DELIVERING THE FUTURE

Global Market Forecast
2011-2030

AIRBUS

DELIVERING THE FUTURE

If you are reading this year's Airbus Global Market Forecast (Passenger Aircraft Edition), there is no doubt that you are interested in the future of civil aviation, with the majority of you, like us, passionate about the industry and keen to play a part in its continued positive development; not only for those directly involved in the business, but for the billions of passengers who today and in the future will need and have access to its benefits.

There is no denying aviation's importance in terms of social and economic growth and the huge strides it has taken in a very short space of time, in terms of supply in the form of deliveries, but also environmentally, with each aircraft for example 70% more fuel efficient than just forty years ago. Its value to the modern world was emphasised recently with the rapid recovery of passenger traffic following the worst financial crisis experienced for decades, a resilience that was also in evidence following prior economic cycles.

As well as this more traditional, detailed publication, we have also produced a pocket guide this year in a simple format, in order to make it easier for you to access the information contained in the forecast, a document available through our website: www.airbus.com. Our detailed forecast for the freight market will be published separately in future, reflecting its importance to Airbus and the industry.

In producing the 2011 GMF, it became clear that there are four key messages that it would be useful to highlight by means of an introduction which are set forth in the first pages of this guide-welcome aboard !

Your Airbus forecasting team

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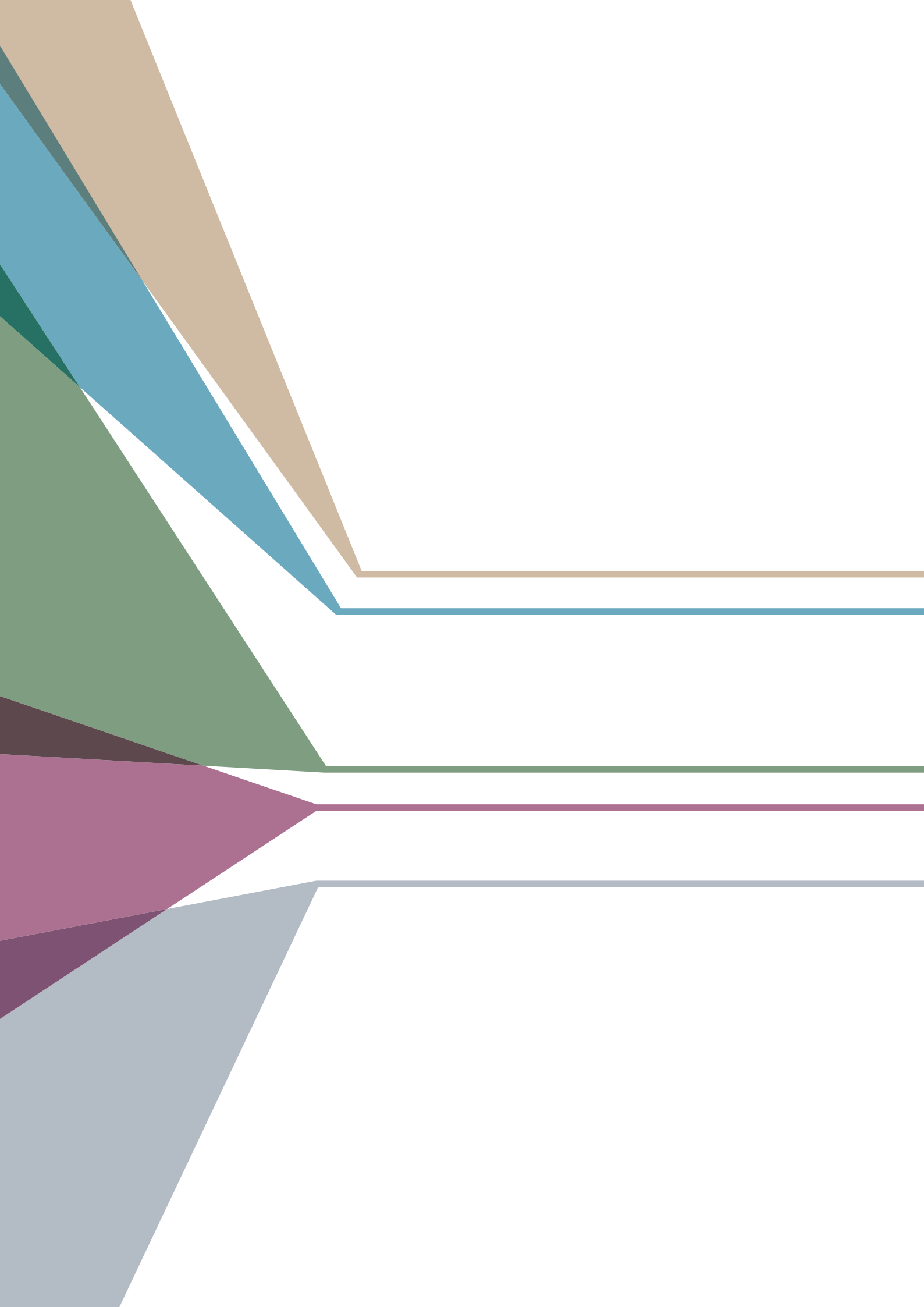


1 PEOPLE VALUE FLIGHT, BUT NOT AT ANY COST

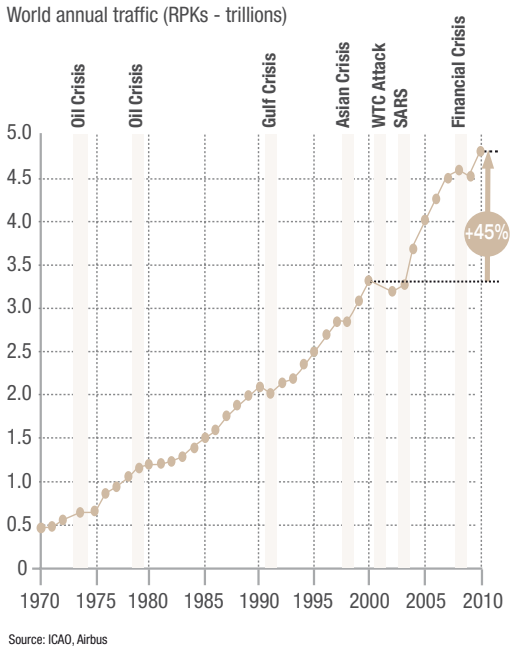
The expression the “miracle of flight” is seldom heard these days, it is taken for granted that if we want to visit a client in the US, Europe or the emerging markets in Asia, we can affordably get on an aircraft and be there the next day. If we want to visit our friends or relatives who have moved away with their jobs for example, it’s easy, no more difficult than a few clicks of a mouse and a trip to the airport. But just because we don’t say it much in today’s modern world, it doesn’t mean that flying is no longer a man-made miracle.

If someone were to say that they were going to take you to an altitude where you couldn’t breathe, where you would experience temperatures around -50 degrees, and then leave you there for anything between one and fourteen hours, you wouldn’t be very keen to go with them. Yet that is exactly what 2 billion passengers do every year, without even a second thought, as they fly to every corner of the world.
Even when economic crises or other events serve to dampen demand, as we have seen from time to time, people still need to fly, with air traffic quickly returning to more normal growth levels. Even during a period when aviation had three of its severest tests following 9/11, SARs, and the recent financial crisis, aviation still managed to grow 45%, a fact that can only mean people really do need and want to fly.

What about the future? Airbus commissioned an international study of over 10,000 people around the world, who will be the passengers of 2050, and what they expect from air travel in the future. From these respondents, 69% said they expected to fly more, with the reasons in order of importance being, **1 economic growth, 2 a desire to see more of the world, 3 the need to see friends and family spread across the globe, and 4 greater flexibility between home and the workplace.**

However, significantly, they also stated that reducing CO_2 emissions was one of the top two areas where they would like and expect to see technological advances. The good news is, so do we. In the last 40 years, manufacturers have reduced the fuel burn of aircraft and therefore CO_2 emissions by 70%, noise by 75%, with work continuing to deliver further improvements. In the last ten years the demand for jet fuel has increased 3%, whilst traffic in terms of RPKs (Revenue Passenger Kilometres) has increased 45%. Aviation will continue to strive to become ever more eco-efficient, reducing fuel burn per aircraft to the benefit of the environment and airlines, who face the prospect of fuel being a significant portion of their operating costs in the years to come.

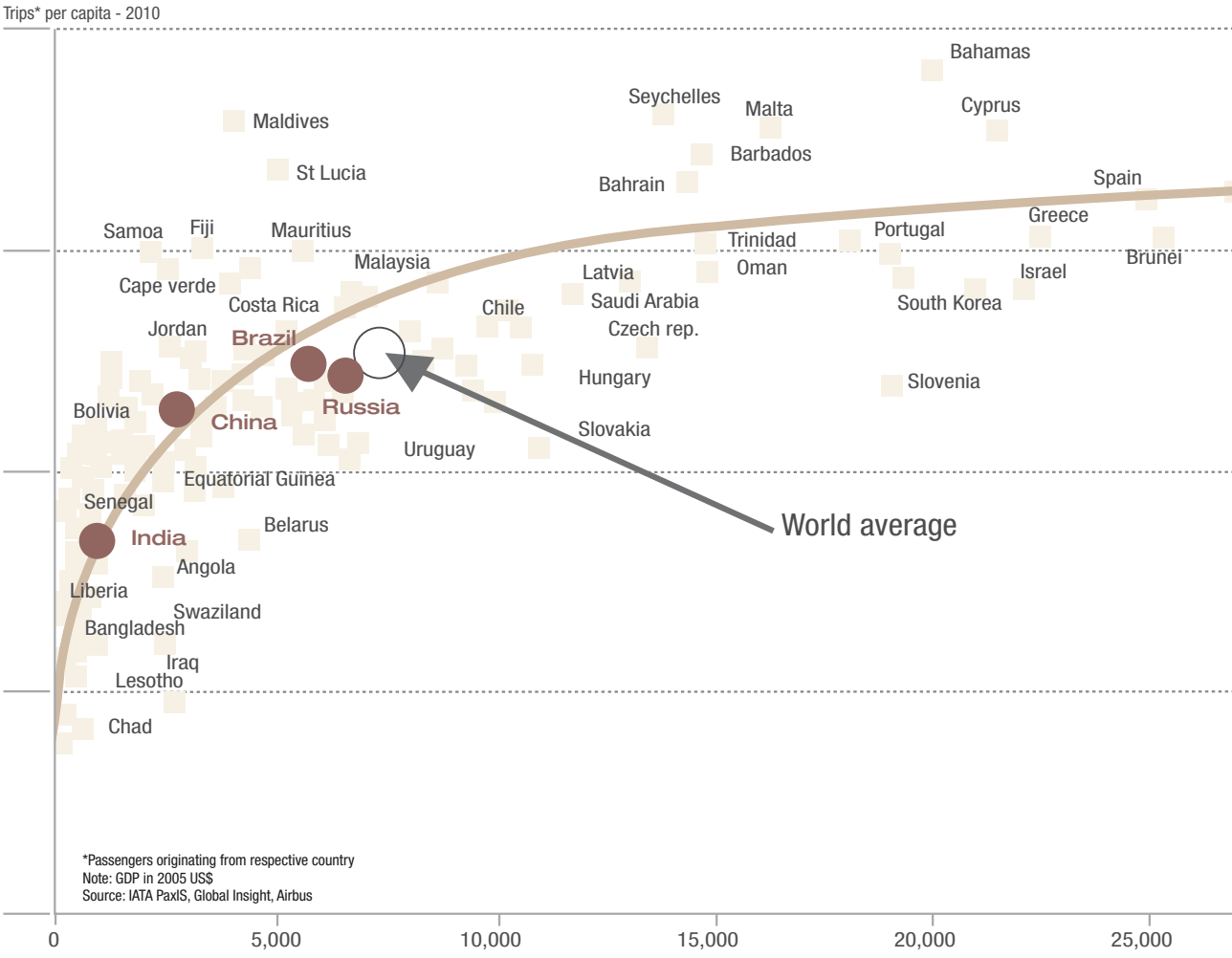
Air travel has proved to be resilient to external shocks



Source: ICAO, Airbus

2 MORE PEOPLE WILL HAVE ACCESS TO THE BENEFITS OF FLIGHT

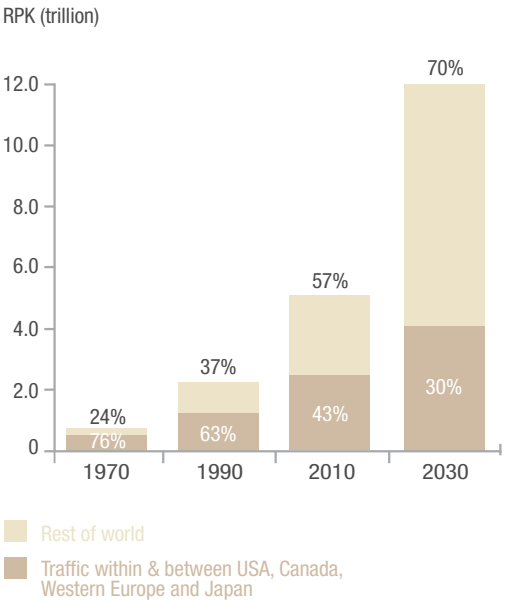
One component of traffic growth, as always, will be the existing travellers who will simply need to fly more. In a survey Airbus conducted recently on the future of flying, respondents suggested they expected to nearly double the number of times they flew each year in the future. However, with emerging economies around the world rapidly growing their economies and as a result growing the wealth of their citizens, more and more people will be able to benefit from aviation and fly for the first time. This effective and continuing democratisation of aviation, and something that is happening every day.



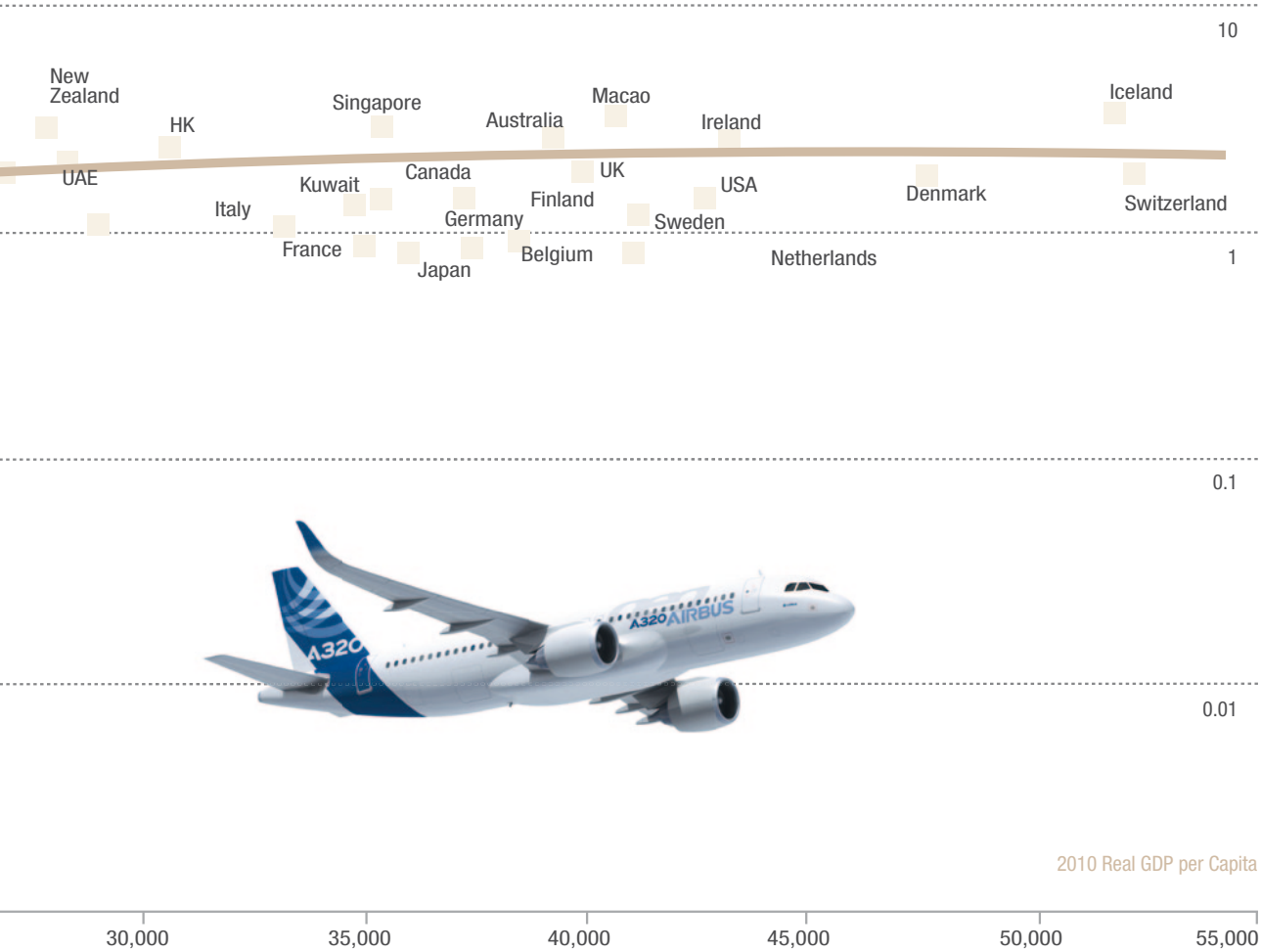
Today, whilst having an aviation infrastructure that is already large and growing fast, the people of China take just 0.2 trips per person per year. This compared to the largest domestic aviation market in the world in the US, where their flying citizens take on average nearly 2 trips per person per year. Increasing wealth will however move these countries along the flight curve, flying more and helping to drive our forecast passenger traffic growth at a 4.8% average annual growth rate per annum over the next 20 years.

Forty years ago, 76% of the world's traffic flew from, to or between North America, Western Europe and Japan. Today, as more of the world has embraced flight and been able to take advantage of its benefits this share has dramatically reversed. Some 57% is now centered in other parts of the world. This is not to say that these original regions will not also grow, they will, almost doubling their traffic over our forecast period.

70% of 2030 traffic volumes will be between expanding regions



Source: Airbus GMF 2011



3 SINGLE AISLES CONNECTING PEOPLE

Single-aisle aircraft, like the A320 family and the 737NG, are a very significant part of today's aviation network. Taking aircraft above 100 seats, 87% of all routes are flown by single-aisles and 78% of all seats offered globally are on a single-aisle aircraft. They really do connect people.

This is a broad segment, covering from about 100 seats to 210 seats. It is no surprise therefore that the most successful products in this market are those that offer a complete family, offering maximum choice and flexibility for airlines, with the largest of these very often needing the complete spectrum of size on offer. As single aisle aircraft are an important component of the fleet today and will still be in 20 years time, it is also no surprise that this segment should become the focus of new entrants and efforts to reduce the environmental impact of aviation. Today, there is an opportunity to further reduce the environmental footprint of these aircraft through new engine and aerodynamic technologies, but also to reduce their cost of operation by reducing fuel burn. This is also significant due to the fact that as fuel prices rise, fuel becomes an ever increasing share of an airline's operating costs. At Airbus, the A320neo will reduce fuel burn by 15% when it comes into service in 2015. Another big step in aviation's development, magnified by the importance of this segment to the overall aviation network.

87% of all routes

78% of seats

87% of frequencies

78% of the fleet in 2010

73% of the fleet by 2030

71% of new deliveries in the next 20 years

Aircraft ≥ 100 seats

87 aviation "mega-cities" in 2030

Destinations with more than 10 000 daily long haul pax

4 VERY LARGE AIRCRAFT CONNECTING THE WORLD

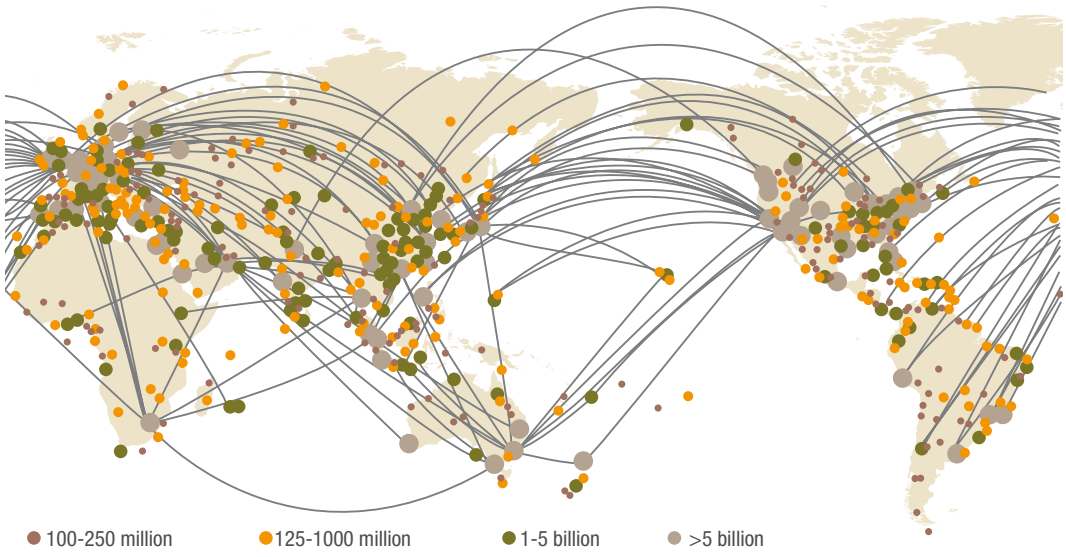
Whilst a key design goal of new aircraft is to reduce the fuel that they burn and, therefore, the CO_2 emitted, it is also important to scale the aircraft to market requirements and in particular, to the ever growing numbers of people who will have access to aviation and will fly between the increasing number of aviation mega-cities and hubs. By 2030, there will be 87 such cities, increasing from 39 in 2010, expansion driven by population growth and a rapidly urbanizing world. Today, about 50% of the world's population lives in cities, by 2030, this will be nearly 60%. More importantly from an aviation perspective, 91% of the people flying long-haul in 2030 will want to fly to, from or between these very big points. These dense markets are exactly the ones for which the A380 was designed; offering the right capacity at the right operating cost and right fuel burn per seat for the airlines operating in these markets.

There are no aircraft today that can offer better fuel burn per seat and therefore eco-efficiency than the A380.

The Airbus Global Market Forecast is able to project the future routes on which Very Large Aircraft (VLAs) will operate in the future. It is clear that many of these are the world's major population centers and the places where people live, work and travel. If single-aisle aircraft are connecting people, VLAs will connect the world.

Hubs important today and tomorrow

Level of RPK from/to each city in 2029



EXECUTIVE SUMMARY

Executive **summary**

Background

In the period following the financial crisis in 2008 and 2009, there was understandably considerable uncertainty as to what effect these events would have on the aviation industry and for how long. One question that was frequently asked was “Is it different this time?” Whilst the cause was damaging and with longer-term ramifications for the banking sector and sovereign debt, the aviation industry rebounded quickly posting positive traffic and record financial results in 2010: This rapid recovery clear evidence of the value that passengers and business place on the benefits of aviation.

The Highlights

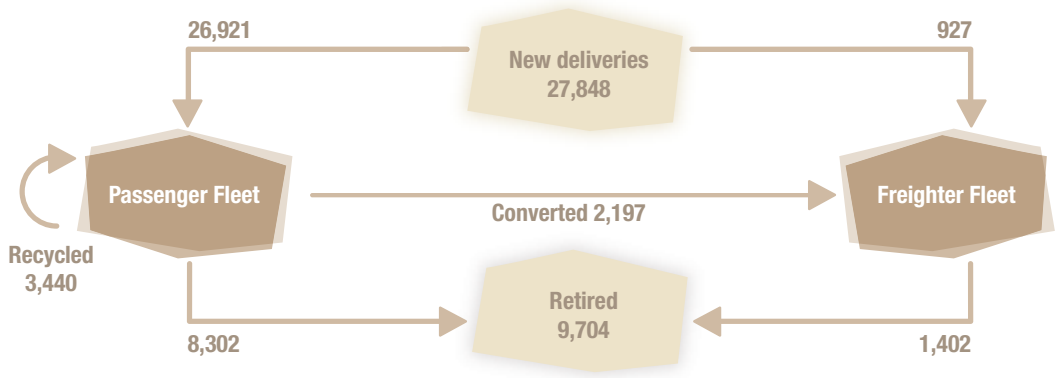
Markets in the emerging economic nations are expected to continue to grow over the next 20 years; driven by their economic growth and demographic changes, including increasing urbanisation and the resulting increased wealth and therefore ability to fly. Whilst not growing at the same pace, the more mature markets like North America and Europe will also grow, nearly doubling the amount of traffic flown, as connections, both personal and commercial are made with the developing economic nations. Continued global liberalisation is giving greater market access to airlines, wider choice for passengers and improving the efficiency of the industry. Low-cost carriers will also continue to grow around the world, particularly in Asia, while the network airlines will benefit from demand on the important international markets and a wave of new international travel consumers from the emerging countries. Changing dynamics, particularly network evolution and the role of aviation megacities and congestion, will influence the future of aviation. All of these drivers taken into consideration when developing this edition of the Airbus Global Market Forecast (GMF).

