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DEVELOPING TRAVELER- FRIENDLY AIRPORTS TO IMPROVE THE PASSENGER EXPERIENCE IN THE APEC REGION

A BEST PRACTICES REPORT

January 2017

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ABBREVIATIONS

APC	automated passport control
APEC	Asia-Pacific Economic Cooperation
ASUR	Grupo Aeroportuario del Sureste
BAC	Brisbane Airport Corporation
BNE	Brisbane Airport
CUN	Cancun International Airport
IATA	International Air Transport Association
LAP	Lima Airport Partners
LIM	Jorge Chavez International Airport, Lima
NRT	Narita International Airport
PDX	Portland International Airport
TFI	Travel Facilitation Initiative
TWG	APEC Tourism Working Group
TSA	U.S. Transportation Security Administration
USD	U.S. dollar
US-ATAARI	US-APEC Technical Assistance to Advance Regional Integration
VIP	preferred passenger (<i>literally, very important person</i>)
Wi-Fi	wireless Internet connection

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¹ US-ATAARI is a joint project of the U.S. Agency for International Development, U.S. State Department and the Asia-Pacific Economic Cooperation (APEC) forum

EXECUTIVE SUMMARY

This best practices report is based on a series of in-depth assessments carried out by a team of aviation sector technical experts led by Nathan Associates, Inc. (the Experts) in five volunteer airports in the APEC (Asia-Pacific Economic Cooperation) region:

- Brisbane International Airport, Australia;
- Narita International Airport, Japan;
- Cancun International Airport, Mexico;
- Jorge Chavez International Airport, Peru; and
- Portland International Airport, the United States.

These airports were nominated by APEC members using selection criteria that were developed in close consultation with APEC Tourism Working Group (TWG) members. They have all achieved world recognition for their traveler friendliness and are diverse in terms of geography and in terms of:

- Size (passenger traffic);
- Function (transfer point or origin/destination, international or domestic); and
- Types of users (business or leisure travelers).

This report contains the findings of field assessments conducted between February 9 and April 8, 2016. Considered a crucial aspect of determining what constitutes a favorable passenger experience, the objectives of the field assessments were to gain an in-depth understanding of international/domestic and arrival/departure passenger process flows and to observe services that are provided to passengers throughout the airport.

Through these on-the-ground assessments, the Experts were able to identify key factors that could impact passengers' perceptions of traveler friendliness in this diverse range of airports. Based on these findings, a comprehensive list of traveler-friendly quality standards was developed that airports in the APEC region can use to prioritize the issues they need to address in order to improve existing services and/or develop new systems. These standards are presented in Chapter 4 in the form of a checklist that airports can use to evaluate their level of traveler friendliness and establish goals and strategies to achieve all of the standards in the near future.

I. INTRODUCTION

The movement of travelers across the Asia-Pacific region for business and leisure is vital to economic growth. Tourism represents a special type of cross-border supply chain in which a variety of services are supplied to meet the requirements of increasing international traveler flows.

The Asia-Pacific region represents the world's biggest passenger aviation market. The International Air Transport Association (IATA) has forecasted that Asia-Pacific passenger traffic will grow by an average of 5.7% compound annual growth rate, with the region expected to add around 300 million passengers by the end of 2017. Traffic within the Asia-Pacific region will represent 31.7% of global passengers in 2017, up from 28.2% in 2012. IATA also predicted that the number of air travelers around the world will grow from 2.4 billion in 2010 to 16 billion by 2050, with much of this growth expected to occur in the Asia-Pacific region. The APEC (Asia-Pacific Economic Cooperation) region is also home to some of the world's busiest airports. Airports Council International statistics ranked 38 airports in the APEC region in the top 50 in terms of passenger movement.

Given the growing economic importance of travel and projected increases in traveler volume in the region, APEC developed the Travel Facilitation Initiative (TFI) in 2011 as a framework to expedite the flow of large numbers of people, including efforts to expedite departures and arrivals for international passengers at ports of entry in the region. The overarching goal of the TFI is to enable more efficient, more secure, and less stressful travel. The TFI is also aligned with other policy frameworks, such as the APEC Connectivity Blueprint, which aim to promote connectivity in the APEC region.

Under the Airport Partnership Program pillar of the TFI, APEC members agreed to explore the potential for establishing a comprehensive, coordinated program in which government and private-sector stakeholders can work together to showcase best practices and promote safe and secure travel for business and leisure travelers. This also supports APEC's broader goals of promoting economic growth in the region by increasing the tourism potential of developing economies, which in turn will create new economic opportunities and jobs and encourage local entrepreneurship.

In 2015, the United States sought funding for an APEC project titled *Developing Traveler-Friendly Airports to Improve the Passenger Experience in the APEC Region*. This initiative is in line with the Macau Declaration, in which APEC Tourism Ministers encouraged TWG members to continue to implement the TFI and work to make travel more accessible, convenient, and efficient while maintaining and enhancing secure travel. The specific objectives of the project are as follows:

- Share best practices that contribute to creating a traveler-friendly airport, and develop recommendations for implementing these practices across the Asia-Pacific region.
- Develop recommendations for improving the traveler-friendliness of airports across the APEC region. These recommendations will be included in the Best Practices Report and will inform the components of the proposed scorecard.

- Provide a guide for beginning the process of improving both the travel experiences of passengers, from the time they arrive at the airport through takeoff, and overall airport operations through new technologies, operational efficiencies, or other means—such as trusted-traveler programs, automated passport control (APC) and Advanced Passenger Information (API)/Passenger Name Record (PNR)—which could reduce wait times and/or improve passenger experiences while maintaining and enhancing security.
- Improve perceptions of APEC airports in order to increase travel to and within the APEC region. For example, a traveler-friendly airport can create a positive image of the destination itself and therefore increase travel (and repeat travel) to the destination and the region as a whole.

The project aims to identify traveler-friendly quality standards that can be implemented across multiple APEC economies to improve traveler friendliness in airports. For a traveler, the airport is a gateway, creates a first impression, and is an economic and cultural showcase. It is an instrument of hospitality, yet stressful entry processes often create an uncomfortable experience. In some airports across the region, there is a lack of efficiency that affects leisure and business travelers, including long security and immigration lines. The goals of security and hospitality do not have to be in conflict.

To this end, an analytical study was conducted with the objective of developing best practices, recommendations, and quality standards that, if implemented by airports, will improve the travel experience for passengers as well as overall airport operations. A team of aviation technical experts worked closely with government and private-sector stakeholders of five airports in APEC economies to highlight best practices that exist in these airports that create a welcoming environment for travelers; through this approach, they developed practical guidelines that can be used to enhance the airport visitor experience.

The project culminated in a one-day workshop where the results of the study were presented to APEC TWG members and public- and private-sector stakeholders in the aviation and tourism industries. The workshop provided opportunities to share experiences and build useful networks between industry and government to enable future cooperation and capacity building.

This report presents the findings of the study and is organized as follows. The next section details the methodology used to conduct the analysis. Section 3 presents study findings, detailing the information gathered through stakeholder interviews and passenger surveys, and factors that were identified during the site assessments as making a significant contribution to these airports' success in the area of traveler friendliness. These factors, and the corresponding quality standards, fall into four broad categories:

- Services;
- Technology;
- Facilities; and
- Personnel.

Section 4 draws on the traveler-friendly factors identified in the study to recommend quality standards that APEC economies can use to determine which issues and challenges they need to prioritize in order to improve the traveler friendliness of their airports. Section 5 identifies other key factors for improving an airport's perceived traveler friendliness, and is followed by detailed appendices on each airport's individual assessment; passenger processing times; passenger survey results; and additional information on level of service.

2. METHODOLOGY

The objective of the study was to highlight technologies and processes that enhance an airport's traveler friendliness. Five airports were chosen for study in a formal process in which APEC TWG members were invited to select and nominate airports based on agreed selection criteria.

CRITERIA FOR SELECTING PILOT AIRPORTS

Airports were chosen for their diversity in the following categories:

- Size—large, medium, small, or non-hub classification²;
- Function—origin/destination traffic or transfer traffic; primarily international or domestic travel; and
- Type of users—business or leisure travelers.

In addition to this, each airport that was identified by APEC economies was expected to have achieved world recognition in one or more elements of traveler friendliness, such as:

- Transportation and connectivity (including availability of public transport connections, parking, and rental car services);
- Operational efficiency (including check-in and security wait times);
- Facility conditions (including cleanliness, signage, and ease of movement); and
- Availability of services (including restaurants, lounges, shopping, customer service, and restrooms).

Five airports were selected for the study:

1. Narita International Airport, Japan;
2. Jorge Chavez International Airport, Peru;
3. Brisbane Airport, Australia;
4. Cancun International Airport, Mexico; and
5. Portland International Airport, USA.

ON-SITE ASSESSMENT

A team of aviation field experts conducted analyses in the five selected airports. The analytical framework developed for the assessment covered the following topics:

- Transportation connections;
- Operational and passenger-processing efficiency;

² Size as determined by the Federal Aviation Administration (FAA)² and the Aerodrome Reference Code as identified by the International Civil Aviation Organization and based on passenger enplanements

- Connecting times and walking distances;
- Level of service; and
- Customer satisfaction ratings.

The on-site assessment of the selected airports was conducted between February 9 and April 8, 2016. The assessment focused on international/domestic and arrival/departure passenger flows and services provided to passengers throughout the airport, and sought answers to the following questions:

- What services were provided by the airport, airlines, and federal agencies to enhance passengers' travel experiences?
- How did the airport, airlines, and federal agencies interact with passengers to provide a positive experience?
- What were the processing times at each processing point?
- What services or technologies were used to expedite passenger processing?
- Were the facilities clean and orderly?
- Were enough amenities (including restrooms, baby-changing areas, water fountains, seating, elevators and escalators, prayer and reflection rooms, children's play areas, quiet zones, and circulation spaces) provided for passengers?
- Were adequate retail and food and beverage options provided to meet travelers' needs?
- How did the airport, airlines, and federal agencies handle concerns raised by passengers?

Processing times were also surveyed at all major passenger-related service checkpoints, including:

- Check-in (for both international and domestic departures);
- Security control;
- Emigration (outbound);
- Immigration (inbound); and
- Customs control.

To evaluate these, appropriate processing times were determined to be as follows: 3 minutes for international check-in, 2 minutes for domestic check-in, and 3 minutes each for security control, emigration and immigration, and customs control.

Processing times for at least 100 passengers were measured at each processing point. Processing times were measured during both peak and off-peak periods. At the check-in facilities, the Experts surveyed at least two major airlines operating at each airport. Surveys were compiled for domestic and international flights and included processing times for various service classes (first, business, and economy) as well as different check-in procedures (self-service versus staffed).

PASSENGER SURVEYS

In order to obtain a sound appreciation of which factors affect airport users' perception of traveler friendliness, the team also conducted passenger surveys. Each participating passenger was asked two questions:

1. Which aspect of this airport made your experience more pleasant?
2. In which area could this airport improve your experience further?³

The survey responses were a key element in the determination of the traveler-friendly quality standards.

STAKEHOLDER INTERVIEWS

In order to attain further knowledge about operational practices that have helped the airports excel in the area of traveler friendliness, the team also conducted interviews with multiple stakeholders at each airport. The stakeholders interviewed at each airport included the following:

- Manager or director of airport operations;
- Staff or manager working in concessions (retail tenant);
- Information-technology staff working on passenger information systems such as arrivals/departures data displays;
- Terminal operations staff, including, where relevant, private-sector baggage handlers;
- Staff or managers working in security control and immigration;
- Representatives of the key airlines serving the airport; and
- Managers of ground transportation and parking operations.

Interview questions varied depending on the stakeholder's position and role.

³ Responses to the second question were kept confidential.

3. STUDY FINDINGS

Factors contributing to these airports' successes in the area of traveler friendliness fall into four main categories:

1. Services
2. Technology
3. Facilities
4. Personnel

Each is discussed in turn below. More information and additional detail of the study's findings can be found in the appendices:

- Appendix I includes a detailed analysis of each of the nominated airports in these categories.
- Appendix II summarizes the processing times at the five airports.
- Appendix III includes a summary of the passenger survey responses.

SERVICES

- The availability of free and reliable Wi-Fi (wireless Internet connection) was highlighted as the most impactful traveler-friendly feature in airports that provided it.
- The availability and accessibility of commercial services (food and beverage and retail outlets) at prices comparable to local market prices (or “street” prices) was highlighted as a critical component to improve passenger experience.
- The availability and accessibility of charging stations or outlets was perceived as a highly convenient feature across all five airports.
- The availability of other amenities such as VIP (preferred passenger—literally, very important person) lounges, showers, and spa/massage services were highly regarded as passenger-friendly features, particularly in airports with a large share of international transfer travelers.
- Parking availability and options (short- and long-term) form a key passenger-friendly feature for those passengers for whom the airport is their point of origin.
- A wide variety of ground transportation services in terms of price, frequency, and mode (including buses, shuttles, taxis, collective taxis, luxury taxis, car rental services, and public transport) is an important factor affecting traveler friendliness.
- Services that expose cultural attributes from the airport's member economy, such as local food/retail options or local musicians performing at the terminal, tend to be a highly regarded traveler-friendly feature.
- Airport provision of affordable tourist activities near the airport can effectively attract passengers with long layovers.

TECHNOLOGY

- Free wireless connectivity with a wide bandwidth is becoming an aviation-industry standard, and therefore, it is important that airports aiming to improve traveler friendliness provide it.
- Availability of self-check-in kiosks and APC kiosks improves passenger processing times significantly.
- Common-use technology⁴ allows greater flexibility in how airport facilities are allocated and shared by airlines to handle fluctuating passenger flows more effectively.
- Reliable and easy-to-find flight information display screens and terminal maps were frequently mentioned as traveler-friendly features during interviews and passenger surveys.
- Other wayfinding and airport information technology systems, such as interactive information kiosks and mobile applications, were also mentioned as traveler-friendly features during interviews and passenger surveys.
- A state-of-the-art airport resource management system⁵ that is integrated with the airport's operational database and provides real-time, quickly updated flight, baggage, and gate information that provides live information to passengers provides support to passengers especially when faced with unexpected delays.

FACILITIES

- Cleanliness was the facility-related factor most frequently highlighted during the passenger surveys as a key traveler-friendly feature.
- An airport terminal layout that made it easy for passengers to get around and that required passengers to walk less was another frequently highlighted facility-related factor. Passengers tend to find it stressful and inconvenient to walk long distances or make time-consuming ground transport connections, especially when connecting to another flight. Simple and compact terminal layouts, with a design that minimizes the feeling of crowdedness (e.g., high ceilings and queuing spaces that do not conflict with other passenger flows), have a significant impact on passengers' perceptions of a layout as friendly.
- A sufficient number of restrooms was also frequently mentioned as a traveler-friendly feature during interviews and passenger surveys.
- Passengers appreciated the presence of drinking fountains and water-filling stations by each bathroom.
- Improved curbside safety and order through safe roadway crossings and exclusion of informal vendors significantly impacted passengers' perceptions of safety.

⁴ Common-use equipment consists of a common interface for airline ticketing counters, which allows multiple airlines to allocate counters according to each airline's peak traffic management needs. Examples include terminal equipment and the more recent passenger processing system, which was introduced by IATA in 2009 to simplify common-use implementation (Future Travel Experience 2014).).

⁵ The resource management system helps airports coordinate all of their functions in real-time in case of delays or unforeseen events. It also allows providers, authorities, commercial service concessionaires, and most airport employees to have access to a system that provides real-time updates so that on-the-ground handling operations can react more effectively to enable more on-time departures.

- Features that make an airport unique, such as a carpet with a unique design or local artwork displays, can impact passengers' perceptions of traveler friendliness.

PERSONNEL

- Frequent communication among airport staff and stakeholders was identified in the stakeholder interviews as the strongest contributing factor to excellence in customer service. Airport stakeholders credited monthly or weekly staff meetings for each department or each project or initiative as a key contributor to good communication and working dynamics across departments and other staff employed within the airport.
- Requiring all airport employees and officers to receive customer service training was highlighted by stakeholders as a successful way of promoting a customer-friendly culture.
- And, because customer service is highly regarded as a key element of traveler-friendliness Airports can make it a top priority by allocating resources to undertake the following tasks on a regular basis:
 - Perform regular research to better track and measure customer preferences and needs.
 - Work with airport staff, airlines, concessionaires/tenants, and operators to develop, institute, evaluate, and manage programs aimed at providing the highest level of customer satisfaction.
 - Recognize employees excelling in customer service through awards (such as a complementary airport service for a period of time), and generally treat employees well.
 - Recruit local volunteers to implement “airport ambassador” programs that enhance customer service.
 - Encourage airport employees to display unique cultural traits that are highly regarded by passengers.

4. RECOMMENDED QUALITY STANDARDS

Based on the study's findings, a list of traveler-friendly quality standards has been identified to help airports in the APEC region improve traveler friendliness. These standards are provided on the following page in the form of a checklist that can be used to evaluate an airport's current level of traveler friendliness and to establish goals and strategies for future improvements.

Traveler-Friendly Quality Standards

Services

- Free wireless connectivity with a wide bandwidth
- Charging stations and outlets readily available at each gate
- Diverse, reasonably priced retail and food and beverage options, including regional and local products
- VIP lounges and spa service areas
- Multiple transportation options including car rentals, taxis, and mass transport (bus, shuttle, and collective taxi) with frequencies under 15 minutes
- Easily accessible short- and long-term parking
- Short and affordable tourist activities for passengers with long layovers

Technology

- Self-check-in kiosks
- APC kiosks
- Interactive information kiosks and/or an airport information mobile app
- Flight information displays and terminal maps at each node within the terminal
- Common-use technology
- Resource management system

Facilities

- Facility consistently rated as “clean” by passengers
- Moving walkways in long concourses
- Checkpoint queues that do not obstruct other passenger flows
- High tables in post–security control areas for passengers who do not want to sit
- Sufficient restrooms in each terminal area
- Drinking fountains and water filling stations outside each restroom
- Local art displays throughout the terminal
- Road safety features such as raised crossings and strict speed limits (15 km/hour)
- Terminal design that
 - Minimizes walking distances
 - Showcases local cultural assets
 - Incorporates high ceilings
 - Provides sufficient sunlight

Personnel

- At least weekly staff meetings for each airport department
- At least weekly staff meetings for project/initiative participants
- At least biannual all-airport staff meetings
- Airport staff recognition program
- Monthly passenger satisfaction surveys administered by the airport
- Display of at least one distinctive local cultural activity, such staff joining to bow and wave to a departing aircraft, staff wearing the jersey of a local sports team, or performances by local musicians

5. OTHER TAKEAWAYS FROM THE STUDY

The study required the assessment of both qualitative and quantitative factors in order to determine which practices can more effectively lead to significant improvements in an airport's level of traveler friendliness.

On-site facility assessments typically concentrate on how quickly passengers are processed through specific passenger checkpoints. While this is important, a passenger-friendly airport also provides a positive experience by engaging and assisting passengers in all processing areas. This may result in a slightly longer processing time, but this should by no means reflect on the airport's processing ability.

During the process of identifying the most relevant traveler-friendly factors, the Experts were careful to take into account cultural differences in perceptions of traveler friendliness. Airports throughout the world are impacted by different social, demographic, geographic, cultural, and economic microsystems, and each embodies a specific set of characteristics that is reflected at each airport and projected to the passengers.

Whether an airport caters primarily to leisure or business travelers also plays a vital role in how an airport is deemed traveler-friendly. An airport that is located in a tourist destination will typically experience more friendly passengers due to the fact that the majority of them are on vacation and are not as concerned with processing times and state-of-the-art technology. In comparison, a major hub airport in a large metropolitan city that caters primarily to business travelers is less likely to be seen as traveler-friendly if it has frequent long wait times, limited technology, and outdated facilities. Different cultures and types of passengers may have different priorities when it comes to what makes an airport traveler friendly.

Many aspects that should be considered when identifying an airport as traveler-friendly go well beyond processing times and level-of-service classifications (see Appendix IV). Although these aspects and the resulting microsystems could be further defined and evaluated, this was not considered the objective of this study. And, while level of service and processing times were evaluated, the Experts relied on a multitude of other factors as well in conducting the five airport assessments. The Experts determined the traveler-friendly quality standards based on a diverse mix of objective and subjective factors that were consistently identified as most impactful in affecting traveler friendliness at the different airports.

APPENDIX I: AIRPORT PILOT STUDIES

BRISBANE INTERNATIONAL AIRPORT, AUSTRALIA

AIRPORT BACKGROUND

Brisbane International Airport (BNE, Image 1) is the primary international airport serving Brisbane and Queensland and a major gateway to Australia.

In 1997, as part of the privatization of numerous Australian airports, BNE was acquired for \$1.4 billion from the Federal Airports Corporation by Brisbane Airport Corporation (BAC) under a 50-year lease (with an option to renew for a further 49 years). Since

then, BAC has assumed ultimate responsibility for the operations of BNE, including all airport infrastructure investment, with no government funding. BAC's shareholders are major Australian and international organizations and institutional investors.

BNE is the third busiest Australian airport in terms of aircraft movements. It serves 28 airlines flying to 45 domestic and 28 international destinations; in 2015 alone, more than 22 million passengers traveled through the airport. In 2015, an OAG⁶ report named BNE the fourth-best-performing medium-sized airport in the world for on-time performance with 88.31% of arrivals and departures occurring within 15 minutes of their scheduled times (OAG 2016).

