
COVID-19

PASSENGER FACILITATION UNDER PANDEMIC AND ITS LEGACY TO AIRPORT PLANNING

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**“YOU NEVER WANT A SERIOUS
CRISIS TO GO TO WASTE.
AND WHAT I MEAN BY THAT
IS, IT’S AN OPPORTUNITY TO
DO THINGS YOU THINK YOU
COULD NOT DO BEFORE.”**

Rahm Emanuel, Chief of Staff
for Barack Obama



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EXECUTIVE SUMMARY

Over the past few decades, airports and airlines have sought to do more with less. This has included efforts to use infrastructure and assets more effectively, strategies to spread peak demands and employing better technology to optimise performance.

Generally, these efforts resulted in improved passenger throughput without major expansions and the confluence of more people into tighter pathways. A set of circumstances that have not compromised quality, but now presents challenges for physical distancing. A key risk management response to COVID-19.

Through the most recent pandemic, individual risk appetites in the community have been tested. Some have demonstrated a comfort with crowds and busy spaces, others have preferred relative or complete isolation.

There is a proportion of the population that sits between the risk seeking and risk averse that can be influenced to undertake certain activities, such as air travel, if they feel safe. During a pandemic, this is the segment of the passenger market that needs to be persuaded by airports – they are the 'Reluctant Middle'.

This paper focuses on Brisbane Airport's most recent response to the pandemic. It also presents three types of interventions for all airports, based generally on case studies and exemplars from around the world, that seek to reduce the risk of transmission and compel more people to get back into the sky, particularly those that can be influenced, the **Reluctant Middle**.

1. Design interventions: Seek to further reduce risks to passengers through contactless processing and improved technology. Safety improvements are sought through sanitisation processes and infrastructure.

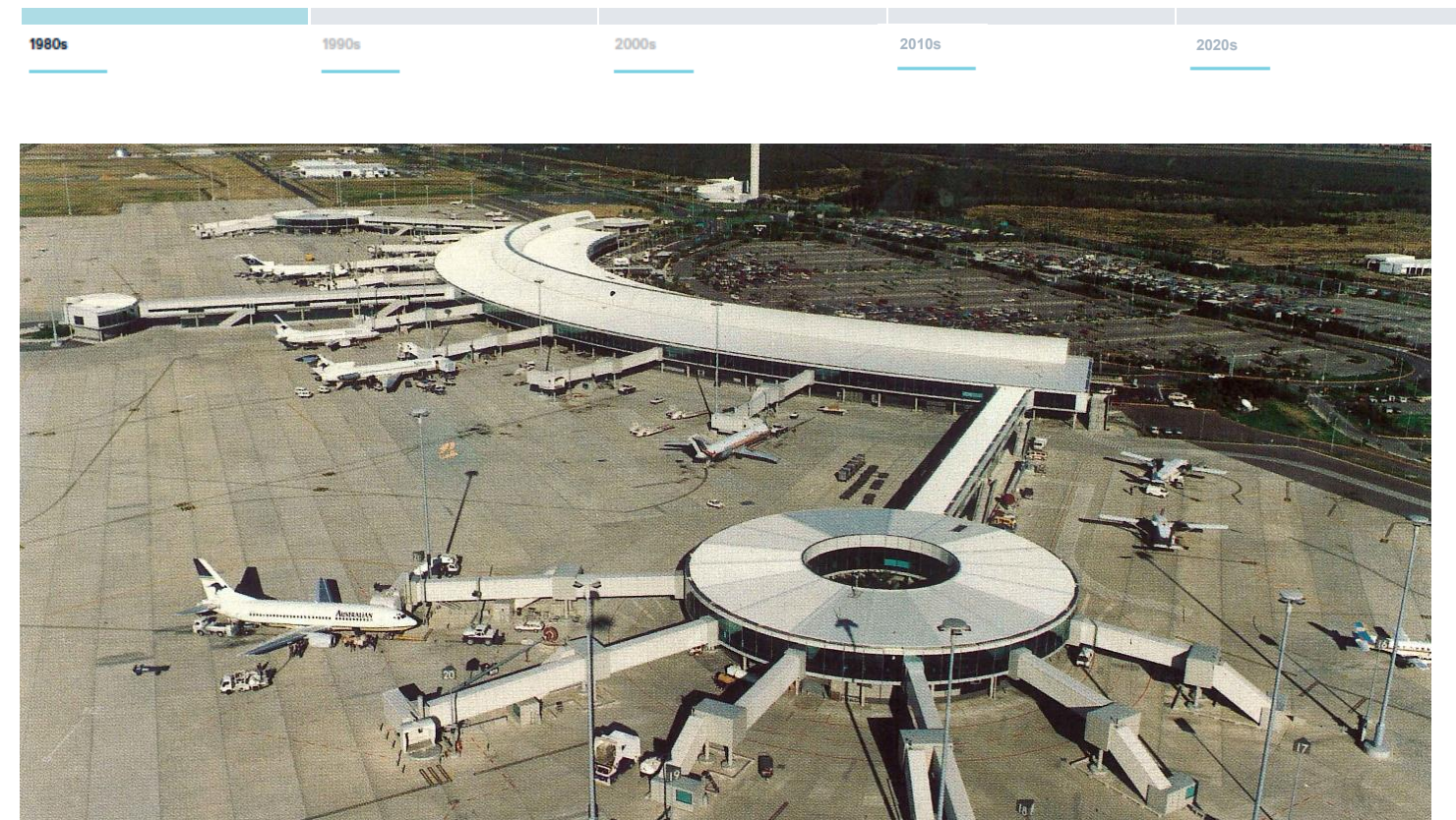
2. Programmed interventions: Seek to further reduce risks for passengers through greater flexibility and adaptability with day to day operations. These interventions are intended to be programmed for particular circumstances, such as a pandemic.