The Traffic

With the fact that historical growth in air passenger traffic has been significant, even when challenged by economic and other short term shocks, and is then combined with positive drivers with global scale, including socio-economic progress in the emerging markets, it is unsurprising that industry forecasters see continued growth in the long term. Examining the more than 160 traffic flows in our forecast, has resulted in projected annual growth of 4.84% (rounded to 4.8%) from 2010 to 2030.

This forecast is stronger than the 4.75% forecast in the previous GMF 2010. Globally, Airbus continues to forecast the single biggest traffic flow will be the US domestic market with 11.1% of all RPKs flown. Intra-Western European traffic, with its well established global and low cost carriers, will be the third largest flow with nearly 8% of World RPKs. The Chinese domestic market is forecast to grow at more than 7% per annum, moving it from the fourth largest flow in 2010 to the second by 2030.

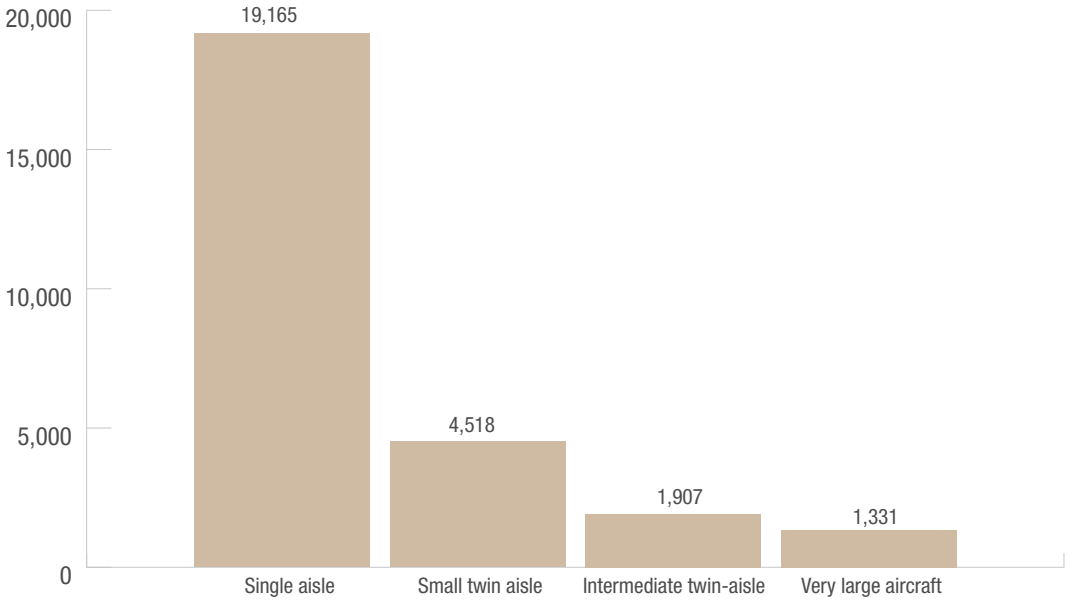
1,390 new passenger and freighter aircraft deliveries per year over the 2011-2030 period



Passenger aircraft ≥100 seats and freighters

Source: Airbus GMF 2011

New passenger aircraft demand will average ~1,350 per year



% unit	71%	17%	7%	5%
% value	6.5%	28%	15%	14%

Source: Airbus GMF 2011

The Fleet and Deliveries

The world's fleet of passenger aircraft, will grow from 15,000 at the beginning of 2011 to nearly 31,500 by 2030. At the same time, some 14,000 aircraft from the existing fleet will be replaced by more eco-efficient models. Of these, 3,400 will be recycled back into passenger service, where they too will replace an older generation model with another airline. It is also forecast that 2,200 will be converted to freighters and the remaining 9,700 will be permanently retired or withdrawn from service. Some 19,200 new deliveries will be single-aisles for domestic and intra-regional flows, which is more than in previous forecasts. A large number of aircraft, where significant product developments and later new products, will help deliver capacity, cost and environmental efficiency when technology allows and when needed.

As many as 5,500 twin-aisle passenger aircraft will be required to serve the existing, mainly international markets created largely by growth on existing city pairs, flows from and within emerging markets and the addition of new routes. Around 1,300 very large passenger aircraft will be needed to link the world's major aviation hubs. It should be no surprise that 45% of the new deliveries of very large passenger aircraft will be delivered to the airlines in the Asia-Pacific region.

The Airbus forecast predicts that the greatest demand for passenger aircraft will come from airlines in the United States and the People's Republic of China. North American and European airlines' will both receive 22% of the total, with Asia-Pacific's airlines forecast to take 34% of new deliveries. In addition, the world's airlines will require nearly 5,000 smaller aircraft, either jet or turbo-prop (with 20 to 100 seats) to serve regional demand, especially in the US and Europe.

By 2030, the world's airlines will take delivery of more than 26,900 new passenger aircraft, worth US$3.3 trillion at current list prices.

Top 10 countries (2011-2030)

Top ten countries in 20-year new passenger aircraft deliveries

Passenger aircraft demand		
1	USA	5,389
2	PRC	4,041
3	Germany	1,038
4	India	1,019
5	UK	938
6	UAE	813
7	Brazil	701
8	Russia	689
9	Australia	609
10	Ireland	588

By US$ value (billions)		
1	PRC	545.1
2	USA	495.5
3	UAE	177.0
4	India	141.4
5	Germany	132.7
6	UK	119.6
7	Japan	91.5
8	Brazil	82.3
9	Australia	80.2
10	Russia	72.8

Passenger aircraft ≥100 seats (excluding freighters)
Sources: Airbus GMF 2011

Asia-Pacific: the largest demand

New passenger aircraft deliveries by region

	2011-2020	2021-2030	2011-2030	% of world deliveries
Asia-Pacific	4,259	4,901	9,160	34%
Europe	2,918	3,032	5,950	22%
North America	2,667	3,234	5,901	22%
Latin America	961	1,067	2,028	8%
Middle East	1,044	838	1,882	7%
Africa	542	559	1,101	4%
CIS	464	435	899	3%
World demand	12,855	14,066	26,921	100%

Passenger aircraft ≥100 seats (excluding freighters)
Sources: Airbus GMF 2011


RPORT

DEMAND FOR AIR TRAVEL

GMF 2011
People, cities and network evolution

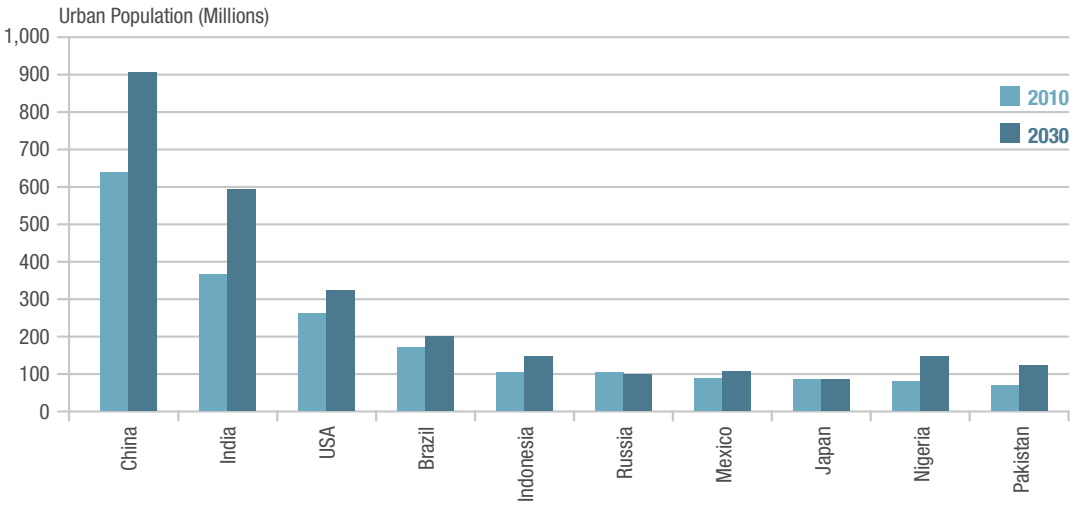
For the first time in history, more than half of world's population, 3.5 billion people, live in urban centers. By 2030, 59% ,~5 billion people, will live in cities. During the next two decades, developing countries will absorb nearly a billion additional urban dwellers with China (900 million city dwellers) and India (600 million) leading the way. Rates of urban growth in developing countries have been higher than that of developed countries.

Cities have become the main driver of globalization and the engine of economic growth. They have quickly transformed their economies through international trade, attracting large multinational corporations, international media and foreign tourism. Importantly, a rise in urban population has historically led to an increase in per capita GDP, a key driver for aviation.

According to a Mc Kinsey Global Institute study, cities on average account for more than 50% of gross domestic product in almost all countries. In fact, urbanization provides crucial opportunities for people in search of higher income and a better standard of living. World GDP is becoming less unequally distributed as globalization and urbanization proceed.

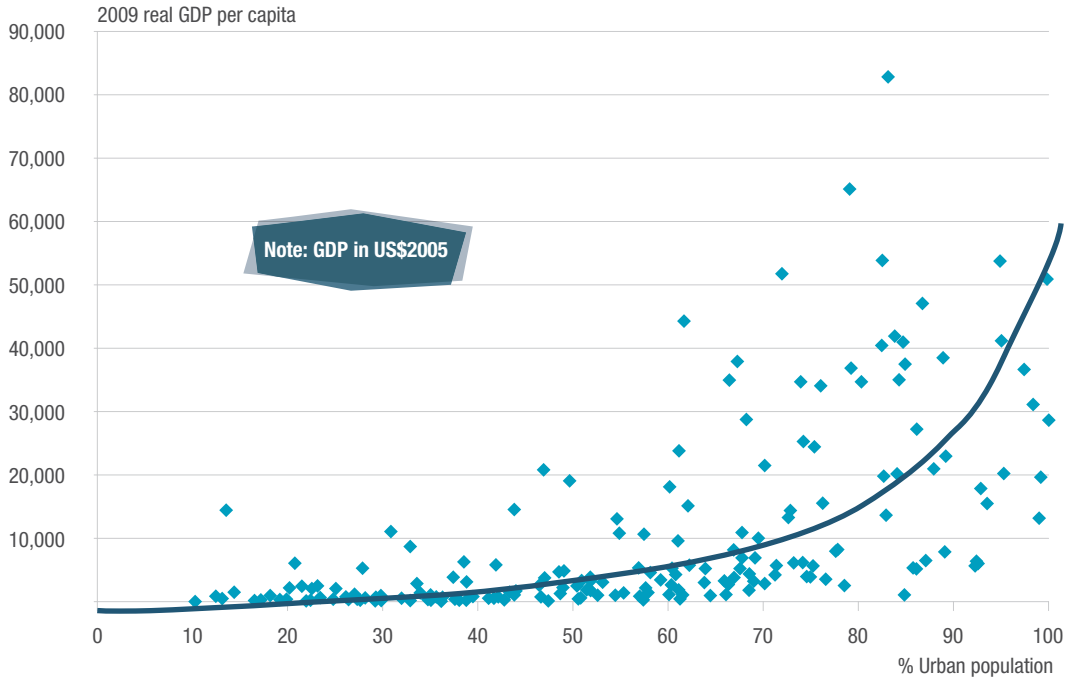
China, India and the USA - the most urbanized countries

Top 10 urban countries (2010)



Source: UN population division, Airbus

Urbanisation: The engine for economic growth



Source: Global Insight, UN Population division, Airbus

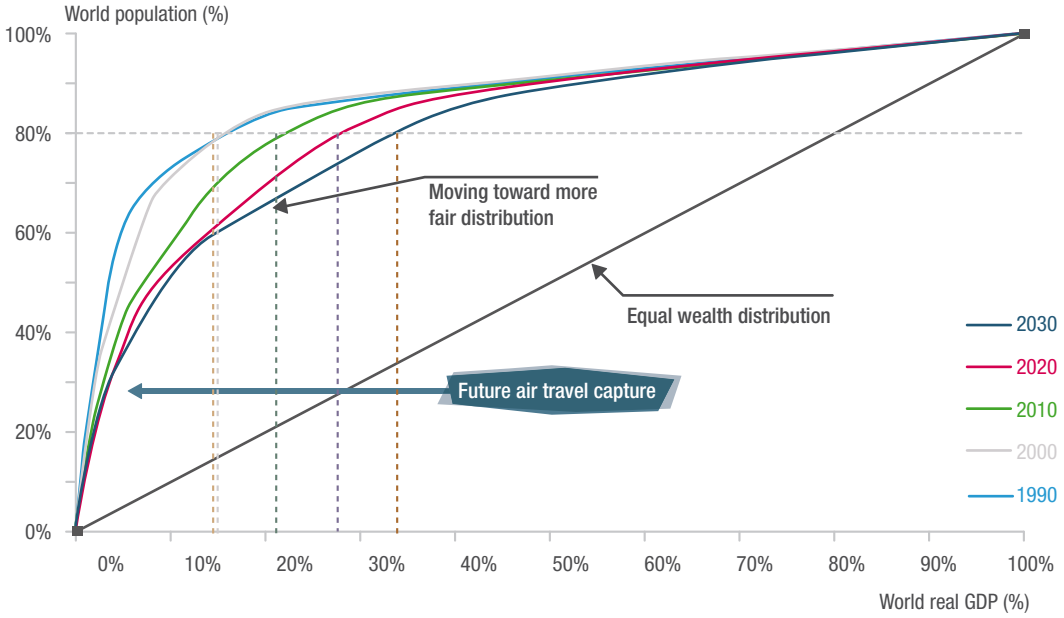
Most urban growth is projected to take place in the southern part of the world, with different degrees of urbanisation. Already, nearly three-quarters of the population of Latin America live in urban areas, close to the same level of urbanisation as in developed countries. Whereas, urban populations are expected to grow significantly in India, China and Indonesia. By 2030, more than half of the population of China and Indonesia and about 40% of the Indian population will live in cities. As new mega cities develop in the heart of China, they will need to be quickly and efficiently connected. Air transport is the ideal solution, minimizing time, the impact on land use and cost to government.

We are now living in a global economy, where not only capital flows but the flow of people across continents has become essential. Air transport has therefore become a vital part of this global system by providing access to global markets and facilitating the connection of people worldwide, enabling increased foreign migration and international tourism to many cities. According to the World Bank, more than 200 million people were living outside their country of birth in 2010. The growth in migration and globalization has been beneficial to the travel and tourism industry as immigrants tend to return home regularly to visit friends and family. Additionally, according to the United Nations World Tourism Organisation, 40% of international tourists now travel by air, with air and international tourism arrivals expected to reach nearly 1.6 billion by the year 2020, 1.2 billion will be intra-regional and 378 million will be long-haul travelers. The age of populations will also affect the amount and type of travel in the future, for example statistically, older, more affluent retired people in developed countries take the longest trips.

For decades, air traffic has been led by urban areas representing centers of production, distribution, services and culture. Today, most of cities in developed countries are economic giants. For example, London, New York and Tokyo's economies are already larger than those of some nation-states.

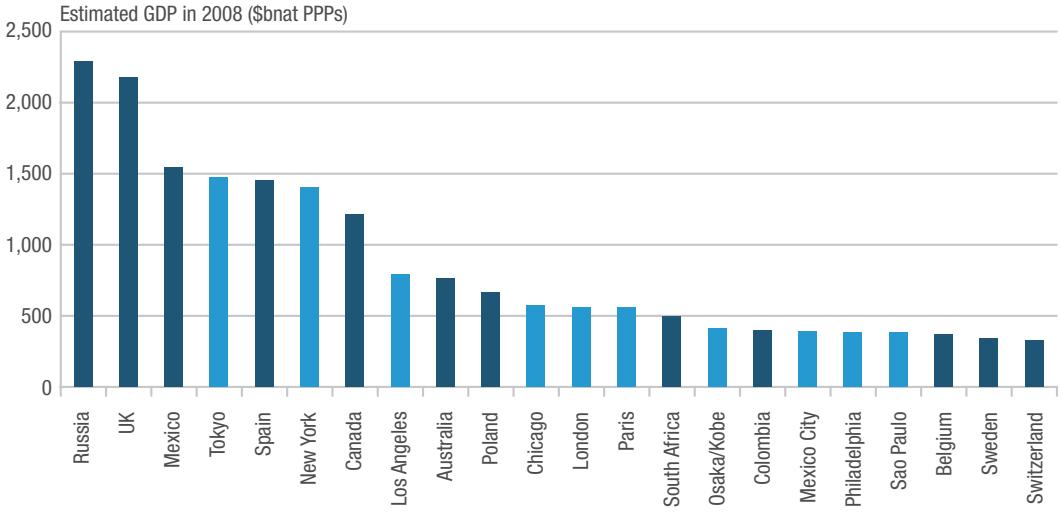
As globalization blurs national borders and intensifies competition, cities from the developing world, such as Shanghai, Beijing, Seoul, Mumbai, Delhi, Dubai are also quickly becoming economic giants, inturn attracting a high number of air traffic passengers. The emergence of global cities and global companies will increases the demand and connectivity between cities and will drive the shape and development of the air transport in the future and in turn the numbers and types of aircraft which will be needed.

The world is moving toward better standard of living



Source: Global Insight, Airbus

Some cities are already larger than some nation-states



Source: PWC

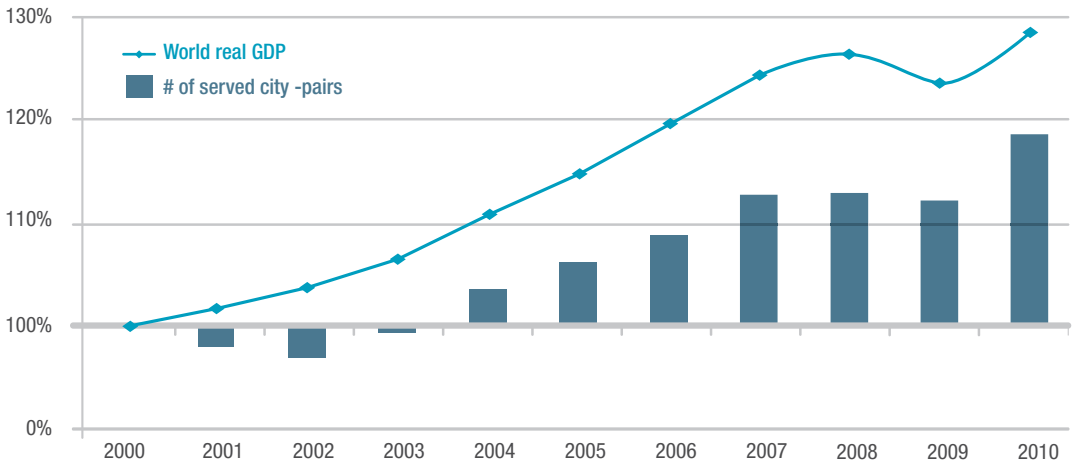
Network Development

The shape of things to come

The world has gone through the biggest economic crisis since the 1920s. The passenger route network of the world's airlines, being one of the key service providers for our globalized economy, consequently followed this downturn. The crisis peaked in a 3.4% loss of global GDP and a 5.6% loss in number of served city-pairs, comparing the first quarters of 2009 and 2008. Since then, the world economy has improved relative to this period, so too has the global route network which has expanded with more than 17,000 city-pairs operated with nonstop flights by the end of 2010, which marks an all-time high in aviation's history.

Historically, long-haul traffic has grown faster than short-haul, even after industry downturns, growing 3.4% per year since 2000 as compared to the growth in short-haul at 2.5% for the same period. Today's long-haul network serves a variety of market needs. People who want to fly directly from one of the world's economic centres to another; they might also use one of these cities as gateway to reach a more remote secondary airport or seek directly for a connection between smaller points. Whatever the choice, it will be linked to the viability of any potential route from an airline operational perspective.Taking a look at today's leading long-haul gateways reveals the different composition of long-haul traffic: Nonstop and connecting traffic contributes to different extents to an airport's long-haul traffic volume.

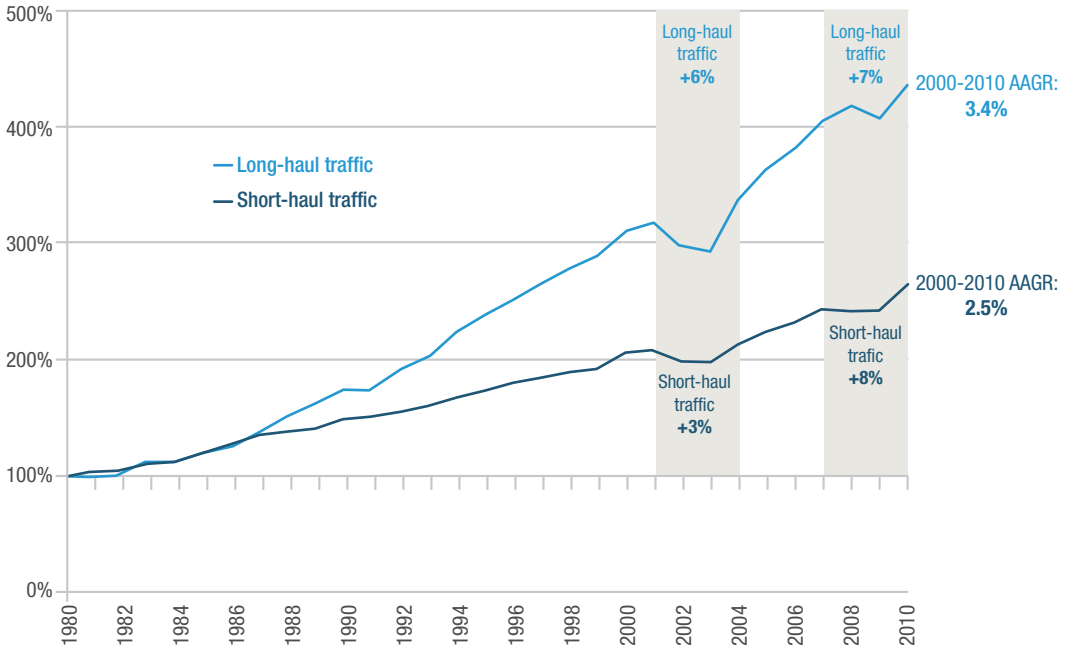
Evolution of world real GDP (2005 US$) and number of served city -pairs, 2000 set to 100%



Source: Airbus

Long-haul traffic

Year-on-year evolution of long -haul and short -haul traffic (offered seats), 1980 to 100%*



* Long haul traffic: flight distance >2,000nm, excl. domestic traffic
Source: OAG, respective month of September

Network development: methodology

Assessing the future development of the air transport network is a crucial step in the forecasting process. The shape of the air transport network affects a wide range of parameters that influence the future demand of aircraft, notably the required size and range.

