some airports have introduced new models for their reward systems that include customer satisfaction results.

The already mentioned correlation between passenger satisfaction and non-aeronautical revenues (see Chapter 2.1) demonstrates how this relationship can support the decision-making process on airport investments. Some airports also evaluate the effects of customer satisfaction improvements on their own business results.

Airport Managing Bodies need to set a system of KPIs that analyse the benchmark data. Attention must be paid to the fact that benchmark data can be subject to some distortions. In a process of continuous improvement, airports need to compare results with those of other industry stakeholders, including their competitors. The chosen index should therefore allow for a comparison among airports and other actors in the industry, including different modes of transport (e.g. air carriers, railways).

6.2.4. BENCHMARKING

In the airport industry, benchmarking has become an important management tool that is used to orientate an airport's strategy and to improve its positioning in the aviation industry.

Benchmarking helps to assess airport performance in comparison with the best in class and direct competitors. Analysing gaps with airports within the cluster of comparable airports helps to identify, among the most impactful initiatives, those in which to invest in order to gain an advantage in the market by estimating their contribution to customer satisfaction improvement.

There are aviation bodies and companies that carry out benchmarking analysis in order to provide comparisons of airport performance. Among those that analyse aspects related to the customer experience in the airport, we can highlight the ones listed below that focus on:

- Airport punctuality and delays (i.e. in Europe, the European Airports Punctuality Network (EAPN), part of the ACI EUROPE Technical and Operational Safety Committee).
- Delay and capacity constraints, carried out by EUROCONTROL, the Network Manager of the European ATM Network, which assists the European Commission in the implementation of the Single European Sky establishing and measuring targets in key areas (safety, network capacity, effectiveness and environmental impact).
- Customer satisfaction (ACI Airport Service Quality): the ACI ASQ Survey global benchmarking programme that has allowed every participant airport to benchmark with other airports around the world since 2006.

The ACI ASQ Survey measures passenger satisfaction while they are travelling through an airport, providing the airport with quarterly and yearly analyses as well as comparisons with other airports' performance.

At the main European airports, there is extensive use of data provided by benchmark programmes, including Economic Regulation Agreements with national regulators, for which data is part of the airport charges definition mechanism.

The benchmarking activities detailed above can be particularly effective when they are used in combination with surveys on services, processes and passenger satisfaction in cooperation with other airports in order to identify the solutions and the success factors of the best in class.

THREATS

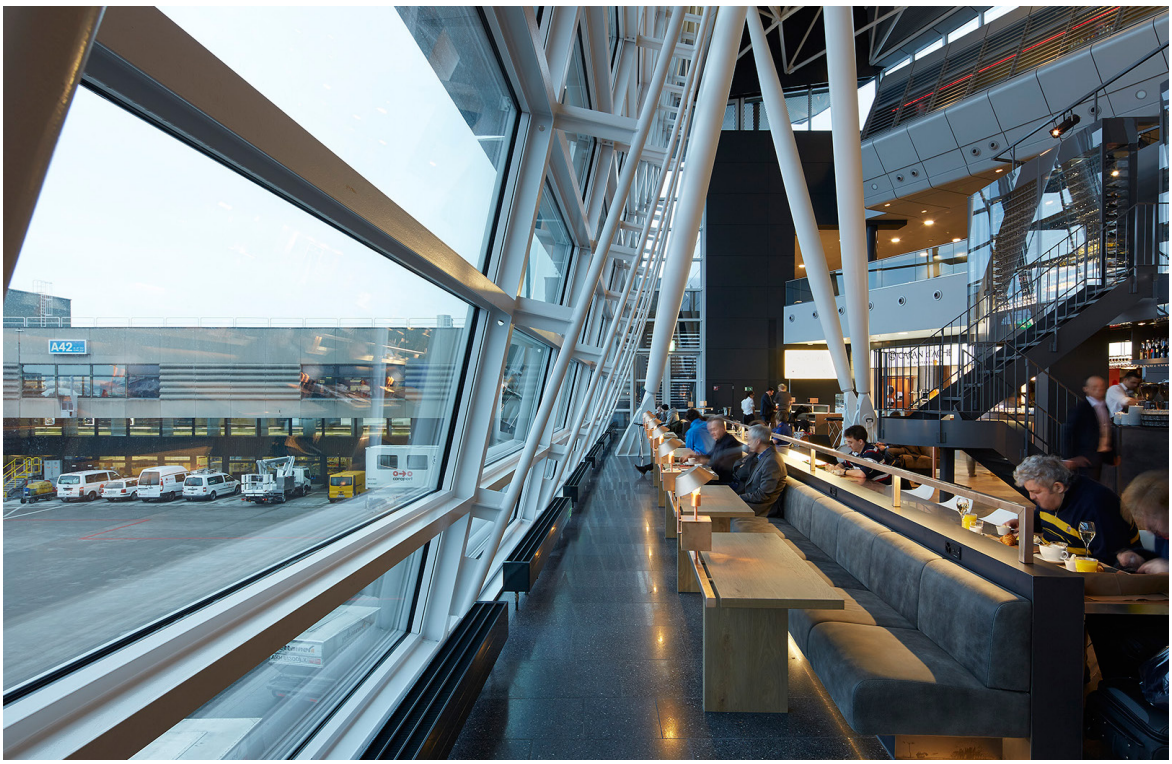
1. Not comparable data
As data provided must be comparable, first checks should be carried out in order to verify if a shared methodology is in place. In the case of punctuality, the same time-stamps must be recorded in order to calculate delays. When measuring the queuing time at security check point, this means identifying the touchpoints at which to start and finish the measurements. It also implies identifying the same statistically significant samples and having the same reference period for the measurements (peak traffic hours only or all operating hours).

2. Cultural and demographic background of respondents
Customer satisfaction answers are affected by cultural and demographic background (nationality, gender, age, etc.). Passengers from different nationalities give different evaluations of the same service (for example, Asian passengers tend to be more positive than Europeans).

OPPORTUNITIES

1. Sharing best practices
Learning from other markets, best practices for front-line staff attitude can be learnt from the hotel industry.

2. Benchmarking with competitors inside and outside the industry
In particular, other modes of transport.



Zurich Airport / ZRH

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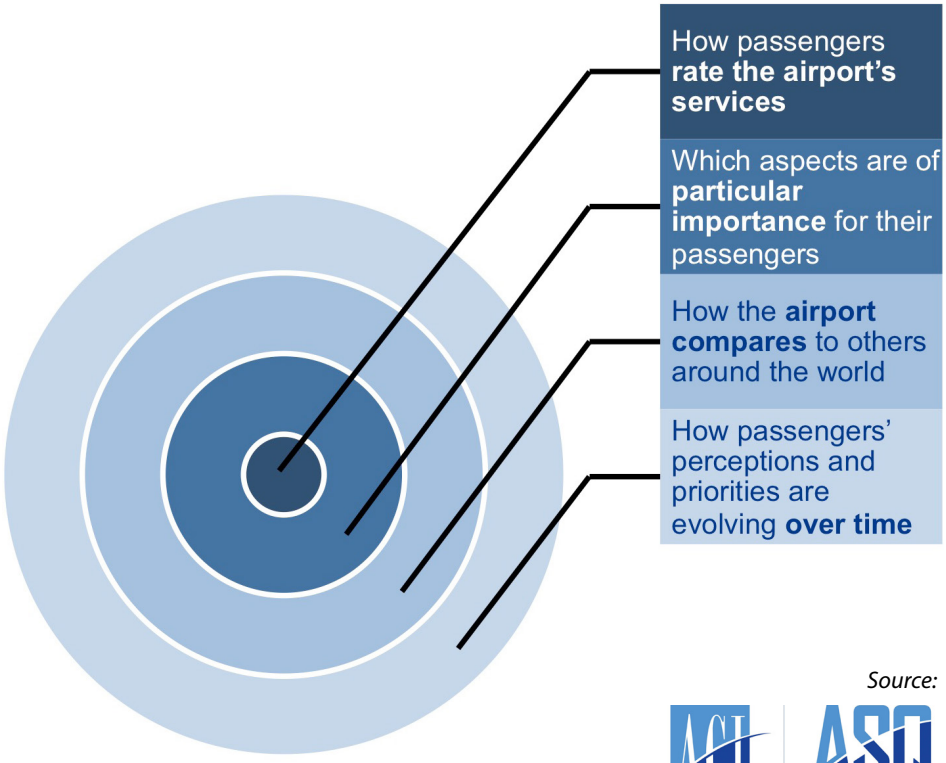
6.2.5. AIRPORT SERVICE QUALITY (ASQ) PROGRAMME

ASQ is the world's leading airport passenger service and benchmarking programme.

PICTURE 23 - **WHAT IS AIRPORT SERVICE QUALITY?**

- ACI's **customer satisfaction** measurement and analysis programme
- Main objective: to provide airports with **research tools and management information** to better understand passengers' views with respect to the airport's services
- **Participating airports learn**…



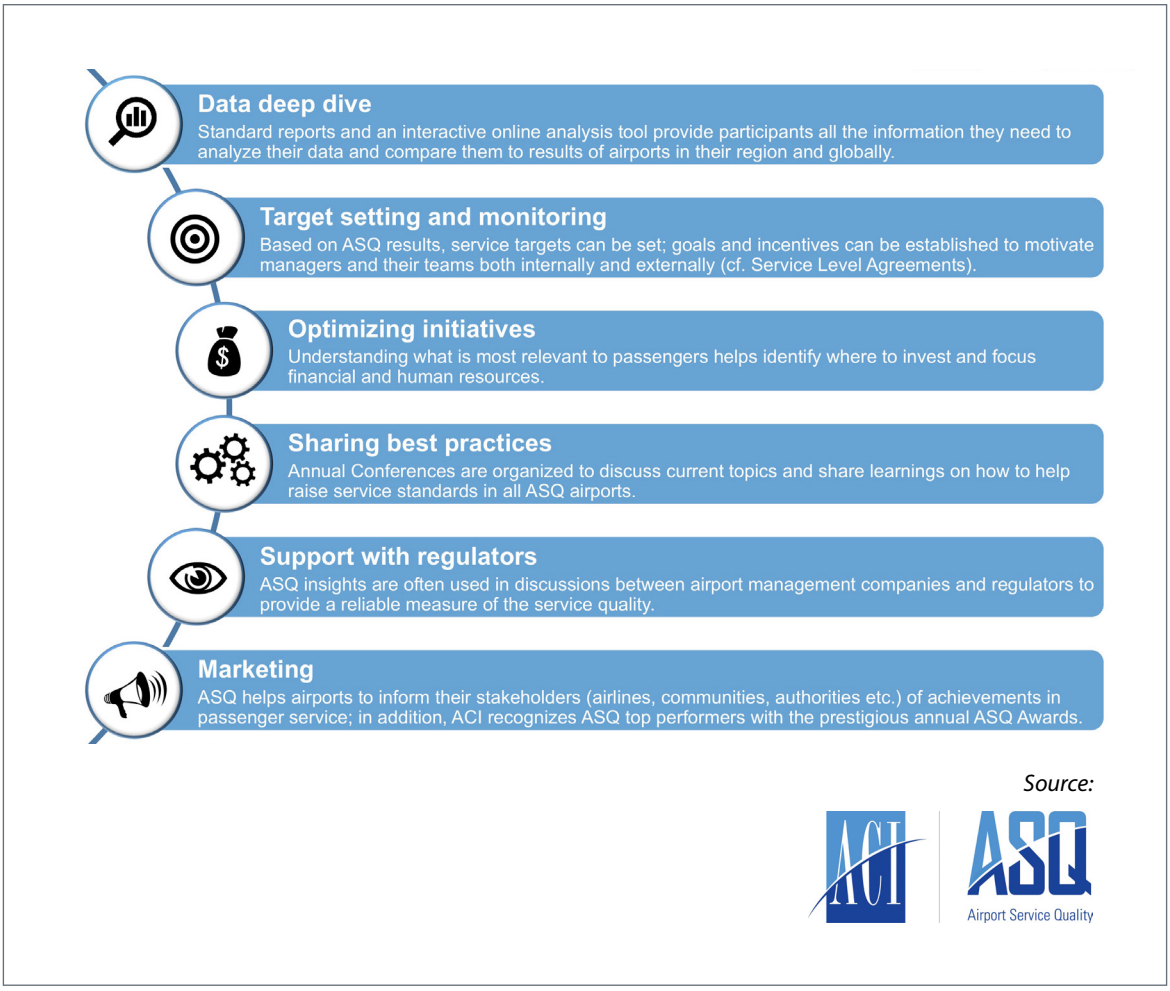
Source:

ACI | ASQ Airport Service Quality

Developed and implemented by ACI, ASQ is a survey programme that is available separately for both departing and arriving passengers. Both surveys provide key passenger research and insight, as well as essential management information. ASQ is designed for Airport Managing Bodies seeking more effective, efficient and profitable ways to meet their passengers' needs and expectations.

The ASQ Survey is intended for Airport Managing Bodies that require up-to-date feedback on their service performance to drive high-level operational and strategic decision-making. It helps them understand today's performance and changes over time, as well as allowing benchmarking and comparison of performance against other airports.

PICTURE 24 - **HOW CAN ASQ HELP YOUR AIRPORT?**



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An airport may be improving but its competitors may already be a step ahead by widening their offers and implementing them at a faster pace. ASQ helps Airport Managing Bodies to gauge where they stand, allowing decisions and investments to be made based on the best intelligence available.

In ASQ Departures, 34 service attributes are measured. Passengers are asked to rate specific service-related topics and their overall satisfaction with the airport on a scale of 1 (poor) to 5 (excellent), along with questions related to the passenger profile. The questionnaire is offered in 45 languages.

Launched in 2017, in ASQ Arrivals 37 service attributes are measured, providing valuable insights on:

- disembarkation
- border control
- baggage reclaim
- customs
- infrastructure and services
- comprehensive passenger profiles

ASQ research takes place in airports that serve more than half the world's 7.7 billion annual passengers and provides unique data indicating:

- how passengers rate the airport services
- how the airport compares to others around the world by traffic type, size, regions, etc.
- which aspects are of importance for specific airports
- how passengers' perceptions and priorities are changing over time

The information ASQ provides will allow Airport Managing Bodies to:

- optimise investments and initiatives
- monitor the performance of suppliers
- share best practice with other airports
- assess the management performance
- help with regulators
- market their airport more successfully

The ASQ programme also includes studies that are useful for validating quality data value in business strategy planning.

Furthermore, launched in 2017, the ACI Employee Survey for Customer Experience (ECE) is an additional new programme to help airports better understand the thoughts, actions and motivations of all staff in the airport. The ECE has been designed to provide invaluable data to airports so that they can better understand how airport staff interact with passengers, and to help them evaluate whether passenger experience enhancement projects are hitting the mark.

The ECE is designed to help airports:

- understand the motivation and commitment of airport staff towards achieving the common goal of improving the passenger experience, and assess their collective commitment to it,
- identify areas that might be prioritised for improvement and develop action plans to enhance the overall passenger experience and to,
- benchmark passenger experience initiatives and share best practice with other participating airports.

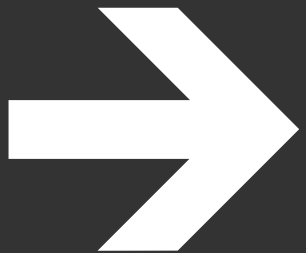
The ECE has been developed with the same commitment to robust data gathering that has made the ASQ Survey an essential tool for the world's best airports. The ECE is easy to use, has been designed to be self-administered online and is packed with useful features, such as a global index structured around 73 questions, search functions, strategic recommendations; and, year-end summaries. The ECE also fits seamlessly with the ASQ toolkit of products and services, making it the ideal complement to the ASQ programme.

ASQ Awards Ceremony at the 27th ACI Africa/World Annual General Assembly, Conference & Exhibition in Port Louis, Mauritius, October 2017.

Lyon–Saint-Exupéry Airport / LYS

7

ENHANCING THE PASSENGER EXPERIENCE THROUGH TECHNOLOGY



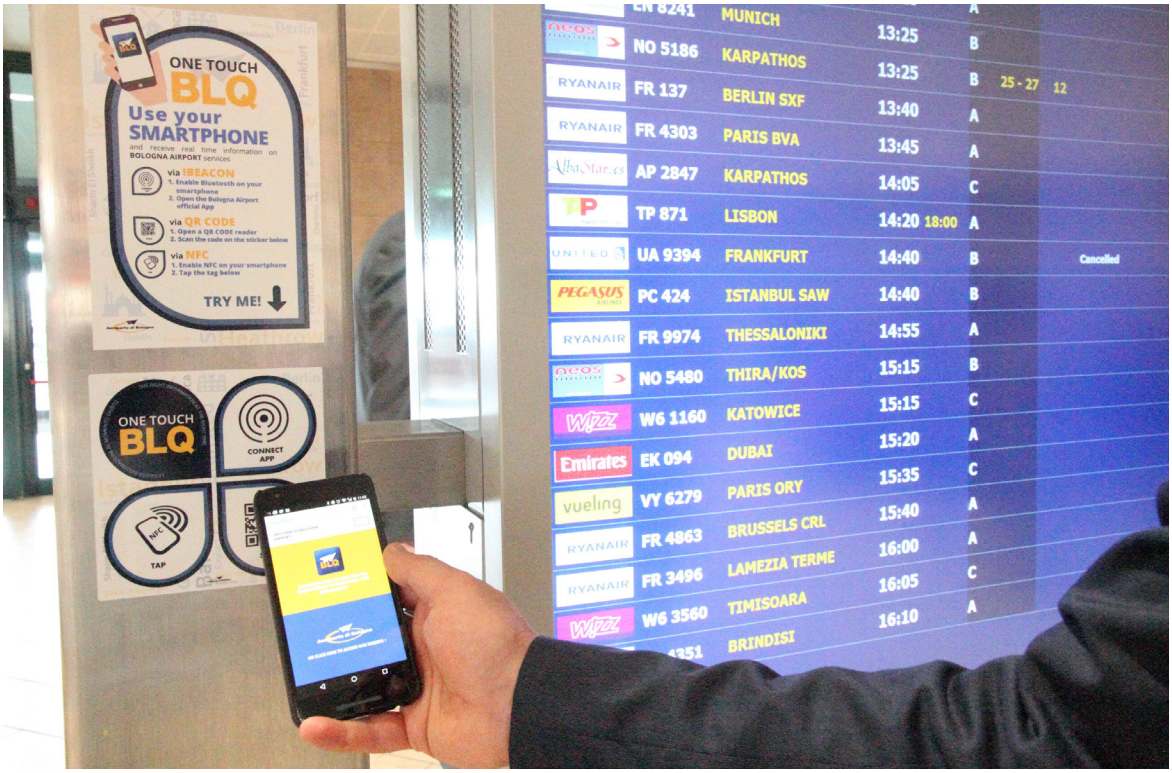
7

Over the last few years, we have witnessed constant evolution of passengers' attitude towards technology – today 90% of airline passengers carry a mobile phone and/or tablet with them during their travels. Therefore, it is vital that Airport Managing Bodies can support these tools as part of their primary communications with passengers, visitors, and meeters and greeters.

There is little doubt that the more passengers interact with the technology they use, the more they profit from it. At the same time, one technology does not fit all passengers' needs as each passenger has their own travel requirements and mindset. Passengers now have increased access to personalised, real-time information from anywhere at any time. As such, they expect immediate personalised interactions with airports. It is also important to have an omni-channel approach and to be coherent between different channels that interact with passengers. The same look-and feel in different channels helps users to recognise the owner of the service used and build the brand. There is one criteria, though, that matters for all passengers: ease of use.

When technology is perceived as easy to use, Airport Managing Bodies will get a positive passenger response and a positive attitude to reusing that technology, which will impact long-term adoption. Additional technologies, such as context-aware, augmented reality and predictive analytics, can help airports to maximise the passenger experience even before they arrive at the airport and during their time on the premises.

Providing the latest parking information, flight status and security and border control waiting times, in addition to commercial services and promotions, will help passengers (and other visitors) enjoy their time at the airport.



Bologna Airport / BLQ

7.1. SOCIAL MEDIA/INTERNET

With free WI-FI available in more than 70% of airports, airports' presence on social media is very much established in Europe. Initially used by Airport Managing Bodies to provide notifications about flight status, this has now evolved to offer a wide range of new services, such as notifications about airport status, retail promotion and purchase of airport services. Wi-Fi has become an excellent tool to connect and engage with the passengers that were previously only accessible to air carriers. Social media channels, such as Twitter, Facebook, Google+ and Instagram, allow for relationship building before, during and after passengers reach the premises. Therefore, it is not surprising that more than 70% of airports have invested in customer relationship management via social media. These relationships provide Airport Managing Bodies with opportunities to engage with passengers during contingencies, provide real-time services, disseminate corporate communications and interact with passengers in a more informal and personal manner.

KEY EFFECTS OF SOCIAL MEDIA

→ REAL-TIME PASSENGER INTERACTION

With increased passenger interaction comes the greater risk of reputation damage owing to delays, outages and poor customer service. It is very important for Airport Managing Bodies to be able to measure the level of passenger satisfaction, analyse their feedback and, if needed, shape solutions. Airport Managing Bodies must ensure transparency, authentic responses and timely communications to mitigate this risk. There are several ways in which Airport Managing Bodies can interact in real-time with passengers, such as using specific feedback devices installed in the premises, through online questionnaires and/or surveys on the airport website, or through specific reporting tools available in the CRM. An internal feedback tool reserved only for people (staff) might also be very useful to gather feedback on the quality of the service and on the staff satisfaction level. Last but not least, social media (Facebook, Twitter, airport blog, Instagram, YouTube, LinkedIn, etc.) is also a very powerful tool that can be used for various purposes, for example, for responding to passengers' complaints or queries, enhancing customer relationships or information sharing. However, it needs to be carefully planned and implemented to provide a valuable passenger service in terms of responsiveness (real-time), quality of information provided (accuracy of data) and value added (content provided). If not properly and efficiently managed, it might have a "boomerang effect", exposing the airport to negative comments from its passengers, hence undermining its credibility.