3. Policy interventions: Seek consistency and continuity in decision making from government, encouraged to come in the form of a nationwide approach to managing travel, whilst respecting risks and the community's health.

The intervention ideas present a potential future state for an airport that aims to provoke discussion between planners, architects, operators, government and airlines.

For Brisbane Airport, this work will help to inform a new strategy and act as a catalyst for an updated plan, called Future BNE.

Images: Two photos of Brisbane's first terminal, now known as the Domestic Terminal. The first photo, the terminal in 1989, accommodated approximately 5 million passengers. The second photo, the terminal in 2019, accommodated 17.6 million passengers.



INTRODUCTION

Last year, when the world was enjoying normality, 4.5 billion passengers took to the skies. Over 100,000 commercial flights a day provided choice and connections across the globe (The Economist, 2020).

As a consequence of the evolving and unpredictable travel restrictions, the International Air Transport Association (2020a) regularly downgrades their expectations of full-year 2020 traffic. CNN Business recently reported that the pandemic is set to cost the airline industry \$157 billion, down from the June estimate of \$100 billion (Horowitz, 2020).

The significant reduction in passenger and aircraft volumes has required airlines and airports to become more industrious. At Brisbane Airport, passenger planes were temporarily used solely for freight, aprons as aircraft parking lots and a new online retailer emerged, BNE Marketplace, to help airport tenants sell their stock whilst passenger numbers were low.

The pandemic has also completely changed the current operations of airports and has resulted in airport staff, health workers and police, all kitted in personal protective equipment, to greet departing and arriving passengers. Most airport retailers have temporarily closed their doors due to the lack of foot traffic, making for an eerie emptiness. Out the front of the terminal, the kerbside roads functioned with an uncharacteristic flow during peak hours.

Like all airports around the world, the affability and warmth of Brisbane Airport temporarily vanished during the peak of COVID-19.

Whilst Australian airports are now on the road to recovery and the happiness is slowly returning, there are questions about how we can promptly exit the situation caused by the pandemic and better prepare for the next interruption.

Is it possible to have less disruption and more continuity during a pandemic? Can the accustomed pleasant airport experiences continue regardless of the perceived health risks?

The intent of this research paper is to inspire thought and provide ideas to support passenger facilitation during a pandemic. All with a focus on keeping passengers safe and encouraging more people, including the Reluctant Middle, to get back into the sky.



WHAT CONSTITUTES PASSENGER FACILITATION?

For the purpose of this paper, passenger facilitation consists of all air travel-related activities between the time of booking a flight to the time of arrival at the final destination. Whilst passenger facilitation requires effective coordination between the airlines, government, service providers, infrastructure owners and technology companies, this paper will focus on the role and influence of the airport.

WHY IS IT IMPORTANT TO HAVE A STRATEGY FOR ALL CIRCUMSTANCES?

For most airports around the world, over 55% of their revenue comes from passenger fees and charges, whilst the remainder comes from retail, car parks and other operational activities (Airport Council International, 2020). These traditionally safe and consistent revenue streams have temporarily dissipated, resulting in tens of thousands of jobs being lost, businesses becoming insolvent and the creation of new debt facilities to keep the lights on.

Earlier this year in Australia and New Zealand, S&P Global downgraded the credit rating of Melbourne Airport, Wellington International Airport and Christchurch International Airport. In recent judgements about airports globally, Standard and Poor's have noted that they expect airports to operate with "weaker metrics for the foreseeable future" and questioned their ability to raise charges whilst airlines are not profitable (Kemp, 2020).

Despite signs of life, particularly on domestic routes in Australia, America, Europe and China, the outlook remains uncertain (The Economist, 2020). It is anticipated that it will take four to five years before passenger numbers recover to pre-COVID levels at Brisbane Airport, in line with industry outlook. What is clear is that any sustainable recovery requires passengers to be and feel safe at airports, regardless of the prevailing health risks.

Whilst safety is and always will be paramount, it should not be to the detriment of airport ambience and the sense of enjoyment it can offer. If a space is not loved, it will not get used to its fullest. Enhancements to passenger facilitation that respond to a pandemic must also be supported by initiatives that continue to make air travel and lingering in airports desirable.

Furthermore, airports play a crucial role in the economic development and sustainability of the region's that they support. Prior to COVID-19, the total economic contribution of Brisbane Airport was set to grow from \$4.7 to \$8.7 billion by the year 2040. This contribution is the jobs and economic activity created from the ongoing capacity investment.

Less passengers and flights mean that there is reduced expenditure and investment in the region, which has a detrimental impact on the local economy and jobs.