BNE is a major port for several airlines, including Virgin Australia and both Qantas and its low-cost subsidiary Jetstar. Tigerair Australia also opened a base at BNE on March 11, 2014. BNE is the most connected airport in Australia with the highest number of domestic destinations in its network. It is also home to Qantas's A330 heavy maintenance facility. Virgin Australia has a smaller maintenance facility at the airport to service its 737 fleet. QantasLink and Alliance Airlines also conduct maintenance at BNE.

BNE is consistently recognized as a leading airport, and has received several awards. It was voted Best Airport in the World (Australia/Pacific regions), achieving fourth place for Best Airports in the World (servicing 20–30 million passengers), and was ranked 17th in Skytrax's World's Top 100 Airports list for 2016. BNE was also named Capital City Airport of the Year

Image 1. Brisbane International Airport Location



Map data: Brisbane Airport Corporation.

⁶ OAG is an air travel intelligence agency based in the United Kingdom.

for 2014 and 2015 in the Australian Airports Association's National Awards, and has been rated as Australia's number-one airport for quality of service for 12 years (2005–2016) in an Australian Competition and Consumer Commission survey.

Its recently redeveloped International Terminal won the Queensland Architecture Award. In 2005, BNE was awarded the IATA Eagle Award, one of only two Australian airports to receive it. BNE was also the host airport for the 2014 Group of 20 leaders' summit, facilitating the arrival and departure of 26 world leaders and their associated entourages and more than 70 aircraft with 100% safety and security and exceptional on-time performance.

AIRPORT TERMINALS

The airport has two main passenger terminals (international and domestic), a logistics apron, a general aviation terminal, one main runway, and one smaller cross-runway. Located in the heart of the Australia Trade Coast precinct, BNE is positioned at the intersection of air, road, rail, and shipping, just 8 km from the Brisbane CBD. It is accessible from all directions by the Gateway Motorway M1, the Southern Cross Motorway, East West Arterial M7, Inner City Bypass, and Clem 7. Airtrain rail services link both terminals to the wider Queensland Rail City network.

International Terminal

The international terminal (Image 2), built in 1995, has 12 gates and is capable of handling A380 aircraft. The terminal has four levels: Level 1 houses airlines, baggage handlers, and tourism operators; Level 2 handles arrivals; Level 3 handles departures; and Level 4 handles check-in.

Image 2. International Terminal



Source: Brisbane Airport Corporation.

Domestic Terminal

The domestic terminal (Image 3) is a two-level curved building with three satellite piers extending beyond the building, providing additional passenger lounge and gate facilities.

Image 3. Domestic Terminal



Source: Brisbane Airport Corporation.

The domestic terminal has three distinct areas, serving Qantas and Qantas Link at the northern end of the building; Virgin Australia at the southern end; and other carriers including Jetstar, Tiger Airways, and JetGo in the central area. The Qantas concourse has nine gates equipped with three lounges—the Qantas Club, Business Class, and Chairman’s Lounge. Virgin Australia’s concourse has 12 aircraft parking locations, six of which are served by bridges (all single bridges). It has one lounge, the Virgin Australia Lounge, located opposite Gate 41. Remote aircraft parking is located to the north and south of the building (for non-jet aircraft) and in the central area (for jet aircraft).

ON-SITE ASSESSMENT

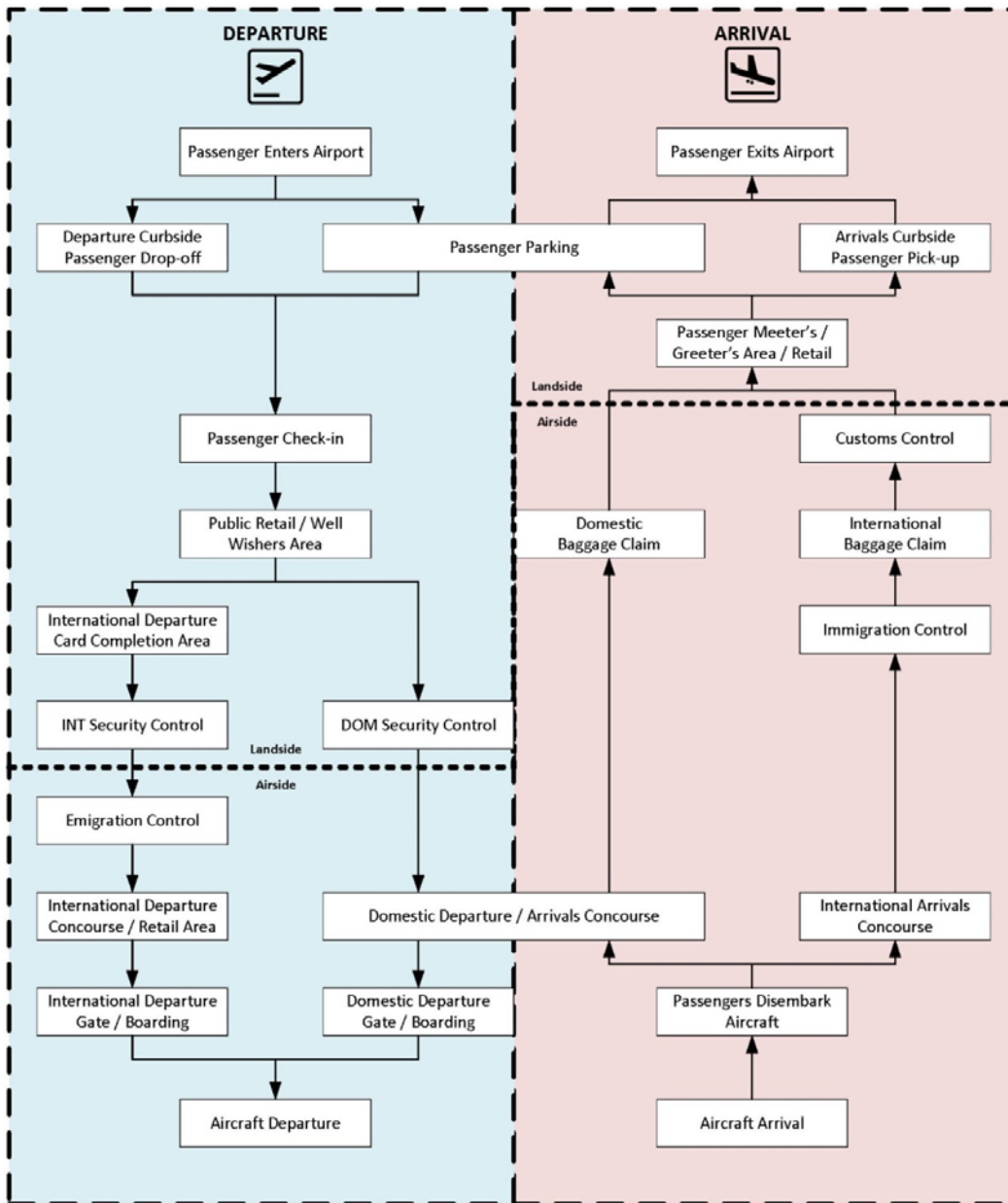
From February 15–18, 2016, an on-site assessment of BNE’s operations and facilities was conducted. The assessment included interviewing BNE staff, airline staff, security staff, as well as staff from other airport operators. The assessment also included conducting time surveys of airline check-in and processing, security control, customs control, immigration control, and emigration controls. To reduce any biases, surveys were conducted during both peak and off-peak periods.

The assessment focused on BNE’s two dominant airlines, Qantas and Virgin Australia, and separate surveys were conducted for domestic and international flights and reviewed processing times for various classes of services and the two different check-in procedures. The results of the assessment are described below.

PASSENGER TERMINAL FACILITIES

Figure 1 provides a depiction of passenger flows at both BNE terminals.

Figure 1. BNE Passenger Arrival and Departure Flows



Source: Nathan Associates, Inc.

Departures Passenger-Processing Areas

International Terminal

Departing passengers enter the international terminal at Level 4 and proceed to the flight check-in area, which is accessible by passengers as well as visitors. Once checked in, the departing passengers proceed to Level 3 and pass through security control and then emigration control.

At security control, passengers place all carry-on items on a conveyor that carries them through a baggage-screening device. They then proceed through a walk-through metal detector, collect their belongings, exit the security area, and proceed to emigration control. There, they may use

a self-service kiosk or a staffed counter to provide their passports for travel authorization. Once cleared, they exit into a retail duty-free area prior to reaching the departures concourse.

The recently redeveloped international departures concourse provides a wide variety of shopping, dining, and other services for passengers, including a duty-free shop, gift shops, fashion stores, dining facilities, and a currency exchange kiosk.

Domestic Terminal

Passengers enter the domestic terminal at Level 1 and proceed to the check-in area, which contains self-service kiosks and staffed counters. This area is accessible to both passengers and visitors. Once checked in, passengers proceed to security control, where they place all carry-on items on a conveyor that carries them through a baggage-screening device. They then proceed through a walk-through metal detector, collect their belongings, exit the security area, and proceed to the airline gates.

Departures Curbside

International Terminal

The terminal curbside extends the entire length of the terminal on Level 4. The access roads provide excellent access from the airport entrance to the terminal.

- Lane 1, closest to the terminal, is used for passenger drop-off. It is accessible by all types of vehicles, including private cars, taxis, and public ground transportation vehicles.
- Lane 2 is a dedicated bypass lane and is located furthest from the terminal facility; no vehicle is authorized to stop in this lane.

Domestic Terminal

The terminal curbside extends the entire length of the terminal. A ground-level roadway system, including four one-way roads, serves as the primary access point for all passengers arriving and departing the terminal.

- Road 1, located closest to the terminal, is allocated to taxi pickup and terminal transfer buses.
- Road 2 is allocated to taxi drop-offs.
- Road 3 is allocated to ground transportation operators such as limousines and other buses.
- Road 4 is allocated to general passenger drop-off and pickup and has three lanes. Lane 1 is a passenger drop-off and pickup lane. Lane 2, located furthest from the terminal, is a bypass lane with no stopping or parking allowed. Lane 3 provides additional direct access to short-term parking.

Observations

- The landside transportation access and curbside areas were adequate for airport operations.
- Baggage trolleys were available for arriving and departing passengers. Airport staff promptly collected unused trolleys and returned them to the terminal facility.

Terminal Entrance/Boarding Pass Control

International Terminal

The terminal has several entrances, all of which are open to the public. Entrances on Level 4 serve the international check-in area. No identification or travel document is required to enter the terminal, and no security screening is conducted at this location. Exits on Level 1 are allocated to international arriving passengers but also allow access to the meeters-and-greeters area, where individuals and visitors can wait for arriving passengers. .

Image 4. International Terminal Check-In Area



Source: Nathan Associates, Inc.

Domestic Terminal

The terminal has several entrances, all of which are open to the public and located on Level 1, serving both departing and arriving passengers. No identification or travel document is required to entering the terminal, and no security screening is conducted at this location.

Observations

- No security checks were required to enter either of the terminals.
- The number of entrances was adequate to efficiently accommodate passengers entering both terminals.

Departures Hall/Check-In

The entrance to the international terminal on Level 4 leads directly into the departures hall and check-in area, where both self-service kiosks and staffed counters are available for check-in. Similarly, the entrance to the domestic terminal on Level 1 leads to the departures hall and check-in area, with the same self-service staffed check-in options.

Observations

- Facilities were clean and very well maintained.
- Cleaning staff were always present.
- No substantial delays or lengthy queues were observed; processing times were deemed appropriate.
- Information counters were present in the check-in area and sufficiently staffed.
- Agents were proactive, knowledgeable, friendly, courteous, and helpful to passengers.

- At the Jetstar check-in, passengers were primarily leisure travelers; agents were friendly, courteous, and helpful to passengers.
- At the Virgin Australia check-in, agents were professionally dressed, proactive, knowledgeable, friendly, courteous, and helpful to passengers; counters were sufficiently staffed; queuing lengths and waiting times were acceptable.

Well-Wishers Area

In both the international and domestic terminals, once check-in has been completed, departing passengers proceed to the well-wishers area, which allows passengers to reconnect with acquaintances prior to security checkpoints to in the departure hall. Passengers and visitors can then proceed to a public retail and concession area.

Observations

- All public areas are accessible to passengers and well-wishers.
- There is adequate public seating and retail space in both terminals.
- Facilities were exceptionally clean.

Boarding Pass and Identification Control

In the international terminal, departing passengers, after completing check-in, proceed via escalator or elevator to the security control area on Level 3, and from there to emigration. In the domestic terminal, after check-in, passengers proceed directly to security control.

Observations

- No congestion was observed during the time of the survey.
- Security personnel were considered friendly, courteous, and helpful.
- A free mobile application is available that provides flight arrival and departure information and allows passengers to complete the required international departure card online. Once the card has been completed, passengers receive a QR code (matrix barcode) that they can scan and print at the airport.

Security Control

International Terminal

The security control process involves a comprehensive screening of all departing passengers and their belongings by means of a walk-through magnetometer, baggage screening devices, and in some cases also the use of handheld magnetometers. Once hand-held baggage and personal belongings have been screened, passengers may also be subjected to a random explosive-trace-detection screening or a manual search.

After clearing the security control area, passengers enter the emigration control area.

Domestic Terminal

After completing the boarding pass and identification control procedures, passengers immediately enter one of three security checkpoints. The security checkpoint serves as the boundary between the landside and airside operations; the process is the same as that described for the international terminal.

After clearing the security control area, passengers enter the secure departures zone.

Observations

- Security personnel were considered friendly, courteous, and helpful.
- No substantial delays or lengthy queues were observed; processing times were deemed appropriate.
- When required, secondary screening included a manual search using a handheld magnetometer.

Emigration—Outgoing Passport Control

The emigration control area offers both staffed counters and self-service e-gates, at which passengers with chip-embedded passports can scan their passports and then proceed to an identification port to be photographed. Once the photograph is matched with the passport photo, a gate opens and the passenger proceeds directly to the retail area and departures concourse.

Three queuing areas are provided: one for general passengers, one for airport employees, and one for airline crew and diplomats.

Observations

- Passenger processing times were acceptable.
- There was limited to no congestion.
- Agents were considered friendly, courteous, and helpful.
- Airport volunteers were available to assist passengers.

Departures Concourse

Both the international (Image 5, Image 6) and domestic departures concourses have multiple retail and food and beverage operators. The international departures concourse also has duty-free shopping.

The airside sections of both the international and domestic terminals offer specialty stores and food and beverage operators, as well as dedicated restrooms for passengers with assistance animals. In addition, duty-free shops, advertising, and airline lounges are available in the international terminal.

Image 5. International Departures Concourse



Source: Nathan Associates, Inc.

Image 6. International Terminal Concessions Area



Source: Brisbane Airport Corporation.

Observations

- Sufficient duty-free, retail, and food and beverage options are provided in the departures areas and concessions areas of both terminals.
- There was limited to no congestion and, lounges were large enough to accommodate allocated flights.
- All areas in the departures concourses were very clean and welcoming.
- Adequate restrooms and other passenger amenities were provided.
- BNE offers passengers 1 gigabyte per day of free Wi-Fi throughout the international terminal and in the central area of the domestic terminal.
- BNE has made significant investments in concession development.
- BNE continues to research what passengers want in retail options.
- BNE provides cultural and sales training for the concessionaires.

Arrivals Passenger-Processing Areas

International Concourse

Arriving international passengers are separated into three categories based on whether they hold a passport from (1) Australia, New Zealand, Nauru, or Papua New Guinea; (2) another APEC member; or (3) any other origin.

Citizens and residents of APEC economies are directed to use the self-service immigration kiosks, while the other passengers are directed to a staffed counter. BNE uses airport volunteers in the international arrivals areas to assist passengers and defuse potential problems before they occur. After clearing immigration, passengers retrieve their checked bags and proceed to a customs agent for processing. After clearing customs, passengers exit into the arrivals area.

Domestic Concourse

Arriving domestic passengers are directed to baggage claim (Image 7).

Image 7. Domestic Baggage Claim



Source: Brisbane Airport Corporation.

Observations

- The landside access and curbside areas for both terminals were very well managed.
- Baggage trolleys were available for arriving passengers.
- Airport staff promptly collected baggage trolleys and returned them to the terminal facilities.
- Information counters were highly visible and well-staffed with knowledgeable workers.

Immigration—Incoming Passport Control

Immigration control is separated into four categories:

1. Crew, diplomats and passengers requiring special assistance;
2. Holders of e-passports (i.e., passports with an embedded electronic chip) from Australia; Canada; China; Hong Kong, China; Japan; New Zealand; Singapore; the United States; Great Britain; Ireland; Macedonia; and Switzerland;
3. Holders of passports without an embedded electronic chip from the same economies or countries included in group 2;
4. All other international passengers.

Holders of e-passports are directed to one of 10 self-service kiosks to scan their passports and flight information. Once accepted, they enter a station where they are photographed and their biometrics are compared to the passport information. Once cleared, passengers gain entry to the baggage claim area.

All other passengers are processed through 12 staffed immigration counters.

Observations

- No substantial delays or lengthy queues occurred in immigration control; processing times were deemed appropriate.
- Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
- Counters were sufficiently staffed to handle the quantities of passengers present.

Baggage Claim

Baggage claim devices in the international and domestic terminals are adequate to process the passengers' checked bags. Baggage trolleys are readily available, free of charge in the international terminal and at cost in the domestic terminal.

Observations

- Passengers' bags were delivered promptly.
- Baggage claim areas were very clean.
- Baggage trolleys were available for all passengers who needed them.

Customs Control

Customs control was well staffed. It included a quarantine area.

Observations

- No substantial delays or lengthy queues occurred in customs control; processing times were deemed appropriate.
- There was limited to no congestion was observed during the survey.
- Customs and border agents were welcoming, courteous, and helpful.

Meeters-and-Greeters Area

The meeters-and-greeters areas in the international and domestic terminals offered many services, including retail concessions, food and beverage facilities, information desks, ground transportation service desks, and car rental operators. In the international terminal, currency exchange operators and tour operators were also available.

Observations

- Meeters and greeters had access to a myriad of concessions.
- Meeters and greeters had large seating areas in which to wait for the passengers.

- The restrooms were clean with very good signage.
- Baggage trolleys were well organized and available in sufficient numbers.
- All areas were considered exceptionally clean and well maintained.

Arrivals Curbside

International Terminal

The arrivals curbside of the international terminal is accessible by a two-lane road.

- Lane 1 is used by private vehicles and taxis to pick up passengers.
- Lane 2 is a bypass lane with no stopping allowed.

Arriving passengers who use buses (with the exception of the terminal transfer bus) or shared van services must be picked up at the side of the terminal facility in the ground transportation parking lot.

Domestic Terminal

The arrivals curbside of the domestic terminal is located on Level 1 and is accessible by a four-lane road.

- Lane 1, located closest to the terminal facility, is allocated to taxi pickup and terminal transfer bus pickup and drop-off.
- Lane 2 is allocated to taxi drop-off.
- Lane 3 is allocated to public ground transportation pickup and drop-off.
- Lane 4 is allocated to general passenger drop-off and pickup.

Observations

- The curbside areas were very well managed.
- Security staff kept control of vehicles on the curbside.
- Baggage trolleys were promptly collected by porters.

Landside Ground Transportation

Parking

There is a six-story long-term car park and a smaller short-term car park in close walking proximity to the terminal. BNE offers the following parking services:

- International car park: multilevel car park with 2,123 spaces (including 348 valet spaces) and on-airport car rental with 151 spaces.
- Domestic car park (Image 8): 266 valet spaces, 171 premium spaces, 881 short-term spaces, 6,806 long-term spaces, 165 over-height spaces, and 132 spaces with free parking for 30 minutes.

Image 8. Domestic Car Park



Source: Brisbane Airport Corporation.

Ground Transportation Services

BNE offers the following ground transportation options: taxis, buses, AirTrain,⁷ a shared shuttle service, and car rental. A bicycle route is also available between the Moreton Bay Bikeway and the airport.

All ground transportation operators must complete a training program that covers the following themes: cultural awareness; helping passengers with their bags; and helping passengers with special needs, pregnant women, and those traveling with young children.

CONCLUSIONS

Services

BNE provides a myriad of services and amenities that enhance the traveler friendliness of the airport, including showers, free Wi-Fi, mobile charge stations, medical and first-aid rooms, parents' rooms,⁸ currency exchange, a tourist refund facility,⁹ prayer and meditation rooms, and restrooms for passengers with assistance animals.

Technology

BNE's operations are supported by various state-of-the-art technologies. Flight information displays, interactive information kiosks, self-service check-in kiosks, and free Wi-Fi throughout the terminal provide passengers with the perception of a modern and efficiently operated airport.

BNE has made significant investments in security technology during the past 18 months (smart gates for passenger processing, Rapiscan scanners, upgraded X-Ray to Multi-view system, world-leading digital departure card). This new system has increased the passenger throughput rate significantly.

⁷ Airtrain is a rail link between BNE, Brisbane City and the Gold Coast.

⁸ Parents' rooms are distinct spaces that allow parents to perform many functions and are equipped with private feeding rooms and changing benches/facilities, among other amenities designed for parents.