→ PASSENGER FLOW/PASSENGER SERVICE COMMUNICATIONS

Ongoing updates and real-time alerts allow passengers to adapt their plans based on the weather, train/transport to airport issues, parking availability and waiting times at security. Potentially tricky situations can be turned into brand wins with timely and relevant updates and potential passenger bottlenecks can be averted. Passengers will have more flexibility in allocating the appropriate time to go through each touchpoint, thanks to the real-time information received, reducing stress and allocating the required time to ensure a hassle-free experience.

7

→ PASSENGER ENGAGEMENT

Ongoing interactions with passengers provide the Airport Managing Body with a tool to show its personality and corporate image. Passengers share their news, comings and goings via social media, giving the Airport Managing Body numerous opportunities to engage with them and get involved with their stories. Engagement can be encouraged among passengers, facilitating connections with frequent travellers. Thanks to the special attention provided by Airport Managing Bodies, passengers will feel part of a pleasant experience that will increase their positive mood.

→ RETAIL ENABLEMENT

Coupons, discount updates and promotions for airport retailers can be highlighted, driving traffic to stores. Highlighting the offers of the air carriers using the airport strengthens awareness of the destination. Passengers will benefit from a special promotion tailored for them, making them feel appreciated and valued by Airport Managing Bodies. Airport Managing Bodies must always seek passengers' permission to send this kind of messages in order to comply with the European General Data Protection Regulation (GDPR).

→ CUSTOMER LOYALTY

Building brand awareness allows for ongoing engagement with passengers and enables Airport Managing Bodies to differentiate themselves. Offering loyalty rewards and recognition via social media or treating passengers and sharing their stories have proved very successful. The passenger will be emotionally attached to the airport and its corporate image.

→ DESTINATION MARKETING

Route launches and air carrier promotions build awareness and loyalty. The passenger will feel properly informed of any new opportunity and in a better position to take decisions. Airport Managing Bodies must always seek passengers' permission to send this kind of messages in order to comply with the European General Data Protection Regulation (GDPR).

→ BUSINESS INTELLIGENCE

An airport that is active on social media has greater direct access to passenger information and data, which was only available to air carriers in the past. This data allows Airport Managing Bodies to communicate and market themselves more effectively' and directly with their passengers and build a base of social advocates.

→ CONTINGENCY AND REPUTATION MANAGEMENT

Contingencies, whether they are natural, political or other disasters (see Chapter 5.2.2), require swift and clear updates showing the necessary amount of concern about what are usually very emotional situations. Failure to respond appropriately could result in fatal brand damage. Passengers will benefit from real-time accurate crisis event information provided by Airport Managing Bodies, allowing them to feel in control of the situation and able to take the appropriate decisions based on the specific occurrence and their own willing.

Main benefits for the passengers:

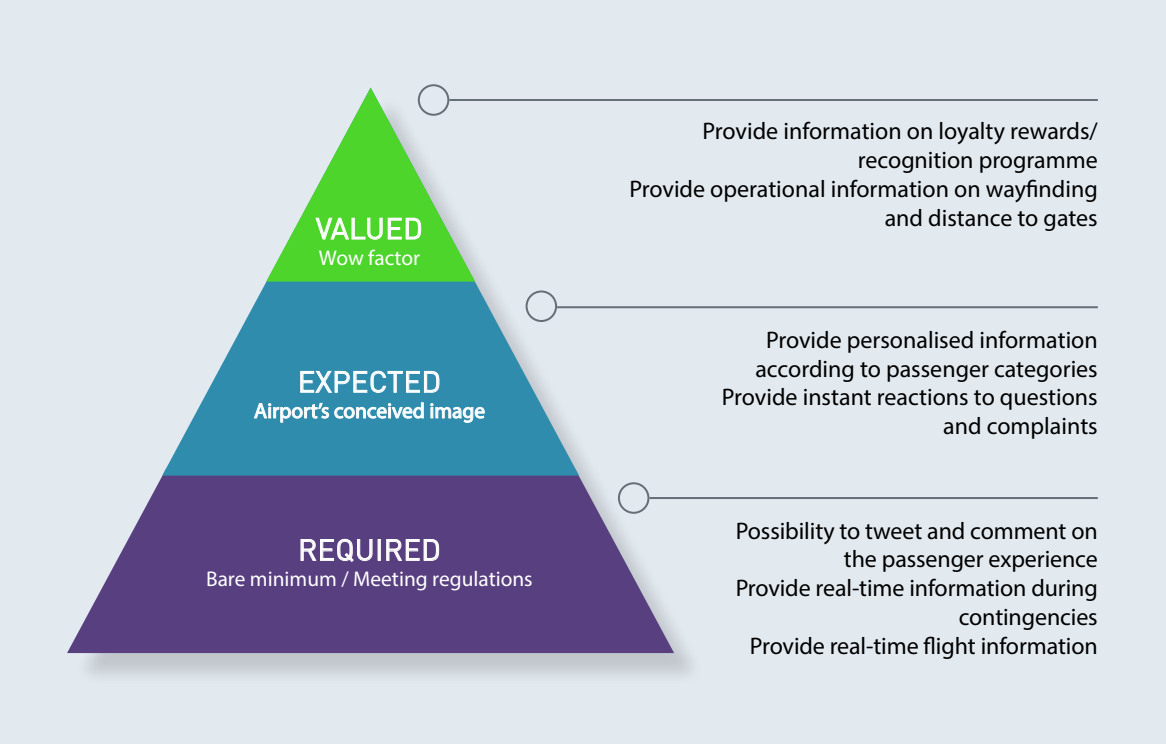
- Real-time accurate operational information.
- Flexibility in allocating the right time to every step of the journey.
- Commercial promotion tailored for them.
- Rewards and recognition for their loyalty.
- Feel more in control of their trips.

Main challenges for airports engaging in social media channels:

- Posting, editing and reacting to messages should be done 365 days a year – ideally around-the-clock (at least, during regular business hours including weekends).
- To answer requests in real-time, roles and responsibilities need to be clarified.
- A social media strategy, following the corporate strategy, should be developed in advance, including how often updates will be published.
- There should be a translator, who can assist with different languages (minimum requirement being to answer in English).
- Established responsibility areas and interfaces to all internal (e.g. complaints management) and external stakeholders should be defined (e.g. police, security, authorities).
- Social media channels must be integrated into the crisis communication plan.
- Provide people (staff) with a social media policy to ensure that they understand what social media means and what they can or should say.
- Implement a social media monitoring system in advance.

Cork Airport / ORK

PICTURE 25 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: SOCIAL MEDIA**



Nice Airport / NCE

7.2. NEW TECHNOLOGIES

Airport Managing Bodies are constantly looking for new technologies that will help them provide added value services to their passengers in near real-time and to optimise the passenger flow within the premises.

Below are some of the technologies that Airport Managing Bodies have already piloted, deployed or are planning to implement in the near future. These technologies may also be used by passengers to enhance their experience.

7.2.1. AUGMENTED REALITY

Augmented reality is a feature of some smartphone apps that is growing in popularity. Smartphones and other mobile devices, such as iPads, can be configured to broadcast their location within the premises. By superimposing this location on a map of the airport terminal, passengers can use the camera feature on their mobile device to get contextual information on their surroundings, e.g., directions to a specific boarding gate or information on a shop.

For example, in California, San Jose International Airport (SJC) is at the forefront when it comes to trialling and implementing new technologies. Their latest project is testing the new Google Tango technology platform in the terminal with the co-creation of an SJC augmented reality app where users can see various 3D images 'floating' around the concessions area. For instance, they could see a 3D shark swimming outside of the Sharks Cage restaurant, view 3D pints of beer floating outside The Brit restaurant, and even see a British Airways aircraft at the departure gate ahead of the flight to London.

7.2.2. WEARABLE DEVICES

Major consumer brands are now moving into the wearable computing space. Wearable computing devices as well as intelligent assistants are evolving. Despite trials for smart glasses and smartwatches failing to inspire permanent implementations, their potential as enterprise devices is becoming clearer. Passengers can, for example, have the boarding pass available at their wrist without needing to access their mobile and/or can receive commercial/operational information. Recent surveys indicate that 28% of airports are planning evaluation programmes by 2019 and most airports will have trialled wearable technology for staff within the next 10 years.

For example, San Diego Airport (SAN) staff members have been equipped with smartwatches to optimise efficiency. When an IT issue is reported, the nearest staff members will be alerted via their smartwatch so they can quickly respond. When they receive an alert, they can accept it as a task. Once it has been dealt with, it is reported to a central database using a voice command or text input on the wearable technology device.

7.2.3. NEAR-FIELD COMMUNICATIONS (NFC)

Near-Field Communications (NFC) is a technology that is increasingly being rolled out on the latest generation smartphones. It allows these phones to exchange data with other NFC-enabled devices simply by touching or being in close proximity. Passengers' phones are increasingly being used as holders of their personal identity and can already be used to store boarding cards. This provides huge potential to use NFC to automate or semi-automate steps in the passenger journey, such as check-in, passing security control, paying any excess fees and even passing through the boarding gate. 53% of airports are planning to invest in NFC programmes by 2019 as per SITA's Airport IT Trends Survey 2016.

7.2.4. SINGLE TOKEN BIOMETRICS

The emergence of 'single token travel' can truly begin to provide a walkthrough experience from check-in to the aircraft door for fast-track passengers. The technology captures a passenger's biometric details through a facial scan at the very first touchpoint in the journey. Once checked against the passenger's travel documents, a secure single token is created. Then, at other touchpoints, biometric recognition removes the need to show a passport or boarding pass again, simplifying and shortening the processes. This technology will improve security oversight while speeding-up passenger flow and reducing the resources needed to manage the journey. The single token delivers streamlined 100% self-service passenger processing with increased security. It reduces stress for passengers as the process is fast, simple and eliminates redundant travel document checks. By reducing queue time, passengers can relax and enjoy more time in the retail area, positively impacting non-aeronautical revenues.

7.2.5. INTERNET OF THINGS (IoT)

The Internet of Things (IoT) is another emerging trend, despite still being far from capable of creating an interconnected ecosystem. Gartner[20] predicts that by 2020 around 25 billion devices will be interconnected across the globe and today a third of airports have already considered the IoT as a component of their IT strategy, while a further 43% have plans to do so over the next 3 years.

From queue measuring sensors, Bluetooth beacons and smart baggage tags to in-flight IoT ecosystems, there are many projects that airports and air carriers are focusing on to improve the operational efficiency and enhance passenger satisfaction. Facility management and cleaning will be much more effective and efficient if premises are monitored in real time. This information can be used to provide smart allocation of tasks and resources.

Leveraging IoT will add a new dimension to the entire airport digital transformation process. It will offer a unique opportunity, based on data coming from any touchpoint, to personalise the passenger experience.

20. Gartner Symposium/ITxpo 2016, 16-20 October, Orlando, US.

7.2.6. BIG DATA ANALYTICS

Studies on advanced analytical tools (data analysis, machine learning, etc.) are underway to allow Airport Managing Bodies and air carriers to benefit from accurate prediction of future flight delays. These predictions should enable all stakeholders to better anticipate delays and mitigate them. Passengers will indirectly benefit from airports' better use of integrated and processed information by experiencing a high level of service[21].

7.2.7. TRACKING TECHNOLOGY

Predicting and managing passenger flows have long been a central component of operating a passenger terminal. Recently, a number of technologies have emerged and been applied to help with this task. While it is expected that different technologies will be applied over time to answer particular questions, today certain technologies are particularly appropriate for one or another aspect.

Some examples include:

- **Bluetooth**
  Bluetooth is increasingly being adopted to monitor passenger flows; this data can then be used to measure and predict queuing times at certain touchpoints. The ability for sensors to rapidly detect Bluetooth devices makes the technology suitable for "gate" type configurations – for example, detecting passengers as they approach a queue. Combining such sensors with people counters (e.g., thermal or laser) enables software to predict future queuing times as well as to report past or current waiting times. Combined Bluetooth and Wi-Fi sensors are also widely used to increase the detection rate and accuracy of such solutions.

- **Wi-Fi geolocation**
  Wi-Fi networks allow software to detect and determine the approximate location of Wi-Fi-enabled devices to the nearest few metres. This allows the general passenger flow – speed and direction – to be detected across the areas covered by the Wi-Fi network. Such a solution can also be used to track known Wi-Fi/RFID devices, e.g., assets such as luggage trolleys or people (staff) rates.

- **Video**
  Video technologies are capable of tracking passengers within zones, monitoring and predicting queues, for example at check-in, security control and the entry/exit to restrooms. Different underlying technologies can be applied to video, such as detecting an infra-red "thermal signature" of a person and using that to track them through the premises. Software can now also recognise individual faces in videos of crowds for security purposes.

21. Bearing in mind that Big Data analytics can provide airports with powerful business insights with a positive impact on the way they operate and engage with passengers, ACI EUROPE decided to create a transversal Task Force on Big Data. The focus of this Task Force is to determine what can be expected from new tools and methodologies, to define which stakeholders should be involved and how, to understand which legislative and regulatory aspects must be addressed, as well as to identify the potential role of ACI EUROPE in supporting airports in the implementation of new technologies.

7

- **Beacons**
  Beacons are small wireless devices that broadcast signals using Bluetooth Low Energy (BLE) or Bluetooth SMART technology. When a Bluetooth-enabled mobile device moves into range, it can trigger web services on the app that are relevant to that location. While they are good for wayfinding, location services and commercial purposes, beacons are not well suited for tracking passengers as a beacon only broadcasts its location to mobile devices that have an active application that is listening for the beacons. Downloading and using such applications requires the participation of the passengers.

In summary, as well as giving valuable planning data and tracking passengers within the premises, beacons also provide valuable information to passengers. For instance, Airport Managing Bodies using sensors to extrapolate expected queue times at security control are then able to display these wait times on screens.

How tracking technology supports operations and commercial applications

- Ensuring that SLAs are met for queue times (counting the number of people standing in the queue and measuring the processing rate; this information can be passed to the Airport Managing Bodies so that the appropriate action can be taken).
- Optimising people (staff) resources to ensure queues are minimal (in response to the registered length of the queue, the Airport Managing Bodies can decide to increase/reduce the number of staff allocated to serve the passengers).
- Hence, enabling more time for passengers in the retail area (and resulting in greater retail spend).

7.2.8. BAGGAGE MANAGEMENT

Radio-Frequency Identification (RFID) has been presented as the solution for lost baggage for some time now, and the technology is gaining considerable ground within the industry. While this will allow the air carrier or ground handler to closely follow each baggage item, the next step may well be to enable the passenger to track it instead. A combination of RFID technology with smartphones could allow passengers to be directly informed of the status of their baggage, be it in sortation, on the aircraft, or offloaded at the destination airport upon arrival. Baggage tracking can already be achieved via systems that capture when a bag tag is scanned through the journey and store it in a database, where it is easily retrievable using mobile devices or websites.

7.2.9. ELECTRONIC BAGGAGE TAGS

The introduction of electronic baggage tags (EBT) is being actively considered by several air carriers.

EBTs should contain an e-ink display, QR code, RFID, NFC and Bluetooth LE communications options. There are mandatory and optional components of an EBT, as described in the IATA Recommended Practice 1754, and these have been selected to support different technologies accessible to air carriers, airports and passengers.

EBTs are designed to be re-usable by passengers over multiple journeys. They can be programmed under the control of the air carrier, either remotely at online check-in (via an air carrier phone app) or when the bag is dropped off at the airport.

7.2.10. DIGITAL INFORMATION AND WAYFINDING

Providing passengers and stakeholders with accurate and relevant information has always been key to effective and efficient airport operation. Information display screens have been placed in airports for more than 30 years, but nowadays the Airport Managing Body and air carriers have more than this channel to communicate with passengers, people (staff) and other stakeholders. Smartphone applications, computers, tablets and other electronic devices can provide an access point to communicate relevant and timely information to the passenger, not only on flight updates, but also wayfinding (how do I get to...?), service and promotional content (club pricing, retail, fast-track options), parking and general airport information (queue times, stand-by information, walking times, etc.).

Kiosks and/or virtual assistants represent another option to communicate with passengers. Traditionally, kiosks have been installed to facilitate check-in and, in some cases, have also been used for lost baggage reporting. However, currently kiosks and/or virtual assistants are also used to provide wayfinding, flight status and commercial information.

Munich Airport / MUC

New technologies being considered by Airport Managing Bodies:

- Augmented reality
- Wearable devices
- Near-Field Communications (NFC)
- Single token biometrics
- Internet of Things (IoT)
- Tracking technologies
- Electronic bag tags

Main challenges for Airport Managing Bodies implementing new technologies

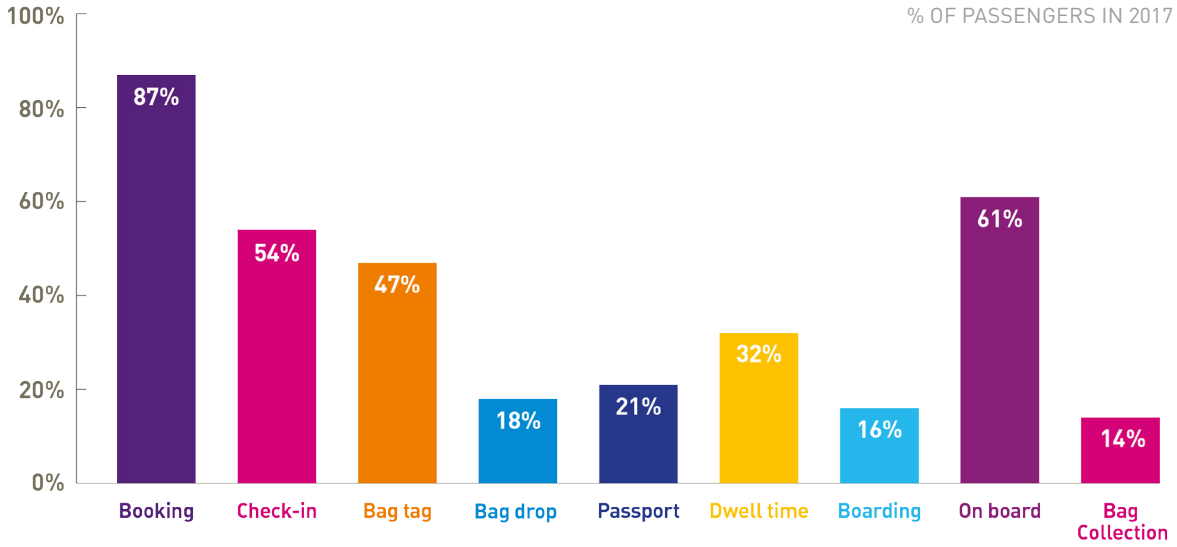
- Right timing:
  - Early adopters risk delaying the return on investment (ROI) until the critical mass of passengers using that technology is achieved.
  - Followers risk embracing the new technology too late compared to their competitors.
- Adoption of new technology not always pays off in the long-term, as it evolves so quickly that it might be old in 5 years' time.
- The wide variety of technologies makes it very difficult to predict which one will be widely used by passengers, thus increasing the investment risk.
- Cybersecurity threats.

Brussels Airport / BRU

7.3. IT SOLUTIONS ALONG THE PASSENGER JOURNEY

Taking a closer look at passengers' potential use of technology during their journeys, there are certain touchpoints where technology plays a major role, while in others technology implementation and adoption is still low.

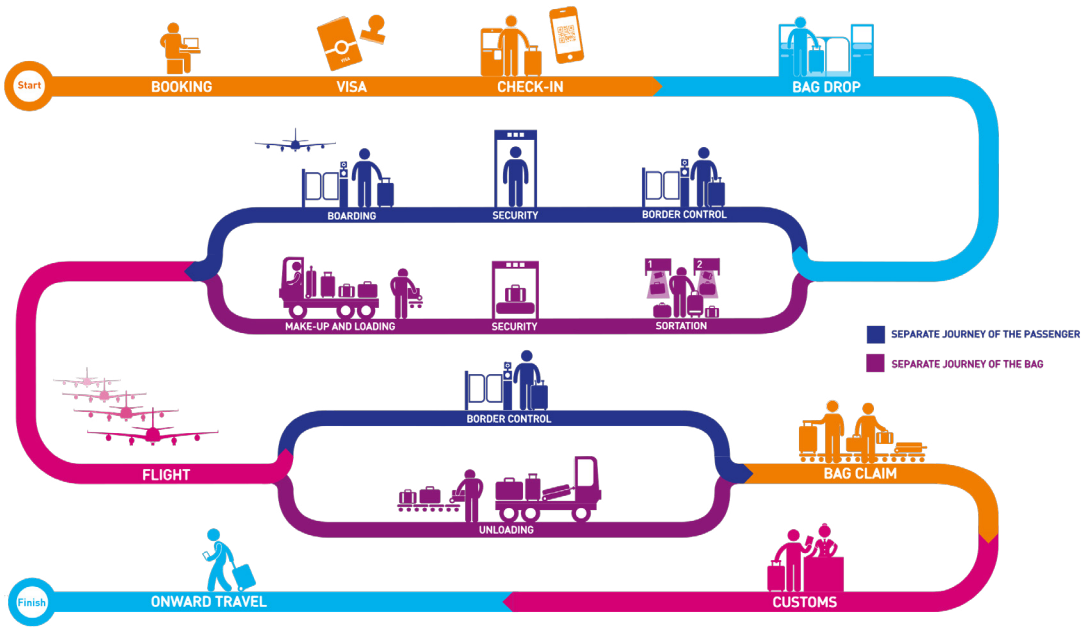
GRAPH 2 - **TECHNOLOGY ADOPTION ACROSS THE JOURNEY**



Source: Passenger IT Trends Survey (SITA, 2017)

It is increasingly important for passengers to be given the right to choose between human interaction and assistance or self-service technologies. Ideally, passenger flow through the airport would ensure a positive passenger experience and optimal throughput. Unfortunately, space and resource constraints, growing passenger demands and increased security and regulatory requirements contribute to bottlenecks and delays that negatively impact on the passenger experience and limit or eliminate non-aeronautical revenue generation opportunities. This situation may be exacerbated by unavoidable peaks and troughs in passenger flows, tight budgets and limited visibility to passengers. People, processes and tools (technology) need to be deployed to remove these obstacles and to ensure that Airport Managing Bodies can meet their business objectives.

