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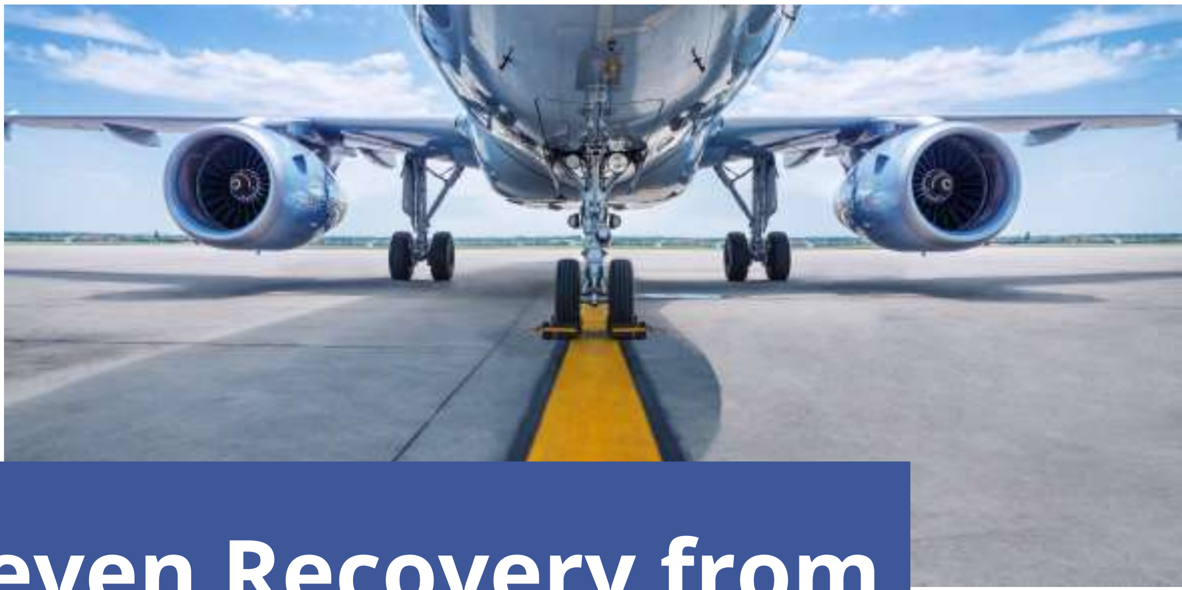

The Uneven Recovery from COVID

- T2RL's Outlook

August 2021

INTRODUCTION

This is the fifth edition of T2RL's analysis of the market recovery for the airline industry during and after the COVID-19 pandemic. T2RL will update this document on a periodic basis as new information and developments become apparent.

T2RL's View

Eighteen months into the Pandemic the world is still far from normal by the standards of 2019 and before. The appearance of the Delta variant of COVID-19 has resulted in a resurgence of the disease in places that previously seemed to have it coming under control and some disruption to the vital supply of vaccines, especially to less developed countries. The global airline industry is still operating a long way below capacity but despite this there is significant start-up activity. Although this may seem at first glance to be paradoxical there is reasoning behind it which we will examine in this report.

Across the 1,046 airlines that we currently track, T2RL recorded a 60% fall in passenger numbers, in 2020 compared with 2019. 27 airlines managed to increase their passengers boarded last year, by an average of 33%, but this is completely swamped by the red ink generated by the other 1,019. In the first half of 2021 the situation has improved a little. Early indications are that the major carriers operated three times as many flights in the second quarter compared with the same period last year, which represented the lowest point for air traffic in the pandemic so far. Passenger numbers have increased almost eightfold on the same comparison, indicating that load factors are growing strongly.

Looking at regional differences we see that North America is back to around 80% of pre-pandemic levels following a strong recovery from the beginning of 2021. China came close to 2019 levels by October 2020 but has subsequently seen volatile conditions and is currently running around 15% below the levels seen at the end of last year. After an uptick in the summer of 2020 Europe is again seeing increased traffic in the last three months as successful vaccination programs have allowed the lifting of some border restrictions. Other regions are seeing very slow recovery.

