How COVID-19 impacts airport operations planning – Physical distancing, volatile schedules, and limited budgets

Challenge 2: Lower annual passenger numbers but unchanged or higher peak levels compared to pre-COVID-19

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CONTENTS

THIS ARTICLE IS AIMED AT READERS WHO ARE LOOKING FOR

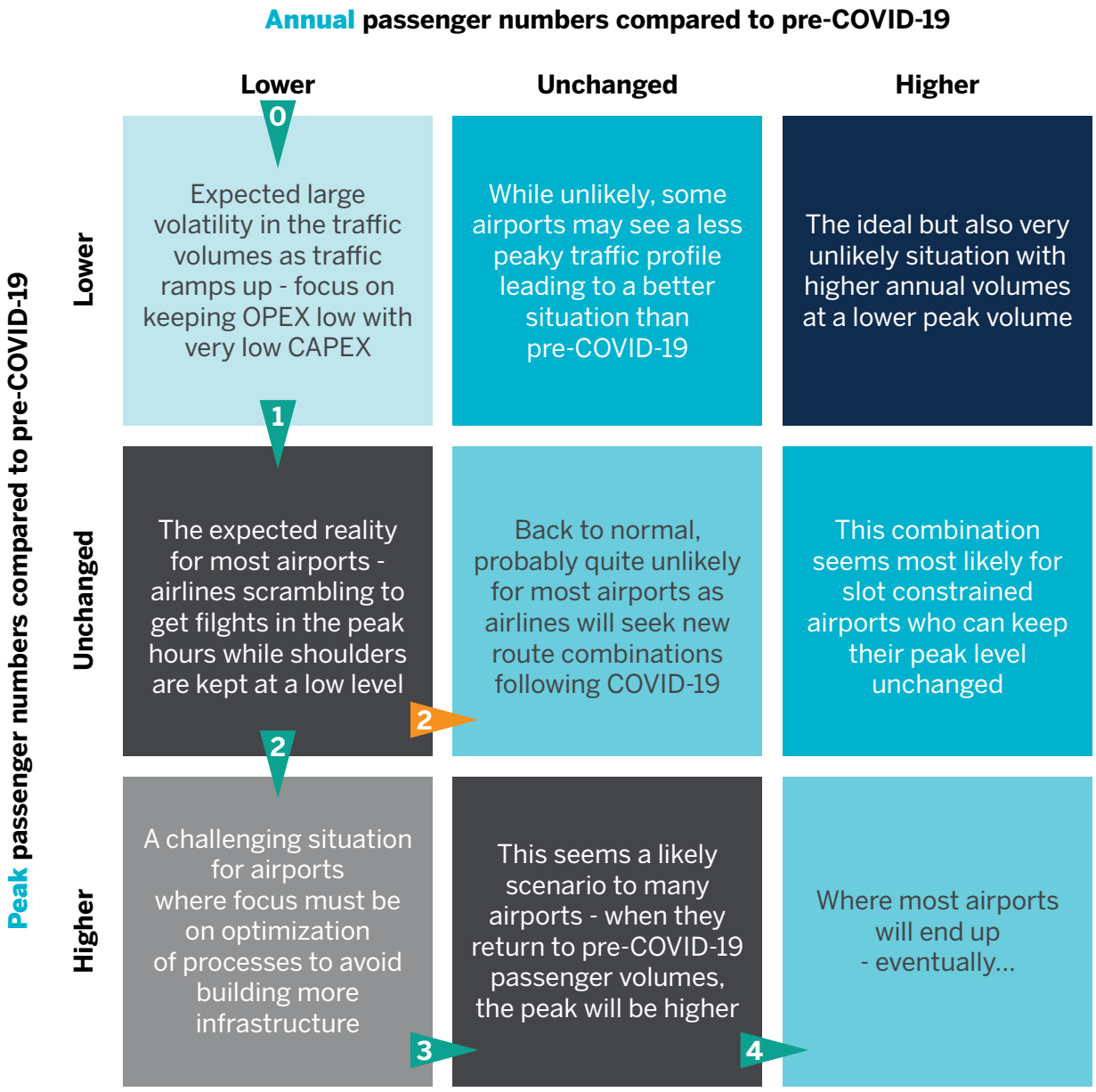
— An outline of the expected phases in air traffic's return to normality after COVID-19

