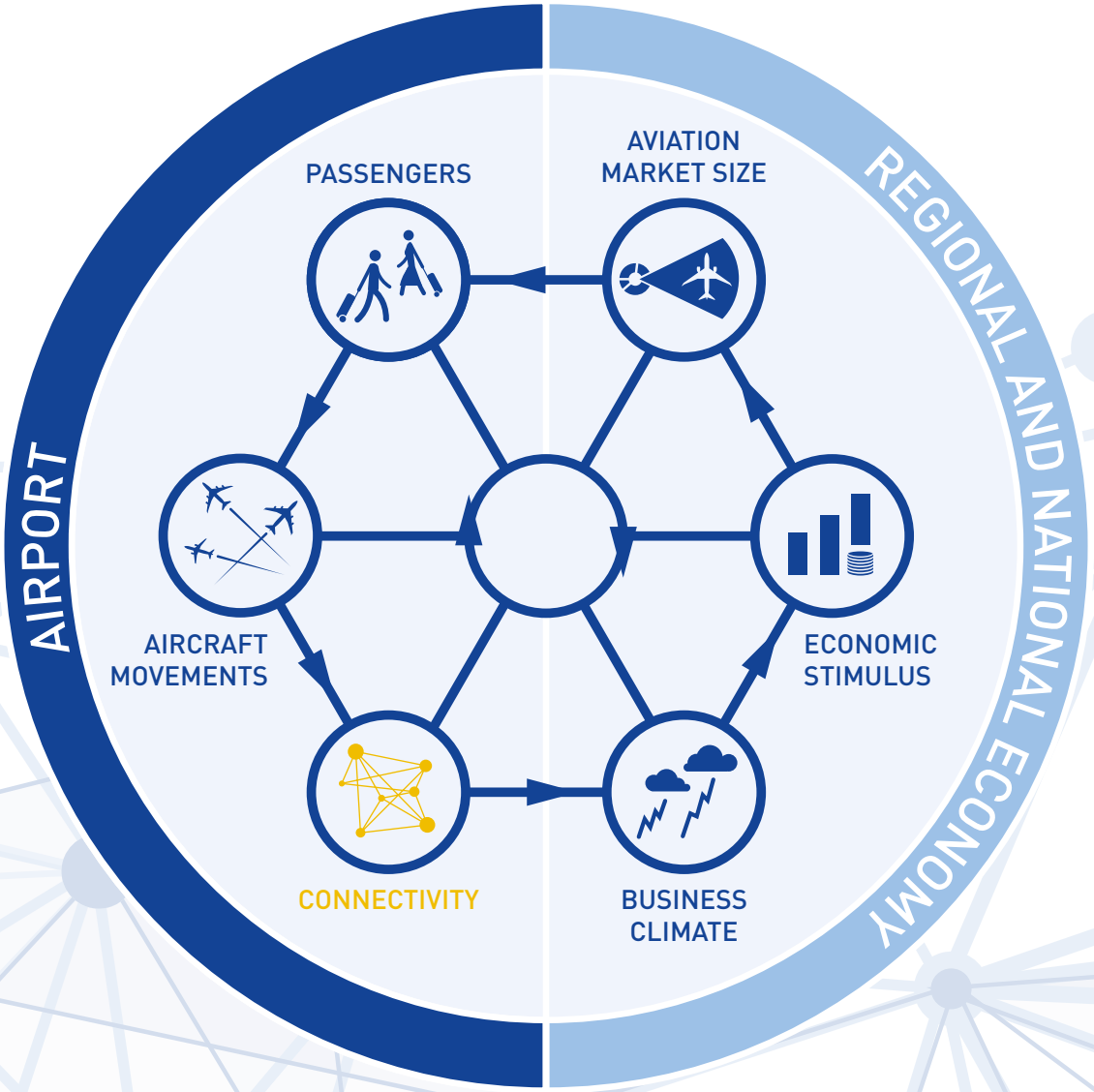
ACI EUROPE
AIRPORTS COUNCIL INTERNATIONAL

AIRPORT INDUSTRY CONNECTIVITY REPORT 2017

THE VIRTUOUS CIRCLE OF CONNECTIVITY



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Additional appendices detailing individual airport data on air connectivity are available to download here:
https://www.aci-europe.org/policy/connectivity2017.pdf

FOREWORD
WHY CONNECTIVITY MATTERS

Last year saw an unprecedented political and media focus on the promise, purpose and service of building walls – a wake-up call for globalisation and a step backward from 2 decades during which building bridges (diplomatic, digital or real world) was much more the norm. All of a sudden it seemed that public discourse had turned to favour isolation.

It was all the more shocking to many people, because of the ubiquity of the word 'connectivity' in daily life and how overtly positive its connotations are. Connection and connectivity are words that are so broadly used in society now that they apply to everything from telecommunications to transport, from social media networks to face-to-face conversations, from business to leisure. You could feasibly categorise it in 2 camps – digital connectivity and real world connectivity.

While Europe's airports are embracing the digital revolution to leverage the service quality and efficiencies afforded by more direct relations with passengers and improved ones with their industry partners, the very essence of an airport's purpose is real world connectivity. Airports exist to physically connect their communities, their regions and their economies to the rest of the World.

Since the advent of the EU Single Aviation Market, its extension to other European countries and linkage to external trading partners such as the US and Canada, Europe's airports have empowered themselves by actively seeking to attract new airlines and connect to a wider network of destinations.

Over the past 4 years publishing editions of this analysis report, we have sought to track the ebbs and lows of the connectivity facilitated by European airports. This new report also looks, for the first time, at how airline business models shape connectivity and the impact of the much talked about Gulf carriers and Turkish airlines on connectivity for Europe.

With the risks derived from pitting nationalism against globalism, this report also serves as a reminder that air connectivity is not a given and that its dynamics can be influenced by a wide range of economic, social and political factors. But one thing is certain: open trade and open skies are essential for air connectivity to develop. They are also key strategic instruments in the tool box of any future-looking and forward-thinking economy.

The European Commission has placed air connectivity at the core of its Aviation Strategy, which itself is part of its plan for Growth, Investment & Jobs. A reminder that the link between connectivity and GDP remains above politics, above walls and beyond dispute - even in these tumultuous times.

Olivier Jankovec
Director General
ACI EUROPE


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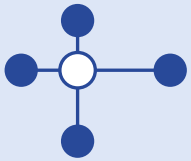
INTRODUCTION
TYPES OF AIR CONNECTIVITY

What is exactly air connectivity? How can it be measured? And how well connected is Europe?

As with previous editions, this year's report provides a comprehensive measurement and analysis of the way Europe's air connectivity has evolved over the past 10 years. Using the SEO NetScan connectivity model, the report provides indexes for direct, indirect and hub connectivity based on both quantitative and qualitative metrics. The airport connectivity index is made-up of both direct and indirect weekly frequencies, weighted by their quality.

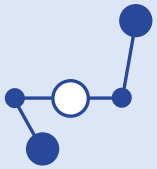
This means that this is not simply a measure of how many city pairs there are, or how many direct services there are. For the purposes of this report, connectivity is a composite measure of the number of destinations, the frequency of services and the quality of the connections (in the case of hubbing or indirect services).

Let's begin by outlining the various types of air connectivity that airports facilitate. The following 4 definitions describe them and together they provide a qualitative and quantitative picture of how an airport links to the rest of the world:



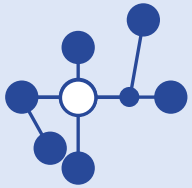
DIRECT CONNECTIVITY

These are the direct air services available from the airport – measured not just in terms of destinations, but also in terms of frequency (so for example, an airport with 5 daily flights to another airport, will register a higher score than one with only 4).



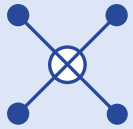
INDIRECT CONNECTIVITY

This measures the number of places people can fly to, through connecting flights at hub airports from a particular airport. For example, if there is a flight to Amsterdam-Schiphol, Istanbul or Dubai – the large number of available onward connections from these airports expands the range of destinations available from the airport of origin. Indirect connections are weighted according to their quality, based on connecting time and detour involved with the indirect routing. For example, a flight from Manchester to Johannesburg via Paris-Charles de Gaulle will register a higher score than an alternative routing via Doha.



AIRPORT CONNECTIVITY

As the name suggests, this is the most comprehensive metric for airport connectivity – taking into account both direct and indirect connectivity from the airport in question. Airport connectivity is defined as the sum of direct and indirect connectivity – thus measuring the overall level to which an airport is connected to the rest of the World, either by direct flights or indirect connections via other airports.



HUB CONNECTIVITY

This is the key metric for any hub airport big (such as London Heathrow) or smaller (such as Keflavik). Essentially, it measures the number of connecting flights that can be facilitated by the hub airport in question – taking into account a minimum and maximum connecting times, and weighting the quality of the connections by the detour involved and connecting times.

KEY INSIGHTS

- The **EU market is leading connectivity gains in 2017 (+4.3%),** with non-EU market growing at a slower pace (+1.4%) - mainly due to connectivity losses in Turkey (-6%) and Norway (-2%). **Direct connectivity in the EU outperforms indirect connectivity gains** (+5.4% versus +3.8%) – reflecting continued & increased market penetration by Low Cost Carriers (LCCs).

- **Since 2007, Europe's direct connectivity gains (+16%) has been entirely driven by LCCs** – while Full Service Carriers (FSCs) have seen their direct connectivity decrease by -8%. While LCCs now account for nearly a third of Europe's direct connectivity (up from just 13% in 2007), 98% of their direct connectivity remains focused on linking airports within the intra-European market. **The bulk of Europe's direct connectivity to other world regions remains the preserve of FSCs** – where they keep growing their offer (+30.6%). However, LCCs have also started providing direct connectivity to external markets – mainly to North America.

- **Smaller regional airports (less than 5 millions) are no longer leading direct connectivity growth** – reflecting that LCCs have moved upmarket & into larger airports.

- **Amsterdam-Schiphol is now the number 1 airport in Europe in terms of direct connectivity** – having replaced London-Heathrow in that position since 2016. **Frankfurt, Paris Charles de Gaulle** and **Istanbul-Atatürk** are also included in the top 5 European airports offering the highest levels of direct connectivity.

- **Frankfurt remains the airport offering the best hub connectivity in the world** – followed by **Amsterdam-Schiphol, Dallas-Forth Worth, Paris-Charles de Gaulle** and **Atlanta.**

- While the top 20 airports in terms of hub connectivity include mainly European and North American airports (along with Dubai and Doha), **the airports which have shown the fastest increase in hub connectivity over the past 10 years are predominantly in the Middle East and Asia – including China** with Guangzhou, Shanghai-Pudong, Kunming, Shenzhen and Chengdu. **Brussels** and **Lisbon** are the only 2 EU airports in the list of the 20 airports reporting the fastest hub connectivity growth since 2007.

  All this is pointing to **changing and increasing competitive dynamics for hub airports.**

- Since 2007, **Dusseldorf, Dublin, Warsaw** and **Berlin Tegel** have joined the **Top 20 European airports offering the best hub connectivity** – while **Milan-Malpensa, Barcelona El-Prat, Prague and Stockholm-Arlanda** have exited the league.

- **The 3 largest Gulf airlines and Turkish Airlines have captured an increasing market share of indirect connectivity between the EU and Asia Pacific (19%, up from 4.9% in 2007)** – mainly at the expense of the 3 top European FSC groups (Air France/KLM, IAG and the Lufthansa Group have seen their market share decrease from 60.6% to 41.8%.

  However this has **not resulted in a reduction of the direct connectivity offered by the top European FSC groups to Asia from their hubs** – but may have constrained their growth prospects. The performance of these airlines in this regard is quite contrasted - and often follows similar trends to their direct connectivity to North America. Also, when looking at selected secondary hubs & point-to-point airports where Gulf airlines/Turkish Airlines operate, their significant contribution to indirect connectivity from these airports has not prevented the top European FSC groups from growing their own indirect connectivity.

1. EUROPEAN AIRPORT CONNECTIVITY AT A GLANCE

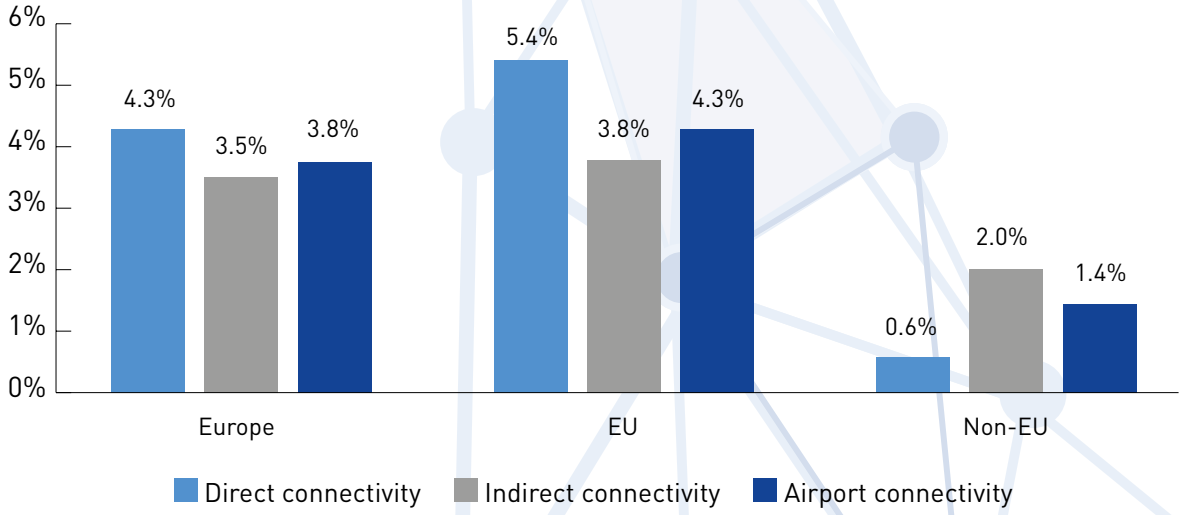
EU MARKET LEADING CONNECTIVITY EXPANSION

In 2017, **overall average airport connectivity** increased by **+3.8%**, reflecting significant airline capacity expansion. Most of the connectivity gains came from the **EU market** at **+4.3%**, where Cyprus, Latvia, Lithuania, Malta and Portugal achieved double-digit growth. Conversely, connectivity in the **non-EU market** grew at a much slower pace at **+1.4%** - mainly due to connectivity losses in Turkey (-6%) and Norway (-2%) as well as limited gains in Switzerland (+1%).