T2RL subscribers can follow the development of traffic recovery at our dedicated COVID-19 pages. https://www.t2rl.net/airline/covid19traffic

A striking aspect of the impact of the pandemic on the airline industry is how few airlines have gone out of business. The current number of airlines ceasing operations since March 2020 is only 56. Even that exaggerates the true impact as many of these are subsidiaries that have been closed by parent companies and others are multiple members of groups that operate under a single brand. The number of unique airlines that have so far succumbed to the impact of the pandemic is around 35. Given the huge loss of revenue represented by a 60% drop in traffic it is clear that a great many airlines are surviving on government assistance and borrowing. For the time being borrowing is cheap and government assistance continues in many countries but as the world economy begins to pick up it is likely that interest rates will rise, debt servicing will be an ever-increasing burden and governments will phase out their support. The risk to the survival of many airlines will extend long beyond the end of the medical phase of the pandemic.

This brings us back to the apparent paradox of investment going into airline start-ups at such a miserable time for the industry. Investors are taking the view that existing airlines will struggle under the burden of debt. They will be looking to increase fares while new companies with strong balance sheets and a fresh approach to business models and technology will be able to undercut them and take market share. We expect to see significant comings and goings in the period 2022-25.

RECOMMENDATIONS

Contracting

As the pandemic extends well into its second year some of the early responses are approaching their anniversary. Airlines that were able to achieve relief from contractual minimums in 2020 sometimes negotiated a single year of respite. Those periods are now coming to an end with full industry recovery apparently still far away. In some cases airlines were able to insert "Material change of business" clauses into their contracts and these carriers are better placed in seeking further relief.

Vendors are facing pressures on a par with the airlines themselves. By this stage in the downturn any easy cost-reduction measures have been taken. The emphasis is now on preserving and improving the revenue side of the account. Anecdotal accounts suggest that vendor responses to RFPs are generally far more positive than they were a couple of years ago. Whether consciously or not vendors are agreeing to requirements that go beyond their existing capabilities. They are presumably taking the view that the necessary product development work will be recovered if they can just secure the additional revenue.

The move to outsource platforms and infrastructure on the part of vendors has continued and is likely to gain more momentum. The large cloud providers like AWS, Microsoft and Google have much more diverse customer bases and some aspects of their business are experiencing boom times. They will not be perturbed if volumes for airline industry vendors are depressed for an extended period. Those vendors will continue to see the benefit of their move away from the fixed costs involved in running their own data centres.

Airlines that have not already done so should review all their IT services contracts. Those that reviewed in 2020 should do so again. Provisions that made sense last year or two years ago may look quite different in the light of a continued 60% reduction in revenue and severe curtailment of geographical reach.

Distribution

Despite anecdotal evidence that the pandemic has impacted indirect distribution far more than direct, actual data shows that the shift has been relatively modest. In 2019 the Direct/Indirect booking split was 51.5/48.5. The following year it changed to 56.0/44.0. A shift of almost five percentage points in a single year is significant to be sure but it is far from a wholesale collapse of the indirect channel.

T2RL continues to believe that it will be some years before the airline, and hence the GDS market, reaches the same levels as 2019. In fact it is reasonable to speculate that the traditional GDS model will never return to pre-pandemic levels. However the fundamental reasons for the existence of the GDSs have not gone away and we believe that they will continue to operate. Corporate travel is a sufficiently complex business that it needs to be managed by people with professional skills. Whether those skills reside in the corporations themselves or with specialist travel management companies, they will still need to be supported by technology that aggregates supply and facilitates the management of payments and accounting. These are the fundamental roles of the GDSs and if they don't fulfil them someone else will have to. While this could happen over a long time scale it is very unlikely to take place during the period of pandemic recovery.