— Expectations on the major operational challenges in the times to come

— Guidance on how, when, and where to act in order to tackle operational challenges

ONE-MINUTE SUMMARY

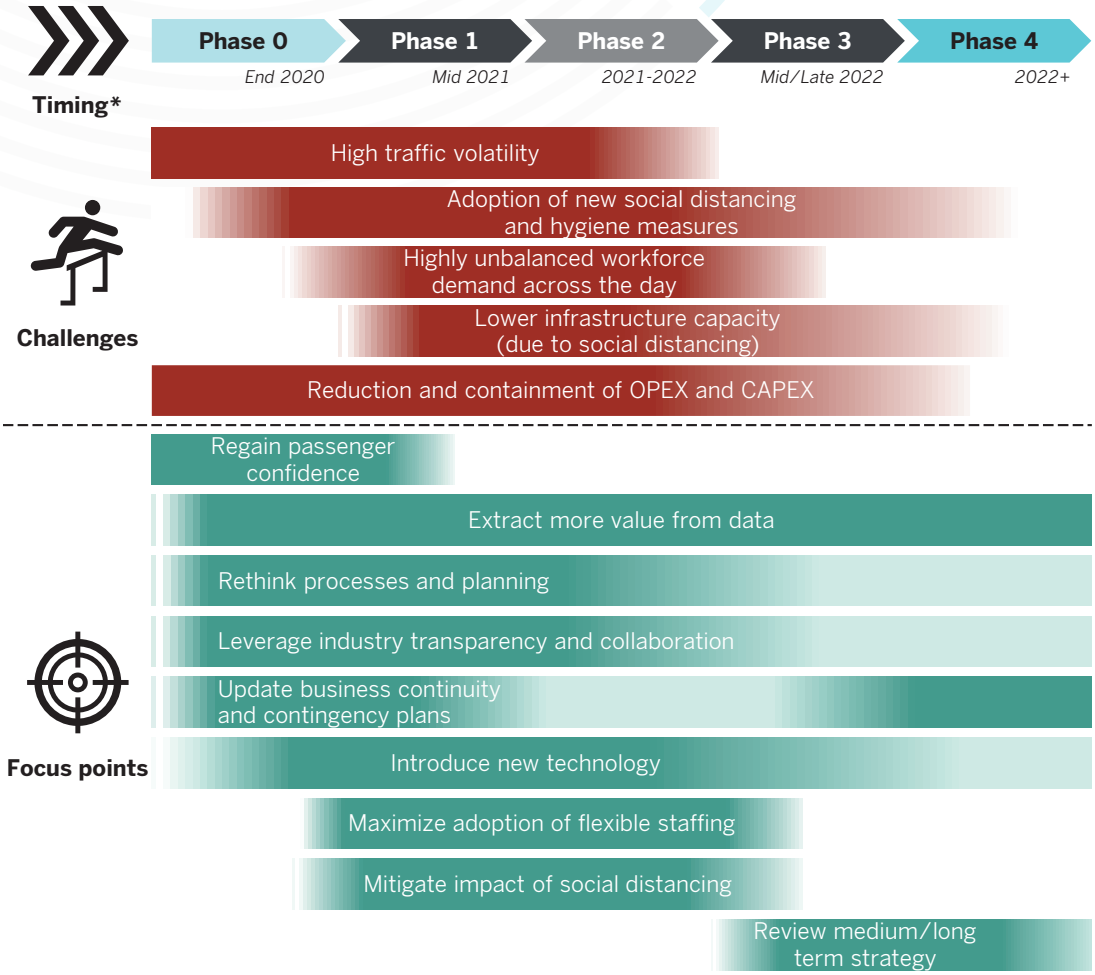
Today total and daily peak-time (i.e. the time of the day where airlines prefer to fly) air traffic numbers are lower than before COVID-19. Annual and peak traffic numbers can each evolve to either be lower, equal, or higher than their pre-COVID-19 levels, as shown in the matrix below.