PICTURE 26 - **PASSENGER FLOW AT THE AIRPORT**



Source: Passenger IT Trends Survey (SITA, 2017)

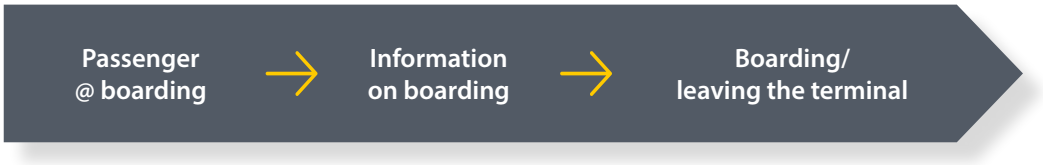
Today, technology provides tailored solutions for each step of the passenger journey, as described below:

Passenger @ terminal landside → **Orientation and wayfinding** → **Services before security** → **Check-in/ bag drop**

- A common-use passenger processing platform enables Airport Managing Bodies to reap the benefits of their offer to air carriers: shared workspaces and equipment for the check-in and boarding processes.
- Common-use kiosks optimise operations by making the best use of limited airport terminal space, while minimising costs and providing the best passenger experience.
- Self-service bag drops can more than double passenger throughput and be less expensive (less than half) than the traditional check-in. Waiting times can be reduced since there are no staff needed.
- The adoption of biometric technology in the passenger journey can simplify the process at various airport touchpoints later in the process and eliminate the need for multiple travel document checks by using a passenger's biometric data as a single travel token.

- Mobile phone apps: Featuring airport maps with points of interest. Apps can match passengers' desires with retail and food & beverage opportunities, which can result in significant ancillary revenue for an airport.
- As passenger numbers continue to grow, more demand is placed on existing airport resources. Consequently, Airport Managing Bodies require improved access to information to support decision making. Business intelligence solutions that track passengers and can report on queues and pinch points have become crucial.
- There is nothing more important to passengers than having steady and constant access to information. Being able to reach passengers both visually and audibly, inside and outside the airport, with timely and targeted multi-media information and messages is a must.
- Airport Managing Bodies are always looking for ways to enhance the passenger experience, while generating ancillary revenues and cost-savings. Services such as digital media kiosks support this by providing a wide range of entertainment content, which is wirelessly downloadable and payable via passengers' own mobile devices.

Bologna Airport / BLQ



- Common-use self-service boarding gates help reduce queues and boarding times while freeing up agents to focus on customer support. Biometric technology enhances security through identity control.
- Connections can be a source of stress for many passengers. Transfer kiosks make the process faster and easier, allowing passengers to take full control of re-issuing their boarding pass and/or upgrading and changing their seat, thus enhancing their experience.

- Automated Border Control gates are e-gates that allow full automation of border control procedures for arriving and departing passengers. They offer fully secure, self-service, automated border crossing for passengers holding a biometric credential, such as an e-passport.
- Baggage tracking applications enable passengers to follow their baggage handling process in real-time. In the event of mishandled baggage, passengers can use self-service kiosks or be assisted by agents using mobile devices to improve the passenger experience in the arrival baggage area.

7.4. INTEGRATED PROCESS CONTROL (IT SYSTEMS, DATA EXCHANGE, ETC.)

Airports serve as multi-modal hubs using a variety of processes and services to ensure safe, timely and effective processes that enable the facilitation and operations of passengers, baggage, cargo and aircraft.

Some of these processes are invisible to passengers who might not be aware of them. Nevertheless, they are vital for Airport Managing Bodies to ensure a seamless, efficient, safe and secure journey to their passengers.

7.4.1. HOW TECHNOLOGY SUPPORTS INTEGRATED AIRPORT CONTROL

Integrated Airport Control is a combination of processes from different stakeholders that is moving away from the segregated approach to command and control functions. The main objective is to bring together all key stakeholders and all the operational voices into a single command and control centre, creating a stakeholder situational awareness.

- In Europe, and now worldwide under ICAO, the advent of Airport Collaborative Decision Making (A-CDM) strives to tie all relevant stakeholders (Air Traffic Control, Air Carriers, Ground Handlers, Airport Managing Bodies, and others) in an effective and transparent manner to ensure the highest level of performance. A-CDM seeks to improve the aircraft turn-around process and overall airport operations, and to better use the European airspace. Many European airports, as well as larger hubs around the globe, have already fully implemented A-CDM procedures and enabling technology. Many others are in various stages of planning and working towards A-CDM implementations. The next step is Advanced A-CDM or Total Airport Management (TAM), including terminal, landside and ground access domains. As a result of the wide A-CDM adoption, passengers will experience improved punctuality, shorter waiting times at the gate area for boarding and optimised departure sequencing, which will ultimately shorten the overall flight duration.

- The Airport Operations Control Centre (AOCC) is a proven means of improving integrated airport control and achieving more A-CDM & TAM benefits for all stakeholders. Within an AOCC, the airport co-locates critical players at, in and around the airport and airspace management chain to enable transparency and to better integrate workflows. The AOCC concept breaks down communication barriers between airport operators, air carriers, air traffic control and other key stakeholders, such as ground handlers, border police, security agencies, crisis management, regional transportation coordination and public transport into/out of the airport. This way of working enhances the passenger processes, flight operations and baggage management. Queues at various touchpoints are minimised and an orchestrated effort to run the whole airport process is proactively prepared, planned, executed and evaluated.

- Data integration, aggregation and enrichment services and solutions enable data exchange from various stakeholders to create proactive awareness and real-time intelligence amongst the key players. A variety of tools, techniques, methods and processes can be used to facilitate data sharing. There are several ongoing industry initiatives to improve and harmonise data sharing among stakeholders (e.g., ACRIS and AIDX). For further information on data exchange among aviation stakeholders, please see Chapter 3.2.

7.4.2. CYBERSECURITY

Cybersecurity is a key topic for the air transport industry. As such, it has been highlighted as a major challenge by the European Commission[22]. Airport Managing Bodies need to protect themselves against the growing threat of hackers, who are mainly motivated by the following reasons:

1. **Ideology**: Through information disclosure, business disruption or attack on reputation.
2. **Criminality**: Through theft of personal or strategic data, fraud or ransom.
3. **State destabilisation**: Through espionage, service disruption or data destruction.

Airport Managing Bodies hit by a cybersecurity attack may experience operational disruptions. Passengers may not realise cybersecurity threats, as they are invisible to them, but might suffer the consequences of the unpreparedness of the Airport Managing Body.

In addition, there is a strong trend among governments and authorities to protect the strategic companies that operate on their territory. Air carriers and Airport Managing Bodies are at the heart of this trend. Thus, there are several new legislations and standards (ISO 27, GDPR, NIS, NISTS…), driving the need for Airport Managing Bodies to adopt cybersecurity solutions and comply with them.

7.5. MANUAL VS. AUTOMATED, COMMON USE

The benefits of implementing Common Use are well known and documented. Common Use solutions also reduce queues and waiting times for passengers, facilitating passenger handling and allowing Airport Managing Bodies to use space more effectively. Previously, Common Use equipment was installed to facilitate manned positions in several touchpoints. Similarly, self-service has increased throughput since it could be used anytime, independently from the availability of people (staff), hence providing Airport Managing Bodies with another way to increase passenger throughput without having to invest in more counters. This type of services requires a new kind of support and actions from the responsible ground handler to handle both manned and self-service versions of their offer to air carriers and to support passengers.

Self-service is a multi-channel process option that passengers are not only embracing, but also demanding, according to industry surveys. Furthermore, self-service expands to other parts of the passenger experience, including bag drop, border control (ABC or Automated Border Control kiosks), lounge access and self-boarding. Future trends for self-service include re-booking, which could heavily reduce queues at transfer counters and reduce passenger stress. Airport Managing Bodies have two priorities when it comes to ensuring an effective disruption management practice. These are improving data quality and analysis and sharing data within their own organisation, as shown by Graph 3.

22. President Jean-Claude Juncker's Annual State of the Union, 13 September 2017.

GRAPH 3 - **AIRPORT MANAGING BODIES' VIEWS ON PRIORITIES TO ENSURE AN EFFECTIVE DISRUPTION MANAGEMENT PRACTICE**

Source: ACI-SITA Airport IT Trends Survey (2017)

The purpose of introducing self-service facilities from the passenger's perspective is that they can take over the processes, thus leaving people (staff) to concentrate on passengers that need or request assistance, such as misconnecting passengers or other irregular operations, PRM, senior travellers and even those with special border control needs. While air carriers, ground handlers and government agencies may benefit from cost savings by implementing self-service, Airport Managing Bodies also do by limiting additional investments and leveraging technology to engage directly with the passenger.

Self-service is being driven by passengers – in smaller airports as in large ones; LCCs and FSCs; for leisure and business traffic. Self-service does not mean no service. It should rather be seen as a very efficient tool to increase throughput and passenger satisfaction. Airport Managing Bodies should work closely with air carriers, encouraging them to implement self-service applications so that all stakeholders win by reducing congestion and queues, while offering a seamless and integrated passenger experience.

7 7.6. THE DIGITAL AIRPORT[23]

For Airport Managing Bodies, business success is not just about the deployment of new technologies, simply because IT systems and applications change too quickly. Instead, success is about transforming the airport business, adapting to passengers, staff and stakeholders, and leveraging existing and new technologies to meet objectives and goals.

Therefore, digital transformation is about evolving processes and services to deliver a better experience to all passengers and users. From a passenger's point of view, a better experience means a personalised and individual experience that offers a seamless flow through the airport. It starts before the passenger even arrives at the terminal.

From the moment passengers start planning their journeys, they have numerous choices for obtaining additional information, offers and enhanced services from the multitude of websites and applications provided by traditional and non-traditional travel companies. Within the airport premises, a multitude of tools makes it nearly impossible for passengers to know which one will be the most informative. This has become a big challenge for Airport Managing Bodies as they compete for the digital and physical attention of passengers. If an airport is not successful in gaining direct engagement with its passengers, there is a great risk that a third-party disrupter will fill the gap, diverting passengers away from the airport and taking control of their attention, even inside the terminal. This puts any loyalty to that airport at risk. As soon as passengers purchase their airline tickets, they should be able to plan their journeys to and through the airport and book services such as parking, security fast track, lounge access, concierge treatment, and food and concession promotions.

Digital transformation is not only about technology. It is also about business transformation in a digital world, making sure that these digital technologies are cyber-secure to ensure that every system works as intended.

Picture 27 shows the digital airport levels.

23. Based upon ACI (2017), *"Airport Digital Transformation Best Practice. Digital transformation is about business transformation in a digital world"*.

PICTURE 27 - **DIGITAL AIRPORT LEVELS**

Digitally enabled
The airport has the basics in order, such as infrastructure and cyber-resilience, to be able to become a digital airport in order to reach passengers and users.

Fully digital
The airport has implemented all the options that create a fully digital airport, based on mainstream and commonly available technologies.

Next-generation digital
The airport has implemented all the advanced digital concepts that are not commonly available and tested in the aviation industry, such as seamless travel with single-token biometric touchpoints; new business models based on digital services such as blockchain; and personal and context-aware services.

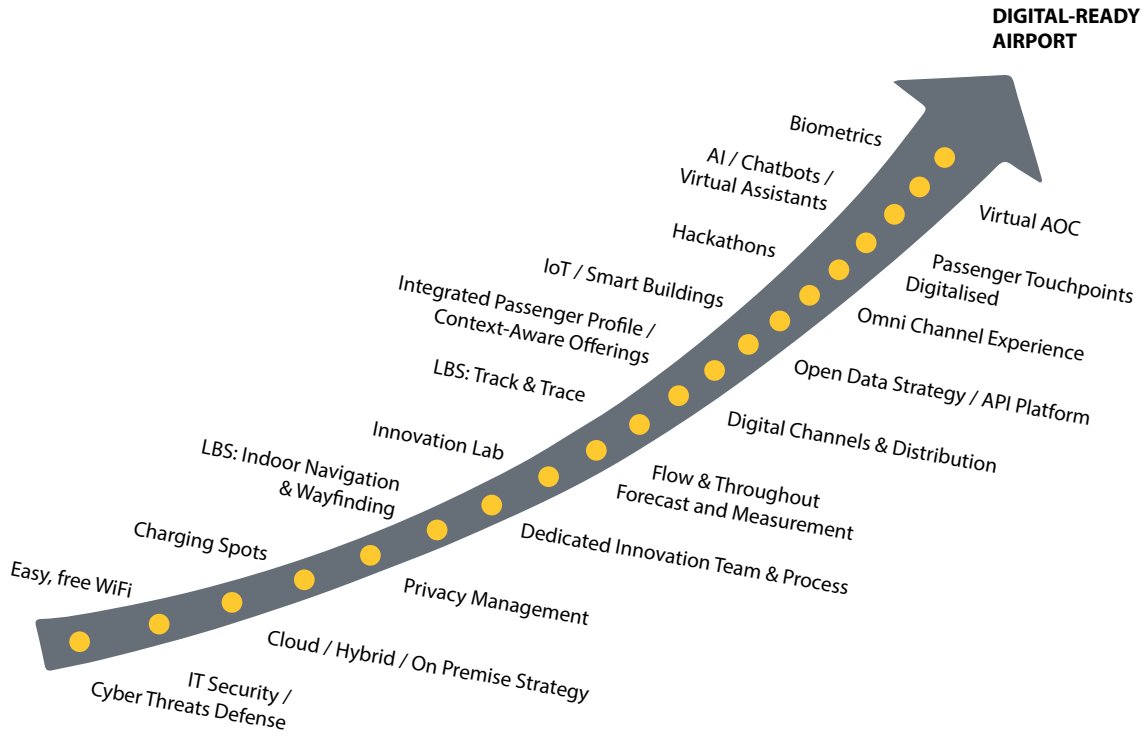
Munich Airport / MUC

7

7.6.1. BECOMING A DIGITAL AIRPORT: TECHNOLOGIES

Picture 28 shows a possible path to becoming a digital-ready airport. This path is not the only way to achieve this goal; the order of enablers may vary depending on your airport's current situation. Nevertheless, it shows dependencies in a typical, reasonable sequence.

PICTURE 28 - **ENABLING TECHNOLOGIES FOR BECOMING A DIGITAL AIRPORT**



Source: Adapted from ACI (2017).

7.6.2. STEPS TO BECOMING A DIGITAL AIRPORT

While the outcome will be unique, the basic steps of digital transformation are common:

1. Airport environment assessment: A multi-dimensional review of the airport's characteristics including, but not limited to, its physical, passenger, market, local community and economic characteristics and the socio-political influences upon it.
2. Airport plans and objectives: A specific step for airport C-level management to agree on the priorities and actions for specific digital plans and identify areas where technology (existing or new) will improve the outcome or desired results.
3. Internal organisational review and requirements: An assessment of the current organisation and its competencies versus what is needed to remain flexible and agile through the digital transformation and beyond.

Finally, it is important to acknowledge that because the speed of evaluation, trial, adoption, etc. is critical and technology evolves quickly, airports should review these steps every few years to ensure that the right solutions are in place to provide the best results (financial, business, operational, customer service, etc.).

Göteborg Landvetter Airport / GOT

7

7.6.3. ADDITIONAL RECOMMENDATIONS

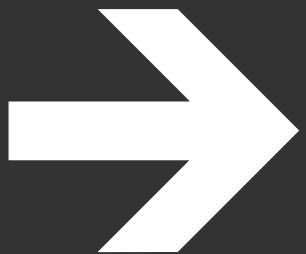
Digital opportunities vary from airport to airport and are dependent on each airport's business context, objectives and readiness. Digital transformation is already well underway in the global aviation industry, especially at airports where rapid adoption and digitalisation of passenger self-services, such as check-in kiosks, bag-drop and self-boarding, is taking place. The rate of adoption of digital transformation is accelerating so airports should engage with all their stakeholders and demonstrate proactivity in adapting to the real-time demands of all airport customers (both internal and external). In order to do this, it is important to:

- Acknowledge that Airport Managing Bodies have inherent business advantages that must be leveraged (i.e., capital, know-how, brand and passenger base) to keep digital disrupters at a respectable distance and ensure control over their valuable assets.
- Keep in mind that successful digital transformation comes from the top so the clear and deep involvement of C-level management is needed to lead and sustain change and promote a culture that celebrates risk-taking and rapid actions.
- Understand that digital transformation does not always mean creating a new organisation because there are often quick wins that can be achieved from reshaping the existing one and leveraging new ways of working. The airport should also take advantage of valuable strategic assets and gain value from investments already made.
- Speed is more important than perfection. A recommended practice is to launch small-scale digital initiatives to validate their effectiveness. If they fail, move on quickly. Secure quick wins and then scale up successful initiatives to improve the passenger experience, introduce new services, digitise internal processes or achieve whatever else is the objective.
- Reinforce business and IT collaboration because digital transformation is a team effort in which technologies play a key role.
- Focus on IT architecture. The speed of technological evolution is increasing every day so it is critical to master and manage the airport's entire IT architecture. In order to be flexible, airports should adopt a modular approach, so that they can swap components as needed in an agile yet controlled way.

8

CONCLUSION

SHAPING THE PASSENGER EXPERIENCE



1. **Identify, categorise and segment your passengers.**

2. **Develop an effective stakeholder communication, coordination and engagement strategy.**

3. **Know your airport.**
   Define your cluster (similar airport competitors).

4. **Benchmark with comparable airports and focus on Premises, Processes and People where you have larger gaps, higher control and higher stress levels.**

5. **Analyse the status of your pyramids of passenger perception levels and ensure the Required, strengthen the Expected and find your Valued (wow) factors.**

6. **Interact with passengers using all possible available tools.**

7. **Ensure a reliable quality strategy and management.**

8. **Shape solutions. Don't miss any of the 3Ps (Premises, Processes and People).**

ANNEX 1

REGULATORY FRAMEWORK ON AIR PASSENGER RIGHTS

REGULATORY FRAMEWORK ON AIR PASSENGER RIGHTS

LEGISLATION	REGARDING	NATURE	PASSENGERS' RIGHTS	RESPONSIBLE
Regulation (EC) 965/2012 (5 October 2012)	Laying down technical requirements and administrative procedures related to air operations.	Regulation. Immediately enforceable as law in all Member States simultaneously from 28 October 2012 (Member States may decide not to apply the provisions of Annexes I to V until 28 October 2014).	Safety, carriage of special categories of passengers (SCPs), including PRM, UM and deportees, inadmissible passengers or prisoners in custody.	Air carrier.
Regulation (EC) 1008/2008 (24 September 2008).	Common rules for the operation of air services in the Community.	Regulation. Immediately enforceable as law in all Member States simultaneously from 1 November 2008 (Self-executing, not requiring any implementing measures).	Transparent information on price.	Air carrier.
Regulation (EC) 1107/2006 (5 July 2006).	Concerning the rights of disabled persons and persons with reduced mobility when travelling by air.	Regulation. Immediately enforceable as law in all Member States simultaneously from 26 July 2008, except Articles 3 and 4 which applied with effect from 26 July 2007 (Self-executing, not requiring any implementing measures).	Assistance to PRM.	Airport Managing Body, Air carrier.

REGULATORY FRAMEWORK ON AIR PASSENGER RIGHTS

LEGISLATION	REGARDING	NATURE	PASSENGERS' RIGHTS	RESPONSIBLE
Regulation (EC) 2111/2005 (14 December 2005).	On the establishment of a Community list of air carriers subject to an operating ban within the Community and on informing air transport passengers of the identity of the operating air carrier (list of air carriers amended by Commission Regulation (EC) 273/2010).	Regulation. Immediately enforceable as law in all Member States simultaneously from 15 January 2006. Articles 10,11 and 12 apply from 16 July 2006 and Article 13 applies from 16 January 2007 (Self-executing, not requiring any implementing measures).	Information on the identity of the airline.	Air carriage contractor.
Regulation (EC) 261/2004 (11 February 2004). (under revision)	Common rules on compensation and assistance to passengers in the event of denied boarding, and of cancellation or long delay of flights.	Regulation. Immediately enforceable as law in all Member States simultaneously from 17 February 2005 (Self-executing, not requiring any implementing measures).	Information, Assistance, Re-routing, Reimbursement, Financial compensation.	Air carrier.
Montréal Convention. (28 May 1999) transposed into European legislation by Regulation 2027/97. (under revision)	Unification of certain rules for international carriage by air.	Treaty. Ratification needed. Effective from 4 November 2003.	Compensation for injuries, lost, delayed or damaged luggage.	Air carrier.

REGULATORY FRAMEWORK ON AIR PASSENGER RIGHTS

LEGISLATION	REGARDING	NATURE	PASSENGERS' RIGHTS	RESPONSIBLE
Council Directive 90/314 (13 June 1990).	On package travel, package holidays and package tours.	Directive. Binding, as to the result to be achieved, upon each Member State to which it is addressed, but leaving to the national authorities the choice of form and methods. Deadline for transposal into national law: 31 December 1992.	Information, Performance of services offered, Withdrawal, Assistance, Compensation (including insolvency).	Organiser and/or retailer.
Guidelines on the application of Regulation (EC) 1107/2006 (14 June 2012).	Concerning the rights of disabled persons and persons with reduced mobility when travelling by air.	EC interpretation of Regulation 1107/2006 (addressed mostly to National Enforcement Bodies).	Assistance to PRM.	Airport Managing Body, Air carrier, passenger.
ECAC Doc 30 and annexes.	Policy Statement in the field of civil aviation.	Recommendation: provisions, specifications and guidance material.	Facilitation of transport of persons and their baggage, Facilitation of transport of PRM, Limitation of the amount of hand luggage.	Airport Managing Body, Air carrier, Civil Aviation Authority.