Unsurprisingly, the gap in connectivity growth between the EU and non-EU markets largely reflected their traffic performance in Q1 2017[1].

[1] In Q1 2017, passenger traffic grew by +7.2% and aircraft movements by +3.4% at EU airports, while the growth at non-EU airports was respectively +5.9% and +1.8%.

DIRECT, INDIRECT AND AIRPORT CONNECTIVITY 2017 vs 2016



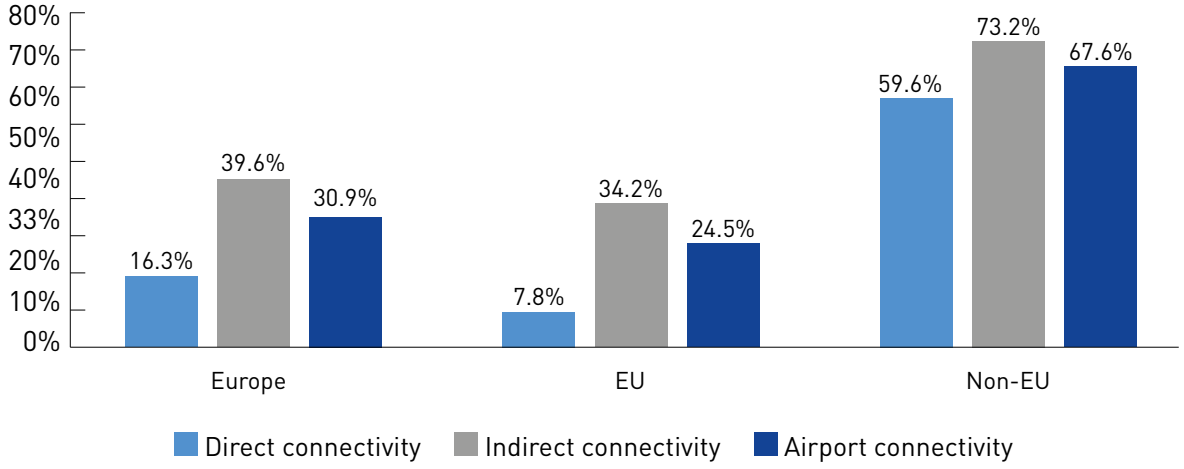
NEW CONNECTIVITY PATTERNS

For the second year in a row, **direct connectivity remained the main driver of airport connectivity growth** – again driven by significant gains in the EU market (+5.4%). This is in **sharp contrast to the 'traditional' dynamics of airport connectivity, which usually see direct connectivity** gains bringing with them larger increases in indirect connectivity. To give an example, since 2007, direct connectivity across Europe increased at less than half the pace of indirect connectivity (16.3% vs. 39.6%).

This new trend reflects the expansion of Low Cost Carriers (LCCs), whose traffic has remained – for now – mostly point-to-point. Hence, unlike Full Service Carriers (FSCs) with their strong focus on transfer traffic based on hub & spokes operations, LCCs only have marginal impacts on indirect connectivity. It may also be, to a lesser extent, a reflection of airport capacity limitations at larger & hub airports – which tend to constrain indirect connectivity developments.

In the future, direct & indirect connectivity dynamics may change again – with LCCs' business model evolution potentially leading to these carriers developing indirect connectivity.

DIRECT, INDIRECT AND AIRPORT CONNECTIVITY 2017 vs 2007



STRONG CONNECTIVITY GAINS TO EMERGING MARKETS

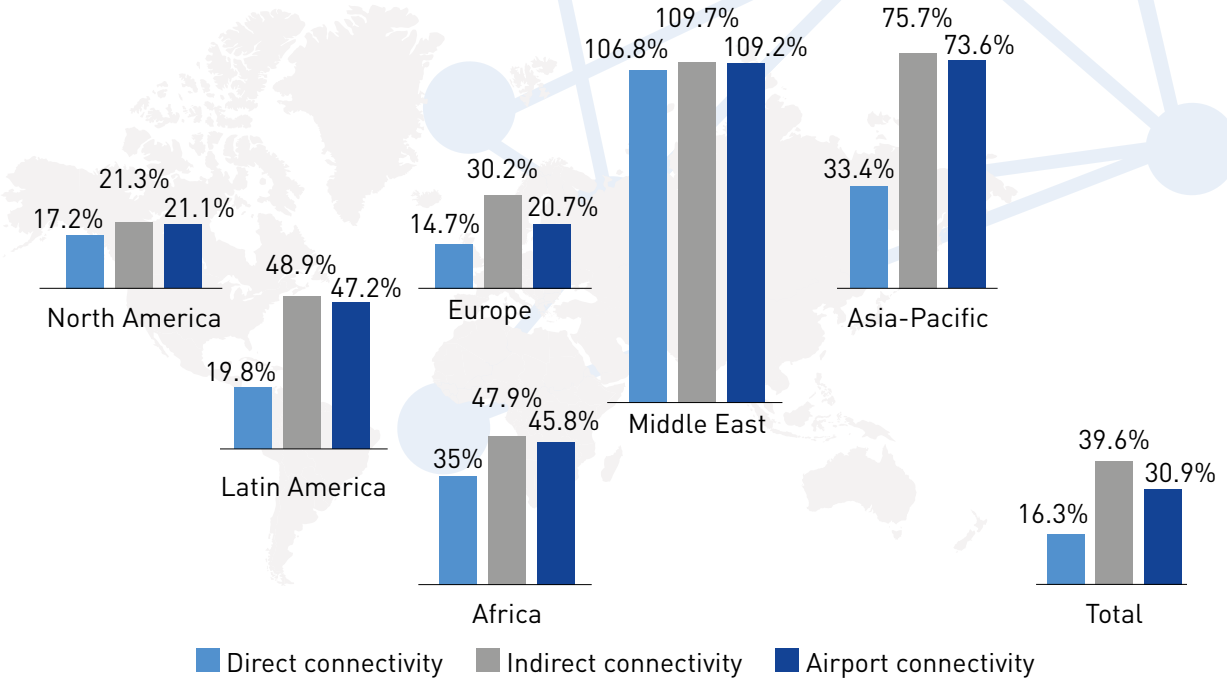
Unsurprisingly, the largest increases in connectivity over the past 10 years have been to the Middle East (+109.2%) - on the back of the significant expansion of Gulf carriers - as well as to **Asia Pacific (+73.6%)**, followed by Latin America (+47.2%) and Africa (+45.8%).

The stronger increase in connectivity to Asia Pacific (compared to Africa and Latin America) is largely driven by indirect **connectivity gains** (+75.7%) - which are mainly correlated with:

- Direct connectivity increases to the Middle East +106.8%, through which the Gulf hubs provide indirect connectivity between Europe and Asia Pacific.
- Intra-Asian direct connectivity developments - particularly from large Chinese hubs, which have resulted in new indirect connectivity from Europe to Asia via these hubs.

However, the development of such indirect connectivity does not seem to have disproportionately affected direct connectivity gains between Europe and Asia Pacific. Indeed, the increase in direct connectivity to Asia Pacific (+33.4%) is almost equivalent to the increase in direct connectivity to Africa (+35%) and much higher than the increase in direct connectivity to Latin America (+19.8%).

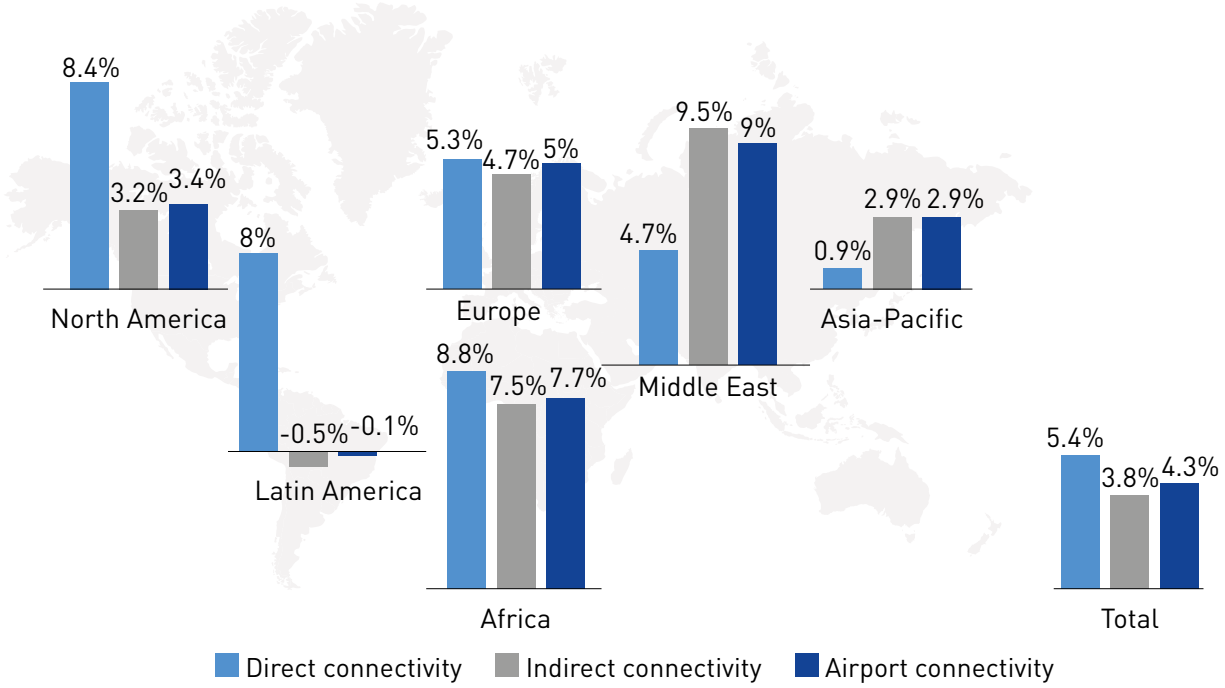
DIRECT, INDIRECT AND AIRPORT CONNECTIVITY BY WORLD REGION 2017 vs 2007



Looking specifically at the **EU market** and its performance over the past year, slightly different patterns are emerging:

- **Direct connectivity** is **outperforming indirect connectivity not just to Europe but also to North America**. This reflects LCCs penetrating the transatlantic/long haul market.
- Similarly, **direct connectivity to Africa and Latin America are also outperforming indirect connectivity**. 66 European airports saw flights to Africa increasing in 2017 – mainly to Northern Africa, but also to Ivory Coast, Ethiopia, Cape Verde, the Seychelles and South Africa. 19 European airports saw flights to Latin America increasing – mainly to Mexico, Colombia, Cuba and the rest of the Caribbean.
- **Direct connectivity to Asia Pacific is barely growing** and overall connectivity to the region is surprisingly weak for such an emerging market. However, Asia Pacific remains the second largest external market in volume for direct connectivity – after the US. Direct connectivity to Asia Pacific is 4 times that of direct connectivity to Africa and 3 times that of direct connectivity to Latin America.

DIRECT, INDIRECT AND AIRPORT CONNECTIVITY FROM EU AIRPORTS BY WORLD REGION 2017 vs 2016



2. CONNECTIVITY & AIRLINE BUSINESS MODELS

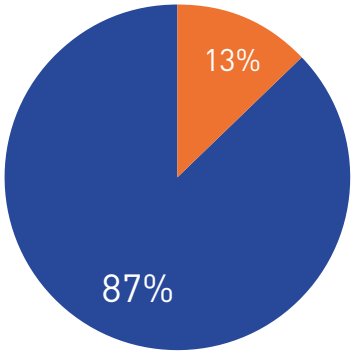
As already mentioned above, airline business models have different implications for connectivity. Whereas FSCs operating hub & spoke networks and being part of global alliances/interlining arrangements provide both direct and indirect connectivity, LCCs remain focused on point-to-point traffic and essentially provide direct connectivity – a notable exception being Vueling.

This may well change – with LCCs now looking at offering connections either within their own networks or with FSCs. The recent announcement that Ryanair is setting up connecting services at Rome-Fiumicino and planning to feed the long haul routes of Air Europe out of Madrid-Barajas by the end of 2017 appear to be first moves in that direction.