We expect that, mostly driven by financial reasons, the recovery will come in phases (of varying length and start time) with peak-time traffic returning to "normality" relatively faster than shoulder-time traffic: from phase 0, the current state, to phase 4.

As we describe this likely scenario for traffic recovery, we outline key challenges and recommended focus points of airport operations. Our goal is to let the assessment of the intensity of each challenge over time provide guidance on how to focus, prioritize, and time airport interventions.

Key challenges and focus points for airports across traffic recovery process



NOTE: The darker color indicates higher relevance of the challenge/Focus point
** Timing is highly indicative and expected to vary for each airport*

The recovery process will happen in phases

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Air traffic's return to "normality": a phased approach

The last time airlines generally saw a severe drop in passenger traffic was in 2008 / 2009 during the financial crisis. An interesting observation from 2009 was that while annual traffic numbers dropped significantly – typically between 10% and 15% – the peak traffic levels in airports remained largely unchanged. This was driven by the desire from airlines to consolidate flights during peak times (i.e. the time of the day where the airlines prefers to fly), which is usually defined by parameters such as rotations and passenger needs (e.g. short-haul business should fly in the early morning and later afternoon/evening). While the COVID-19 situation is already far worse than the financial crisis, we expect a similar development for the rebound in traffic after COVID-19: like today, many airlines suffered financial losses during the 2008 crisis, and relied on peak-time traffic, where, we believe, profitability is higher, to invert that trend. There are already examples of similar schedule consolidations: Delta has suspended flights from 10 stations, redirecting passengers to neighboring airports; Lufthansa has announced aircrafts decommissions and schedule cuts for its regional carriers and subsidiaries such as Germanwings, Austrian and Brussels airlines.

As anticipated in the article summary, we expect the recovery process to happen in phases. The length and timing of each phase across airports will vary, influenced by national and international regulations, passenger behavior, and airports' ability to react.

In the following paragraphs we give our perspective on how to best approach such a phased return to "normality".

PHASE 0:
Lower peak and lower annual passenger numbers

Timing

The current average reduction in flight volume of 90% compared to last year leaves no doubt that the total passenger number in 2020 will be far lower than in 2019. Similarly, severely trimmed schedules have eased the operational pressure on the traditional flying peak times. Although lockdown restrictions will be slowly and gradually lifted in the time horizon of this phase, it is fair to assume that air transport will still face a high degree of uncertainty: lacking confidence among passengers, and a drastically changed flight demand and supply, hampering the possibility of an immediate traffic rebound.

Operational implications

Whereas the direct relationship between traffic and infrastructure capacity may be of little concern (fitting 10-15 daily departures when used to fit 200 should not pose capacity challenges), in this phase the major challenges for airport operations planning will be due to:

— Introduction of new physical distancing and cleaning measures

— High traffic volatility

— Reduction of OPEX and CAPEX (in order to minimize financial losses)

Recommended focus points

The response to these challenges should be focused and balanced. Ensuring business continuity and adapting processes to minimize costs should be the main priorities. However, carrying out the right activities in phase 0 can ease operations once traffic volumes increase in later phases.

Hence, we recommend focusing on:

— Regaining passenger confidence by implementing measures to ensure safe separation (e.g. every second check-in desk in use) and high hygiene standards without incurring in high costs (e.g. more frequent cleaning, higher adoption of touchless where already available)

— Extracting more value from data: where possible, collect and analyze data to understand present and predict future load factors, presentation profiles, passenger journeys across the terminal

— Rethinking processes and adapting planning: e.g. adjusting service levels, shortening the planning horizon (to increase accuracy and staff at the right times and places), updating processing times at major checkpoints

— Collaborating with stakeholders to survive the impact of the crisis: COVID-19 is a chance for airports to encourage airlines, handling agents, and other airport stakeholders to move away from legacy habits. Collaboration could come in the form of increased data transparency across the value chain, willingness to staff more flexibly, or redefinition of infrastructure allocation rules. If it has been tried before without success, the current crisis offers a second chance to join forces.