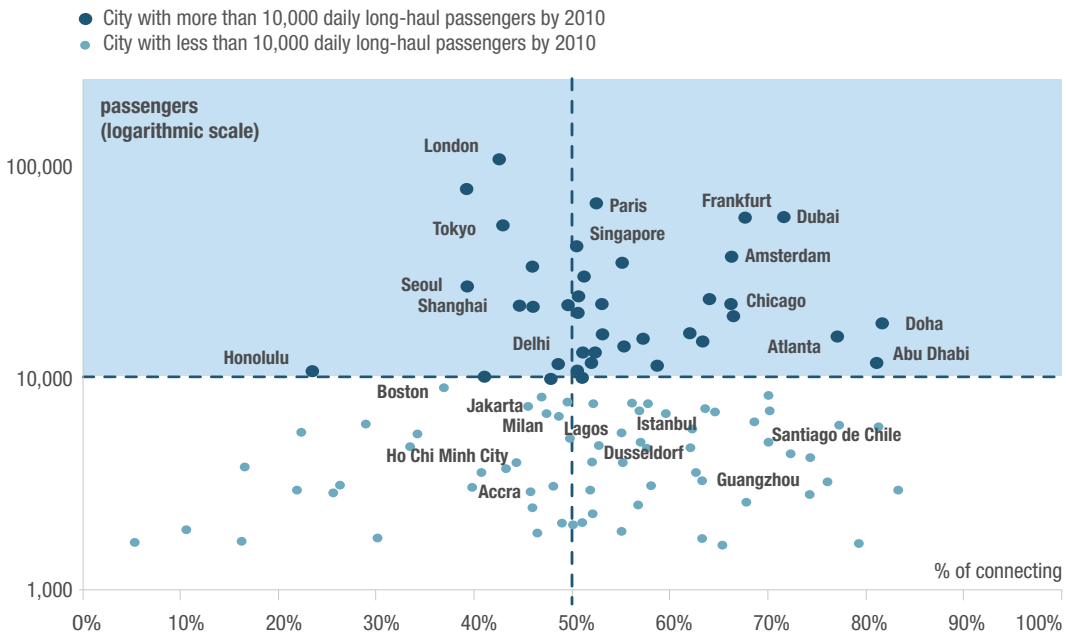
The Airbus network forecast process uses an aggregated traffic forecast on a global scale and estimates of future traffic volumes at a route level. This involves the following steps:

- **Breakdown from a macro traffic flow level to a micro city-pair level:** The global traffic forecast per traffic flow is the baseline for any further network analysis. The observation of country and city specific characteristics allows an estimation of future travel demand on a city-pair or origin-and-destination (O&D) level.

- **Extending the choice of flying:** The connection of each O&D today is realized through a specific number of physical routings. As demand for air travel increases this number can be enlarged, notably as new nonstop services become viable for the airline.

- **Tracing the choice of flying:** Specific traffic growth perspectives down to an O&D level and the integration of new airline routes change the shape of today's airline network. New routes will affect the traveller's choice, not only directly between the cities they connect, but also indirectly between many more cities as the route endpoints might serve as points to connect beyond. This said, the vast majority of future traffic and demand is expected to be fulfilled through existing city pairs.

Total daily long-haul traffic and percentage of connecting traffic per airport*



* Long haul traffic: flight distance >2,000nm, excl. domestic traffic
Source: Airbus

2010 Aviation Mega-cities: 39 cities with more than 10,000 daily long-haul passengers

Long haul directs routes between the world's 2010 Aviation Mega-cities*

* Long haul traffic: flight distance >2,000nm, excl. domestic traffic

Source: Airbus

There are cities that traditionally are centres of air transport demand, due to their socio-economic weight within a certain region. These cities, such as Tokyo, New York and London, are vital points for world trade; they are also big population centres with an enormous appeal far beyond their borders. These cities, in the majority of cases, also serve as a connection hub for one or more “home” or so called “flag” carriers. However, it is origin-and-destination traffic, or where people want to start and finish their journey that above all contributes to their weight and importance in the world long-haul network.

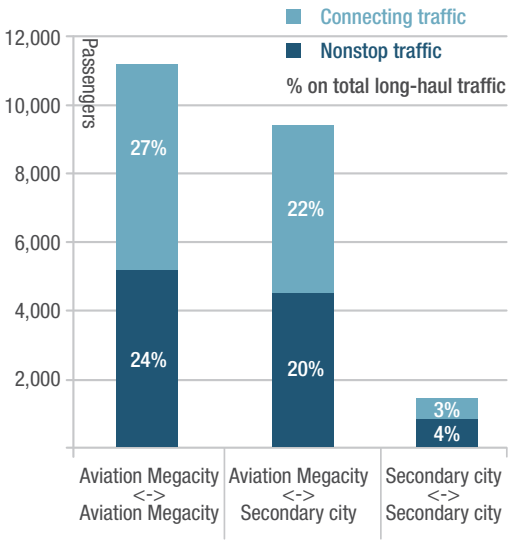
Other points, whilst not being major population centres, are very significant as aviation centres, such as the cities and airports in UAE and large European and U.S. transfer hubs.

In many cases, these cities, at least today, have a relatively lower, (socio)-economic weight compared to the big O&D destinations mentioned before. They draw a big part of their importance within the long-haul network from highly optimised flight schedules that aggregate traffic from all over the world to efficiently redistribute it to destinations beyond.

Today, there are 39 cities from a total of around 350 that have a monthly throughput of at least 10,000 long-haul passengers per day. They serve as the pillars of the global long-haul network, serving as essential network crossroads and as the source of massive air transport demand: Real aviation mega-cities.

More than 90% of the world’s long-haul traffic starts, terminates or goes through an Aviation Mega-city

Monthly long-haul traffic per type of route start-/endpoint [1,000’s passengers]*



* Long haul traffic: flight distance >2,000nm, excl. domestic traffic
Source: Airbus

The importance of the 39 aviation mega-cities has been outstanding:

- **Aviation Mega-city <-> Aviation Mega-city:** More than 11 million monthly passengers or 51% of total long-haul passengers have been carried between these cities. This number includes people that either wanted to travel directly from one megacity to the other or that used one of these city links to connect to flights beyond.

- **Aviation Mega-city <-> Secondary city:** An additional total of nearly 10 million or 42% of long-haul passengers used one of the existing routes between an Aviation Mega-city and a secondary city, either as nonstop or connecting passengers.

- **Secondary city <-> Secondary city:** The remaining 7% of passenger traffic has been carried between secondary cities, both on nonstop and connecting flights.

More than 90% of long-haul passengers travelled either on a route between two Aviation mega-cities or on a route having one of them as route start point, connecting point or end point.

Long-haul network forecast

World air traffic will grow at an average rate of 4.8% per year over the next two decades. This additional traffic volume will be accommodated on the existing route network as well as on new routes. Airbus forecasts that more than 700 new city-pairs will be added on the long-haul market over the next 20 years. This will grow today's long-haul network of about 1,600 city links by more than 40%.

However, as traffic will grow twice as fast as the network, most growth will be accommodated on the world's existing city pairs. No more than 15% of 2030 passenger traffic will be on routes that are not served today i.e. new routes.

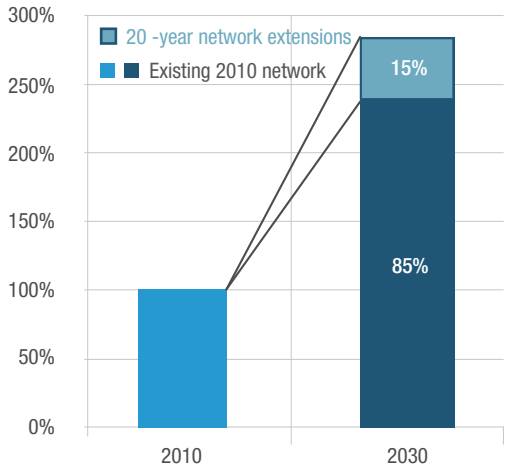
More than 51% of today's long-haul passenger traffic travels between 39 identified aviation megacities and connects an additional 42% of traffic on routes linking these aviation megacities to secondary cities.

In terms of the number of routings, just 22% of long-haul routes are between aviation mega-cities, whereas the majority of 58% link these hub cities to secondary cities. This indicating the importance of a relatively small number of points to the network.

Whilst the number of cities in each category is expected to remain relatively stable, for example despite new route openings, mega-cities will still represent 19% of the total routings, this slightly down from 22% in 2010. In terms of traffic, whilst volumes will grow significantly, these cities will accommodate 45% of all traffic, down slightly from 51% in 2010. There will be a four percentage point shift in hub to secondary city pair routings, which is likely to stimulate the need for large twin aisle types like the A350-1000.

85% of 2030, long-haul traffic will still be accommodated on the 2010 network

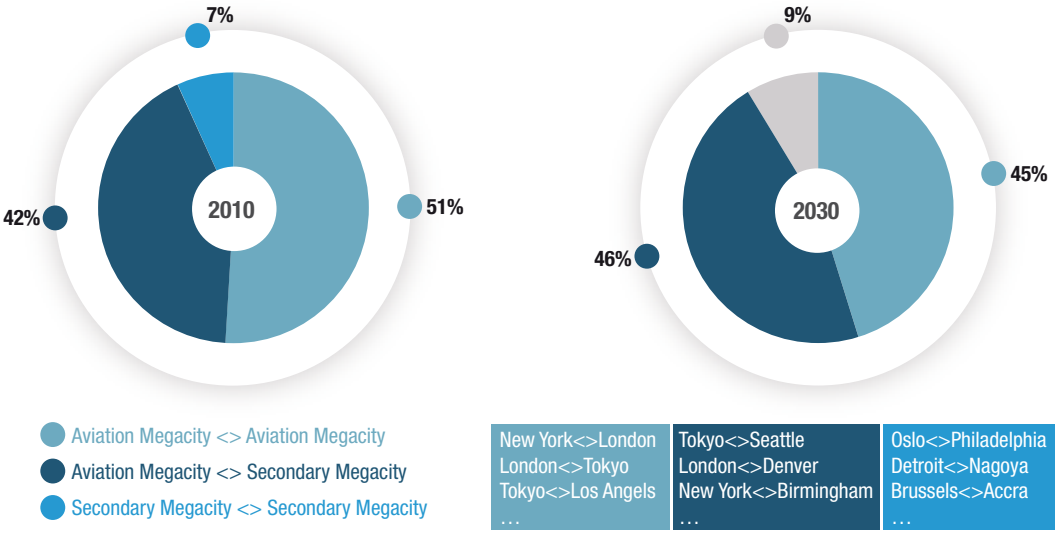
Evolution of long -haul traffic, 2010 set to 100% (passengers)



Source: Airbus

A large portion of long-haul traffic will remain between the 39 Aviation Mega-cities

Share of city-pair categories on long-haul traffic (passengers), 2010 and 2030*



Aviation Megacities as of 2010 for both years
* Long haul traffic: flight distance >2,000nm, excl. domestic traffic

Source: Airbus

By 2030, a total of 87 cities around the world will have passed the threshold of 10,000 daily passengers, to become aviation mega-cities. The emerging regions of the world, including Latin America, Africa, the Middle East and Asia will contribute an additional 29 long-haul traffic hubs, as their economic power and wealth grows passenger traffic within these regions. Cities in Australia, Europe and North America will also-benefit from a sustained long-haul traffic growth, adding a further 19 aviation megacities here. However, in the next 20 years, slightly more than half of the global long-haul air transport centres will be in emerging economies.

The number of cities that are considered as key gateways for long-haul flights will more than double over the next 20 years. Never-the-less the concentration of traffic on a relatively few number of points will remain high. The curves of cumulated traffic shares across all cities with long-haul operations for 2010 and 2030 maintain a very similar shape. In practical terms this can be illustrated as follows: The 2010 top 20 long-haul gateway cities handled 55% of world long-haul traffic. Despite network evolution, the top 20 of 2030 will still account 50% of traffic. In the same way, the top 100 cities account for more than 90% of long-haul traffic, in 2010 as well as over the next 20 years.

2030's Aviation Mega-cities: 87 cities with more than 10,000 daily long-haul passengers

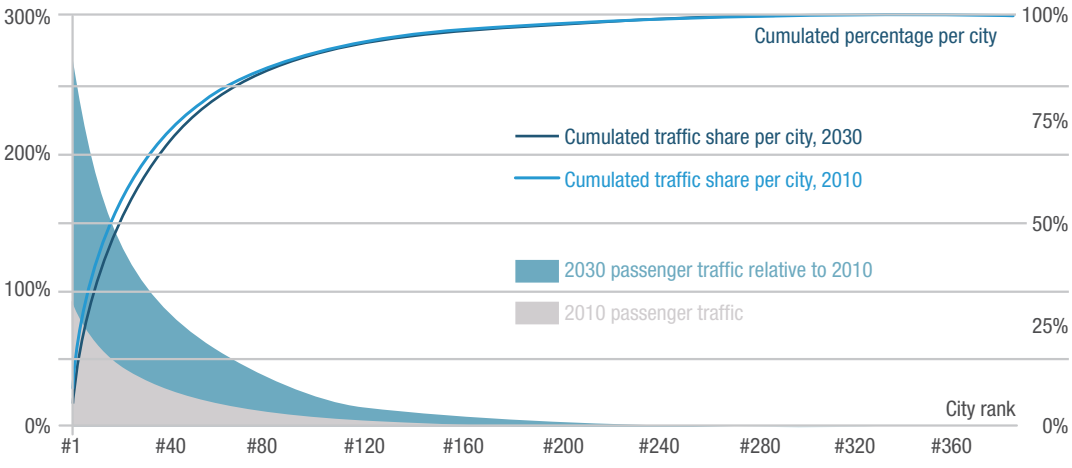
2030 cities with more than 10,000 daily long-haul passengers*

* Long haul traffic: flight distance >2,000nm, excl. domestic traffic

Source: Airbus

Long-haul traffic will remain highly concentrated

Aggregated und cumulated monthly long-haul traffic per city, ranked from largest to smallest for 2010 and 2030 (passengers), 2010 set to 100%*



* Long haul traffic: flight distance > 2.000, excl. domestic traffic

Source: Airbus

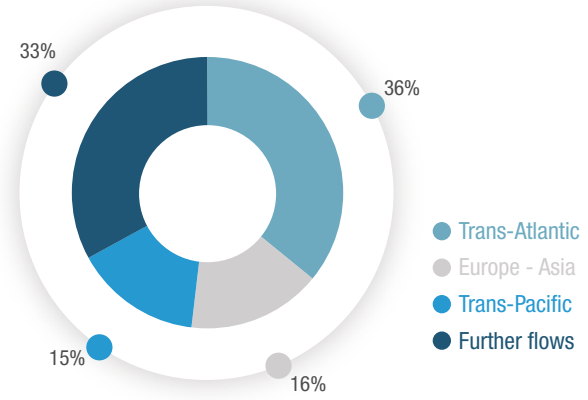
Long-haul traffic by regional flow

Some 1,600 long-haul city-pairs are operated today. This market is dominated by three main traffic flows. The air-bridges over the Atlantic and the Pacific Ocean, as well as links between Europe and Asia, account for two thirds of worldwide long-haul traffic, but only half of the total operated city-pairs. With anticipated traffic growth over the next 20 years the vast majority of long-haul traffic will remain concentrated on these three dominant flows.

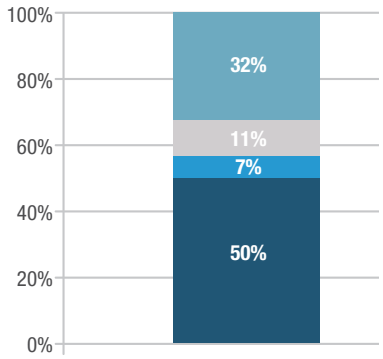
Long-haul traffic is heavily concentrated on three traffic flows

2010

RPK share of Trans-Atlantic, Trans-Pacific and Europe-to-Asia traffic flows on total long-haul traffic, 2010*



Share of RPK per flow



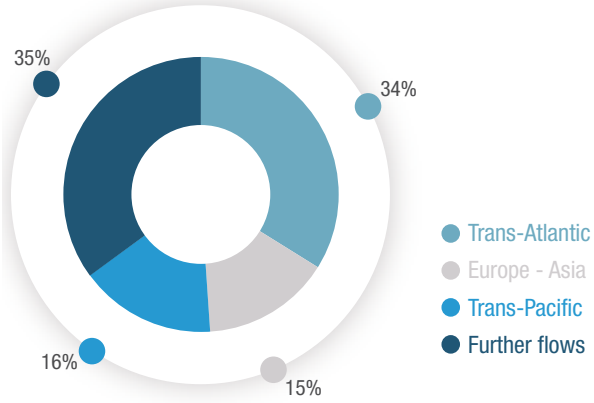
Share of served city-pairs per flow

* Long haul traffic: flight distance >2,000nm, excl. domestic traffic

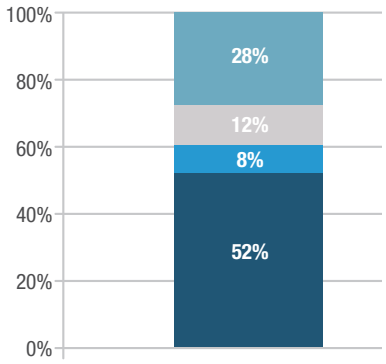
Source: Airbus

2030

RPK share of Trans-Atlantic, Trans-Pacific and Europe-to-Asia traffic flows on total long-haul traffic, 2030*



Share of RPK per flow



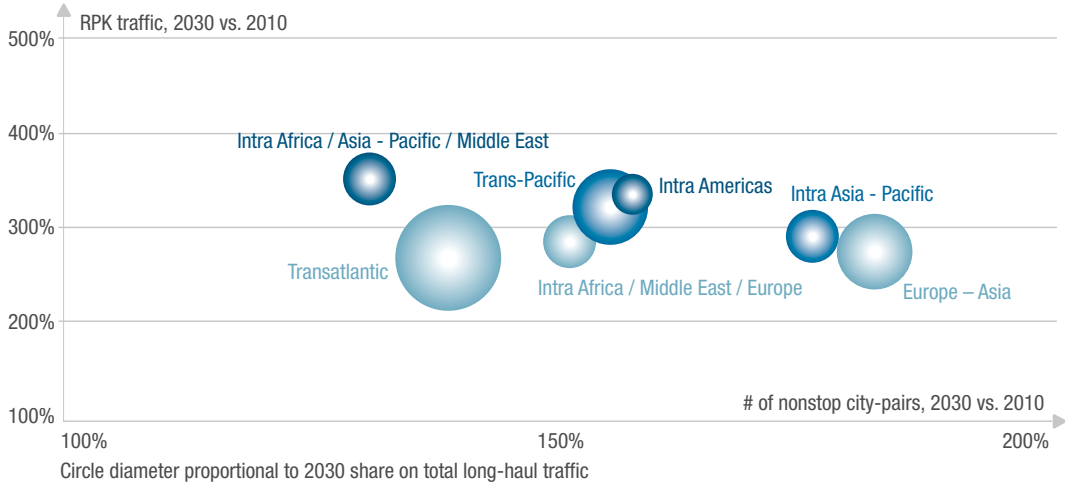
Share of served city-pairs per flow

* Long haul traffic: flight distance >2,000nm, excl. domestic traffic

Source: Airbus

Long-haul traffic on routes linking the emerging regions will triple over the next 20 years

20-year evolution and share of long-haul traffic for selected traffic flows [RPK], 2010 set to 100%*



* Long haul traffic: flight distance >2,000nm, excl. domestic traffic

Source: Airbus

The highest growth in long-haul traffic is expected within the triangle of Africa, Asia-Pacific and the Middle East. Some 20% of the 2030 traffic will be accommodated on new city-pairs, notably between the Middle East and the PRC.

The PRC will also be the main contributor to new long-haul routes in the Asia-Pacific region; 40% of the new city-pairs will connect the PRC to South-East Asia, the Indian subcontinent and Australia.

The long-haul sector between Europe, the Middle East and Africa is dominated by traffic between Europe and Middle East, where again most of the route openings are expected, notably between the U.A.E. hubs and more secondary cities in Europe.

The Trans-Pacific will enjoy the strongest growth out of the big three long-haul flows. The main reason is the increasing weight of RPK traffic to China, which will reach similar dimensions as traffic to Japan. The most new non-stop route openings are forecast between Europe and Asia, in spite of strong competition coming from connections via the Middle East hubs. Both Trans-Pacific and Europe-to-Asia traffic will be carried to roughly 18% on newly opened city-pairs.

The most fragmented long-haul market in terms of offered non-stop connections is the Trans-Atlantic sector, where more than 500 non-stop routes were served in 2010. However, new non-stop routes will only contribute to 10% of total traffic by 2030. The relatively low growth compared to other long-haul flows is due to the dominance of traffic between more mature regions; even by 2030, more than 60% of the Trans-Atlantic traffic will be between Canada, the US and Europe. But a high growth potential will still come from emerging flows from the Middle East and Africa to the Americas as well as from Europe to South America. These segments will raise their share of Trans-Atlantic traffic from 18% to more than 30% by 2030.

Passed and future liberalisation driving growth

Airline commercial rights on international routes are governed by a web of more than 10,000 bilateral air services agreements between countries, in the frame of the 1944 Chicago Convention on international air transportation.

In 1979, the US enacted the International Transportation Competition Act that promoted the establishment of liberalized bilateral air service agreements with foreign countries. An action intended to drive economic and air traffic growth and a move to allow increased competition due to removal of restrictions on capacity, frequency and pricing. An additional benefit was the gain in efficiency through the optimisation of networks.

According to some studies, examples of liberalisation increased traffic by 12-35% when compared to the preceding years. In some exceptional cases even doubling traffic.

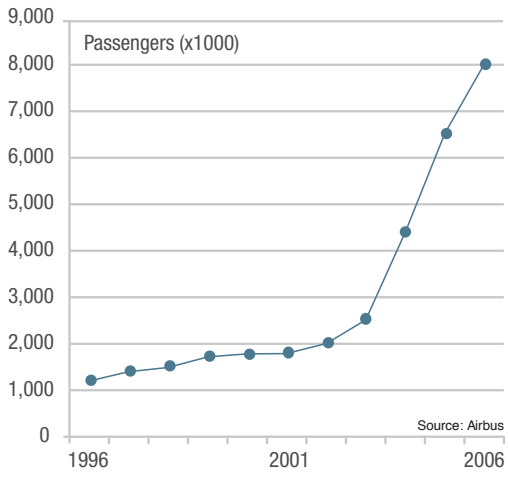
In May 2004, eight Central and Eastern European countries became members of the EU, and also members of the Single European Aviation Market, a liberalised market. This resulted in a rapid entry of Low Cost Carriers (LCCs), with these new entrant countries quickly becoming a key growth area for air traffic in Europe.

The growth generated can be demonstrated by examining traffic between the UK and new members. It can be seen that by 2006, traffic was more than two times higher than before CEE enlargement.

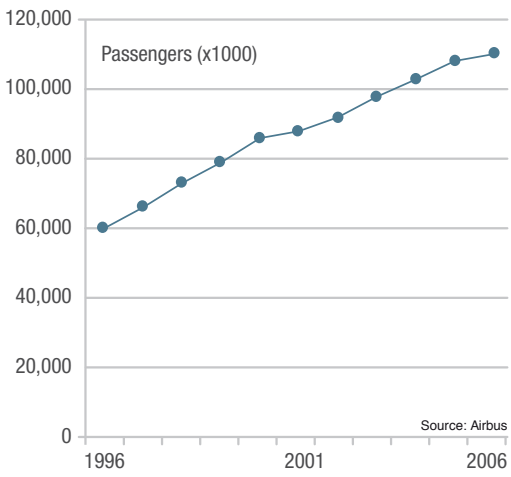
Future liberalisation is expected to drive traffic growth in parts of Asia and Africa in the coming years. Something that forecasters will need to consider, in order not to underestimate growth in these regions.

Number of passengers in a year on routes between

UK and CEE-8



UK and EU-15



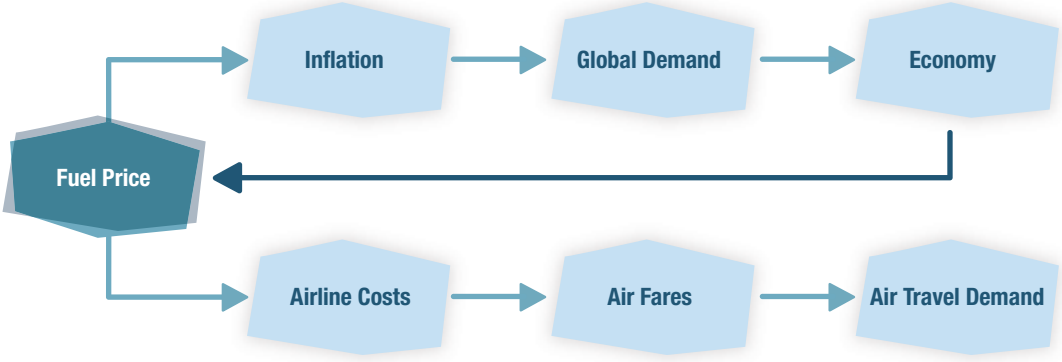
Fuelling **Concerns**

Oil price is an important consideration in aircraft forecasts as a result of its impact on economic activity, and the resulting impact it has on demand for aviation. Ironically from aviation's perspective, crude oil prices and economic activity are closely correlated: strong and developing economic activity increases demand for oil, which has a positive impact on crude oil prices. Conversely, an exogenous increase of crude oil prices has a negative impact on economies, through inflation and a negative shock on global demand.

