Thoughts on the postpandemic new normal in air travel

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Abstract

The coronavirus disease-2019 pandemic will compel permanent transformation of the travel industry and its aviation sector. Key disruptors emerging from the pandemic will include:

- *Behavioural changes of the traveling public*
- *Increased fear of contracting the virus during travel*
- *Continued uncertainty as to when an effective vaccine will be available, if ever*
- *Severe global economic downturn*
- *Revised procedures to be introduced at airports and onboard aircraft that increase the inconvenience of air travel*

While the immediate effects of the pandemic may be temporary, interaction with more strategic factors, such as globalisation and the digital economy, could result in disruption of the air travel sector. Issues addressed in this paper include:

- *Aviation-industry recovery and changes to the business model*
- *Need for regulatory change*
- *Inherent uncertainty in forecasting*
- *Impact on airport operations and development*

This paper explores the impact of these factors and how they could permanently transform the air travel industry, and how the trends of global digitalisation present a unique opportunity to reinvent the entire aviation sector business model as well as the end-to-end travel experience To achieve this will require meaningful collaboration of the digital technology and air transport sectors to drive innovation and transformational change in response to this challenge for society.

Keywords

digital, transformation, passenger, experience, trusted, platform

INTRODUCTION

While we are in the midst of a global pandemic, which is having a catastrophic impact on the aviation sector, it is worth reflecting on the potential outcomes and effects the coronavirus disease-2019 (COVID-19) crisis may have on air travel in the longer term. Historically, air travel has been vulnerable to external factors, such as oil crises, natural disasters, armed conflict, global terrorism and economic downturns, but the sector was able to eventually recover to precrisis activity and growth levels. Notably, the 2019 International Air Transport Association's (IATA) pre-COVID forecasts predicted a doubling of air traffic by 2030. The key questions are whether this crisis will force fundamental changes to the air travel sector and what the recovery will look like.

This is a global health crisis that has rapidly driven global economies into recession, forced border closures and lockdowns, and significantly increased unemployment. Contact tracing, social distancing, mask wearing and hand washing are common responses to minimise contagion. In addition, health officials are concerned about the possibility of second and third waves of the pandemic resulting in further quarantines and lockdowns. As air travel requires human beings to sit or queue for long periods, in close quarters, there is going to be a natural fear of close unprotected contact that could limit any recovery until an effective treatment or vaccine for the disease is widely available.

In addition, the pandemic is resulting in behavioural changes that could have long-term effects on all forms of human interaction. First, forced lockdowns have resulted in a grand experiment in 'work from home' and widespread use of videoconferencing and telecommuting that may result in a major shift in business travel behaviour. Employers have already concluded that working from home brings them benefits as they need less offices and can staff outside major urban centres, translating into lower overheads. Finally, influences such as climate change and the so-called Greta-effect are expected to affect the overall recovery of air travel in general.

Although there are many recent forecast predictions on how the recovery may unfold, the challenge to both airlines and airports is how to make any effective decisions with the current uncertainty.

As Paul Griffiths, CEO of Dubai Airports recently stated,

> *Social distancing in the longer term is not going to be sustainable from an economic or a social perspective. We really need a breakthrough in a vaccine or treatment or a very clever digital platform that will allow us to instantly track. It is inexcusable that we were not better prepared. In the long-term we will have a digital biometric passport that we carry around with us in the cloud that we can demonstrate at all points in the journey that we are medically fit to travel without being a hazard to anyone else.*[1]

THE PREVACCINE ERA

At the time of writing (August 2020), we are in the early stages of emerging from the initial pandemic wave. To date, there have been 25 million cases reported globally with almost 850,000 deaths.[2] Although there is a massive effort by governments and the pharmaceutical industry to create a vaccine, the process is rigorous, time consuming and not guaranteed to be successful in the foreseeable future.

