



Aviation 2030

Ground handling beyond COVID-19

Thriving on disruption series



The pandemic has proven seismic across aviation - but not terminal. In common with other segments, the ground handling industry will likely survive, but it cannot afford to return to pre-pandemic norms. Players should use the opportunity presented by today's lower volumes to get ahead of the trends that can shape the coming decade.

COVID-19 may have pushed the Fourth Industrial Revolution out of the headlines, but it has not stopped it. Ground handling can expect to see significant disruption in the coming decade from technologies such as:

 AI	 EV and AV
 Big data	 Synthetic and hydrogen fuels
 IoT	 VTOL

The ground handling ecosystem will need to evolve rapidly in response to these technologies and others. Players looking to thrive in the post-COVID normal need to assess now both the threats and opportunities presented for their long-term strategy.

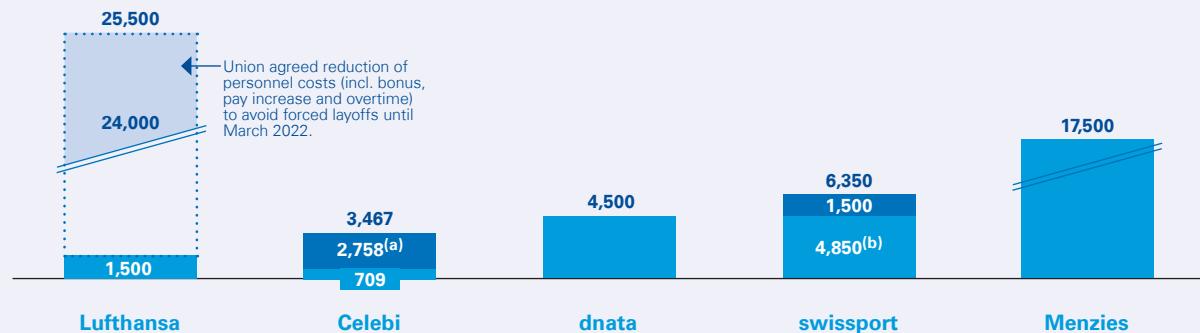


Crisis and opportunity

The first two years of the 2020s have been characterized by a fight for survival for many ground handlers, enduring substantial numbers of layoffs or furloughed staff. But the ever-shifting industry consensus suggests flight volumes likely recover at some point around mid-decade.

Figure 1: The impact of Covid to date

Staff layoff/furloughed numbers for ground handlers



Notes: (a) Based on 2020 Annual Reports (b) Includes employees in UK, Ireland, Belgium and Switzerland
Source: KPMG analysis, April 2021

July 2020 to mid-2021 March-June 2020

Figure 2: Never let a good crisis go to waste

Indexed Revenue Passenger Kilometers (RPK) and ground handler capital expenditure proxy



Note: (a) Capex figures based on the available proxy of investments made by Menzies Aviation from 2004-2019 based on Annual Reports
Source ICAD, IATA, Menzies Aviation Annual Reports 2004-2019

The fundamentals underpinning growth in global travel will survive the COVID age, and we expect volumes to bounce back to and exceed pre-pandemic levels. Smart ground handlers can avoid repeating the mistakes of the post-2008 financial crash retrenchment, when many missed an opportunity to make necessary upgrades, reengineer processes and train core staff in the less stressful environment offered by temporarily depressed volumes. They will need to assess where the equivalent opportunities lie today.

Even going into 2019, the current model wasn't sustainable for outsourced ground handling. Whether it's for governance, safety, environmental or financial sustainability – the business model for ground handlers has to evolve. And it will need the enlightened self-interest of airports and airlines to succeed. For example, the next few years will see pressure to electrify ground support equipment. But it needs the business case to stack up – including recognition in airline contracts and adjusted airport electricity charges.