— Updating existing contingency and continuity plans to face the new reality, but also creating new contingency plans to cover any new challenges. Contingencies should have already been implemented and the primary focus should be in the continuity and recovery plans. In a similar way to this article, continuity and recovery plans should unfold the different phases airports will undergo until recovery.

PHASE 1:
Unchanged peak level and lower annual passenger numbers

Timing

Peak passenger numbers are going to increase faster than the annual numbers, potentially returning to the pre-COVID-19 levels already by the end of 2020. This is a consequence of the typical demand dynamics in the industry (and a reality in most non-slot constrained airports): once air traffic ramps up, airlines, dictated by passenger demand, will target the most profitable time slots, leading to a return of pre-COVID-19 peak levels.

Operational implications

As this dynamic unfolds, airports will transition into phase 1, where passengers are acquainted and at ease with the "new way of flying", while airports and airlines are still financially challenged. Consequently, challenges of phase 0 mix with new ones:

— Highly unbalanced workforce demand across the day

— Reduced infrastructure capacity due to physical distancing measures

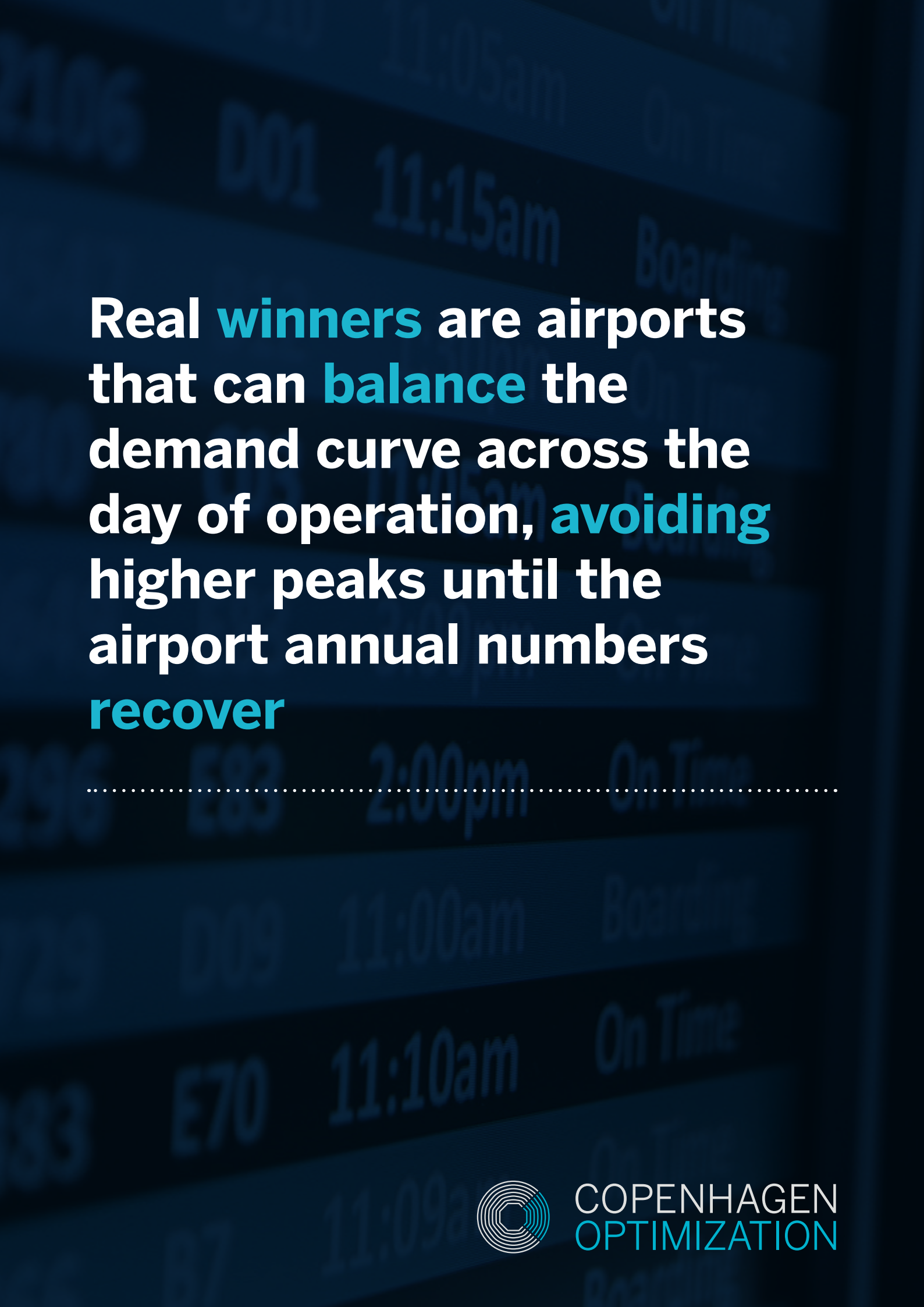
Recommended focus points

The efforts started in phase 0 need to be expanded to:

— Increase flexibility, precision and efficiency of staffing. Moving from fixed rosters to variable ones, increasing flex time allowances, and updating overtime policies will make airports agile enough to meet changes in demand while maintaining reduced yearly budgets. Data analytics and planning software can improve the precision of staffing and minimize over/under staffing. Finally, repetitive tasks of low value-add should be automated where possible to increase efficiency (e.g. in the context of planning, for example, these may include forecast generation, resource allocation and staffing, all of which can be greatly sped-up by dedicated software on the market)

— Assess the impact of physical distancing on capacity and optimize around it: from an infrastructural point of view, it is important to quickly identify potential capacity pinch points. Previous capacity declarations might need to be reviewed as physical distancing measures will decrease the airport's total capacity. Optimized processes can improve the airport capacity and therefore balance its impact. For instance, a slot constrained airport needs to make sure all its slots are still valid, and it can guarantee all of them without causing major operational disruption in the terminal operation.