Until there is a vaccine available and effectively distributed on a global basis,

we will remain in this pre-New Normal environment. There are a number of factors that will inhibit recovery due to the pandemic including:

- Travel health risk and uncertainty as to when a vaccine will be widely available
- Travel restrictions in different parts of the world
- Fear of travel attitude linked to high death toll from COVID-19
- Deep global recession

The air transport industry is in a dire situation. Initially there has been some government economic assistance, aimed at reducing the impact of a global recession and job losses, and in the case of airlines, to help them survive the immediate crisis. European airlines have sought over €32bn in government relief since the beginning of the COVID-19 crisis in the form of loan and credit guarantees. In the United States, the airlines received $25bn in grants and loans. But these are temporary measures that cannot be sustainable. IATA estimates that airlines globally will lose at least US$314bn due to the outbreak. We have already seen some of the weaker airlines go into bankruptcy and there will likely be more, further increasing overall uncertainty on how the world may look in the New Normal.

Guillaume Faury, chief executive officer of Airbus, stated that the pandemic is the 'gravest crisis the aerospace industry has ever known'. In Europe, for example, there were 80 per cent fewer flights reported as of June 2020, compared to same period in 2019.[3] Although travel restrictions are being lifted in many parts of Europe, there remain conflicting travel requirements and quarantine policies between countries.

IMPACT ON AIRLINE INDUSTRY IN THE NEAR TERM?

The impact on the airline industry near term is unpredictable because the airlines are unable to operate in a 'steady state' until borders across the globe fully open. This makes it difficult to forecast operations and develop an effective network strategy. The result is that a significant amount of the global airline fleet is currently inactive, which is unsustainable.

Network megacarriers relying mostly on long-haul flights, channelled through major hubs, face the biggest challenge and an uncertain future. Fewer long-haul trips, with travellers shunning crowded transfer areas, will trigger a significant downsizing of airlines and wide-body airplane orders, with major airport projects being put on hold and re-evaluated. Short-haul flights, already under attack pre-coronavirus from the flight-shaming movement, could see the shift of travellers towards lower carbon-emitting transport means like high-speed trains.

While widespread border restrictions remain, low-cost carriers (LCCs) lacking large domestic markets will be forced to rethink their business model. Their strategy of squeezing as many passengers as possible on aircraft to generate high load factors may become unsustainable. In addition, hygiene requirements to disinfect aircraft on each turnaround will impact the fundamentals of the LCC business model where quick turnaround times (30 minutes or less) are required. Given many negatives for air travel — such as environmental, well-being and passenger experience factors — certain categories of traveller will likely become more discerning in their travel choices.

The question will be whether the travel experience will be more difficult

and time-consuming, and therefore deter people from flying. Will the airline fare be so high as to reduce demand or will customers be flight shamed and stay at home more? Will flying be a special occasion treat or a compelling business requirement rather than something people do without a second thought? These all remain unanswered questions contributing to the uncertainty of what the recovery will look like.

OUTDATED REGULATORY ENVIRONMENT

The air transport sector works within a regulatory system, set up in 1946, largely on mercantile rules, that resulted in the Chicago Convention. The primary thrusts of the Chicago Convention are global regulation and coordination, by The International Civil Aviation Organization (ICAO), of standards and recommended practices on aviation safety and security including pandemics. Although ICAO and the World Health Organization (WHO) issued warnings, the initial global response to COVID-19 by governments failed to adopt appropriate measures to minimise the spread of the disease. There has not been a universal response, and each government acts in its own self-interest.

This raises the issue of the regulatory system's effectiveness and suggests an urgent need to rebuild its confidence and authority. Certainly, this crisis will serve as a wake-up call for a new regulatory order that is responsive to the aviation sector as well as the public in general. Central to this will be establishing protocols for safe travel during a pandemic. For example, ICAO[4] and other regulatory authorities have recently issued guidelines on health safety protocols to provide guidance for airport operators, airplane operators and national aviation authorities, as well as other relevant stakeholders as to how to facilitate the safe and gradual restoration of passenger transport. Although these guidelines are useful, it should be noted that their implementation is discretionary.