ACI EUROPE AND ITS MEMBER AIRPORTS SUPPORT AND PARTICIPATE IN THE EUROPEAN COMMISSION'S INFORMATION CAMPAIGNS ON AIR PASSENGER RIGHTS.

Source: European Commission

European Commission

DENIED BOARDING? FLIGHT CANCELLED OR LONG DELAY?

Airlines have a legal obligation to inform you about

YOUR RIGHTS

and where to complain

Your passenger rights at hand

GENERAL PASSENGER RIGHTS

NON-DISCRIMINATION

You are protected against discrimination notably based on nationality, residence or disability when buying tickets and travelling.

REDUCED MOBILITY

If you're disabled or have reduced mobility, within the scope of the EU rules, you have the right to be assisted at no additional cost at all EU airports including when embarking, disembarking and when on board.
Make sure you notify the airline of your needs at least 48 hours before departure. Essential information should be accessible to you.

INFORMATION

Airlines and their agents need to inform you of the ticket price before departure and about your rights at appropriate stages of your journey.
You must be informed in advance of your travel which airline is planned to operate your flight. Unsafe airlines are banned from operating within, to and from the EU.

LIABILITY

Airlines can be held liable for injury or death as the result of an accident or, subject to certain criteria, for loss or damage to baggage (including mobility equipment).

PACKAGE HOLIDAYS

Package tour operators must give accurate information on the holiday booked, comply with contractual obligations and protect passengers in case of the organiser's insolvency.

Visit the website at europa.eu/youreurope/travel, download the passenger rights app or call Europe Direct on 00 800 6 7 8 9 10 11*

*Certain telephone operators may deny or charge for access to 00 800 numbers

DENIED BOARDING? FLIGHT CANCELLED OR LONG DELAY?

ASSISTANCE

While waiting to continue your trip, you may have the right to meals and refreshments, access to communication, accommodation (if necessary) and transportation to and from the accommodation. Some restrictions to this right may apply.
The airline will have no further obligation to provide assistance once you accept a refund of the ticket; a rebooking at a later date; or if, in the case of voluntary denied boarding, you accept some other benefits.

RENOUNCE TRAVELLING

You have the right to a refund of your ticket if you decide not to travel and, if necessary, a return flight free of charge to the first point of departure at the earliest opportunity. The option of reimbursement shall be available in case of delay at departure of at least five hours.

REROUTING

You have the right to be rerouted to your final destination shown on your ticket at the earliest opportunity under comparable transport conditions or rebooking at a later date if that is more convenient for you. The right to rerouting and rebooking is not applicable to long delays.

COMPENSATION

You may have the right to compensation of between €125 and €600 depending on the distance of your flight and the delay in arrival to your final destination. Restrictions to this right do, however, apply.
No compensation is due where your flight was cancelled more than two weeks before departure and you are offered rerouting within certain time frames, your delay in arriving to your final destination is less than three hours or the cancellation or delay is due to extraordinary circumstances which could not have been avoided even if all reasonable measures had been taken.

Please note; prior to travel, you should always familiarise yourself with your itinerary, check-in times and the airline's terms and conditions

European Union: 203-14-03-13-125-EN-P

Mobility and Transport

Source: European Commission

ANNEX 2

CASE STUDIES

VIP SERVICES

/Munich Airport

EXCLUSIVE AIRPORT SERVICES IN A UNIQUE LOUNGE SETTING FOR A SMALL FEE

In a coordinated effort to recover the glamourous spirit of airports and air travel, Munich Airport implemented a new airport "end-to-end" VIP service proposition, including state-of-the-art premises, streamlined processes and fully dedicated people.

The new 1,700 m^2 facility, named VipWing, was inaugurated in June 2011. It is located next to Terminal 1. It was designed by architects Erich Gassman and Tina Aßmann as a combination of a modern style, special identity, uniting progress and tradition. It uses typical Bavarian materials, such as loden, felt, leather and broad oak planks, with maximum use of daylight, featuring selective views of the famous white and blue Bavarian sky.

It results in an island of peace and tranquility in the turbulent working day, a holiday spirit between appointments, a perfect work oasis equipped with the latest technology and a Bavarian sense of place.

Passengers get a unique and excellent experience when travelling through the 5 star VipWing Terminal at Munich Airport. A personal VIP assistant provides discrete and efficient assistance during their stay. The VipWing Terminal with comfortable lounge areas and individual decor is an inviting spot to await and relax while the VIP assistant takes care of all departure, arrival and transfer procedures.

→ INVOLVED STAKEHOLDERS

In order to make the VipWing concept possible, it was necessary to involve all stakeholders, including air carriers, ground handlers, authorities, concessionaires and other commercial partners, for example, BMW, Audi and Mercedes, which provide limousines to transport passengers directly to and from the aircraft.

METHODOLOGY

Identifying the key success factors of an excellent VIP service using the 3P Approach (Premises, Processes and People) was clearly useful for maximising the VipWing guest experience at Munich Airport.

In terms of Premises, the architectural and functional design of the building revolves around the VIP passengers' needs, expectations and emotions. The pleasant and modern rooms of the VipWing Terminal combine exclusivity and modern Bavarian tradition. The aspiration of Munich Airport to be a representative gateway to Bavaria for guests from all corners of the world is convincingly underlined in the VipWing.

Concerning Processes and People, the VipWing concept of operations relies on an exclusive set of processes with the main purpose of eliminating virtually all travel formalities. Therefore, the cornerstone of the service is the VIP assistant, who takes care of as many departure, arrival or transfer procedures as possible on behalf of the passengers that use the service. Those flight formalities are quickly handled in a separate area according to the authorities' regulations and include check-in, baggage handling, border control, customs and VAT refunds.

The personal VIP assistant is what sets the VipWing apart from many VIP lounges around the world. The assistant not only takes care of all special needs of the guests, but also adjusts the services to all requirements and cultural backgrounds. Special requests can even be realised at short notice. The VIP assistant is discreet, sensitive and has excellent customer service as well as cultural awareness skills. The international and well-trained VIP assistant team makes the VipWing experience special for the VIP passenger. Boarding time will be coordinated with the air carrier according to the guests' wishes. VIP passengers have the benefit of boarding at their preference. Guests are picked up for boarding in the lounge and then chauffeured to the aircraft. In case of any flight irregularities, the guests will be updated by the personal VIP assistant. Since VIP passengers do not usually use the common passenger way via the gate, they can board easily and comfortably without waiting.

Additional features and wow factor services include:

- An exclusive VIP beer garden with the panorama of the Bavarian Alps in the distance. This is a unique feature of the Munich Airport VipWing. Guests have the luxury of relaxing and enjoying a fresh beer and regional specialties in the first and only beer garden in the security area at an airport worldwide.

- A separate landside access, which is extremely important for departing and arriving passengers. VIP guests are welcomed by a personal VIP assistant as soon as they pull up to the curb or are accompanied to the curb upon arrival.

- An exclusive meet and greet service. Meeters and greeters can accompany VIP passengers to the aircraft meet the guest directly at the aircraft and use the lounge facilities together with the VIP passenger.

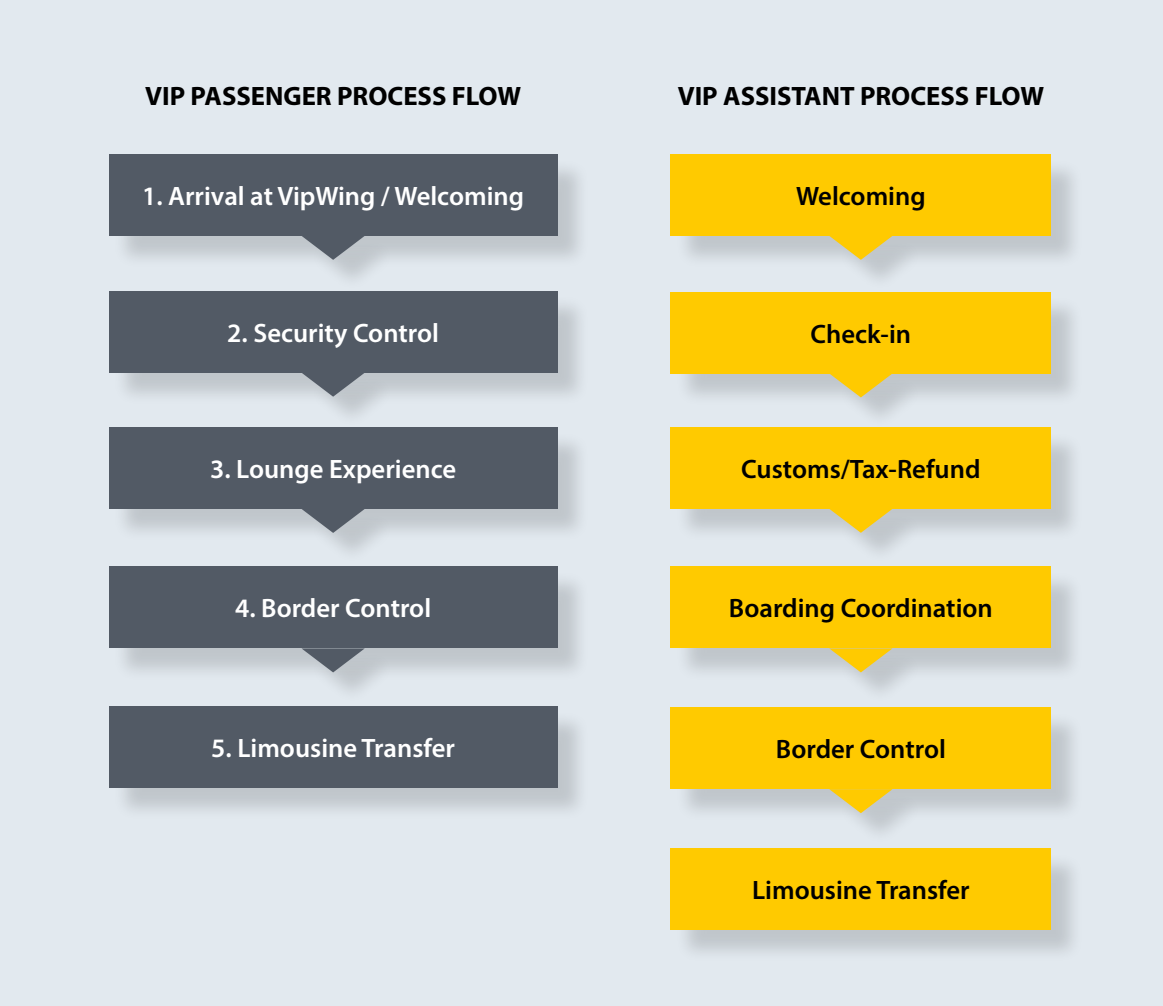
TIMELINE/MILESTONES

The VipWing development project was a major capital investment project of Flughafen München GmbH and started operations in June 2011.

EFFECTS & BENEFITS

Over the last 5 years, the passenger experience feedback from users of the VipWing service has been outstanding. In addition, this facility has experienced a constant growing demand of high-yield users from different segments all over the world, in particular from Eastern European, Asian and Middle-Eastern passengers. Therefore, this dedicated facility and service has directly contributed to the substantial growth in traffic between Munich Airport and the regions where these passenger segments are located.

PICTURE 29 - **PROCESS FLOW – DEPARTURE FOR VIP SERVICES**



ELDERLY TRAVELLERS

ENHANCING THE PASSENGER EXPERIENCE AT AIRPORTS FOR A GROWING NUMBER OF ELDERLY TRAVELLERS

TH Airport Consulting in cooperation with the International University of Applied Science Bad Honnef – Bonn conducted a research study in 2014/2015 on the passenger experience for elderly travellers at airports by applying the methods of the *ACI EUROPE Guidelines for Passenger Services at European Airports* and examined key issues regarding elderly travellers. The Guidelines are designed in a way that the recommended approach to enhance the passenger experience can be applied on different passenger categories. In this case, elderly travellers have been chosen owing to the drastic changes in the demographic development. Elderly travellers have multiple needs and expectations that are different to those of other passenger groups. An economically relevant finding was that elderly travellers are a powerful target group for non-aviation businesses at airports.

→ INVOLVED STAKEHOLDERS

European airports, ground handling services, PRM assistance providers and medical services supported this research study with valuable input through expert interviews. Additionally, several elderly passengers participated in a survey (Table 12).

→ METHODOLOGY

1. PASSENGER CATEGORISATION AND CHARACTERISTICS OF ELDERLY TRAVELLERS

The study demonstrated that there are three dimensions for categorisation of elderly travellers that are highly coherent with their characteristics, abilities and experience within the premises.

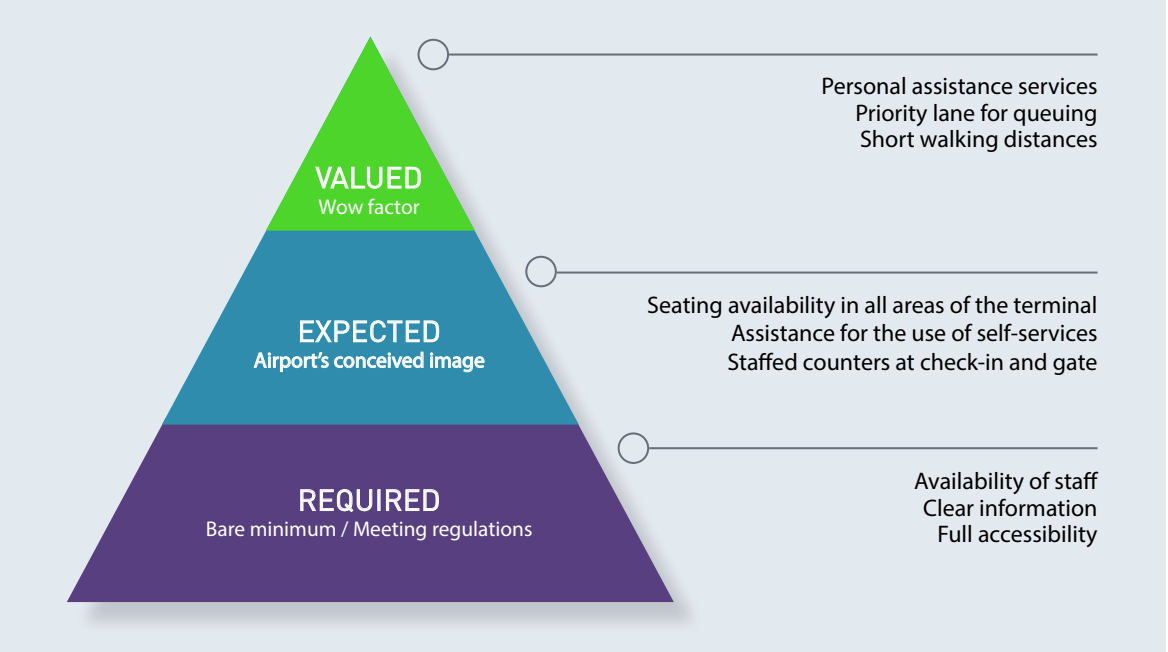
TABLE 12 - **CATEGORISATION OF ELDERLY PASSENGERS**

	DYNAMIC ELDERLY TRAVELLER	INDISPOSED ELDERLY TRAVELLER	
	• good motor abilities • familiar with processes at the airport • does not need further assistance	• weaknesses in motor abilities • familiar with processes at the airport • needs assistance	EXPERIENCED ELDERLY TRAVELLER
IT AFFINITY	**knows how to use IT-based self-services**	**is able to use IT-based self-services**	
	• good motor abilities • is not familiar with processes at the airport • might need further assistance	• weaknesses in motor abilities • is not familiar with processes at the airport • needs full assistance	INEXPERIENCED ELDERLY TRAVELLER
IT AFFINITY	**can learn how to use IT-based self-services**	**can learn how to use IT-based self-services**	

2. NEEDS AND EXPECTATIONS OF ELDERLY TRAVELLERS

Elderly travellers' needs and expectations are expressed in the pyramid in Picture 30.

PICTURE 30 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: ELDERLY TRAVELLERS**

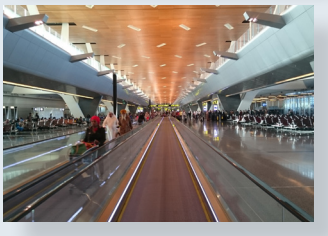
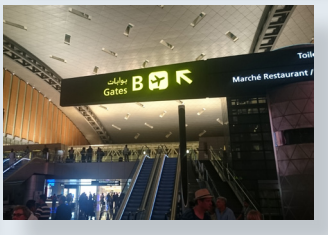


3. USE OF THE 3P APPROACH – EXAMPLE: PREMISES

For each of the 3P an overview was created to illustrate possible initiatives to enhance the passenger experience. The most relevant findings were highlighted to express their importance for elderly travellers.

PICTURE 31 - **3P APPROACH FOR ELDERLY TRAVELLERS – EXAMPLE: PREMISES**

NEEDS & EXPECTATIONS

Short walking distances	Good wayfinding	Availability of seats
		

MEASURES FOR ENHANCEMENT

- Provision of escalators and elevators for all levels changes
- Automated doors or no doors
- Signage with symbols, large font, visible contrast: white font, dark background
- Automated people mover
- Assistance with long walking distances
- Provision of seats in all areas, including baggage claim and check-in hall

→ EFFECTS & BENEFITS

Satisfied passengers spend more money at airports. The investigation showed that elderly people spend more time at the airport and request tailor-made non-aviation offers as well as value-added services. If less stressed, their willingness to pay for additional services increases. Airport Managing Bodies might use the approach to enhance the passenger experience, while looking at growing passenger categories.

Bordeaux–Mérignac Airport / BOD (top) & Cornwall Airport Newquay / NQY (bottom)

QUALITY CONTROL

THE JOURNEY TO EXCELLENCE

Excellence is not a destination; it is a journey of continuous improvement that never ends. Airports of Mauritius (AML), the airport operator, always uses a forward-thinking approach in the quest for passenger service excellence and its vision to make Sir Seewoosagur Ramgoolam International Airport a Model and Reference Airport in its Category.

In order to achieve this ambition, AML has implemented the Airport Service Quality Improvement Programme – *"The Journey to Excellence",* which is oriented towards Total Quality Management principles.

The main objective of this concept is to bring on board all airport service providers and to make the ACI Airport Service Quality (ASQ) programme an integral part of the day-to-day management of the passenger experience through the implementation of Key Performance Indicators (KPIs).

→ STAKEHOLDERS INVOLVED

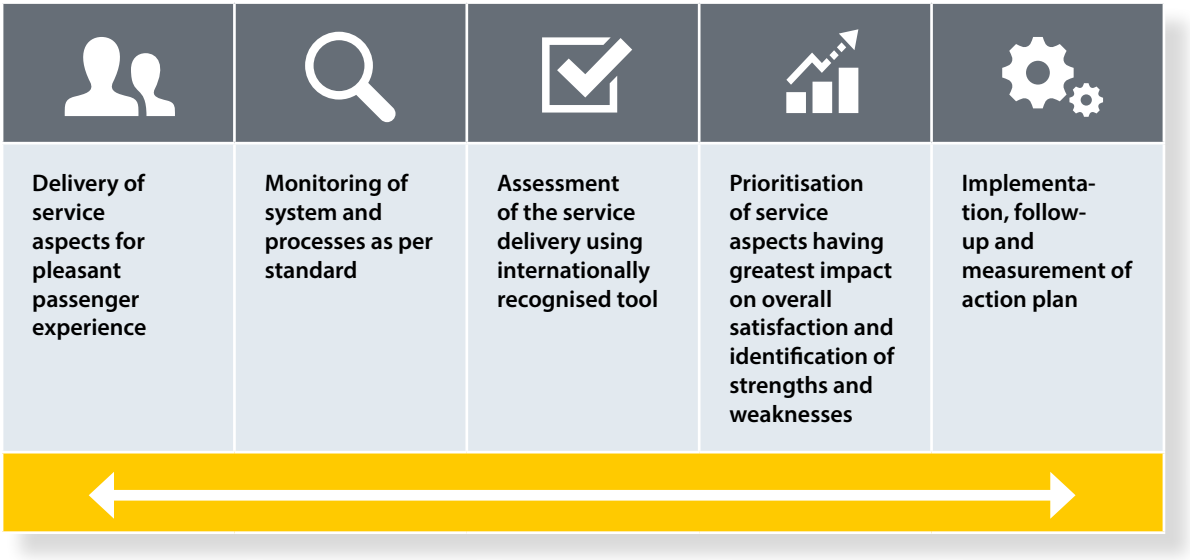
Airports are complex environments with a multitude of stakeholders. However, excellence can only be achieved if all of them share a common vision and approach. The strategy and KPIs regarding service excellence were thus developed in consultation with our partners, such as air carriers, government agencies and other stakeholders involved in the service delivery.