— Manage and contain airlines expectations: to avoid peaks increasing, airports will need to manage airline expectations to fly in the desired times. If possible, a pricing structure and a slot restriction during most demanding times can help avoid a capacity breach and will allow a more effective use of available resources. Similarly, in the context of physical distancing, larger use of common-use check-in (several airlines in the same check-in area) and online check-in are two examples of practices that should be pushed, as they come with potential benefits for all stakeholders. They require less staff, hence lower costs. They are faster and reduce the number of passengers on the floor, thereby allowing better utilization of queue areas and easing the correct adoption of physical distancing measures. This is particularly true of times like this, where schedules and passengers are greatly reduced. Eventually, airports successful in containing airlines' demands for peak slots will skip phase 2.


Real winners are airports that can balance the demand curve across the day of operation, avoiding higher peaks until the airport annual numbers recover
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PHASE 2:
Higher peak levels and slightly lower annual passenger numbers

Timing

As we illustrate in the matrix, it is possible that in phase 2 both annual and peak passenger numbers return to "normal".

However, as we look further ahead, more factors come into predicting the evolution of flight traffic: an eroded competitive landscape for airlines, delayed pick-up of tourism sector, changed and reduced business travel habits are some possible developments that would lead to a continuation of the market dynamic described in phase 1.

In such a scenario, the passenger volume in peak could grow higher than pre-COVID-19 level before total passengers match their pre-crisis number: because more challenging than the "return to normality" abovementioned, this is the phase 2 scenario we will refer to when describing operational implication and recommended focus points.

Operational implications

The operational implications from the previous phase become even more challenging, as airports need to handle even larger amounts of passengers during peak times, while dealing with a continuation of COVID-19 inherited safety measures.