These European Union Aviation Safety Agency measures will be regularly evaluated and updated in line with changes in knowledge of the risk of transmission as well as with development of other diagnostic or preventive measures (including technological) and the evolution of the pandemic.[5] Longer-term global solutions involving health and vaccine certification will likely be required to instil greater confidence that it is safe to fly.

FORECASTING OR CRYSTAL BALL?

The COVID-19 pandemic is unprecedented when compared to prior crises that significantly affected air travel, such as the 2008/9 Financial Crisis, the severe acute respiratory syndrome and 9/11. These crises generally resulted in a V- or U-shaped recovery that was relatively fast and allowed the aviation sector to recover to precrisis activity levels. Unfortunately, we are currently in a deep crisis and downturn whose duration is unpredictable. There are hopeful signs of recovery as travel restrictions are being lifted in certain domestic markets and travel 'bubbles' being created. At the same time there are, however, signals of second waves and emerging 'hot spots' as well as countries, such as the United States and Brazil, who have not been able to reduce infection rates.

Certainly, there will be an inflection point where either a vaccine is developed and effectively distributed

or the human population manages risk to instil sufficient confidence to travel. This inflection point will be the defining moment of the New Normal. For example, IATA has recently published an outlook for the next five years predicting that global revenue passenger kilometers (RPKs) may recover to 2019 levels in 2023, two years later than the projected level of 2019 gross domestic product recovery in 2021. More importantly, the return to the growth starting point post COVID will be at a lower level with global RPKs forecast to be 32–41 per cent below expected (pre-COVID) levels in 2021.[6]

IATA also projects that the average trip length will fall sharply, with short-haul domestic markets opening first. In addition, international RPKs will trail domestic such that international activity may not recover to 2019 levels until 2023–2024 at the earliest.

Although many industry experts have hopeful predictions of recovery in a two to three-year time frame, these are simply optimistic views that people will feel sufficiently safe to fly and that airlines and airports will have sufficient resources to survive and meet the recovered demand. Critical to understanding and managing the recovery, the use of short-term, scenario-based planning, analysing key recovery inputs and assumptions, such as short-term trends, regional caseloads, surveyed passenger willingness to travel, border openings and economic activity, will be important. These will need to be integrated with business models and facility requirements. For industry stakeholders, including airlines, this not only means bracing for challenging times and managing uncertainty, but is also an opportunity to restructure and come out of the crisis stronger than their competitors.

EMERGING FROM THE DEEP CRISIS

As the world progresses towards a New Normal, airlines will plan recovery from a strategic perspective, with clearly defined scenarios. They are likely to develop options with a clear set of triggers addressing demand change relative to health concerns and other trends, such as work from home. Will they change their business model and move away from targeting business traffic? Will lower-cost and more flexible LCCs and new entrants expand into markets vacated by higher-cost less-flexible legacy carriers? What does it mean for fleet, network, operations, the cost base and crisis resiliency in the long-term? These are the types of critical questions needed to establish an airline business plan for the New Normal.

Airports are operating in crisis mode and will likely to continue to do so until air travel starts to recover and they begin to move to a New Normal. The current focus is on:

- Preserving revenue and reducing costs
- Implementing responsive operational adjustments
- Alleviating slot-usage requirements
- Attracting and deploying emergency funding, where granted
- Waiving concession fee payments to governments, where applicable
- Deferring major capital programmes

One component of air travel demand that will likely be permanently impacted will be business travel. One of the most radical transformations in societal attitude in the 'work from home' experiment will be reduced business travel due to virtual meeting practices, supported by new corporate travel policies implemented to curb expenses. Although human-to-human contact

has been the basis of business since the dawn of man, it is inevitable that virtual meetings will replace many face-to-face meetings for people who do not live in the same city. The recovery in leisure travel will largely be dependent on the extent of the economic downturn and attitudes towards discretionary travel. But even when the requirements of social distancing and mask wearing subside due to a vaccine, this crisis will likely have a deep psychological effect as the traveling public will expect greater hygienic measures in place in aircraft, airports, hotels and ground access.

