

Arriving on time: the passenger priority

How a more efficient Network can help reduce airline schedule buffers

The significant increase of network ATFM delays over the last years contributed to an overall deterioration of airline punctuality. Faced with this increase in ATFM delays, the use of schedule buffers helped airlines to better deliver on the passenger priority of arriving on time. A more efficient Network will reduce ATFM delays and boost departure and arrival punctuality. As airlines require fewer schedule buffers it will also improve their aircraft utilisation.

Introduction

You've just boarded your flight. The pilot announces that boarding is complete, but the aircraft will have to wait another 10 minutes on the parking position because of "a small ATC delay". Relax. This doesn't automatically mean that you will arrive late at the destination airport. In recent years airlines have realised that arriving on-time is more valuable to a passenger than departing on-time, and developed tactical and strategic measures to ensure a flight arrives on time. This addresses the true priority of passengers – arrival punctuality - but also mitigates the risk of reactionary delay building up towards the end of the day.

In this example, the pilot immediately adds that despite the ATC delay the aircraft is still expected to arrive approximately 10 minutes ahead of schedule at the destination airport. In this case the departure delay was caused by a lack of en-route airspace capacity (an "ATFM regulation"), but it could have been for any reason like loading some late bags or an additional technical check.

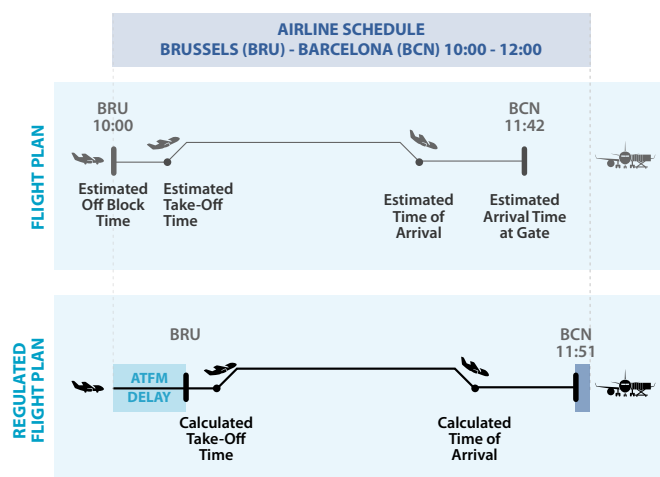
The days are gone when an on-time flight departure was good enough. We can see in performance data how airlines' new focus on arrival punctuality is changing their behaviour. But it's a slow, slow process of cultural change. Contract service level agreements, staff incentives and system performance measurements are in many cases still driven by departures. One way to mitigate delays on arrival

is by inserting strategic buffer in the schedule. A flight can then 'recover' more departure delay during the flight and arrive with less delay than it had on departure. The more the ATFM delay problem is chronic, continuing from month to month, the more airlines respond with buffers, just like a good project manager manages risk by adding 'contingency'.

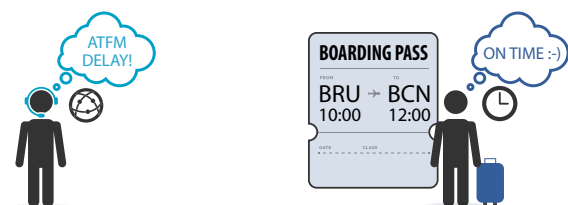
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Leave on time or arrive on time?

Historically, airlines' punctuality focus has been on achieving an on-time departure. The passenger's perception of a good service was strongly linked to the sensation that a flight journey 'started' at the time shown on their ticket, i.e. when an aircraft pushed back from the parking position. The moment the aircraft leaves the parking position remains an important operational milestone as it marks the end of the turnaround process. It is also when the delay cause assignment takes place using industry agreed delay codes.



“With ATFM delays significantly impacting airlines’ departure punctuality, airlines have been forced to react in order to protect the passenger’s priority of arriving on time.”