⁹ At BNE the tourist refund facility enables travelers to use the tourist refund scheme and claim a refund of goods and services tax and wine equalization tax that were imposed on goods bought in Australia.

Facilities

Facilities are very clean and well maintained throughout the airport. The terminals have enough restrooms, seating areas, and relaxation areas to ensure passenger comfort. Surveyed passengers frequently commented on the exceptional quality and maintenance of airport facilities and maintenance. BNE's international terminal and parking facilities are fairly new, very attractive, and well maintained. The domestic terminal is an older facility but is also very well maintained. Both terminals offer a wide range of convenient facilities aimed at taking the stress out of traveling.

Personnel

BNE recognizes that the airport's success begins with its people. With a staff of approximately 500 people, including consultants and contractors, BNE has developed and executed training programs aimed at ensuring a traveler-friendly environment. BNE has become a passenger-friendly airport by instituting numerous measures, including the following:

- Developing a customer-service training program for staff of the airport, airlines, concessionaires, and other operators.
- Balancing security and passenger-service efforts—for example, by changing officers' uniforms from the standard police/military ensemble to a friendlier look.
- Establishing a Passenger Experience Forum which meets monthly to discuss the delivery of customer service.
- Hosting a quarterly social event to recognize staff that provides excellent service.
- Providing cultural and sales training for retailers.
- Focusing on and caring about the passenger journey and experience.
- Measuring and tracking passenger satisfaction.

Surveyed passengers generally commented that it is evident the airport is focused on providing a great experience for the passengers. Many of the surveyed passengers stated that the airport management must have anticipated the types of services they would be looking for while traveling through the airport. They also stated that the management has succeeded in making a large and busy airport feel small and manageable for travelers.

Customer Experience Department

To ensure that BNE delivers exceptional customer service, it created a dedicated customer experience manager role within the Operations Department. The Customer Experience Manager is tasked with working with airport staff, airlines, concessionaires, tenants, and operators to develop, institute, evaluate, and manage programs aimed at providing the highest level of customer satisfaction. Everyone working at the airport—airlines' staff, and other tenants' employees, and operators—is responsible for providing great customer service. The customer experience manager continually collects and analyses data to monitor quality of service and changing customer needs.

Airport Ambassador Program

The airport has established an Airport Ambassador program with 180 volunteers known as 'Ambassadors' who provide customer services at both terminals. The selection process is

rigorous and the program is run very professionally. Each ambassador must complete a 16-hour one-on-one training and shadow an experienced ambassador for three months before they can work independently. The ambassadors work at least four hours each week. BNE solicits and receives daily feedback from volunteers about perceived customer satisfaction from passengers.

NARITA INTERNATIONAL AIRPORT, JAPAN

AIRPORT BACKGROUND

Narita International Airport (NRT, Image 9), previously known as New Tokyo International Airport, is the second largest airport in Japan. It is located in Chiba Prefecture in the city of Narita, approximately 75 kilometers east of Tokyo. NRT is the second busiest airport in Japan in terms of total passenger throughput and the leading airport for international flights.

Through the Narita International Airport Corporation Act, the airport was privatized in 2003 and officially received its current name. As part of the privatization effort, the airport is now operated and managed exclusively by the Narita International Airport Corporation.

Image 9. Narita International Airport Location



Map data: Google.

AIRPORT TERMINALS

The airport has three terminals. Terminal 1 caters to both international and domestic flights and consists of a central building, north wing, and south wing. The north wing is dedicated primarily to the SkyTeam Airline Alliance (e.g., Delta Air Lines, Aeroflot, Air France, KLM, and Korean Air), and the south wing is allocated primarily to the Star Alliance (e.g., All Nippon Airways, United Airlines, Lufthansa, Air New Zealand, Thai Airways, Air China, and Singapore Airlines). The central building has six levels and includes the main processing areas for check-in, security control, baggage claim, customs control, and shopping. The north wing contains gates 11 to 26 and the south wing gates 27 to 58.

Located northwest of Terminal 1, Terminal 2 is an international and domestic six-level facility that has a main terminal building and a satellite building. Terminal 2 accommodates operations for Oneworld member airlines (e.g., Japan Airlines, American Airlines, and Cathay Pacific Airways) and other carriers (e.g., China Airlines and Air India). The main terminal building includes the main processing areas for check, security control for international and for domestic passengers, baggage claim, customs desk and shopping, as well as Gates 61 to 75. The satellite building includes some shopping and access to Gates 81 to 99.

Terminal 3 is a three-level international/domestic terminal dedicated exclusively to low-cost carriers, including Jetstar, Vanilla Air, Spring Japan, and Jeju Air. It is approximately 500 meters

north of Terminal 2 and consists of a main building and a satellite building. All Terminal 3 passenger processing is conducted in the main building, including check-in, security control, passport control, baggage claim, and customs control. The main building accommodates Gates 151 to 155 and the satellite building accommodates Gates 161 to 175.

ON-SITE ASSESSMENT

The Experts conducted an on-site assessment from April 5–9, 2016. Due to the size of the airport, with three terminals handling 37 million passengers annually, the assessment focused primarily on passenger flows at Terminal 2, which was near the Narita International Airport Corporation offices and served as the central meeting point for all meetings, tours, and site surveys. The processing areas for arriving and departing international and domestic passengers are identical in the three terminals.

At the time of the assessment, NRT was in the planning phase for an upcoming Group of Seven (G7) summit and Foreign Ministers' meeting. Because of this, there was an elevated level of security at NRT, and access was not granted to security-related areas including immigration and emigration. Concentrating primarily on check-in, the Experts surveyed All Nippon Airways and Sky Team Alliance facilities in Terminal 1 and Japan Airlines facilities in Terminal 2.

PASSENGER TERMINAL FACILITIES

Departures Passenger-Processing Areas

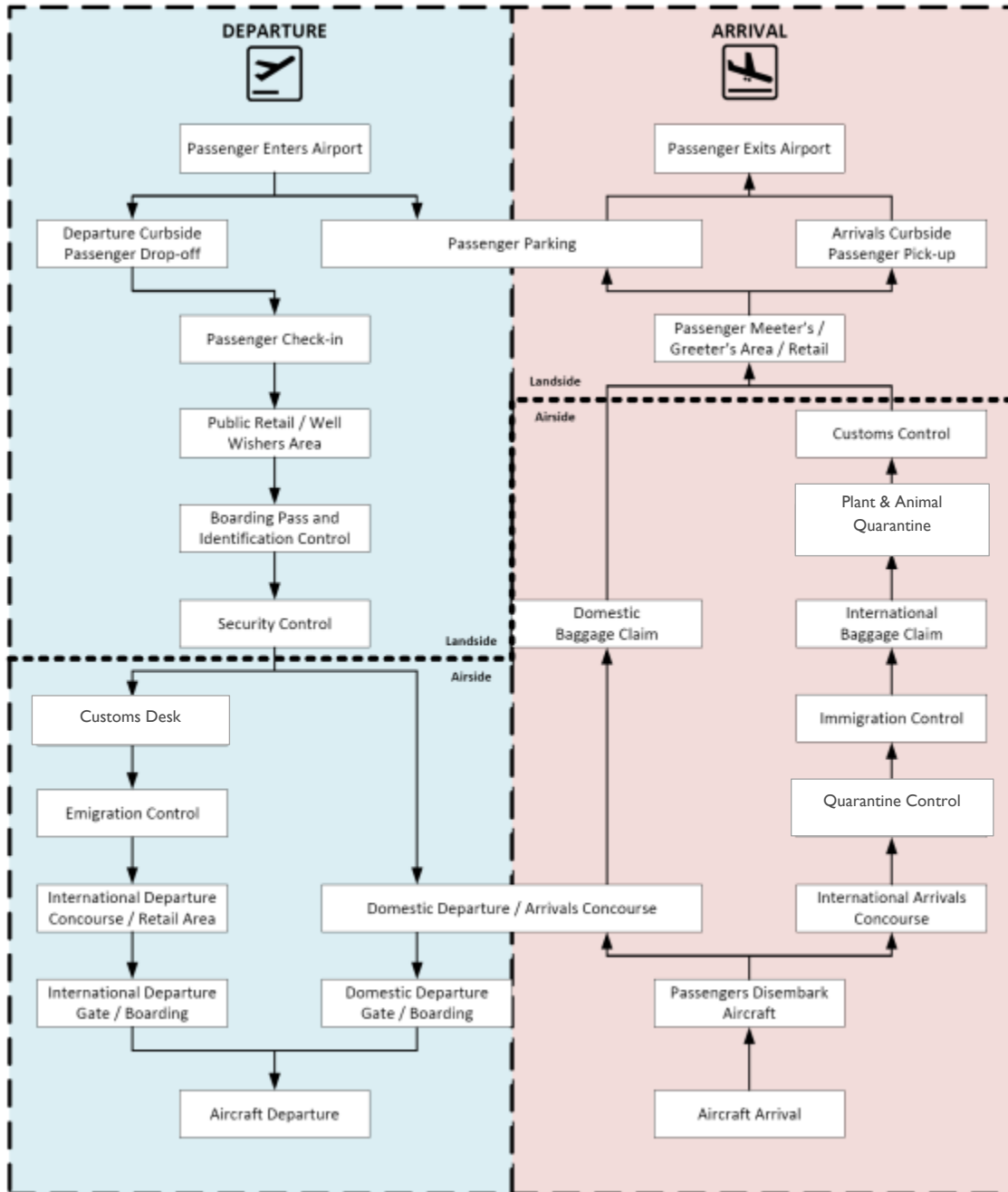
Passengers enter the main building at Level 3 and proceed to the check-in area, which is open to both visitors and passengers. International passengers use one of 16 check-in islands, while domestic passengers proceed to a separate check-in area on Level 1.

Once checked in, international passengers proceed to the north or south departures gate areas, also on Level 3, and then to boarding pass and identification control, followed by security control; in both, passengers must show a passport and boarding pass. Domestic passengers proceed to Level 2 to boarding pass and identification control and then security control.

At security control, both international and domestic passengers place all carry-on items on a conveyor belt that passes through a baggage screening device. They then proceed through a walk-through metal detector, collect their screened belongings, and exit the security area. After the security control, domestic passengers and international passengers diverge. Domestic passengers proceed to departure gates on Level 3, and separately, international passengers proceed to customs control. Upon completing the security process, International passengers may complete any outbound Customs formalities at the Customs Desk before proceeding to the Passenger Control Area (emigration) where passengers are required to present their personal identification and travel documents in order to obtain permission to leave Japan. Once cleared, passengers enter a duty-free retail area and can proceed to the departures concourse. Within both the international and domestic departures concourses, many retail and food and beverage options are available.

When called to board their flight, passengers proceed to the assigned gate, present their travel documents, and board the aircraft. Passengers on international United States-bound flights are required to proceed through a secondary security control prior to boarding the aircraft.

Figure 2. NRT Passenger Arrival and Departure Flows



Source: Nathan Associates, Inc.

Departures/Arrivals Curbside

The curbside area (Image 10) includes a multilevel terminal access road with an arrivals curb on Level 1 and a departures curb on Level 3. The curbside area is approximately 5 meters in width and extends the length of the terminal.

Image 10. Departures and Arrivals Curbside Area



Map data: Google (left); Nathan Associates, Inc. (right).

The access road is a one-way (north to south) loop with 6 lanes for both the arrivals and departures curbside areas.

- Departures

- Lane 1, closest to the terminal facility, includes VIP drop-off and pickup areas. This lane is mainly used by buses and emergency vehicles. Once passengers are dropped off, the vehicles enter Lane 2.
- Lane 2 is a joint bypass/drop-off lane that exits the terminal in a southerly direction.
- Lane 3 is a bypass lane; no vehicles are authorized to stop or park.
- Lane 4, separated from Lanes 1–3 by an approximately 5 meter wide island, is a dedicated drop-off lane.
- Lane 5 is a joint bypass/drop-off lane.
- Lane 6 is a bypass lane; no vehicles are authorized to stop or park.

- Arrivals

- Lanes 1–4 constitute a pickup, drop-off, and bypass area to which only buses and other designated vehicles are permitted access.
- Lanes 5 and 6 serve as drop-off and bypass lanes.

Short- and long-term parking is located adjacent to the access roadway in a multilevel car park.

Observations

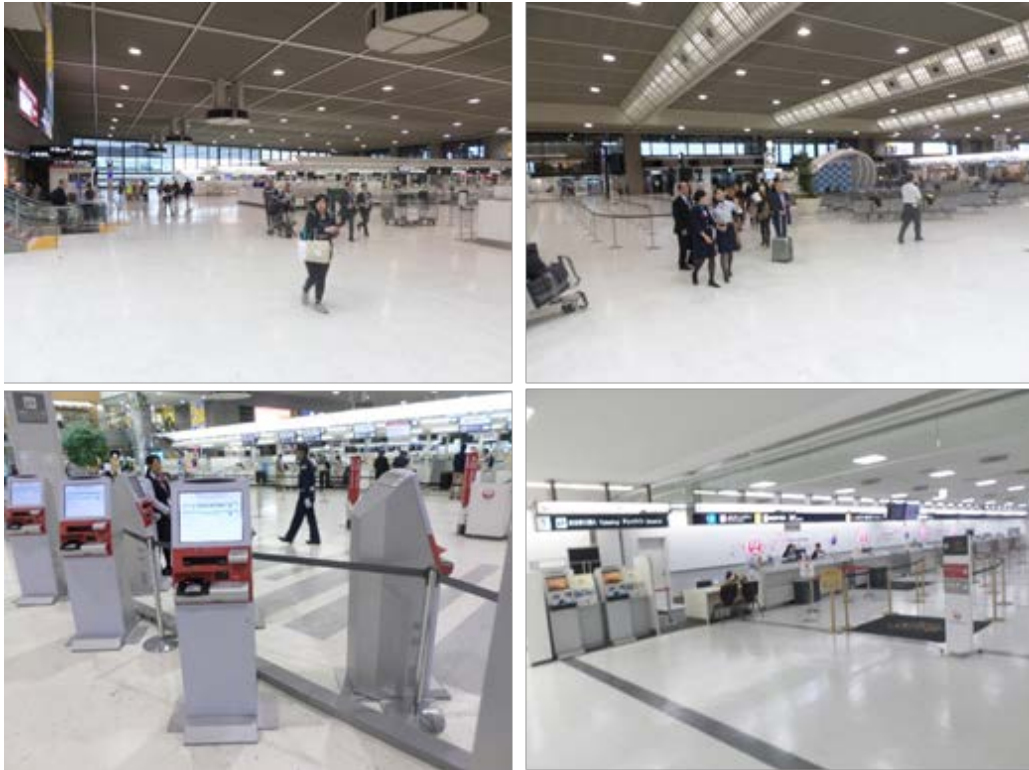
- The landside access and curbside area was sufficient for handling personal vehicles and bus pickup and drop-off.
- There was limited to no congestion.
- Porter assistance was available.
- Baggage trolleys were available for departing and arriving passengers. Airport staff promptly collected trolleys and returned them to the terminal facility.
- Porters for buses were extremely helpful, courteous, and polite. They greeted each bus, helped load and unload baggage, and bowed and waved to each bus after assisting its passengers.

- Dedicated VIP areas were available along the lane closest to the terminal.

Departures Hall/Check-In

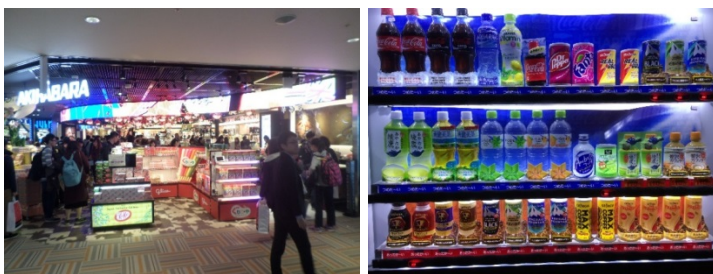
Upon entering the terminal through one of six entrances, passengers immediately enter the departures hall and a check-in area with 13 bays. Domestic passengers checking in for domestic flights must proceed to Level 1 to a dedicated domestic check-in area (Image 11, lower right). All counters use common-use technology, and future installation of self-service bag-tagging and bag-drop stations is being considered. International passengers must check-in on Level 3.

Image 11. Departures Hall and Check-In Area



Source: Nathan Associates, Inc.

Image 12. Departures Hall



Source: Nathan Associates, Inc.

Observations

- General
 - Facilities were exceptionally clean.
 - Airport staff was consistently courteous and helpful to guests.

- Information counters were readily available within the check-in area.
- Baggage trolleys caused congestion after being left at the counter by passengers who had checked in their bags. Agents were collecting the trolleys and moving them away from the immediate check-in area.
- No substantial delays or lengthy queues were observed; processing times were deemed appropriate.
- SkyTeam Airline Alliance check-in
 - Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
 - Agents were professionally dressed.
 - Counters were sufficiently staffed to handle the quantities of passengers present. In the event that queue lengths increased, additional counters and agents were immediately allocated.
- Japan Airlines check-in
 - Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
 - Agents were professionally dressed and groomed.
 - Agents sometimes left their positions, greeted passengers in the queue, and escorted them to the check-in counter.
 - Counters were sufficiently staffed to handle the quantities of passengers present. In the event that queue lengths increased, additional counters and agents were immediately allocated.
 - Dedicated check-in was provided for passengers requiring special assistance (e.g., elderly passengers, pregnant women, mothers with babies, and passengers with a disability).
 - A dedicated check-in area was allocated to parents and included a children's playing area.
 - Japan Airlines offers a service for priority passengers in which baggage is picked up from the passenger's home; this must be requested at least 24 hours before check-in.

All Nippon Airways check-in

- Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
- Self-service kiosks were located near the counter area so passengers could check in and immediately have their baggage tagged.
- Counters were sufficiently staffed to handle the quantities of passengers present. In the event that queue lengths increased, additional counters and agents were immediately allocated.
- Queue lengths and waiting times were acceptable.

Well-Wishers Area

Once check-in is completed, domestic passengers proceed to Level 2 for the domestic departure gates area; and, international passengers proceed to the north or south international

departures gates area. Passengers and visitors can also proceed to Level 4 via an escalator to a large public area with multiple restaurants and shops.

Observations

- Sufficient public seating was available.
- Facilities were exceptionally clean.
- Airport staff were consistently courteous and helpful.

Boarding Pass and Identification Control

Prior to entering the departure gates area, passengers show their passport and boarding pass prior in order to enter the security control area. There are also dedicated security areas for priority passengers.

Security Control

Next, passengers immediately enter the security control area, which serves as the boundary between landside and airside operations and involves a comprehensive screening of all passengers and their belongings. Screening is conducted by means of a walk-through metal detector and baggage screening devices and may include a manual search using a handheld metal detector.

All security operations are conducted by private firms. Airlines are responsible for providing security services, and the cost is shared equally between the airport and the airlines. All security equipment is purchased and installed by the airport. Neither photography nor documentation of processing times was not permitted.

Observations

- There was limited to no congestion during the survey.
- Agents were considered friendly, courteous, and helpful.

Emigration—Outgoing Passport Control

The emigration control area has a north side and a south side, each with 17 counters configured in a face-to-face layout. Four automated e-gates are provided for registered Japanese citizens and foreign residents. Lanes are not allocated to different types of passport holders. Neither photography nor documentation of processing times was not authorized or permitted.

Observations

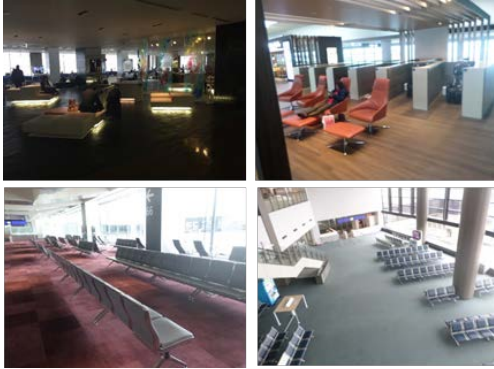
- There was limited to no congestion during the survey.
- Agents were considered friendly, courteous, and helpful.

Departures Concourse

Once emigration control formalities are completed, passengers exit into a large concession area that provides access to Gates 61 to 75 in the main terminal building and Gates 81 to 99 in the satellite building. Passengers entering the departures lounge proceed down to Level 2 via an

elevator or stairway. Multiple retail and food and beverage operators are located throughout the departures concourse in both the domestic and international areas. The international concourse provides various duty-free options as well as multiple restaurants, relaxation areas, and Japanese cultural exhibits.

Image 13. Departures Concourse



Source: Nathan Associates, Inc.

Observations

- The layout of the facility helped shorten connecting times.
- Numerous retail and food and beverage spaces were provided.
- There was limited to no congestion was observed during the time of the survey. Lounges were considered large enough to accommodate allocated flights and were exceptionally clean and well maintained.
- Immaculate restroom facilities included various types of hygienic and automatically sanitized toilets. Both men's and women's restrooms included wall-mounted seating racks for small children.
- Numerous Japanese cultural exhibits were displayed or provided. During the site visit, a small parade of Japanese men marched through the concourse drumming and wearing traditional Japanese garments.
- Airline agents were considered consistently friendly, courteous, respectful, well mannered, and helpful.
- Equipment and furnishings were well maintained and functional.
- Lounges and facilities were very clean and in working order.
- Numerous superbly furnished working areas and relaxation areas were provided.