Paradoxically, the COVID-19 crisis and lockdown have certainly created one benefit, a reduction in fossil fuel emissions and cleaner air. No doubt this will be used by environmental lobbies to further build the case to take action on carbon emissions. In response, IATA is already calling on ICAO to use 2019 emission levels as a reference to determine the emission baseline in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). In addition, aviation de-growth initiatives such as flight shaming can be expected to increase. It is safe to say that a focus on the aviation contribution to climate change has been raised in human consciousness and will impact air travel growth in the future.

As we emerge from the deep crisis, while recovering demand levels will regenerate airport and airline business models in general, there are practical capacity and operational considerations as airlines begin to ramp up activity. As airlines prioritise desirable routes and timings, this will likely increase pressure on peak periods initially while off-peak traffic will remain dormant resulting in inefficient use of terminal infrastructure.

As traffic ramps up, the critical question for airports becomes how to maintain social distancing as traffic gets closer to pre-COVID-19 levels. For airport operators, the primary challenge will be to balance operating expenses against uncertainty of revenues and demand. Implementation of hygiene and safety measures, such as cleaning, temporary dividers, distribution of masks, will likely continue until we reach a New Normal. Ultimately, there should be a move towards wider use of mobile technology enabling automation, hands-free solution for the passenger processing touchpoints and virtual queuing to alleviate crowding.

From a longer-term perspective, airport management will be deferring and optimising large-scale capital programmes and revisiting their master plans. For example, Changi recently announced a two-year delay in their Terminal 5 programme to review its scale and design considering the COVID-19 pandemic. A recent Straits Times editorial stated:

> *Given the way in which the Covid-19 outbreak has changed the rules of the aviation game for the immediate future, it is essential to ensure that what was a necessity in pre-Covid times does not end up becoming a liability now.*[7]

Key considerations in revisiting an airport master plan will begin with a review of the forecast assumptions. Due to the unprecedented nature of this crisis, an alternative scenario-based approach would allow testing of the inherent flexibility of the master plan recommendations. As opposed to forecasts, scenarios-based analysis is an indication of possible paths or outcomes. Key analytical considerations should include:

- Geographical disparity of international/domestic passenger traffic mix
- Business and leisure traffic mix
- Difference in market size among regions
- Potential difference in resilience and speed of recovery
- Outbreak timing that impacts when traffic would bottom out
- Gap between what is scheduled and actual operations

With a scenario-based approach, planning of terminal facility requirements would be reassessed in anticipation of permanent requirements dealing with hygiene and solutions to avoid crowding. Airports will need to analyse and model their passenger-facilitation processes from terminal entry to aircraft boarding and from deplaning to terminal exit in anticipation of future pandemics.

OPPORTUNITY FOR CHANGE

The COVID-19 crisis has shown that the airport sector is not sufficiently resilient to major shocks, with sizeable fixed costs, limited operational flexibility, vulnerable passenger markets and certain carriers being placed in a precarious financial position. The aviation sector can be characterised as an adversarial stakeholder community, which is disaggregated with nonaligned business models, lacking global economies of scale and are risk averse, highly regulated and with cumbersome procurement processes.

There are no key aviation sector leaders with significant market share, who are organising things, setting standards and are invested in innovation to operate and build efficiently. At the same time, what the COVID-19 pandemic has exposed is that we are more interconnected than ever before, and that this connectivity is highly complex and central to our lives and economies.