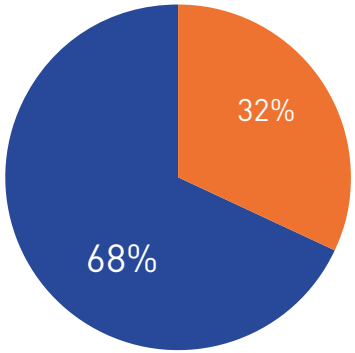
DIRECT CONNECTIVITY GAINS DRIVEN BY LCCs

Looking at the past 10 years, Europe's direct connectivity gains (+16%) are entirely attributable to LCCs as result of their dynamic expansion and the relative retrenchment of FSCs (and others) – which have seen their direct connectivity decrease by -8%. Accordingly, LCCs now account for nearly a third of Europe's direct connectivity.

DIRECT CONNECTIVITY 2007

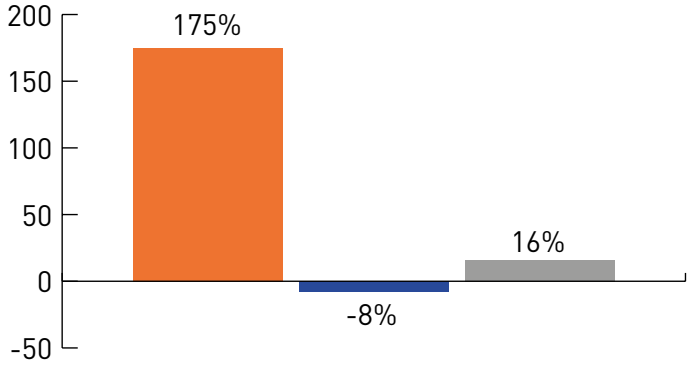


DIRECT CONNECTIVITY 2017



LCC FSC

DIRECT CONNECTIVITY 2017 vs 2007

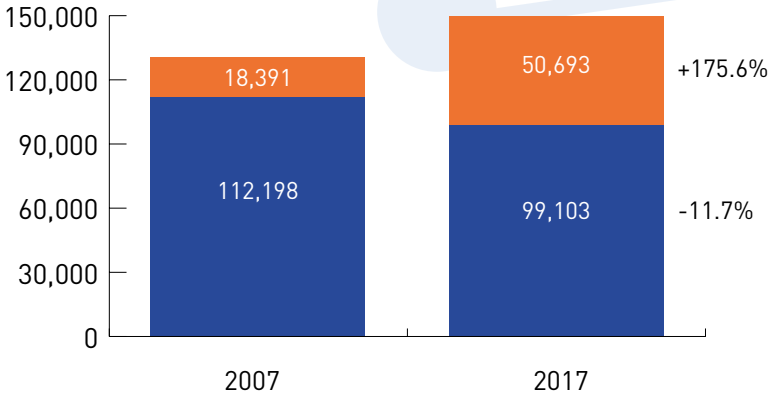


LCC FSC Total

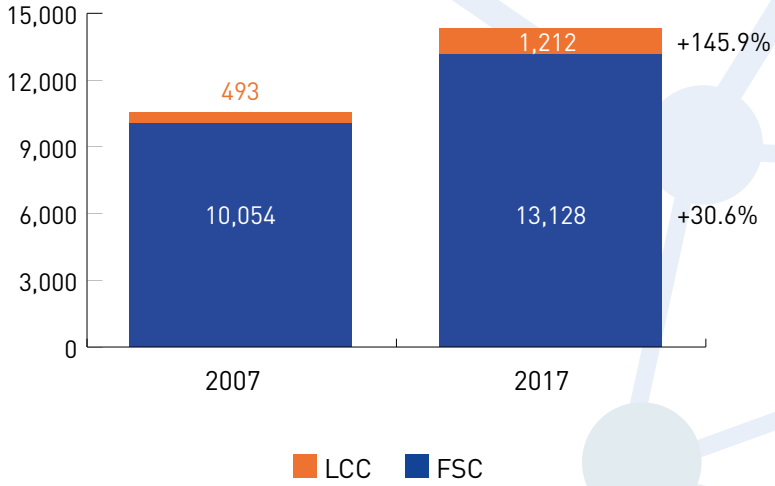
DIRECT CONNECTIVITY TO OTHER WORLD REGIONS STILL PROVIDED BY FSCs

Nearly 98% of the direct connectivity offered by LCCs is on intra-European routes – as a result, the **bulk of direct connectivity to other World regions (91%) is provided by FSCs**. While LCCs have increased their direct connectivity to these external markets by an impressive +146% since 2007, they have done so from a low base. The increase coming from FSCs over the same period (+30.6%) amounts to 4 times the volume of additional direct connectivity provided by LCCs. These figures point to the potentially significant growth & disruptive potential of LCCs into long haul markets

DIRECT CONNECTIVITY TO EUROPE BY AIRLINE TYPE



DIRECT CONNECTIVITY OUTSIDE EUROPE BY AIRLINE TYPE

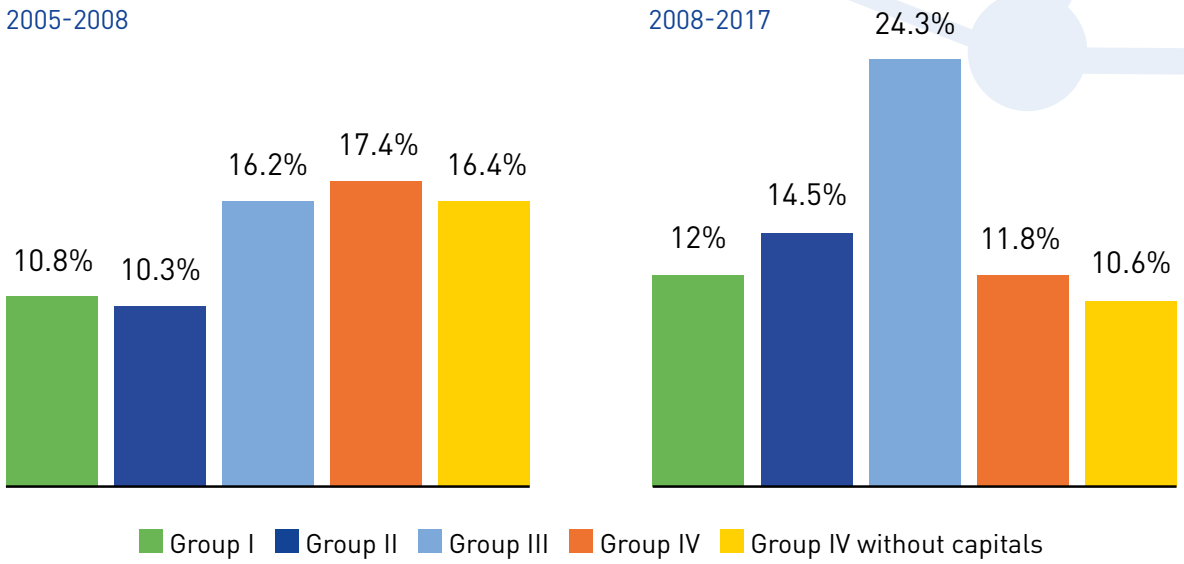


LCCs UPMARKET MOVE LIMITS DIRECT CONNECTIVITY GROWTH AT SMALLER REGIONAL AIRPORTS

The recent move of LCCs into larger markets & primary airports (supported by a product offering also targeting time sensitive passengers) **has somehow altered the connectivity dynamics** between the different segments of the airport industry:

While smaller regional airports (less than 5 million passengers per annum – Group IV) used to record the most dynamic growth rates in direct connectivity before the global financial crisis, since then, they have underperformed compared to other segments.

DIRECT CONNECTIVITY BY AIRPORT GROUP (2005-2017)



AIRPORT TRAFFIC GROUP CATEGORISATION

Group I: Over 25 million passengers a year

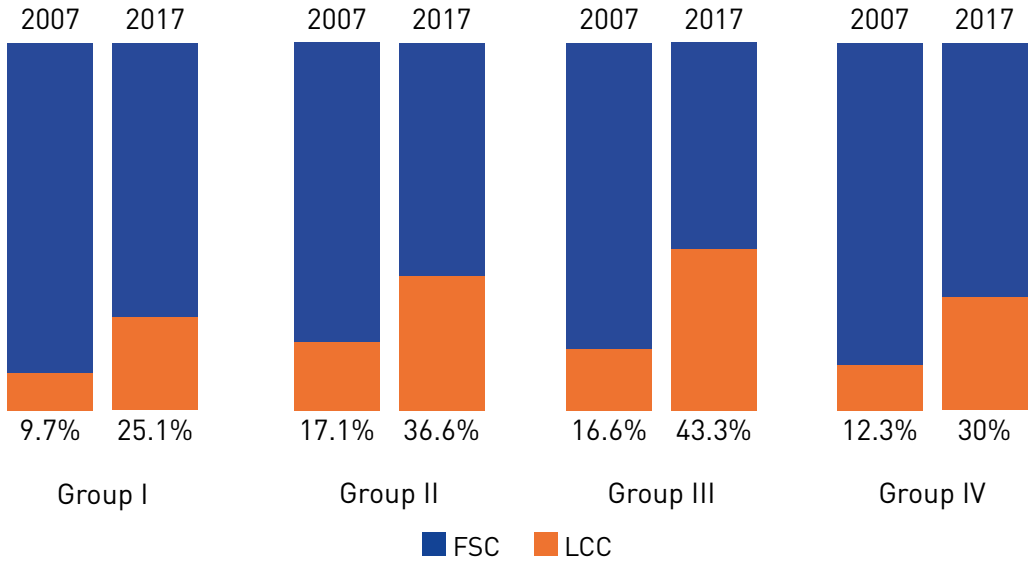
Group II: 10 to 25 million passengers a year

Group III: 5 to 10 million passengers a year

Group IV: 0 to 5 million passengers a year

Over the past 10 years, the expansion of LCCs resulted in these carriers increasing their share of direct connectivity across all segments of the airport industry.

DIRECT CONNECTIVITY SHARE 2007/2017 LCCs vs FSCs



ENABLING AIRCRAFT

Many of the new connectivity patterns we are seeing on long haul flights share an unmistakable common denominator – being operated by a new breed of aircraft: the **Boeing 787 Dreamliner and the Airbus A350.**

In the case of the Dreamliner, as of April 2017, some 70 of these aircraft have been delivered to European airlines, with a further 113 to be delivered to them in the coming years. It is already or will be in service with 11 European carriers – each of which is taking advantage of its higher fuel efficiency and longer range. Meanwhile, around 80 A350s are currently in use by 12 airlines, with a significant number of them deployed on services to/from Europe.

Both the Dreamliner and the A350 have been groundbreaking in helping airlines open new direct routes from both major and regional airports – over 138 new non-stops routes have already been announced. Between them, these 2 aircraft now facilitate city pairs involving 49 European airports – including previously infeasible services such as Bergen-New York JFK, Cardiff-Barbados, Dublin-Addis Ababa, Edinburgh-Doha and Krakow-Chicago.

On top of that, the upcoming next generation of the Boeing 737-800 and the Airbus A320: the 737 MAX and the Airbus A320 NEO will also allow airlines more range and flexibility – something many of them are already planning. With thousands of these aircraft currently on order, they will certainly be a further boost to connectivity dynamics, as they come into service.

THE A380

The **Airbus A380** – famously, the world's largest passenger aircraft – first entered into service in 2008 and is currently operated by 12 airlines serving Europe. It has been useful to airlines seeking to increase the number of passengers per flights, particularly from capacity constrained airports, where airports slots are in very short supply. On the flip side, the A380 has also been deployed to brilliant effect at many medium-sized airports, such as Birmingham, Dusseldorf, Prague and Vienna.

An Ethiopian Airlines' Boeing 787 Dreamliner coming into land at Dublin Airport – where its operates routes connecting Addis Ababa to Dublin and on to Los Angeles. The airline already has 17 of the aircraft in service, with more on order.

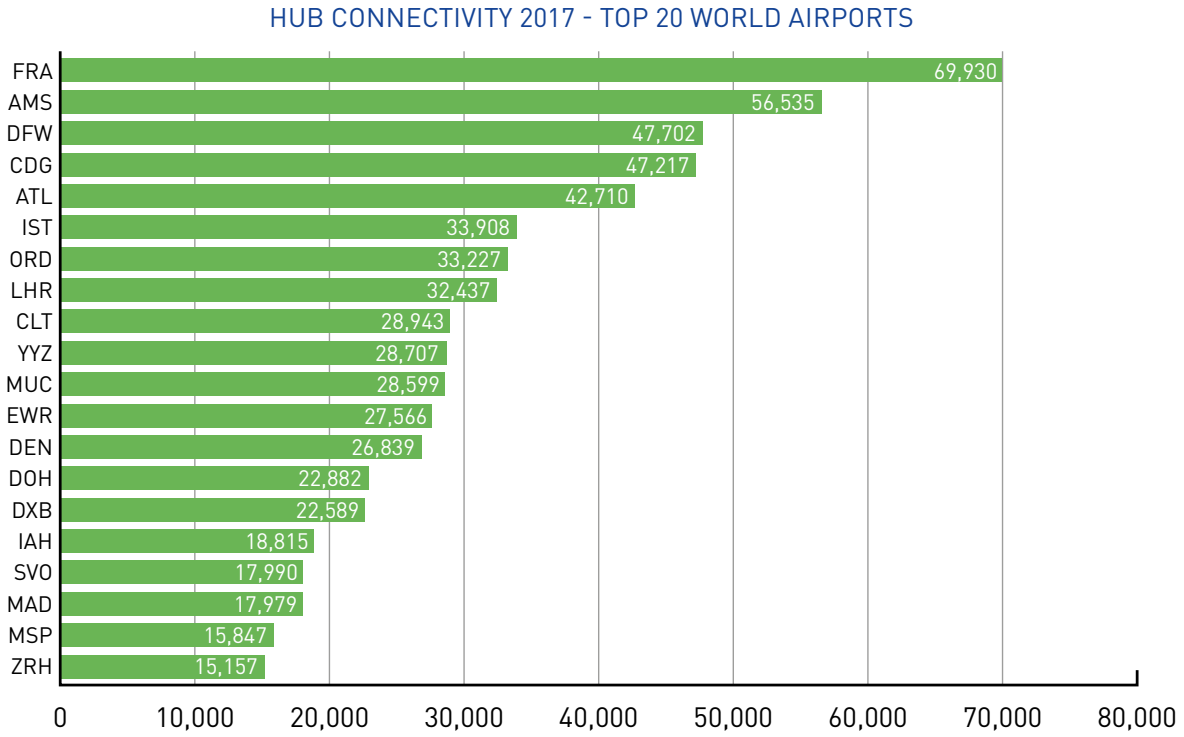
Finnair - the first European airline to operate the Airbus A350 already has 8 of them in service, with 11 more due for delivery between now and 2023.