Image: Average passenger aircraft spend for flights arriving at Brisbane Airport (Brisbane Airport Corporation, 2020)

AVERAGE PASSENGER AIRCRAFT SPEND

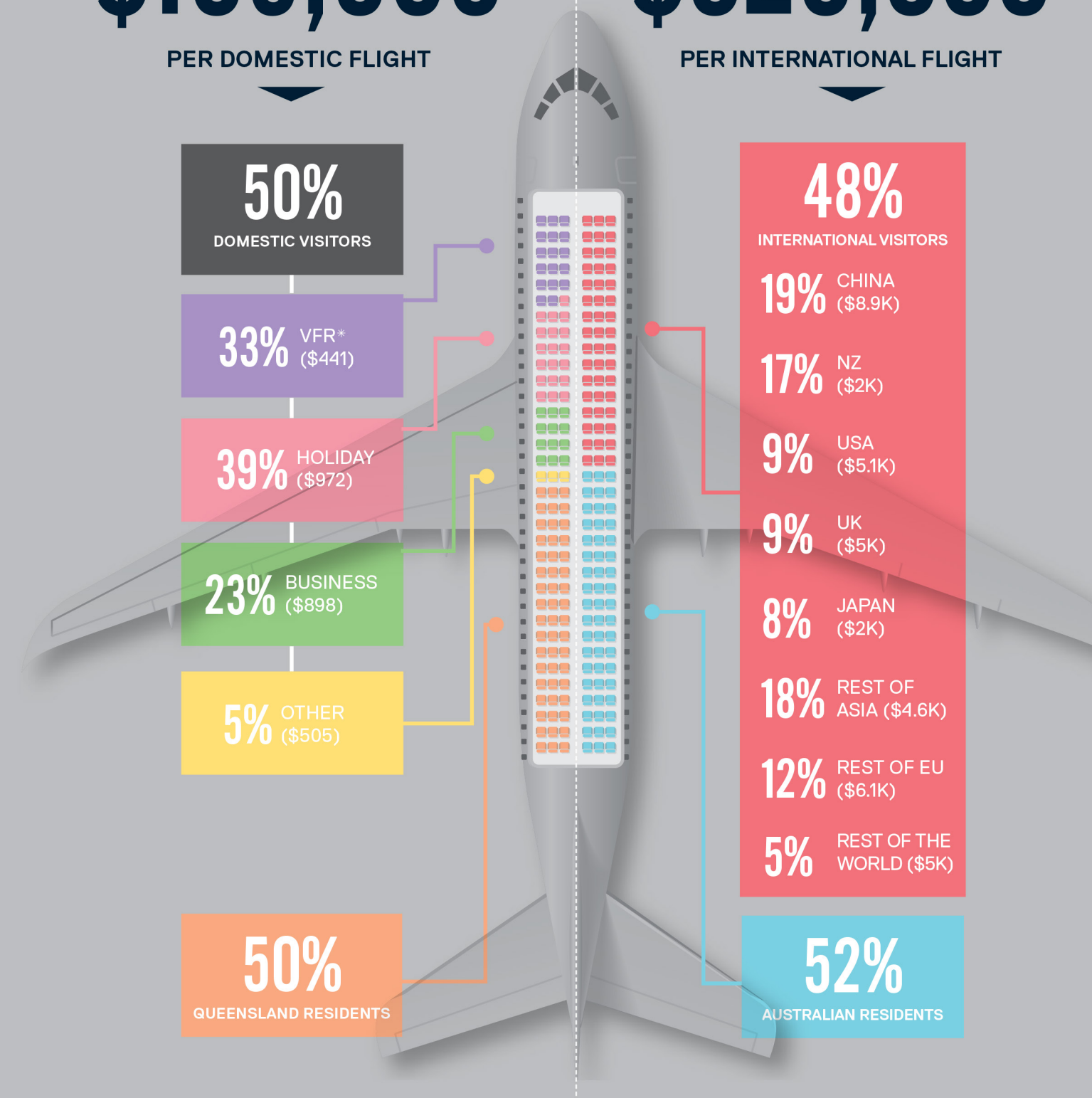
2018-2019

\$105,000

PER DOMESTIC FLIGHT

\$620,000

PER INTERNATIONAL FLIGHT





STRUCTURE OF THE PAPER

Whilst journeys to and through airports have similarities, the first section of this paper maps the journey of a passenger as it relates to Brisbane Airport, identifying the changes that were adopted in response to COVID-19. The journey map provides a framework for the exploration of opportunities for future improvement.

This initial analysis is followed by an examination of case studies and exemplars from around the world. The case studies and exemplars explore three types of interventions that could enhance passenger facilitation during a pandemic and improve the overall customer experience. Importantly, each of the interventions are designed to provide greater confidence to the Reluctant Middle.

1. Design Interventions: Interventions to the built environment at the airport, which promote an improved experience for passengers, visitors and staff, regardless of the prevailing health risks. These will include ideas for the terminals and transport infrastructure.

2. Programmed Interventions: Interventions that are programmed for particular circumstances, such as a pandemic. This will include ideas for risk management and the repurposing of infrastructure.