What may change however is the selling process. Traditional GDSs have relied on holding the necessary information about flights and creating offers when requested by travel agents. There is now a move to a different model based on API connectivity in which airlines themselves create offers in real time and provide them to travel agents using NDC or a proprietary API. In this model the GDS is relieved of the burden of supporting shopping so airlines will be looking for significant reductions in booking fees as they will have to support shopping in their PSS or in a specialist offer management system. Of the major GDS companies Amadeus in particular is pushing very hard for this model. It is announcing NDC agreements with leading airlines on a regular basis, the most recent at time of writing being with United Airlines.[1]

If Amadeus proves to be the leader and the other GDSs follow, airlines will see the balance of costs in distribution shift decisively towards the PSS and away from the GDS. Three of the four GDS companies, Amadeus, Sabre and TravelSky, are also market leaders in PSS so for them the shift will be broadly neutral. What they lose on the GDS swings they will regain on the PSS roundabout. Only Travelport, which lacks a PSS business, appears to be significantly exposed to the financial consequences of such a structural change.

IT Capabilities

Despite the very difficult conditions in the market we still see innovation. Some of this is forced as old ways of working have lost their relevance.

Demand Forecasting

Demand forecasting remains a huge problem. Information derived from prior year booking curves is almost valueless. Sudden changes in travel restrictions cause huge discontinuities in demand and there is a substantial premium on flexibility of response.

In previous editions of this report we highlighted a new market entrant Kambr which uses customer web shopping behaviour as its primary source of demand data. Since we last reported Kambr has tied up a partnership with Navitaire[2], the Amadeus company that serves the PSS market for low-cost carriers. They have agreed to jointly offer Kambr's Eddy RM solution with Navitaire's New Skies. This represents a valuable endorsement for Kambr and potentially a big blow for Accelya whose AirRM system has until now been the preferred option for many Navitaire customers.

Another recent entrant to the market is Israeli startup Fetcherr which is also addressing the problem of demand forecasting in the current environment. It has implemented an "AI deep learning software based model" that sits on top of the Amadeus RM system at

[1] https://www.travelweekly.com/Travel-News/Airline-News/United-NDC-content-available-Amadeus

[2] https://www.kambr.com/articles/kambr-and-navitaire-partner-to-improve-integration-of-real-time-revenue-management-for-lccs

Singapore Airlines. Its proposition is that it collects and aggregates very large quantities of data from various sources to feed its machine learning algorithms in a similar manner to systems operating in financial and other markets.

Dynamic Network and Scheduling

Airlines continue to struggle with the need for extreme flexibility in their schedules. While domestic flights in markets such as the USA and China have achieved a level of stability international operations remain highly vulnerable to the changing course of the pandemic. Airlines whose management has the bandwidth to look for strategic solutions to these issues will consider optimisation tools from Amadeus' Optym, Sabre's AirVision Suite, Seabury, Solution-Tek and S3RUS. Others will continue with ad hoc solutions and hope that the crisis will eventually pass. In the longer term they need to think about the effects on fleet assignment, pairing and crewing solutions, which also need to be more dynamic in future. This would mean looking at a wider portfolio of operations solutions including those offered by vendors such as CAE (formally Merlot.aero), IBS and S3RUS, amongst others.

Biometrics and Medical Passports

Assuming that COVID-19 will be around for an extended period there is likely to be a strong demand for coherent solutions to the problem of deciding which passengers may be safely carried and which will be allowed to cross international borders. The problem breaks down into three stages: creation of a credential, transmission of that credential and action as a result of receiving the credential.

Governments and medical authorities are responsible for the first and last of these. The European Union has created a Digital COVID Certificate which may be issued to a person who has been vaccinated, recovered from COVID-19 or received a negative test result. Other national authorities have their own approaches. Decisions on whether to issue a certificate and whether to accept it are the responsibility of governments which have so far not arrived at a consistent approach. Some have adopted digital proofs of vaccination but others require paper certificates. The responsibility of communicating between the two ends of the chain often falls to airlines. IATA has created its Travel Pass Initiative[3] in an attempt to bring standardisation to the airlines' piece of the puzzle. The recent announcement that the European Union and United Kingdom vaccination certificates are

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[3] https://www.iata.org/en/programs/passenger/travel-pass/

now compatible with the IATA Travel Pass[4] is an important step towards widespread adoption of this initiative. Over 50 individual airlines and airline groups have so far done so.