As air travel matured, airlines and passengers understood that a punctual departure has little value if the aircraft systematically arrives late. Airlines realised that a punctual arrival also means that the passenger will have a more positive feeling about the air travel part of their complete journey since it is the best starting point to reach the final destination, be it a business meeting, holiday or home.

For airlines, a punctual arrival reduces the risk of reactionary delays caused by waiting for the aircraft, passengers or crew from a delayed inbound flight. In addition, a punctual arrival reduces the risk of compensation under the EU’s passenger rights regulation (IR261/2004), on this flight, or subsequent ones.

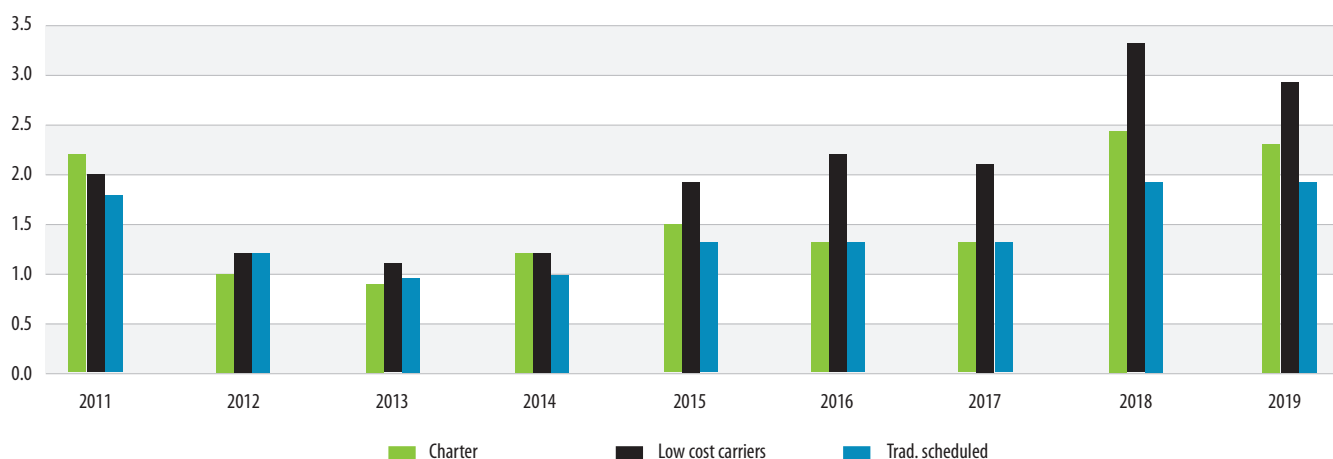
Network challenges

When looking at the Network ATFM delays (covering en-route, arrival and departure ATFM regulations) over recent years we observe an upward trend that started in 2013. All main airline market segments saw this increase although the Network impact varies between these categories. Compared to 2013, when the average ATFM delay per flight was +-1min/flight for all three market segments, the average ATFM delay per flight has more than doubled for charter and traditional scheduled airlines and almost tripled for LCCs (Low Cost Carriers).

Note: regardless of the ATFM regulation location, an ATFM delay will result in the aircraft being held longer at the gate at the departure airport. The ATFM regulation location can be en-route, at the arrival airport or at the departure airport.

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AVERAGE ATFM DELAY PER FLIGHT IN MINUTES BY MARKET SEGMENT



“A punctual arrival reduces the risk of compensation under the EU’s passenger rights regulation (IR261/2004)”