Arrivals Passenger-Processing Areas

Passengers enter the terminal at Level 2 via passenger boarding bridges and proceed through an arrivals corridor to the main terminal building. They then proceed through quarantine control. Passengers who are connecting to another international flight veer to the right and proceed to a security control area and then up to Level 3 to re-enter the departures concourse. All other passengers proceed to the immigration control area, where they provide the necessary documentation to enter the economy.

Passengers then proceed to Level 1 to baggage claim, where they proceed to the baggage carousel device (one of 10) that is allocated to their flight. After collecting checked baggage, passengers proceed to customs control.

The arrivals hall, a nonsterile public area, offers numerous concessions and access to ground transportation providers as well as to the train station. Here passengers can meet their acquaintances. They then exit the terminal onto the arrivals curbside area and proceed to the parking area or are picked up at the curb.

Arrivals Concourse

After disembarking the aircraft, passengers proceed through an arrivals concourse to the main terminal building. The concourse is an inviting space that has window glazing which allows natural light to enter. As illustrated in Image 14, the concourse also includes displays with information about connecting, arriving and departing flights and airport services and other general airport information. Interactive touchscreen displays allow passengers to check on their flight status.

Image 14. Arrivals Concourse



Source: Nathan Associates, Inc.

Observations

- The layout enabled acceptable flight connecting times.
- All areas were considered exceptionally clean and well maintained.
- Exquisite restroom facilities and other passenger amenities were provided.
- Agents were considered friendly, courteous, and helpful toward arriving passengers.

Quarantine Control

At the end of the arrivals concourse, passengers proceed to quarantine control, where they pass through an infrared camera that indicates if a passenger is showing signs of an elevated temperature.

Immigration—Incoming Passport Control

After quarantine control, passengers enter the immigration control area. This area is divided into two sections, to the left and right, each with 26 counters configured in a face-to-face layout. Separate lanes are provided for airline crew and diplomats, Japanese citizens, foreign citizens re-

entering Japan, and those newly entering Japan. Four automated e-gates are provided for registered Japanese citizens and foreign residents.

All passengers must present passports, and foreign passengers must fill out an embarkation and disembarkation card. Neither Photography nor documentation of processing times was permitted.

Observations

- There was limited to no congestion during the on-site tour.
- Agents were considered friendly, courteous, and helpful.

Baggage Claim Area

Once all immigration formalities have been completed, passengers exit and continue to baggage claim and customs control on Level 1. The area includes baggage carousels, trolleys, and various support offices. There are 10 baggage carousels, all capable of handling wide-body aircrafts. Neither photography nor documentation of processing times was permitted.

Observations

- Baggage transfer times were acceptable.
- All areas were considered exceptionally clean and well maintained.
- Baggage trolleys were well organized and available in sufficient numbers.
- Agents were considered courteous.

Plant and Animal Quarantine Area

All passengers transporting vegetation (including fruits, vegetables, and seeds), animals, or meat products into Japan must have them inspected and approved at the plant and animal quarantine counter. Photography was not permitted.

Observations

- All areas were considered exceptionally clean and well maintained.
- Agents were considered courteous.

Customs Control Area

After baggage claim, the next stop for passengers is the customs control area. Passengers with nothing to declare provide their customs declaration form to the customs officer. If they are required to undergo a secondary screening, they proceed to an area adjacent to the lane where baggage is subject to a more thorough inspection, which includes automated and manual screening. Based on the results of that screening, a passenger either exits the terminal or is directed to an adjacent office to declare items and pay the relevant duties. Neither photography nor documentation of processing times was permitted.

Observations

- Agents were considered courteous.

- Sufficient lanes were open to handle arriving passengers.
- All areas were considered clean and well maintained.

Arrivals Hall/Meeters-and-Greeters Area

Passengers leaving customs control enter the arrivals hall and meeters-and-greeters area (Image 15), where passengers meet their acquaintances. The area located immediately after the customs control exit includes ground transportation sales offices, airline baggage service counters, and numerous concessions.

Image 15. Arrivals Hall and Meeters-and-Greeters Area



Source: Nathan Associates, Inc.

Observations

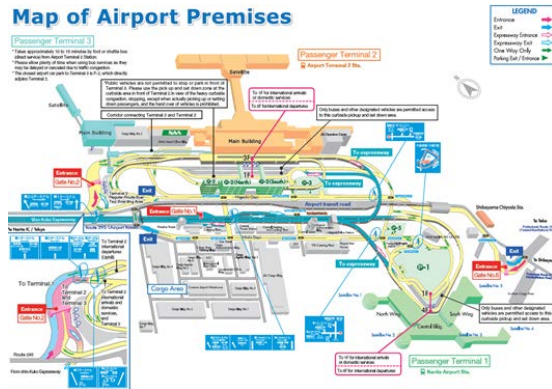
- The area had been recently renovated and had a clean and modern look.
- Baggage trolleys were amply available and well organized.
- All areas were considered exceptionally clean and well maintained.
- Restrooms and other passenger amenities were plentiful, clean, and well maintained.

Landside Ground Transportation

Access Road

As illustrated in Figure 3, the airport access road consists of a complex loop that provides access to Terminals 1, 2, and 3 via multilevel curbside roadways. Dynamic and static signage provide directional information as well as information about parking and other airport facilities.

Figure 3. Airport Access Roadway System



Source: Narita International Airport.

Parking

Each terminal offers numerous parking options, including VIP pickup and drop-off, valet services, and long- and short-term parking at two multilevel garages with direct access to the terminal via an enclosed pedestrian tunnel or overhead pedestrian bridge.

Services

Access to extensive rail service is provided at a railway station inside the airport on the basement level. Bus service is available to multiple destinations in Japan, including express service to Tokyo.

Observations

- Passengers could connect to the airport via bus, train, taxi, or personal vehicle.
- Porters were available at the ground transportation level and were considered extremely helpful, courteous, and polite. They greeted each bus, helped load and unload baggage, and bowed and waved to each bus after assisting its passengers.
- All areas were considered exceptionally clean and well maintained.

CONCLUSIONS

Services

A dedication to passenger comfort was observed on multiple occasions. Airlines provide dedicated check-in facilities for parents traveling with infants that include a dedicated and secured location where children can play while a parent checks in for the flight.

Transfer passengers with an extended layover can join a free tour of the airport or of the city of Narita, where they can visit the Naritasan Shinshoji Temple and gardens for a small fee.

Technology

As expected, state-of-the-art technology is apparent throughout the airport. Flight information displays, interactive information kiosks, self-service check-in kiosks, and free Wi-Fi throughout

the terminal provide passengers with the perception of a modern and efficiently operated airport.

Facilities

All areas of the airport are exceptionally clean. Equipment, furnishings, and finishes located throughout the terminal were exceptional. Relaxation areas, Japanese cultural exhibits, airline lounge areas, working areas, and toilet facilities are exquisite. Surveyed passengers frequently commented on the cleanliness of the airport and the incredible terminal spaces that were provided for passengers.

Personnel

Exceptional customer service by the airport and airline agents was continually observed. A prime example occurs when a departing aircraft is pushed back by the tug and is accompanied by “wing walkers”; once the aircraft is in the taxiway and ready to depart, the entire ground crew joins together in a line, bows, and waves goodbye. As passengers look out the window they see this genuine farewell ritual that leaves them with a positive feeling as they depart the airport. This simple service, which is not costly, can mean so much when it is performed genuinely.

Throughout the assessment period, staff members from the airport, and in particular from the airlines, showed tremendous courtesy and helpfulness. Airlines agents stepped away from the counter and greeted and escorted the passengers to the check-in counter, where they were processed in a helpful and engaging manner. All passengers surveyed confirmed this observation. Not one negative comment was received regarding a staff member’s conduct, appearance, or level of helpfulness.

CANCUN INTERNATIONAL AIRPORT, MEXICO

AIRPORT BACKGROUND

Cancun International Airport (CUN, Image 16), located in Cancun, Quintana Roo, on the Caribbean coast of Mexico's Yucatan Peninsula, is one of the busiest airports in the Caribbean and serves as an origin/destination airport (i.e., no connecting passengers) and entry point for millions of tourists who visit Cancun and the Riviera Maya every year. It is the second busiest airport in Mexico, after Mexico City International Airport, having handled 19,596,485 passengers in 2015

and has seen a 12.3% increase in passengers since 2014 (ASUR 2015). The airport offers flights to 21 destinations in Mexico and over 30 economies in North America, Central America, South America, and Europe, and to.

CUN was privatized in the late 1990s, when the private company Grupo Aeroportuario del Sureste (ASUR) took ownership. In 1999, ASUR began to modernize and expand the airport. In 2005, it invested US\$150 million in the construction of a third terminal, a new control tower, and a new runway, which allowed the airport to double its passenger capacity. ASUR and the Grupo Aeroportuario del Pacifico (with 13 airports) are the only Latin American airport groups listed on the New York Stock Exchange.

Over the last decade, the airport has received multiple recognitions and awards including

- Best Airport in Latin America–Caribbean (Airport Quality Awards, Airport Service Quality Awards), 2011 and 2009;
- Third Best Airport in Latin America–Caribbean (Airport Quality Awards, Airport Service Quality Awards), 2014;
- Second Best Airport by Size, 5–15 million passengers category (Airport Service Quality Awards), 2011; and
- Best Improvement by Region, Latin America–Caribbean (Airport Service Quality Awards), 2009.

Image 16. Aerial View of Cancun International Airport



Map data: Google, INEGI, DigitalGlobe.

AIRPORT TERMINALS

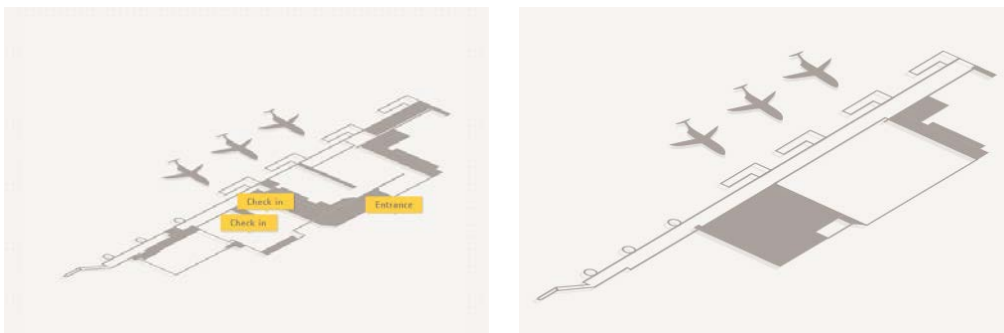
CUN has three terminals, which serve different airlines and types of passengers. This section describes the features and characteristics of each terminal, but because Terminal 1 is substantially smaller in terms of size and volume of passengers, it focuses on Terminals 2 and 3.

Terminal 1

Terminal 1 serves the domestic market through low-cost and charter airlines, including Magnicharters, TAR Aerolíneas, and Viva Aerobus. These airlines provide flights to 15 destinations in Mexico, including Mexico City, Guadalajara, and Monterrey.

Terminal 1 (Figure 4) has two levels, with six ground-level gates and one contact gate (gate with a bridge that connects the seating area of the terminal to the parked aircraft).

Figure 4. Terminal 1, Level 1 (left) and Level 2 (right)



Source: ASUR.

Terminal 2

Terminal 2 serves multiple domestic and international carriers including Aerolíneas Argentinas, Aeroméxico, Aerotucán, Aruba Airlines, Air Transat, Arkefly, Avianca, Blue Panorama Airlines, Elite Airways, Calima Aviación, Copa Airlines, Cubana de Aviación, EuroAtlantic Airways, Eurowings, Finnair, Interjet, Jetairfly, LAN Airlines, Maya Island Air, Novair, Orbest Portugal, SATA International, Southwest Airlines, Sunwing Airlines, TAM Airlines, Thomson Airways, Transportes Aéreos Guatemaltecos, Tropic Air, TUIfly, Volaris, WestJet, and XL Airways France. Besides serving multiple domestic destinations, Terminal 2 serves economies in South, Central, and North America, the Caribbean, and Europe.

Terminal 2 has two levels:

- Level 1 contains the arrivals curbside, departures curbside, public retail and food and beverages area, check-in, inbound and outbound baggage make-up,¹⁰ health services, bus gates (i.e., passengers must take a bus to access the boarding gate), arrivals concourse, security control, immigration control, baggage claim, customs control, and a ground transportation area.

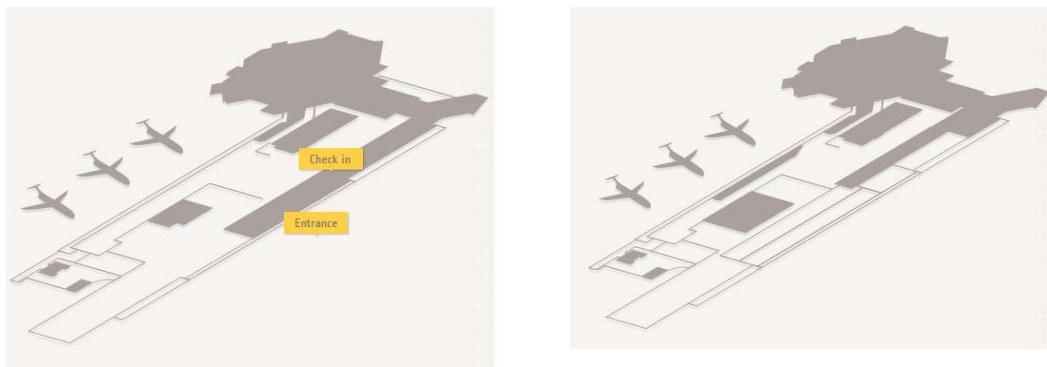
¹⁰ Baggage make-up includes manual or automated make-up units, the cart/container staging areas and baggage train maneuvering lanes.

- Level 2 contains the departures concourse, airside retail and food and beverages area, a VIP lounge, contact gates and departure hold rooms (areas for passengers to wait prior to boarding their flights).

The terminal is configured in a linear north–south direction, with the exception of the contact gates area, which is located on the north side and has a circular form that protrudes to the west. The north side of the terminal includes check-in and public commercial concessions for departing passengers, security control, airside retail and food and beverages concessions, a VIP lounge, contact gates, and departure hold rooms. The south end of the terminal includes services for international arriving passengers, immigration control, and baggage claim.

Terminal 2 (Figure 5) has 31 gates, of which 9 are contact gates; the rest are bus gates.

Figure 5. Terminal 2, Level 1 (left) and Level 2 (right)



Source: ASUR.

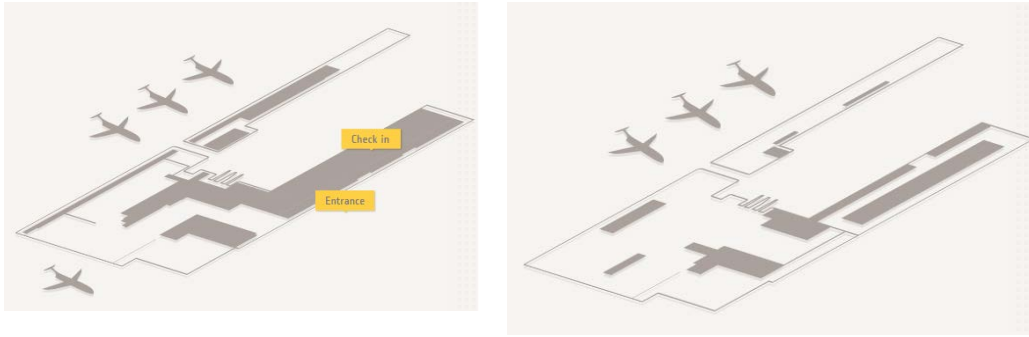
Terminal 3

Terminal 3 serves domestic and international carriers including Air Berlin, Air Canada, Air Canada Rouge, Air Europa, Air France, Alaska Airlines, American Airlines, Allegiant Air, IcelandAir, Xtra Airways, British Airways, Condor, Delta Airlines, Dynamic Airways, Frontier Airlines, Interjet, JetBlue Airways, LOT Polish Airlines, Lufthansa, Neos, Nordwind Airlines, Spirit Airlines, Sun Country Airlines, Thomas Cook Airlines, United Airlines, Volaris, Virgin America, Virgin Atlantic, and Wamos Air. Terminal 3 handles most flights to North America and Europe (Figure 6). Terminal 3 is the newest of the three; it opened in 2007, and in March 2016 inaugurated its last expansion. It has 16 gates, all of which are contact gates.

Terminal 3 has two levels:

- Level 1 contains the arrivals curbside, departures curbside, public retail and food and beverage area, check-in, inbound and outbound baggage make-up, bus gates, baggage claim, immigration control, customs control, meeters-and-greeters area, and ground transportation area.
- Level 2 contains landside and airside retail and food and beverage areas, security control, the departures concourse, and departure hold rooms.

Figure 6. Terminal 3, Level 1 (left) and Level 2 (right)



Source: ASUR

A fourth terminal is under construction and is expected to open its first phase in 2018, allowing the airport to handle up to 25 million passengers per year.

ON-SITE ASSESSMENT

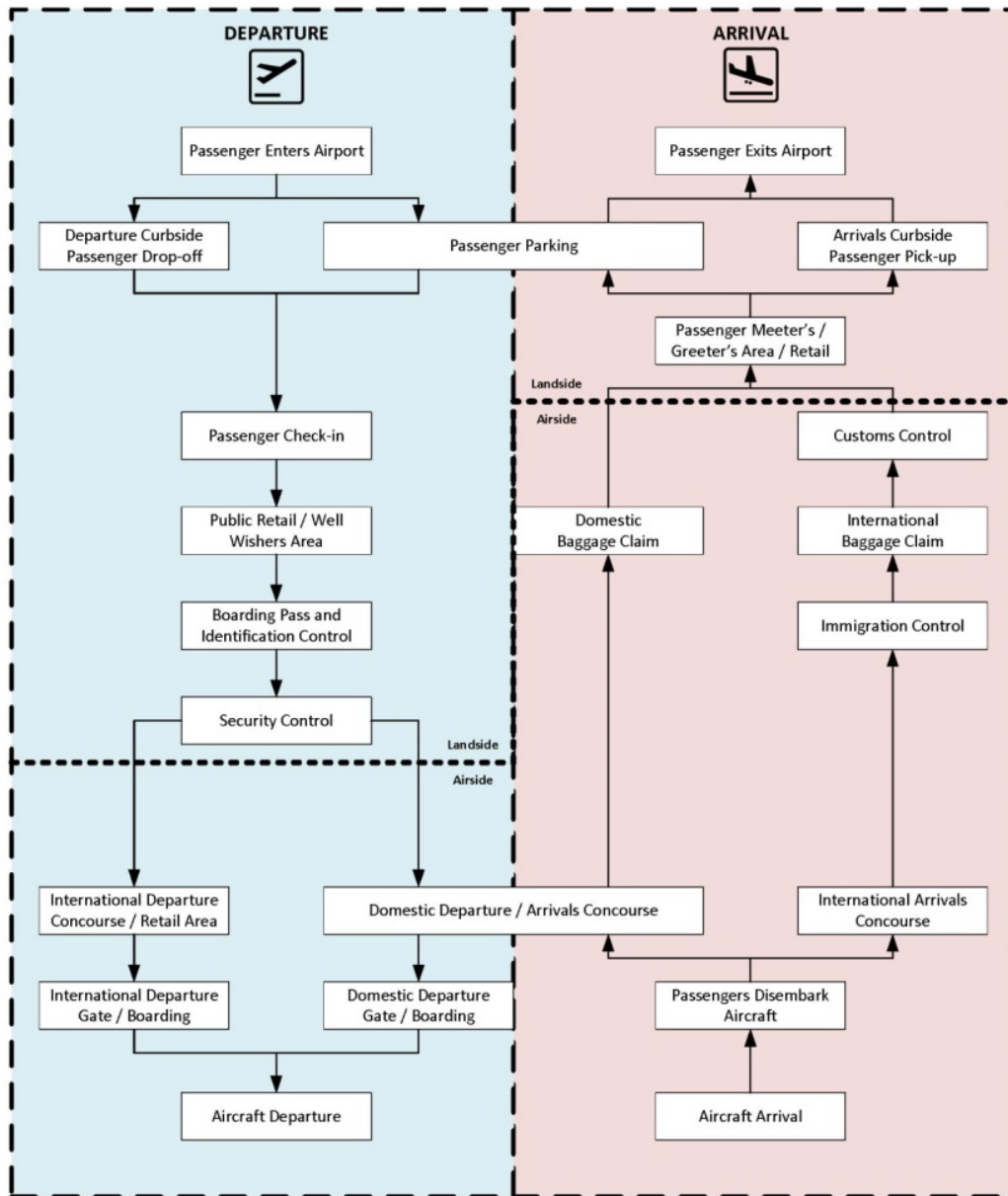
The Experts conducted an on-site assessment from February 8-12, 2016. The on-site assessment for CUN focused on Aeroméxico, American Airlines, United Airlines, and Westjet. The following section describes key observations made during the on-site assessment.