An analysis of the history shows that the correlation coefficient between world GDP and crude oil prices from 1979-2010 is 85%. The elasticity of GDP with respect to crude oil prices has been estimated by some economists, but they find very different values as this elasticity depends on various factors such as oil dependence and monetary policy. Airbus ensures that the economic forecasts it uses incorporates the effects of oil price and are clearly understood in the context of these forecasts.

Fuel prices have an impact on the economy

Scheme of the impact of oil prices on both the economy and air transport



Source: Ascend, ICAO, Airbus

Impact on air transport

According to the IEA, the global transportation sector accounts for almost 70% of the total demand for fuel. Ground transportation is the dominant mode of transportation, and has the most important influence on the equilibrium of crude oil price markets. According to the U.S. Bureau of Labour Statistics, air transport, which has no viable alternative to the use of aviation fuel, accounts for around 7% of the total demand within the transportation sector in the USA.

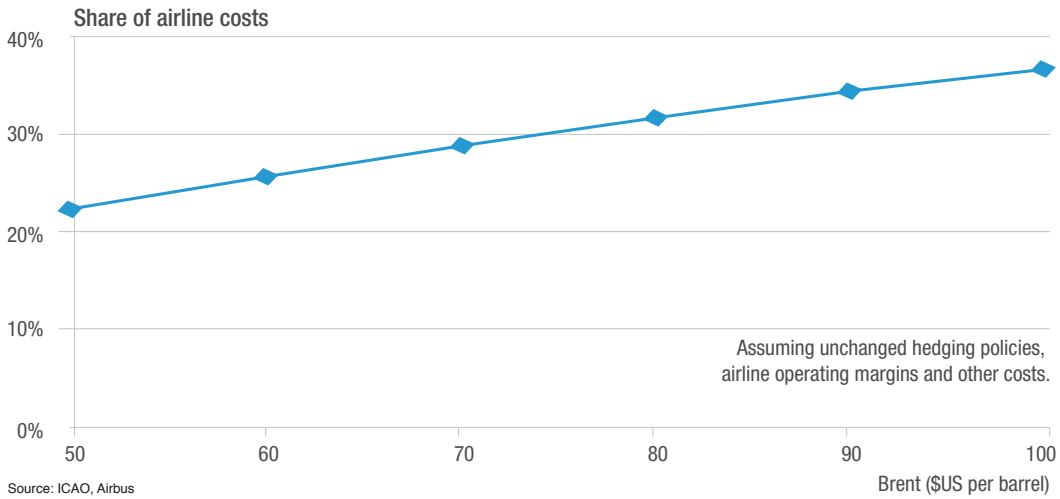
The response of airlines to higher fuel prices can have an effect on forecasts, as ticket fuel surcharges are applied, possible capacity reductions and even the replacement of older less fuel efficient aircraft with eco-efficient modern models.

Fuel surcharges for example, have a negative impact on air travel demand, as the estimated values of price elasticity show that demand is rather elastic, notably for leisure travellers, and especially in periods of economic recovery, where consumer confidence is fragile. Additionally, air transport is generally more impacted than other sectors by increases of crude oil prices, as fuel currently represents more than 30% of airlines operating expenses.

1% increase in air fares → **0.5 to 1% decrease in air travel demand** (elasticity for air fares is -0.5 to -1)

-0.5 Domestic China
China - Japan
US - W. Europe
-1 Domestic Europe
Domestic US

Higher fuel price, higher share of airline costs

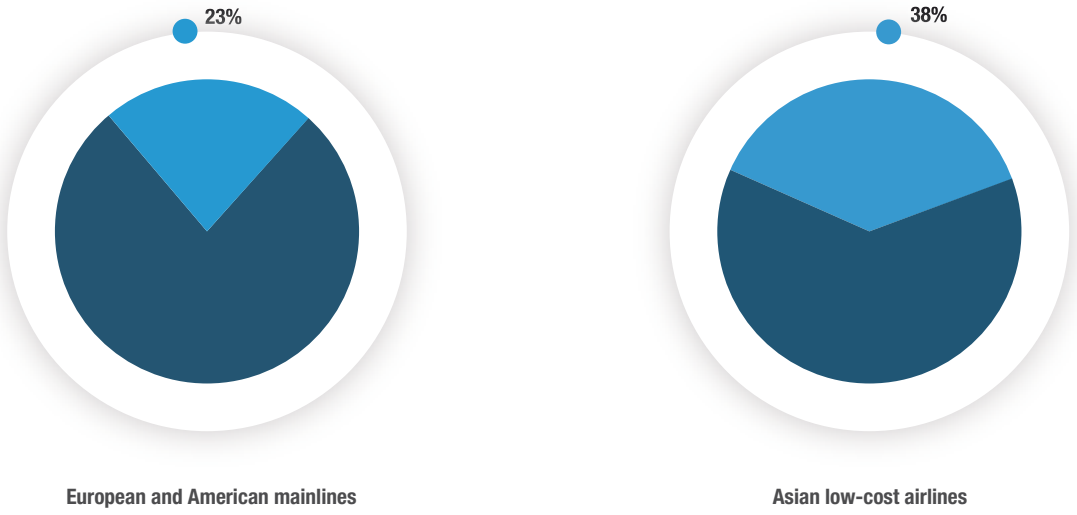


Source: ICAO, Airbus

Low-cost carriers are more impacted?

The impact of high fuel prices can be greater for low-cost carriers, which pay the same fuel price as the traditional airlines, who can realise economies on other parts of their business. For example, in 2009, fuel expenses represented, on average, 38% of all Asian low-cost carriers operating expenses, whereas they represented 23% of European or American major airlines.

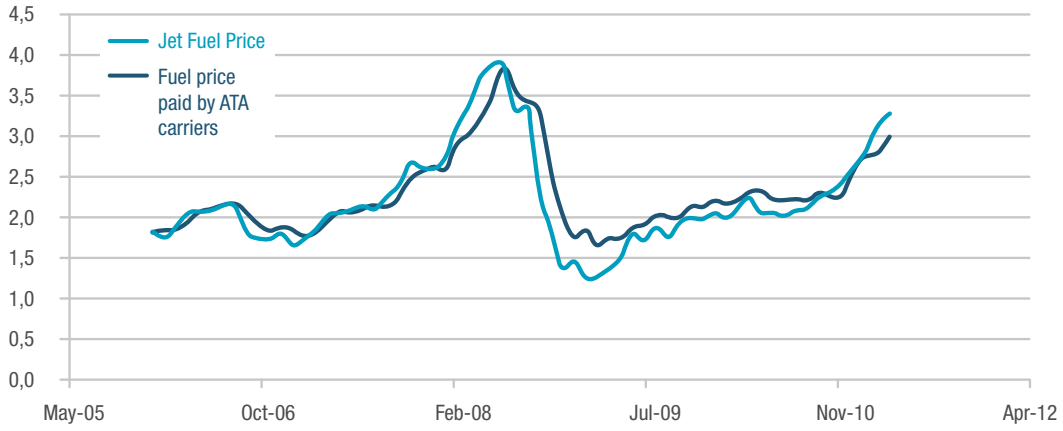
Percentage of fuel expenses in operating expenses (2009), per airline type



Source: Airlines Financial Reports, Airbus

Fuel hedges can have thorns

Hedging is a powerful tool to soften price increases and fluctuations, but this technique has proven to be a delicate balance. The volatile nature of fuel prices, with sharp rises in a very short period quite often followed by declines during weaker economic periods, making them difficult to forecast. Therefore, the technique is not always successful, notably when these fuel price decreases are not anticipated. During the period January 2006 – April 2011, a very volatile period, the total loss due to hedging was estimated at $6 billion dollars for all ATA carriers (in the US), representing 3% of all fuel costs.

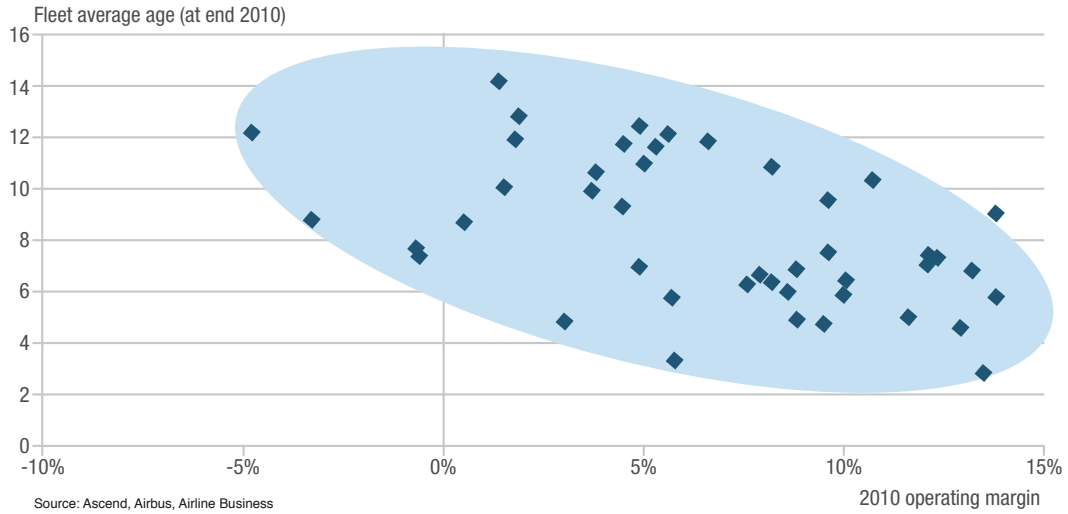


Source : ATA, EIA, Airbus

Fuel efficiency is the key

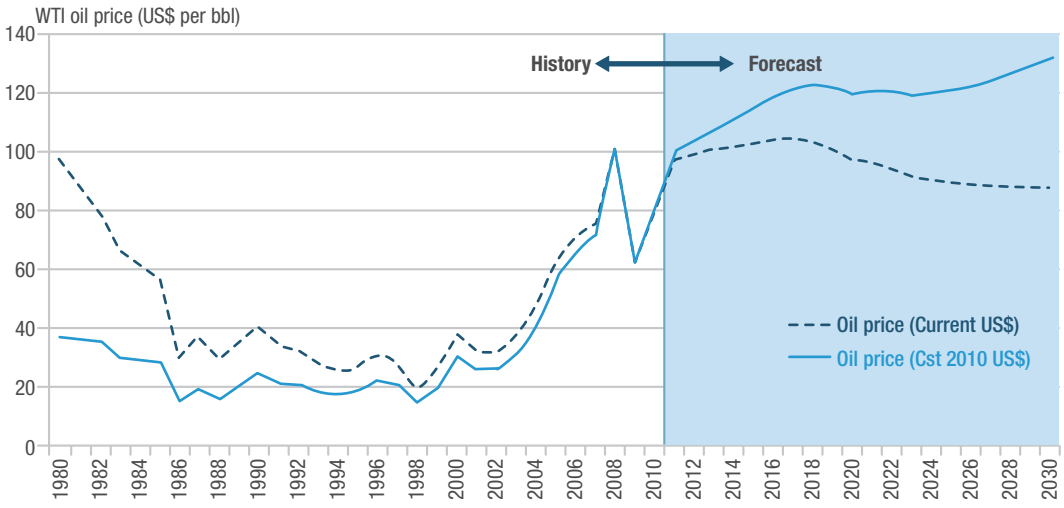
Greater fuel efficiency is the long-term solution to mitigate the risk of fuel prices. Indeed, airlines with young fuel efficient fleets proved to be more resistant to oil crises, a sort of natural hedge. It's not just about the aircraft however, airlines have improved load factors, and their operations to the point where demand for aviation fuel has increased just 3% in the last 10 years, whilst traffic has grown 45%. However, one thing is clear from forecasts, the low prices of twenty years ago are a thing of the past with prices averaging over $90 (barrel) the new reality.

Demand from the emerging economies and the value of the dollar have helped in driving the cost of oil upwards. The gap between the price of crude oil and the refined product used by aircraft, the crack spread, has grown, and the role of speculation in the commodities markets have served to create a greater problem for airlines. Combine this with widely varying views on how long fossil fuel will be available, together with the growing environmental concerns of burning such fuels, it is unsurprising that alternative, more sustainable sources, both economically and environmentally are being examined.



Source: Ascend, Airbus, Airline Business

Fuel prices; an issue here to stay



Evolution and forecast of WTI oil price

Source: Global Insight

"Oilchemy"

Alternative fuels, is one of the options, to reduce the impact of aviation on the environment and provide an alternative to more traditional sources. Airbus believes these new sources of fuel should be primarily reserved for aviation, as there are no other viable alternative energy sources for the industry today.

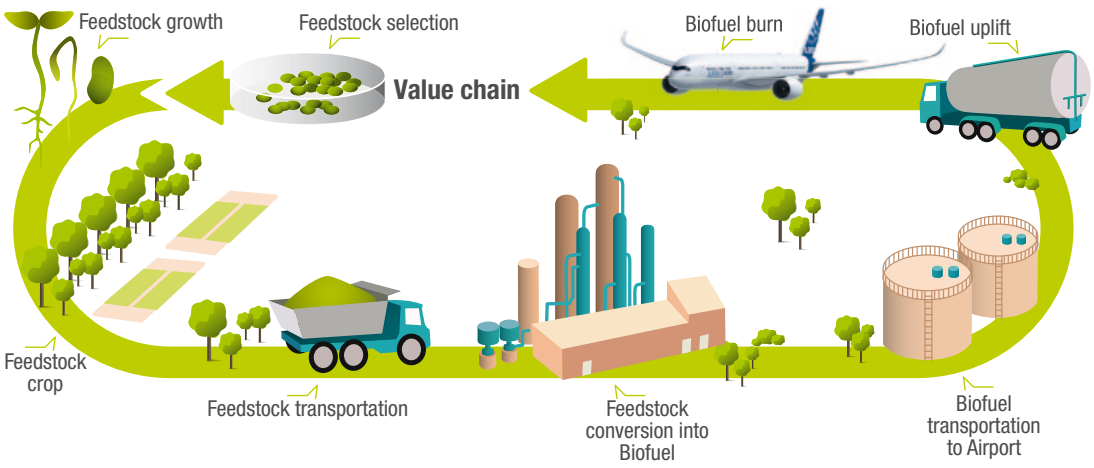
Alternative fuels (from gas or bio-mass) have been shown to work. The next phase focuses on speeding up the use of alternative fuels commercially so we can help meet our target of carbon neutral growth by 2020 and 75 % CO_2 reductions by 2050 compared to 2005.

Today, Airbus' alternative fuels strategy is based around being the catalyst in the search for sustainable solutions for the production of alternative fuels in commercial quantities for aviation without competing with land, water or food. Airbus' premise is based on establishing local sustainable solutions for local communities because we believe that multiple feed-stock solutions will co-exist (GTL, Camelina, Jatropha, Algae, yeast, woodchip, organic waste ...).

The final bio-fuel product must be standard jet fuel (Jet A/A1), what-ever the refining process or feedstock used. In some instances, integration of the feedstock production with the refining processes, (e.g. by taking the CO_2 from the refinery to promote rapid growth of feedstocks like algae which consume CO_2 rather than release it into the atmosphere), can further reduce the carbon footprint.

Airbus is leading this approach through an ambitious global program connecting farmers, refiners and the end user (airlines) to form regional bio-fuel "value chains".

Moving from Demonstration flights to Value Chain Projects



Airport capacity constraints – barriers ahead?

When forecasting, it is important to consider whether other factors, more difficult to add to a passenger aircraft demand model, will become an effective barrier to future growth or at the very least will affect the composition of the future fleet and operations in terms of aircraft size and frequency.

While we can assume that the controlled air space will in general provide sufficient capacity to cope with the traffic growth through new developments like Sesar, we know from experience, in particular in Europe, that airport capacity enhancements are often delayed due to a strong resistance of the population in the vicinity of airports.

There are almost 2,500 airports worldwide which are served by regular scheduled traffic, however, as we have seen, global air traffic is concentrated on a rather small number of airports: The largest 100 airports handle about 50% of the global flight movements and if we expand the number of airports to the largest 1000 airports, virtually all flight movements (95%) are covered.

Thus, there is a situation of traffic being highly concentrated on important airports which already have a high degree of capacity utilisation, and while we have seen a strong growth of air traffic worldwide in the past, and can expect a continuation of growth in the future, we have to take note of the fact that some important airports are faced with more or less severe capacity constraints. There are many airports with traffic volumes that reach capacity only in certain peak times, for instance for some hours in the morning and evening. However, there are also airports with high traffic loadings which experience near capacity utilisation during many hours of the day, everyday, like London Heathrow, Frankfurt, R. Reagan Washington National, or New York LaGuardia, and others. Capacity shortages at some airports may lead to a shift to bigger aircraft, or even more traffic growth at smaller airports with less congestion. Normally, airports can adapt many of their facilities, like for example ground traffic facilities, terminal buildings, etc. to increasing demand as part of their normal planning procedures; however, there is an important exception, which is the runway system. Increasing the throughput of the runway system by a few movements per hour may be accomplished for example by operational improvements of air traffic control or allowing aircraft delays to increase. Moreover, such measures may be realised within a rather short timeframe, though their long term perspective is somewhat limited. Therefore, increasing the capacity significantly, i.e. more than just a few aircraft movements per hour, usually means adding a new runway.

For runway system expansion plans, substantial land surface is needed, and in addition, more aircraft movements at an airport mean more noise and emissions, against which neighbouring populations are more and more opposed. In western countries, in which the involvement of the public is required for adding new runways, there are basically four basic factors which influence the speed and acceptance of improving airport capacities, especially adding new runways:

- Attitude of the population towards air transport
- Location and size of an airport
- Participation level
- Inter-modal substitution

The most important factor within “attitude of the population towards air transport” is the welfare level of the population surrounding an airport. As already stated, aircraft cause added noise nuisance and emissions; however, on the positive side, they enhance local economy as well. Thus, whether the positive or negative effects of an airport are rated higher essentially depends on the welfare level: The higher the welfare level is, the more the negative effects come to the fore,

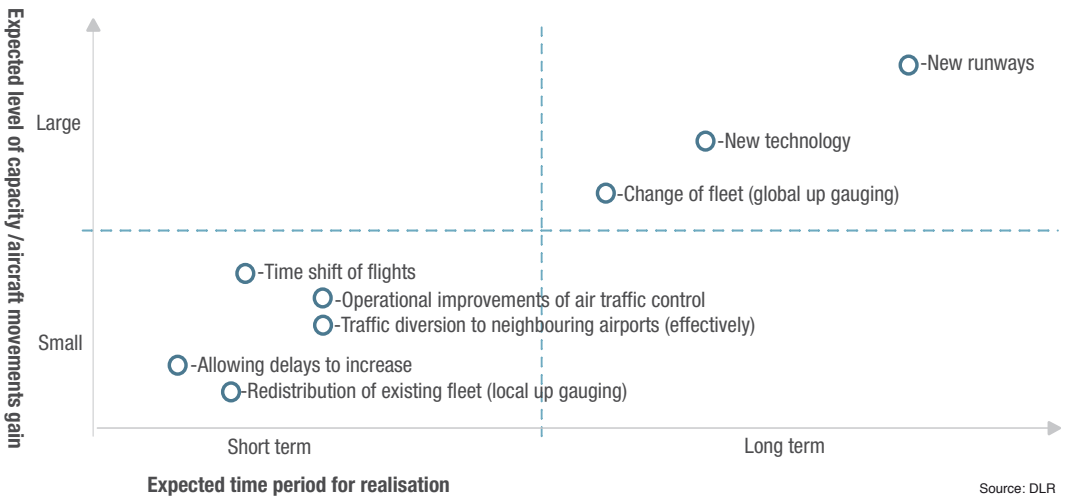
and this is one of the reasons why airport expansion is such a complicated and time consuming process, especially in highly developed western countries. For example, it took more than ten years to complete the fourth runway at Frankfurt airport. However, location and size (measured in aircraft movements) of an airport are important as well: First, the dimension of noise and pollutant emissions matter, i.e. airport size, and secondly, the proximity and size of the population matters, i.e. airport location with regard to the neighbouring population. Participation level describes the involvement of the public in the planning and approval procedure. Last, intermodal substitution plays a role where rather short distances can be covered efficiently by other modes of transports, for example high speed trains in Europe, Japan or China.

In search for ways to mitigate capacity constraints at congested airports, we distinguish between short term and long term measures. Furthermore, we can classify measures with regard to their capacity gains. Different measures can be summarised on two dimensions "Expected time period for realisation" and "Expected level of capacity/aircraft movements gain" in a rather schematic way, which in detail may vary from case to case.

Some measures are more or less self-explanatory, however some need additional comments: "Redistribution of existing fleet (local up gauging)" a measure that can be achieved in the short term, with an existing fleet, means that the overall fleet structure remains unchanged, but is redistributed among airports, i.e. larger aircraft are assigned to more congested airports. "Change of fleet (global up gauging)", i.e. overall fleet structure is changed towards larger aircraft, is the more sustainable strategy, but takes a longer time span to realise. "Traffic diversion to neighbouring airports" means out sourcing flights at congested airports to less congested neighbouring airports. However, this is a strategy with only limited potential, since mainly hub airports suffer from congestion. By splitting up a hub, the ability to create transfer connections suffers and this hinders in many cases the concept of a hub; however, the airports of Frankfurt and Munich are an example where this strategy works. "New technology" is a quite diffuse collection of future measures which enhance air traffic control, aircraft and airport technology, including organisation, so that more and/or larger aircraft can be handled in a given timeframe than today.

Reflecting existing and potential capacity limits in forecasting the global air traffic in a better way is on the research agenda of Airbus and air transport research institutions like DLR, with whom Airbus is collaborating in this area. Algorithms are being developed that allow estimates for the future, the capacity of airports in relation to factors like those described above, in particular the attitude of the population towards air transport, helping to better understand the effects of congestion on demand and the world's network and fleet in the future.

Measures for mitigating airport capacity constraints



Source: DLR

Technological **innovation**

Inspiration to Innovation

Airbus recently celebrated its 40th year manufacturing and delivering innovative aircraft solutions to the world's airlines. A heritage of innovation that Airbus has nurtured and grown from its historical links to European companies and engineers from the past, who took aviation from the earliest days of wood and canvas, through to the jet age with the Comet and Mercure, and supersonics with Concorde. This knowledge, experience, and innovative culture is all part of the global business Airbus is today and has helped to add visionary aircraft like the A380, the A350XWB and now the neo to this auspicious list; new technology, eco-efficient aircraft which will serve aviation in the coming decades.

However, this is clearly not a story which stops with these aircraft. Future demand , trends in passengers, demographics, emerging markets and the environment will demand future innovations: Innovations with which Airbus will be one of the companies with the obligation, ability and passion to not only meet these demands, but to continue the remarkable pace of progress witnessed over the last 100 years.

The Airbus Global Market forecast is one part of this process, helping to define the shape and timing of demand for the next twenty years. Analysis which feeds into the process by which Airbus strategists, engineers and technologists consider what shape the future technological environment will need to be in order to meet the future shape and dynamics of the market. Technologies linked to aerodynamics, structures, propulsion, and systems from airframe to the aircraft cabin. Due to the long term nature of the industry, the typical development cycle time for a new civil aircraft program takes ~10 years including time upfront for technology development, with high investments requiring design of product life targets of over 20 years, with a program life of about 40 years, this activity is focused on current products, the next generation of aircraft and even longer term, 2050 and beyond.

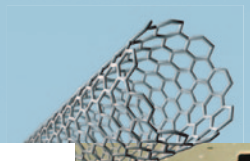
We are working hard today on the technologies that will allow the next generation of aircraft to take the next step in improvements in terms of fuel burn and operability needed; aircraft that could be in the skies late in the next decade with the technologies that will also allow aviation to grow with a minimum impact on people and the environment.

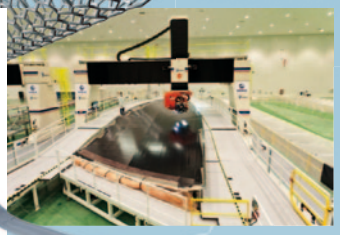
However, we also allow ourselves to think well beyond this timeframe, to the very long term, to aircraft who will not fly until 2050 and beyond. How would we like to see this experience? What technologies do we need to think about today to even make them a reality in 40 or 50 years time. Some ideas could just end up as science fiction once investigated, however others will no doubt end up as science fact and form a part of aviations technological future.

Airbus recently launched the Future by Airbus – Aircraft and Cabin Concept 2050, looking at what will drive the future cabin environment and what technologies could be available to meet those needs. Technologies that include:

- **Bionic Structures**

Future aircraft will be built using a bionic structure, including the fuselage. The Concept Cabin utilises this bone-like, weight-optimized design to provide strength where needed. Bone is very light because of its porous interior, but it is also very strong as it carries tension only where necessary. Future aircraft will follow this model, creating extremely lightweight, very strong structures.