Strategic choices

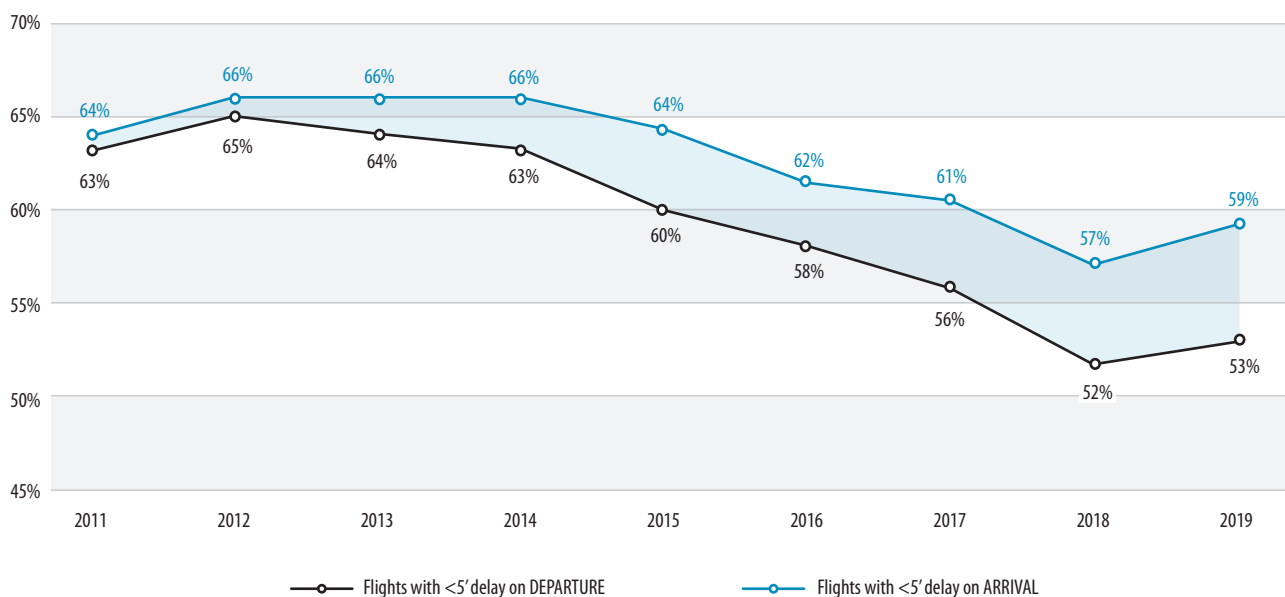
In order to achieve their performance goals, airlines have developed a wide range of strategic and tactical measures to mitigate the negative impact of departure (ATFM) delays. These measures include the use of schedule buffers, additional stand-by aircraft and crew, dynamic operating speeds, reduced turn-around times, etc. In this Think Paper we focus on the use of schedule buffers as a strategic measure to mitigate the potential knock-on effects of departure delays.

The use of schedule buffers is visible through the widening gap between the share of on-time flight departures and arrivals (flights with a delay < 5 minutes).

When looking at the share of on-time flights in the Network since 2011 we observe that as of 2013 the difference between the share of on-time departures and on-time arrivals (delay <5 minutes) started to widen. Overall there has been a drop in on-time performance over the last years but the share of on-time arrivals decreased at a slower rate compared to the share of on-time departures.

In 2011 the share of flights with a departure delay <5 minutes was 63% compared to 64% for arrivals. For 2019 this difference has increased to almost 6% (59% vs 53%) indicating that airlines developed mitigation techniques that focus on arrival punctuality.

NETWORK PERCENTAGE OF ON-TIME FLIGHTS (<5' DELAY)



However, differences can be observed when looking at this evolution by airline Market Segment. For LCCs the difference between the share of on-time arrivals and departures increased from 2% in 2011 to level off at 7% from 2017 onwards. The same evolution can be observed for traditional scheduled airlines but here we observe a levelling off at 5% from 2017 (or the same level LCCs reached in 2015).

Charter airlines come from a situation in 2011 with negative values – on average each airborne segment added delay – and over more recent years maintained a slightly positive value of around 2%.

Charter, low-cost and traditional scheduled carriers have all increased their focus on arrival punctuality, as the figure above shows. But low-cost airlines have been able to do more of this by actively marketing this performance focus with their passengers as part of their quality of service.