The operating models and business cultures that have evolved from this adversarial relationship between airlines and airports are misaligned multilateral institutions that present significant challenges towards effective and collaborative transformation. This model is not aligned with the globalised world in which we live, and this failure of global governance has greatly aggravated the risk. The COVID-19 crisis should be a call to arms for both the airport and airline communities to start meaningful collaborative initiatives with the digital technology sector to learn from other industries and accelerate innovation.

LEVERAGING THE DIGITAL AGE

We are in the early stages of the digital age that has already upended commercial retail and the taxi and hotel industries (ie Amazon, Uber and AirBnB). Like all industries in the global digital economy, the aviation sector will need to be an active participant and proactively engage and embrace this change. Traditional aviation technology providers still operate and offer legacy technology solutions out of self-interest. Such traditional platforms inhibit innovation and lack the economic power to drive real change in the industry. The aviation sector now has an opportunity to move away from these legacy providers as it will be companies outside of the industry that drive this digital transformation.

For example, the COVID-19 crisis has exposed the fundamental flaws of the entire inventory distribution and slot capacity-allocation model used by the airline industry. Slot-allocation rules are

based on an airport-by-airport system using archaic seasonal-distribution models that result in overcapacity and an unsustainable business model in the long-term. On the demand side, traditional airline ticket sales channels have been under attack from online travel agencies, such as Kayak, Expedia and Priceline, and there is every reason to believe that this trend will continue. Passengers want a good price for an uncomplicated transaction and do not want to be artificially managed for the convenience of the airline and its complicated logistics or yield-management programme.

The new model will entail a combination of dynamic pricing and dynamic scheduling so that airlines supply capacity and connections as required to minimise wasted flight hours. For example, traditional flight schedule network-planning models and airport capacity slot-allocation processes could be challenged by a new demand-driven bidding model for major city connections in which aircraft are deployed or connections planned to respond directly to booking demand rather than deploying capacity and trying to fill it. Certainly, rationalising capacity would have an added benefit of reducing the amount of carbon emissions overall while strengthening the viability of the airline business models.

Moreover, the important underlying trend driving success for major technology companies is their ability to manage and manipulate data to create products and services at a hyperpersonalised level on a global scale. It is now time to embrace and leverage this capability and develop effective solutions in air travel that can mitigate perceptions that travel is unsafe from a health perspective and offer a truly seamless end-to-end solution that offers wellbeing and encourages growth and resilience.

REALISING THE VISION FOR AN END-TO-END TRAVEL EXPERIENCE

Now is the time to reinvigorate efforts towards a true, end-to-end, seamless travel experience on a multiairport basis. Digital technology solutions already present the opportunity for consistent, touchless passenger terminal processes that can mitigate travel fears. Unfortunately, the air transport sector is highly fragmented and currently lacks the capability to offer an integrated, multiairport global digital solution sophisticated enough to manage the passenger from end to end. The necessary terminal interfaces, such as check-in, bag drop, security, passenger boarding and baggage collection as well as the transport mode selections to and from airports, could conceivably be fully integrated and optimised. This will require collaboration between technology providers, government agencies and the air transport industry, with data sharing to provide real-time digital solutions.

This integration can be achieved by looking at the travel process holistically and from a traveller's perspective. The industry needs to set aside the 20th century passenger terminal model with its inherent limitations and consider facilities development from a customer-centric perspective to reinvent the processes using available technological tools.

Fundamentally, the traveller is seeking a smooth, seamless and predictable transition from their home or office to an airplane and from that airplane to their destination. This includes:

- Predictable and reliable transportation to the airport

- A quick and uncomplicated handover of baggage
- A smooth, safe and predictable process through the airport to their airplane
- Confidence that their baggage will reach the destination
- Pleasant and interesting entertainment, food and beverage and retail options at the airport before the flight
- 'Fastrack' options for passengers who prefer to minimise their time at the airport
- Reasonable alternatives for getting baggage on arrival at the airport or final destination
- Quick and convenient access to ground transportation when leaving the airport
- Personalised and digital end-of-journey solutions to the final destination, be it home, office, hotel and beyond.