→ METHODOLOGY

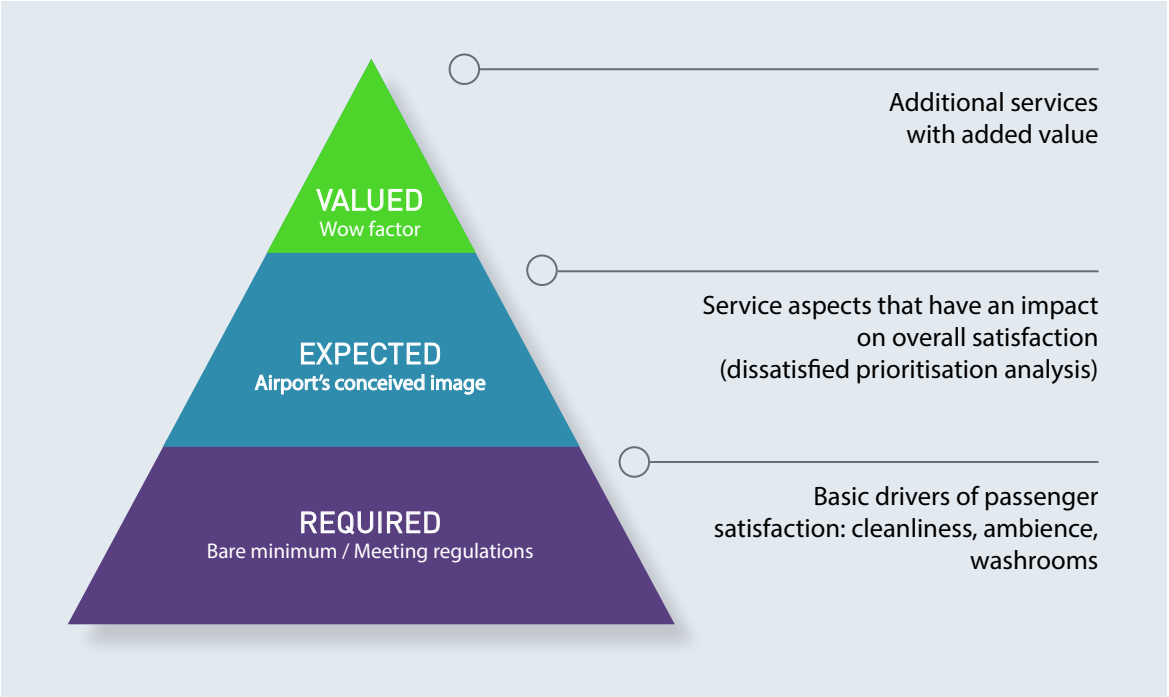
AML not only focuses on B-to-B strategies but also puts emphasis on B-to-C strategies – placing passengers at the heart of the business. A Total Quality Management approach for service improvement has been adopted. It encompasses a holistic methodology starting with service delivery, followed by monitoring, assessment, communication and continuous improvement (see Picture 32).

With limited resources and tools, we decided to prioritise efforts on those touchpoints with a high impact on the passenger experience. They have been classified according to their degree of importance based on the correlation and overall satisfaction (see Picture 33).

PICTURE 32 - **KEY DRIVER PROCESS**



PICTURE 33 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: PRIORITISATION FRAMEWORK**



You can't manage what you can't measure: quality of service must be measured, benchmarked and targeted for continuous improvement by adopting a factual approach. As such, KPIs have been developed and some initiatives have been implemented to help AML define and measure the activities that have contributed to progress towards its goals. Based on the prioritisation analysis, the most important ASQ services have been grouped into a framework consisting of five key success factors (see Picture 34).

PICTURE 34 - **FIVE KEY SUCCESS FACTORS**

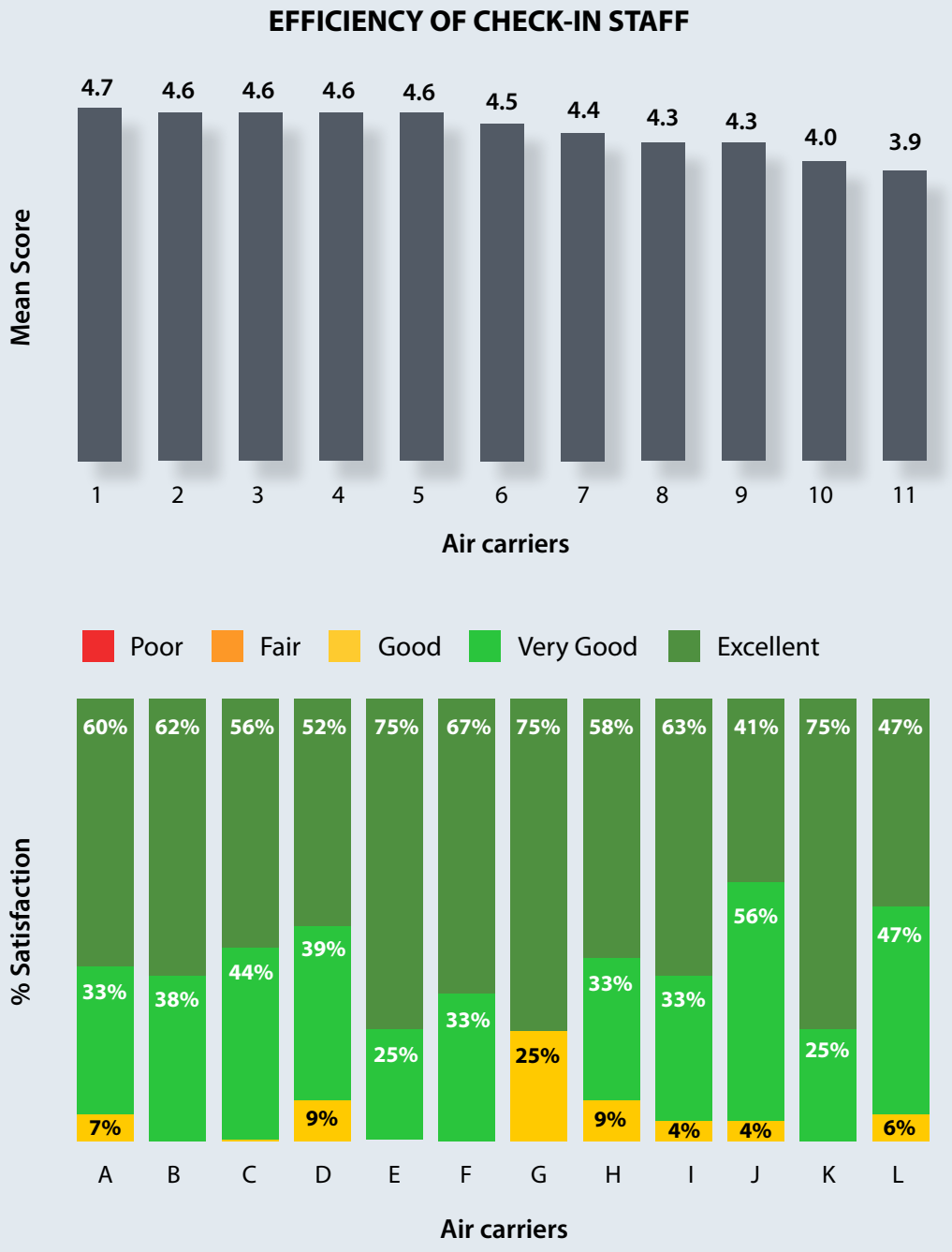
→ INITIATIVES

COLLABORATIVE APPROACH – "MANY PARTNERS, MANY VISIONS, ONE AIRPORT"

AML has introduced the Airport Quality Service Monitoring Committee (AQSMC), with the aim of monitoring, identifying and implementing recommendations for service improvements and auditing the KPIs as set out in the airport quality strategy.

Air carriers can greatly influence passengers' perception of the level of service. For this reason, we have introduced the concept of "Collaborative Approach". We thus use the ASQ raw data to conduct further analysis and share the results with the air carriers for further improvement (see Graph 4).

GRAPH 4 - **AIRPORT SERVICE QUALITY (ASQ) RAW DATA**



**For the purposes of confidentiality, the air carrier names have not been mentioned.*

LINK BETWEEN KEY PERFORMANCE INDICATORS AND REWARD

Performance Management System

AML has linked the Performance Management System (i.e. the reward system for staff) by using the ASQ key results as KPIs in the staff Performance Management System. This initiative aims at enhancing staff to improve results by focusing on AML's goals and objectives for service delivery.

Outstanding Passenger Service Excellence Initiative Award

We are always touched by the subtle actions of our staff while serving the passengers, recognised through the **Most Outstanding Passenger Service Excellence Initiative.** With this programme, we aim at instilling the necessary energy, enthusiasm and passion to drive our service to the next level.

The winner is evaluated and selected by peers based on the extent to which the nominee went beyond the call of duty to assist passengers, the initiative, drive and creativity in handling a difficult situation, and passengers' feedback.

Local ASQ Award Ceremony for Service Providers

An annual local ASQ Award ceremony has been introduced for service providers at the airport in recognition of their outstanding performance in service delivery. The winner in the different categories is evaluated based on the satisfaction score of the different ACI ASQ service elements, which are further analysed as per the required segments.

→ THE ULTIMATE WINNER

A testimony of the continuous efforts to improve the passenger experience at our airport during the past few years is strongly characterised by the results obtained from the ACI ASQ programme.

On average, 94% of passengers surveyed in 2016 rated the overall service satisfaction at the airport as "Excellent" or "Very Good".

Our airport has been ranked the best airport in Africa for the last 3 years. These awards recognise the commitment of the entire airport team to cultivating and ensuring a stellar passenger experience at our airport with the ultimate winners being the passengers and happy airport staff.

Outstanding Passenger Service Excellence Initiative Award (top).
Local ASQ Award Ceremony for Service Providers (bottom).

STAKEHOLDER & STAFF ENGAGEMENT

STRATEGY TO ENGAGE STAKEHOLDERS FOR CONSISTENT HIGH-QUALITY PASSENGER EXPERIENCE

Passengers do not distinguish between the services received from different stakeholders. Hermes, the operator of the two international airports in Cyprus (Larnaka and Pafos), made a strategic decision to engage all stakeholders in a shared customer-centric vision and through collaboration to deliver a consistently high-quality passenger experience.

→ STAKEHOLDERS INVOLVED

All airport-based companies providing services to passengers, including air carriers, ground handlers, retail and F&B concessionaires, the aviation security services provider, the Police, Border control services, Customs, the Department of Civil Aviation and others.

→ METHODOLOGY

The first step was to make the enhancement of the passenger experience one of Hermes' strategic priorities with specific goals, targets and KPIs. Then, a customer care strategy was put in place in every department within Hermes and was communicated to passengers.

The Guidelines recognise that Airport Managing Bodies only influence a small part of the passenger journey. To address this challenge and to obtain the necessary accountability and commitment from other stakeholders, Hermes facilitated a strategic workshop for the top management of each stakeholder aligned with Hermes' vision, goals and targets. Then, a Customer Experience Action Group

was formed by gathering key managers from the airport community with a mandate to implement and communicate about airport-wide improvement programmes and track progress against predefined KPIs. Finally, the front-line airport staff and supervisors were engaged, trained and motivated to deliver the services.

Cross-functional working groups were established with a mandate to use the 3P Approach and to make recommendations for improvements at each touchpoint. By drawing on the knowledge and perspectives of all airport stakeholders, there has been a shift of focus from the individual to the whole process, which is what the passenger experiences in real life.

Another initiative aiming to foster collaboration was the creation of a Customer Care Forum where stakeholders meet once a year to share experiences and best practices. In addition, each organisation has nominated a customer care champion who liaises with his/her counterparts in other organisations to ensure consistency.

TIMELINE/MILESTONES

Hermes' customer care strategy was rolled out in 2014 and most of the elements planned up to the end of 2017 have been delivered. Initially, the focus was internally within Hermes, with significant progress made on several 3P initiatives and all departments substantially achieving their objectives. More recently, the scope was expanded to engage the airport community using the methodology described above.

Next steps include:

1. Establishing an annual event for all stakeholders to celebrate achievements on ASQ and airline passengers CSQ scores, aiming to reinforce commitment and collaboration.
2. Developing an airport-wide recognition programme for excellent passenger service.
3. Going beyond the airport boundaries and encouraging the implementation of a global customer care strategy that will be shared across the Cyprus tourism industry in the form of an accredited training programme.

EFFECTS & BENEFITS

Staff are happier, more engaged and understand each other's involvement and perspective. This is reflected in the results of staff engagement and satisfaction surveys. Process times have been reduced owing to improved information sharing and better preparation at each touchpoint. ASQ scores for courtesy of airport staff rose to around 4.3 out of 5 and are amongst the highest scores of competing airports. The ratio of thank you to complaint letters has improved. There has been improved recognition from peers with Larnaka Airport winning the ACI EUROPE Accessible Airport Award 2017 and in the same year being shortlisted for the Best Airport in the category of between 5 and 10 million passengers per year.

Photo from the Customer Care Forum, Larnaka International, 2017 (top).
Celebrating customer experience successes, Larnaka International Airport, 2016 (bottom).

STAKEHOLDER & STAFF ENGAGEMENT

IMPROVING PASSENGER EXPERIENCE THROUGH THE CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

Putting the passenger first and improving communication means building a relationship of mutual trust to improve the services and simplify the processes. Understanding the variety and complexity of the passengers' needs and expectations and their growing empowerment given by technology has encouraged Airport Managing Bodies to explore the opportunities offered by Customer Relationship Management systems.
Aeroporto di Bologna has developed a Customer Relationship Management system in order to better understand and serve its stakeholders and passengers.

→ INTEGRATION OF STAKEHOLDERS

The project started with the mapping of all stakeholders and the selection of the most relevant ones in relation to the objectives of the CRM project in Bologna Airport. As a corollary, Bologna Airport organised a series of focus groups with representatives from each stakeholder group in order to collect suggestions and ideas for improvement.

→ METHODOLOGY

The key words of the projects were service, technology and integration. The CRM helped to organise and centralise in one single system the information available in many different databases of the airport (e-commerce, customer service, business lounge, customers and suppliers lists, excel databases), making better use of them. The CRM also integrated the information coming from social media channels (Twitter and Facebook).

The customer care activities have been centralised in the CRM system and are structured as follows: passenger information, suggestion and complaints, environment, car parks, baggage deposit and lost items. The staff working on customer care can easily exchange information and tasks through the platform.
Activities are coordinated in a dedicated ABICC group (Airport Business Intelligence Competency Center), which is held on a monthly basis.

EFFECTS & BENEFITS

The CRM improved cross-functional collaboration: the information database is a platform shared among different people (staff) (operations and safety, security, facilitation, aviation, retail, marketing, communication, legal affairs), who can update, extract and modify the information available for the benefit of all.

The information collected in the CRM helped Aeroporto di Bologna to increase the interaction with its passengers and improve their experience: the information is selected, mixed and better integrated in order to build consistent profiles of airport stakeholders' needs and expectations. Passengers' suggestions are taken into account when it comes to creating new services and improving the quality of existing ones.

By means of the CRM, Aeroporto di Bologna has developed an information and communication programme addressing different passenger categories. It regularly delivers news and information on operations and commercial opportunities.

Business lounge

STAKEHOLDER & STAFF ENGAGEMENT

AIRPORT HELPER – A LABEL FOR EUROPEAN AIRPORTS: FROM A SIMPLE IDEA TO AN OPERATIONAL SERVICE

Airport Managing Bodies have quickly understood the need to continuously improve the quality of passenger services, influenced by the welcoming attitude of staff.

In this context, in 2005, Lyon-Saint Exupéry Airport created a proactive concept of customer hospitality called Airport Helper, an innovative approach **based on volunteer staff that helps passengers** at all touchpoints. Airport Helpers assist passengers, **while performing their other tasks**. They are identified by a badge stating that they are happy to help.

→ INTEGRATION OF STAKEHOLDERS

The originality of the initiative, under the guidance of the airport management, lies in the engagement of all stakeholders. Sharing the same values and working for the same mission creates synergy, an integration process that is key to ensuring a smooth passenger experience.

→ METHODOLOGY

The core of the Airport Helper programme consists of permanent training sessions organised by the Airport Managing Body for Airport Helper candidates as well as refreshment courses for confirmed ones.

The Airport Helper course is aimed at sensitising to a welcoming attitude, hospitality and gaining knowledge on main processes in order to give the right answer to passengers' questions and better meet their needs.

Training sessions in welcoming attitude and onsite visit to premises gather people (staff) from different stakeholders and include basic airport information.

Airport Helper courses may vary from one airport to another. Still, there is a common goal between all airports. It is to allow participants to:

- Discover the airport environment (vocabulary, jobs, passenger journey...)
- Explore the services offered to passengers
- Interact with colleagues from other stakeholders and discover the great variety of jobs
- Adopt a welcoming attitude and be proactive
- Get useful tools to better perform their mission (main information manual, quick reference in English or other languages...)

Furthermore, the Airport Helper community can make use of platforms or social media channels to share experiences, give feedback and formulate any suggestion to better perform their mission.

Constant recruitment is key to enlarging the Airport Helper community.

→ EFFECTS & BENEFITS

Being an Airport Helper is an attitude for the staff and a label for the airport.
By building a community, the Airport Helper initiative creates the sense of belonging to a unique family for a sole goal: passenger service.

This initiative fosters a stronger relationship between stakeholders and their people (staff).

Airport Helpers are likely to experience a personal transformation in the way they see their job and interact with passengers. An improved work environment also generates a better service.

The image of the airport, overall satisfaction and courtesy indicators have improved following the implementation of the Airport Helper concept.

→ HOW A GOOD IDEA IS SPREADING AMONG EUROPE'S AIRPORTS

Further to Lyon airport's original idea, 13 European airports have adopted and developed the Airport Helper concept: Munich, Paris Charles de Gaulle, Paris Orly, Rome Fiumicino, Rome Ciampino , Toulouse, Naples, Milan Linate, Milan Malpensa, Bologna, Prishtina, Montpellier and Brussels. The concept has also been adopted by 30 French railway stations.

The European Airport Helper community now counts more than 9000 Airport Helpers committed to their mission of helping passengers. Regular meetings between the European Airport Helper communities are organised to share experience and best practices.

→ WORLD KINDNESS DAY: "LET THE KINDNESS BLOOM"

An emblematic event of the Airport Helper community at European airports is the World Kindness Day, which takes place each year on 13 November. As kindness is a core value for Airport Helpers, they are the main players in this event, organised by the Airport Managing Body. They spread kindness all over the airport by offering flowers and sweets to the delight of surprised passengers. The goal is to celebrate the sense of service and passenger loyalty to the airport.

World Kindness Day has proved to be the perfect opportunity to strengthen the ties between European airports and their passengers by highlighting the actions of the Airport Helper community.

To mark the spirit of this growing international community, the same slogan *"Let the kindness bloom"* and the same flower – a gerbera – as a symbol are used by the entire Airport Helper European community.

STAKEHOLDER & STAFF ENGAGEMENT

ATHENS INTERNATIONAL AIRPORT ELEFTHERIOS VENIZELOS

I-MIND PROGRAMME: ENGAGING PEOPLE (STAFF) FOR BETTER SERVICE QUALITY

AIA's innovative and award-winning i-mind programme engages all staff, regardless of level or operational expertise, in carrying out various walkthroughs of the airport premises in order to evaluate the passenger experience in real time.

The programme was designed to:

- complement existing monitoring mechanisms and provide departments with additional feedback to ensure the appropriate service level
- improve internal communication to take immediate action, if necessary, and shape solutions
- involve staff in activities – other than their usual tasks – affecting the passenger experience

→ INVOLVED STAKEHOLDERS

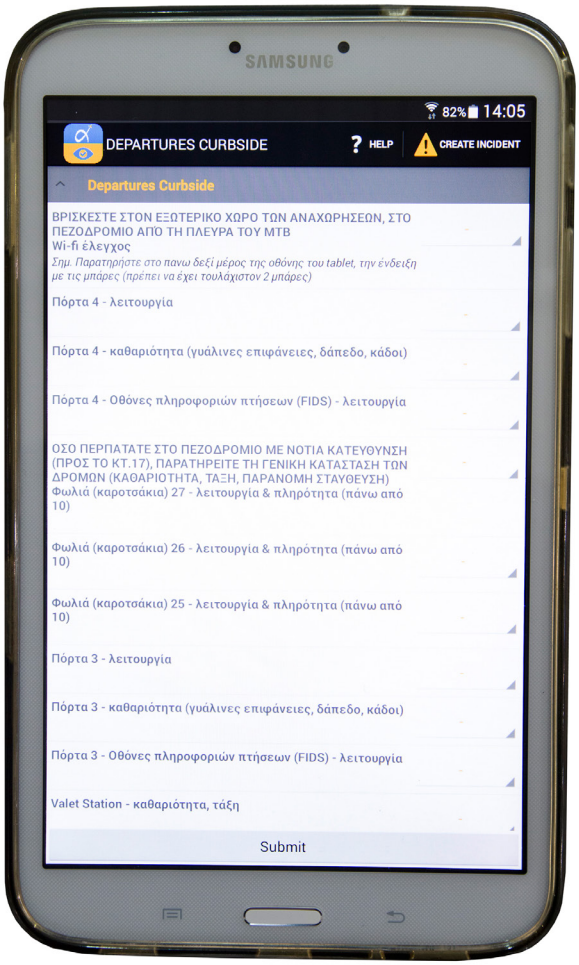
This innovative effort turns all AIA employees into "virtual passengers" and asks for their personal views. Regardless of the operational expertise, it seeks a "fresh view" of our airport. The power of "i-mind" lies in staff participation and involvement, their special care and unique relationship with their work environment.

The CEO's continuous commitment to i-mind initiative ensures the success of the project. For this reason, the CEO endorsed the project by directly addressing all people (staff) through a corporate video made available through the corporate intranet.