Innovative structure
•Composite / Metallic technologies / Nano technologies

Smart wing technologies
•Sharklet
•Natural Laminar Flow / Hybrid Laminar Flow

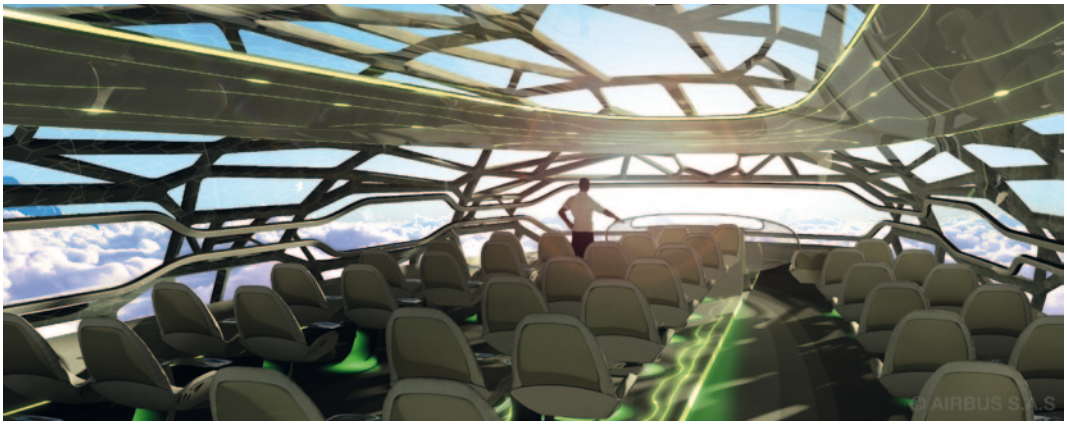
Alternative fuel/energy

New Engines
•Geared & Advanced turbofan
•Open Rotor

Air Traffic Management
•Green trajectories
•SESAR / NextGen

Fuel cell technology

Innovation for weight reduction, fuel consumption reduction, more eco-efficient and greener aircraft



• **Neural Technology**
The cabin electrical system can be compared to the human brain, with a network of intelligence pulsating through the cabin. This network will be built into the structural materials – cables and wires are a thing of the past. Known as 'Smart' materials they can perform numerous functions, recognising the passenger, so that you too are 'connected' to the plane.

• **Ecological Materials**
The future passenger cabin will be fully ecological. Instead of using non-renewable materials like metal and plastic, fully recyclable plant fibres that can be grown to a custom shape will be used, sourced from responsible and sustainable practices.

• **Morphing Materials**
Materials that change shape and return to their initial form, like the organs of living creatures, are a very real possibility. Morphing materials might be metals that have a 'memory'; or are covered with a 'skin' of material that carries a system that will instigate a shape change. A memory is created by providing materials with a certain level of intelligence. This means the ability to 'control', so a sensor system and an activator system will exist within the material.

• **Self-reliant Materials**
Materials will be self-cleaning. Think of the leaves of a lotus plant, which water rolls off in beads, taking contaminants with it. Today this is already used on the surfaces of cabin bathrooms. In the future this will be found on the fabric of seats and the carpets on which we walk.

These intelligent materials could well be self-repairing. Self-repair of this kind is already used today in surface protection. Certain paints can seal a scratch just as the human skin heals itself when scratched.

• **Transparent Panels**
Materials of the future can accommodate additional functionality that provides opacity or transparency on command, negating the need for windows. This smarter structure would help to make the aircraft lighter and more fuel-efficient while giving passengers 360 degree views of the skies. The planes of the future will offer an unparalleled, unobstructed view of the wonders of the five continents.

• **Holographic Technology**
Scenes reflecting the destination, a city skyline or a tropical forest, will be projected onto the walls' a private cabin can reflect your bedroom at home, a business conference or even a zen garden, thanks to the projection of virtual decors. Holographic technology will have advanced to such a degree that the virtual world will be indistinguishable from the real.

• **Energy Harvesting**
Smart energy solutions such as energy harvesting will be a part of the cabin environment. 'Excess' energy will be collected from solar panels on the window blind and your body heat by the seat and floor as you relax or sleep, all to fuel cabin appliances.

Science fact or science fiction some of us will see, some of us will make it happen.

PASSENGER TRAFFIC

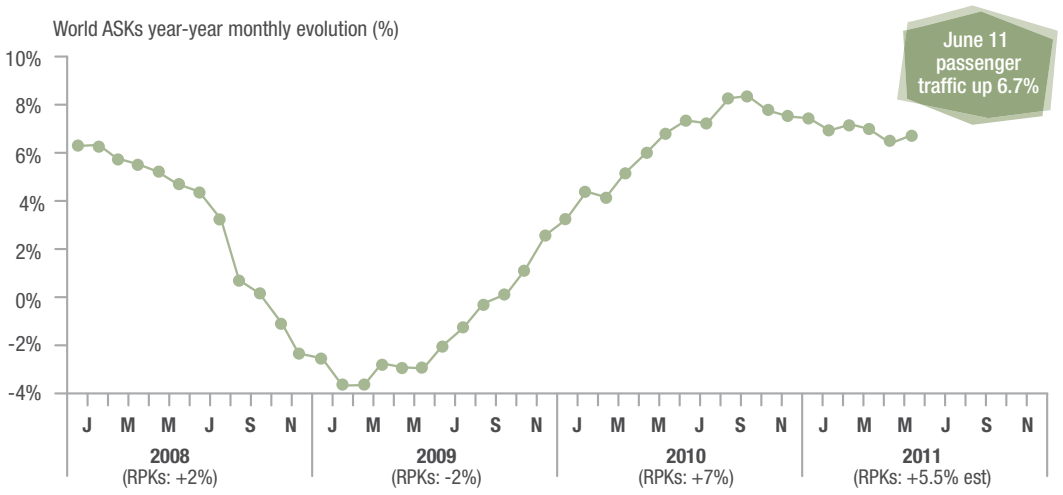
Defining **demand**

Despite challenges, the long term need for air transport is confirmed

With the financial crisis developing throughout 2008, it proved to be a poor year in terms of traffic growth (+2% in 2008) and later 2009 feeling the full effects proving to be one of only three negative years of traffic growth historically, it was a relief to many in the industry when worldwide passenger air traffic (measured in RPKs) rebounded strongly in 2010 (+7%).

The recovery was much faster than initially anticipated by many forecasters, with the uncertainty reflected in the broad range of opinions at that time, which had the shape of economic recovery varying from "V" shaped to swimming pool shape!

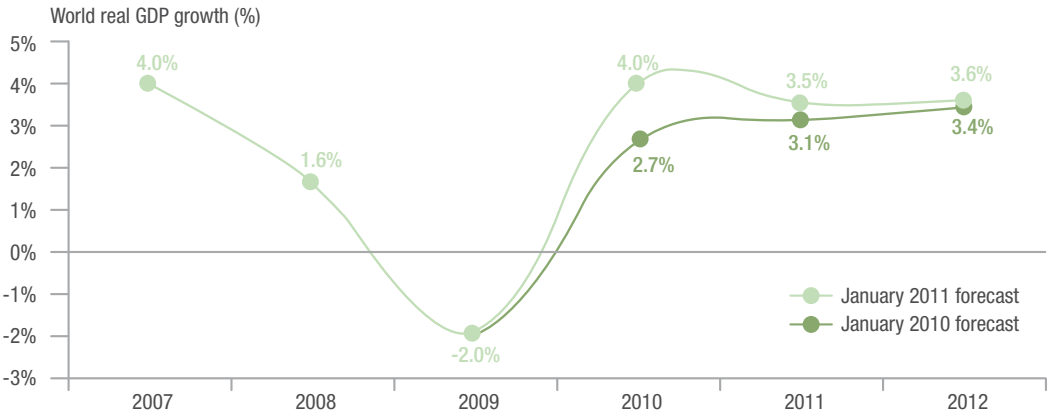
A perfect V-shaped recovery, passenger traffic back to strong growth



Source: Airbus, OAG

While the current cycle has been very difficult for everyone in the air transport industry, as in previous cycles it had a global economic slowdown at its heart. However, to their credit, the world's major economic powers were quick to evaluate how critical the situation was and to act, with the deployment of unprecedented economic stimulus plans for example. Actions which many countries and their people are now having to finance, difficult, but undoubtedly preferable to what might have occurred without these measures. Whilst with hindsight, signs of recovery were more clear as 2009 progressed, perceptions still tended to cloud some economic and industry outlooks.

Recovery much stronger than anticipated one year before

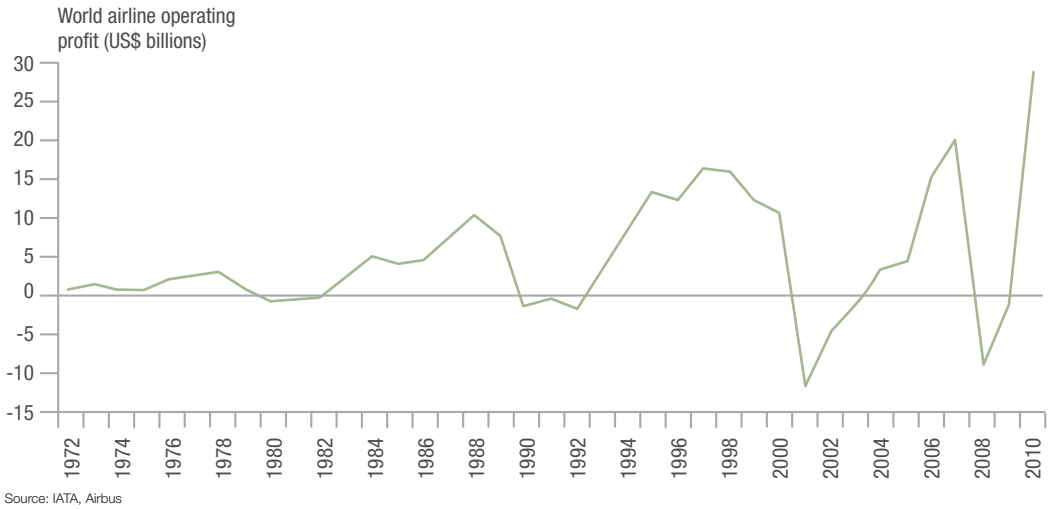


Source: Airbus, IMS Global Insight

Therefore with better than expected economic activity, traffic and lower fuel prices, 2010 became a record year in terms of airline profitability with a US$30 billion cumulated airline operating profit.

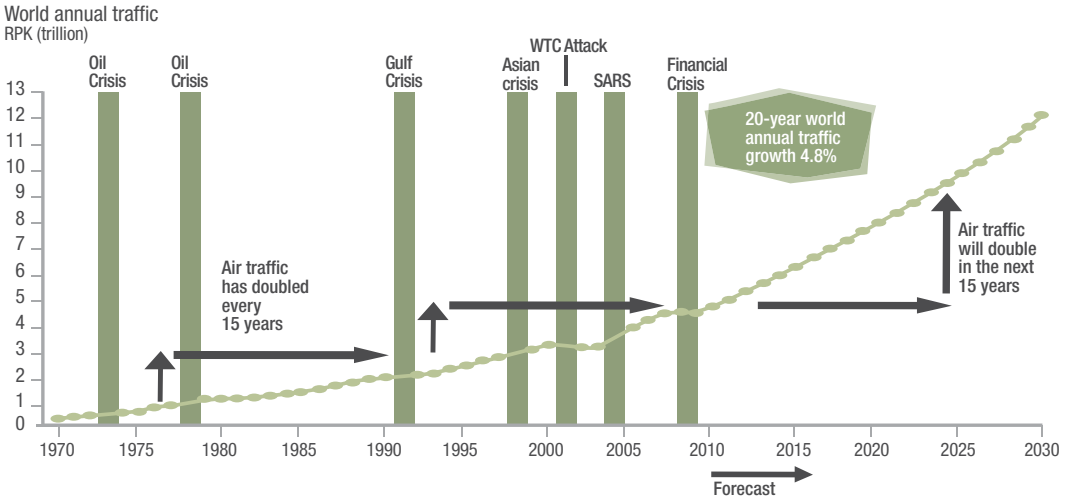
Over the past forty years, worldwide air travel has been characterised by periods of strong growth interspersed with slowdowns caused by a series of economic and financial issues and at times made worse by war, diseases or other events. Having gone through one of the most severe economic crisis in its history, demand for air transport has again proved its extraordinary resilience. In 2010, worldwide air travel measured in RPKs was more than ten times higher than in 1970, forty years earlier, and surprisingly 45% above the 2000 levels despite having two of the worst downturns the industry has experienced in the intervening years.

2010: Airline profitability at record high level



Source: IATA, Airbus

Air travel has proved to be resilient to external shocks



After several crises, air traffic is back to its potential

Source: Airbus, ICAO

This ten-fold increase over last 40 years is not only explained by the fact that air transport has been able to overcome many challenges, but also by the emergence and the development of several drivers acting as engines for growth.

Over the last twenty years non industry related factors have helped to drive the development and growth in the industry, for example the globalisation of the worlds business, economies and arguably people, who have been able to work internationally or simply expand their knowledge of the world with more wide-ranging tourism. At an industry level, deregulation and the advent of the low cost model have combined with economic growth and reducing yields from lower fares to drive growth. From 1980 to 2010, average worldwide real yield (cents per RPK expressed in 2010 US$) has more than halved, from 20 cents per RPK in 1980 down to less than 9.5 cents per RPK in 2010.

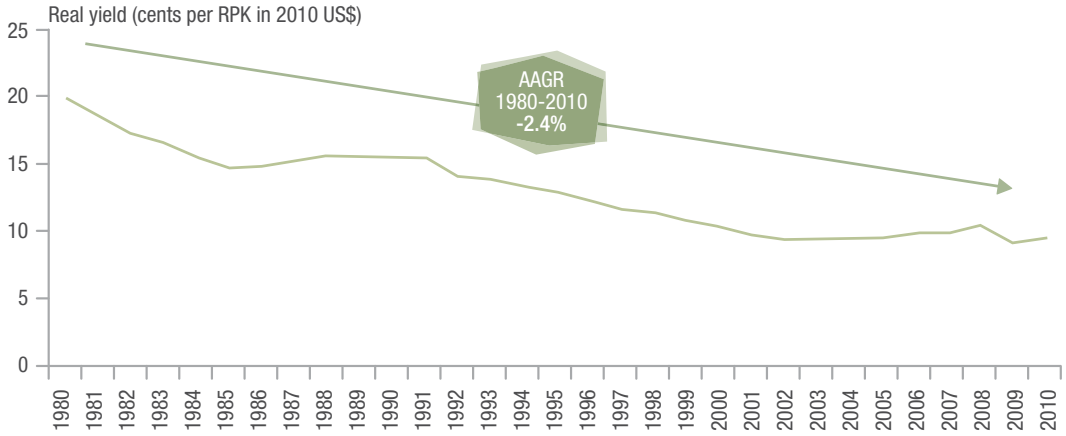
With worldwide average elasticity to fares equal to about -0.6, it is estimated that the -2.4% average yield decrease from 1980 to 2010 has stimulated traffic growth at an average 1.4% yearly rate over last 30 years. Unsurprisingly, at a global level, yield is considered the second most important driver of world airline traffic, although at a detailed level is infrequently used as a key variable to model specific traffic flows, largely due to the availability of reliable data.

Air transport has also had to face several external exogenous events (wars in 1991 and 2001, financial crisis in 1998 and 2008, international health issues in 2003 and terrorism in 2001) as well as more medium to long term challenges (Oil price surge, airport congestion and competition with High Speed Train). Despite these challenges, air transport grew at 4.2% yearly average from 1990 to 2010, rebounding quickly after such events as in 2004 (+14% RPK growth) and in 2010 (+7% RPK growth).

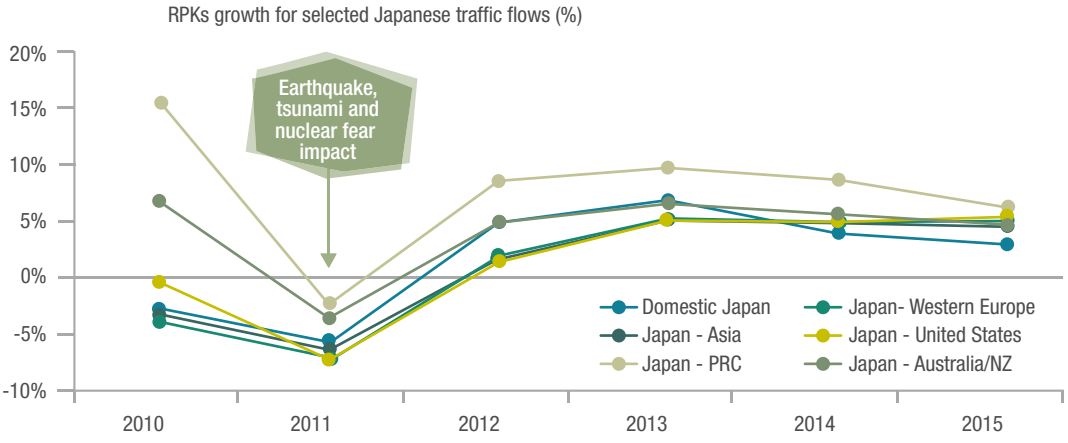
One example of an “exogenous shock” from 2011 was the earthquake in Japan and the subsequent Tsunami and their terrible after-effects. From the chart, opposite we can see the effects these events had on traffic flows to and from the country. What is also evident is that as the country and its people were characteristically rapid in responding to the crisis, so was the recovery in air traffic, which is expected to be complete in 2013.

Together with yield, population growth can be another explanatory variable in forecasting future air traffic growth. The more people, there are the more people who will want the benefits aviation can bring. In our categorisation, which we have adopted from IHS Global Insight, there are thirty-one countries classified as advanced economies; these states account for 15% of the world’s population, about 1 billion people. In this category, we find Western European countries, the US, Japan and the 4 Asian “tigers“.

Average yield has decreased by 2.4% yearly since 1980, stimulating traffic growth



Japanese passenger traffic expected to rebound in 2012 with a complete recovery in 2013



Source: Airbus, OAG

"Emerging" countries, including the "BRIC" nations (Brazil, Russia, India and China) total fifty-four, together account for 69% of world population in 2010, about 5 billion people, again helping to explain the growth we are predicting over the next two decades.

In the future, it is estimated that the "BRIC economies" will contribute 39% of the 2010-2030 world economic growth. Together with the 17% from the "Other emerging economies", an impressive 56% of the world economic growth over the forecast period.

But the job of the forecaster is also to search and where possible quantify and apply new factors and trends, both opportunities including continued deregulation in parts of the world like Africa, Asia and Latin America, the growth in middle classes in emerging economies and challenges such as oil price, increasing airport congestion and competition with other modes of transport such as high speed train will have to be faced. As in the past however, we are confident the aviation industry will meet these challenges together.

Air transport from 1990 to 2010: new drivers and new challenges

DRIVERS

- **Economic growth driven by BRIC countries** (China GDP AAGR 1990-2010: 10.4%, India GDP AAGR 1990-2010: 6.6%)
- **Strong yield decrease** (-2.4% yearly average in real terms)
- **Deregulation in Europe, ASEAN**
- **Tourism development**
- **Entry into service of more capable very long range aircraft** (A330/A340, 777)
- **Hub and spoke in parallel with point to point traffic**
- **LCCs in Europe, Asia/Pacific markets**

CHALLENGES

- **Oil price surge**
- **Financial crisis**
- **Wars**
- **Airport congestion**
- **High Speed Train in Japan, Europe**

Additional countries regularly feeding economic growth,

Advanced economies

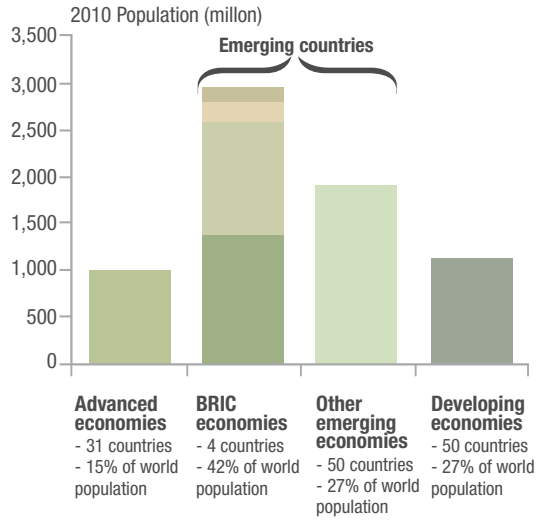
- 31 countries
- 15% of world population in 2010
- 1 billion people in 2010

BRIC economies

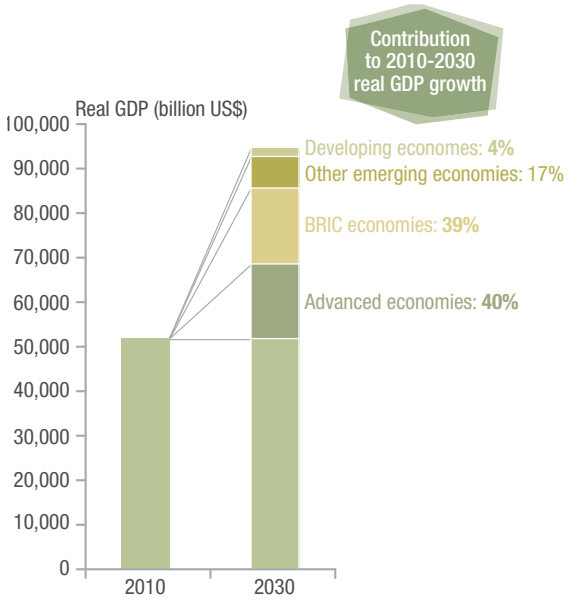
- 4 countries
- 42% of world population in 2010
- 2.9 billion people in 2010

1970 **1990**

Emerging countries representing 69% of world population in 2010



Emerging economies expected to account for 56% of world economic growth from 2010 to 2030



and therefore air travel

Other emerging economies

- 50 countries
- 27% of world population in 2010
- 1.9 billion people in 2010

Developing economies

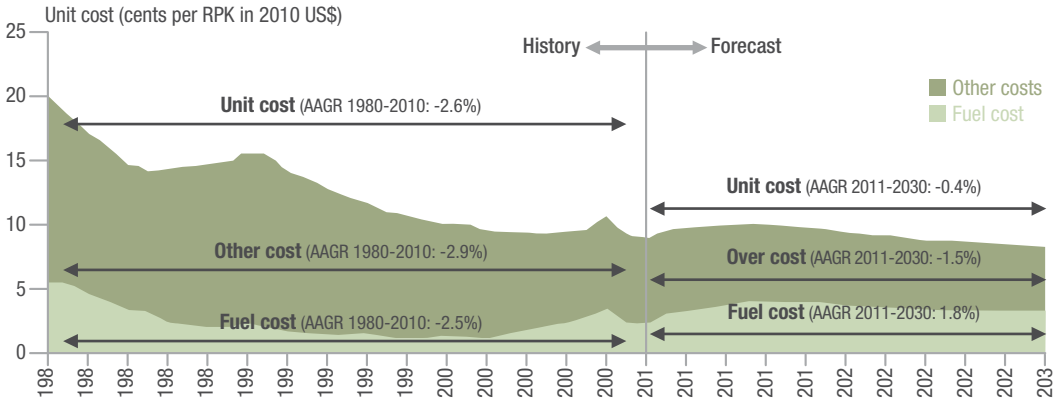
- 119 countries
- 16% of world population in 2010
- 1.1 billion people in 2010

2010 **2030** **2050**

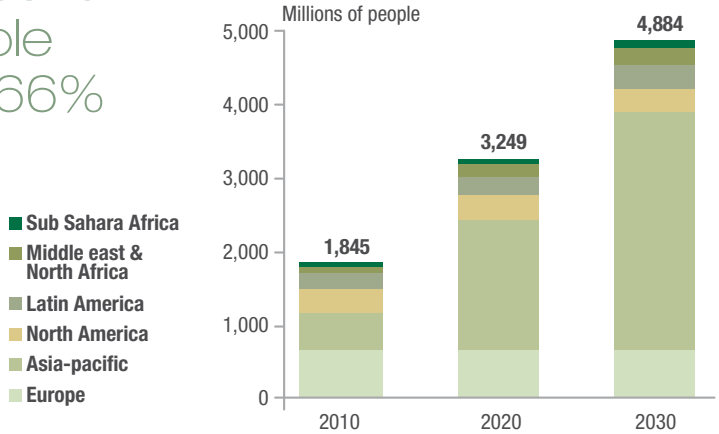
Over the next 20 years, air fares are also expected to decrease, although at a slower rate than in the past. This is explained by the fact that the cost per RPK, which is a good proxy of yield, are anticipated to decrease at -0.4% yearly average rate for next 20 years. Indeed, although the other costs are expected to decrease at -1.5% yearly, average fuel cost per RPK is anticipated to increase by 1.8% yearly under our baseline scenario.