Recommended focus points

Taking for granted that long implementation times and suffering budgets leave little room for CAPEX projects of infrastructure expansion, key focus points in this phase are:

— Continuous improvement of processes and planning introduced in phase 1 (e.g. more accurate forecasts of traffic and passenger journeys based on larger data samples and/or more advanced software, more precise staff planning based on the experience previously acquired, correction to identified process flaws)

— Introduction of low/medium cost technology to minimize time spent in the airport and maximize safety (e.g. luggage pick-up from the airport to hotel to avoid check-in, touch-free kiosks, new bag tag concepts, walk-through security checkpoints, e-gate boarding processes)

However, real winners are airports that, thanks to a clever understanding of the airport capacity and a careful containment of airlines' requests (started in phase 1), can balance the demand curve across the day of operation, avoiding higher peaks until the airport annual numbers recover.

PHASE 3:
Higher peak levels & unchanged annual passenger numbers

Timing and operational implications

Once in phase 3, airports can claim to have survived the worst of the crisis.

Recommended focus points

As financial statements stabilize, airports approach the right time to rethink their medium to long-term strategy. This should include a review of the changes introduced because of COVID-19, so that the positive ones can be kept and improved further. This crisis can be the catalyst to rethinking and improving processes, and it would be a waste to return to old bad habits.

Hence, the focus of phase 3 should be on:

— Developing a new medium/long-term strategy accounting for industry outlook, regulations, airport financial situation and desired service level. Airport management will need to review and agree on the latter ones based on the new status-quo. Having an easy, flexible way to link Service Level Agreements with budgets will support business decisions and support the airport as everything moves forward to the new reality.

— Sustaining the changes introduced during the crisis and making them "the new normal".

PHASE 4:
Higher peak level & higher annual passenger numbers

Timing

A best-case, but today unlikely, scenario, is one where airports achieve unchanged annual passenger numbers by 2022 and higher from 2023 onwards. Realistically, based on current industry outlooks, it could take 2-4 years before we start seeing similar annual passenger numbers compared to pre-COVID-19.

Operational implications

Phase 4 is the time horizon on which to project the airport vision, the state airports aim for. Some of the challenges arisen in the previous phases might survive, but so will the learnings and improvements, which by then will hopefully have strengthened the airports and the industry as a whole.

Recommended focus points

To maintain the newly acquired strengths and avoid repeating what, in hindsight, will look like mistakes, airports will need to update and enhance their business continuity and contingency plans. Business recovery and continuity plans in an airport can vary from loss of infrastructure, to loss of staff, to loss of systems. These plans are usually forgotten over time if they are not exercised regularly or a major event does not impact the airport. A pandemic response plan is a prime example of this. The last time airports had to deal with a pandemic was in 2014 due to the Ebola outbreak and this only impacted a few airports globally. Once the worst of COVID-19 is past, airports should make treasure of the lessons learnt by incorporating them in their plans and putting into place process that ensure a regular review of such plans.