3.A FOCUS ON THE HUBS & TOP 20

EUROPEAN AIRPORTS ON TOP OF GLOBAL HUB CONNECTIVITY RANKING

As in the previous year,[2] European hubs remain the best connected hubs in the world – serving our continent as enablers of air connectivity with the wider World. 2017 data on hub connectivity shows that:

- **Frankfurt is the best connected hub Worldwide.**
- 4 other European hubs - **Amsterdam-Schiphol, Paris-Charles de Gaulle, Istanbul-Atatürk** and **London-Heathrow** - are amongst the top 10 Global hubs (along with Dallas-Fort Worth, Atlanta, Chicago-O'Hare, Charlotte and Toronto-Pearson) showing impressive levels of hub connectivity.
- 4 more European hubs - **Munich, Moscow-Sheremetevo, Madrid-Barajas and Zurich** - are included in the top 20 airports globally in terms of hub connectivity.



[2] *2016 Airport Industry Connectivity Report*

INTENSIFYING GLOBAL HUB COMPETITION

Looking at those airports that have achieved the highest growth in hub connectivity over the past 10 years, a more contrasted picture emerges. **Gulf & Asian Hubs** – including a number of Chinese airports, **have clearly been driving hub dynamics.**

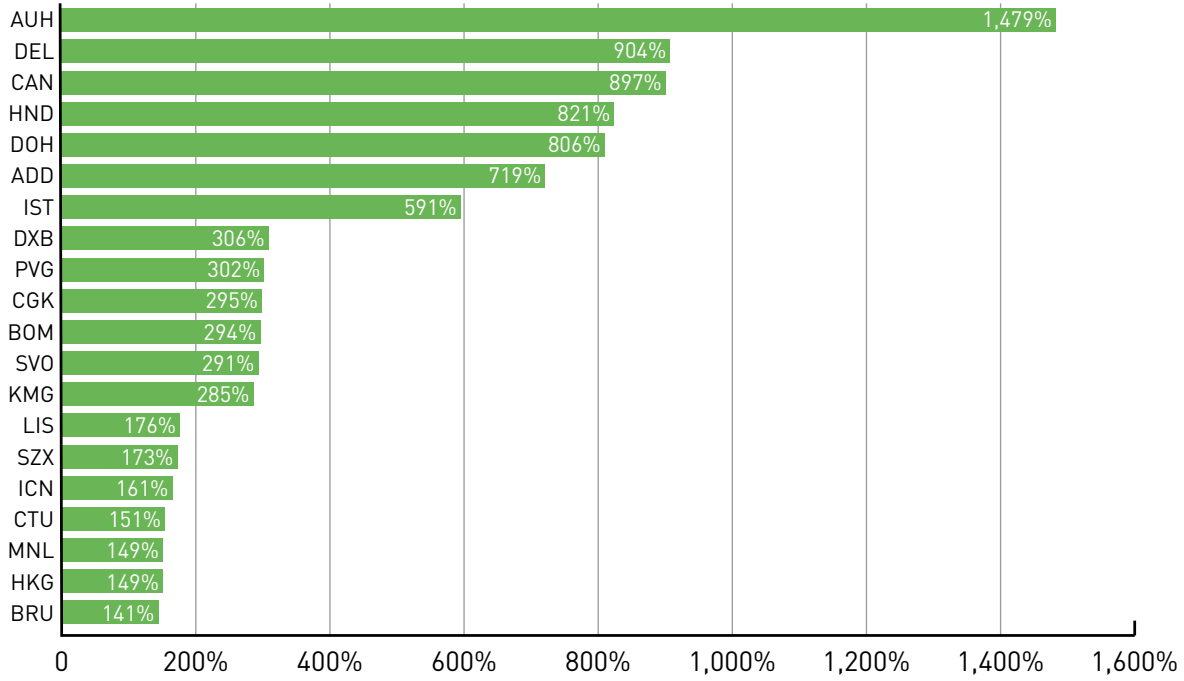
- **Abu Dhabi** has been the fastest growing hub since 2007 **(+1,479%)**, followed by **Delhi (+904%)** and **Guangzhou (+897%)**. None of these airports features in the top 20 hubs globally for now (Abu Dhabi: n. 39, Delhi: n. 54 and Guangzhou: n. 52), but their rise is emblematic of the shift happening in Global aviation towards the Gulf & Asia.

- Whereas the top 20 Global hubs currently include European and North American airports only, **Gulf & Asian hubs are preeminent amongst the 20 fastest growing airports in terms of hub connectivity since 2007**:

  - 3 are from the Gulf – **Abu Dhabi, Doha (+806%)** and **Dubai (+306%)**.
  - 12 are from Asia, of which 6 from China: **Guangzhou, Shanghai-Pudong (+302%), Kunming (+285%)**, **Shenzhen (+173%), Chengdu (+151%)** and **Hong Kong (+149%)**.
  - Only 4 are from Europe: **Istanbul-Ataturk (+591%), Moscow-Sheremetevo (+291%), Lisbon (+176%)** and **Brussels (+141%)**.
  - Quite interestingly, one is also from Africa: **Addis Ababa (+719%)** and none from North America.

Conversely, those European and North American airports which dominate the top 20 Global hubs list have seen their hub connectivity grow at a much slower pace or even remain flat over the same period.

HUB CONNECTIVITY 2017 – TOP 20 FASTEST GROWING WORLD AIRPORTS



EUROPEAN HUB & DIRECT CONNECTIVITY DYNAMICS

The past 10 years have seen **significant changes in hub connectivity rankings amongst the top 20 airports** – once again revealing how the **competitive dynamics** and specific **local circumstances** play a role as well (airport capacity constraints, terminal infrastructure developments and the fate of their home based carrier).

- Among **'the Majors'** (top 6 airports based on hub connectivity levels) which are led by **Frankfurt** (which also has the best hub connectivity level worldwide), **Paris-Charles de Gaulle** and **Amsterdam-Schiphol** have swapped their ranking as number 2 and 3 – with the latter seeing a significant increase in hub connectivity (+70%).

- **Istanbul-Atatürk** has joined the Majors (growing its hub connectivity by an exceptional +591%), replacing London-Heathrow as the 4th best connected European hub (up from the 13th position in 2007). **London-Heathrow** (+13%) is now in the 5th position, followed by **Munich** (+20%).

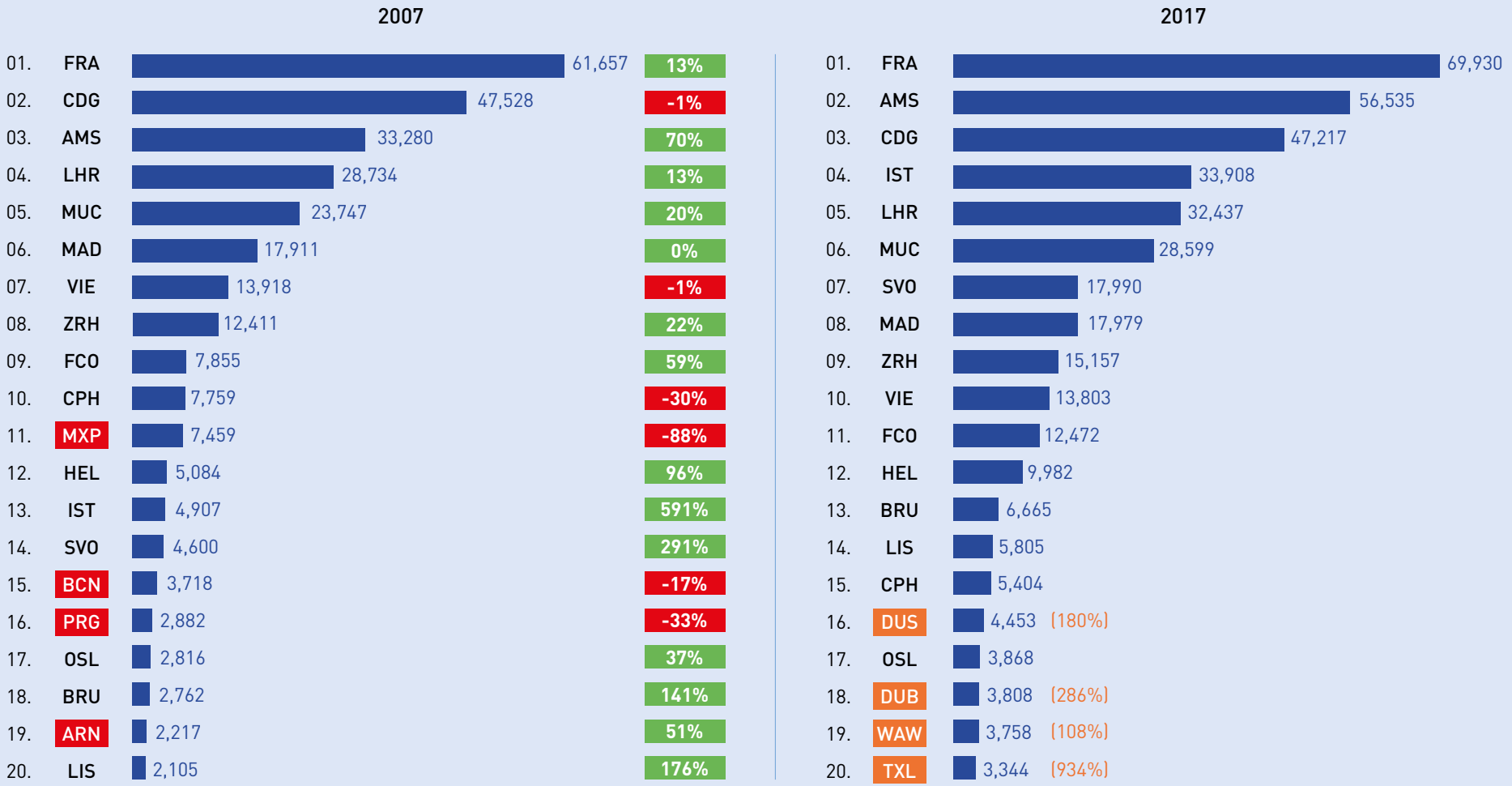
- Along with Istanbul, **Moscow-Sheremetyevo** has also seen very significant hub connectivity growth (+291%), jumping from the 14th position to the 7th – ahead of **Madrid-Barajas** (0%), which exited from the Majors.

- **Other winners** include **Brussels** (+141% – jumping from the 18th to the 13th position) and **Lisbon** (+176% - jumping from the 20th to the 14th position), as well as **4 new entrants in the top 20 league: Dusseldorf** (+ 180%), **Dublin** (+ 286%), **Warsaw** (+108%) and **Berlin-Tegel** (+934%).

- **Zurich, Rome-Fiumicino, Helsinki** and **Oslo** also grew their hub connectivity (respectively by +22%, +59%, +96% and +37%) but did not see their ranking improving.

- Finally, while **Vienna** (-1%) and **Copenhagen** (-30%) saw their hub connectivity decrease and lost a few places in the top 20 league, **4 airports exited the ranking: Milan-Malpensa** (-88%), **Barcelona** (-17%), **Prague** (-33%) and **Stockholm-Arlanda** (+51%). The fact that Stockholm-Arlanda did not remain amongst the top 20 hubs despite a substantial growth in hub connectivity is indicative of increased competitive dynamics amongst European hubs.

HUB CONNECTIVITY: 20 FASTEST GROWING AIRPORTS IN EUROPE



As far as **direct connectivity** is concerned, changes have also been substantial between 2007 and 2017. Most of the losses in direct connectivity are concentrated at larger hubs and in particular amongst the Majors (5 out of 6 Majors saw a decrease in direct connectivity over the period). This is consistent with the fact that as mentioned above, LCCs have been the main drivers of direct connectivity since 2007.

- **Amsterdam-Schiphol** (+20%) **is now the leading European airport in terms of direct connectivity**. The airport jumped from the 6th position back in 2007 and surpassed London-Heathrow (-2.1%), which last year ranked number 1. While Amsterdam-Schiphol's direct connectivity performance relates in part to its hub connectivity gains, it is also reflective of the fact that LCCs now account for 21% of the airport's direct connectivity – the highest LCC direct connectivity share amongst the Majors[3].

