



Ground Operations 2030: Solving today's core problems with the solutions of tomorrow

Secure your pole position for the future!

Ground operations and the interaction of the parties involved are essential for a hassle-free journey. Low performance and low collaboration lead to additional cost and jeopardize the success of the overall operations. A close look into solving the current problems, combined with an assessment of future trends enable companies to prepare for the changes in aviation.

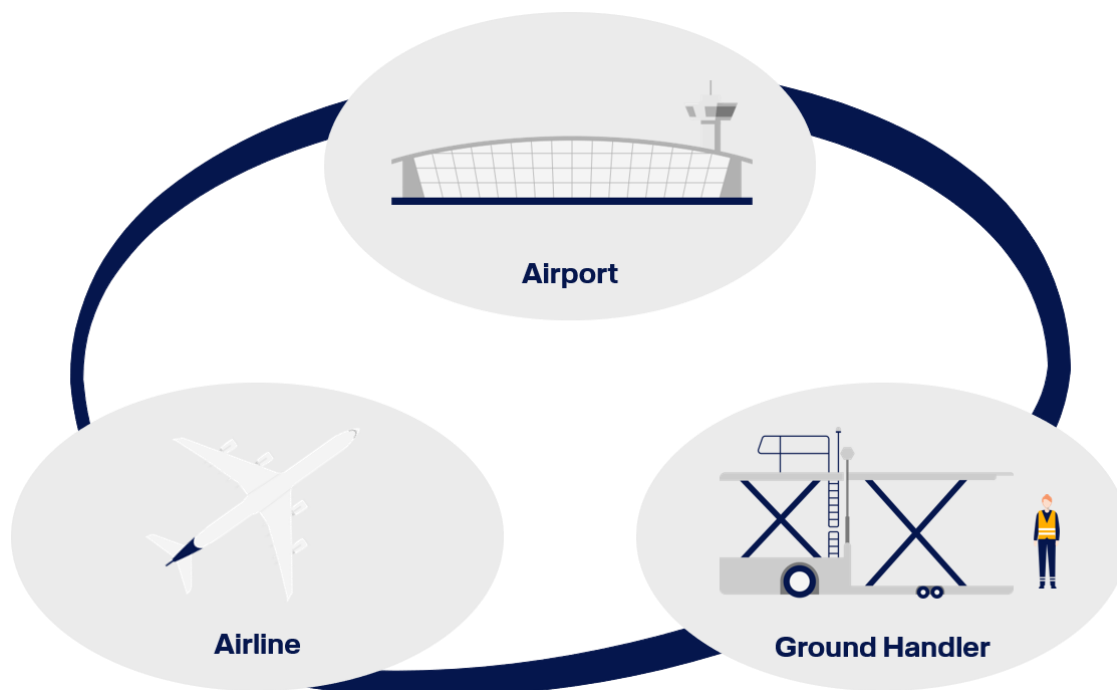
August 18th, 2021

By Eric Kuhn and Michael Kunz

(This is the lead article of a series of articles covering different ground operations topics at airports and their anticipated development within the next years)

Introducing the “GOMT”

To discuss the way forward in aviation ground operations, we first need to find a common understanding of what Ground Operations (GO) stands for. Ground Operations involves all aspects of aircraft handling at airports as well as aircraft movement around the aerodrome, except on active runways. These aspects are usually handled by three big players – the airport operator, the airline and the ground handler – which together form the Ground Operations Magic Triangle, the **GOMT** as illustrated in the diagram.





However, the GOMT sometimes consists of less than three different parties as many airlines carry out their own ground operations (for example Lufthansa does its passenger handling in the two hubs in Frankfurt and Munich airport). In addition, sometimes airports provide their own ground operations, either directly or through a subsidiary as is the case at Frankfurt airport where Fraport is the airport operator but also offers ground handling services. At many airports more than one company provide ground handling services.

Extract of airport core problems today

As the (three) parties of the GOMT tend to have different focal points in their development, challenges within the collaboration are inevitable. Silo thinking is still observed in ground operations leading to mis-communication and even uncoordinated investments which prove to be costly for all involved. One of the major issues is data sharing – quite often all parties of the GOMT use different IT systems and / or various data sources which are not compatible - meaning that a single source of truth is missing. An average flight with a Boeing 787 produces more than 500 GB of data – only a fraction is used, and this is only one example of not used data.

But which consequences does this lack of data sharing have for the GOMT? Among other things it can lead to endless discussions about performance resulting in monetary consequences due to missing bonus or too much malus as (manual) data stamps from each party do not match and therefore a clear performance measurement is not possible. In 2019 the air transport industry had disruption costs of more than 58 billion US\$¹. These are cost which can be avoided. Shared data among the GOMT could open up additional opportunities to generate revenue. A use case could be, that the airline shares passenger data about nationality and age (always in line with the applicable data protection laws and regulations) with the airport operator who in turn can steer duty-free product offers at the shop directly at a gate and adjust the choice of product to the anticipated desires and needs of the passengers of the relevant flight.