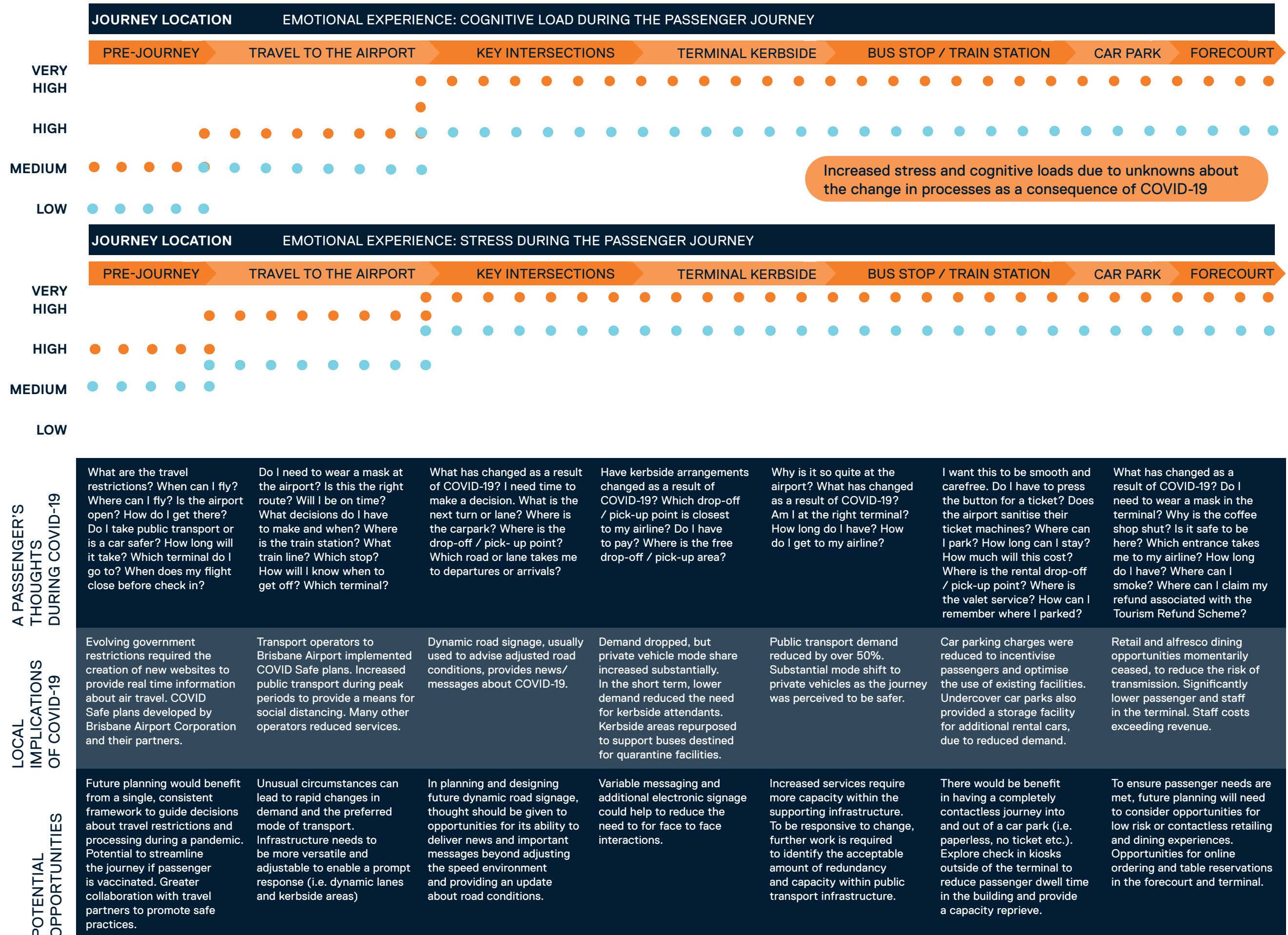
3. Policy Interventions: Interventions that are necessary to support travel and regain confidence. This will reinforce the need for governments to work together at all levels to develop consistent policy frameworks.

The categories are intended to be complementary and create a stronger vision for an improved and safer passenger journey.

The final section of the paper concludes with a short set of recommendations for advancing the ideas that were shared in the preceding section.