AIA project team members:

- corporate quality
- terminal services
- human resources
- information technology and telecommunications


SAMSUNG
80% 14:11
i-mind
i-mind ver:1.1
ATHENS
INTERNATIONAL AIRPORT
ELEFTHERIOS VENIZELOS
i-mind
ENTER
SYNCHRONIZE
Last synchronization date: 21/02/2018 14:01:43


SAMSUNG
82% 14:05
DEPARTURES CURBSIDE
HELP
CREATE INCIDENT
Departures Curbside
ΒΡΙΣΚΕΣΤΕ ΣΤΟΝ ΕΞΩΤΕΡΙΚΟ ΧΩΡΟ ΤΩΝ ΑΝΑΧΩΡΗΣΕΩΝ, ΣΤΟ ΠΕΖΟΔΡΟΜΙΟ ΑΠΟ ΤΗ ΠΛΕΥΡΑ ΤΟΥ ΜΤΒ
Wi-fi έλεγχος
Σημ. Παρατηρήστε στο πανω δεξί μέρος της οθόνης του tablet, την ένδειξη με τις μπάρες (πρέπει να έχει τουλάχιστον 2 μπάρες)
Πόρτα 4 - λειτουργία
Πόρτα 4 - καθαριότητα (γυάλινες επιφάνειες, δάπεδο, κάδοι)
Πόρτα 4 - Οθόνες πληροφοριών πτήσεων (FIDS) - λειτουργία
ΟΣΟ ΠΕΡΠΑΤΑΤΕ ΣΤΟ ΠΕΖΟΔΡΟΜΙΟ ΜΕ ΝΟΤΙΑ ΚΑΤΕΥΘΥΝΣΗ (ΠΡΟΣ ΤΟ ΚΤ.17), ΠΑΡΑΤΗΡΕΙΤΕ ΤΗ ΓΕΝΙΚΗ ΚΑΤΑΣΤΑΣΗ ΤΩΝ ΔΡΟΜΩΝ (ΚΑΘΑΡΙΟΤΗΤΑ, ΤΑΞΗ, ΠΑΡΑΝΟΜΗ ΣΤΑΥΘΕΥΣΗ)
Φωλιά (καροτσάκια) 27 - λειτουργία & πληρότητα (πάνω από 10)
Φωλιά (καροτσάκια) 26 - λειτουργία & πληρότητα (πάνω από 10)
Φωλιά (καροτσάκια) 25 - λειτουργία & πληρότητα (πάνω από 10)
Πόρτα 3 - λειτουργία
Πόρτα 3 - καθαριότητα (γυάλινες επιφάνειες, δάπεδο, κάδοι)
Πόρτα 3 - Οθόνες πληροφοριών πτήσεων (FIDS) - λειτουργία
Valet Station - καθαριότητα, τάξη
Submit

METHODOLOGY

According to the project design, the premises were initially divided into 19 monitoring areas. Specific inspection parameters were mapped for each area. Three options are available for users to mark (ok, not ok, not applicable), while a free text section for comments submission is also available.

A very important section of the i-Mind application is the alerts page in which users can record incidents requiring immediate action from the competent departments. A free text section is also available for comments, which are then incorporated into the Passenger Comments database.

A group of approximately 30 i-minders is invited for walkthroughs each week. Detailed instructions are uploaded to the corporate intranet and a support team trains and assists i-minders .

A tablet device is used for monitoring areas and data recording. Data is then transmitted to the corporate database Management Information System (MIS), AIA's main tool for data storing, analysis and KPI reporting.

For this purpose, AIA's IT&T developed a user-friendly application that allows introducing data easily. At the same time, instructions are given at each step to i-minders unfamiliar with the premises. As such, a useful side-effect is that people (staff) not working in operations become familiar with the company's front line business.

TIMELINE/MILESTONES

The project was launched in April 2014. It was decided that for the successful implementation of the project, cross-departmental cooperation was of vital importance. The main objectives were defined while deadlines were set. After 3 months of intense work and exemplary cooperation, the project was officially launched (July 2014).

As major construction works took place during 2017 (Extra/Intra Schengen Areas renovation), a new updated version of i-mind was released, ensuring that the new status of the infrastructure was efficiently incorporated into the application and, thus, made available to AIA people.

EFFECTS & BENEFITS

The "i-mind" programme is directly linked to the company's mission and objectives. The programme lies on one of the key pillars of AIA's strategy and operations: customer service. Main indicators were defined and are continuously being monitored as well as updated.

To evaluate the programme and regularly measure the progress towards customer service, certain KPIs have been developed:

- participation rate (invitations vs exits)
- number of sorties
- average walkthrough time (minutes)
- number of checks performed
- performance ratio (“ok”)
- number of alerts

During 2017, 1,056 walkthroughs (equivalent to 69,378 checks of specific points) took place and 124 alerts were emitted requiring the rapid resolution of terminal infrastructure issues.

STAKEHOLDER & STAFF ENGAGEMENT

AEROPORTOINTERNAZIONALEdiNAPOLI

TOGETHER WE FLY

Together We Fly is the Internal Open Innovation Programme of Naples Airport Management Company to engage front-line staff, find new solutions and ideas to improve the passenger experience. People (staff) working directly with our guests know their needs and expectations much better than managers. They are the first and last touchpoint and are in charge of ensuring high standards in the passenger experience.

2014: award ceremony with the CEO

→ INVOLVED STAKEHOLDERS

Air carriers, handling companies, police, maintenance and cleaning companies were all involved in the idea generation and development process. Their engagement has been key to better identifying how processes could be smoothed and how to delight our guests whilst reducing inefficiency in operations.

→ METHODOLOGY

Building new infrastructures or acquiring new technologies is not always possible. Most Airport Managing Bodies are challenged to improve the passenger experience and traffic growth with limited resources.

This is the case for Naples International Airport, which launched Together We Fly (TWF), an internal open innovation programme. TWF is based on Kaizen methodology, which is very popular in the manufacturing industry (i.e., quality circles). This programme has a bottom-up approach: everyone is invited to participate and propose new ideas.

People (staff) working in security, terminal, airfield, purchasing, accounting and retail departments have been asked to work together for a common goal: our guests' satisfaction.

Co-design, visual thinking, gaming and storytelling are some of the tools used to sharpen the ideas and empower participants.

→ TIMELINE/MILESTONES

The programme, launched for the first time in 2013, has a 2-year life cycle and is structured in six steps:

1. Identification of areas of improvement: six to ten areas are defined based on:
   a. passenger satisfaction monitoring (ASQ and others) results.
   b. interviews to the management committee.
   c. focus groups with airport users.

2. Call to contribute: a call is launched to all staff (excluding middle/top management). Each candidate is asked to choose one of the areas of improvement to be involved in.

3. The forming of teams and election of team leaders: based on preferred areas, teams are formed, mixing colleagues from different departments. Each team elects a leader who is trained on problem finding/solving techniques and is followed by a senior colleague as a tutor.

4. From idea to project: based on process data analysis, on-site observations and interviews with other stakeholders, each team develops a project and related business case.

5. Presentation of projects and award ceremony: the ideas are showcased in a storytelling format where the innovators unveil their ideas with a visual presentation and a timed speech to the Leading Committee. One project is chosen by the CEO to receive an award in an official ceremony.

6. Implementation: the winning idea and the other projects chosen to be implemented are financed and entrusted to the relevant departments.

The programme is led by the Quality Manager and a Leading Committee that includes the whole Board of Directors. The leadership of such a programme is vital in order to guarantee the needed support for the activities and budget for implementation.

→ EFFECTS & BENEFITS

The Together We Fly programme has obtained important results:

- Creating an environment that supports improvement
- Spreading a culture of quality and inspiring all stakeholders
- Obtaining quick wins
- Launching new projects to enhance the passenger experience
- Empowering people (staff) and helping them to grow from learning to coach and teach others. At the same time, educating managers to trust their people and sometimes step back
- Increasing people engagement

In two editions, since 2013, more than 12 projects and 60 quick actions have been financed and implemented.

More than two thirds of people (staff) have been involved in dealing with passenger experience issues, cooperating with colleagues from other departments, and analysing processes and passenger satisfaction data. In short, they act as consultants, ready to help and proud to be part of the company. They realise the importance of their contribution to the passenger experience.

People (staff) proud of their work and their own airport help create a contagious atmosphere in the pursuit of increasing quality levels. They become great ambassadors for the airport.

Among the main outcomes of these 4 years (considering a traffic increase from 5.4 Mpax in 2013 to 6.8 in 2016), NAP has registered a significant increase in the ASQ score (from 3.66 in 2013, to 4.15 YTD 2017), and in the on-time performance (from 80.4 in 2013 to 85.2 YTD 2017).

In June 2017, NAP won the ACI EUROPE Best Airport Award 2017 (5–10 million category). Engagement has grown (AirPeople survey: engagement index from 75 in 2015 to 79 in 2017).

2016: Training activity for team leaders with a Michelin starred chef coaching on team building and customer care

TERMINAL REDESIGN

NEW BOARDING AREA E AT ROME LEONARDO DA VINCI AIRPORT: CONCEIVED TO FIT PASSENGERS' NEEDS AND TRANSFORM THE PASSENGER JOURNEY INTO A UNIQUE EXPERIENCE

The objective was to conceive a new boarding area dedicated to non-Schengen flights, tailor-made to passengers' expectations. While ensuring safety and efficiency, great attention has been paid to the infrastructure development to create a unique passenger experience.

→ STAKEHOLDERS INVOLVED

All interested parties were involved in order to integrate all needs and different goals: ADR's business units (infrastructure, operations, commercial, real estate, quality…), State authorities, air carriers, handling companies and local communities. Notably, cooperation between ADR and State Police has been exemplary: a special path for connecting passengers coming from non-Schengen countries where One Stop Security concept applies has been designed in order to allow these passengers to skip security control and go directly to border control while ensuring the separation of departing and arriving flows. This has significantly reduced connecting times for these passengers and waiting times at security control for other connecting passengers.

→ METHODOLOGY

In order to provide the right conditions for a good passenger experience and to reap the benefits of a holistic view, ADR adopted the 3P Approach.

PREMISES
Wayfinding, ambience and cleanliness are of paramount importance. They are also key drivers to passengers' satisfaction. All of these have been taken into account in the new infrastructure design.

PROCESSES

Processes must run smoothly: ADR has refurbished security and border control areas, providing passengers with the opportunity to benefit from the latest technology.

PEOPLE

There is no success story without the commitment of people. ADR strongly believes that people make the difference in the whole passenger experience. The new infrastructure has been conceived and developed by in-house experts and architects working with dedication, passion and pride.

At the same time, Terminal Managers are committed and dedicated to passengers' comfort: they are responsible for the operations and upkeep of the infrastructure and services, take care of passengers' comfort and ensure that everything is performed safely, securely and with the highest quality. They oversee cleanliness and challenge misbehaviour.

The Airport Helper concept was launched in 2013: more than 1,000 Airport Helpers working for many different stakeholders offer their expertise, kindness and assistance to passengers. Airport Helpers strongly believe in their mission.

TIMELINE/MILESTONES

DESIGN AND CONSTRUCTION WORKS

The design, works supervision and safety organisation for the new Boarding Area were provided by Spea Engineering S.p.A., part of the Atlantia Group. The new infrastructure is the result of a vision that uses local resources to the fullest, in favour of the renovation and consolidation of existing areas rather than the use of new ones.

ARCHITECTURAL DESIGN

The architectural design concept for the new Boarding Area E was developed on the basis of two fundamental assumptions: the need to connect to Rome's historical and artistic heritage and the need to find a formal balance with the original 1960s terminal. This concept incorporated a contemporary perspective, through organic and engaging volumes, both light and transparent, revealing the complexity of the buildings and reversing the relationship between internal and external spaces. The area is conceived according to the most advanced Italian architecture and engineering criteria. The materials used evoke the history of Roman architecture. The interiors and natural lighting are key design elements.

BOARDING PROCESS

Out of the 22 new boarding gates, 14 have a loading bridge for direct boarding and disembarking. In line with international best practices, gates devoted to wide-body aircraft have three boarding bridges to serve both aircraft levels at the same time: the main deck and the upper deck.
In order to speed up the boarding process and manage the different flows, boarding gate infrastructure includes the separation of priority and economy passengers.

TECHNOLOGIES

The most advanced construction technologies and the protection of the environment were the guiding principles for the design. Technical installations and high-performing materials led to optimal environmental performance.
The large transparent surfaces were made with semi-reflective double and triple glazing, ensuring the highest level of heat and sound insulation and providing a shield against solar radiation. The external covering is built with aluminium panes that follow and enhance the curve of the façade.

PASSENGER COMFORT

The new Boarding Area E has been conceived with the passenger in mind so that time spent at the airport becomes a memorable experience. Its vast volumes, the originality of the architectural design, the excellence of the Made in Italy products and the quality of food make this infrastructure truly unique at the European level.
Passenger comfort is ensured by spacious seating areas and the visual perspective is enhanced by the panoramic view onto the aprons, under a crystal sky through which external light illuminates the area for many hours every day.
The application of the "call forward" concept means that time to gate information is displayed on Flight Information Display Systems (FIDS) so that passengers can optimise their time in an enjoyable way. Furthermore, gate information is provided well in advance, enabling passengers to reach their gate calmly.

"MADE IN ITALY" SQUARE

This area hosts prestigious luxury "Made in Italy" and international fashion brands, offering their best products and latest trends. The offer is completed by retailers that can satisfy the needs and expectations of all passenger categories and a food court that provides a vast choice of Italian foods and wines.
The new international Boarding Area E, dedicated to non-Schengen flights, was completed on schedule on 21 December 2016.

KEY FIGURES

- 130,000 m^2 of new surface area of which 90,000 public area
- 6 million additional passengers
- 22 new gates
- 40 stores of prestigious luxury "Made in Italy" and international fashion brands
- 10 new restaurants

→ EFFECTS & BENEFITS

NEW WAYFINDING

Wayfinding is at the core of the passenger experience. It can be a source of stress, but a clear signage makes passengers feel confident.
At Leonardo da Vinci airport, the signage in the new Boarding Area E, compliant with international standards, will be extended to all terminals before the end of the year.
Scores achieved for the ASQ survey item "ease of finding way": Q1 2017 vs. Q1 2016: +9.3%.

TOILETS

Further to the refurbishment of nearly all sanitary blocks, passengers can find brand new toilets, designed according to a new concept in line with international best practices. Cleanliness and comfort are combined with a pleasant ambience. Furthermore, passengers can express their satisfaction with the service through smiley box devices that also generate real-time alerts in order to call the supervisor's attention if needed.

Scores achieved for the ASQ survey item "cleanliness of washrooms": Q1 2017 vs. Q1 2016: +8.6%.

FREE WIRELESS LAN ACCESS

While awaiting their flight, passengers can easily connect their laptops, tablets or smartphones to unlimited free Wi-Fi, and surf the web, check emails, download files and watch video streaming without any registration and with only one click.

Scores achieved for the ASQ survey item "internet access/Wi-Fi": Q1 2017 vs. Q1 2016: +22.9%.

SECURITY CONTROL

The security area is accessible through e-gates for boarding pass control. For a smooth security control, a preparation area with a "queue beater system" made of a double conveyor has been installed, allowing up to four passengers to prepare simultaneously. Security control is a stressful touchpoint: after it, passengers can find a "de-stress area" with soft lighting, comfortable seats and a natural landscape.
Scores achieved for the ASQ survey item "waiting time at security inspection": Q1 2017 vs. Q1 2016: +8.4%.

BORDER CONTROL

The new border control area in Terminal 3 offers passengers 26 cabins and 16 e-gates that help authorised passengers perform the process autonomously and quickly.
Strip-led lights create a nice atmosphere, passengers have more space available while transparent walls separating the flows make them feel more relaxed.
Scores achieved for the ASQ survey item "waiting time at passport control": Q1 2017 vs. Q1 2016: +6.5%.

TERMINAL REDESIGN

ENHANCING THE AMBIENCE AND RE-ENGINEERING THE SECURITY PROCESS TO OFFER PASSENGERS A UNIQUE AIRPORT EXPERIENCE

In 2015, SEA, the operator of Milan's airports, finalised the first phase of a project that successfully designed Terminal 1 to deliver an excellent passenger experience. SEA plans and invests in renovations and upgrades delivering elegant and fully comfortable **premises** and services that meet passengers' needs and expectations to produce a remarkable experience (wow effects). This is also made possible through smoother **processes** and outstanding tailor-made facilities in combination with **friendly and motivated staff.**

→ STAKEHOLDERS

New services and processes are developed by bringing together the right key stakeholders. **Designers, air carriers, operators, retailers and the Italian National Aviation Authority** brainstorm together, develop proof-of-concept solutions and define targets. **Staff engagement** is another important step of this holistic approach: their contribution is both valuable and valued and they feel part of the company's success.

→ METHODOLOGY – THE ANALYTICAL APPROACH

Since 1991, SEA has a long story of quality measurements. In 1995, SEA adopted a Quality Management System.

In 2012 SEA introduced a **model** and **analytical approach** in order to use quality data as a business leverage and estimate quick wins or long-term initiatives and investments, to improve service levels and passenger satisfaction.

TABLE 13 - **METHODOLOGY TO IMPROVE AMBIENCE AND THE PASSENGER EXPERIENCE: SECURITY CONTROL**

1	**Know our passengers**	• Passenger categorisation through Demographic Survey • Define their needs, expectations and behaviours
2	**Know our performance**	• Measure quality and service levels • Define appropriate KPIs • Identify proper cluster and measure the gaps with the best in class
3	**Know our positioning in the market**	• Identify the cluster group of comparable airports for Malpensa Terminal 1 • Measure the gaps with the best in class using ACI ASQ data and other measurable data (EAPN punctuality data, AQC service data: baggage delivery time, waiting time at security, etc.)
4	**Assess investments in the short, medium, long terms**	• Identify areas/services to be improved • Estimate their contribution to customer satisfaction improvement

TABLE 14 - **INITIATIVES TO IMPROVE THE PASSENGER EXPERIENCE: SECURITY CONTROL**

1	**PREMISES**	• Enhancing ambience: relaxing, airy, naturally lit, elegant architecture, creating a sense of place • Comfort and cleanliness, innovative facilities meeting the different passengers' needs
2	**PROCESS**	• Smoothing processes, clear and user-friendly information and communication • State-of-the-art technical solutions • Continuous performance monitoring, BluFI queue measurements and HappyOrNot Customer Satisfaction, ACI ASQ and CS Survey – Approach PDCA
	Security control	• **Smoothing one of the most stressful touchpoints** • **Bigger queuing and preparation area with clear information** • **Real-time measurements of security performance with BluFI and HappyOrNot, compliance with KPIs** • **Immediate actions in case of anomalies**
3	**PEOPLE**	• Staff training on customer orientation, focus on motivation and engagement, rewarding system

ENHANCING THE AMBIENCE: THE PROJECT AT A GLANCE

Malpensa Terminal 1 opened in 1998 and in 2015 it has undergone a complete renovation, which includes the restyling of the arrival hall, check-in, security control and waiting area, and the completion of a new area, the Northern part of Terminal 1. The new airside terminal facilities included spacious shopping areas with the most famous Italian fashion brands and gastronomy products.

INCREASING EFFICIENCY IN A USER-FRIENDLY ENVIRONMENT

The check-in area offers a modern and elegant ambience with a distinctive design, innovative materials, glossy surfaces, and spacious and ordered check-in counters that allows better queue management. Some counters are also equipped with world-class self-service kiosks and self-bag-drop solutions. The architectural solutions allow natural light to enter the inner areas from both landside and airside, and passengers can enjoy a fascinating view of the apron.
Wayfinding information helps passengers move through the premises in an efficient and confident manner. A new colour-coded system has been adopted to offer clear and consistent signage. Light blue has been chosen as the background colour for service information messages and LED green is used to lead passengers to airport facilities. Passengers never feel alone: real-time information is always available through call centres, social media, e-mails, online requests, live chats and the airport app. The most avant-garde system is the high-resolution video calling kiosk (live info desk) that provides passengers with a personal and "desk-like" interaction with customer care staff standing off-site.

The security control hall underwent a full redevelopment in 2015. A new centralised control area was created, increasing the number of x-ray machines featuring an in-house made system of frames and belts and improving processes. A large space for accessing controls and a bigger queuing area with electronic boarding pass readers with natural light are now available, and all the security area is visible through large glass windows. Divesting shelves and baskets for prohibited items are available all along the walkway.

Naturally lit stairs lead downstairs towards the great commercial area and the gate area, luxurious shopping, and fine food and drinks experience.

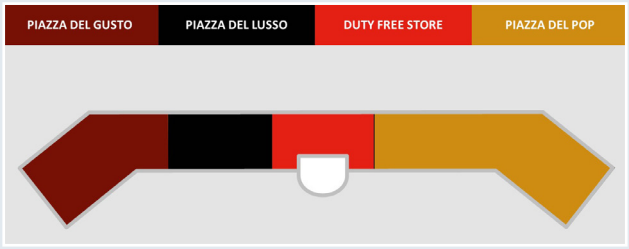
The new shopping gallery "piazza" concept (Picture 35) offers an exceptional and sensorial experience. Airport shopping helpers can be hired and are available to help passengers enjoy the most exquisite shopping experience, especially for Chinese passengers.

Information is important to make people feel calm and relaxed. Airport maps show passengers where they are exactly and FIDs provide constant updates on waiting times at border control.

Personalised services for families travelling with children are also provided. Follow the family friendly airport signage with Geronimo Stilton to find the dedicated services. The latest initiative within the programme is pet therapy, which offers a quick play session with dogs and bunnies to put a smile on passengers they interact with. Finally, *Flying Notes – Note in Volo,* a piano concert taking place throughout the day, entertains passengers.

PICTURE 35 - **THE "PIAZZA" CONCEPT**

THE "PIAZZA" CONCEPT:
Colour-themed clusters represent each area.