  Istanbul-Atatürk (+118%) jumped from the 20th position to the 5th, with the airport's direct connectivity being closely correlated with its hub connectivity gains. While **London-Heathrow**'s decrease in direct connectivity is mainly attributable to a lack of airport capacity, the losses experienced by **Paris-Charles de Gaulle** (-8.4%), **Frankfurt** (-2.9%) and **Munich** (-4%) can be linked to their respective hub carrier's network rationalisation.

- Other airports seeing direct connectivity decreases over the past 10 years include **Madrid-Barajas** (-19% - exiting the Majors), **Barcelona El-Prat** (-3.2%), **Rome-Fiumicino** (-0.6%), **Vienna** (-6.9%) and **Milan-Malpensa** (-25.6%) – the latter no longer being amongst the top 20 European airports.

  While Madrid's sharp decrease reflects the harsh impact of the global economic and European sovereign debt crises in Spain, Barcelona El-Prat was better able to weather the impact thanks to a significant penetration of LCCs[4]. LCC penetration also limited direct connectivity losses at Rome-Fiumicino[5] (attributable to the continuous restructuring of its hub carrier) – but less so for Vienna airport[6] . Milan-Malpensa's direct connectivity was hard hit by the de-hubbing of Alitalia (March 2008), the impact of which is still being felt after 9 years - despite a very significant penetration of LCCs[7].

- Conversely and apart from Istanbul-Ataturk and Amsterdam-Schiphol – amongst the airports in the top 20 back in 2007, **London-Gatwick** saw the largest direct connectivity increase (+20.8%), followed by **Stockholm-Arlanda** (+16.7%), **Oslo** (+13.3%), **Zurich** (+12.7%) and **Brussels** (+10.5%). For all these airportst, with the exception of Zurich to a lesser extent, these direct connectivity gains came along with a notable increase in the penetration of LCCs.

  Direct connectivity growth was less dynamic at **Manchester** (+7%), **Copenhagen** (+5.7%), **Dusseldorf** (+3.1%), and **Paris-Orly** (+0.1%) – despite an also significant increase of the share of LCCs in these airport's direct connectivity.

- Finally, **Milan-Malpensa**, **Manchester** and **Brussels** were replaced in the top 20 league by **Moscow-Sheremetyevo** (+78% - 11th position), **Palma de Mallorca** (+42% - 14th position), and **Dublin** (+23% - 20th position).

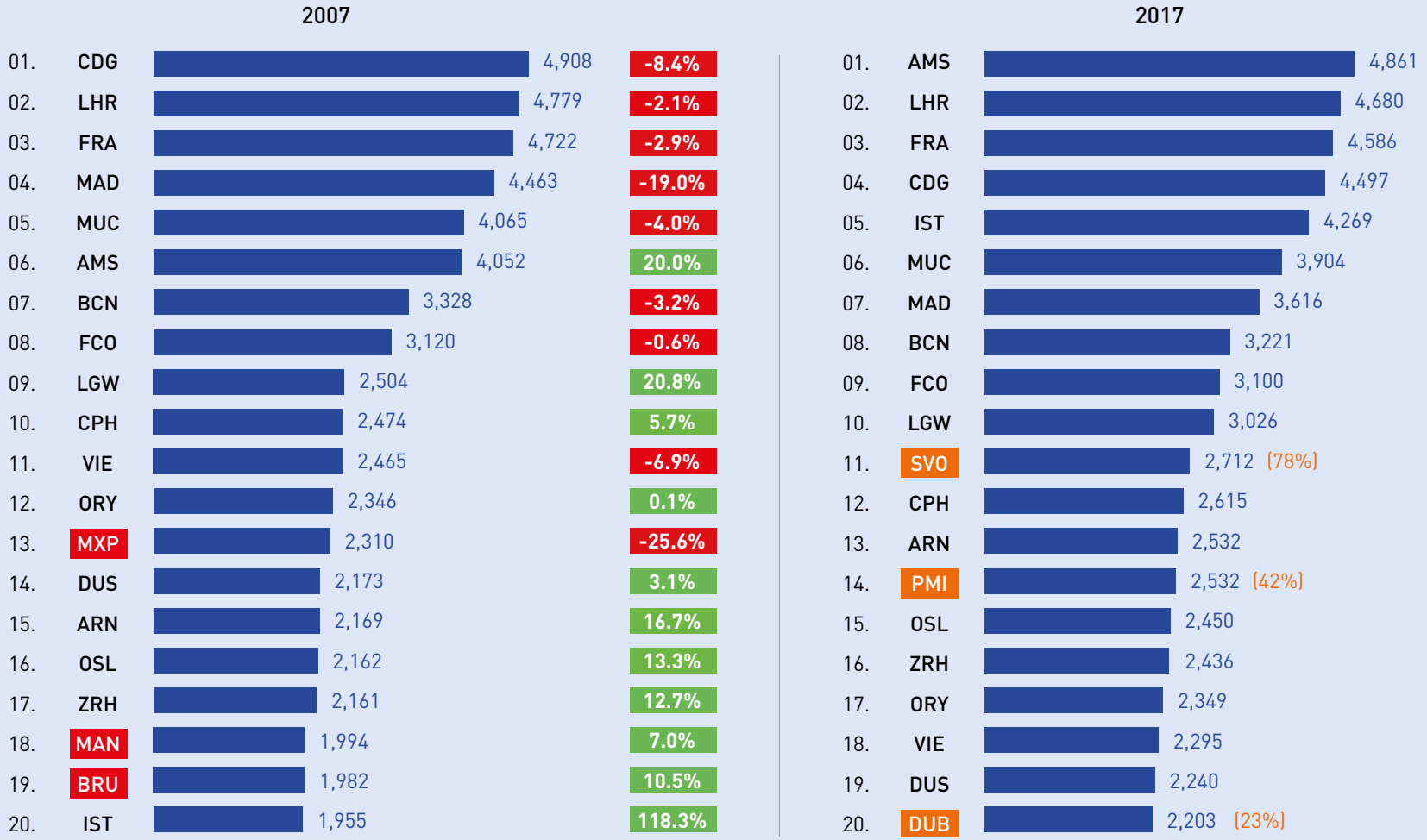
[3] The 2017 shares of direct connectivity provided by LCCs at the other Majors are 2% at London-Heathrow, 4% at Frankfurt, 12% at Paris-Charles de Gaulle, 5% at Istanbul-Ataturk and 10% Munich.

[4] LCCs now account for 72% of Barcelona's direct connectivity, up from 21% in 2007.

[5] LCCs now account for 24% of Rome Fiumicino's direct connectivity, up from 4% in 2007.LCCs now account for 16% of Vienna's direct connectivity, up from 5% in 2007.

[6] LCCs now account for 44% of Milan-Malpensa's direct connectivity, up from 11% in 2007.

DIRECT CONNECTIVITY: 20 FASTEST GROWING AIRPORTS IN EUROPE



4. THE IMPACT OF GULF AIRLINES & TURKISH AIRLINES ON EUROPEAN CONNECTIVITY

Over the past years, the debate over the development of Gulf airlines (Emirates, Qatar Airways and Etihad Airways – the so-called Middle East Big 3 or MEB3) has been intense, with some of their competitors accusing these airlines of unfair competition. Without looking at the legal merits of the argument, this report sheds some light on the actual impact of the MEB3 - as well as Turkish Airlines (TK) – on air connectivity.

This analysis looks at the contribution of MEB3/TK to indirect connectivity out of the EU market, their impact on the direct connectivity offered from the EU's top hubs by the 3 largest European FSCs (Air France/KLM, IAG and the Lufthansa Group – EUB3), as well as on the indirect connectivity offered from a sample of EU secondary hubs and point-to-point airports by the EUB3.

INDIRECT CONNECTIVITY – EU MARKET OVERVIEW

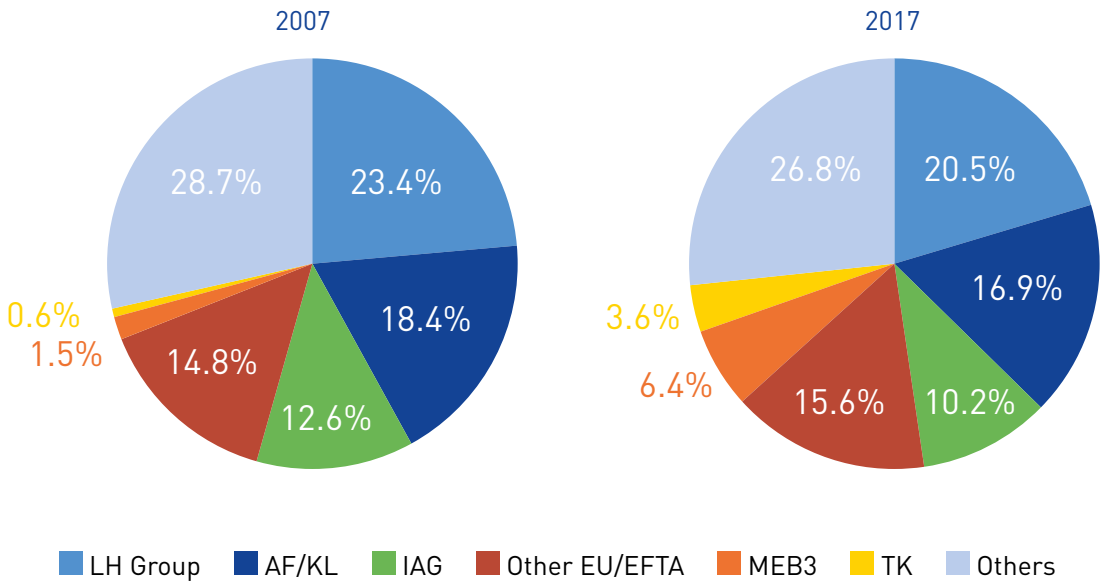
Since 2007, the **MEB3/TK** have increased their **share of the indirect connectivity from the EU to other Word regions** from 2.1% to 10% - with MEB3 now holding a share of 6.4% and TK of 3.6%.

- This increase has been captured **primarily at the expense of the EUB3** (market share decreasing from 54.4% to 47.6%) and other non-EU/EFTA carriers.
- Conversely, the market share of other EU/EFTA carriers has slightly increased (from 14.8% to 15.6%).

While losing market shares to MEB3/TK, the **EUB3 have still seen their indirect connectivity from the EU to other world regions growing**:

- **+ 27.4%** for **AF/KL** – with its market share only slightly decreasing from 18.4% to 16.9%.
- **+21.9%** for the **LH Group** – with a decrease of its market share from 23.4% to 20.5%.
- **+12.3%** for **IAG** - with a market share decrease from 12.6% to 10.2%.

INDIRECT CONNECTIVITY TO OTHER WORLD REGIONS FROM EU AIRPORTS

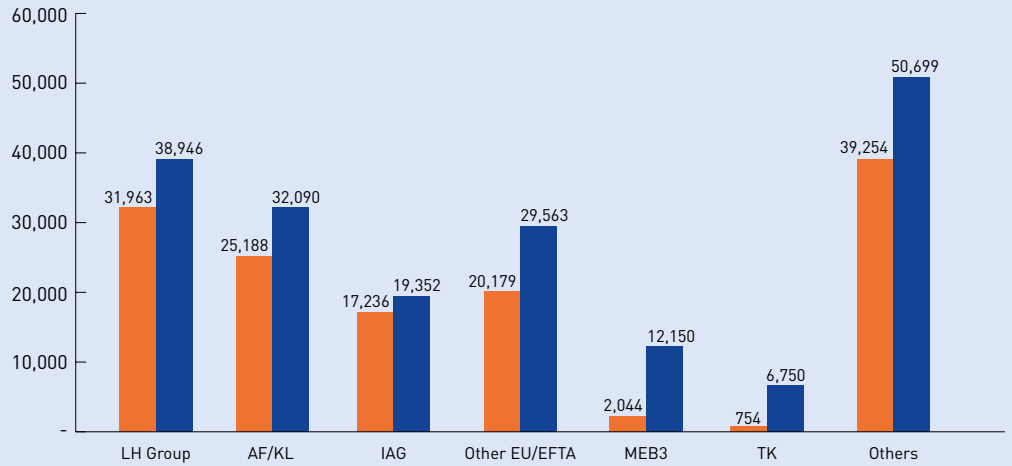


INDIRECT CONNECTIVITY FROM THE EU TO OTHER WORLD REGIONS BY AIRLINE GROUPS (2007/2017)

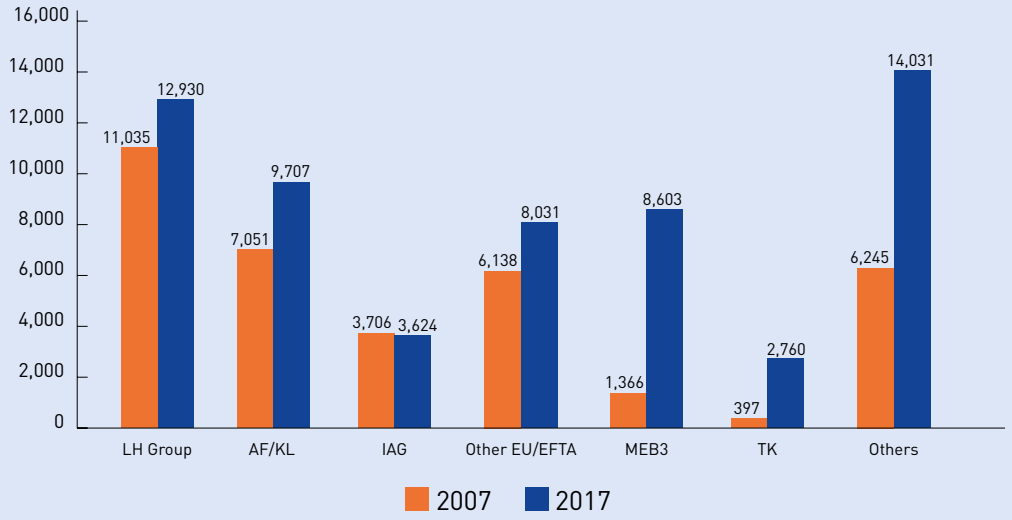
Due to the geographic location of their hubs, the indirect connectivity offered by the MEB3/TK from the EU market is limited to the Middle East, Asia Pacific and Africa. Much of the attention to the growth of these airlines has focused on their impact on the EU-Asia Pacific market. From that perspective, the following can be observed:

- **MEB3/TK have made a notable contribution to indirect connectivity between the EU and Asia Pacific over the past 10 years** – helping that market posting the largest growth (+66%) after EU-Middle East indirect connectivity (+102%). This reflects their penetration of the Asian market, both in terms of destinations and frequencies - MEB3 in particular fly to many destinations not served by EUB3, especially in the Indian subcontinent as well as in Australia/ New Zealand - as well as their expansion into the EU market.