Digitalisation

Digitalisation is a term that can mean almost any application of computer technology to a business process. For airlines in the pandemic projects have focused on ways to reduce the amount of human contact needed in a customer journey all the way from the initial booking to the final arrival. In particular the often labour-intensive process of servicing bookings – changing schedules, rebookings, full and partial refunds – have been subject to increasing levels of automation. At the airport self-service check-in has been standard for some years but now automated bag drops and boarding gate access are being added to the portfolio. Vendors with proven solutions in these areas have a ready market.

Cargo

Air cargo represents one of the few areas of opportunity for airlines. Surface shipping has been badly affected by the pandemic and rates are surging. This brings down the value point at which air freight becomes an effective competitor. The main constraint on airlines' ability to exploit the opportunity lies in the lack of freight-capable aircraft. Suppliers that specialise in passenger to freight conversions have order books stretching out several years. In the course of 2020 the average monthly number of cargo flights increased from 78,000 worldwide to over 138,000 and it is likely that the growth has continued into the current year. Airlines looking to expand their activity in cargo will need solutions for cargo booking, revenue management, capacity optimisation and in-transit shipment monitoring from vendors such as IBS, SmartKargo, Accelya and Wipro.

Loyalty Redemption

In the coming year or two T2RL expects airlines will need to put more emphasis on loyalty miles redemption in order to decrease the deferred revenue liability which has been steadily accruing and balance out their books. Airlines will be reluctant for members to redeem miles on actual seats as they will need as much cash injection as possible, therefore focus will need to be on enticing members to spend miles on ancillaries, upgrades and external partners. Vendors offering ready-to-go retail solutions in this area as well as already established partner networks include OpenJaw, Switchfly, Loylogic and Collinson as well as other ecommerce/digital providers.

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[4] https://www.travelmole.com/news_feature.php?c=setreg&region=2&m_id=bY!s~v~AT_&w_id=39298&news_id=2048264

Interlining

In the medium term, as we expect airlines' international networks to be much reduced compared to 2019, passengers with true global requirements are likely to need to do business with multiple carriers. Interline itineraries will therefore be unavoidable. Legacy PSS vendors have long since offered traditional methods of interline but there are now other vendors offering virtual interlining solutions that may be worth a look, such as AirBlack Box and Dohop as well as other providers investing in NDC Interlining such as IBS.

As the impact of the pandemic crosses paths with the need to reduce CO_2 emissions airlines are looking at intermodal partnerships, especially with railways in markets with well-developed rail infrastructure. Easyjet's recent announcement that it has added German rail operator DB to its Worldwide by Easyjet program is likely to be the first of many such tie-ups.[5]

VACCINE RELIANT MARKETS

It is now apparent that there are specific markets relying predominantly on vaccines where cultural and economic influences have meant other strategies have fallen by the wayside. Examples of these markets include the USA, UAE, Israel, UK and some EU countries.

While this strategy has been successful in most countries in preventing the rise in case numbers due to the Delta variant causing a similar rise in hospitalisations and deaths, one market in particular has proven to be an outlier. In the United States the management of the pandemic has become a highly politicised issue with supporters of former President Trump refusing vaccination and other amelioration strategies such as social distancing and the use of masks. As of August 15th only 51% of the US population was fully vaccinated. The impact has been uneven with southern states seeing lower rates than those in regions such as New England and the west coast. As a result hospital systems in the south are being overwhelmed and fatalities are rising strongly again

[5] EasyJet's deal to sell combo plane-rail tickets

While we can expect the other vaccine-reliant markets to continue on a trajectory to reopening, the US market is likely to falter. Domestic travel is recovering strongly but US borders are still closed to most international travellers. While vaccinated passengers from the USA are currently allowed to enter most European countries, that status may be questioned unless the USA can get some control over the pandemic.