- Kristof Philips, COO, TCR

Taking advantage

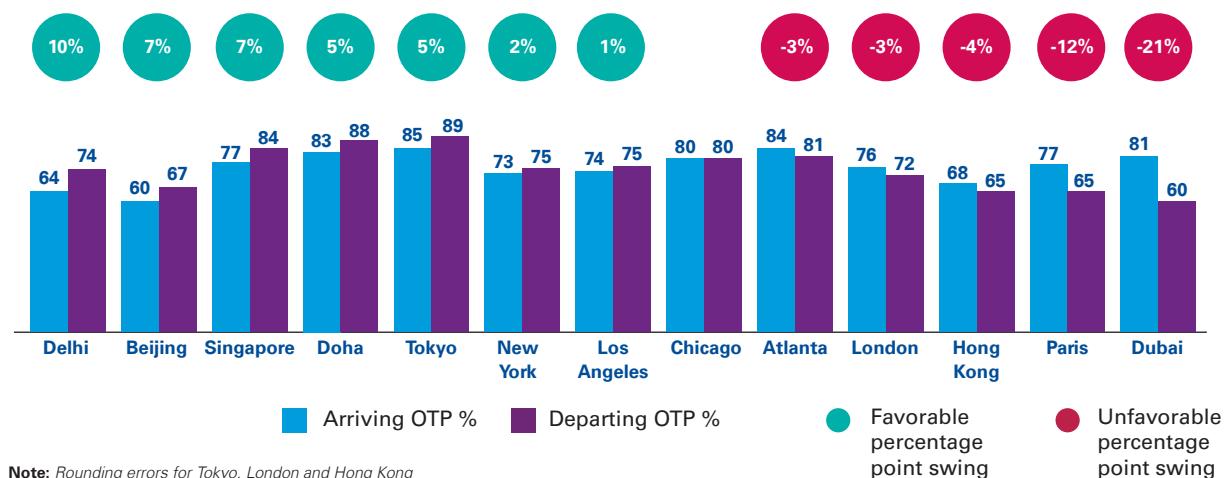
When global travel resumes in earnest, ground handling should not just aim to return to 2019 processes or technology.

Wide variation in turnaround times internationally suggests Lean Six Sigma methodologies and technological upgrades have the potential to unlock a range of efficiency and profitability improvements for most players. Here we consider some of the likely opportunities by player type.

Figure 3: Room for improvement

On-time-performance percentage point swings

Sample of airports globally



Note: Rounding errors for Tokyo, London and Hong Kong

Source: Last available pre-pandemic data at OAG Aviation Worldwide

Airlines - assess and negotiate partners

In the short term, the demand for sanitized travel may continue to lengthen turnaround times, but medium-term passenger expectations will continue to demand quicker, slicker boarding experiences, most likely facilitated by smartphone apps requiring quality back-end data.

This is a good moment for airlines to consider their ground handling contracts, and to reconfigure where current partners are not keeping pace with passenger expectations or long-term turnaround time pressures. In a vibrant ground handling market, the cheapest contract is not necessarily the best value when factors beyond contract cost are considered.

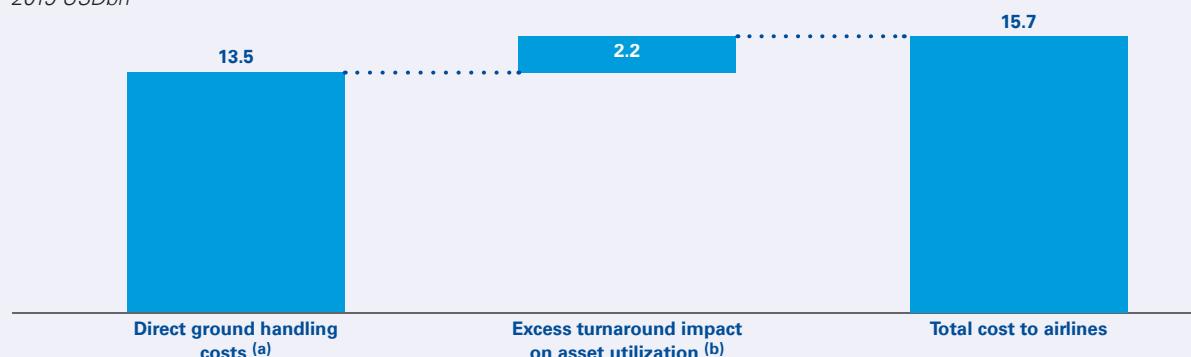
As figure 4 shows, ground handling costs need to be understood on a clear value basis encompassing asset utilisation. Airlines should more often seek to reflect this in ground handling contracts, with performance payments tied to asset utilization rather than simple turnaround times with penalties. Currently, it is all too common that contracts are cost - not value - engineered, leading to a range of ancillary penalties.