INDIRECT CONNECTIVITY FROM THE EU TO OTHER WORLD REGIONS BY AIRLINE GROUPS



INDIRECT CONNECTIVITY FROM THE EU TO ASIA PACIFIC BY AIRLINE GROUPS

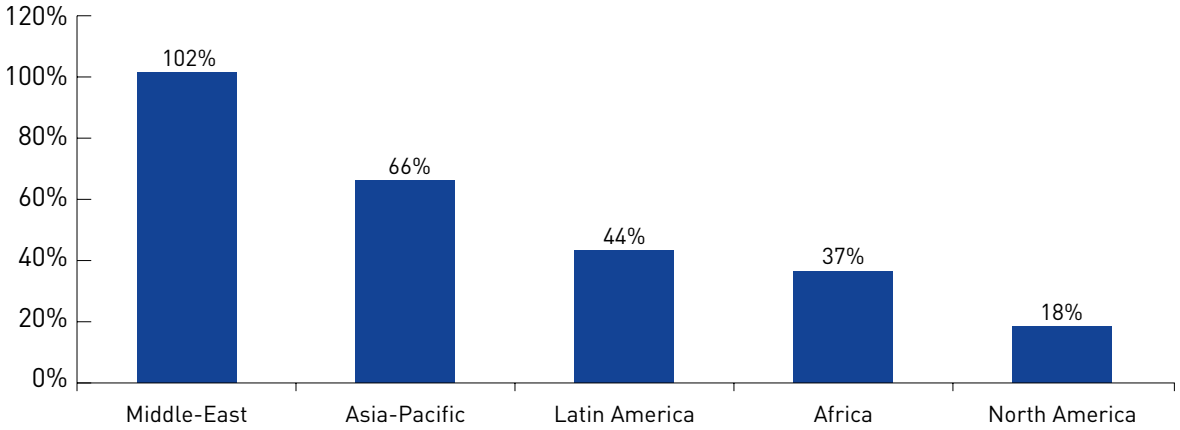


Accordingly, **MEB3/TK have grabbed a significant market share of indirect connectivity between the EU and Asia Pacific** – from 4.9% in 2007 to 19% in 2017, exploiting their ideal geographic position and network outreach both in scope and depth. These carriers have not been the only ones gaining market shares: other non-European carriers (mainly Asian ones) have also reinforced their position relative to their competitors. Conversely, the market share of EUB3 decreased from 60.6% to 41.8% - with other EU/EFTA also losing ground.

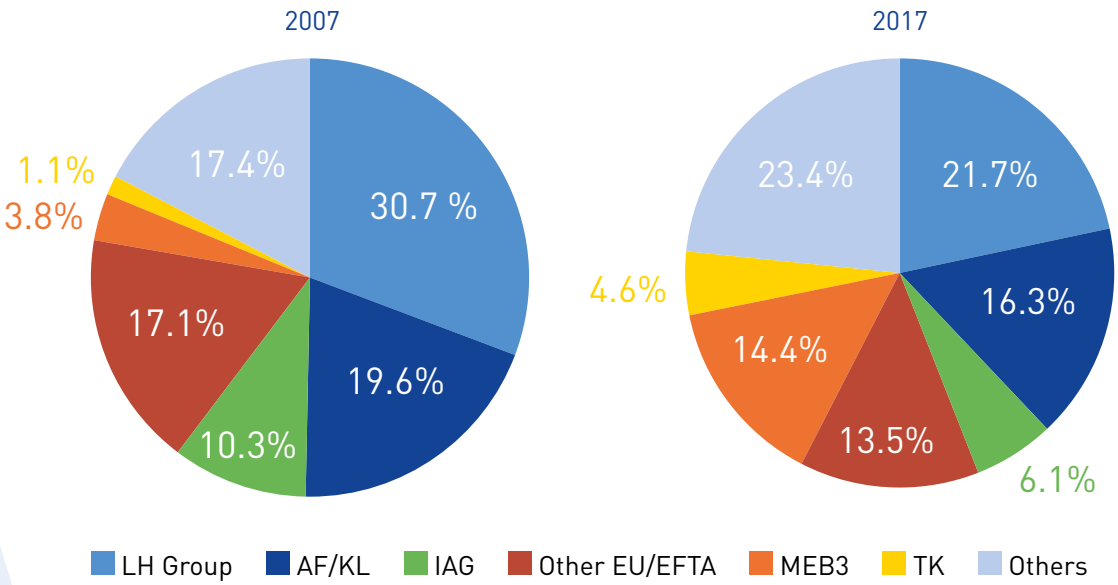
However, the growth of MEB3/TK and other non-European carriers did not prevent European carriers from increasing their indirect connectivity to Asia Pacific. Accordingly, since 2007 **EUB3 have achieved a +20.5% growth in their level of indirect connectivity to Asia Pacific.**

AF/KL achieved the highest growth at **+38%**, followed by the **LH Group** at **+17%** - while **IAG** saw a decrease of **-2%**. IAG has historically accounted for a much lower share of indirect connectivity to Asia Pacific due to the geographic location of its hubs (which involves longer travelling times from most of the EU) and a higher reliance on point-to-point traffic when compared to its peers.

INDIRECT CONNECTIVITY FROM EU AIRPORTS TO OTHER WORLD REGIONS 2017 vs 2007



INDIRECT CONNECTIVITY TO ASIA PACIFIC FROM EU AIRPORTS



IMPACT ON DIRECT CONNECTIVITY TO ASIA PACIFIC FROM THE MAJORS & THEIR HUB CARRIERS

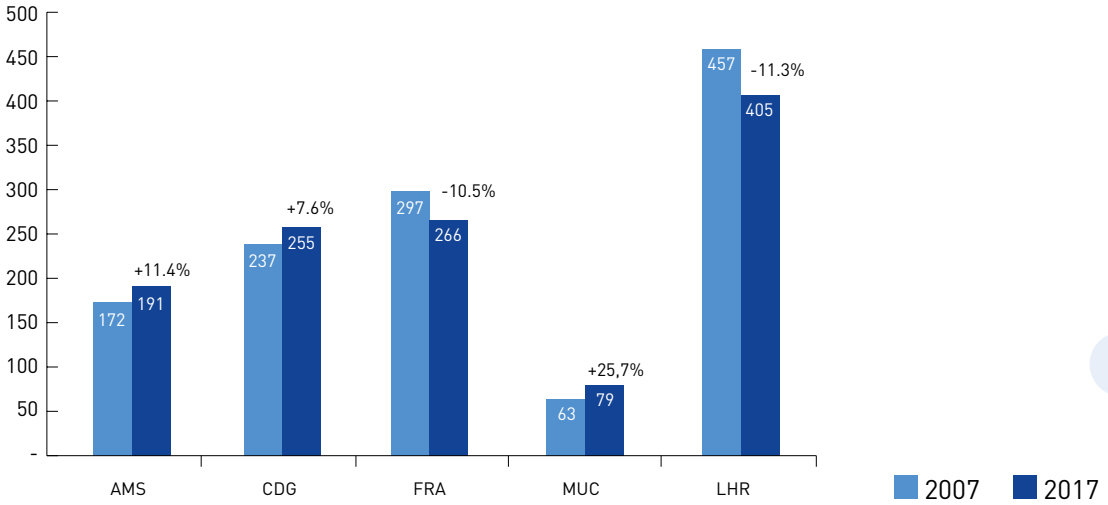
A recurrent grievance over the increasing role of MEB3/TK as providers of indirect connectivity to Asia Pacific is that this has allegedly eroded direct connectivity to the region from the main EU hubs – and in particular direct connectivity provided by EUB3.

A closer look at connectivity data for the top 5 EU hubs (London-Heathrow, Paris-Charles de Gaulle, Amsterdam-Schiphol, Frankfurt and Munich- "The Majors") does not necessarily support this view:

- While the Majors collectively saw their direct connectivity to Asia Pacific decrease by -2.5% over the past 10 years, the picture is quite diverse when looking at individual airports:

- Decreases in direct connectivity to Asia Pacific were concentrated at London-Heathrow (-11.3%) and Frankfurt (-10.5%).
- The other Majors achieved notable increases: Paris-Charles de Gaulle (+7.6%), Amsterdam-Schiphol (+11.4%) and Munich (+25.7%).

DIRECT CONNECTIVITY TO ASIA PACIFIC FROM THE MAJORS (2007/2017)



Moreover, when looking more specifically at **the record of EUB3 in developing direct connectivity to Asia Pacific** from their respective hub(s) since 2007, the picture is also quite **contrasted:**

While **AF/KL** delivered **significant increases from Amsterdam Schiphol** (+14.9% – well above gains provided by Asian carriers from the airport), the group significantly **underperformed and lost ground at Paris-CDG** (-11.7%) - where Asian carriers alone ensured the airport's growth in direct connectivity to Asia-Pacific (+26.4%).

Interestingly, an almost identical pattern can be observed in the way AF/KL provided direct connectivity to North America - a market where MEB3/TK competition is absent - with gains from Amsterdam-Schiphol and losses from Paris-Charles de Gaulle. These similarities are pointing to divergences in the economic performance of KLM versus Air France having a significant influence in the group's network development strategy. Thus, **such divergences appear to be playing a bigger role than the growth of MEB3/TK in AF/KL's levels of direct connectivity to Asia Pacific.**

Overall, AF/KL's direct connectivity to Asia Pacific from its main hubs (Paris-Charles de Gaulle and Amsterdam-Schiphol) grew by +0.5% between 2007 and 2017.

The **LH Group grew its direct connectivity to Asia Pacific significantly from Munich** (+19%) along with Asian carriers (+37.7%), **but reduced it at Frankfurt** (-15.2%).

If one also takes into account the fact that the LH Group significantly increased its direct connectivity to Asia Pacific from another of its hubs - Zurich (+56%), **losses in its direct connectivity from Frankfurt seem to reflect** (at least in part) **primarily strategic network development priorities – rather than the impact of MEB3/TK**. Of course, such priorities will inevitably reflect wider competitive pressures.

Moreover, there are also interesting similarities with AF/KL in the way in which the LH Group's strategy to North America also resulted in diverging direct connectivity trends between its two main hubs - Frankfurt and Munich. Again, this also indicates that **the growth of MEB3/TK** – while resulting in significant competitive pressures on EUB3 – **might not be the primary cause of direct connectivity losses for selected EUB3 at some of their hubs.**

Overall, the LH Group's direct connectivity to Asia Pacific from its main hubs (Frankfurt, Munich, Zurich, Vienna and Brussels) grew by +2.8% between 2007 and 2017.

Finally, **IAG marginally grew its direct connectivity to Asia Pacific at London-Heathrow** (+0.8%), while Asian carriers reduced it (-7.9%).

London-Heathrow is of course a **special case** compared to the other Majors – given the **high level of congestion affecting the airport,** which ends up **constraining network development and limiting connectivity gains.** As a result, the airport's direct connectivity developments to specific destinations tends to come at the expense of direct connectivity losses to others – based on a logic of airlines' network optimisation guided by yields and profitability. Slot trades also influence connectivity outcomes and given related prices, they probably compound profitability requirements.

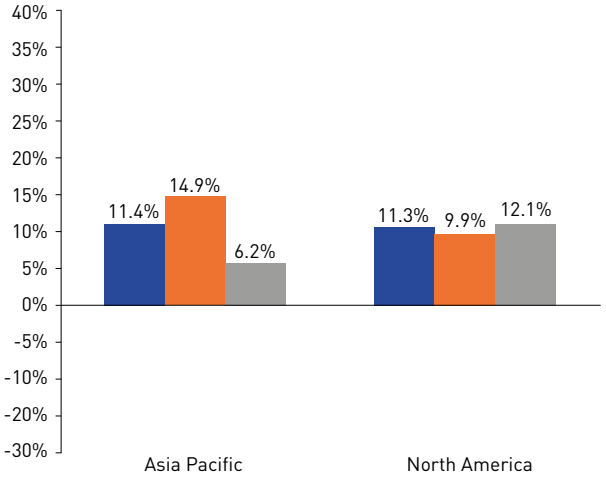
While all this makes market specific connectivity data more difficult to read, this may explain the differences in direct connectivity developments between Asia Pacific and North America from London-Heathrow. With IAG being part of an immunised transatlantic alliance, prioritising network developments to North America probably makes more sense than looking for new opportunities to Asia Pacific. The fact that Qatar Airways is also part of the Oneworld alliance (of which British Airways is a founding member) may also be another factor explaining why IAG has barely grown its direct connectivity to Asia Pacific since 2007. Finally, given the geographic position of London-Heathrow, British Airways' exposure to indirect competition to North America from other EUB3 is more limited, while its exposure to their indirect competition to Asia Pacific is more significant.