Certainly, there is already a drive towards the seamless travel experience, but the offerings remain disjointed, with little integration of the various products offered. One can book flights, hotels or rental cars online, but there is no interconnectivity between these activities on the day of travel and no linkage to the airport experience.

Individually, there are smart airport solutions being deployed at airports across the globe. An example is issuing facial-recognition tokens promoted by IATA (their ONE ID initiative) whose vision is

> *to create a streamlined, friction-free process that allows an individual to assert their identity, online or in person, to the required level, while maintaining privacy of personal data and enabling significant improvements to operational efficiency and security. The vision will be delivered through true collaboration between airlines, airport and governments.*[8]

Another notable initiative is the United States Customs and Border Protection (USCBP) biometric entry and exit initiative that has been deployed at many US airports and US preclearance facilities globally. This is a facial-recognition solution that permits seamless travel through the immigration process by leveraging mobile technology. USCBP's programme is a biometric identification service known as the Traveller Verification Service, which has the potential of creating a standard for identity verification between government and private sectors with far-reaching implications, if adopted globally. In short, your face becomes your passport.

Unfortunately, these efforts have been on an airport-by-airport basis to date, reinforcing the fragmentation of the travel experience and not offering the end-to-end travel solution that travellers seek.

THE DIGITAL PASSENGER

A bigger view of the digital passenger is needed to achieve a truly end-to-end seamless travel experience, available using the fundamental currency of the digitised world, data. The Big Data ecosystem involves trusted cloud-based digital platforms that potentially allow for collaboration towards shared goals. To work, data must be available and shared across all stakeholders. The ability to access, mine and analyse this data from the multiple sources will redefine the airport operational and business processes as well as create opportunities to delight the passenger.

The digital economy has the ability to redefine the relationship between the passenger and multiple aviation stakeholders, resolving the spurious contest between airlines and airports as to who 'owns' the passenger. In this digital age, it is the passenger who can take control.

Air travel will be dictated by their demands and expectations. For example, while airports have constructed terminal spaces as warehouses with forced shopping experiences while depriving passengers of flight information, the traveling public has turned to personally available data through apps, such as Google and Flight Aware. In response to the COVID-19 crisis, Google Travel is already offering up-to-date travel information amid the changing travel restrictions, including advisory alerts and related airline and hotel offerings. Most passengers do not yet realise the extent to which their travel experience could be revolutionised in the same way that consumers could not anticipate the degree to which smartphone technology would transform their lives.

Airports have the advantage of having a captive audience. Employing digital solutions and Big Data analytics could drive innovative retail business strategies; concession programmes could include more entertainment and amusement diversions, personal services and experiential stores rather than the traditional shopping mall model currently implemented.

REIMAGINING THE PASSENGER EXPERIENCE

The traveller's emotional journey is inexorably linked to the physical or process journey and that consideration is an important basis of the reimagined airport. As such, we need to apply the fundamental principles of customer experience to re-engineer the passenger terminal processes themselves. From a traveller's perspective, the airport experience is only one step in a continuum involving multiple interfaces and touchpoints in the journey from origin to destination. End-to-end travel solutions based on digital passenger-innovation use cases hold the promise to overcome the fragmented travel ecosystem and create a truly integrated experience driven by real-time data with the traveller in total control. To achieve this will require a new way of thinking about the traveller and their data.

A guiding principle needs to be established that the passenger owns their own data. Airline inventory and ticket purchases are based on Passenger Name Record (PNR), the fundamental building block of passenger data used for commercial purposes as well as to meet legal obligations for travel between member states for fighting serious crime and terrorist activity. The PNR is a record in the computer reservation system (CRS) database that contains the individual passenger or group itinerary. The PNR concept was first introduced in the 1970s, by airlines to exchange reservation information for passengers on multiairline journeys. It is the airline that currently manages the passenger travel data. The airport does not have real-time access to this data or real-time connectivity to the passenger, and is forced to rely on passive tracking systems and historical data for the management of passenger facilitation through the terminal building.