JOURNEY MAPPING UNDER PANDEMIC: TRAVEL TO THE TERMINAL

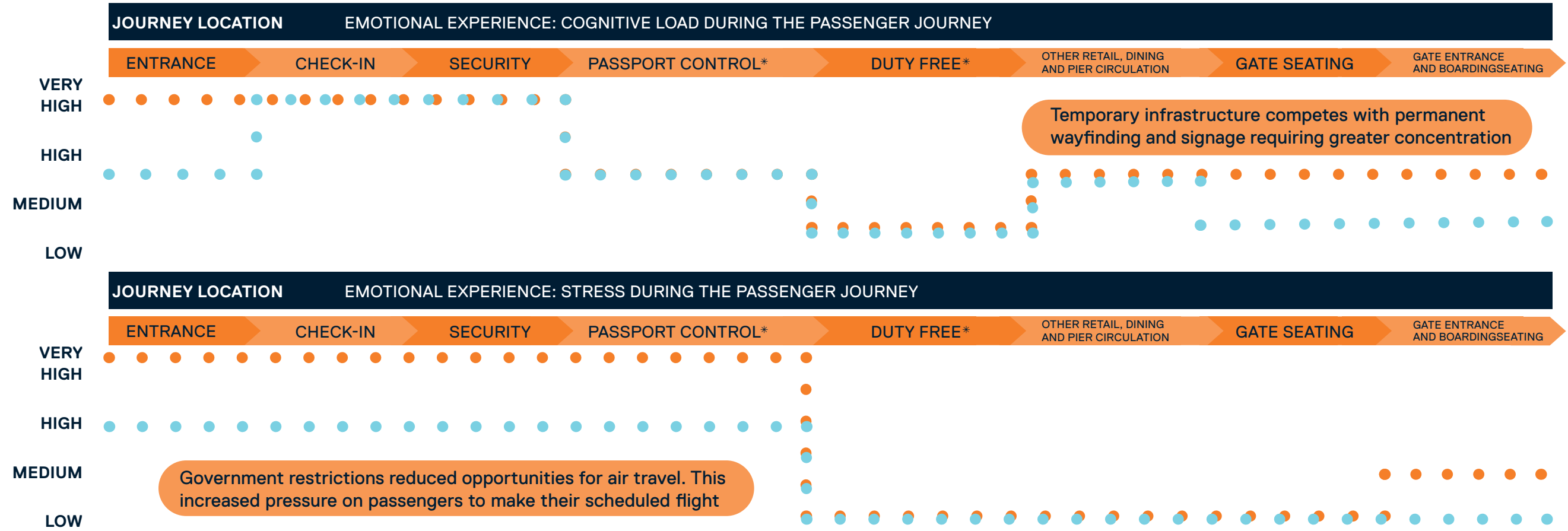
● NORMAL
● DURING COVID-19



*INTERNATIONAL ONLY

NORMAL

DURING COVID-19



A PASSENGER'S THOUGHTS DURING COVID-19

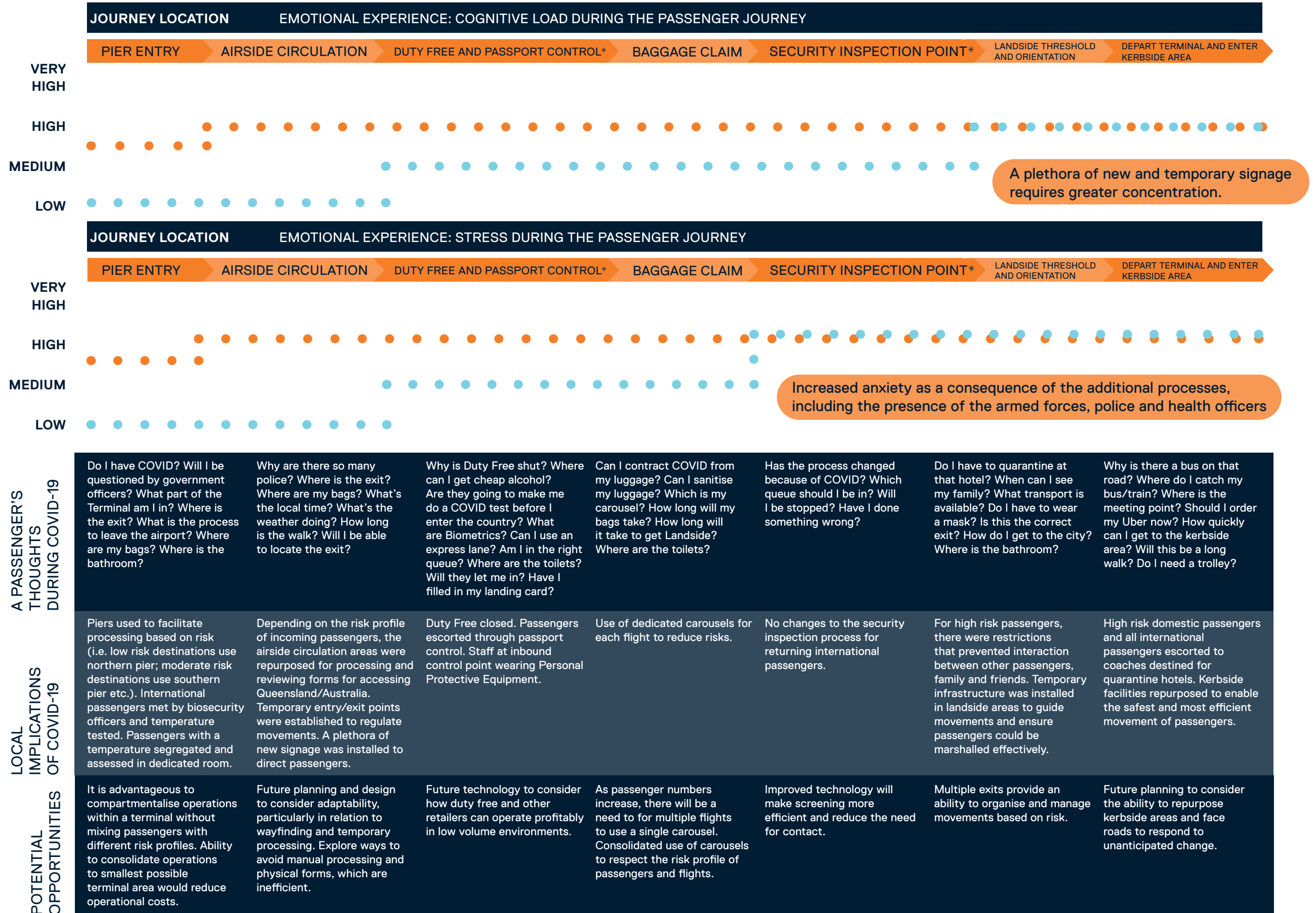
LOCAL IMPLICATIONS OF COVID-19

POTENTIAL OPPORTUNITIES

Why are some people wearing masks? Why are there more police than usual? Am I getting too close to other passengers? Where am I going next? Is this my entrance?	Where is my airline? Do they have COVID-19 requirements that I don't know about? Who can I ask for help? Can I check in without needing to interact with others? Do they sanitise the self-service check-in machines? If someone takes my bag, is it COVID Safe?	Where are the dots for me to stand on? Have these trays been sanitised? Which queue should I be in? Will there be a problem? Will I be searched? Why is this taking so long? Will I miss my flight? Can I take my water through here?	Am I going to be asked COVID related questions? How long will this take? Will the shops be open? Why is that person jumping the queue? I hope I filled the form out properly? Will there be a problem?	Why is Duty Free closed? Where will I buy gifts? Where are the gates? Where are the toilets? How long will it take to get to my gate/do I have time to shop? Where do I get my currency and tax refund?	Why are the retailers closed? Where can I get food? How much time do I have now? Where is my gate and how long will it take to get there? Where is the lounge? Do I have time to go to bathroom? What is the flight status?	Are these chairs clean? Can I find a seat that keeps me away from others? Can I see my flight information? What is my flight status? When do I need to head off? Will my flight be called on the PA? What time will we be boarding?	Do I have to wear a mask? Will I be sitting next to someone? Which queue do I join? Will this new app work or should I get a ticket as well in case? Why am I having to wait? Are we going to leave on time? Will there be room for my overhead bag?
New signage installed about BNE COVID Safe practices. Hand sanitiser dispensers installed at every entrance. Australian Border Force review exemption certificate for international travel, due to ban.	Domestic passengers encouraged to check in on mobile devices. Some industries, such as mining, established health screening facilities in the terminal.	Security trays cleaned after use. Security officers employed Personal Protective Equipment to reduce contact with passengers.	Limited outbound travellers reduced staffing requirements at the outbound control point.	Reduced passenger volumes led to an oversupply of retail stock. Brisbane Airport established an online marketplace (BNE Marketplace) and leveraged our database to facilitate sales.	Retail and alfresco dining opportunities momentarily ceased, to reduce the risk of transmission. Food options were generally limited to Grab and Go, to expedite the dining experience.	Furniture was reorganised or restricted to provide for social distancing.	For international flights, passengers required to wear Personal Protective Equipment. Personal Protective Equipment was not mandated on domestic routes.