As the demand for innovation of ground handling operations grows, there will also be cases where it is appropriate to consider the business case for taking ground handling or elements of it (back) in-house, an option whose greater degree of control and flexibility has proven alluring for some market leaders and may represent the best option for airlines at certain airports.

Figure 4: The case for value

Illustrative costs of ground handling arrangements across US airlines

2019 USDbn



Note: (a) (Total "Aircraft Total Direct Operating expence") *Average % of Airport and handling charges of Total Opex by Ryanair and Lufthansa (in the absence of identified similar breakdowns by US airlines)

(b) (Cost of delay in US by Airlines as of 2019) * (% of Airport and handling charges of "Total additional costs due to delay of aircrafts".) Ryanair and Lufthansa's opex levels used as a proxy for the purpose of this calculation.

Source FAA – Economic Values of Investment and Regulatory Decisions, FAA – Cost of Delay Estimates, 2019, Ryanair Annual Report 2019, Lufthansa Group Annual Report 2019

Airports - take greater control

Accepted wisdom around the efficiencies gleaned through enforced competition between ground handling providers is being eroded by examples such as Toronto and Qatar, where consolidation of operations has produced better outcomes.

Whilst multiple ground handling providers are meant to ensure efficiency through competition, it is not always the case. When a multitude of operators independently ensures sufficient capacity to cope with its own peak demand, aggregate airport-level capacity will be bloated. It may benefit some airports to own their own ground support equipment and then lease on a pay-per-use basis.

Similarly, airlines contracting with ground handling independently without airport oversight can produce structural problems at the airport level. Bigger airports can benefit from consolidated operational centres with airport-level reach, as well as floating teams that can despatch operators anywhere on the facility. Airports may benefit from a more hands-on approach to ground handling operations, for example in specifying particular requirements around tech deployments or staffing.

Airports have a role to play in deploying specific technologies such as sensor tech, cameras, and AI on stands, all of which increase the flow of information between ground handling, airline and airport, and can facilitate more efficient boarding and pushback prep.



"With the retirement of A380s, 747s, there is a smaller scale range in numbers of passengers to handle, less variability in things like stand types or fuelling equipment. This provides an opportunity to reduce the overall quantity of apron assets while standardizing processes."

- **Gordon Murphy, Chief Systems Engineer and General Manager, Morson Projects**

"The roll-out of EV powertrains might see a shift to pooled equipment. It makes sense for the airports, the difficulty with pooling I see, is for airports, ground handlers and airlines having a common approach with perceived market share and priority access concerns."

- **Owen McKenna, Sales Director at Mallaghan Group**

Ground handling - optimize and invest

At the practical level, COVID-suppressed volumes translate into an unprecedented decongestion of airports, providing a real opportunity to rethink processes, trial and rehearse new methods and technologies.

The F1 Analogy



At the simplest level, consider rehearsals. Ground handling teams, accustomed for years to work at 100% capacity, work on little or no turnaround practise. In contrast, F1 professionals will typically do over 1,000 dry runs per race day pit stop, with over 50 dry runs on race day itself. This is the level that makes two second pit stop times possible. While F1 may sound like an extreme example, ground handling operators have a once-in-a-generation chance to tackle the significant scale of optimization opportunity available to them, applying Lean Six Sigma methodologies in a controlled environment.

Improvements can be further enhanced by the deployment of technology to facilitate real-time visibility of turnaround checkpoints and problems for the ground handling team and the airlines. Again, now is the time to source the relevant tech and to ingrain it into teams' existing processes.