However, finding an optimal way of working together amongst the GOMT is not the only challenge for airports to prepare for the future. There is a general need for an infrastructure update and more crucially an adaptation of the infrastructure to meet the needs of airport users. We have to bear in mind that passengers are not the only airport users! The requirements for the most suitable infrastructure are ever changing, most recently the new hygiene concepts due to the pandemic. Unfortunately, the realization of these changes is always lagging behind the discovery of the needs as it simply takes time to build new and / or additional infrastructure.

The new hygiene concepts and the new regulatory barriers in form of additional documents required for travel have led to a need for different infrastructure and processes but also a need for speed in the implementation of digitalized processes. Biometrics is one of the key words here. Passengers more than ever want to have as few contact points as possible, preferably not to have to touch anything at all. While there are already examples on how biometric recognition can support this, many airports have yet to undergo these changes. The customer journey at airports requires the consideration of additional aspects. Hygiene concepts need to reflect the current developments and thus require a certain flexibility in infrastructure as well as in processes. For example: inexperienced passengers often feel uneasy at airports.

¹ Amadeus IROP Report 2019

Unfortunately, the customer journey cannot be individualized as the infrastructure and processes are not adjustable to each client type.

In addition to the passenger handling processes, ramp operations are still lacking digitalized, automated and new innovative processes. These operations still consist of almost only manual processes and too much human interaction. They are not only dependent on an expensive workforce but can also result in severe safety and security incidents. These incidents quite often cause flight delays and cancellations which result in huge disruption cost for the airline. A 30-minute delay for an average A320 flight leads to more than 3'000 US\$² disruption cost. Furthermore, various operational processes on the apron are not adequately linked together, as system partners do not operate on the same system or use the same data. Again, this can lead to irregularities.

Clustering the core problems

The problems mentioned above are only an extract of the most urgent questions and problems to be solved in the near future. Lufthansa Consulting has categorized the core problems in five action areas for future ground operations:

- need for a new way of innovative stakeholder collaboration,
- future requirements of the right infrastructure at an airport,
- what the customer journey will look like and how it can be integrated and implemented in the current operating system,
- how the GOMT will actively prevent disruptions – and how in the worst-case irregularity management 2.0 can be conducted and
- how ramp operations are carried out without any direct human interaction.

The following diagram gives a brief summary of the five areas:



² University of Westminster; Airline Delay Cost Reference Values, Version 4.1



Combining problems with global trends

Solving these core problems will help the GOMT to survive and to maintain current standards but it will not be sufficient to become one of the driving forces in operations in the year 2030. Global mega trends, in general but especially in aviation need to be considered and used to develop tailored solutions, adapted to each geographical location and culture of each and every airport in this world.

But what are the global mega trends in aviation? What are the questions that need to be answered for future aviation operations? Especially in a world after the Covid-19 crisis the aviation industry has to take the next step. One day the crisis mode will be over and the transition to stable and normal operations will have to work successfully. Airlines, airports and ground handlers have to be ready to adjust in a fast and agile way. We selected certain trends and asked ourselves the following guiding questions to check if the future vision of ground operations can match those trends.

How will passengers arrive at and leave the airports? Will there still be feeder flights by small and regional planes or will they be replaced by air taxis? Companies like Volocopter and Lilium are growing and an inaugural commercial flight of an autonomous small aircraft can be expected soon. The challenges and adaptations required by the GOMT should not be underestimated and they need to be solved.

Will luggage and passengers fly on the same flight? Will they be separated from the start of the journey until the final destination (which is not necessarily an airport)? The biggest hassle of any trip, business or leisure, is transporting your baggage along the journey – but is this really necessary in future? Is waiting at the baggage belt or fighting for space in the overhead compartments something of the past? Separating baggage from the passenger with the aim of the baggage travelling faster is another future goal.

Will we be able to conduct the whole journey seamlessly and without any touching points one day? How quickly and how far will biometrics and robotics in passenger handling evolve? Changing regulatory requirements and additional mandatory travel documents like a vaccination pass or a test certificate completely disrupt the fragile passenger handling processes nowadays. The queue in front of every check in counter is huge, as all passengers have to obtain their boarding passes manually from the counter. This has to change and airlines, airports and ground handlers all have to be ready to handle the new and probably more complicated regulations in a much faster way.

Ground Operations 2030 by Lufthansa Consulting

Now the tricky part starts – answering those questions above. This includes matching the clustered core problems with the identified mega trends and turning them into successful and tailored solutions. Lufthansa Consulting has accepted this challenge and our experts have performed an in-depth analysis into how an airport of the future and especially Ground Operations in 2030 can and should look in order to achieve pole position in successful aviation operations.

Ground Operations 2030 by Lufthansa Consulting provides a high-level overview with different action fields clustered into the five core areas. In this series further articles will cover deep dives into each of the core fields of GO2030.



***Eric Kuhn** is Consultant at Lufthansa Consulting, and has been working in the aviation industry for the last ten years. He is a specialist in airline and airport ground operations. He is a member of the Solution Group Infrastructure and Operations.*

***Michael Kunz** is an Associate Partner at Lufthansa Consulting working since more than 20 years in the aviation industry, predominantly in the area of airport operations. He heads the Solution Group Infrastructure and Operations.*

Further insights from Lufthansa Consulting's aviation experts are available at <https://www.lhconsulting.com/insights/news/>