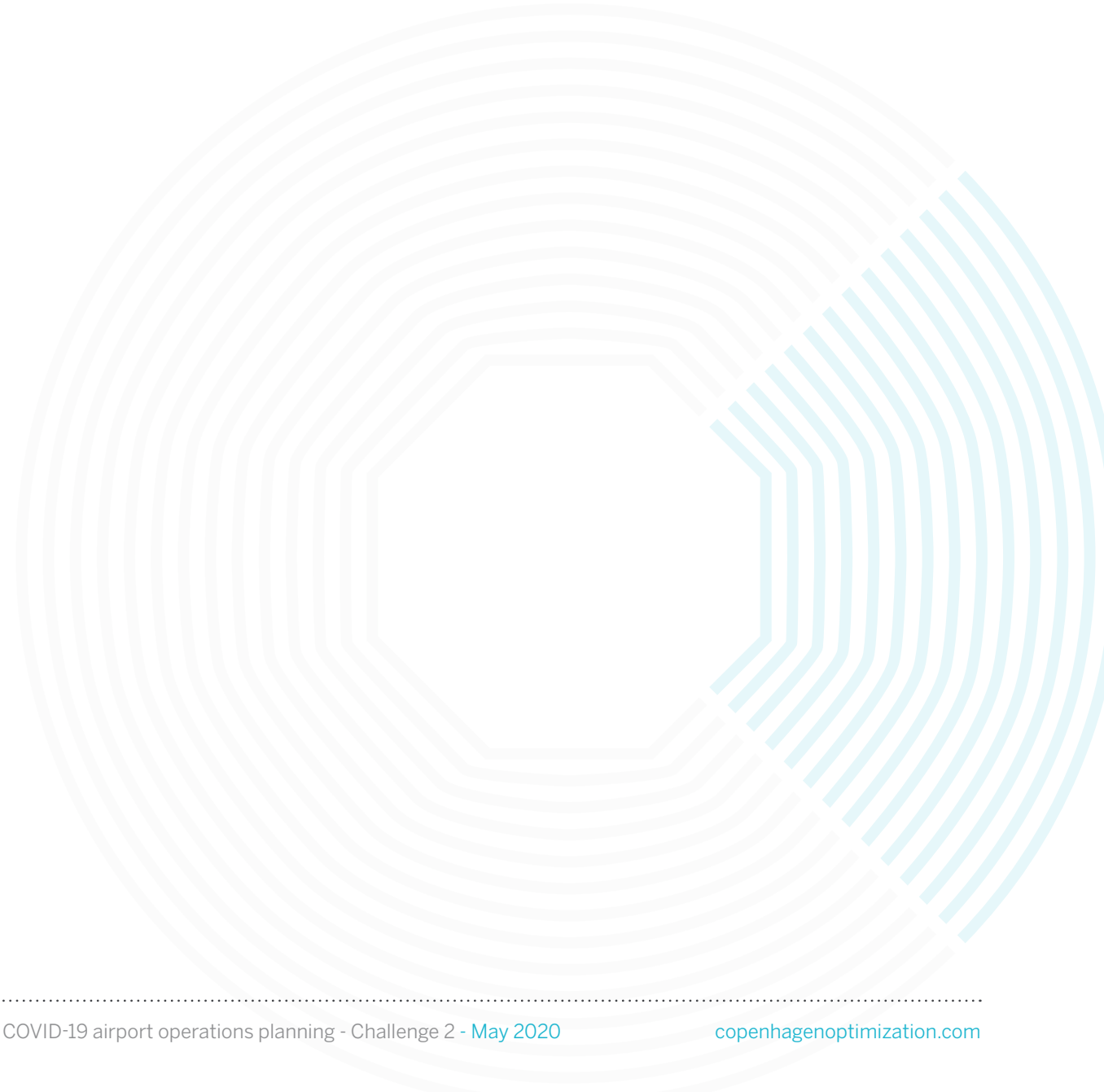
CONCLUSION

Focus efforts according to specific operational challenges hitting the airport and resource availability

Assessing when each challenge will be most intense is not an exact science, but it can provide guidance on how to focus, prioritize and time airport interventions so that the right resources are spent at the right time in the right area. Similarly, the timing of focus points should be interpreted fluidly: some, such as the introduction of new technology, are greatly welcomed already in phase 0, but require a balance between compliance with regulations and budget availability.

This article is part of a series on the challenges of COVID-19 for airport operations planning, and on how to best handle these challenges. Our focus is both short-term and long-term when we refer to the post-COVID-19 situation.

In this article we touch upon several challenges and recommendations that are treated in greater detail elsewhere in this series. If you want to know more on forecasting and data, please check article 1 “Challenge 1: High variance in flight schedules and load factors”. For more insights on how to cope with physical distancing and cleaning measures, have a look at article 3 “Challenge 3: Physical distancing” and article 4 “Challenge 4: Cleaning and personal protective equipment”.



ABOUT
Copenhagen Optimization

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If you would like to learn how we can help your airport navigate through the COVID-19 aftermath, reach out to us for a personal talk via:
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