As mentioned, another factor which is expected to play a key role in future air transport development is the rise of the "Emerging economies" global middle class. According to a frequently used definition, this global middle class is composed of households with daily expenditures between US$10 and US$100 per person at PPP. In parallel with expected growth in wealth in Asia/Pacific, most of the new global middle class will come from this region. In 2010, there were 500 million middle class consumers in Asia/Pacific (with one quarter of these in Japan) but within 20 years, there could be a six-fold increase to some 3.2 billion people or 66% of the total global middle class. North America and Europe could see their combined share drop from more than one-half to just 17%, largely the result of slow population growth in these regions.

Cost per RPK (inflation removed) expected to "only" decrease by an average of 0.4% yearly until 2030



"Global middle classes" expected to rise to 4.9 billion people by 2030, with 66% in Asia-Pacific



Source: Airbus, IMS Global Insight

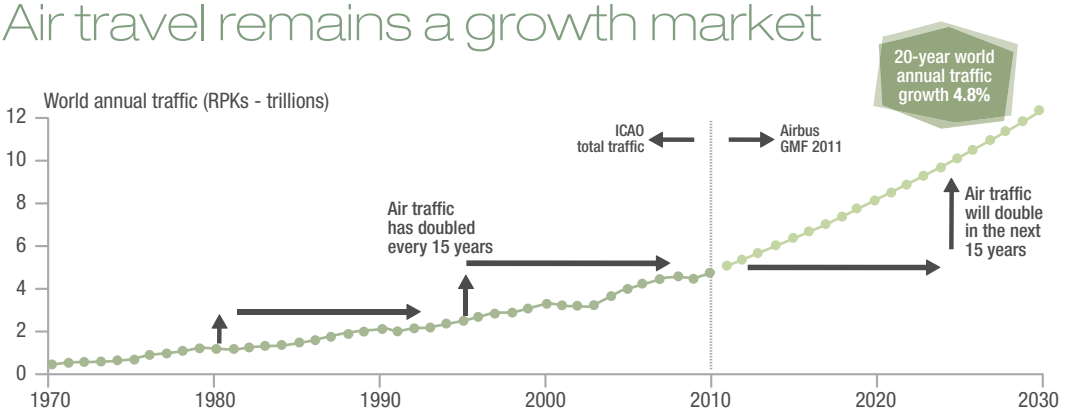
* Households with daily expenditures between $10 and $100 per person (at PPP)

Passenger traffic forecast results

Passenger traffic growth is expected to continue over the next 20 years with a 157% increase in RPKs between 2010 and 2030. The aggregated result of the 161 passenger traffic flows modelled results in a 4.84% (rounded to 4.8%) average annual growth rate from 2010 to 2030.

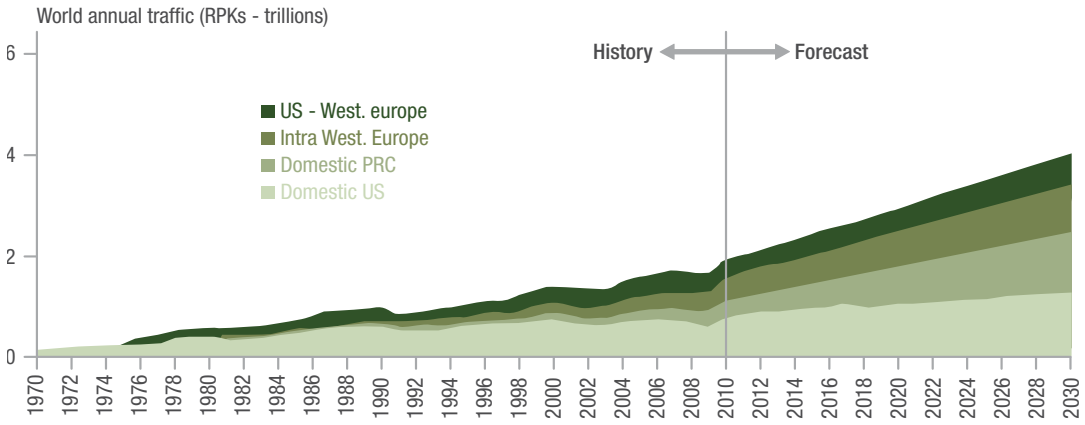
This forecast is stronger than the 4.75% forecast in the previous GMF 2010. Whilst it is clear that many of the driver's of growth will lead to more traffic to and from emerging economies, mature markets will still account for a significant share of 2030 traffic volumes.

Air travel remains a growth market



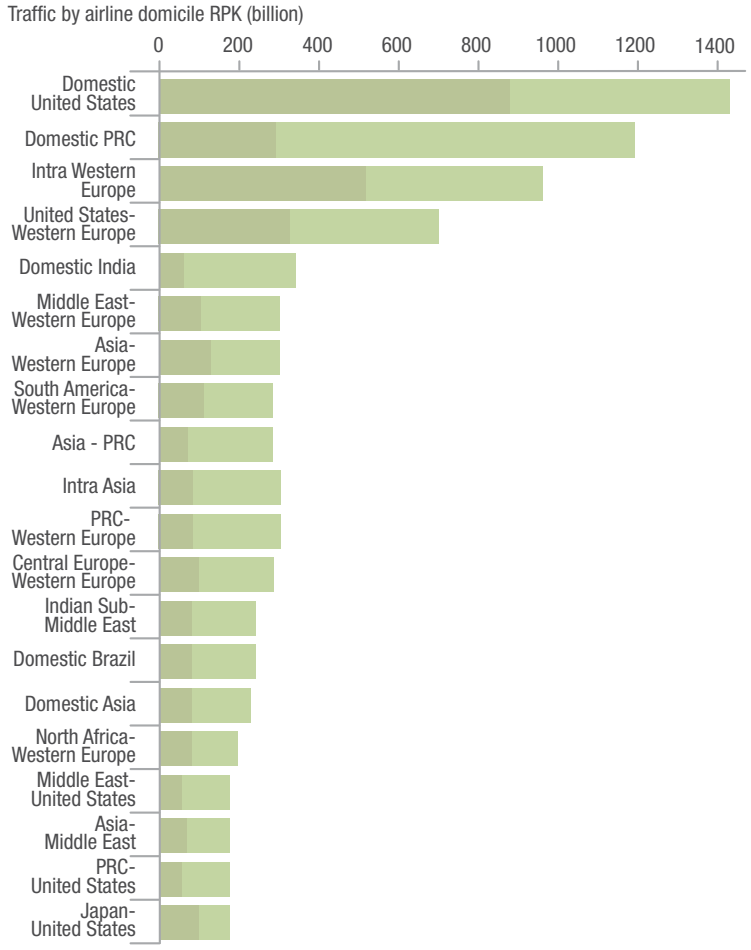
Source: ICAO, Airbus

3 out of the top 4 traffic flows in 2030 the same as in 2010



For example, Airbus still forecasts that the single biggest traffic flow from those we study, will be the US domestic with 11.1% of all RPKs flown. Intra Western European traffic, with its well established global and low cost carriers, will be the third largest flow with nearly 8% of World RPKs. The Chinese domestic market is forecast to grow at more than 7% per annum, moving it from the fourth largest flow in 2010 to the second.

Largest 20 traffic flows in 2030: domestic US still the largest flow



	20-year growth	% of 2030 world RPKs
Domestic United States	2.4%	11.1%
Domestic PRC	7.2%	9.3%
Intra Western Europe	3.2%	7.5%
United States-Western Europe	3.9%	5.4%
Domestic India	9.8%	2.6%
Middle East-Western Europe	5.7%	2.3%
Asia-Western Europe	4.3%	2.2%
South America-Western Europe	5.1%	2.2%
Asia - PRC	6.8%	2.2%
Intra Asia	6.4%	2.1%
PRC-Western Europe	6.2%	2.0%
Central Europe-Western Europe	5.7%	1.9%
Indian Sub-Middle East	6.2%	1.9%
Domestic Brazil	6.6%	1.8%
Domestic Asia	5.6%	1.7%
North Africa-Western Europe	4.6%	1.4%
Middle East-United States	7.1%	1.4%
Asia-Middle East	5.5%	1.4%
PRC-United States	6.6%	1.4%
Japan-United States	3.8%	1.4%

GMF 2011 - Airbus Market Research & Forecasts

The top 20 traffic flows are expected to account for 63% of world total traffic by 2030, with the BRIC nation economies increasing their presence in the results over time.

- Domestic India traffic to be the 5th largest flow by 2030, enjoying a huge six fold increase, with the expected average annual growth of 9.8% until 2030

- Domestic Brazil/traffic to be the 15th largest flow by 2030, enjoying three and a half fold increase with the expected average annual growth of 6.6% until 2030

- Domestic Russia/traffic to be the 25th largest flow by 2030 with a two and a half fold increase.

As a result of this strong growth in BRIC economies and resulting demand and growth in their domestic and short-haul markets, the opportunity for Low Cost Carriers to grow their presence and to stimulate the market through lower fares is significant. This is already happening today in the Indian and Brazilian domestic traffic flows, with domestic Chinese and Russian markets presenting opportunity, given the right operating environment.

LCCs to represent one third of total short-haul traffic by 2030

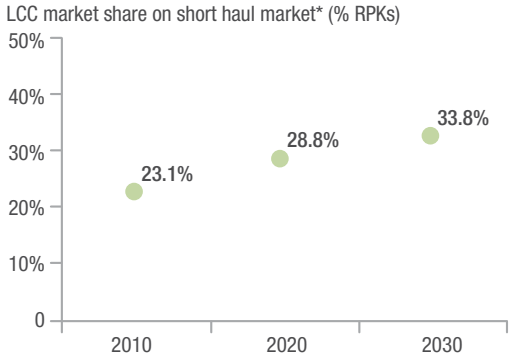
Airbus expects Low Cost Carriers to continue to increase their global short-haul traffic market share, from 23% today, up to 29% by 2020 and 34% by 2030. Regionally, some short-haul markets such as the intra Western Europe or Domestic ASEAN for instance are expected to have greater low cost market presence, potentially taking a 60% share of the short-haul market on these flows by 2030.

Using the country segmentation described previously, and with the emerging economies' estimated share of world economic growth over the next twenty years at 56%, it is not surprising that airlines domiciled in these 54 countries are expected to account for 55% of world traffic growth (for the same period). From this 55%, "BRIC economies" will account for 25% and the 50 "Other emerging economies" 30%.

Airlines domiciled in the 31 "Advanced economies" are still expected to operate half of world traffic in 2030. Even though their market share is expected to fall slightly over this period, the traffic performed by the airlines in the advanced economies will be roughly equivalent to the traffic performed globally in 2010.

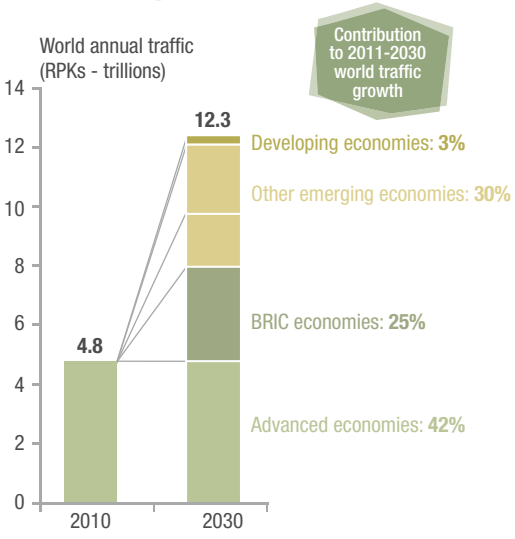
On a regional basis, the airlines located in the Middle East, Latin America and Asia-Pacific will enjoy higher than average traffic development growing at 7.4%, 6.1% and 5.7% respectively. This is fuelled by the aspirations of airlines to benefit from privileged access to fast growing markets which will generate a higher ability and desire to travel as time passes.

Airlines based in Africa and in the CIS are also expected to register growth higher than the world twenty year 4.8% global average.



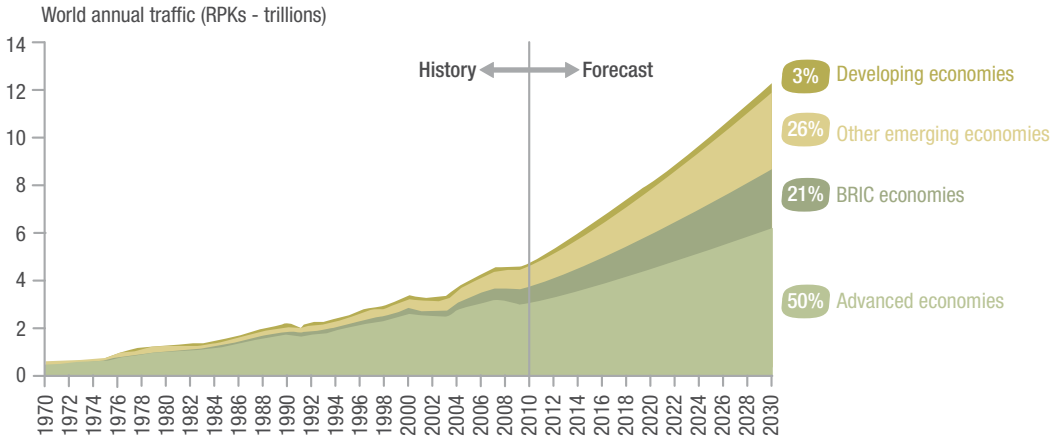
* Short haul markets: Domestic US+ greater than 2,000nm operations

Airlines domiciled in 'Emerging Economies' expected to account for 55% of world traffic growth



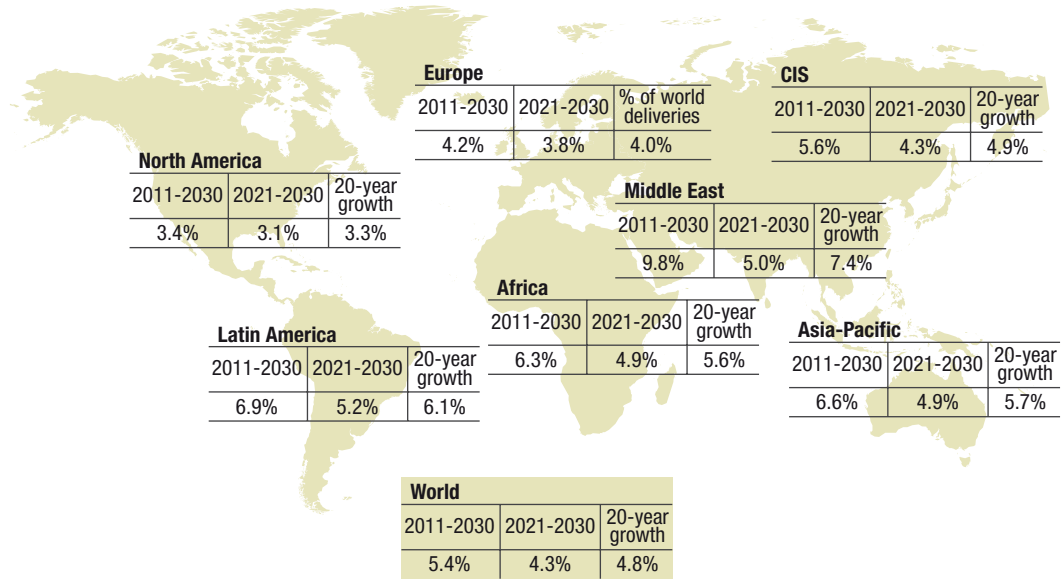
Passenger aircraft ≥100 seats (excluding freighters)

Airlines domiciled in "Advanced economies" to account for 50% of world traffic by 2030



Source: Airbus GMF 2011

Passenger traffic growth by airline domicile



Europe

2011-2030	2021-2030	% of world deliveries
4.2%	3.8%	4.0%

CIS

2011-2030	2021-2030	20-year growth
5.6%	4.3%	4.9%

North America

2011-2030	2021-2030	20-year growth
3.4%	3.1%	3.3%

Middle East

2011-2030	2021-2030	20-year growth
9.8%	5.0%	7.4%

Africa

2011-2030	2021-2030	20-year growth
6.3%	4.9%	5.6%

Asia-Pacific

2011-2030	2021-2030	20-year growth
6.6%	4.9%	5.7%

Latin America

2011-2030	2021-2030	20-year growth
6.9%	5.2%	6.1%

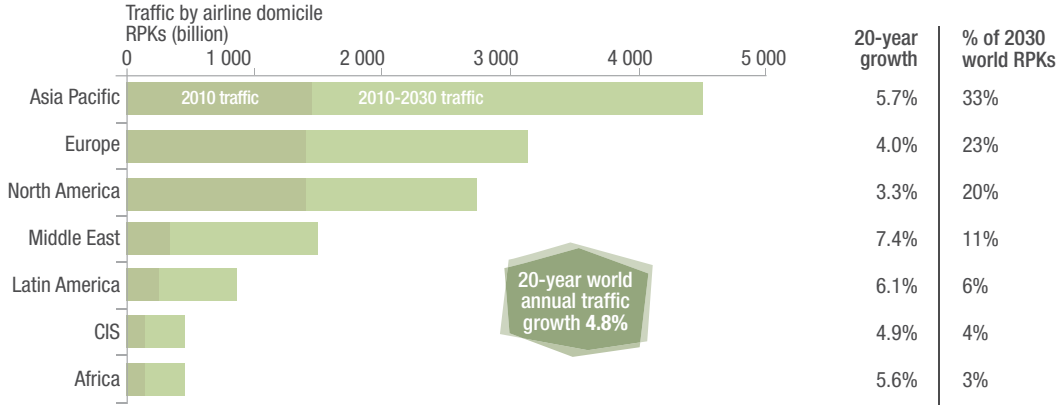
World

2011-2030	2021-2030	20-year growth
5.4%	4.3%	4.8%

European and North American airlines are expected to enjoy sustained traffic growth from their already significant base, averaging 4.0% and 3.3% per annum respectively over the forecast.

As a result of these developments, the way that traffic is distributed between regions will evolve. The biggest change will be that traffic will become much more evenly shared across the world, with Asia-Pacific airlines forecast to represent 33% of total traffic, a five percentage point increase when compared with their 2010 level.

Asia-Pacific to lead in world traffic by 2030



GMF 2011 - Airbus Market Research & Forecasts

The fastest regional traffic growth will be the Middle East, where airlines seeking to benefit from their geographical, demographic and economic location are expected to generate an impressive 11% of 2030 world traffic, up from 7% in 2010.

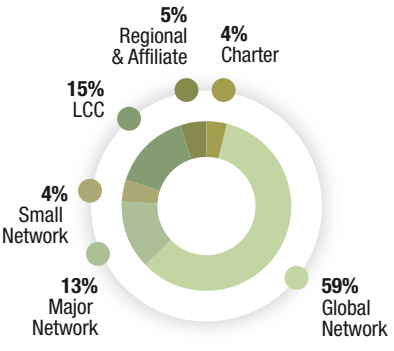
Looking at traffic distribution and its evolution through airline business model segmentation i.e. network carriers, LCCs, charter airlines, regional airlines, network airlines are expected to remain at the heart of air transportation, delivering 74% of total worldwide traffic by 2030, with the global airlines, with their diverse operations providing the major part with 56%, a similar share to 2010.

With the opportunities discussed in new and emerging markets, LCCs are expected to grow 1.4% per annum faster than the global network airlines and are expected to operate 19% of world traffic expressed in RPKs by 2030.

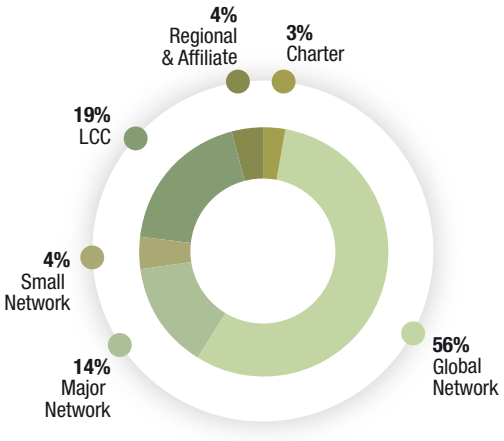
Having examined the split of traffic by airline domicile (airlines in the region they are based) and by business model, we can also segment traffic by flow which accounts for traffic irrespective of operator home region affiliation. Taking this approach, we can see that traffic within and between North America, Europe and Asia-Pacific will still account for 68% of total RPKs by 2030, down from 72% in 2010. However, North America, which still dominates world traffic today, will be overtaken by the Asia-Pacific region by 2030, making this dynamic region the world's largest air travel market. For instance, traffic within the Asia-Pacific region will represent 25% of total traffic in twenty years, up from 19% in 2010.