Dynamic signage is more adaptable and responsive than traditional static signage. Opportunities to replace static signage with electronic signage should be explored through future projects.	Future planning to consider spaces that can be repurposed based on circumstance. There is a reduced need for self-service check in facilities – how can these spaces be used better. Focus on the better use of touchless technology.	Removing electronic devices from bags presents increased risks and delays at security. New scanners, such as computed tomography, have the ability to increase efficiency and reduce risks. UV-C light could form part of screening processes to disinfect luggage.	Limited passenger demand resulted in terminals being underutilised. Opportunity to consolidate activities into a single terminal or smaller space, without compromising passenger safety.	It is possible that the online marketplace will need to be supported by new pick up facilities in the terminal, particularly for duty free.	To ensure passenger needs are met, future planning will need to consider opportunities for low risk or contactless retailing and dining experiences.	Permanent built in furniture presents challenges for social distancing. In planning and designing spaces to marshal, loiter and rest, there is a need to consider flexibility and adaptability to provide for new or temporary functions.	Seek greater efficiency through biometrics and paperless processing.

*INTERNATIONAL ONLY

● NORMAL
● DURING COVID-19



INTERVENTIONS TO RESTORE THE CONFIDENCE OF PASSENGERS

As part of mapping the passenger's journey at BNE during the pandemic, several potential opportunities were identified. The potential opportunities provided a catalyst for conversation with airport staff and partners about case studies and exemplars from around the world, as well as ideas for improvement.

The case studies, exemplars and ideas in the following section explore the types of interventions that could enhance passenger facilitation during a pandemic and improve the overall customer experience – all with the intent of restoring confidence in air travel.



DESIGN INTERVENTIONS

01 Testing Facilities

Case Studies: Dublin, Ireland; Miami, United States of America

One of the greatest barriers to air travel is the risk of transmission and further contagion.

In terminal testing is not ideal, given the risks associated with interactions on the journey to and at the airport. There are further questions about who should wear the costs of the tests.

As technology improves, rapid testing will become more available and cost effective. In high risk environments, effort should be made to promote testing prior to travel.

As an example, Dublin Airport has established two coronavirus laboratory and test centres. These facilities are operated by two private companies. One has been established as a walk-through facility in a building near Terminal 2 multi-storey car park. The other a drive-through in the Express Green car park (BBC News, 2020).