The UK has implemented a 'traffic-light' plan in the re-opening of borders to certain countries where markets will be classified according to criteria '*including vaccination rates, infection rates and prevalence of variants of concern as well as their systems for tracking infections and variants.*' While this has been welcomed in principle by the airline industry its actual deployment has been marred by confusion and questionable categorisation of some destinations.[6]

For international travel a mixed approach of medical passports with vaccination certificates and testing is set to become the norm. Just as the events of 11 September 2001 drove major changes in the approach to security in airlines and airports, the current pandemic is leading to new requirements being placed on the industry. This in turn will place a burden and subsequent cost on airlines, PSSs, travel agents and GDSs to enable vaccine and testing data to be collected and certified at the time of booking and/or boarding. Even with little traffic airlines are starting to see more resource needed at the airport check-in to deal with manual paper certification checks and the time it takes for boarding. Eventually these costs will need to be passed onto the traveller unless initiatives such as the IATA Travel Pass can be introduced quickly enough to automate the process.

The standards used by airlines in these markets will no doubt set the bar for other global markets and will be enforced across the industry in due course. Based on experience after 9/11 we expect that some new processes will be put in place due to political pressures regardless of any evidence base for their effectiveness. Once implemented it will be almost impossible to remove them so airlines and airports are likely to have costs imposed for an extended period.

T2RL continues to believe there will be little business travel in the next year, even in markets where travel restrictions have been relaxed. Most corporate travel insurance will not provide cover while the outbreak is still categorised as a pandemic, which according

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[6] https://travelweekly.co.uk/news/air/hancock-creates-confusion-over-traffic-light-travel-rules

to the WHO could continue until the end of 2022[7]. Companies have a duty of care to their employees and would have significant legal exposure if they were to require them to travel. Additionally, many office staff have been working from home for quite some time and have become accustomed to readily available video conferencing, meaning a lot of travel for meetings is now deemed unessential and costly. Recession, downsizing, new habits and ways of working are now ingrained into society and will consequently suppress demand for business travel.

Airlines operating in these markets in particular will need to focus on leisure demand as a priority in coming months and potentially open new routes and increase capacity for certain segments. Many airlines are doing exactly this with Ryanair the latest to announce new routes aimed at leisure travellers in Europe.[8] Governments could help by improving consistency of process around testing and quarantine requirements. In some markets the cost of testing is also a strong deterrent to travel.

COVID-Free Markets

COVID-free markets are those countries that have opted for a totally COVID-free approach, reliant on closed borders, strict testing on arrival, quarantine and vigorous contact tracing, for example Australia, New Zealand, Pacific islands and certain Caribbean islands. These markets make up around 2% of International travel.

Until the advent of the Delta variant these markets appeared to have achieved minimal impact from COVID-19, albeit at the cost of cutting themselves off from the world. In New Zealand for example only residents have been allowed to enter the country for over a year and even they have to quarantine in Government-approved hotels at a substantial cost to the traveller. Despite this cost, demand for the service is so high that at the time of writing there was no availability before the end of the year, effectively preventing any new travel into the country even for citizens and residents.

As a result of this isolation the priority placed on vaccination in these markets was significantly lower than in Europe or North America. This has now changed as the new variant has broken out even in tightly-sealed New Zealand while in Australia it is becoming widespread. The vaccination programs in these countries are a long way behind other parts of the world and the prospects of opening their international borders

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[7] https://www.bbc.co.uk/news/world-53870798

[8] https://www.mirror.co.uk/travel/cheap-flights/ryanair-launching-11-new-uk-24787678

are receding rapidly. In our last report we suggested that Q1 2022 would see these markets opening up but this now appears over-optimistic to us although Qantas recently announced plans to resume international flights in December of this year.[9]

Travel corridors between COVID-free locations have been attempted but currently none is operational due to the rapid advance of the Delta variant.