Airline segmentation – world traffic evolution

Traffic at end 2010 4.8 trillion RPKs

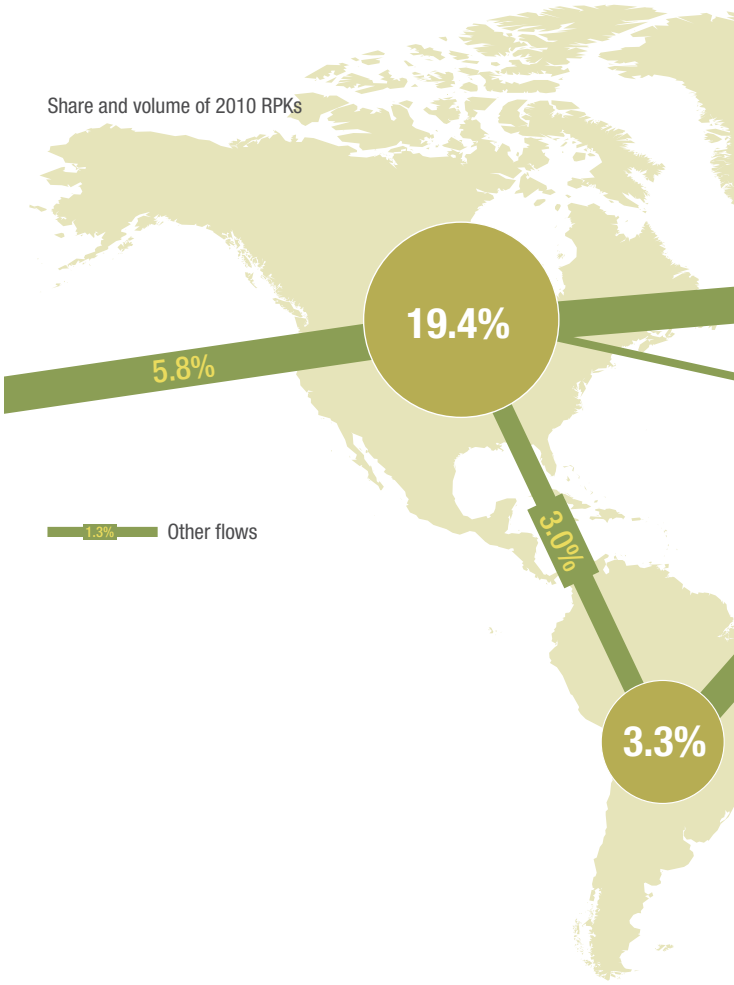


Traffic at end 2030 12.3 trillion RPKs

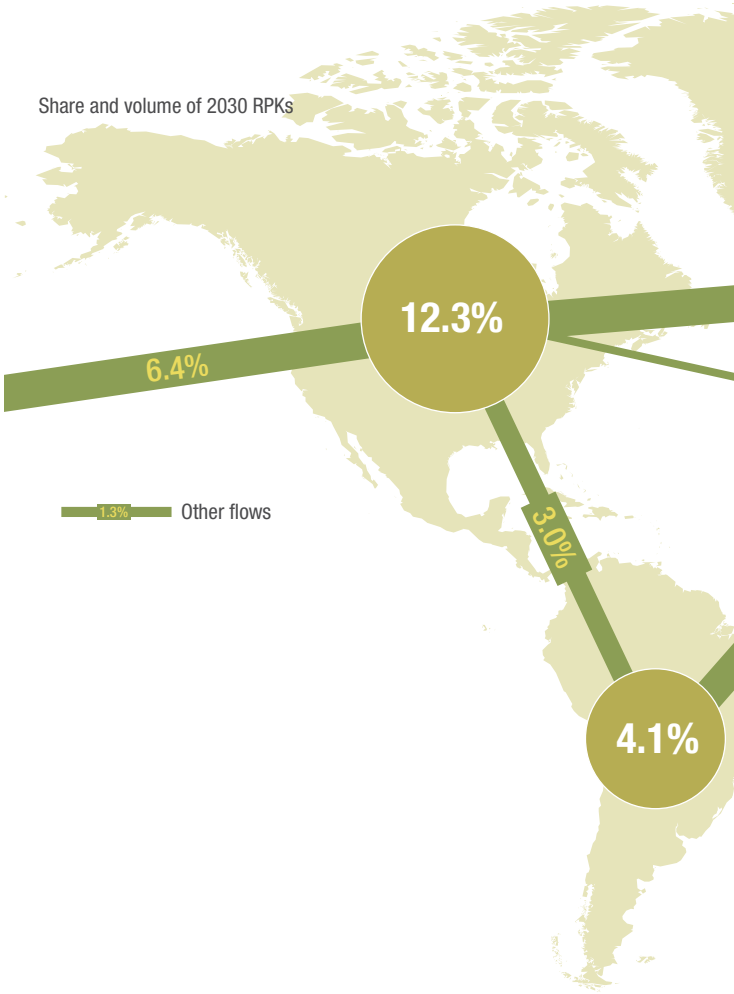


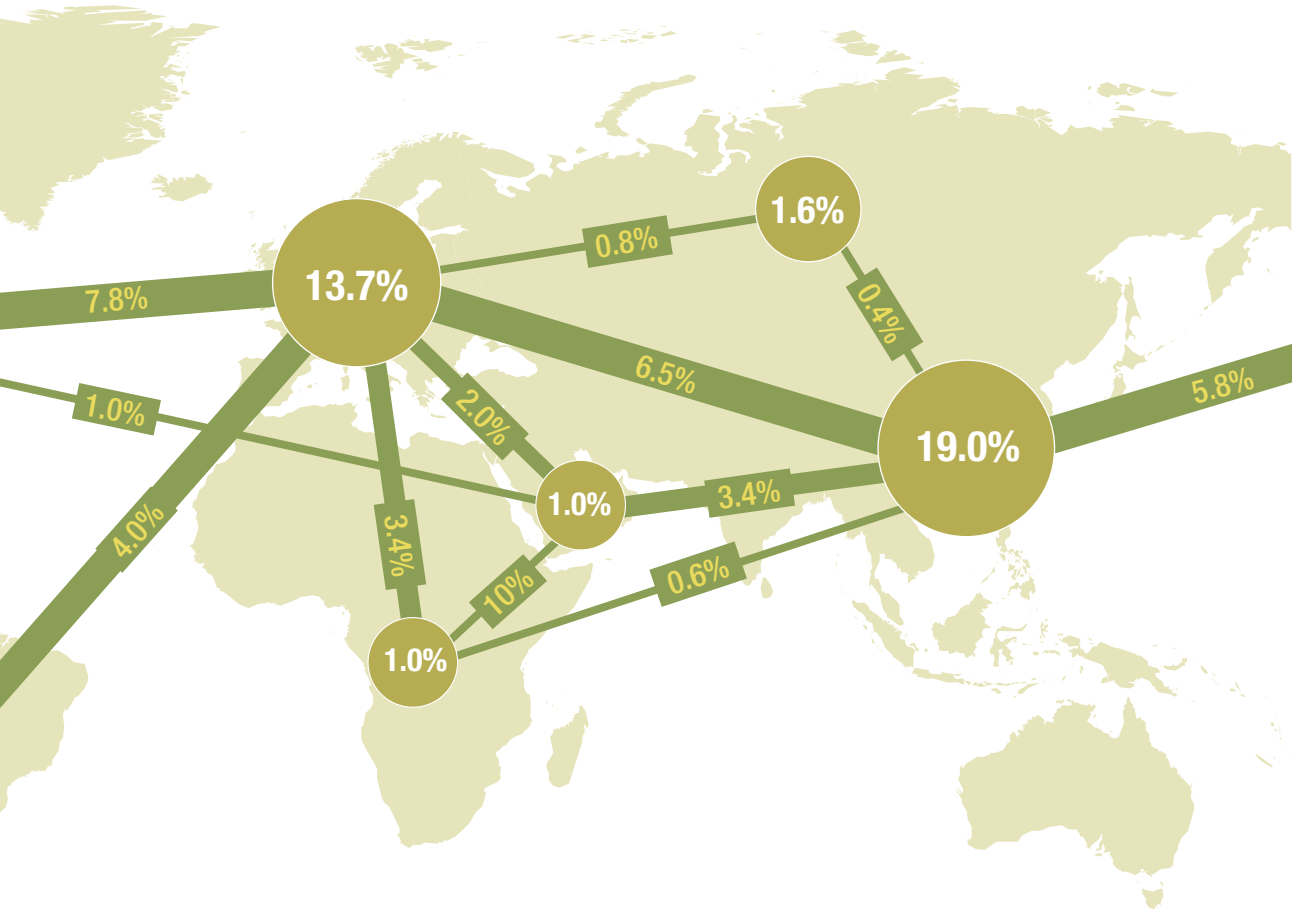
Source: Airbus

North America still dominates world traffic today ...



... but by 2030 Asia-Pacific will take the lead

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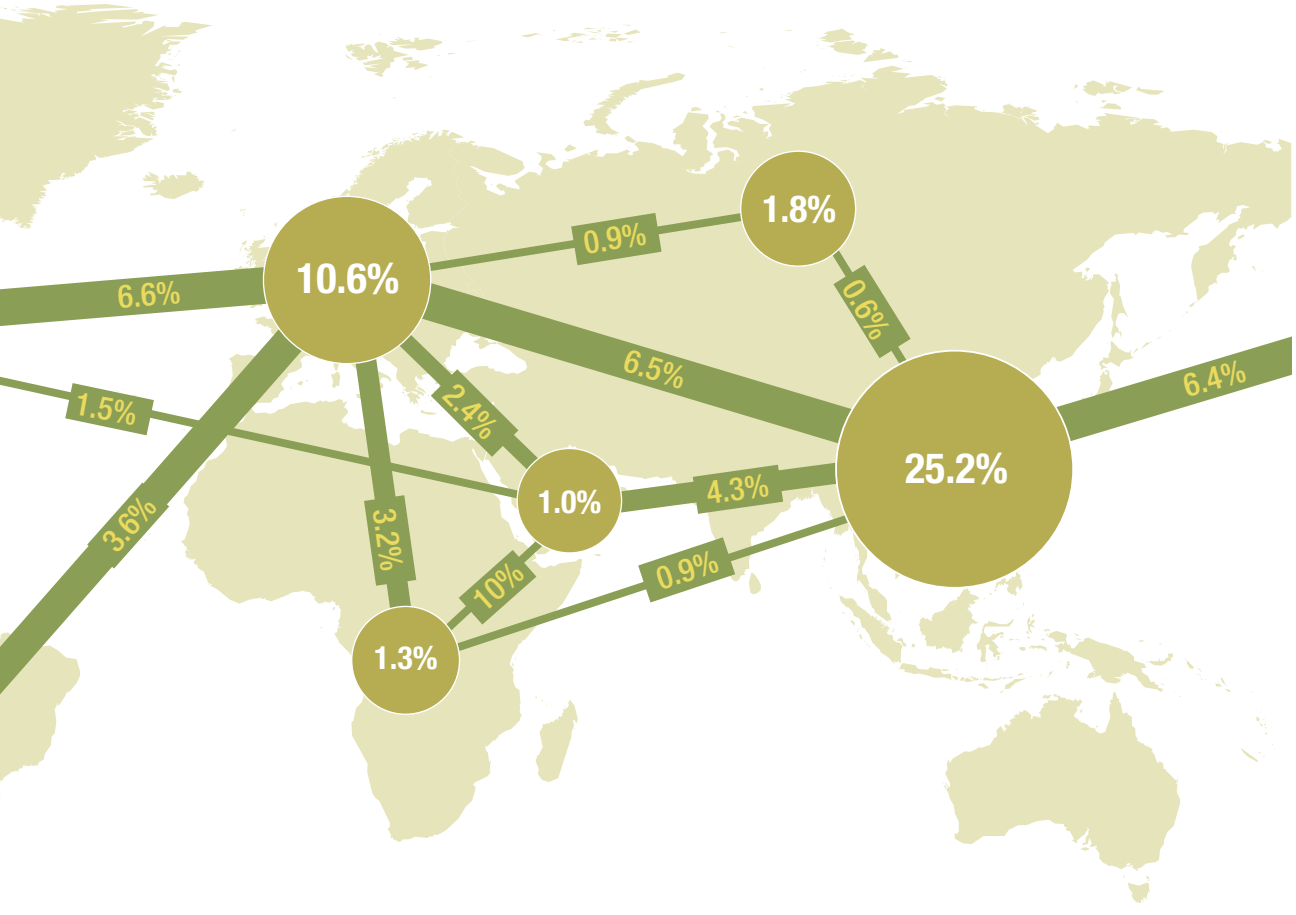
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DEMAND FOR PASSENGER AIRCRAFT

Demand for passenger aircraft

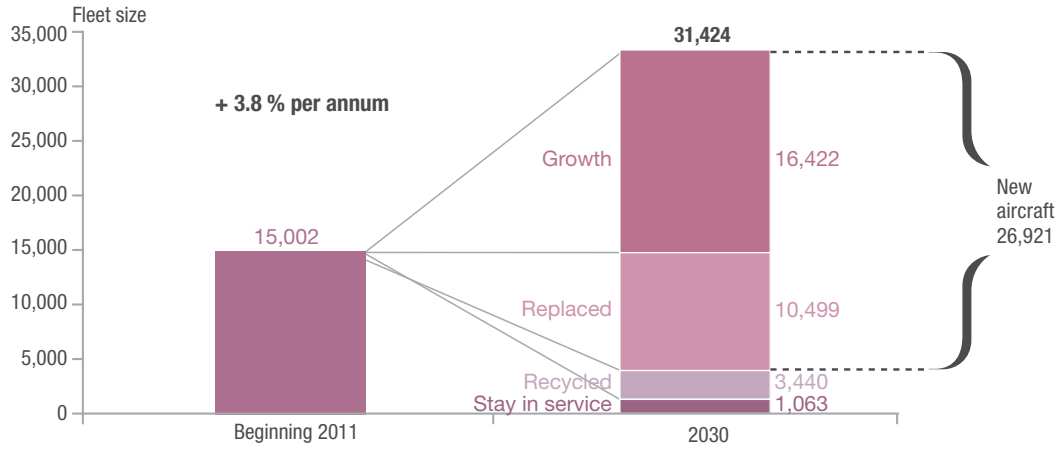
Our forecast suggests that traffic will more than double in the coming twenty years as aviation becomes more accessible to those in emerging markets as well as the more traditional markets in Asia, Europe and North America. People will increasingly travel between the globes major population centers, developing, strengthening and sustaining relationships in a way that only face to face communication allows. At the same time however, those in the industry will seek to continue to innovate and improve the whole flying experience for passengers, and to reduce the cost for airlines and to the environment. A goal that has been at the forefront of the industry for the last forty years, as it is today, and will be in the future.

The world's passenger aircraft fleet from 100 seats to very large aircraft, will grow from 15,000 at the beginning of 2011 to just over 31,000 by 2030.

At the same time, some 10,500 aircraft from the existing fleet will be replaced by more eco-efficient models. Of these, 3,400 will be recycled back into passenger service, where they too will replace older generation less eco-efficient aircraft with another airline. It is also forecast that 2,200 aircraft will be converted to freighters and the remaining 1,100 will be permanently retired or withdrawn from service.

Globally, deliveries of single-aisle aircraft from 100 to 210 seats are the most significant in terms of volume and value, with these aircraft supplying nearly 80% of all the seats flown today. As well as the sheer number of aircraft in this category that have and will be delivered in the future, aircraft like the A320 family, this segment is the most important in terms of delivered value, with 43% of the total calculated at sticker prices.

20-year demand for 26,900 aircraft worth US$ 3.3 trillion



Passenger aircraft ≥100 seats (excluding freighters)

Source: Airbus

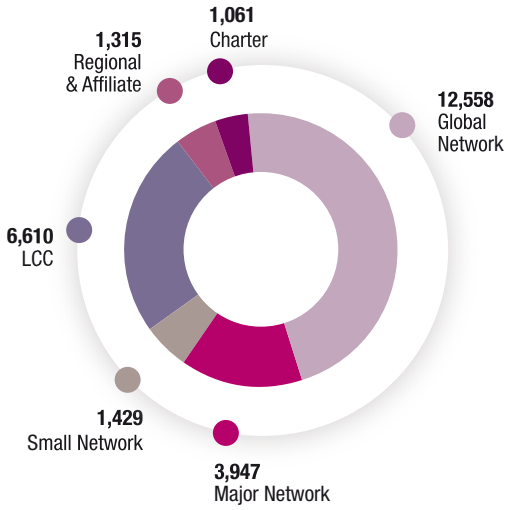
The twin-aisle segment, combining, small and intermediate types is broad in terms of both seating range, 250-400 seats, but also in terms of operations which vary from domestic and regional routes, (where today the A330-200/300 is excelling in Asia for example), to inter-continental flying, where they perform a key role connecting the large aviation "mega" hubs to secondary airports, a role in which the A350XWB is soon set to star. Whilst the 24% of deliveries is small compared to single-aisle deliveries, this segment will account for 43% of deliveries by value. Finally, Very Large Aircraft like the A380 will increasingly play a key role connecting the world, primarily through aviation "mega" hubs like London Heathrow, Dubai and Hong Kong. Although even today we are seeing the versatility of this class of aircraft in moving people efficiently domestically, regionally or internationally

The Airbus forecast continues to predict that the greatest demand for passenger aircraft will come from airlines in the United States, the People's Republic of China and Germany, with its mix of global, low-cost and charter airlines. Europe will receive 22% of the total, with North America and Asia-Pacific taking 22% and 34% respectively. In addition, the world's airlines will require more than 5,000 smaller aircraft, either jet or turbo-prop, (with 19 to 100 seats) to serve regional demand, especially in the US and Europe.

Taking the demand for aircraft of 100 seats and above, and segmenting deliveries by broad airline segment, nearly 50% of all deliveries will be made to the global network airlines, driven by their large hub focused domestic and international networks. With the growth in low cost operations through new opportunities, particularly in Asia, and the growth on existing routes, the world's low cost airline will need a quarter of new deliveries. The mix of size and range evolving as new longer range routes are developed, both through necessity in the more mature markets of North America, and also simply through the geography and demographics of Asia.

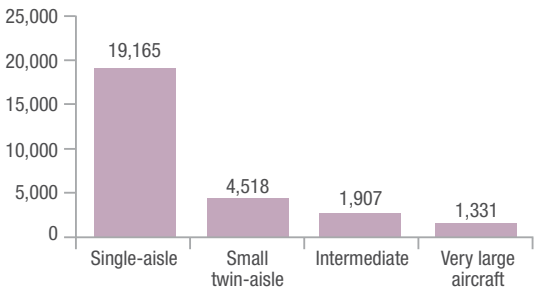
World deliveries per airline type

20-year demand for new passenger aircraft per airline type



Does not include regional aircraft

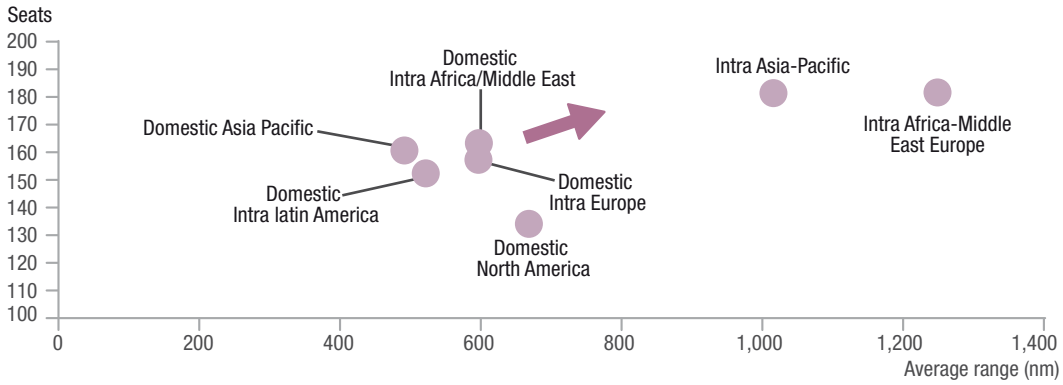
New passenger aircraft demand will average - 1,350 per year



% unit	71%	17%	7%	5%
% value	43%	28%	15%	14%

Source: Airbus

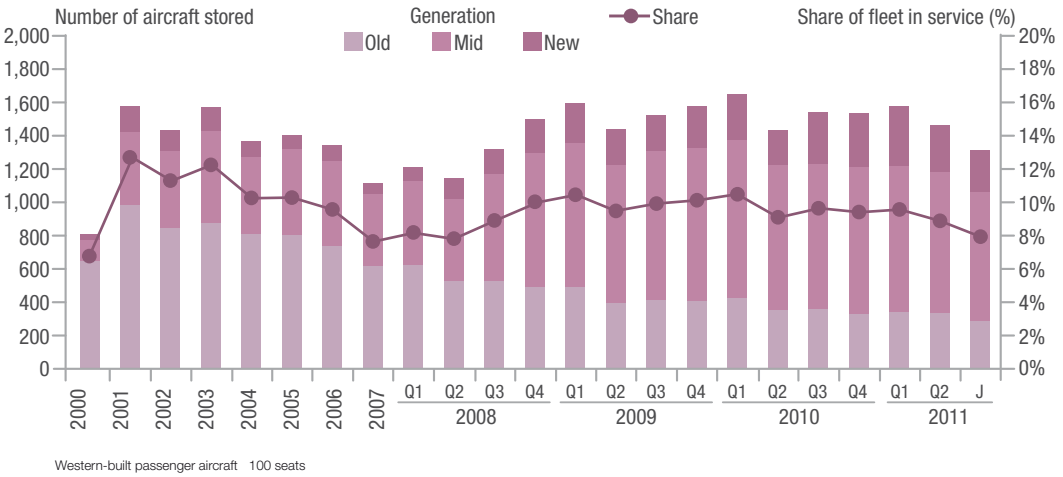
LCCs to operate more bigger aircraft



Record levels of productivity benefitting airlines, passengers and the environment

Much has been achieved in the aviation industry, over the last 40 years; for example fuel burn and therefore CO_2 has been reduced by 70% and noise by 75%. However, many of those people who fly today would be unable to make a direct comparison between flying then in the early 70's and flying now, to understand at first hand just how much has changed and improved in terms of the industries productivity over this period. However, examining a few simple industry metrics can help. Stored aircraft is one measure. Typically, the storage of aircraft is used as a largely short term mechanism to balance the capacity needs of airlines, either due to seasonality effects, aviation cycles, or as a prelude to sale. Despite the fact that the fleet is 20% larger today than in 2001 the number of stored aircraft is less. Also, the share of the in service fleet in storage, ~8%, is also less, by about five percentage points, remaining consistently around the 8-10% level since 2007 . This implies that airlines are efficiently able to balance capacity without recourse to adding in significant amounts to the stored fleet.

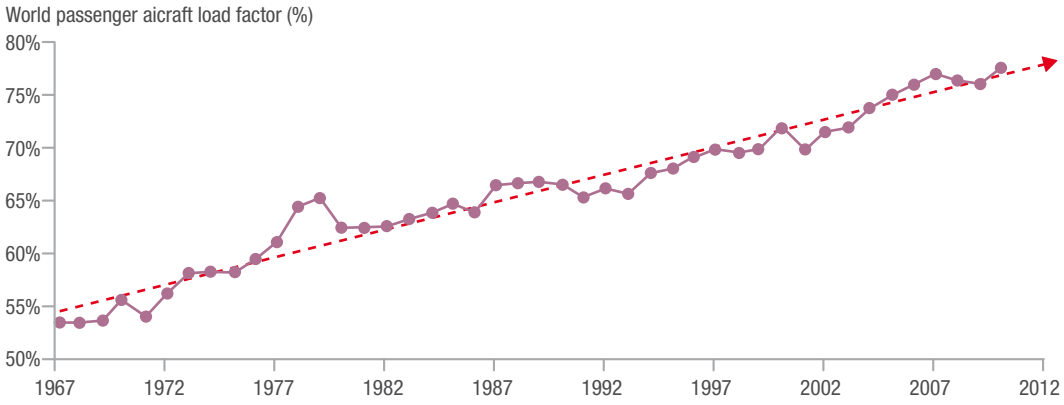
Stored passenger Aircraft



Western-built passenger aircraft 100 seats

Load factor, or the efficiency with which aircraft are filled is another indicator of how the industry has improved over time. Forty years ago, average load factors were around 55% (of seats filled), nice in terms of space in the cabin for passengers perhaps, but lost revenue for the airline, higher ticket prices for the passenger and less environmentally efficient. This figure has gradually improved over time even surpassing what many in the industry thought was possible, several times. Today, average load factor is well over 75%. Next time you're on the road, take a look at the cars driving around you, 75% load factor would mean that every car you see would need three of its four seats occupied, not very common? Whilst increasing load factors will become increasingly difficult as the benefits of the latest revenue management systems and techniques have been deployed, and on an average basis some load factor will always be lost through seasonal peaks and troughs in demand, we have assumed a continued improvement in load factor, even if at a slower pace than the past, in our forecast.

Passenger load factor at record high levels

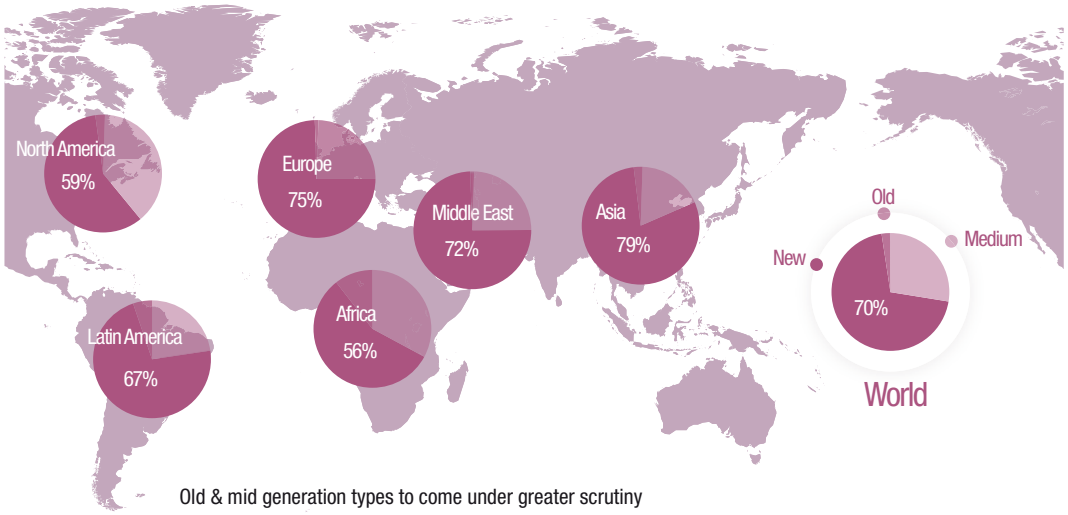


Environnemental efficiency through airline productivity

Another factor that has improved productivity, is the gradual increase in modern eco-efficient aircraft. Taking a snapshot of the fleet in 2011 it can be seen that 70% of the world's fleet is now comprised of what can be classified as "new generation" aircraft. These are aircraft like the A320, 737NG, A330 and A380, types that offer better operating economics in terms of fuel burn for example, and operationally can fly more, simply through improving utilisation, the hours flown. Also in recent years by having more seats than the aircraft they replace, thereby improving efficiency on a per seat basis. Taking a look at a regional level shows that some fleets have a greater proportion of these types than others. In Asia, nearly 80% are in the "new" category, in North America it is closer to 60%. This having been said, at time of writing, the first steps towards improving this comparison have been taken with new aircraft orders for significant numbers single-aisle types from airlines in the region, with more expected from this and other size categories. Today, there are still in the region of 4,600 old and mid generation aircraft in the fleet that will be replaced by new types like the A320neo and A350XWB, further improving the productivity and efficiency of aviation.