PASSENGER TERMINAL FACILITIES

Terminals 1 and 2 have similar passenger flows. In both terminals, passengers enter at Level 1 and proceed to the check-in area on the same level. In Terminal 2, both international and domestic check-in occur in the same area. And, in Terminal 3, check-in occurs on Level 1. In all terminals, Once checked in, the passengers proceed through two stops: passport and identification control (where passengers show their passport and their ticket) and security control (in Terminal 3, identification and security controls are located on level 2). Food and retail shops are available to the general public in the ticketing and check-in area in both terminals.

At security control, both international and domestic passengers place all carry-on items on a conveyor that moves through a baggage-screening device. They then proceed through a walk-through metal detector and collect their belongings. Once cleared, they enter the departures concourse, where duty-free, retail, and food and beverage services are available. In Terminal 2, passengers departing from the ground-level bus gates remain on Level 1, while passengers departing from the contact gates go up a flight of escalators to Level 2. Once they reach Level 2 of Terminal 2, passengers walk north through a hallway with more food and retail options and a VIP lounge, which leads them into a round departures concourse. Within both the international and domestic departures concourses, various retail and food and beverage options are available. When passengers are called to board, they go to their assigned gate, present their travel documents, and board the aircraft.

Figure 7. CUN Passenger Arrival and Departure Flows



Source: Nathan Associates, Inc.

Departures Passenger-Processing Areas

Departures Curbside

Terminal 2

The terminal curbside is approximately 5 meters wide and extends the length of the terminal. The terminal access roads include a ground-level roadway with four primary terminal access points. The southernmost access point also serves as an exit to the departures curbside for domestic passengers, which is separated from the arrivals curbside and is located in the southern end of the terminal. All Terminal 2 access roads are composed of one-way, north-to-south, loop roadways that are allocated as follows:

- Lanes 1–3, located closest to the terminal facility, allow general vehicle and taxi drop-off.
- Once vehicles have dropped off passengers, they can proceed to Lanes 4 and 5, which are separated by an island with two openings along the entire length of the arrivals curbside. They can then proceed south to exit the airport, continue toward Terminal 3, or loop northward toward Terminal 1.
- Most buses and shuttles pass through Lanes 4 and 5, while the bus shuttle that connects passengers to all terminals (Cobus-2500) passes through Lanes 1–3 and has a designated stop at the southernmost end of the curbside.

Short-and long-term parking is located adjacent to the access roadways.

Terminal 3

As in Terminal 2, the curbside is approximately 5 meters wide and extends the length of the terminal. Terminal access roads include a ground-level roadway with 5 primary access points. All Terminal 3 access roads are one-way, north-to-south loop roadways that are allocated as follows:

- Lanes 1–3, located closest to the terminal facility, are for general vehicle and taxi drop-off. A total of 21 temporary parking spaces are lined up diagonally between the curbside and Lane 1 to allow vehicles to drop passengers off without obstructing traffic. Each of these parking spaces is long enough to fit two to three small vehicles. The bus shuttle that connects passengers to all terminals passes through Lanes 1–3 and has a designated stop at the southernmost end of the Curbside.
- Lanes 4–8 are separated from Lanes 1–3 by an island. These lanes are for buses and shuttles, and for access to an adjacent long-term parking lot that holds 125 parking spaces.
- Once passengers are dropped off, the vehicles proceed in a northerly direction to exit the airport, or loop around toward Terminal 1 or 2.

Image 17 shows the departures curbside area for Terminals 2 and 3.

Image 17. Departures Curbside Area (Terminal 2 at left, Terminal 3 at right)



Source: Nathan Associates, Inc.

Observations

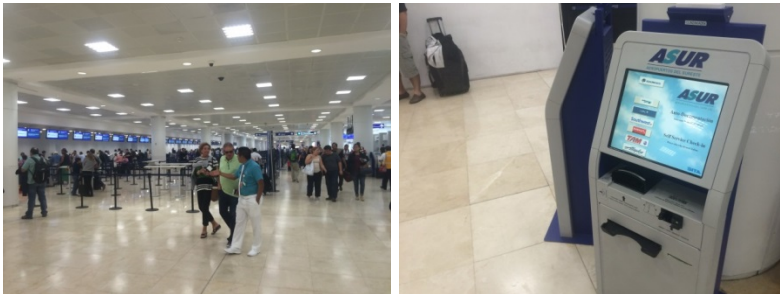
- The landside access and curbside areas worked efficiently, as significant congestion was not seen during peak periods of operation.
- Ground-level access roads impact level of service primarily due to the safety concerns of passengers walking across the roadways and the congestion that occurs in drop-off and pickup areas. Access roads were considered safe for pedestrians crossing from the adjacent long-term parking lots.
- Roofs cover the first drop-off and pickup lanes in order to shelter passengers from the rain.
- Pre-check-in counters and baggage trolleys were available for arriving passengers. Airport staff promptly collected baggage trolleys and returned them to the terminal facility.

Departures Hall/Check-in

Terminal 2

The check-in area consists of 57 common-use counters and multiple self-service kiosks located in a circular configuration around each pillar along the check-in area (Image 18). Self-service kiosks are provided for Aeroméxico, WestJet, Southwest Airlines, Avianca, TAM, and Alaska Airlines.

Image 18. Check-In Area, Terminal 2



Source: Nathan Associates, Inc.

Terminal 3

The check-in area has sufficient common-use counters and multiple self-service kiosks located in a linear configuration along the check-in area (Image 19). Self-service kiosks are provided for Delta Airlines, Air France, Virgin Atlantic, Spirit Airlines, United Airlines, Lufthansa, and Air Canada, among others.

Image 19. Check-In Area, Terminal 3



Source: Nathan Associates, Inc.

Observations

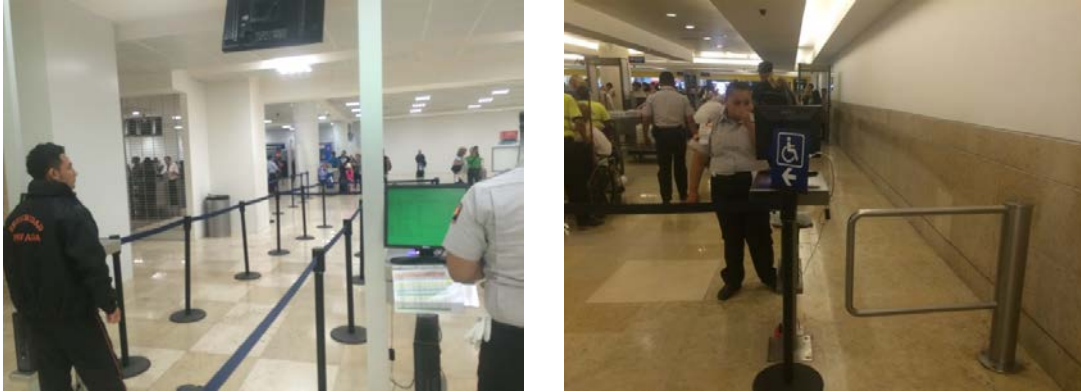
- Facilities were exceptionally clean; cleaning staff were always present.
- Information counters were present within the check-in area.
- The majority of travelers were considered leisure travelers.
- Airport staff were consistently knowledgeable, friendly, courteous, and helpful.
- Agents were professionally dressed.
- There were no substantial delays or lengthy queues, and ; processing times were deemed appropriate.
- Due to the common-use allocation of counters, airlines had enough counters to handle passenger flows.
- Counters were sufficiently staffed to handle the quantities of passengers present.
- Self-service kiosks were used frequently.

Boarding Pass and Identification Control

Once check-in is completed, passengers proceed to the boarding pass and identification control point, where they must show a passport and a boarding pass (Image 20). The boarding pass is scanned for authenticity and to determine if the passenger has already cleared security control.

The process is similar for Terminals 2 and 3, except that for Terminal 2, passengers proceed southward (on the same level), and for Terminal 3, they proceed to Level 2 by stairs or escalator. Terminal 2 has nine verification stations, and Terminal 3 has eight. In each terminal, one station is designated for crew members and passengers with disabilities.

Image 20. Boarding Pass and Identification Control, Terminal 2 (left) and Terminal 3 (right)



Source: Nathan Associates, Inc.

Observations

- Facilities were exceptionally clean; cleaning staff were always present.
- Passenger processing was quick and efficient.
- There was limited to no congestion during the survey.
- Security personnel were considered friendly, courteous, and helpful.

Security Control

Terminals 2 and 3

After completing boarding pass and identification control procedures, passengers enter the security control area (Image 21), which serves as the boundary between landside and airside operations and involves a comprehensive screening of all passengers and their belongings. Screening is conducted by means of a walk-through metal detector, baggage screening device, and possibly also a manual search using a handheld magnetometer. Terminal 2 has 11 security lanes, while Terminal 3 has 14. Each terminal has one security lane for crew members and passengers with disabilities.

Image 21. Security Control (Terminal 2)



Source: Nathan Associates, Inc.

Observations

- There were no substantial delays or lengthy queues and processing times were deemed appropriate.
- There was limited to no congestion during the survey.
- Long tables behind the security control checkpoint prevented overcrowding in that area.
- Space beyond the security checkpoint (over 3.5 meters between the conveyor belt and tables) was sufficient to allow passengers to collect their belongings and to move around the area.
- Agents were considered friendly, courteous, and helpful.

Departures Concourse

Terminal 2

A total of 31 departure gates are provided for commercial flights. The nine contact gates are numbered A1–A9, while the other 22 gates are numbered B1–B22. Both A and B gates are allocated to international and domestic flights.

Multiple retail and food and beverage operators are located throughout the departures concourse. The Level 2 departures concourse provides food and beverage options as well as clothing shops. Duty-free stores are available on both Level 1 and Level 2. A VIP lounge is located on Level 2, in a hallway that connects the Level 1 stairway and the Level 2 departures concourse. The duty-free stores provide Mexican souvenirs, tequila, and other Mexican goods.

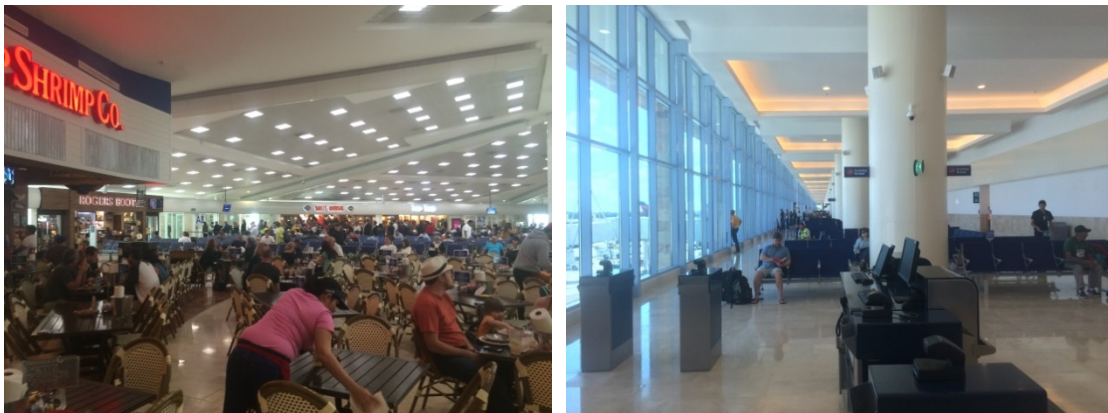
Terminal 3

A total of 33 departure gates are provided for commercial flights. The contact gates numbered C10–C26, serve international flights.

Multiple retail and food and beverage operators are located along the departures concourse, including duty free shops. A VIP lounge is in the concourse area.

The terminals are shown in Image 22.

Image 22. Departures Concourse, Terminal 2 (left) and Terminal 3 (right)



Source: Nathan Associates, Inc.

Observations

- The layout helped shorten connecting times.
- Sufficient retail and food and beverage spaces were provided in both terminals.
- The departures concourse's high ceiling created a sense of spaciousness and openness.
- There was limited to no congestion during the survey. Lounges were considered large enough to accommodate the flights.
- All areas were considered clean and functional.
- Adequate restrooms and other passenger amenities were provided.
- Agents were considered friendly, courteous, and helpful.

Arrivals Concourse and Arrivals Passenger-Processing Areas

International passengers enter Terminal 2 at the northern side of Level 2 via passenger boarding bridges and proceed to a staircase that leads them down to Level 1 to the immigration control area. Domestic passengers arrive at a ground-level entrance at the southern end of the terminal, which leads them to the domestic baggage claim area. In Terminal 3, passengers walk through a hallway between the departures concourse and the contact gates on Level 2, which leads to an escalator on the northern side of the terminal and to immigration control on Level 1 (Image 23). There, they provide documentation to enter Mexico.

Once passengers have cleared immigration, they proceed to baggage claim. (There are 14 baggage claim carousels in Terminal 2 and 11 in Terminal 3.) After collecting their belongings, they proceed to customs control. There, all checked and carry-on bags are screened. Passengers place their belongings on a conveyor belt, show their customs forms, and collect their belongings after they have been screened. Passengers selected for a secondary screening proceed to a separate area where their belongings are manually searched.

Once they have cleared customs, passengers enter the arrivals hall. This contains some small retail and fast-food concessions as well as access to ground transportation. This is the nonsterile public area where passengers meet their acquaintances. They then exit to the arrivals curbside area and proceed to the parking area or are picked up at the curb.

Passengers connecting to another flight walk through a hallway leading to the departures concourse.

Image 23. Arrivals Concourse



Source: Nathan Associates, Inc.

Observations

- The layout helped shorten connecting times.
- All areas were considered exceptionally clean and well maintained.
- Adequate restrooms and other passenger amenities were provided.
- Walking distances were acceptable.

Immigration—Passport Control

Terminals 2 and 3

All emigration and immigration control procedures are regulated by the Government of Mexico and carried out by the Instituto Nacional de Migración, or the National Institute of Migration. Immigration control has separate lines for foreigners, citizens, and airline crew and diplomats. Terminal 2 provides 20 stations with 2 booths each, while Terminal 3 provides sufficient stations with 2 booths each.

All passengers must present identification and a baggage declaration form, which is collected at customs control. Once all immigration formalities have been completed, passengers exit and continue to the baggage claim area and customs.

Observations

- All areas were considered exceptionally clean and well maintained.
- There were no substantial delays or lengthy queues; processing times were deemed appropriate.

Baggage Claim Area

After clearing immigration control, passengers proceed to the baggage claim area (Image 24), which includes baggage carousels, trolleys, and various support offices. In Terminal 2, the baggage claim area is located in Level 1 on the northern side of the terminal. It contains 14 carousels, of which 13 are capable of handling a narrow-body aircraft and one is large enough to be used for one wide-body or multiple narrow-body aircraft. In Terminal 3, the baggage claim area is located in Level 1 on the northeast side of the terminal. It contains 11 carousels.

Image 24. Baggage Claim



Source: Nathan Associates, Inc.

Observations

- Baggage transfer times were acceptable.
- All areas were considered exceptionally clean and well maintained.
- A sufficient number of lanes were open to handle arriving passengers.
- Baggage trolleys were available in sufficient numbers and well organized.
- Porters were available to assist passengers and collect unused baggage trolleys.

Customs Control Area

Once passengers have obtained their baggage, they enter the customs control area, which is operated by the Servicio de Administracion Tributaria (the Tax Administration Service). If passengers have items to declare, they proceed to a customs declaration office. If they have nothing to declare, they proceed directly to a screening lane. There are five lanes in Terminal 2 and six in Terminal 3, all equipped with baggage screening devices, and all baggage and personal belongings are subject to screening. Passengers place their belongings on a conveyor, hand the baggage declaration form to an agent, and are asked to press a button that will turn on a green or red light. If the light is green, they can exit the area. If the light is red, they are required to go through a more thorough secondary screening. Depending on the results, they are either allowed to exit the terminal or are directed to an adjacent office to declare items and pay the relevant customs duties.

From customs control, passengers can exit to the arrivals curbside. In Terminal 2, passengers connecting to a domestic flight veer to the right, pass through security control, and re-enter the departures concourse.

Observations

- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- A sufficient number of lanes were open to handle arriving passengers.
- All areas were considered exceptionally clean and well maintained.

Arrivals Curbside

Terminal 2

The arrivals curbside for domestic passengers is located at the southern end of the terminal; that for international passengers is to the north of the departures curbside. All Terminal 2 access roads are composed of one-way, north-to-south, loop roadways; they are allocated as follows:

- The international arrivals curbside is restricted to general vehicles picking up individuals and authorized taxis and shuttles. It includes one short loop. The loop's side is lined up with short-term parking spaces for general vehicles and authorized taxis and shuttles (41), and buses (15).
- The domestic arrivals curbside includes two short loops, for which entrance is restricted to general vehicles picking up individuals and authorized taxis and shuttles. Each of the loop's

sides is lined up with short-term parking spaces for general vehicles and authorized taxis and shuttles (64) and buses (8).

An outdoor bar/restaurant is located between the departures curbside and the domestic arrivals curbside (Image 25, left) to accommodate greeters who are waiting for passengers to arrive.

Image 25. Departures and Arrivals Curbside Areas



Source: Nathan Associates, Inc.

Terminal 3

The arrivals curbside is directly south of the departures curbside. It contains two short loops, for which entrance is restricted to general vehicles picking up individuals and authorized taxis and shuttles. Each of the loop's sides is lined with short-term parking spaces for general vehicles and authorized taxis and shuttles (64) and buses (8).

An outdoor bar is located on the departures curbside to accommodate arriving passengers who are waiting for their ride (Image 25, right).

Observations

- Roofs cover the first drop-off and pickup lanes in order to shelter passengers from the rain.
- Traffic from informal taxis (a common issue in airports in the APEC region) was effectively contained by restricted access to the arrivals curbsides (both international and domestic), and by the separation of arrivals and departures curbsides.

Landside Ground Transportation

CUN provides a total of 1,460 parking spaces, distributed among its 3 terminals, and offers long- and short-term parking for personal vehicles, buses, and shuttles. CUN provides several transportation options for its arriving passengers, including taxis, collective taxis, hotel shuttles, and buses. Car rental services are also available.

Observations

The amount and allocation of lanes allowed for proper vehicular flow, avoiding severe congestion during peak hours at Terminals 2 and 3.

CONCLUSIONS

Services

Exceptional customer service was consistently highlighted in the passenger surveys, including the following factors:

- Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
- Ticketing counters were sufficiently staffed.
- Information counters were present throughout the terminal.
- Passenger processing was quick and efficient.
- Sufficient retail and food and beverage choices were provided in both terminals.
- A sufficient number of lanes were open to handle arriving passengers at the security control checkpoint.

Technology

One of CUN's strengths is the use of technology to enhance airport operations and to facilitate passenger processing. The traveler-friendly features stood out at CUN's Terminals 1 and 2:

- Self-service kiosks are available for a large share of airlines and are used frequently.
- Due to the common-use allocation of counters, airlines have enough counters to handle passenger flows.
- The use of a state-of-the-art airport management system, SITA – Global Air Transport Technology, helps the airport proactively coordinate all of its functions in real time in case of delays or unforeseen events. SITA allows all service providers, authorities, and commercial service concessionaires, and most airport employees, access to its system so they can conduct and manage their operations proactively in case there are unanticipated delays or changes in airport traffic.

Facilities

The facilities were considered to be exceptionally clean in all areas of the airport. Equipment, furnishings, and finishes are well maintained and appeared to be in good working order. Surveyed passengers frequently commented on the overall cleanliness of the airport. Passengers also commented positively on the airport layout and said that it felt open or spacious even during peak hours. The Experts concluded that the following factors influenced the passengers' perception of traveler friendliness at CUN:

- Cleaning staff are always present.
- Long tables behind the security control checkpoint prevent overcrowding in that area.
- Space beyond the security checkpoint (over 3.5 meters between the conveyor belt and tables) is sufficient to allow passengers to collect their belongings and to move around the area.
- Access roads were considered safe for pedestrians crossing from the adjacent long-term parking lots.

- Curbside shelter is present in both Terminals 2 and 3. This is an important passenger-friendly feature, especially in economies with irregular weather patterns or long rainy seasons.
- The departures concourse's high ceiling in Terminal 3 provide a sense of spaciousness and openness.
- The layout enables short connecting times and acceptable walking distances.
- Restroom facilities are adequate.
- Traffic from informal taxis is effectively mitigated by the layout of the arrivals and departures curbsides.
- The amount and allocation of lanes prevent severe traffic congestion.

Personnel

Through stakeholder interviews, the Experts noted that airport management at CUN emphasized customer service. CUN maintains frequent communication with its airlines, vendors, and contractors to ensure that everyone's needs are met and that a passenger-friendly culture is maintained. These efforts resulted in the surveyed passengers' perceptions of staff as friendly. Not one negative comment was received regarding a staff member's conduct, appearance, or level of helpfulness.

JORGE CHAVEZ INTERNATIONAL AIRPORT, PERU

AIRPORT BACKGROUND

Jorge Chávez International Airport (LIM, Image 26) is Peru's main international and domestic airport and is located approximately 11 kilometers northwest of the capital city of Lima.