Testing Focused Markets

Testing focused markets for example, China, Korea, Japan and Thailand, have put in place mass testing and contact tracing with isolation and quarantine when outbreaks become apparent. These markets make up around 24% of international travel. They are predominantly in Asia where the rollout of vaccines is taking a while to get under way but testing is widely available. At present these Asian markets appear to be the most successful in supressing case numbers but even they have seen increases as the Delta variant arrives at global domination.

Markets following this strategy are taking cautious measures to ease quarantine and open borders dependant on negative test results, particularly to encourage business travel. Despite significant opposition Japan went ahead with the delayed 2020 Olympic games in the summer of 2021. This coincided with rising case numbers and the games themselves were held with no spectators present. At the time of writing the Paralympics are due to go ahead shortly and they will be held under the same conditions.

Singapore and Hong Kong have attempted to launch an ATB (air traffic bubble) but this has been delayed following a surge of cases in both cities. The situation is under review and the next decision point is planned to be at the end of August.[10]

China has been very successful in suppressing domestic transmission of the virus but even here the Delta variant is proving harder to control. In the first half of August there were 878 domestic cases compared to 390 in the whole of July. For context this represents a run rate of new infections around 0.6% of that in the USA where vaccination is freely and universally available.[11] China's vaccination program has hit its stride in the

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[9] https://eu.usatoday.com/story/travel/airline-news/2021/08/26/qantas-australia-airline-international-flights-expected-resume-december/5598089001/

[10] https://www.info.gov.hk/gia/general/202107/20/P2021072000594.htm?fontSize=1

[11] https://www.cnbc.com/2021/08/13/covid-map-shows-latest-outbreak-in-mainland-china-as-delta-cases-rise.html

last three months with the number of doses[12] administered per 100 residents climbing from 19.3 on May 1st to 135 on August 17th.[13] Since mid-July its vaccination rate has overtaken both the UK and the USA although it remains behind leaders such as Israel and the UAE. China's domestic market had bounced back well but the most recent passenger boarding numbers have fallen by around 13% from the level reached in April. We expect the market to grow again as the impact of the rapid vaccination program is felt.

Currently it looks set to be towards the end of 2022 when borders will fully open to International travel in these markets. Until then, airlines will need to be opportunistic. The focus will be on domestic travel and airlines may need to open and market new routes following demand levels closely.

Developing Markets

Developing markets with large populations and where infections are high will find it difficult to vaccinate whole populations quickly due to limited resource. These markets include India and Brazil. Developing markets make up around 18% of the overall international market.

Some developing markets are making progress with vaccination. Brazil for example has reached 80 doses per 100 people while India has reached 40 and Indonesia has attained 30 doses per hundred. While these numbers are much lower than some developed countries they are much improved over the last quarter and are comparable with Australia at 60 per 100. The situation is much worse in sub-Saharan Africa where current vaccination rates are scarcely measurable. The international community has a pressing need to assist these countries.

Inbound travel will take a long time to recover. The rate of infections and the ability to be vaccinated will deter some travellers but there will still be a limited market demand for some segments including family visits.

It is in these markets where we expect the number of active airlines to diminish the most both through bankruptcy and liquidation and through mergers. We also expect to see

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[12] Remember that two doses per person are required so this represents around 60-65% fully vaccinated

[13] https://ig.ft.comtracker/

fewer travel agencies in the market due to bankruptcies and lower demand. Online travel agencies will be under pressure due to the fall in leisure demand and will be competing more than ever with the airline direct channels.

Travel Technology Research Ltd, trading as T2RL is an independent research and consulting company that specialises in the market place for airline IT systems. Based on data gathered and analysed since the year 2000 it has defined and tracked classifications of airlines and their IT providers. Its research is used by airlines to enable them to make informed choices of systems and vendors and by the vendors to help them develop products that best meet the current and future needs of the airline industry. For further information, visit our website at www.t2rl.com.