With some exceptions, the PNR is managed by Global Distribution System providers who have become an oligarchy and see the PNR as a major unique selling point and profit centre. There is no general industry standard for the layout and content of a PNR except that it should include common elements. In practice, each CRS or hosting system has its own proprietary standards. This is based on legacy business models as airlines have become highly protective of the PNR data. In reality, these data

are, however, the property of the traveller and protected under European Global Data Protection Regulation (EU GDPR) law.[9]

This entire system needs to be turned on its head, placing the passenger in total control of their own data through a Universal Passenger Experience Record (UPXR), which creates a personalised data wallet. The passenger can opt-in to an application solution that safely shares data on a trusted cloud-based global platform. Such trusted data platforms already exist in the banking sector and e-commerce industry, showing that personal data, itineraries and travel preferences could be placed in a secure and open standard platform with the passenger in total control of their data. Those who say it is impossible are desperately trying to protect their own indefensible positions. True optimisation of the end-to-end travel experience can only be achieved through real-time connectivity to the passenger.

Creating a real-time digital passenger platform also leverages mobile technology solutions that already exist worldwide. This would certainly address 'Who Owns the Passenger' and EU GDPR and other privacy concerns while providing a fully integrated solution for seamless end-to-end travel from origin to destination. It would also allow all significant stakeholders, such as airlines, airports, security, health and border control agencies access to the same database facilitating Total Airport Collaborative Decision Making capabilities to improve overall efficiencies.

BRINGING AN IDENTITY PLATFORM TO LIFE

An opt-in global trusted data platform would allow for an endless amount of travel experience 'Use Cases' to be developed. Imagine being able to book any element of a journey, however complex, based on personalised travel preferences and, then, on the day of travel have a fully integrated real-time, but touchless experience where you would have complete visibility, guidance and predictability on each mode of travel and terminal touchpoint via a single App. Pre-existing technology solutions using machine learning and artificial intelligence (AI), such as those used by Google Maps, Waze etc can adjust to changes and/or delays. Unfortunately for the traveller, these travel steps are currently fragmented, lack user friendliness and are not linked to the individual. The solution is to create a personalised identity wallet on the mobile devices to store a multitude of biometrics and passenger information on a single platform that can then be 'shared' at different points in the journey.

MY FACE IS MY PASSPORT

Currently in international travel, the passenger is repeatedly asked to show their passport and/or boarding pass. This step is repeated from origin, to connecting airport to destination, as if each enquirer has no idea of their identity. With consolidated data sources, this is not necessary. The airline captured your passport and identity information when the ticket was purchased, and application programming interface processes are in place verifying that the passenger is not a criminal or terrorist. None of the travel information and biometric data are, however, shared among onward travel immigration and customs authorities, necessitating the need to construct infrastructure touchpoints and queuing space to constantly and

repetitively check each passenger. In a world where authorities are committed to limit the spread of infectious diseases, these multiple document check touchpoints are a public health risk to both the passenger and the agent.

A global trusted platform using digital identity facial recognition would encourage enough efficiencies to largely make the current IATA Airport Design Reference Manual guidelines obsolete. For example, today we are required to segregate international and domestic passengers (or Schengen/non-Schengen in Europe). This results in duplication of dedicated terminal facilities that is inefficient, drives up capex, reduces revenue opportunities and is costly to maintain. With a digital identity platform solution, the need to segregate would be obviated.

A digital identity platform would allow the space between boarding gate and aircraft become the immigration/customs border. This would allow sharing of gates more efficiently and for passengers to mix, increasing revenue opportunities. This approach offers a completely touchless biometric interface, which is also more hygienic, addressing ongoing public concerns.