Overall, IAG's direct connectivity to Asia Pacific from its main hubs (London-Heathrow and Madrid-Barajas) grew by +5.4% between 2007 and 2017.

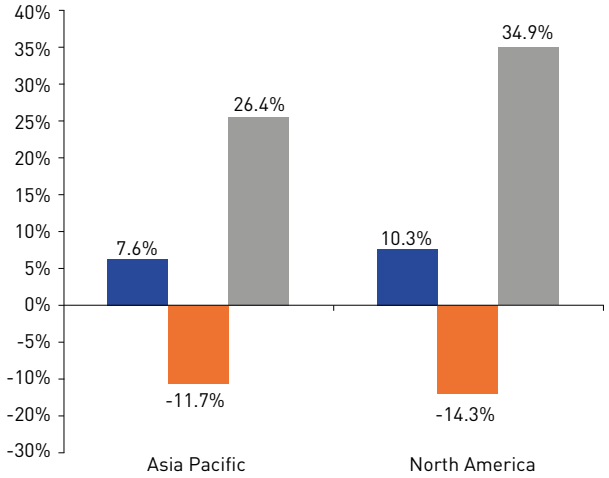
Therefore, while MEB3/TK have acted as disruptors for EUB3 in the long haul market to Asia when it comes to transfer traffic, such disruption has not resulted in a reduction of the direct connectivity offered by EUB3 to Asia from their hubs. None of the EUB3 have indeed registered losses in their direct connectivity to Asia Pacific over the past 10 years. However, the gains of EUB3 on this market have been unimpressive, which potentially signals the impact of MEB3/TK.

DIRECT CONNECTIVITY TO ASIA PACIFIC & NORTH AMERICA FROM THE MAJORS (2007/2017)

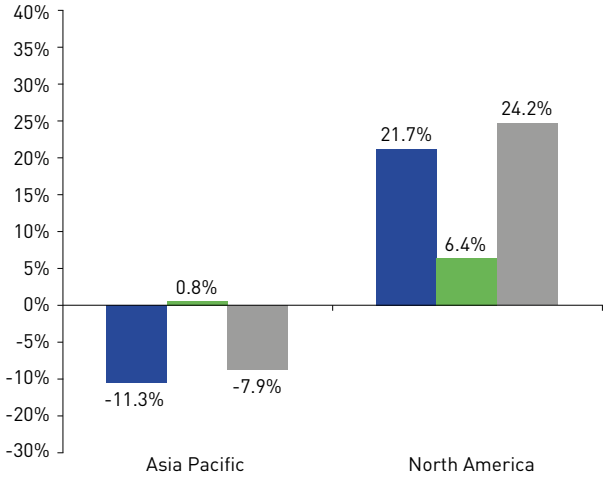
AMS DIRECT CONNECTIVITY



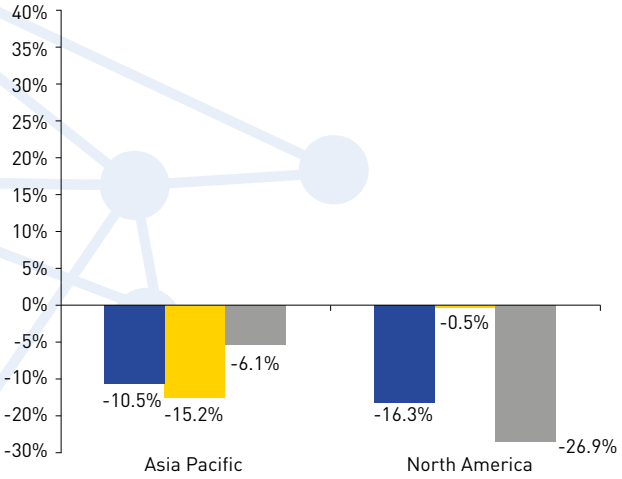
CDG DIRECT CONNECTIVITY



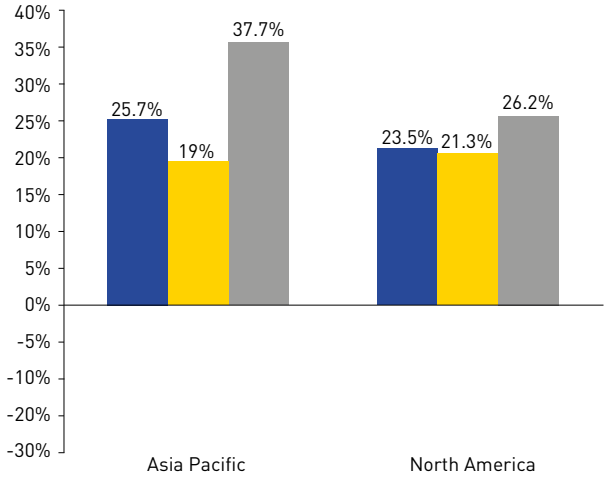
LHR DIRECT CONNECTIVITY



FRA DIRECT CONNECTIVITY



MUC DIRECT CONNECTIVITY



IMPACT ON INDIRECT CONNECTIVITY FROM SECONDARY HUBS & POINT-TO-POINT AIRPORTS

Looking at the **impact of MEB3/TK on a selection of EU secondary hubs & point-to-point airports**, these carriers have not only offered **new direct connections** from these airports to their own hubs, but they have also provided **new & increased indirect connections to the Middle East, Asia Pacific and Africa** – thus contributing to improved connectivity levels.

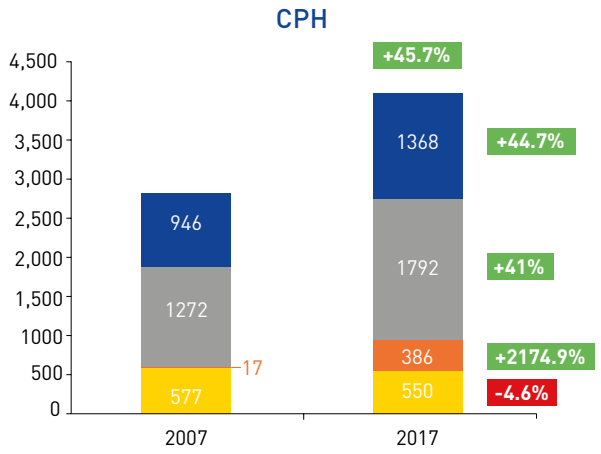
The airports included in this selection are Budapest, Brussels, Copenhagen, Dublin, Hamburg, Malta, Nice and Vienna.

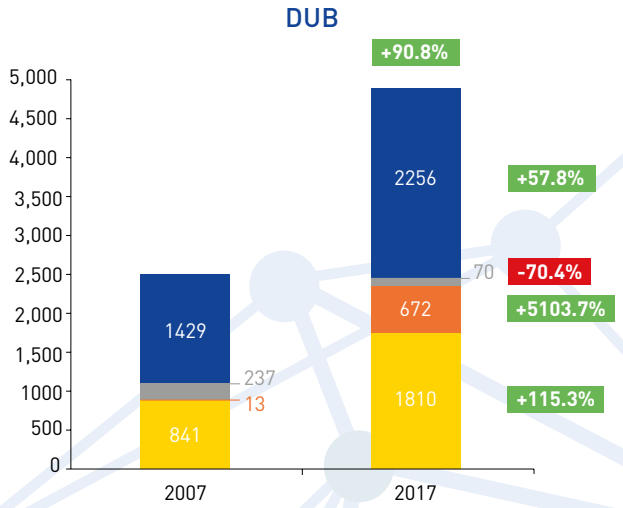
- As a result, MEB3/TK have accounted for a **significant share of total indirect connectivity gains to other World regions** (excluding Europe) at these EU airports since 2007– ranging from 22.1% (Malta) to 51.1% (Brussels) of their growth in indirect connectivity.
- However, the additional indirect connectivity generated by MEB3/TK has **not resulted in lower levels of indirect connectivity to other World regions for EUB3** from these airports. Thus, EUB3 have been able to significantly grow their indirect connectivity from all of these airports to other World regions except from Nice, where their growth was lower (+4%).

At most of these airports, EUB3 have accounted for a higher share of indirect connectivity growth since 2007 than MEB3/TK:

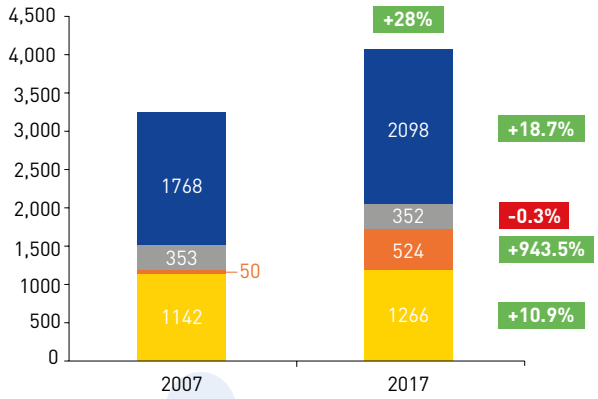
- **Budapest:** 49.7% EUB3 share of growth versus 40.5% for MEB3/TK
- **Copenhagen:** 32.2% EUB3 share of growth versus 28.1% for MEB3/TK
- **Dublin:** 33.7% EUB3 share of growth versus 26.8% for MEB3/TK
- **Hamburg:** 36.5% EUB3 share of growth versus 25.9% for MEB/TK
- **Malta:** 26.5% EUB3 share of growth versus 22.1% for MEB3/TK
- **Vienna:** 57.9% EUB3 share of growth versus 30.2% for MEB3/TK

Therefore, the market penetration of MEB3/TK has not prevented EUB3 from growing their total indirect connectivity from selected secondary EU hubs & point-to-point airports.

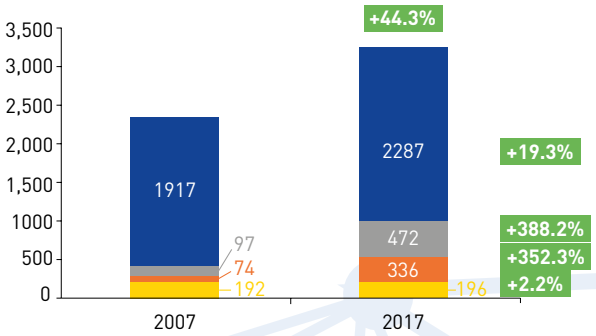




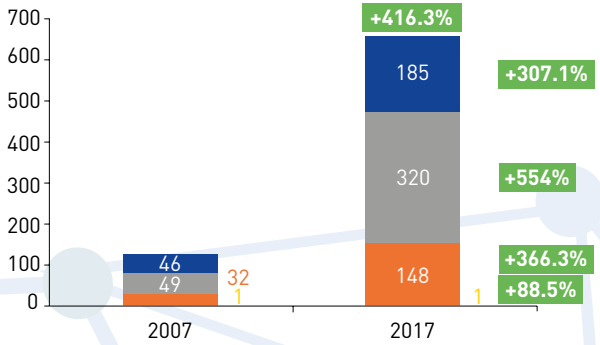
BRU



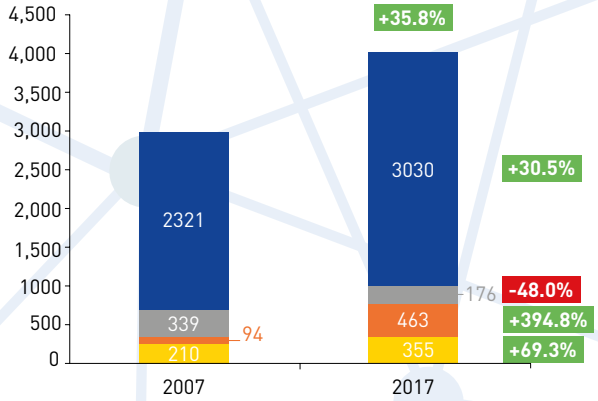
HAM



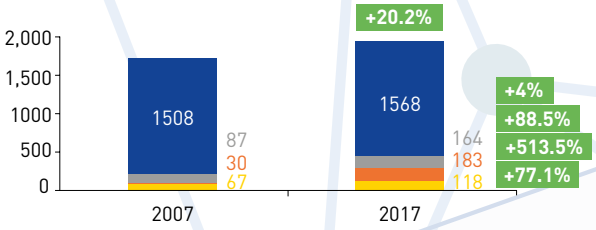
MLA



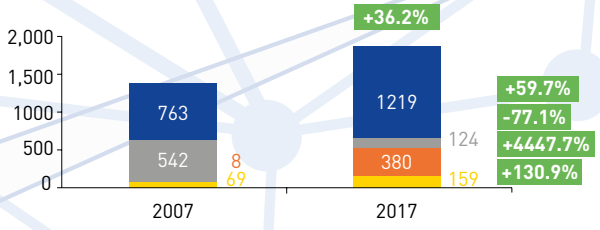
VIE



NCE



BUD



EUB3 Other EU/EFTA MEB3+TK Others

APPENDIX 1: GLOSSARY OF AIRPORT CODES

1.1 AIRPORTS WITHIN EUROPE

Airport code	Airport name	Country
AMS	Amsterdam-Schiphol Airport	Netherlands
ARN	Stockholm-Arlanda Airport	Sweden
BCN	Barcelona El-Prat Airport	Spain
BRU	Brussels Airport	Belgium
BUD	Budapest-Ferenc Liszt Airport	Hungary
CDG	Paris-Charles de Gaulle Airport	France
CPH	Copenhagen Airport	Denmark
DUB	Dublin Airport	Ireland
DUS	Dusseldorf Airport	Germany
FCO	Rome-Fiumicino Airport	Italy
FRA	Frankfurt Airport	Germany
HAM	Hamburg Airport	Germany
IST	Istanbul-Atatürk Airport	Turkey
LHR	London-Heathrow Airport	United Kingdom
LIS	Lisbon Airport	Portugal
MAD	Madrid-Barajas Airport	Spain
MAN	Manchester Airport	United Kingdom
MLA	Malta International Airport	Malta
MUC	Munich Airport	Germany
MXP	Milan-Malpensa Airport	Italy
NCE	Nice Côte d'Azur Airport	France
ORY	Paris-Orly Airport	France
OSL	Oslo Airport	Norway
PMI	Palma de Mallorca Airport	Spain
SVO	Moscow-Sheremetyevo Airport	Russian Federation
TXL	Berlin-Tegel Airport	Germany
VIE	Vienna Airport	Austria
ZRH	Zurich Airport	Switzerland