In order to improve and expand the airport, the Peruvian government decided to privatize it and awarded a 30-year concession to Lima Airport Partners (LAP) in February 2001. Initially, LAP was a joint venture between Fraport AG Frankfurt Airport Services, Bechtel Enterprises International, and local Peruvian construction company Cosapi S.A. Bechtel and Cosapi sold their shares in LAP to Alterra Lima Holdings in 2007; Fraport eventually acquired the shares from Alterra and became the primary shareholder in LAP.

Image 26. Jorge Chávez International Airport Location



Map data: Google, TerraMetric, Digital Globe.

In 2008, the International Finance Corporation and the Fund for Investment in Infrastructure, Public Services and Natural Resources, managed by AC Capitales SAFI S.A., became partners of LAP. The current distribution of shares is 70.01% to Fraport, 19.99% to International Finance Corporation, and 10% to the Fund for Investment in Infrastructure, Public Services and Natural Resources.

Over the last decade, the airport has received the following recognitions and awards:

- Best Airport in South America (World Airport Awards), 2009–2015;
- Best Airport Staff (Skytrax Research), 2009 and 2011–2014;
- South America's Leading Airport (World Travel Awards), 2009–2013; and
- Best VIP Lounge in the World (Priority Pass), 2009 and 2010.

AIRPORT TERMINAL

LIM serves multiple domestic and international carriers including Air France, Aerolineas Argentina, Air Canada, AeroMexico, Avianca, American Airlines, British Airways, Continental,

Copa Airlines, Delta Air Lines, Jet Blue, KLM, LAN Airlines, Iberia, LC Peru, Star Peru, Peruvian, Sky Airlines, Spirit, Tame, United Airlines, and Viva Colombia Airlines. LAN and Avianca are the primary carriers and provide both international and domestic flights. LIM serves multiple South American, North American, and European destinations.

The passenger terminal at LIM has two levels:

- Level 1 houses arrivals and departures curbsides, check-in, inbound and outbound baggage make-up, well-wishers area, bus gates, arrivals concourse, baggage claim, customs control, meeters-and-greeters area, and ground transportation area.
- Level 2 houses public retail and food and beverage area, security control, health services, immigration and emigration control, departures concourse, airline offices, airside retail and food and beverage concessions area, and departure holdrooms/passenger waiting areas.

The passenger terminal is configured in a linear north-and-south direction. The north side of the terminal houses check-in for departing passengers and services for domestic arriving passengers. The south end houses services for international arriving passengers. The terminal also accommodates an eight-story LAP administration office complex.

A total of 33 departure gates are provided for commercial flights. Three swing gates (Gates 14 to 16) serve both domestic and international flights. Gates 1 to 13 are used for domestic flights and Gates 17 to 39 for international flights. Gates 1 to 7 are domestic bus gates, from which passengers are transported to remote aircraft stands, and Gates 27 and 28 are international bus gates. Nineteen contact stands are serviced via passenger boarding bridges and include preconditioned air and 400 Hz power supply.

ON-SITE ASSESSMENT

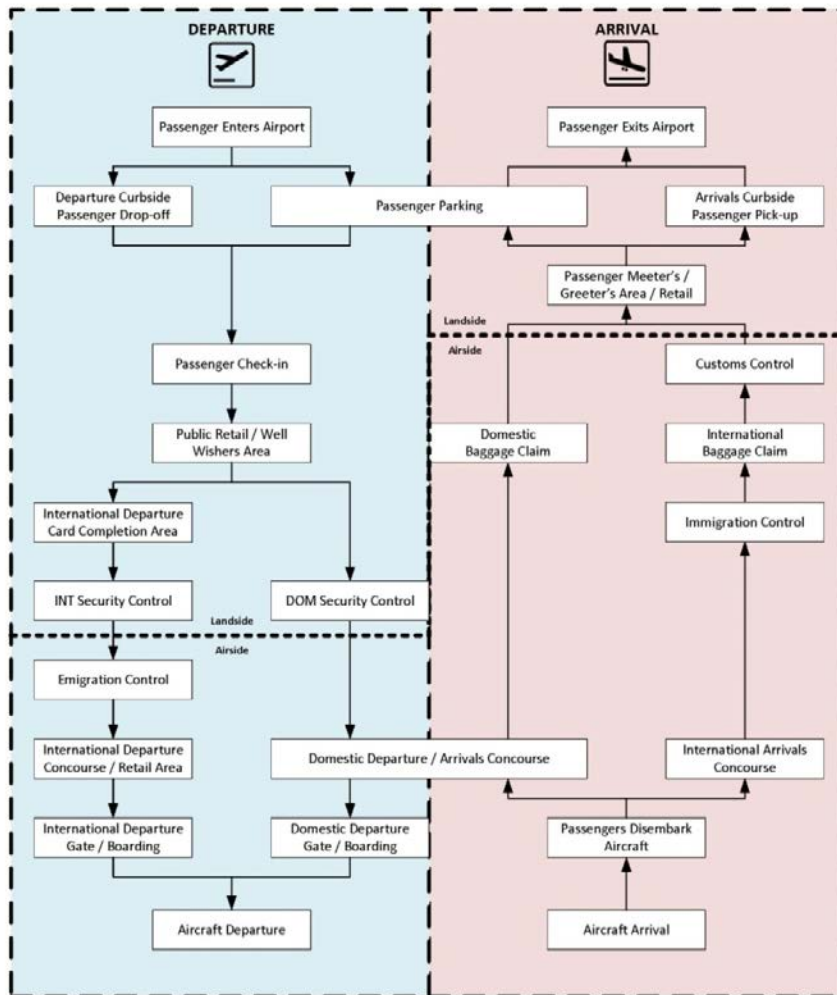
On-site assessment of the terminal facilities was conducted from February 2–6, 2016. Surveys were conducted for Avianca, LAN Airlines, and Peruvian Airlines.

PASSENGER TERMINAL FACILITIES

Departures Passenger-Processing Areas

As depicted in Figure 8, passengers enter the terminal at Level 1 and proceed to the check-in area, which is not open to the general public. Other visitors must enter the terminal at the north end to reach the public well-wishers area. International and domestic check-ins occur in the same area. Once checked in, passengers proceed to the north into a dedicated well-wishers area that includes various concessions as well as airline ticketing counters. Passengers and visitors can also proceed to Level 2, where additional retail shops and eateries are available.

Figure 8. LIM Passenger Arrival and Departure Flows



Source: Nathan Associates Inc.

On Level 2, all departing passengers then proceed to boarding pass control and are separated into international and domestic flights. International passengers show their passport and boarding pass, and domestic passengers show their Peruvian identification card or passport prior to proceeding to security control.

At security control, all passengers place their carry-on items on a conveyor leading to a baggage screening device. They then proceed through a walk-through metal detector, collect their belongings, and exit the security area. International passengers proceed to the emigration-control area, while domestic passengers enter the domestic concourse.

At emigration control, international passengers proceed to one of 24 stations where they provide their passport for travel authorization. Once cleared, they exit into a duty-free retail area and proceed to the departures concourse.

Within both the international and domestic departures concourses, various retail and food and beverage options are available. When passengers are called to board their flight, they proceed to their assigned gate, present their travel documents, and board the aircraft. Passengers on United States-bound flights are required to proceed through a secondary security control before boarding.

Departures Curbside

As depicted in Image 27, the terminal curbside is approximately 6 meters wide and extends the entire length of the terminal. The terminal access roads include a ground-level roadway with two areas that serve as the primary access points for all passengers arriving and departing the terminal. The north end of the curbside area is allocated to domestic departures and arrivals, while the south end is allocated to international arrivals and departures.

Image 27. Departures and Arrivals Curbside Area



Source: Nathan Associates, Inc.

The access road is a one-way, north-to-south loop with six lanes, which are allocated as follows:

- Lane 1, located closest to the terminal facility, is a VIP drop-off and pickup lane; it is also used by emergency vehicles. No buses or public vehicles are allowed access. Once passengers are dropped off or picked up, the vehicles enter Lane 2 and proceed in a southerly direction to exit the terminal.
- Lane 2 serves as an exclusive bypass lane. No vehicles are authorized to stop or park, and no buses or public vehicles are allowed access.
- Lane 3 is separated from Lanes 1 and 2 by an island about 2 meters wide. It is allocated to Green Taxis, an authorized ground transportation service. Once passengers are dropped off or picked up, vehicles enter Lane 4 and proceed in a southerly direction to exit the terminal.
- Lane 4 is a dedicated bypass lane; no vehicles are authorized to stop or park.
- Lane 5 is separated from Lanes 3 and 4 by another island, also about 2 meters wide. It is allocated to taxis, personal vehicles, and buses. Five-minute parking for drop-off or pickup is permitted. Once passengers are dropped off or picked up, vehicles enter Lane 6 and proceed in a southerly direction to exit the terminal.
- Lane 6, located farthest from the terminal, is a dedicated bypass lane; no vehicles are authorized to stop or park.

Short- and long-term parking is located adjacent to the access roadways.

Observations

- Porter assistance was available.
- Baggage trolleys were available for arriving passengers. Airport staff promptly collected unused trolleys and returned them to the terminal facility.

- The parking and terminal area were secured.

Terminal Entrance and Boarding Pass Control

The terminal has 12 entrances. Entrances 1–5 are located on the south end of the curbside area and are open to the public. They are allocated to international arriving passengers, although Entrances 4–5 primarily serve the LAP administration areas and airline offices.

Entrances 6–9 serve the international and domestic check-in areas. Before entering the terminal, passengers are asked to provide identification and travel documents. Only passengers are allowed access to the immediate check-in area. No other security screening is conducted at this location. Entrances 10–12 are public areas that are allocated to domestic arriving passengers but also allow access to the domestic meeters-and-greeters area and the international well-wishers area.

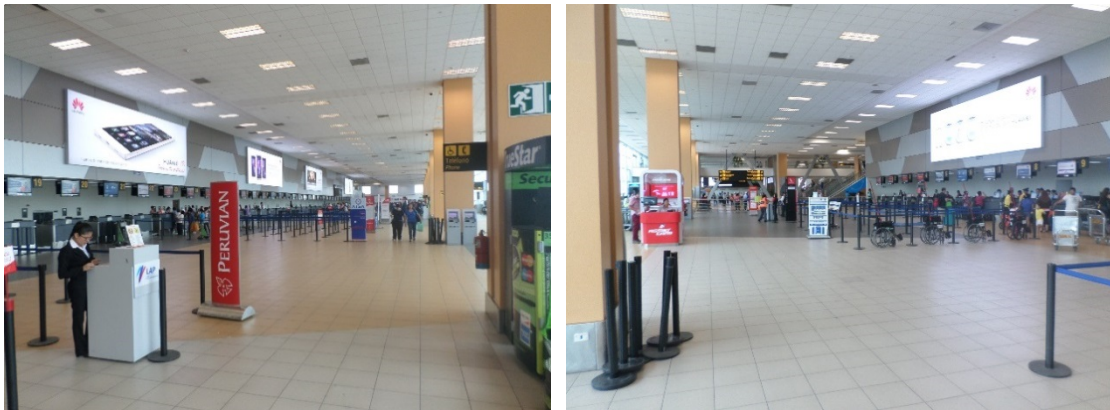
Observations

- Passengers were processed in a quick and efficient manner.
- Security personnel were considered friendly, courteous, and helpful.

Departures Hall/Check-in

Entrances 6–9 lead directly into the departures hall and check-in area (Image 28). The check-in area has 54 common-use counters, placed in a row against the west end of the departures hall. Self-service kiosks are provided for passengers traveling with Air France, Aerolineas Argentina, Air Canada, Avianca, American Airlines, Delta Air Lines, KLM, LAN Airlines, and United Airlines.

Image 28. Check-In Area



Source: Nathan Associates, Inc.

Image 29. Domestic Arrivals and Departures Halls



Source: Nathan Associates, Inc.

Observations

- Facilities were exceptionally clean, and cleaning staff were always present.
- Airport staff were consistently courteous and helpful to guests.
- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- LAN Airlines check-in:
 - The majority of travelers were considered leisure travelers.
 - Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
 - Agents were professionally dressed.
 - Counters were sufficiently staffed to handle the quantities of passengers present. In the event that queue lengths increased, additional counters and agents were immediately allocated.
 - Queue lengths and waiting times were acceptable.
 - Due to the common-use allocation of counters, LAN agents were required to break down stanchions or move them into place to mark queuing lanes.
- Avianca check-in:
 - Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
 - Agents were professionally dressed.
 - Counters were sufficiently staffed to handle the quantities of passengers present. In the event that queue lengths increased, additional counters and agents were immediately allocated.
- Peruvian check-in:
 - Agents were professionally dressed.
- Dedicated check-in was provided for passengers requiring special assistance, including elderly passengers, pregnant women, mothers with babies, and disabled passengers.

Well-Wishers Area

Once check-in is completed, departing passengers proceed north to the well-wishers area, where they are reconnected with their acquaintances. Passengers and visitors can then proceed to Level 2 via an escalator to a public retail and concession area.

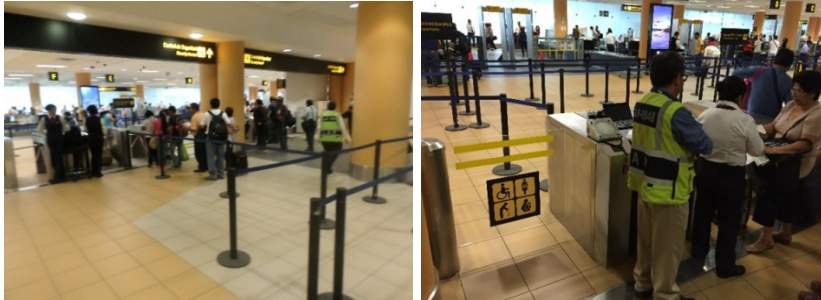
Observations

- The public area located on Level 1 accommodates domestic arriving passengers as well as all departing passengers.
- Facilities were exceptionally clean, and cleaning staff were always present.
- Airport staff were consistently courteous and helpful to guests.

Boarding Pass and Identification Control

From the public area, passengers proceed to the boarding pass and identification control area (Image 30). At this stage, passengers and guests are separated. Upon entering this area, international passengers proceed to the left and domestic passengers to the right. International passengers must provide a passport and a boarding pass. The boarding pass is scanned for authenticity and to determine if the passenger has already proceeded through security control. Passengers who are re-entering the airside area after having left it are required to pay a departure fee. International passengers are required to pay approximately US\$31 and domestic passengers are required to pay approximately US\$11. There are eight verification stations.

Image 30. Boarding Pass/Identification Control



Source: Nathan Associates, Inc.

Observations

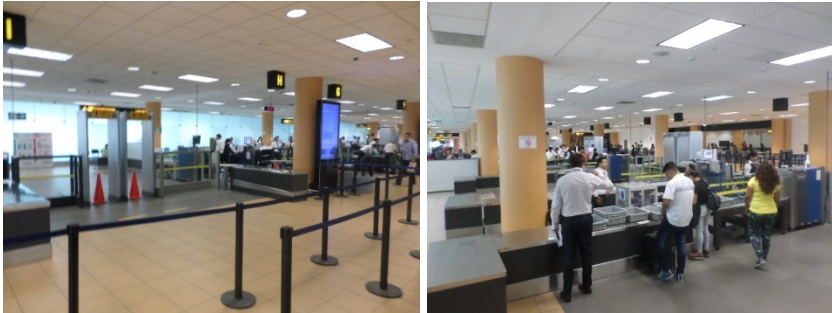
- Processing times were excellent.
- There was limited to no congestion during the survey.
- Security personnel were considered friendly, courteous, and helpful.

Security Control

After completing the boarding pass and identification control procedures, passengers enter the security control area (Image 31), which serves as the boundary between landside and airside operations. Screening is conducted by means of a walk-through metal detector and baggage screening devices, and may also include a manual search using handheld metal detectors. Twelve security lanes are provided; they can be distributed as needed between international or

domestic passengers. A barrier located beyond the screening area separates international and domestic passengers.

Image 31. Security Control



Source: Nathan Associates, Inc.

Observations

- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- No congestion was observed during the survey.
- Agents were considered friendly, courteous, and helpful.

Emigration—Outgoing Passport Control

The emigration control area (Image 32) has 24 counters, configured in a face-to-face layout. Four queuing lanes are provided: one for general passengers, one for employees, one for airline crew and diplomats, and one for passengers who are elderly or disabled or otherwise require special assistance.

Image 32. Emigration Control



Source: Nathan Associates, Inc.

Observations

- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- No congestion was observed during the survey.

- Agents were considered friendly, courteous, and helpful.

Departures Concourse

A total of 33 departure gates are provided for commercial flights. Gates 1 to 13 are allocated to domestic flights (of these, Gates 1 to 7 are bus lounges). Three swing gates (Gates 14 to 16) serve both domestic and international flights. Gates 17 to 33 are allocated to international flights (Gates 27 and 28 are bus lounges).

Multiple retail and food and beverage operators are located throughout the departures concourse in the domestic and international areas. The international concourse provides duty-free shopping as well as three restaurants and two fast-food concessions. Duty-free shopping is considered the largest contributor to concession revenue, and the existing duty-free area is being expanded to accommodate additional shops.

Observations

- The layout helped shorten connecting times.
- There was limited to no congestion during the survey.
- Lounges were considered large enough to accommodate allocated flights.
- All areas were considered clean and functional.
- Adequate restrooms and other passenger amenities were provided.
- The bus lounges appeared to be too small to accommodate passengers during peak periods.
- Airline and VIP lounges were too small for the demand.
- Agents were considered friendly, courteous, and helpful.

Arrivals Passenger-Processing Areas

Passengers enter the terminal at Level 2 via passenger boarding bridges and proceed to Level 1 to the immigration control area. Before reaching immigration control, passengers transferring from one international flight to another veer to the right and proceed to a security control area to be cleared for re-entry to the departures concourse on Level 2.

In the immigration control area, passengers provide documentation and obtain approval to enter Peru. After that, they have another opportunity to purchase duty-free goods. Next, they enter the baggage claim area and proceed to the device (one of six) that is allocated to their flight. After they collect their belongings, they proceed to customs control, where all checked and carry-on bags are screened. Passengers place their belongings on a conveyor for screening, show their identification and a baggage declaration form, which is eventually collected by a customs official, and collect their belongings after screening. Some passengers are selected for a secondary screening involving a manual search.

After clearing customs, passengers enter the arrivals hall, which contains some small retail and fast-food concessions and access to ground transportation providers. This is a nonsterile public area in which passengers can meet their acquaintances. They then exit to the arrivals curbside area and proceed to the parking area or are picked up at the curb.

Arrivals Concourse

Passengers disembark at Level 2 and proceed to Level 1 via escalators, elevators, and stairways. They continue along the arrivals concourse (Image 33), which is located next to the exterior wall; windows provide abundant natural light and a view over the apron area of airports where aircrafts are parked, unloaded or loaded, refueled, or boarded. A corridor with a moving walkway leads to the central area of the terminal; the work of local Peruvian artists is displayed. At the end of the corridor, international connecting passengers proceed to a security screening area and then back up to the departures concourse; all other international arriving passengers proceed to immigration control.

Image 33. Arrivals Concourse



Source: Nathan Associates, Inc.

Observations

- The layout helped shorten connecting times.
- All areas were considered exceptionally clean and well maintained.
- Adequate restrooms and other amenities were provided.
- Agents were considered friendly, courteous, and helpful toward arriving passengers.
- Numerous agents were available to assist passengers.
- The arrivals concourse offered a friendly, welcoming atmosphere that showcased Peruvian culture in art displays and photographs of popular tourist destinations provided by the Ministry of Tourism.
- Walking distances were acceptable, and moving walkways were available.

Immigration—Incoming Passport Control

All inbound and outbound immigration control procedures are regulated by the Government of Peru and carried out by the Superintendencia Nacional de Migraciones (National Superintendency of Migration). These are carried out in one primary area that includes 30 face-to-face booths (Image 34). Separate lanes are provided for airline crew and diplomats; all other passengers proceed through one queue.

Image 34. Immigration Control



Source: Nathan Associates, Inc.

All passengers must present identification and an entry/exit card (Tarjeta Andina de Migración, or Andean Migration Card)) that is collected at immigration control. Once all immigration formalities have been completed, passengers have a final opportunity to purchase duty-free goods.

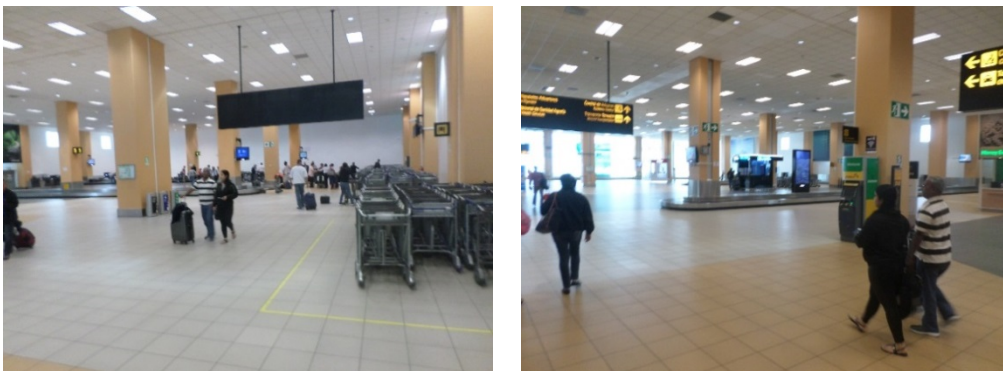
Observations

- All areas were considered exceptionally clean and well maintained.
- Immigration agents were considered friendly, courteous, and helpful toward arriving passengers.
- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- A sufficient number of booths were open to handle arriving passengers. As soon as lines began to form, more agents were allocated and additional booths were opened.