Subject to agreements, test results could be shared with the passenger's destination. A negative test result could enable the passenger to avoid the quarantine period. This is currently being trialled at Miami International Airport by American Airlines for passengers travelling between the United States of America and Jamaica (Moody, 2020).

As part of future planning, thought should be given to how remote car parks and remote buildings near terminals could be repurposed to facilitate testing during a pandemic, particularly if testing could be quick and cost effective.

02 Dynamic Lanes and Kerbside Areas

Case Study: Melbourne, Australia

In a pandemic, operational changes need to be accommodated at short notice.

Similar to the challenges within the terminal, it can be difficult to adjust signage and wayfinding on the approach roads and at the kerbside areas to articulate changed conditions.

Dynamic electronic signage has the ability to be repurposed as required and supports consistent messaging during a pandemic. Importantly, if desired, the signage can direct coaches for passengers that will be quarantined to locations that limit interactions with other passengers.

As an example, Melbourne Airport recently installed a 26m electronic sign as part of their Dynamic Lane Allocation Project. The sign is capable of nominating lanes and their use as the airport sees fit (Donald Cant Watts Corke, 2020).

Future planning should seek to install infrastructure that provides flexibility and enables airports to be adaptable. A movement away from static signs and billboards provides these advantages.

03 Public Transport Demand Management

Case Study: Brisbane, Australia; Sydney, Australia

Over the last six months, public transport patronage has reduced by approximately 50% in Brisbane.

Some staff and passengers are reliant on public transport to get to and from airports. To facilitate safer movements and increase confidence, effective physical distancing on buses and trains is important.

To promote physical distancing, in Sydney, real time seat availability was shared with commuters on Waratah trains. Occupancy is calculated using carriage weight data that is derived from in-built sensors under the axle of each train. This allows passengers to pre-empt possible crowding.

In Brisbane, despite the substantial decline in passenger numbers, public transport services were increased during peak periods. The intent was to provide greater confidence to commuters.

04 Windows Up Car Parks

Case Study: Hyderabad, India

To reduce the risk of transmission, efforts can be made to reduce contact with surfaces.

In an effort to remove the need to receive a parking receipt at entry or make cash/credit card payments at the exit, Hyderabad Airport currently provides customers with a reloadable electronic Radio Frequency Identification tag, which enables automatic deduction of applicable parking charges upon exit (Business Traveller India, 2020).

Whilst there are still issues with the accuracy of Automated Licence Plate Recognition cameras, there will be a future opportunity to leverage this technology and facilitate online payments for registered customers. This would replace the need for a Radio Frequency Identification tag. This advancement could be combined with parking assist technology to facilitate a more efficient and completely contactless journey for customers.

05 Biometrics

Case Studies: Dubai, United Arab Emirates

As contactless processing reduces the risk of transmission, the development of supporting technology is likely to be accelerated over the coming years. Furthermore, these processes provide convenience for passengers and an ability to reduce costs for airports and airlines, increasing their value to all stakeholders and partners.

At Dubai International Airport, Emirates is facilitating a contactless passenger journey through face and iris recognition technology. Building on the success of the "smart tunnel" project, the scans take place at check in desks, passport control, lounges and select boarding gates.

Other airlines, such as Delta, Jet Blue, American Airlines, British Airways and Air Asia are also employing biometric technology at select boarding gates.

Whilst biometric technology will inevitably be used at all airports, it is currently unclear how the required data should be owned and managed. IATA's One ID travel token is one option. Regardless of the steward, effective government regulation and oversight will be required to ensure biometric information is employed responsibly.

06 Contactless Feedback Technology

Case Study: Atlanta, United States of America

Feedback technology has become an invaluable resource to airports. It is increasingly being employed to effectively respond to sanitation issues in bathrooms and better understand perceptions of the performance of different facilities.

Whilst many airports collect data in real time using interactive touch screens, Hartsfield-Jackson Atlanta has recently introduced contactless feedback technology. The contactless feedback technology asks customers to show a thumbs up or thumbs, depending on the experience.

07 Better Retailing

Case Studies: Brisbane, Australia; Seattle, United States of America

During the pandemic, there was a period when most airport retailers closed their doors. This significantly impaired the enjoyability of the passenger journey and the profitability of the airport's tenants.

The future of airport retailing, which presents a more sustainable operation during a pandemic, may look like Amazon Go, originally established in Seattle, Washington. It is a completely contactless experience, where a customer scans their app as they enter the store, picks up items as they see fit, and then walks out without the need to go through a check out.

The contactless retailing experience is likely to be enhanced by online airport marketplaces that enable a passenger to shop before and after their visit to the airport. Brisbane Airport recently established BNE Marketplace, which has provided a source of revenue for airport retailers whilst passenger numbers are low.

Future airport planning will need to consider an effective allocation of floor space to support click and collect shopping. To encourage shopping at multiple airport stores, this may benefit from being centralised. Melbourne Airport's recent introduction of a new locker service for Coles, provides a contactless option for collecting groceries, which have been ordered prior to arriving at the airport.