1.2 AIRPORTS BEYOND EUROPE

Airport code	Airport name	Country
ADD	Addis Ababa Bole International Airport	Ethiopia
AUH	Abu Dhabi International Airport	United Arab Emirates
BOM	Chhatrapati Shivaji International Airport	India
CAN	Guangzhou Bai Yun International Airport	China (People's Republic of China)
CGK	Soekarno-Hatta International Airport	Indonesia
CLT	Charlotte Douglas International Airport	USA
CTU	Chengdu Shuangliu International Airport	China (People's Republic of China)
DEL	Indira Gandhi International Airport	India
DEN	Denver International Airport	USA
DFW	Dallas/Ft Worth International Airport	USA
DOH	Hamad International Airport	Qatar
DXB	Dubai International Airport	United Arab Emirates
EWR	Newark Liberty International Airport	USA
HKG	Hong Kong International Airport	Hong Kong, China
HND	Tokyo International (Haneda) Airport	Japan
IAH	George Bush Intercontinental Airport	USA
ICN	Incheon International Airport	Korea (Rep of Korea)
KMG	Kunming International Airport	China (People's Republic of China)
MNL	Ninoy Aquino International Airport	Philippines
MSP	Minneapolis/St Paul International Airport	USA
ORD	O'Hare International Airport	USA
PVG	Pudong International Airport	China (People's Republic of China)
SZX	Shenzhen Baoan International Airport	China (People's Republic of China)
YYZ	Toronto Pearson International Airport	Canada

APPENDIX 2: AIRLINE GROUP LISTINGS

2.1 LIST OF SELECTED LOW COST CARRIERS (LCCs)

Acronym	Airline name
0B	Blue Air
2B	Albawings
3O	Air Arabia Maroc
4U	germanwings
5F	Fly One
6B	TUIfly Nordic AB
8Q	Onur Air Tasimacilik A.S.
AD	Azul Airlines
BF	French Blue
BLX	TUIfly Nordic AB
BV	Blue Panorama Airlines
CO	Cobalt Aero
D8	Norwegian
DK	Thomas Cook Scandinavia
DP	Pobeda
DY	Norwegian Air Shuttle
EW	Eurowings
FR	Ryanair
FZ	Flydubai
G9	Air Arabia
HG	NIKI
HQ	Thomas Cook Airlines Belgium N.V
HV	Transavia.com

Acronym	Airline name
LS	Jet2.com
MT	Thomas Cook Airlines
OR	TUI fly Netherlands
PC	Pegasus Airlines
SE	XL Airways France
SS	Corsair
TB	TUI fly Belgium
TO	Transavia.com France
TOM	Thomson Airways
TZ	Scoot
U2	Easyjet
V7	Volotea
VY	Vueling Airlines
W6	Wizz Air
WK	Edelweiss Air
WS	Westjet
WW	WOW Air
X3	TUIfly
XG	SunExpress Deutschland GmbH
XQ	SunExpress
XY	Flynas - National Air Services
ZB	Monarch Airlines
ZM	Air Manas

2.2 LIST OF SELECTED FULL SERVICE CARRIERS (FSCs)

EUB3
Airline name
AF-KLM
LH Group
IAG

MEB3	
Acronym	**Airline name**
EK	Emirates
EY	Etihad Airways
QR	Qatar Airways

AF/KL	
Acronym	**Airline name**
A5	HOP!
AF	Air France
KL	KLM - Royal Dutch Airlines
WA	KLM Cityhopper

TK	
Acronym	Airline name
TK	Turkish Airlines

IAG	
Acronym	**Airline name**
BA	British Airways
EI	Aer Lingus
IB	Iberia

LH Group	
Acronym	**Airline name**
LH	Lufthansa German Airlines
LX	SWISS
OS	Austrian Airlines AG dba Austrian
SN	Brussels Airlines

APPENDIX 3: CONNECTIVITY BY COUNTRY

Country	Airport connectivity	Direct connectivity	Indirect connectivity	Hub connectivity	GDP 2015 (m€)	Growth 2017 vs. 2016				Growth 2017 vs. 2008				Growth 2017 vs. 2007			
						Airport	Direct	Indirect	Hub	Airport	Direct	Indirect	Hub	Airport	Direct	Indirect	Hub
United Kingdom	57,801	18,890	38,911	38,001	2,578,721	3%	7%	1%	2%	19%	5%	27%	14%	22%	2%	35%	15%
Spain	46,825	18,704	28,121	21,801	1,075,170	7%	11%	5%	2%	18%	3%	30%	-12%	19%	0%	36%	-4%
Germany	67,884	18,547	49,337	107,966	3,031,498	1%	-1%	2%	3%	16%	-1%	24%	14%	17%	-1%	26%	21%
France	43,130	14,409	28,721	49,386	2,180,113	2%	1%	2%	-2%	11%	-1%	18%	-6%	17%	2%	26%	-2%
Italy	39,557	11,837	27,719	14,895	1,641,728	4%	5%	3%	-3%	20%	4%	28%	10%	22%	1%	34%	-6%
Turkey	22,969	11,305	11,664	36,421	647,030	-6%	-7%	-6%	-3%	133%	160%	111%	498%	167%	182%	154%	630%
Russian Federation	19,575	8,232	11,343	21,992	1,231,064	9%	8%	9%	15%	52%	43%	59%	220%	76%	61%	90%	303%
Norway	15,321	7,411	7,910	4,276	348,426	-2%	-3%	-1%	0%	10%	1%	21%	26%	20%	3%	41%	38%
Netherlands	17,011	5,448	11,563	56,609	676,236	6%	8%	5%	8%	22%	27%	20%	53%	25%	27%	24%	70%
Greece	12,566	5,378	7,188	2,883	175,621	4%	8%	2%	-4%	48%	40%	55%	102%	42%	36%	47%	88%
Switzerland	18,544	4,578	13,966	16,607	604,588	1%	-1%	1%	-2%	29%	14%	35%	21%	33%	20%	37%	30%
Sweden	13,388	4,532	8,856	3,916	446,773	8%	6%	9%	10%	26%	14%	34%	52%	38%	23%	47%	61%
Portugal	12,016	4,181	7,835	6,017	179,462	11%	15%	10%	13%	58%	55%	60%	79%	64%	57%	69%	164%
Denmark	10,421	2,993	7,428	5,432	271,571	4%	1%	5%	-7%	27%	3%	40%	-31%	35%	9%	50%	-30%
Belgium	8,684	2,770	5,914	6,734	410,172	-3%	-3%	-3%	2%	20%	14%	23%	88%	26%	27%	26%	143%
Austria	10,691	2,744	7,946	13,838	339,748	0%	-4%	2%	3%	2%	-15%	10%	-5%	6%	-12%	14%	-1%
Poland	8,629	2,668	5,960	3,810	429,983	8%	10%	7%	23%	31%	23%	35%	138%	45%	32%	51%	107%
Ireland, Republic of	9,862	2,668	7,194	3,850	255,704	8%	3%	10%	17%	43%	7%	63%	234%	34%	10%	45%	267%
Finland	7,863	2,232	5,631	9,986	209,420	7%	6%	7%	17%	1%	-10%	7%	50%	14%	-8%	26%	96%
Romania	4,765	1,727	3,038	305	160,392	6%	18%	1%	9%	28%	58%	16%	-1%	38%	55%	30%	5%
Czech Republic	5,125	1,537	3,588	1,919	166,883	6%	9%	4%	31%	13%	-4%	21%	-40%	20%	2%	30%	-33%
Israel	5,748	1,260	4,488	145	269,865	10%	16%	8%	43%	53%	60%	51%	164%	59%	72%	55%	160%
Croatia	4,133	1,187	2,946	67	43,922	11%	17%	9%	447%	78%	78%	78%	764%	91%	89%	92%	1153%

Country	Airport connectivity	Direct connectivity	Indirect connectivity	Hub connectivity	GDP 2015 (m€)	Growth 2017 vs. 2016				Growth 2017 vs. 2008				Growth 2017 vs. 2007			
						Direct	Indirect	Airport	Hub	Direct	Indirect	Airport	Hub	Direct	Indirect	Airport	Hub
Hungary	3,809	927	2,882	110	109,703	9%	8%	8%	14%	-9%	23%	14%	-90%	-16%	28%	14%	-91%
Bulgaria	2,631	900	1,731	46	45,245	32%	-2%	8%	21%	69%	33%	44%	-12%	86%	50%	61%	26%
Ukraine	2,784	877	1,907	1,167	81,672	18%	7%	10%	26%	-1%	3%	2%	324%	14%	16%	15%	423%
Latvia	1,979	697	1,282	445	24,338	10%	12%	11%	67%	36%	118%	80%	192%	65%	130%	102%	725%
Cyprus	1,846	684	1,161	39	17,630	26%	21%	23%	59%	41%	64%	54%	-61%	49%	84%	69%	-64%
Iceland	1,611	666	945	3,270	15,124	18%	2%	8%	30%	238%	1127%	488%	1063%	205%	1819%	502%	797%
Monaco	618	618	-	-	5,640	-4%	--	--	--	-15%	--	--	--	63%	--	--	--
Serbia	2,179	603	1,576	332	33,493	0%	10%	7%	12%	62%	66%	65%	694%	63%	97%	87%	483%
Luxembourg	2,176	509	1,667	67	51,194	10%	8%	8%	5%	25%	38%	35%	119%	33%	49%	45%	73%
Lithuania	1,510	497	1,014	6	37,314	12%	41%	30%	26%	26%	44%	38%	-77%	68%	42%	50%	62%
Malta	1,794	444	1,350	32	8,785	14%	31%	26%	144%	54%	283%	180%	6%	67%	319%	205%	-22%
Belarus	1,188	434	754	20	49,219	12%	2%	6%	-13%	227%	153%	176%	6629%	248%	159%	186%	1908%
Estonia	1,593	344	1,249	15	20,243	-5%	6%	3%	16%	5%	63%	46%	111%	21%	73%	59%	333%
Georgia	1,119	336	782	5	12,587	32%	26%	28%	280%	128%	167%	154%	68%	261%	208%	222%	36%
Moldova Republic of	780	302	478	69	5,920	62%	2%	19%	186%	161%	215%	191%	957%	235%	263%	252%	1466%
Montenegro	781	244	538	1	3,594	9%	6%	7%	-52%	76%	561%	256%	35%	108%	1150%	388%	1165%
Slovenia	1,170	226	944	150	38,553	6%	3%	4%	116%	-27%	1%	-6%	-15%	-17%	14%	6%	64%
Albania	765	195	570	1	10,273	7%	1%	2%	17%	7%	64%	44%	-71%	13%	72%	52%	-69%
Macedonia FYR	474	150	325	22	9,091	6%	6%	6%	--	46%	83%	69%	--	47%	33%	37%	--
Slovakia	167	126	41	5	78,651	7%	-14%	1%	14%	-34%	-76%	-54%	-71%	-26%	-74%	-50%	-77%
Kosovo	650	121	529	1	5,769	--	--	--	--	--	--	--	--	--	--	--	--
Bosnia and Herzegovina	544	96	448	1	14,594	3%	1%	1%	-46%	-15%	62%	41%	417%	20%	77%	64%	--

Want to know more about YOUR airport's connectivity performance?
Additional appendices detailing individual airport data on air connectivity are available to download.
Simply scan the QR code below:

or download the file from: ***https://www.aci-europe.org/policy/connectivity2017.pdf***

For the fourth time, ACI EUROPE - in partnership with SEO Amsterdam Economics - releases its *Airport Industry Connectivity Report*, analysing the shift in air connectivity trends during the decade from 2007 to 2017 – with some surprising findings. This latest edition of the report is remarkable for its categorisation of airline business models and for the very first time, of the contribution that the 3 biggest Middle Eastern Airlines (the MEB3 – Emirates, Etihad and Qatar Airways) and Turkish Airlines have made to air connectivity in Europe.

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EVERY FLIGHT BEGINS AT THE AIRPORT.