Baggage Claim Area

After clearing immigration control, passengers proceed to the baggage claim area (Image 35), which contains six baggage carousels, trolleys, and various support offices. The carousels include one small device capable of handling a narrow-body aircraft and five baggage carousel devices large enough to accommodate a wide-body aircraft or multiple narrow-body aircraft.

Image 35. Baggage Claim



Source: Nathan Associates, Inc.

Observations

- Baggage transfer times were acceptable.
- All areas were considered exceptionally clean and well maintained.
- Sufficient lanes were open to handle arriving passengers.
- Baggage trolleys were well organized and available in sufficient numbers.
- Porters were available to assist passengers and collect unused baggage trolleys.

Customs Control Area

Once passengers have obtained their baggage, they enter the customs control area (Image 36). Customs control is operated by the Servicio Nacional de Sanidad Agraria (National Service of Agrarian Health). Passengers with items to declare proceed to a customs declaration office on the north side of the customs control area next to the secondary inspection area. Passengers with nothing to declare proceed directly to one of six lanes, where they place their belongings on a conveyor; as the bags are being screened, the passengers submit their baggage declaration forms to an agent. Some passengers are required to undergo a second, more thorough screening, which is carried out on the west side of the screening area, after which they are either cleared to leave or directed to an adjacent office to declare items and pay the relevant duties. After clearing customs, passengers proceed to the arrivals hall and meeters-and-greeters area.

Image 36. Customs Control Area



Source: Nathan Associates, Inc.

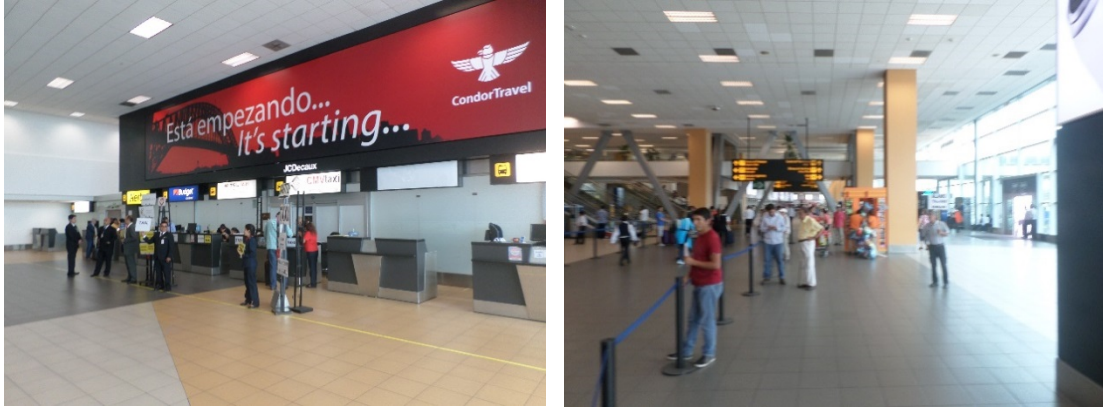
Observations

- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- Agents were considered friendly, courteous, and helpful toward arriving passengers. Agents helped passengers place their bags on the conveyors of the screening devices.
- A sufficient number of lanes were open to handle arriving passengers.
- All areas were considered exceptionally clean and well maintained.

Arrivals Hall/Meeters-and-Greeter's Area

In the arrivals hall (Image 37), passengers meet their acquaintances. The area immediately after the customs control exit contains various vendors with whom passengers can organize and pre-pay for ground transportation.

Image 37. Arrivals Hall and Meeters-and-Greeters Area



Source: Nathan Associates, Inc.

Observations

- The area was under construction and is anticipated to include additional concession spaces.
- Trolleys were well organized and available in sufficient numbers.
- Porters were available to assist passengers and collect unused baggage trolleys.
- All areas were considered exceptionally clean and well maintained.

Arrivals Curbside

Once passengers exit the terminal on the south end, they enter the arrivals curbside area, which includes access to additional baggage trolleys and a dedicated pickup area for international arriving passengers. The curbside is approximately 6 meters wide and extends the length of the terminal. Domestic arriving passengers enter directly from the departures concourse into the meeters-and-greeters area and exit to the domestic arrivals curbside area on the north end of the terminal (Image 38, right).

Image 38. Departures and Arrivals Curbside Areas



Source: Nathan Associates, Inc.

Observations

- Porter assistance was available.
- Baggage trolleys were available for arriving passengers. Airport staff promptly collected unused baggage trolleys and returned them to the terminal facility.
- The parking and terminal area were secured.

Ground Transportation

Parking

LIM provides over 1,400 parking spaces that accommodate long- and short-term parking. The airport also provides parking spaces for buses, airport taxis, and rental cars.

Ground Transportation

LIM provides several transportation options for arriving passengers, including taxis, collective taxis, hotel shuttles, and buses. Car rental services are also available.

Observations

The amount and allocation of lanes allows for proper vehicular flow, avoiding severe congestion during peak hours.

CONCLUSION

Services

Exceptional customer service is continually provided to passengers by all airport staff, including airline staff and security, immigration, and customs personnel. Services such as the VIP lounge and massage services were highly regarded by passengers.

Technology

Self-service check-in kiosks are widely available; flight information displays and wayfinding signs are available and visible throughout the airport terminal.

Facilities

The facilities were considered to be exceptionally clean in all areas of the airport. Equipment, furnishings, and finishes are well maintained and appeared to be in good working order. Surveyed passengers frequently commented on the cleanliness of the airport.

Personnel

Among LAP's greatest assets are its employees and its relationships with airlines, vendors, and contractors. During the assessment, the Experts continually observed and experienced airport employees, airline personnel, and government agents greeting and assisting passengers throughout the airport. Although airports may implement additional technology and specialty services, ultimately, a friendly smile from an airline agent or airport staff member can make a passenger's stressful journey through the airport a positive experience. All passengers surveyed

also supported this observation. Not one negative comment was received regarding a staff member's conduct, appearance, or level of helpfulness.

PORTLAND INTERNATIONAL AIRPORT, UNITED STATES

AIRPORT BACKGROUND

Portland International Airport (PDX, Image 39) is located 19 km northeast of downtown Portland, in northwest Oregon near the border with Washington State. In 2015, PDX served 16,850,952 passengers and handled 218,021 aircraft operations. PDX provides nonstop flights to a number of international and domestic locations and has recently been expanding service routes. In May 2016, the airport started to serve flights to Toronto, Canada, its tenth international destination. PDX's other international

nonstop destinations are Vancouver (British Columbia) and Calgary (Alberta), Canada; Tokyo, Japan; Guadalajara, San Jose del Cabo, and Puerto Vallarta, Mexico; Frankfurt, Germany; Reykjavik, Iceland; and Amsterdam, Netherlands.

PDX is owned and operated by the Port of Portland, which also owns the neighboring airports of Hillsboro and Troutdale and four marine terminals. Hillsboro and Troutdale help relieve demand on PDX by providing services for corporate and private aircraft (Port of Portland 2015). PDX's main sources of revenue are parking fees, facility rentals, aircraft landing fees, and concession agreements for various services and equipment. PDX has received multiple recognitions and awards over the last decade, including

- Best Airport in the United States (Travel + Leisure), 2013–2016;
- Best Airport in the United States (Conde Nast Traveler Business Travel Awards), four times between 2006 and 2010;
- #1 Large United States Airport (JD Powers and Associates), 2015.

AIRPORT TERMINALS

PDX serves multiple domestic and international carriers including Alaska Airlines, Allegiant Air, American Airlines, Compass Airlines, Condor, Delta Air Lines, Frontier Airlines, Hawaiian Airlines, Horizon Airlines, Icelandair, Air Canada Jazz Air, JetBlue, PenAir, Republic Airline, Seaport Airlines, SkyWest Airlines, Southwest, Spirit, Sun Country Airlines, United Airlines, Virgin America and Volaris, and XTRA Airways. Based on the airline and cargo operating agreements, airlines that operate at PDX guarantee that revenues are equal to operation and

Image 39. Portland International Airport Location and Surroundings



Map data: Google.

management costs. In 2015, Alaska Airlines (23.6%) and Southwest Airlines (18.4%) held the highest market share (Portland International Airport 2015).

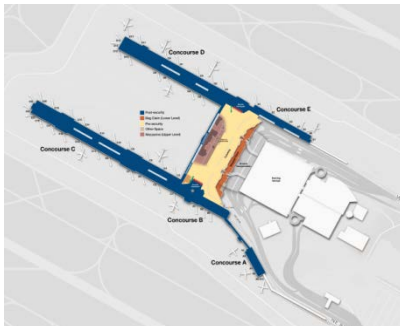
The PDX terminal has five concourses (A–E) and two runways. The north runway was recently extended by 1,825 feet to allow it to handle larger aircraft, and the south runway was completely reconstructed, its deteriorating asphalt replaced with an all-concrete surface (Port of Portland 2016).

The passenger terminal has three levels:

- Level 1 contains the arrivals curbside, inbound and outbound baggage make-up, bus gates, baggage claim, immigration control, customs control, and ground transportation.
- Level 2 contains check-in, public and airside retail and food and beverage areas, departures and arrivals concourses, security control, health services, and airline offices.
- Level 3 contains a conference center.

The terminal has an H-shaped design (Figure 9) with two concourse areas running east to west and a core area running north to south that contains the rest of the airport facilities, including check-in for departing and arriving international and domestic passengers. The concourse areas contain multiple services for passengers, including retail and food and beverage concessions and a children's playground.

Figure 9. Terminal Map



Source: flypdx.com.

PDX has 60 departure gates for commercial flights. Of these, 46 are contact gates (in B, C, D, and E concourses), of which 26 are common-use gates and the other 20 are leased to air carriers. The remaining gates are bus or ground-level gates (in A concourse).

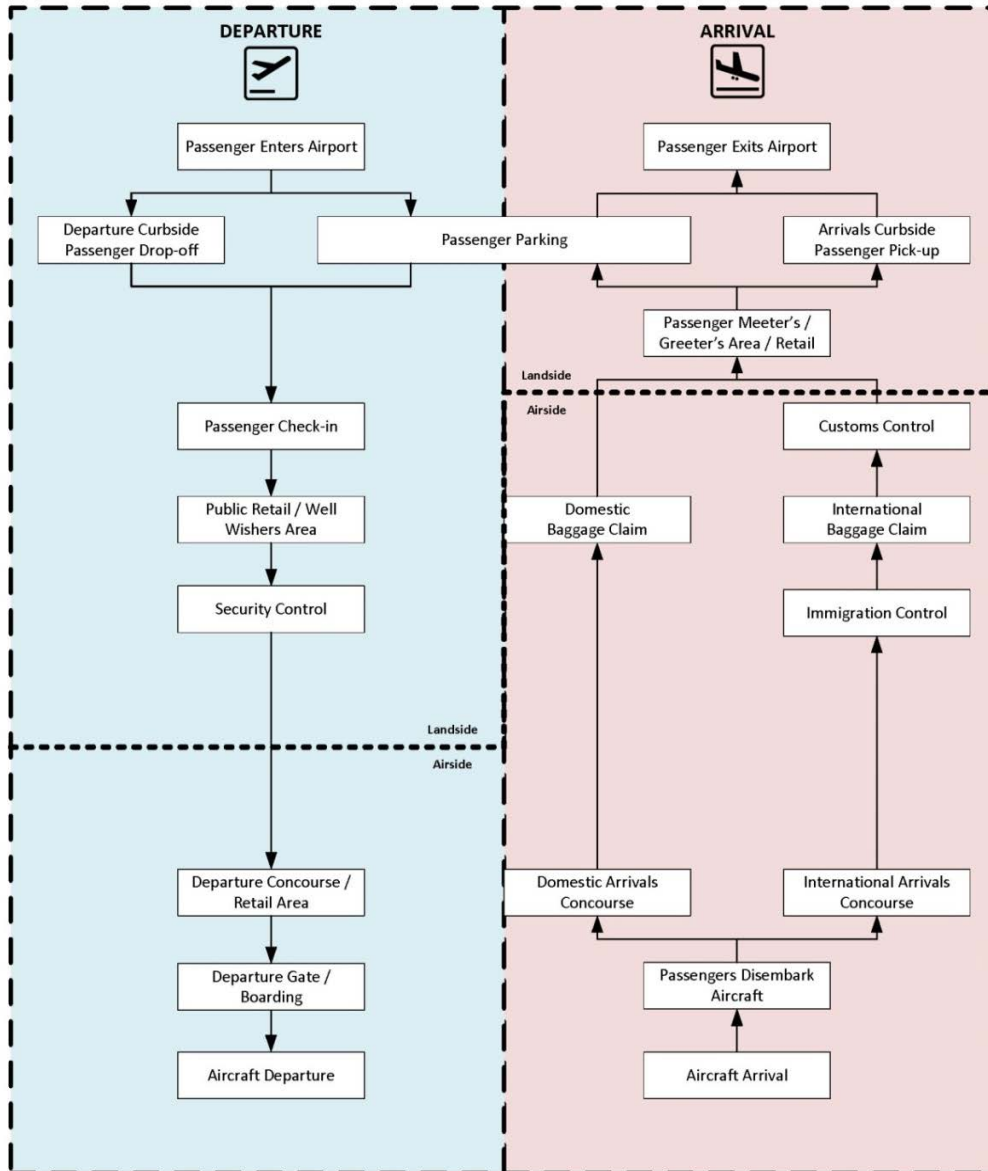
ON-SITE ASSESSMENT

ON-SITE ASSESSMENT OF THE TERMINAL FACILITIES WAS CONDUCTED FROM MARCH 18–21, 2016. SURVEYS WERE CONDUCTED FOR ALASKA AIRLINES, SOUTHWEST

AIRLINES, AND DELTA AIR LINES. PASSENGER TERMINAL FACILITIES

Passengers enter the terminal at Level 2 from the departures curbside area and proceed to the check-in area (Figure 10). Once checked in, they proceed through a wide hallway with food and retail concessions on each side toward one of two security control checkpoints that grant access to Concourses A–C on the south side and Concourses D and E on the north side. Before passengers enter security control, a U.S. Transportation Security Administration (TSA) agent checks their identification.

Figure 10. PDX Passenger Arrival and Departure Flows



Source: Nathan Associates, Inc.

At security control, both international and domestic passengers place all carry-on items on a conveyor for screening by a baggage screening device. Passengers then proceed through a walk-through millimeter wave body scanner (which scans the whole body for concealed objects) and

collect their belongings. Once they clear security control, passengers enter one of the concourses, where multiple retail, duty-free, and food concessions are available. The two concourses are connected by a hallway with moving walkways. Other amenities, including airline lounges, work desks, and a children's playground, are available.

When passengers are called to board, they proceed to their assigned gate, present their travel documents, and board the aircraft.

Departures Curbside

The terminal curbside is approximately 5 meters wide and extends the length of the terminal (Image 40). Access roads include a ground-level roadway with multiple terminal access points. They are composed of one-way, north to south, loop roadways that are allocated as follows:

- Lanes 1 to 4, located closest to the terminal, allow general vehicles to drop passengers off. Once passengers are dropped off, the vehicles proceed in a southerly direction to exit the airport.
- Lanes 4 to 8 are reserved for airport shuttle and airport taxi drop-off.

A short-term parking garage is located adjacent to the access roadways.

Image 40. Departures Curbside Area



Source: Nathan Associates, Inc.

Observations

- The landside access and curbside areas functioned efficiently; significant congestion was not seen during peak periods of operations.
- Wide and raised crossings helped keep speeds low and allowed passengers to cross safely.;
- The entire departures curbside and runway were covered by a ceiling that hangs on top of the terminal and the multistory short-term parking garage.
- Pre-check-in counters and baggage trolleys were available for arriving passengers. Airport staff promptly collected unused baggage trolleys and returned them to the terminal facility.

Departures Hall/Check-In

The check-in area consists of multiple staffed counters and 60 self-check-in kiosks that are located in a linear configuration opposite the check-in counters (Image 41). Self-service kiosks are provided for Alaska Airlines, United Airlines, Southwest Airlines, American Airlines, and Virgin America.

Image 41. Check-In Areas, Staffed and Self-Service



Source: Nathan Associates, Inc.

Observations

- Facilities were exceptionally clean; cleaning staff were always present.
- Airport staff were consistently courteous and helpful to guests.
- Information counters and screens displaying flight information were present within the check-in area. Airport directory maps were present next to the flight information displays.
- The majority of travelers were considered leisure travelers (during the year 2015, 72% out of 28% were leisure travelers—Port of Portland 2015).
- Agents were consistently knowledgeable, friendly, courteous, and helpful to passengers.
- Some airline agents wore a jersey from a Portland sports team with the goal of creating a more relaxed and friendly environment.
- Counters were sufficiently staffed to handle the quantities of passengers present. When queues got longer, airlines reacted promptly to bring in additional staff.
- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- Self-service kiosks were used frequently.

Security Control

After check-in, passengers proceed either south or north through a wide hallway with food and retail concessions on each side toward one of two security control checkpoints. Before passengers enter security control, a TSA agent checks their identification. The security control area serves as the boundary between landside and airside operations and involves a comprehensive screening of all passengers and their belongings. Screening is conducted by the use of a millimeter wave body scanner and baggage screening devices and may also include a manual search using a handheld metal detector. Each checkpoint has eight security lanes and a separate lane that allows crew members and disabled travelers to move to the front of one of the eight lanes. Stations for discarding liquids (Image 42) are located next to each entrance to the security control checkpoints.

Image 42. Receptacle for Liquids to Be Discarded Before Entering Security Control



Source: Nathan Associates, Inc.

Observations

- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- No significant congestion was observed during the survey.
- Agents were considered friendly, courteous, and helpful. When a foreign-language-speaking passenger struggled to understand an agent's instructions, the agent patiently took the time to explain with the help of nearby passengers.

Departures Concourse

A total of 60 departure gates are provided for commercial flights. Concourse areas are split into five sections labeled A through E.

Multiple retail and food and beverage operators are located throughout the departures concourses. Areas with food and beverage concessions have tables, chairs, and couches in the center of the concourse hallway (Image 43). Lounges are located in Concourses C (Alaska Airlines), D (Delta Air Lines), and E (United Airlines). A children's playground is located in the departures concourse (Image 44), and local artwork is on display throughout the terminal (Image 45).

Image 43. Food and Beverage Service and Seating Areas



Source: Nathan Associates, Inc.

Image 44. Playground Inside the Departures Concourse



Source: Nathan Associates, Inc.

Image 45. Local Artwork in Airport Concourses



Source: Nathan Associates, Inc.

Image 46. Retail Outlet with Produce from Local Farmer's Market



Source: Nathan Associates, Inc.

Observations

- The H-shaped layout enabled short walking distances.
- Moving walkways along the north and south concourses helped passengers get to their gates faster.
- Sufficient retail and food and beverage spaces were provided in both terminals. Seating areas in the middle of concourse hallways gave the area an inviting and relaxing feeling.
- The intersecting points where the concourses meet security control have high ceilings and large windows that allow a good view of the natural landscape behind the runways.
- No congestion was observed during the survey.
- Airline lounges are available for three airlines in three different concourses.
- All areas were considered clean and functional.
- Adequate restrooms and other passenger amenities were provided.
- Agents were considered friendly, courteous, and helpful.
- The carpet gave the terminal a warm and hospitable feeling.

Arrivals Concourse

While domestic passengers enter the same concourse areas as departing passengers, international passengers enter the terminal at a bridge gate that leads them to immigration in Level I.

Observations

- The layout helped shorten connecting times for arriving international passengers.
- All areas were considered exceptionally clean and well maintained.
- Adequate restrooms and other passenger amenities were provided.
- Walking distances were acceptable.

Immigration—Incoming Passport Control and Customs Control Areas

All inbound and outbound immigration control procedures are regulated by the U.S. Department of Homeland Security (DHS). Upon arriving at the immigration control area, noncitizen passengers follow a separate line to proceed to the immigration counters to submit arrival/immigration documents to obtain approval to enter the U.S. U.S. and Canadian citizens and U.S. permanent residents use an APC kiosk (Image 47), which substantially shortens processing times.

Image 47. APC Kiosks



Source: U.S. Customs and Border Control 2016.

Instead of completing a declaration form, passengers scan their passports, complete a series of customs declaration questions on a touch screen, have their picture taken by the machine, and get a receipt that they show to a U.S. Customs and Border Protection officer in a separate line to complete the process. There is also an expedited line for passengers enrolled in the TSA Global Entry program (i.e. trusted traveler program) and crew members. There are 10 immigration control booths.

International travelers who have been approved under the Electronic System for Travel Authorization (only available to citizens from the 38 economies covered by the Visa Waiver Program) can also use the APC kiosks, if they have a passport with an electronic chip.

Once passengers have cleared immigration, they proceed to customs control, where they go through a quick line where the officer collects the completed customs form. Passengers who are required to undergo a bag screening by the immigration control officer proceed through a separate customs control line where their bags are inspected.