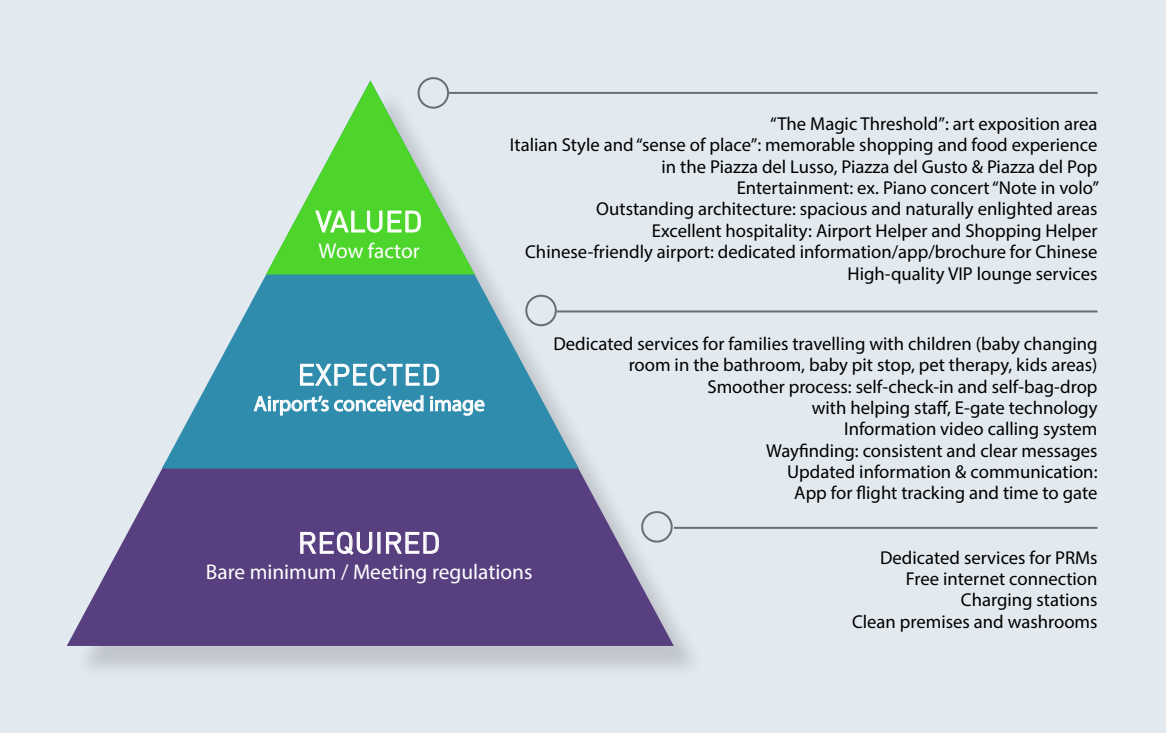
Representing specific business categories (luxury, top-quality food and wine, and trendy fashion) the **Piazza** concept makes Malpensa T1 the ultimate frontier for quality.

STRONGER FOCUS ON ENHANCING THE SECURITY EXPERIENCE

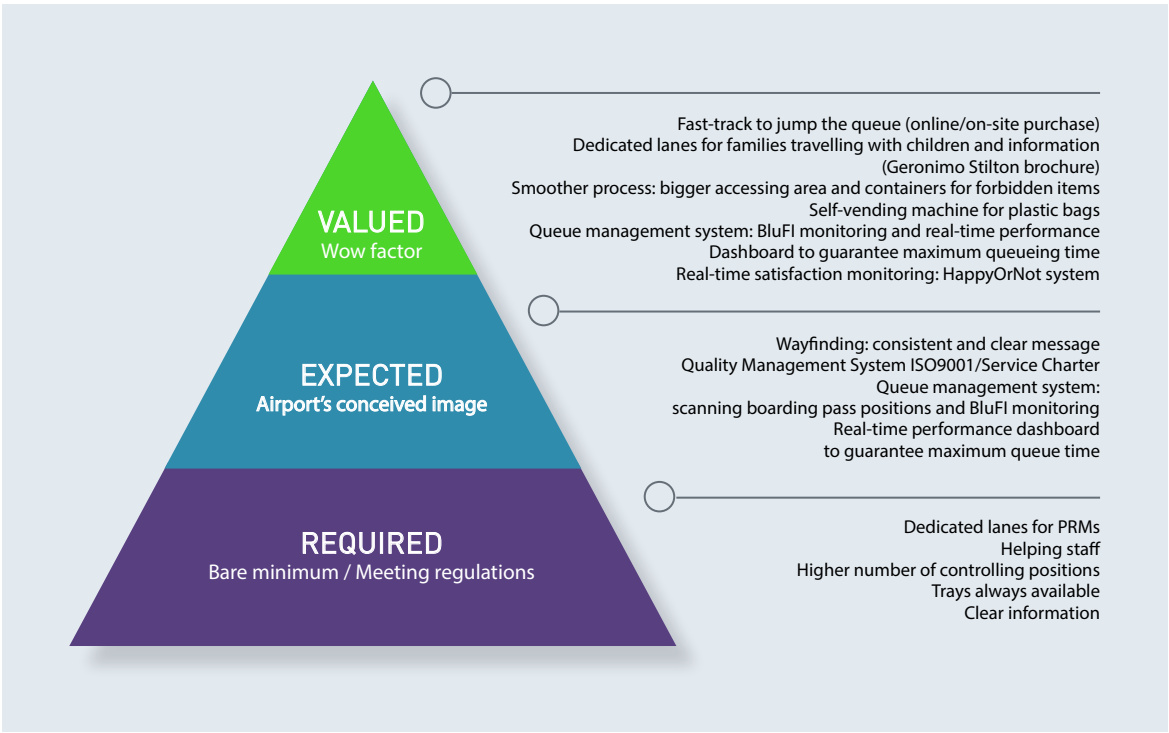
Security control is the most stressful touchpoint in the passenger journey with a direct impact on the whole experience. Among other initiatives, no-stress communications and instructions, helping staff and dedicated lanes for families, PRMs, fast track and flights under special procedures (e.g. USA & EL AL) aim to provide excellent level of service.

SEA engages all its people (staff) in successive steps to get motivated and enthusiastic, creating a more positive working environment. Security staff have joined customer-oriented and education training programmes, organised through focus groups and open dialogue sessions, in order to become aware of their value within the company.

PICTURE 36 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: TERMINAL (AMBIENCE)**



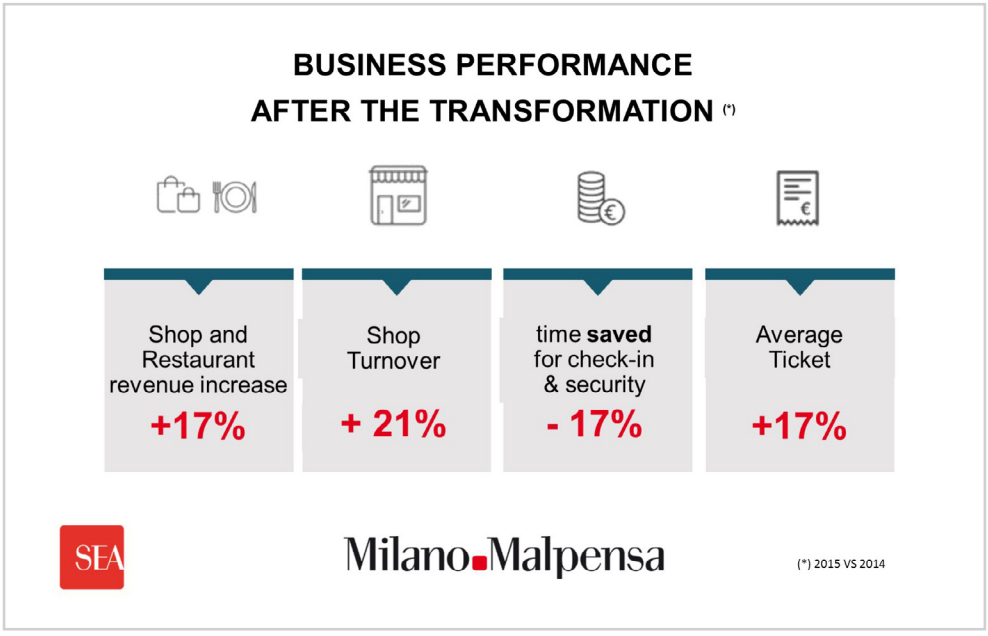
PICTURE 37 - **PYRAMID OF PASSENGER PERCEPTION LEVELS: SECURITY CONTROL**



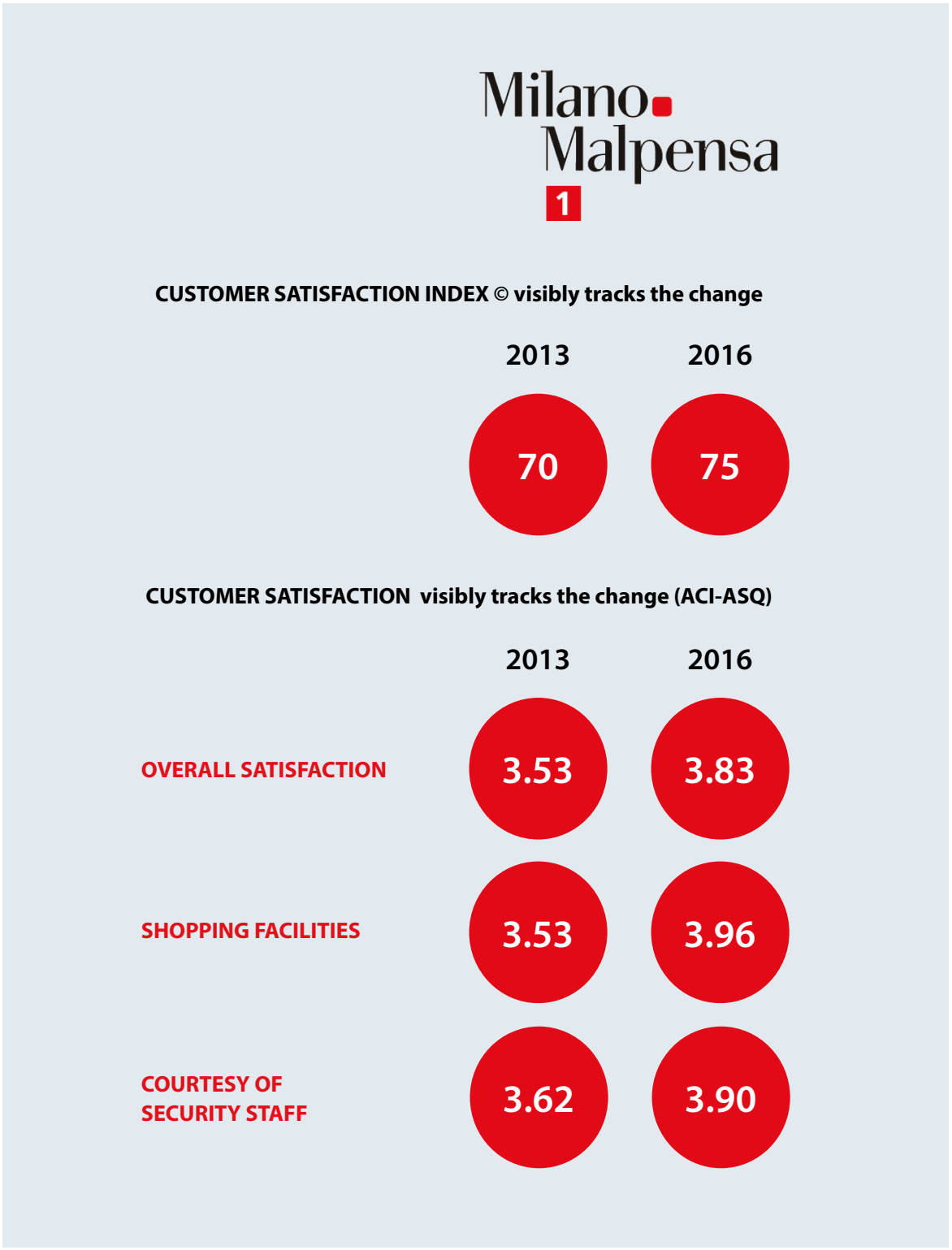
EFFECTS & BENEFITS – A SUCCESSFUL STORY

Milan Malpensa won the ACI EUROPE Best European Airport Award in the 10 to 25 million passengers category in 2015, thanks to its excellent performance, the quality of its services and infrastructures, and its achievements in passenger service, security and retail, as shown by Pictures 38 & 39.

PICTURE 38 - **EFFECTS ON BUSINESS OPPORTUNITIES AND PERFORMANCE**



PICTURE 39 - **EFFECTS ON PASSENGER SATISFACTION**



INTERACTING WITH PASSENGERS

Swedavia Airports

SOCIAL MEDIA

Social media is an effective communication channel that has become increasingly important in our interactions with passengers – but also when it comes to reaching people with our messages. Today, passengers can contact Swedavia's customer service in a number of ways – by phone, e-mail, post, fax, chat and social media. Passenger service via social media is the channel that is reporting the fastest growth and is also used effectively in emergencies.
Today, Swedavia is on Facebook (all the group's airports are also represented there), Instagram, Twitter, LinkedIn and YouTube.

→ INVOLVED STAKEHOLDERS

Many people understand the benefits of our social media channels and help to communicate what Swedavia stands for and what is going on in the different areas. Commercial services, aviation, real estate, human resources and environment are some of the departments that communicate with their target groups via social media.

→ METHODOLOGY

Content is posted on social media channels by local social media groups at our airports or by the Corporate Communications Department. Customer service, which is available around the clock 365 days a year, answers all questions and publishes information in case of contingencies. About 40 people handle social media channels, in addition to their other tasks. For instance, there is a VIP coordinator, firefighter and terminal host, who help describe their workday and post messages on Facebook. Messages that concern the whole group are produced centrally, while the airports are responsible for highlighting their own operations. Efforts are made to provide video material and livestreaming for social media.

Communication in contingencies is something we continuously try to improve and our social channels play an important role. In these cases, it is vital to communicate on a regular basis to provide updated and accurate information. High demands are placed on Twitter and Facebook since those channels are well-known for their instantaneity.

TIMELINE/MILESTONES

- **Speed**. Swedavia's social media target is to respond to all questions within 10 minutes, which makes this channel extremely effective.

- **More satisfied passengers.** Swedavia's customer service is available around the clock 365 days a year. Anyone who asks a question gets a response. That is world-class service!

EFFECTS & BENEFITS

- **Strong brand.** By having a strategic presence on social media, the company's corporate image is strongly enhanced.

- **Benefits of success.** If content becomes a viral success, hundreds of thousands of people can be reached (and even more) through sharing and dissemination. The marketing value of reaching so many people is high, but the real cost is low.

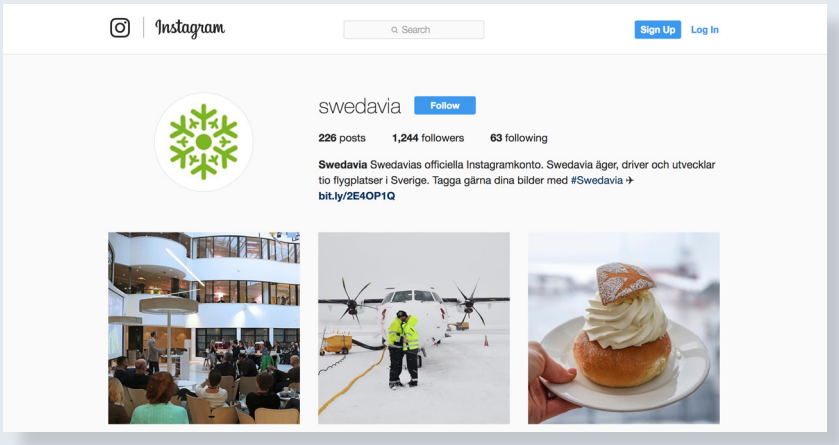
- **Respond and learn from criticism.** Swedavia works to counter negative content. We are happy to respond on our own platform instead of having this kind of discussion in fora we do not control. As a result, we also have our eyes open to any shortcomings we may have.

- **Interaction with the target group.** Social media is optimal for multi-channel communication. People (staff) have a chance to communicate instead of simply providing information.

- **Dare to be personal.** Social media was made for showing behind-the-scenes life and does not need to be as formal as other communication channels may sometimes require.

- **In-house pride.** Many people (staff) like to see their colleagues share their workday routine or have projects they worked on highlighted on social media.

- **Analysis and measurement.** A great deal of data can be accessed from social media. Learn about the passenger category you are addressing and you will know how and when they want information to be presented.


Instagram
Search
Sign Up
Log In
swedavia
Follow
226 posts
1,244 followers
63 following
Swedavia Swedavias officiella Instagramkonto. Swedavia äger, driver och utvecklar tio flygplatser i Sverige. Tagga gärna dina bilder med #Swedavia ✈
bit.ly/2E4OP1Q


Carrier
1:33 PM
100%
Swedavia Airports
Bromma Stockholm Airport
TF030 BRA
16:40 29 Nov
Stockholm
BMA
17:35 29 Nov
Göteborg
GOT
Check-in Boarding
1-4 16:10
Updated 13:32
Discover
Bromma Stockholm Airport
Food & beverages
Shopping
Start
Flights
Parking
Map
More

SELF-CONNECTIONS

VIAMILANO: THE SELF-CONNECTING CONCEPT

For airports with a high presence of Low Cost Carriers (LCCs), attracting connecting traffic is an issue. This is even more important when they operate long-haul routes. Some Airport Managing Bodies have developed solutions to support connections between air carriers not interlining.

Milano Malpensa had to face such a problem as part of the strategy adopted to recover from Alitalia "dehubbing" in 2007, when the airport lost about 7 million transit passengers.

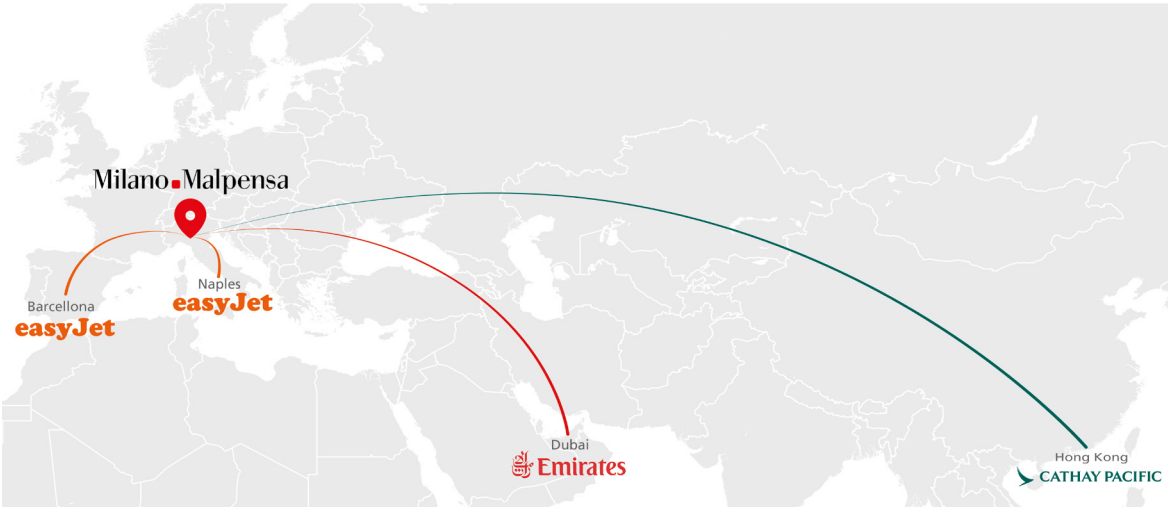
In 2012, SEA launched the ViaMilano service to explore the potential of the Malpensa network and the strong presence of LCC and Legacy Carriers. At Malpensa airport, one of the two terminals is fully dedicated to EasyJet, which has the largest European base in Milan, with about 7 million passengers per year. At the same time, Malpensa is the second intercontinental airport in Italy, located in the strongest economic region of the country.

Milan Malpensa provides a number of services and commercial offers to support self-connecting passengers using LCCs and long-haul flights. This is often more convenient compared to what air carriers can offer. The key point was to make the passenger more confident, even if not relying on a single air carrier.

The free services offered by ViaMilano aim at improving passengers' transit experience at MXP:

- Dedicated desks at Malpensa arrivals for baggage drop-off and passengers' assistance
- Improved shuttle service for transfer between terminals
- Free connections insurance
- Free access to fast-track for security checks and Wi-Fi service
- Promotional prices for VIP lounge access, breakfast and airport hotel rooms
- Discount voucher for purchases at airport shops

PICTURE 40 - **EXAMPLES OF VIAMILANO CONNECTIONS**



The ViaMilano service aims at creating a liaison between carriers operating on Malpensa that don't have interline agreements among them.

ORIGIN	DESTINATION	CARRIER#1	CARRIER#2
Copenaghen	Hong Kong	SAS	CATHAY PACIFIC
Catania	Budapest	easyJet	WIZZ
Barcellona	Dubai	vueling	Emirates

A key aspect of ViaMilano is the unique service offered to passengers to find non-interlining connection options using the FlyViaMilano website, which makes the search for such 'unconventional' routing possible.

SELF-CONNECTIONS

YOUR LONDON AIRPORT Gatwick

GATWICKCONNECTS, THE SELF-CONNECTING CONCEPT

Anyone arriving and departing from Gatwick with the majority of the air carriers on the same day can use a flight connections service called GatwickConnects. It can even issue an onward boarding pass (if the passenger does not have it already) and make sure the baggage gets on to the next flight.

HOW IT WORKS:

1. Collect passenger luggage from the arriving flight and go to the GatwickConnects desk in baggage reclaim.
2. Check the passenger in, take his/her baggage and make sure it is loaded onto the next flight.
3. Then, just exit through Customs, head straight to security and through to the departure lounge.

ADVANTAGES:

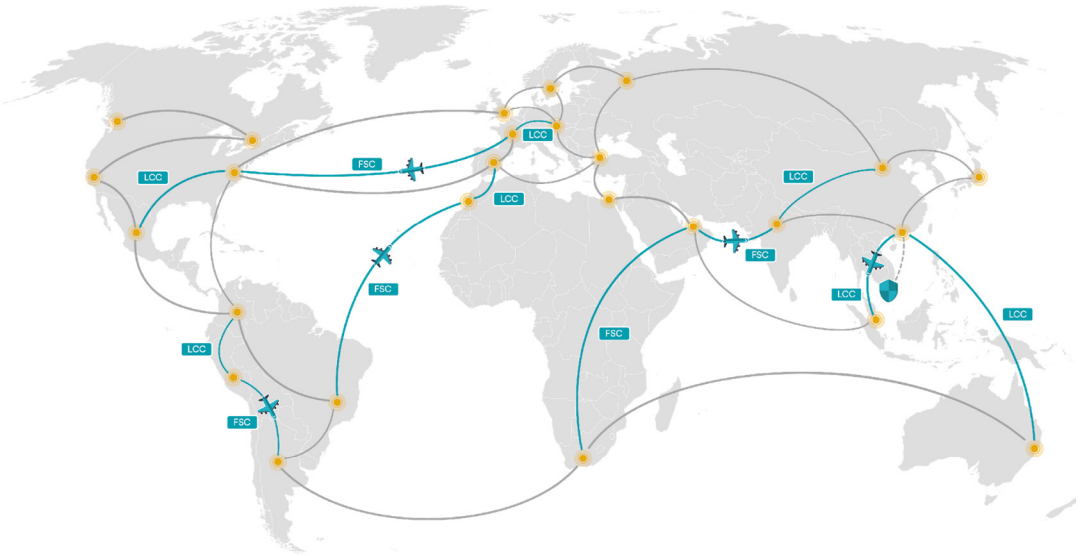
- The quick and hassle-free way to catch the connecting flight
- Take passenger bags for free
- More time for shopping, eating and relaxing
- Less time connecting, more time enjoying the Gatwick experience
- Premium Security – a dedicated security lane open between 04:00 and 20:45 every day
- GatwickConnects protected connection – offering a replacement ticket if passengers miss their onward flight connection
- Additional exclusive GatwickConnects' discounts
- Additional benefits

VIRTUAL INTERLINING

CHANGING THE INDUSTRY THROUGH VIRTUAL INTERLINING

This flight search algorithm created by Kiwi.com allows users to automatically combine flights from more than 650 airlines, many of which do not normally collaborate with each other, into a single itinerary, called **virtual interlining.** Therefore passengers can expect savings up to 80% off normal full airfares.