Another way to respond to the ceaseless pressure to reduce fixed costs can be to ally with other ground handling operators to exploit synergies of staff and assets.

"There is a significant, untapped opportunity to apply Lean Six Sigma techniques to all turn activities, above and below wing. It's one of those things that very few do, but once it's applied and scaled, more will be wondering why they didn't do it sooner."

- **Rowland Hayler, Director at Five Aero**

"There are quick wins in process reengineering and training before the big ticket technology overhauls. When it then comes to technology, it's about spending smarter, not spending more overall. For example, most airports have excess non-powered equipment. Apart from underutilized assets in non-pooled settings, this contributes to the less obvious cost of apron collisions. Telematics, meanwhile, might look expensive, but fewer, pooled equipment with telematics would reduce the costs of collisions."

- **Kristof Philips, COO, TCR**

"As conventional auxiliary power units are increasingly replaced with hydrogen fuel cells this decade, there's a number of implications for ground handlers. Less need for ground electrical supply or tugs, for example. But the water by-product also removes the need to replenish onboard water supply. This could shave 10 minutes off a typical A320 turnaround – but now puts the potential bottleneck back on ground handling activities like baggage. Processes will likely need a redesign."

- **Gordon Murphy, Chief Systems Engineer and General Manager, Morson Projects**

Supply chain - update technology

If ground handling operators cannot expect a return to 2019, nor can their suppliers.

Those who make it their business to build and supply the solutions of the future, based on technologies such as IoT and AV, can future-proof themselves against the competition in the coming decade. Ground handling suppliers have an opportunity to facilitate the significant evolution we expect the 2020s and 2030s to bring, wherever technological investment in the process can be leveraged into meaningful value savings.

"EV will likely win over other technologies given short apron journey lengths, opportunistic charging between peaks and overnight charging. But this is not without significant investment in distribution infrastructure at many airports. We have seen some airports with a preference for hydrogen and other reduced carbon powertrains."

- **Owen McKenna, Sales Director at Mallaghan Group**

"I see a future in ground support equipment for autonomous technology such as autonomous airstairs, baggage tractors, etc., operators will need to consider more of their processes and human training – both to avoid accidents and realize the value add."

- **Sebastian Kollner, Marketing Manager at Mallaghan Group**

Implications: new business models, alliances, investments, M&A

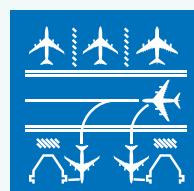
Aviation continues to be one of the sectors hit hardest by COVID-19, but should eventually return to and exceed pre-pandemic volumes. There is an urgent need to evolve ground handling capabilities to keep pace with expected transformation across the sector.

We can summarize the implications by player type:



Ground handlers

Don't just expect to go back to 2019 – use the multi-year recovery to innovate and invest now for the longer term



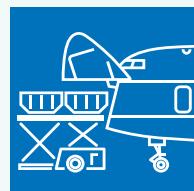
Airports

Be more proactive, lobbying government as required to strike the balance between competitive tension among ground handlers, and the synergies of airport level coordination and assets



Airlines

Don't be 'penny wise, pound foolish' when it comes to ground handling contracts. Analyze asset utilization and other 'hidden' costs to determine the true cost of contracts



Supply chain

Make sure you are helping ground handlers to modernize with automation, integrated IoT / data-driven decisions, and a range of powertrain options, not simply relying on legacy equipment offerings

Sourcing & notes

1. E.g. Ryanair in Spain, Easyjet at Gatwick: <https://www.airsideint.com/issue-article/all-change-for-easyjet-handling-at-lgw/>; <https://airlinergs.com/issue-article/ryanair-to-self-handle-in-spain-and-stansted/>
2. E.g. Toronto Central Deicing Facility: <https://www.torontopearson.com/en/whats-happening/stories/plane-deicing>; Qatar Aviation Services
3. E.g. autonomous vehicles in baggage handling: <https://www.vanderlande.com/news/how-autonomous-vehicles-can-add-value-to-the-baggage-handling-process-at-airports/>



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