WE NEED SOLUTIONS ON A GLOBAL SCALE

The aviation industry should be striving towards solutions that are scalable. The current mindset in airport innovation is of 'invented here first', reinforcing the one-off solutions, with no critical mass to make Big Data technology investment cost effective or profitable. Airlines and airports work independently, guardedly protecting their data and innovation. This creates the main challenge to real breakthroughs and adoption on a global scale, namely the nonuniformity of the solutions. Other industries have learned that fiercely competitive companies collaborate in the establishment of common platforms, data standards and governance over innovative solutions.

The aviation sector needs to develop a similar open source platform to accelerate passenger experience innovation that can be applied globally. The customised airport/airline solutions will ultimately become untenable, and a global solution will ultimately be demanded by the consumer. The open-source model is a proven technique used in many other industries that still allows for intellectual property protection but at the same time creates a cost-effective environment for innovative technology companies to operate and deploy global solutions. There must be a balanced solution driving towards practical innovation, while at the same time allowing for competition to prosper.

A customer-centric solution in the digital age will mandate that the passenger has on-demand real-time information of their flight status, gate information, queuing times, walking distances at origin and baggage status, at their origin, destination and connecting airports. This real-time information gives the passenger better control over how to spend their time before the flight and at their connection airport. A relaxed passenger can spend more time in the concession areas. A rising tide lifts all boats.

CONCLUSION

The COVID-19 pandemic is a grim reminder of stakeholder interdependence in the aviation sector. It has exposed the systemic risk of

globalisation, which is not the collapse of individual systems, but society's inability to manage growing complexities. The risk cannot be removed because it is an inherent part of globalisation and must, therefore, be mitigated. As Winston Churchill once said, 'never let a good crisis go to waste'.

As we emerge towards the New Normal, the aviation sector has an opportunity to reinvent itself and manage the global systemic risks by optimising around the digital passenger. An open source trusted data platform will enable such innovation.

The air travel sector represents an untapped e-commerce and advertising market in the digital economy. In 2019, there were nine billion air trips globally, a level that we can expect to recapture eventually as we emerge out of this crisis into the New Normal. Technology companies such as Google, Apple, Amazon and Microsoft have the capacity to create a trusted global digital platform and have already targeted the travel sector as a new frontier. They see an opportunity to disrupt a traditionally siloed and fragmented air travel market. Data will be the basis of competitive advantage.

This paper suggests two radical ideas that could allow for transformational change of the entire travel sector, namely:

1. The rationalisation of airline inventory through dynamic pricing and scheduling
2. Transformation of the entire end-to-end travel experience based on the digital traveller

The sharing of digital data, between the main stakeholders, on a trusted platform could remove many of the fault lines and reinvigorate air travel.

Finally, a trusted cloud-based global platform where the passenger controls their data will generate real-efficiency gains in the optimisation of existing infrastructure and deferring major infrastructure capital expenditure.

The industry will eventually reach the New Normal, but the aviation sector will need to change fundamentally in order to prosper. As postulated by the Master Architect, Louis Sullivan, 'form ever follows function',[10] the COVID-19 crisis has exposed that the current model is not fit for its intended purpose and requires redesign. A global partnership is needed between technology and aviation-sector leaders to boldly transform and encourage innovation in the air transport marketplace.

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(10) Sullivan, Louis H. The Tall Office Building Artistically Considered; Lippincott's Magazine (March 1896). Whether it be the sweeping eagle in his flight, or the open apple-blossom, the toiling work-horse, the blithe swan, the branching oak, the winding stream at its base, the drifting clouds, over all the coursing sun, form ever follows function, and this is the law. Where function does not change, form does not change. The granite rocks, the ever-brooding hills, remain for ages; the lightning lives, comes into shape, and dies, in a twinkling. It is the pervading law of all things organic and inorganic, of all things physical and metaphysical, of all things human and all things superhuman, of all true manifestations of the head, of the heart, of the soul, that the life is recognisable in its expression, that form ever follows function. This is the law.