Observations

- All areas were considered exceptionally clean and well maintained.
- There were no substantial delays or lengthy queues; processing times were deemed appropriate.
- On average, APC kiosk users completed the immigration process 35% faster than those who could not use the kiosks.
- DHS staff were friendly and attentive to passengers' needs.

Baggage Claim Area

After clearing immigration and customs, passengers proceed to the arrivals/departures concourse on Level 2, walk toward the security control area to exit on the side facing the main part of the terminal by the concessions hallway and check-in area, and go down one flight of stairs to the ground level, where baggage claim is located. The area includes baggage carousels, baggage trolleys, and various support offices. The baggage claim area has nine baggage claim devices. Two tunnels, north and south, connect passengers to the short- and long-term parking garages, as well as the rental car center. There are moving walkways in the tunnels.

Observations

- Baggage transfer times were acceptable.
- All areas were considered exceptionally clean and well maintained.
- A sufficient number of lanes were open to handle arriving passengers.
- Baggage trolleys were well organized and available in sufficient numbers.

Arrivals Curbside

The terminal curbside is approximately 5 meters wide and extends the length of the terminal. The arrivals curbside is located on the ground level on the main side of the terminal. All access roads are composed of one-way, north to south, loop roadways that are allocated as follows:

- Lanes 1 to 4, located closest to the terminal facility, are for public vehicles picking passengers up. Once passengers are picked up, the vehicles proceed in a southerly direction to exit the airport. Buses that service the airport also use these lanes.
- Lanes 5 to 8 are reserved for airport shuttle and airport taxi pickup. Uber and Lyft vehicles can also pick up passengers in these lanes.

The short-term parking garage that is located adjacent to the access roadways is also accessible through the ground-level arrivals curbside area.

Observations

- The arrivals curbside area functioned efficiently; significant congestion was not seen during peak periods.
- Wide and raised crossings helped keep speeds low and allowed passengers to cross safely.
- The entire departures curbside and runway are covered by a ceiling that hangs on top of the terminal and the short-term multistory parking garage.
- Pre-check-in counters and baggage trolleys were available for arriving passengers. Airport staff promptly collected baggage trolleys and returned them to the terminal facility.

Landside Ground Transportation

Parking

- Short-term parking (more than 3,300 spaces) is available in a multistory garage that is located next to the terminal and connected to it by a skybridge.

- Long-term parking (more than 3,000 spaces) is available in a garage that is located near the terminal and connected to it by tunnels with moving walkways.
- Economy parking (7,900 spaces) is available near the airport in an open lot. PDX provides free buses 24 hours a day, 7 days a week, to connect passengers with the terminal in a seven- to nine-minute ride.
- Motorcycle and bicycle parking is available at the northern end of the departures curbside.
- Valet parking is available at the southern end of the departures curbside.

Ground Transportation

PDX provides several transportation options for arriving passengers, including the following:

- Taxis, standard and luxury (e.g., Tesla cars), are available; a trip to downtown Portland can take 30 minutes and cost US\$35.
- Airport shuttles connect to multiple hotels and to downtown Portland; the latter costs US\$14.
- Car rentals are available from multiple providers; rates vary.
- Public transit, in the form of the MAX Red Tram Line (Image 48), connects PDX with downtown Portland; the trip takes 38 minutes and costs US\$2.50 (Portland Travel Tips 2013).

Image 48. MAX Red Line Tram Station



Source: Wilson 2004.

Observations

- The amount and allocation of lanes allows for proper vehicular flow, avoiding severe congestion during peak hours.
- The airport offers multiple easily accessible parking and ground transportation options.
- PDX's website provides a map of ground transportation options with a rate calculator, and live tracking of space availability at each lot (FlyPDX 2016).

CONCLUSIONS

Services

PDX stands out for the high quality of customer service across all airport service providers. Exceptional customer service was continually highlighted in the passenger surveys. The following factors contributed particularly to the airport's traveler friendliness:

- Airport and airline staff are consistently knowledgeable, friendly, courteous, and helpful to passengers.
- Food and retail concession employees are friendly, courteous, and helpful to passengers.
- Wayfinding technology is present throughout the terminal.
- Passenger processing is quick and efficient at all processing points.
- Sufficient retail and food and beverage choices are provided in both terminals.
- Passenger surveys indicated that travelers were mostly pleased with the free Wi-Fi service available everywhere in the airport terminal.
- Passengers were very pleased about the low prices at all food and beverage and retail concessions. This is due to PDX's "street pricing" policy, that is the cost of food and beverage and retail items match the normal price point of the stores outside of the airport. Spending per passenger at PDX was the highest among U.S. airports at US\$ 12.35 in fiscal year 2015 (Port of Portland 2015).
- Passengers were very pleased about the availability of locally sourced and healthy food and beverage choices.
- Multiple options make ground transportation at the airport highly convenient to both leisure and business travelers.
- Lounges are available for three airlines in three different concourses.
- The Port of Portland has a research team that frequently tracks passenger satisfaction and preferences.

Technology

PDX makes good use of technology, including the following, to enhance passengers' experience:

- Self-service kiosks are available for a large share of airlines and are widely used by passengers.
- Information displays with an airport map and flight information screens are well distributed throughout the airport, making wayfinding easier.
- PDX's free and fast Wi-Fi is what passengers highlighted the most in the passenger surveys. This is one of the most important factors affecting traveler friendliness.

Facilities

The following aspects of the airport facilities influenced passengers' perception of traveler friendliness at PDX:

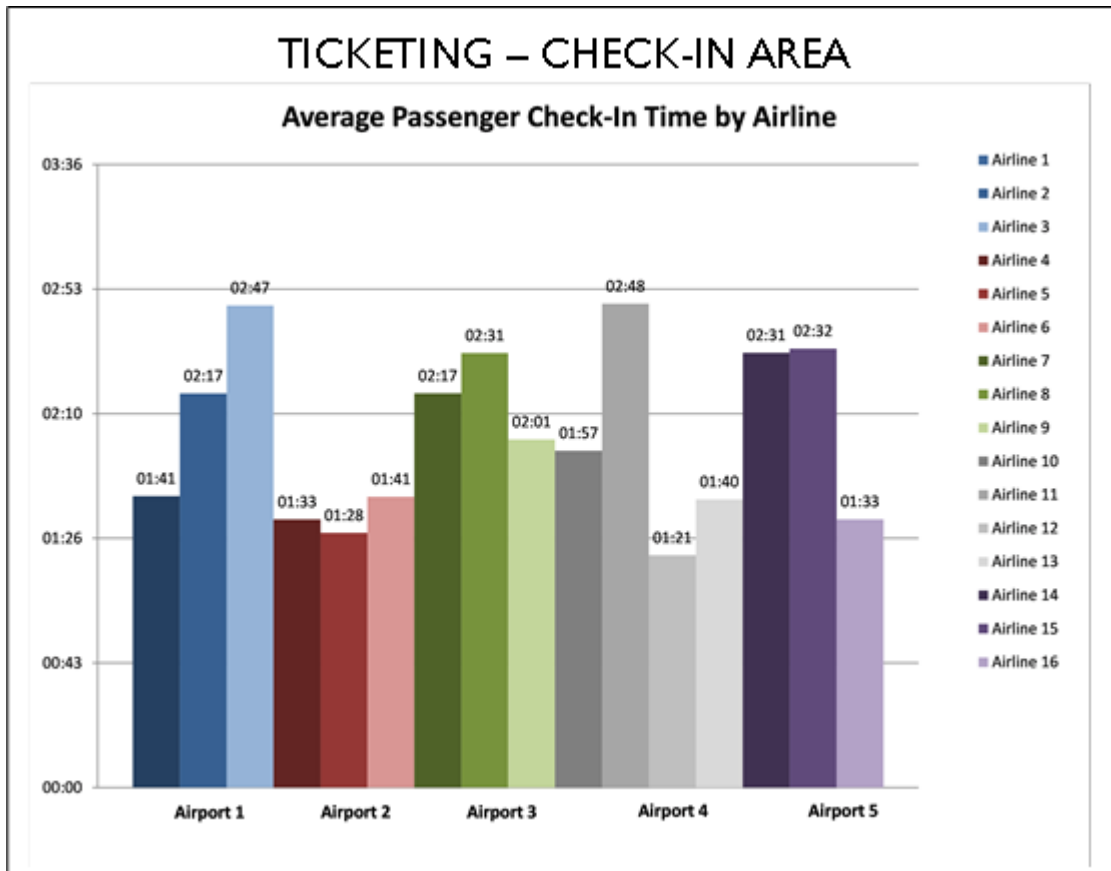
- All areas were considered clean and functional.
- Equipment, furnishings, and finishes are well maintained and appear to be in good working order.
- Access roads were considered safe for pedestrians crossing from the adjacent roadways and the short-term parking lot.
- The H-shaped layout allows for short walking distances.
- The presence of moving walkways along the north and south concourses also helps passengers get to their gates faster.
- Adequate restrooms are provided.
- The amount and allocation of lanes allowed for proper vehicular flow, avoiding severe congestion during peak hours in the departures and arrivals curbside areas.
- The display of local artwork in several terminal locations was highlighted in the passenger surveys.
- Passengers frequently commented that the airport's carpet made the atmosphere feel relaxing and cozy.
- Seating areas in the middle of concourse hallways give the area an inviting and relaxing feeling.

Personnel

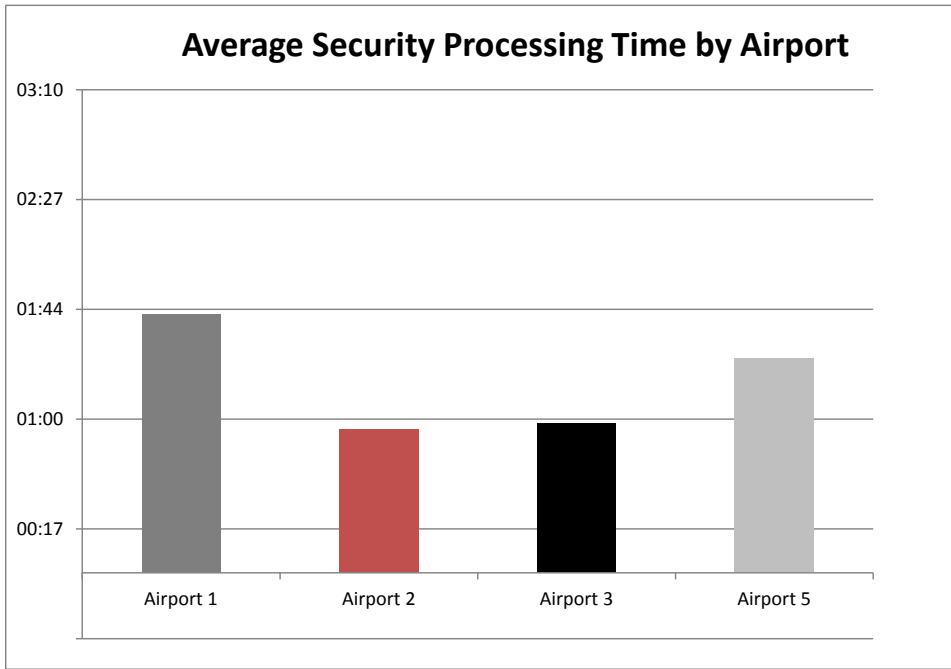
Through stakeholder interviews, the Experts noted that airport management puts a high emphasis on promoting customer service. PDX maintains frequent communication with its airlines, vendors, and contractors to ensure that everyone's needs are met and that a passenger-friendly culture is maintained. These efforts result in the surveyed passengers' perception of staff as friendly. Not one negative comment was received regarding a staff member's conduct, appearance, or level of helpfulness. All interviewed stakeholders frequently highlighted the good communication that was maintained among everyone working at the airport, including TSA and DHS agents and food and beverage and retail service providers. High-level airport staff highlighted that a customer-friendly culture needs to be conveyed from leadership to everyone working at the airport. Stakeholders highlighted several initiatives that help the airport maintain its customer-friendly culture, including the following:

- Customer service training is provided to all airport staff, including those working for TSA and DHS, the airlines, and concession service providers.
- Monthly department meetings as well as frequent cross-department project meetings are held. Several stakeholders stated that these meetings and the organization's transparency helped PDX provide a high quality level of service.
- Customer service awards are given to outstanding employees once a year at an annual banquet.

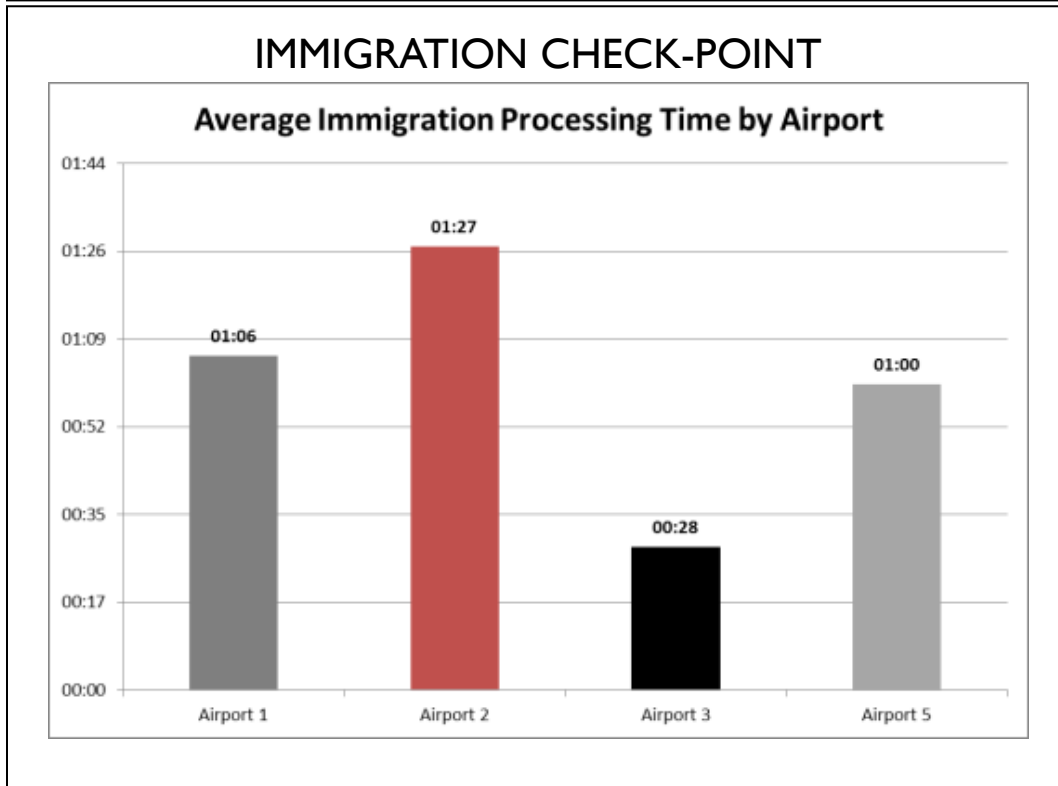
APPENDIX II: PASSENGER PROCESSING TIMES



SECURITY SCREENING CHECK-POINT

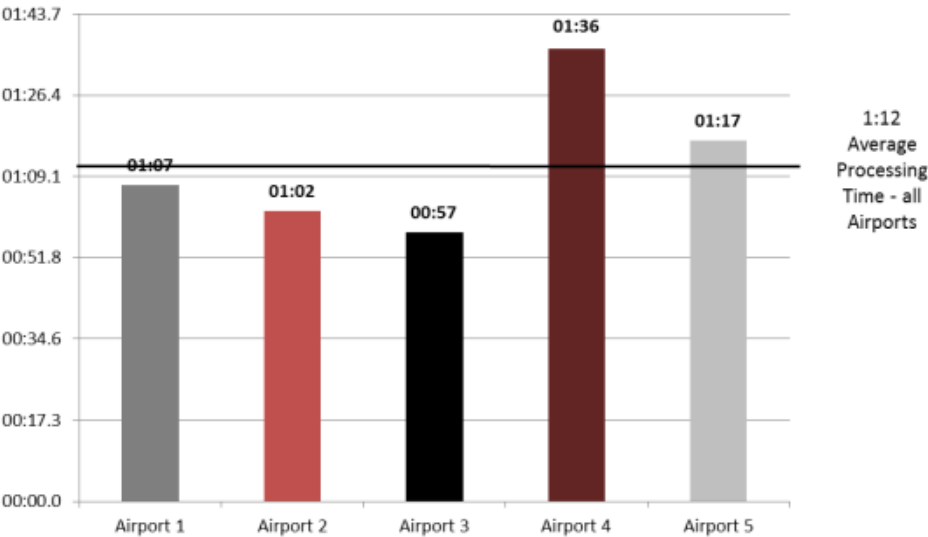


IMMIGRATION CHECK-POINT



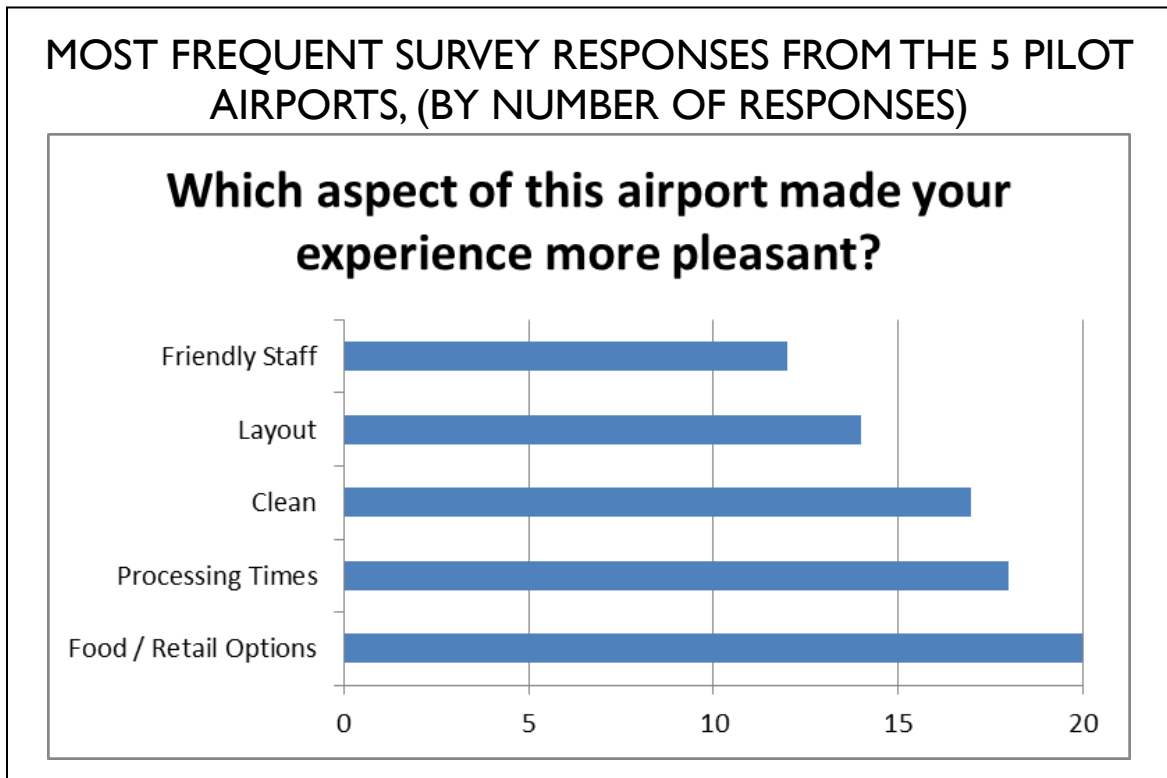
ALL CHECK-POINTS

Average Passenger Processing Times (min)



APPENDIX III: PASSENGER SURVEY RESULTS

At each airport, more than 50 people were surveyed with a total of 280 total respondents across all five nominated airports. The graph here reflects the top five most frequent types of responses.



APPENDIX IV: LEVEL OF SERVICE

The level-of-service concept has been developed to provide a gauge of the capacity of a transportation facility, as well as the quality of the service it provides to passengers. This allows the facility designer and operator to determine if capacity, staffing levels, and procedures can acceptably meet demand.

Agencies including the U.S. Federal Aviation Administration, International Civil Aviation Organization, and IATA, as well as major airport operators such as the British Airports Authority, Schiphol Airport, Port Authority of New York and New Jersey, and Aéroports de Paris have conducted extensive level-of-service analyses. IATA's definitions of levels of service, summarized in Table I, are generally accepted by the aviation industry.

Table I: IATA Levels of Service

A (excellent)	Free flow; no delays; excellent levels of comfort.
B (high)	Stable flow; very few delays; high levels of comfort.
C (good)	Stable flow; acceptable delays; good levels of comfort.
D (adequate)	Unstable flow; acceptable delays for short periods of time; adequate levels of comfort.
E (inadequate)	Unstable flow; unacceptable delays; inadequate levels of service.
F (unacceptable)	Cross-flows; system breakdowns and unacceptable delays; unacceptable level of comfort.

Source: IATA 2004.

Airport operators use level-of-service rankings to ensure that they, governmental agencies, and airlines are providing passengers with service within generally accepted standards. In many cases, increased staffing and/or improved staff training can improve the level of service.

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