PICTURE 41 - **COMBINING LCC AND FSC FLIGHT TICKETS**



Source: Kiwi.com sample itineraries (2017)

INVOLVED STAKEHOLDERS

Kiwi.com is customer centric and focuses its energy on the passenger journey. All this is not possible without cooperating with global content providers, airports and other technology providers.

Kiwi.com does not think only about flights, but wants to enable the passenger to book all their transportation needs in one place, involving all the stakeholders in the value chain. The vision for Kiwi.com customers is to have a seamless travel product on hand.

For example, it is possible for Kiwi.com customers to be checked-in online, as well as to open the saved boarding documents directly on the Kiwi.com app. Further travel information can be accessed, e.g., flight times or terminal information and ancillary services on the airport can be booked directly on the app.

METHODOLOGY

The core benefit for customers is the **Kiwi.com Guarantee** . The passenger is protected from any missed connections resulting from schedule changes, flight cancellations or delays. The passenger will be able to reach Kiwi.com 24/7 by phone and mail, and Kiwi.com will cover any costs related to the missed connection, such as hotel, meals and rebooking onto another flight.

PICTURE 42 - **KIWI.COM GUARANTEE**

Every virtually interlined itinerary is covered and guaranteed to get the passengers to their final destination

KIWI.COM VIRTUAL INTERLINING VS. DIY SELF-CONNECT

In the DIY way, the passenger books two tickets on their own and has to go through all the struggle and anxiety that something could go wrong during the booking process. While travelling, the passenger is still afraid of missing the connection and having to find an alternative flight, which is going to be much more expensive.

At Kiwi.com it is the opposite. Passengers take back control. They do not have to worry about the booking process, nor the transfer times. Everything is thought of to make the journey as pleasant as possible. The smooth process starts with a convenient search map at Kiwi.com website, where the passenger can find all the necessary information; even visa information is provided. There is one single payment, one transaction, boarding passes and the Kiwi.com guarantee that if something goes wrong, there is somebody at Kiwi.com customer support to help. Stress-free; hassle-free.

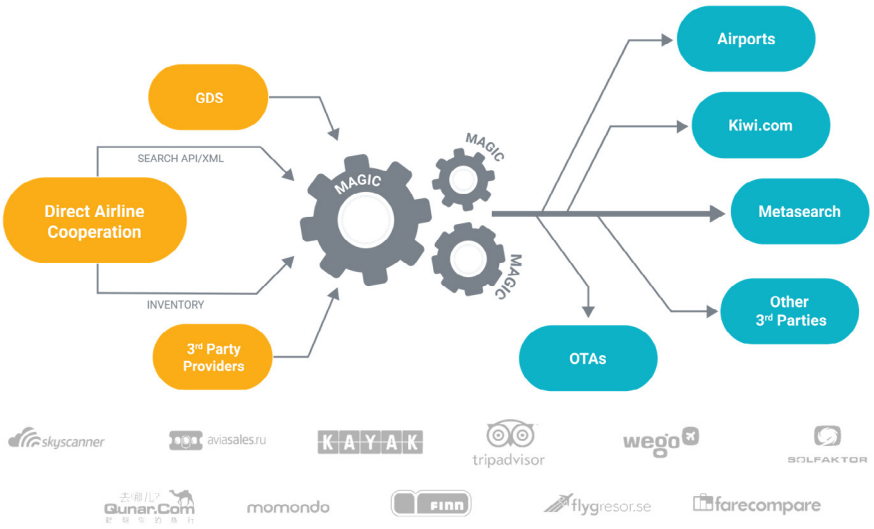
PICTURE 43 - **IMPROVED CUSTOMER EXPERIENCE**

	DIY SELF-TRANSFER	KIWI.COM
Search	Time consuming	Convenient Search map
Flight / Visa info	Research	Provided
Payment	Multiple payments, fees	One no fee
Bookings	Multiple bookings	One transaction
Boarding pass	Own on-line, offline	Provided
Missed flight insurance	Not protected	Protected
Checked bag	Re-check	Re-check

KIWI.COM MODEL

Kiwi.com model is based on cooperation and partnerships. With the help of advanced algorithms and machine learning, it is able to create billions of unique combinations that nobody else is offering. That results in endless possibilities for passengers going from one side of the world to the other all in one booking. With more than 100 distribution partners from APAC over Europe to LATAM, Kiwi.com is a truly global travel company.

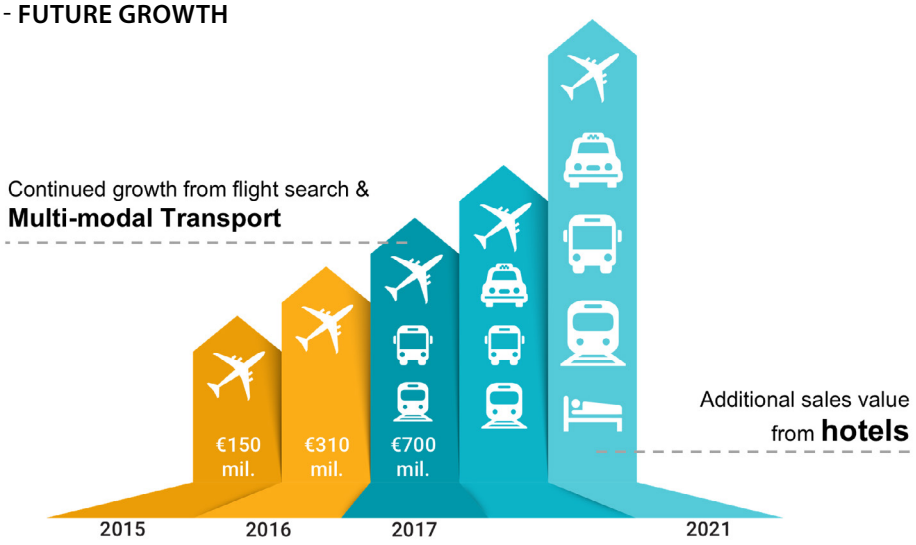
PICTURE 44 - **KIWI.COM MODEL**



TIMELINE/MILESTONES

2018 will be a year of improved content through new partnerships with air carriers and extended coverage of flights from major Global Distribution Systems. Furthermore, kiwi.com will focus on integration of ground transportation means to make travelling much easier and therefore increase the catchment area around many airports.

GRAPH 5 - **FUTURE GROWTH**

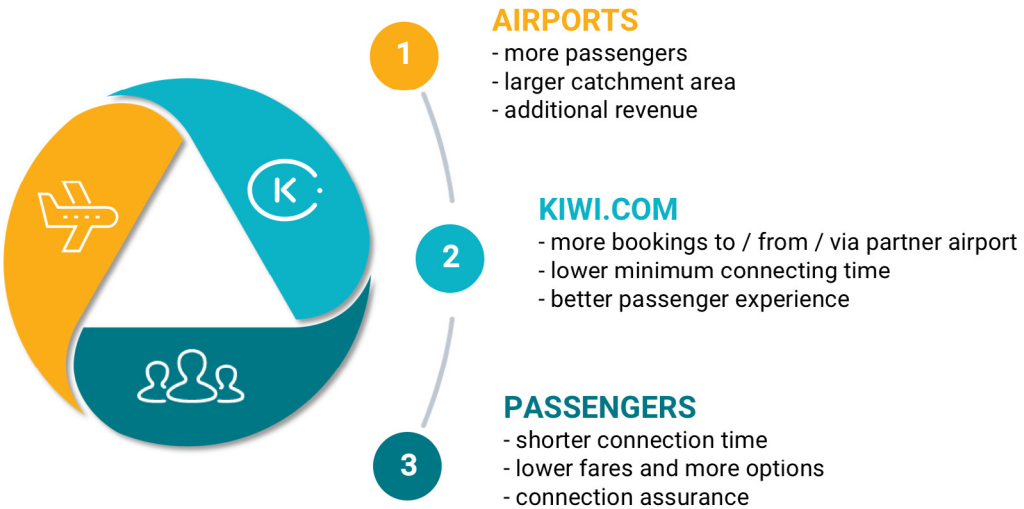


EFFECTS & BENEFITS

The collaboration with Airport Managing Bodies will be increasingly important. They will be a main driver of the future seamless travel product. In addition, they also act as a transfer hub. Kiwi.com can support the Airport Managing Body to offer more of its own services directly to the passengers, e.g., lounges or fast track. This will improve the passenger experience.

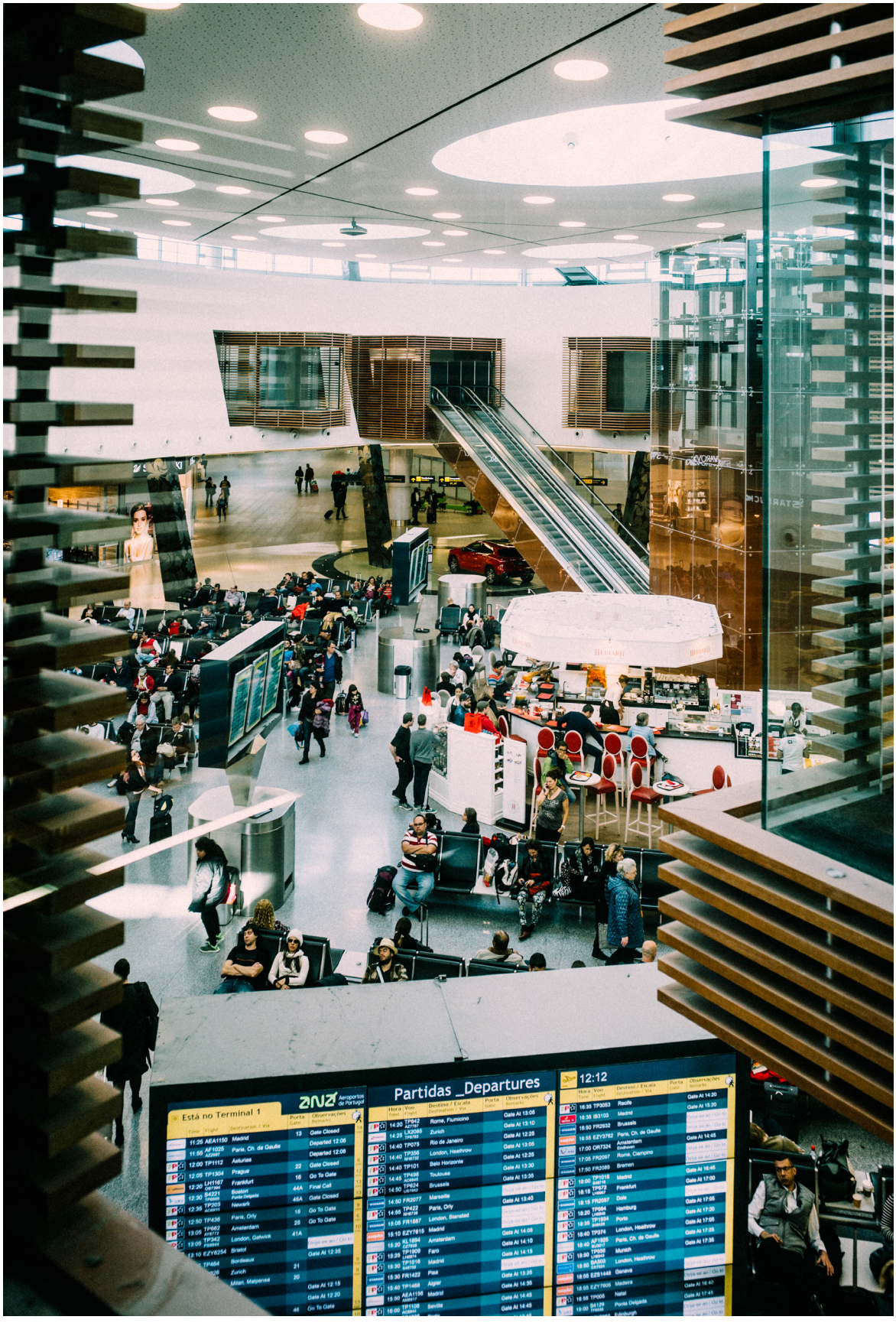
Kiwi.com sells many unique combinations and monitors new trendy routes as well as analyses data for route development opportunities for the airport.

PICTURE 45 - **BENEFIT TRIANGLE**



ANNEX 3

TESTIMONIALS



Lisbon Airport / LIS

EUROPEAN COMMISSION

The attractiveness of European airports is a fundamental issue: for world travellers they are the gateway to the EU. For many European citizens, they are a place of regular passage. For both, airports have to combine contradictory imperatives: safety, security and the quality of the passenger experience through the appropriate strategies, namely Premises, Processes and People. Security control, border control and baggage handling are particularly delicate aspects of the airport experience.

In this context, spreading innovation and solutions is crucial. Technology is of course a powerful tool for enhancing the passenger experience, but trained and adequate processes are fundamental. The first edition of the Guidelines was an important contribution from ACI EUROPE to share some of the imaginative and inventive ways that airport ecosystems can improve the passenger experience. I definitely welcome this second edition!

Violeta Bulc
Commissioner for Transport
European Commission
www.ec.europa.eu

ATHENS AIRPORT

To ensure passengers and people (staff) enjoy high-quality services, Airport Managing Bodies need continuous communication, coordination and cooperation among all stakeholders.

At Athens International Airport, we aim to provide passengers with services that actually respond to their needs and expectations. We consistently reshape our strategic vision; towards this end, we are now asked to best leverage the world's most valuable resource: data.

With the passenger at the core, data have the potential to lead airports to even more effective, efficient and personalised operations.

Sharing best practices and essential components of passenger services through this unique ACI EUROPE repository is essential for our airports' sustainability and growth. For our passengers. For our people.

Well done, ACI EUROPE!

Dr Yiannis Paraschis
CEO
Athens International Airport
www.aia.gr/en

ATHENS
INTERNATIONAL AIRPORT
ELEFTHERIOS VENIZELOS

BRUSSELS AIRPORT

The essence of Brussels Airport's strategy is to enhance the passenger experience by offering excellent services, smooth operational processes and the famous Belgian touch of hospitality, gastronomy and culture.
We want our passengers to enjoy a memorable outstanding experience and take home a unique "souvenir" of our airport and our country.

Airports are complex environments where all operations are interconnected. ACI EUROPE's *Guidelines for Passenger Services at European Airports* is a helpful way of looking at airport processes from a passenger's point of view.

As former president of ACI EUROPE, I have always supported these Guidelines and I welcome this updated version as I am convinced that better customer friendly services are essential for happy passengers and sustainable growth.

Arnaud Feist
CEO
Brussels Airport Company
www.brusselsairport.be/en

brussels airport
the heart of Europe

COPENHAGEN AIRPORT

ACI EUROPE's *Guidelines for Passenger Services at European Airports* has been very useful for Copenhagen Airports when establishing official planning principles for the "Expanding CPH" programme.

Our planning principles serve as crucial input for every capacity expansion project, and helps us maintain the position as the gateway to Northern Europe.

Thomas Hoff Anderson
Director Passenger & Terminal Services
Copenhagen Airports A/S
www.cph.dk/en

HERMES AIRPORTS

For Hermes, the passenger is at the heart of all we do and we constantly aim to improve the passenger experience at both Larnaka and Pafos International airports. We have found the ACI EUROPE *Guidelines for Passenger Services at European Airports* to be an invaluable reference document in our efforts to transform the passenger experience at our airports.

To provide a more holistic approach to the passenger experience, we encouraged other airport stakeholders to also use the Guidelines so that there is alignment when making improvements to every step of the passenger journey.

The Guidelines will remain an important reference document for those airports aiming to understand and manage the wide diversity of passengers' needs and expectations.

Miltos Miltiadous
Chief Operating Officer
Hermes Airports Ltd
www.hermesairports.com

KHARKIV AIRPORT

Kharkiv airport's team expresses its gratitude to ACI EUROPE for the *Guidelines for Passenger Services at European Airports* in Russian.

Our airport constantly strives to increase the level of loyalty of our passengers, and these Guidelines have proved to be very helpful during reconstruction, development of new technological procedures and communication with passengers.

Kharkiv airport's management
www.hrk.aero/en

KHARKIV
AIRPORT

MINSK AIRPORT

RUE National Airport Minsk – has learnt about the Russian version of the *Guidelines for Passenger Services at European Airports* and would like to express its gratitude to ACI EUROPE.

First of all, we would like to note that, despite the wide scope of topics covered in these Guidelines, the information is stated in a clear, accessible and structured way.

The competent narrative style of the information presented in the Guidelines makes it easier to understand its contents with the help of graphs, tables and diagrams.

In addition, we would like to mention the fifth topic of the Guidelines – enhancing the passenger experience through the 3P Approach. From our point of view, ACI EUROPE has managed to make the information precise and concise, to identify existing problems within its framework, and, more importantly, to suggest solution-shaping methodologies.

Furthermore, the practice described by ACI EUROPE in the *Guidelines for Passenger Services at European Airports* was recognised by the representatives of RUE "National Airport Minsk" as very useful and was adopted for its further use.

We consider the conclusions made at the end of the analysis on the formation of passengers' impressions reasonable and applicable at RUE National Airport Minsk.

http://airport.by/en

NATIONAL AIRPORT MINSK

MUNICH AIRPORT

We at Munich Airport believe that understanding our passengers' needs, expectations and emotions is the ultimate enabler of airport excellence. Therefore, we are committed to embracing every single opportunity we have to align our people, processes and premises towards improving the passenger experience. This is one of our key success factors to maintain and constantly improve our 5 star status.

Since its publication in 2014, the 1st edition of ACI EUROPE's *Guidelines for Passenger Services at European Airports* has constantly been a great reference for our team in order to apply a systematic approach to assessing, monitoring and improving both service quality and passenger experience.

It has been an honour for our Munich Airport colleagues to contribute to the Guidelines with contents, images and case studies.

Considering the strong competition among European airports, these Guidelines show how the airport community in Europe is working together with air carriers, authorities and service providers to constantly improve the experience of our common guests and users: the passengers.

Dr Michael Kerkloh
CEO
Flughafen München GmbH
www.munich-airport.de/en

NICE AIRPORT

Nice Airport has been involved in the *Guidelines for Passenger Services at European Airports* since the beginning of the work leading to the publication of the first edition in 2014.

Since then, our representative at the ACI EUROPE's Facilitation and Customer Services Committee and its Task Force on the Passenger Experience understood its added value for supporting an organisation based on passenger satisfaction. Our people have used the proposed methodology not only to enhance the quality of the services offered to our passengers but also on new projects. In this regard, during the 3-year terminal refurbishment launched in 2014, the *Guidelines for Passenger Services at European Airports* was a great resource.

Today, Nice Airport has the honour to Chair the ACI EUROPE's Facilitation and Customer Services Committee. We welcome this second edition which – we are sure – will become a must for Airport Managing Bodies aiming at excellent services for their passengers.

Dominique Thillaud
Chairman of the Management Board
Aéroports de la Côte d'Azur
www.nice.aeroport.fr

AEROPORTS
DE LA COTE D'AZUR

SEA MILANO

When SEA joined the Task Force on the Passenger Experience, launched by ACI EUROPE to write the first edition of these Guidelines, our company was in the middle of the transformation of Malpensa Terminal 1 as the airport of the EXPO 2015 world exhibition in Milan. The ambition was to make the terminal built in 1998 a place where passengers visiting the EXPO would have an outstanding experience, reflecting Italy and Milan's excellence.

Everything started in 2012 when SEA applied a specifically designed analytical model to use quality data as a business leverage to identify quick wins and long-term initiatives and investments, clearly oriented to improve customer satisfaction and service levels. As Chief Operating Officer of SEA, I strongly believed that if Malpensa intercontinental terminal could offer high-quality premises, passenger services and commercial offers, it would become the perfect gateway to the EXPO, with great benefits not only for all our passengers but also for SEA as a business company and for the reputation of the city of Milan.

The methodology described in the Guidelines embodies the successful experience we had while leading Malpensa Airport to become the Best Airport 2015 for the 10–25 million passengers per year category. The Guidelines have allowed us to offer to our industry, by sharing our experience with other leading European airports, a comprehensive handbook to improve the passenger experience; the key methodologies described (passenger multidimensional model, pyramid of passenger perception levels, the 3P Approach, etc.) are now currently applied in our company to design and review airport services; the Guidelines are also effective at shortening the learning curve for new suppliers and partners joining our business; similarly they are a great training tool for new employees joining the company and to disseminate the industry knowledge.

This second edition of the Guidelines can now proudly integrate the valuable contents brought in by industry experts, not only with the more recent evolution of the concepts already introduced by the first edition but also with a number of successful case studies that clearly document the benefit of the approach, including Milan.

Giulio De Metrio
Chief Operating Officer
SEA
www.seamilano.eu/en

AIRPORTS COUNCIL INTERNATIONAL

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