08 Sanitation Station

Case Study: Amsterdam, Netherlands

Airports around the world have intensified cleaning regimes and introduced various opportunities for passengers to sanitise and disinfect.

The need and effectiveness of the efforts depend on the risks to passengers and the operations being facilitated by the airport.

As an example, Schiphol Airport recently introduced a Sanitation Station. The stations can be found in between Arrival Halls 3 and 4 and in Lounge 2. They include hand sanitiser, disinfectant wipes, hand cream and UV-C light to disinfect passenger belongings (O'Leary, 2020).

PROGRAMMED INTERVENTIONS

09 Flexible Terminal Operations

Case Study: Adelaide, Australia; Melbourne, Australia

To improve passenger confidence, there is value in reducing movements and touch points. As an example, both Adelaide Airport and Melbourne Airport use swing gates that can facilitate both domestic and international travel, optimising gate capacity at the one terminal (One Mile at a Time, 2018).

Whilst swing gates are not the only infrastructure response that provides this capability, there is a need for a programmed solution that enables operations to be consolidated during particular circumstances, such as a pandemic.

Future terminal design should consider the ability to consolidate operations as a risk management response during unusual circumstances.

10 Flexible Slot Management

Case Study: China, Brazil, Mexico, Singapore, Australia and New Zealand

Airport slots are normally a solution to an airport's lack of capacity. Annually 1.5 billion passengers depart from a slot coordinated airport, which accounts for 43% of global departing passengers (International Air Transport Association, 2020b).

A number of governments have established the 80-20 'use-it-or-lose-it' slot rule. This provides a framework for expectations during normal conditions, but challenges during a pandemic.

Many governments, such as China, Brazil, Mexico, Singapore, Australia and New Zealand, were early in waiving slot requirements for the Northern Winter 2021 (International Air Transport Association, 2020c).

Flexible slot management during periods of reduced demand is important to support the optimal functionality of terminals and airports generally.

11 Awareness Campaigns

Case Study: Brisbane, Australia; Changi, Singapore

The value of any intervention is devalued if prospective passengers are unaware of the efforts being made by an airport or their partners.

Brisbane Airport recently ran an extensive awareness campaign with travel partners. The campaign targeted the Reluctant Middle and armed them with detailed information about the efforts being made by the airport and local airlines to manage risks. The campaign included awareness videos, dedicated collateral, updated pages on websites and social media blasts.

To ameliorate passenger concerns and address questions, Changi Airport established an easy to navigate Information Hub that was promoted online. In addition to outlining the efforts that were being made at the airport, the Information Hub consolidated news sources and included links to relevant government sites (Changi Airport Group, 2020).

POLICY INTERVENTIONS

12 Nationwide Safe Travel Framework

Case Study: None Found

The inconsistent and reactive State border restrictions within Australia is the most significant impediment to deciding to travel.

At present, regulations enable the various State governments in Australia to manage their borders as deemed necessary. During the pandemic, the status of border opening and closures has changed at less than 24 hours' notice. This lack of certainty presents a challenge for airports, airlines, and passengers alike.

Like other countries, Australia would benefit from a nationwide approach to managing clusters of COVID-19 to prevent such disjointed reactions and the resulting traveller uncertainty. This would support business and the community confidence, noting that while their health is being protected, their livelihoods are also being prioritised.





RECOMMENDATIONS AND CONCLUSIONS

COVID-19 has reminded airports of the value of risk-based management practices.

Despite the ongoing pandemic, Brisbane Airport has supported thousands of domestic and repatriation flights without being the source of a single community transmission.

Regardless, there are members of the community that are currently uncomfortable with the prospect of a journey to or through an airport, however, they could be swayed to travel should they deem the journey safe and reliable – the Reluctant Middle.

The Reluctant Middle must be the focus of interventions that seek to enhance and promote a passenger's confidence. The highest yielding investments are likely to come in the following form:

1. Address risks associated with reactive travel restrictions: Traveller uncertainty will prevail until a nationwide approach to managing clusters is adopted. Transparency and consistency with government decision making will be integral to improving community confidence with air travel.

2. Address perceived risks with the journey through the airport: Improved processes to reduce human interaction and an enhancement to sanitation services are likely to offer increased value to airports. Investments in contactless processes, will not only address perceived risks but also improve the efficiency of the terminals, creating more space for physical distancing. These should be pursued without hesitation.

3. Address the disincentive associated with quarantine: Pre-travel testing has the ability to provide greater confidence to governments and communities about a passenger's health condition. Arrangements that enable a passenger to avoid quarantine will likely significantly increase the attractiveness of air travel.

4. Address traveller uncertainty through effective communication strategies: Airports and airlines have gone to great lengths to improve safety and reduce the health risks associated with the pandemic. A collaborative approach to share each other's message and efforts will help improve confidence and reduce uncertainty.

The number and breadth of interventions required to improve passenger confidence demonstrate the complexity of the situation and its relationship with the airport environment. It also highlights the need to engage actively with all stakeholders to ensure interventions are timely and coordinated.

To advance the interventions that have been explored in this paper and persuade the Reluctant Middle to get back into the sky, there is a need to plan for the future in a different way.

For Brisbane Airport, the strategy to influence the Reluctant Middle and prepare for the next pandemic will be part of the focus of an updated plan – Future BNE.



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