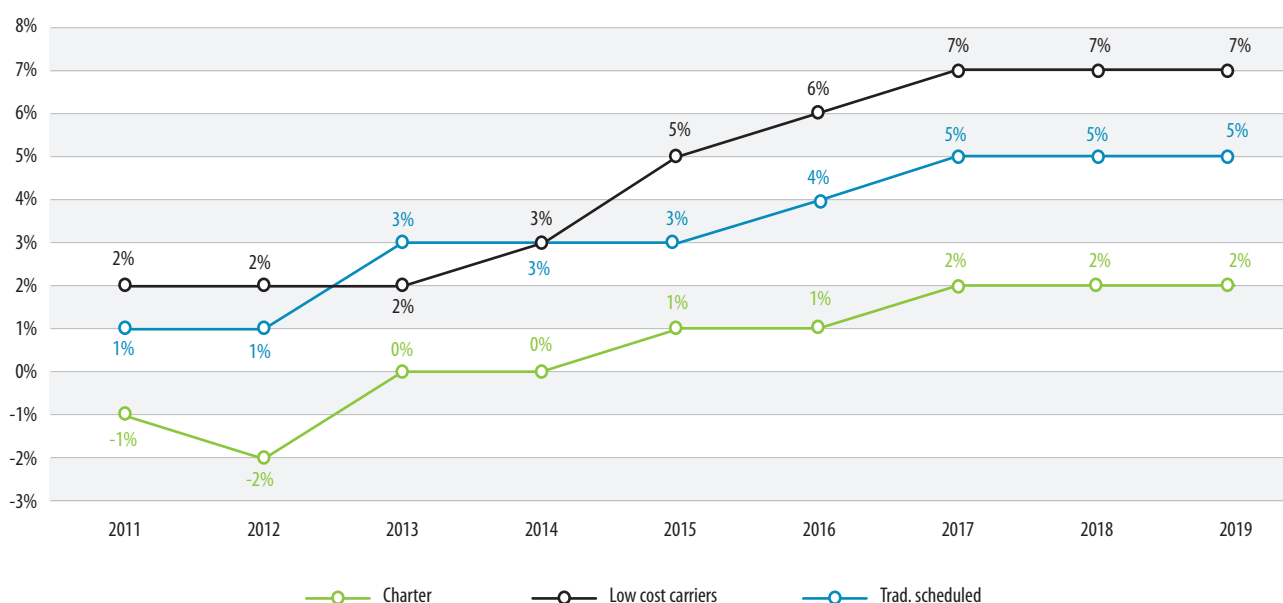
The use of schedule buffers comes at a cost as more resources are planned than actually required. It lowers the airline's aircraft utilisation and will result in aircraft arriving

A more efficient Network, with significantly less ATFM delay, will reduce the airline need to use those schedule buffers which are currently used to off-set the negative impact of ATFM delays.

ahead of schedule in the absence of the anticipated departure delay. In short, it reduces the predictability and capacity of the Network.

A more efficient Network, with significantly less ATFM delay, will reduce the airline need to use those schedule buffers which are currently used to off-set the negative impact of ATFM delays. In a more efficient Network there is less need for schedule buffers meaning airlines will be able to increase their aircraft utilisation.

DIFFERENCE BETWEEN THE SHARE OF ON-TIME ARRIVALS VS. DEPARTURES (<5 MINUTES DELAY ACCORDING TO SCHEDULE)



Conclusion

A significant increase in ATFM delays in recent years has led to declining punctuality. However, airline on-time arrival performance was less affected than the on-time departure performance, indicating a shift in the airlines' operational focus.

Airlines have developed reactive and strategic techniques to mitigate ATFM delays of which schedule buffering has become more and more important. But these schedule buffers come at a cost to the airlines as more resources are planned than actually needed. Schedule buffers also lower the aircraft utilisation and result in early arrivals in case the anticipated delay is lacking.

A more efficient Network also means a re-gained trust for airlines that the passenger priority of arriving on time will be achieved. A more efficient Network will also improve the aircraft utilisation and reduce the airline need for schedule buffers to off-set ATFM delays in order to maintain an acceptable level of arrival on-time performance.



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