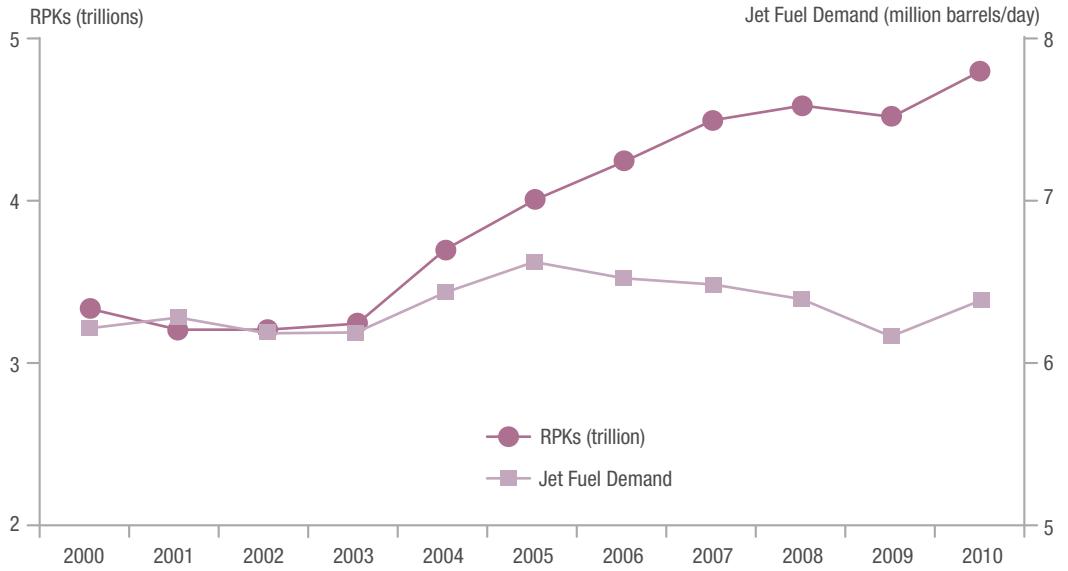
So if you weren't a flyer in 1970 how can you see the effect these improvements and trends have had. If we look over the last 10 years it can be seen that due to the improved productivity coming from airline operations and the take-up of new eco-efficient types, the demand for aviation fuel, has been relatively flat over this period, increasing ~3% over the last ten years. Aviation's productivity in terms of the traffic performed has increased more than 45% over this period, a time when a number of unilateral aviation taxes and other fiscal measures have been conceived and imposed, with environment cited as the reason.

Asia has a higher proportion of new generation types

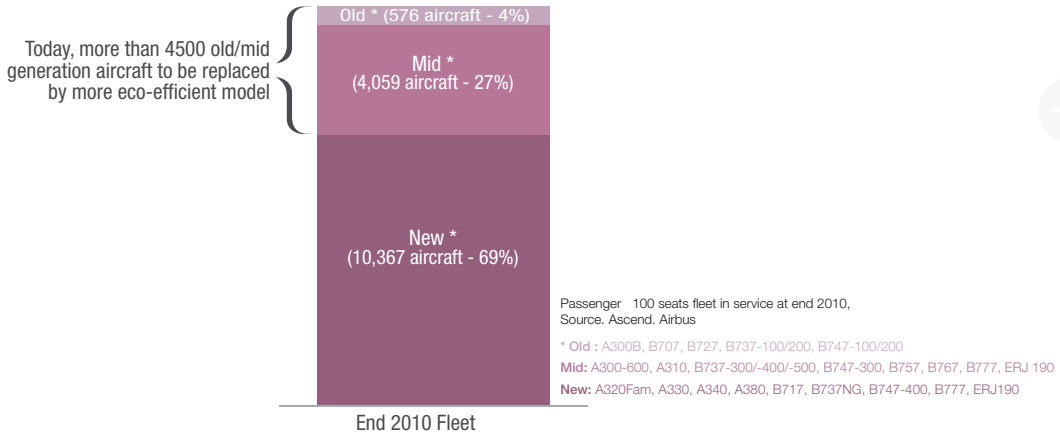


Old & mid generation types to come under greater scrutiny

Since 2000, air travel has grown 45%, the growth in fuel demand and therefore CO_2 was relatively flat...



Large replacement opportunity for passenger aircraft driving demand



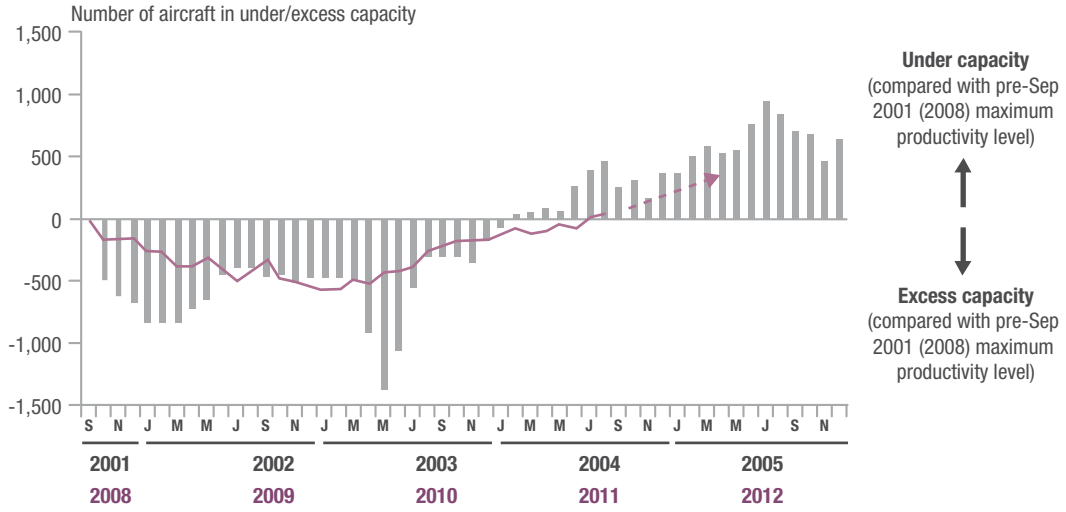
Cycles, Demand and Capacity

One area that can impact the productivity of the fleet is the aviation cycle. The system must constantly balance demand verses supply, in this case the number of seats offered, in order to avoid unnecessary and damaging costs through eroding load factors or the equally unsavoury, the erosion of yields through price discounting . Aviation has achieved this balance well, despite the ups and downs of aviation cycles.

At Airbus, as part of our analysis to understand the effects of the aviation cycle on capacity, we monitor a “theoretical” level of under or overcapacity over time. This is based on the productivity of the fleet just before a cycle, early in 2008 for example, a time when productivity is at a record high, against the fleet and capacity requirements in terms of the ASKs (Available Seat Kilometers) required, taken from the airline’s schedules. By using this technique, it can be seen when in the last cycle overcapacity was at its worst, unsurprisingly in 2001 post 9/11 and later for a thankfully short period following SARs when over capacity was as much as 1,400 aircraft. Mapping the last cycle, characterized by the 2008 financial crisis, we can see the trend is similar without the two spikes caused by the exogenous shocks mentioned. At time of writing, in the summer of 2011, we have passed into an under capacity phase, helping to explain some aircraft ordering and discussions on production rate increases in the first half of the year. Today, aircraft and the industry have surpassed the previous levels of record productivity witnessed in 2008, setting a new point to measure from.

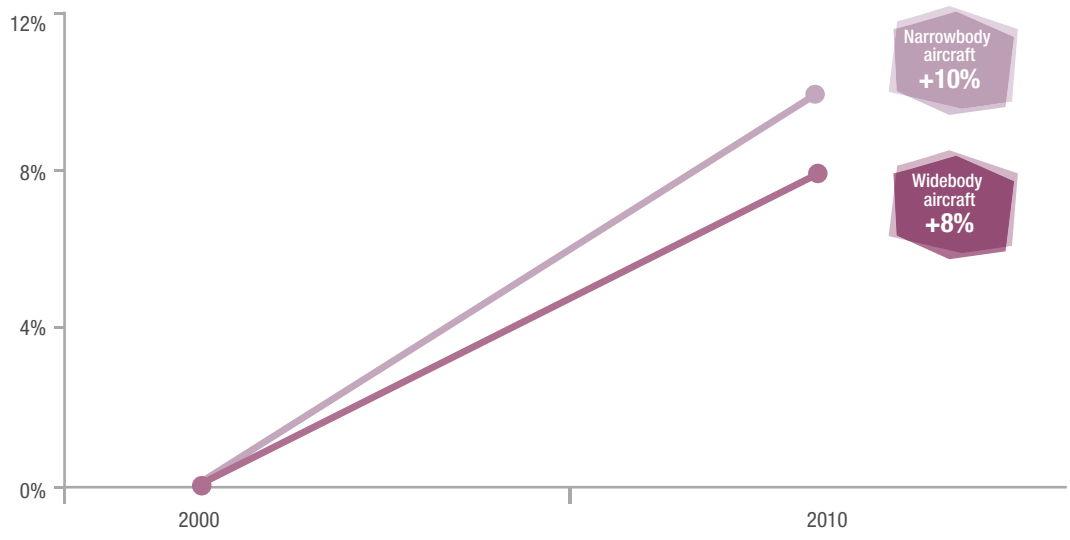
Aircraft also continue to have more seats as airlines again seek to reduce the cost per seat and continue to drive for efficiency improvements. This is particularly noticeable as airlines buy new aircraft to replace their older types. In recent years we have also seen a trend in airlines “up converting” their existing backlog, aircraft on order and yet to be delivered. This has been particularly noticeable on programmes such as the A350XWB and 787 where a number of the smallest variants are being converted into bigger types. Today, the average seating in the global backlog is 10% bigger for single-aisle types and 8% for twin-aisles when compared to 2000.

Capacity trends part of the cycle



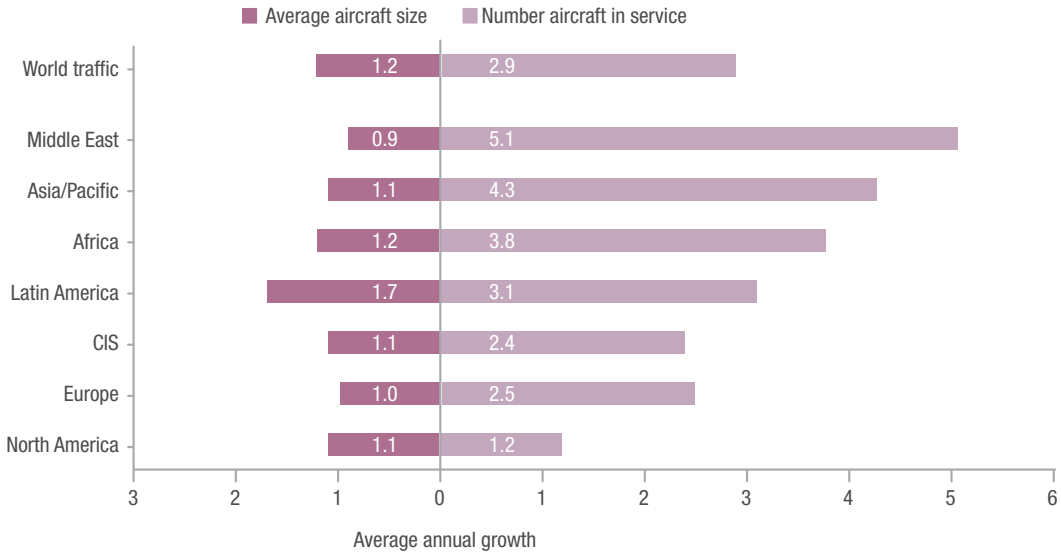
Increase in average seat capacity of aircraft on order

Evolution of average seat capacity of narrowbody and widebody aircraft on order, 2010 vs, 2000 (*)



Passenger aircraft >100 seats

Capacity growth accomodated by bigger and more numerous aicraft



Productivity improvements are also forecast in the coming 20 years, with these numbers available from the GMF as an output. Of the 4.8% traffic growth we have forecast 0.7 percentage points will come from an increase in the RPKs per seat, with improvements most notable in the Middle East the CIS and Latin America.

Meanwhile, 4.1 percentage points will come from an overall increase in capacity, the seats in service. From this capacity component, we forecast that 1.2 percentage points will come from aircraft size growth and the remaining portion from an increase in the number of aircraft.

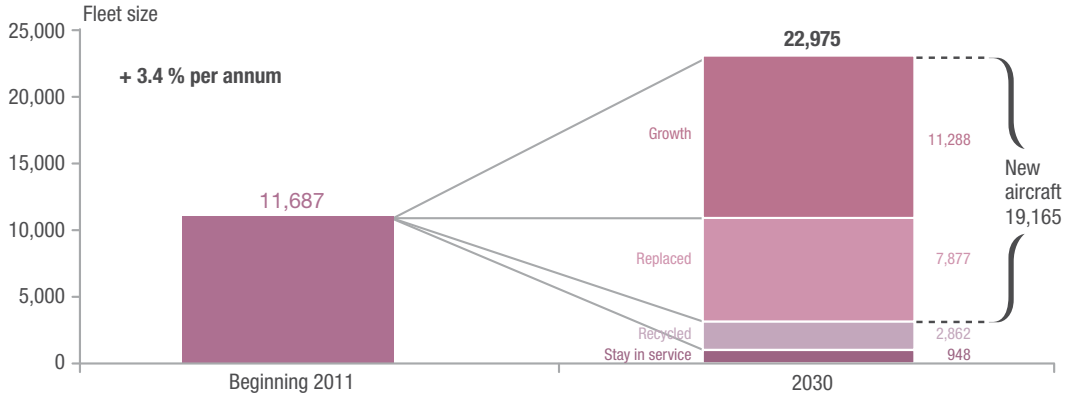
Single-**aisle**

Connecting people

Today, the single-aisle fleet is large, with its 11,700 aircraft representing 78% of the fleet globally above 100 seats. By 2030, this share will have changed little, and is forecast to stand at 73%. However, the numbers in service are forecast to have nearly doubled to 23,000 aircraft, an average annual fleet growth of 3.4% per year. More than 40% of the 19,200 new aircraft deliveries will be driven by the replacement of aging single-aisle types; a process itself driven when fuel prices are high, and made easier with the proposed aircraft developments in this sector which will offer in the range of 15% lower fuel burn, through the continuing application of new technologies at the right time. One example is the A320neo with its significant engine and aerodynamic improvements. Aircraft will also be needed to grow the world's aviation network with 11,300 aircraft or nearly 60% of deliveries. Geographically, 50% of total single aisle deliveries will be made into the North American and European markets highlighting the continuing importance of these regions.

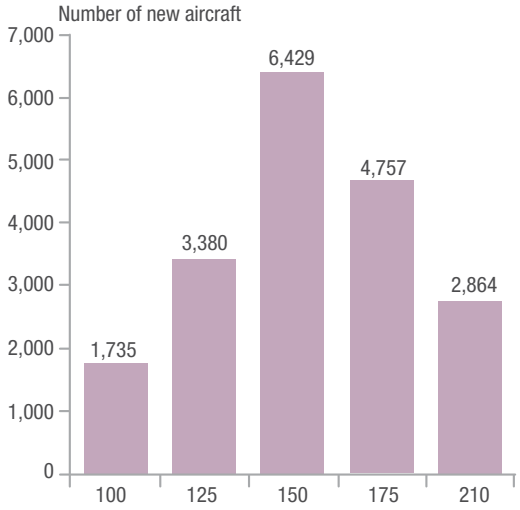
The range of seating in the single-aisle segment is broad with the types segmented between 100 to 210 seats. Our forecast predicts that the centre of gravity for the category will remain at 150 seats, but with larger capacity types more significant in volumes than smaller types, with 7,500 deliveries expected in 175 and 210 seat categories over the period. It is interesting to note that from our analysis 50% of deliveries will be to airlines who need deliveries across three or more single aisle segments, validating Airbus' broad family concept.

Single-aisle



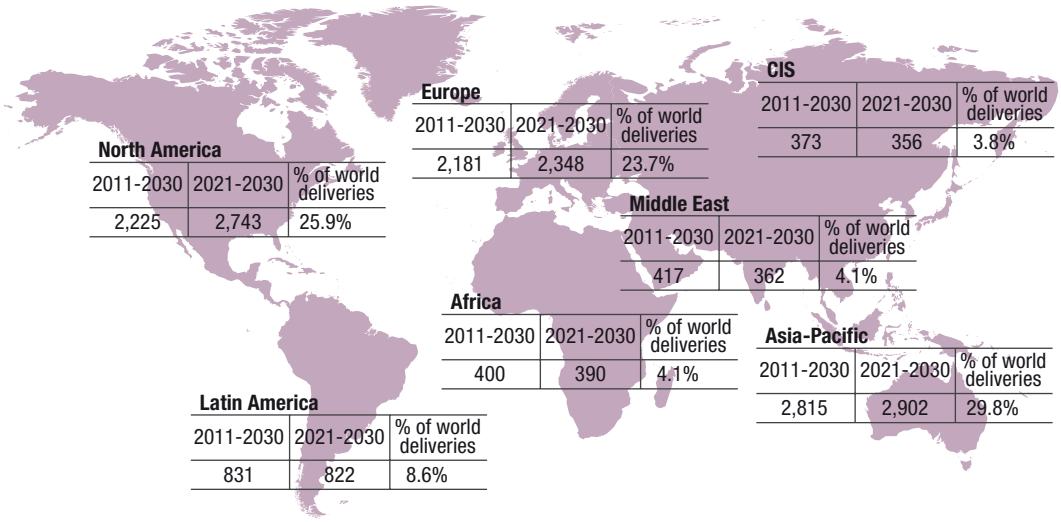
Passenger aircraft ≥100 seats (excluding freighters)

Single-aisle 2011-2030 new passenger aircraft deliveries



Source: Airbus GMF 2011

New deliveries of single-aisle aircraft by region



North America

2011-2030	2021-2030	% of world deliveries
2,225	2,743	25.9%

Europe

2011-2030	2021-2030	% of world deliveries
2,181	2,348	23.7%

CIS

2011-2030	2021-2030	% of world deliveries
373	356	3.8%

Middle East

2011-2030	2021-2030	% of world deliveries
417	362	4.1%

Africa

2011-2030	2021-2030	% of world deliveries
400	390	4.1%

Asia-Pacific

2011-2030	2021-2030	% of world deliveries
2,815	2,902	29.8%

Latin America

2011-2030	2021-2030	% of world deliveries
831	822	8.6%

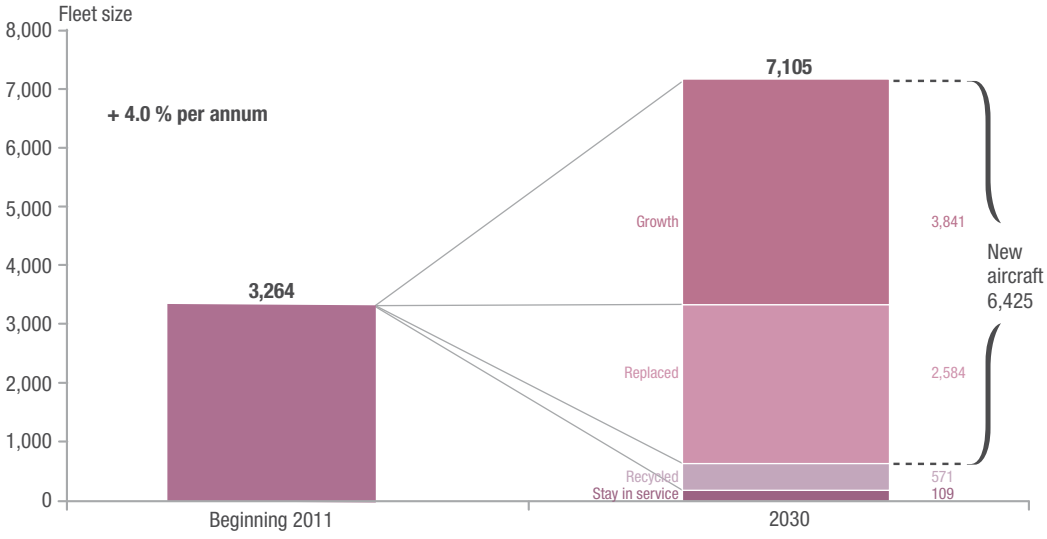
Twin-aisle

Broad segmentation, broad demand

The “twin-aisle” market covering demand segmented between 250 to 400 seats has seen significant product development activity in recent years, with two all new product families entering service in the next few years, signifying the importance of this market for airlines and manufacturers alike. The GMF predicts that the fleet of aircraft in this category will more than double to 7,100 aircraft over the next 20 years, with 40% of this demand coming from replacement. However, more than 3,800 new deliveries will be made for growth, as markets develop in Asia, a market already with an appetite for such aircraft, with 30% of today’s fleet operating with airlines in the region, and as traffic grows between secondary cities and the mega aviation hubs. Geographically therefore, Asia will take the greatest share of these aircraft with 44% of the deliveries. Airlines in Europe and North America will take ~30% with the Middle East just over 12%.

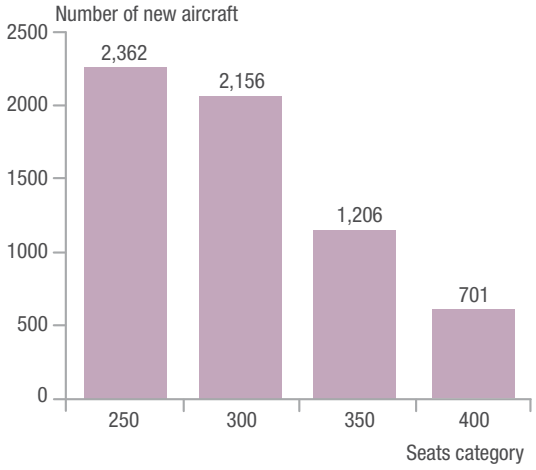
The majority of demand will be focused on the 250 and 300 seat segments with 70% or 4,500 deliveries made to airlines. The remaining 1,900 aircraft will be from the larger segment in the twin-aisle category, aircraft up to 400 seats like the A350-1000XWB.

Twin-aisle fleet in service evolution



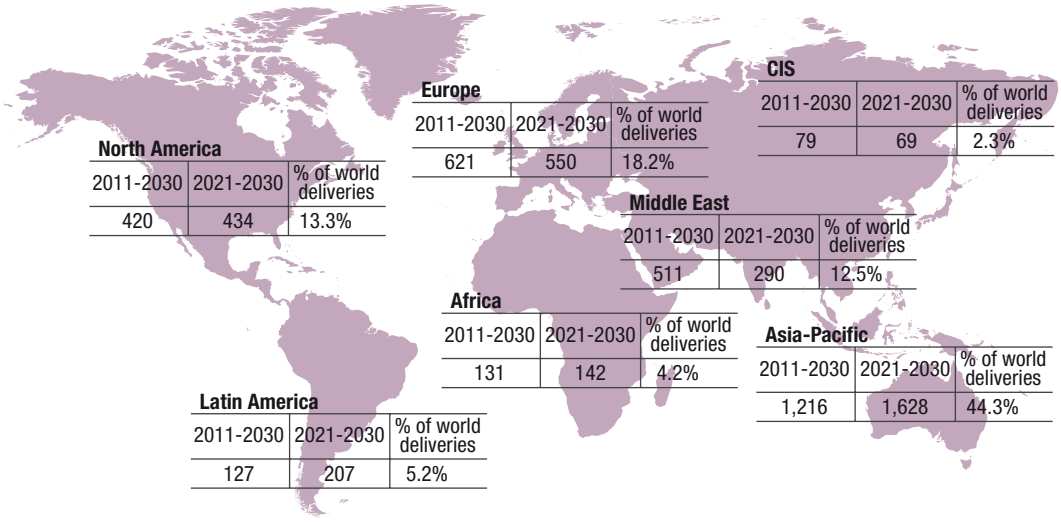
Passenger aircraft ≥100 seats (excluding freighters)

Twin-aisle 2011-2030 new passenger aircraft deliveries



Source: Airbus GMF 2011

New deliveries of twin-aisle aircraft by region



North America

2011-2030	2021-2030	% of world deliveries
420	434	13.3%

Europe

2011-2030	2021-2030	% of world deliveries
621	550	18.2%

CIS

2011-2030	2021-2030	% of world deliveries
79	69	2.3%

Middle East

2011-2030	2021-2030	% of world deliveries
511	290	12.5%

Africa

2011-2030	2021-2030	% of world deliveries
131	142	4.2%

Asia-Pacific

2011-2030	2021-2030	% of world deliveries
1,216	1,628	44.3%

Latin America

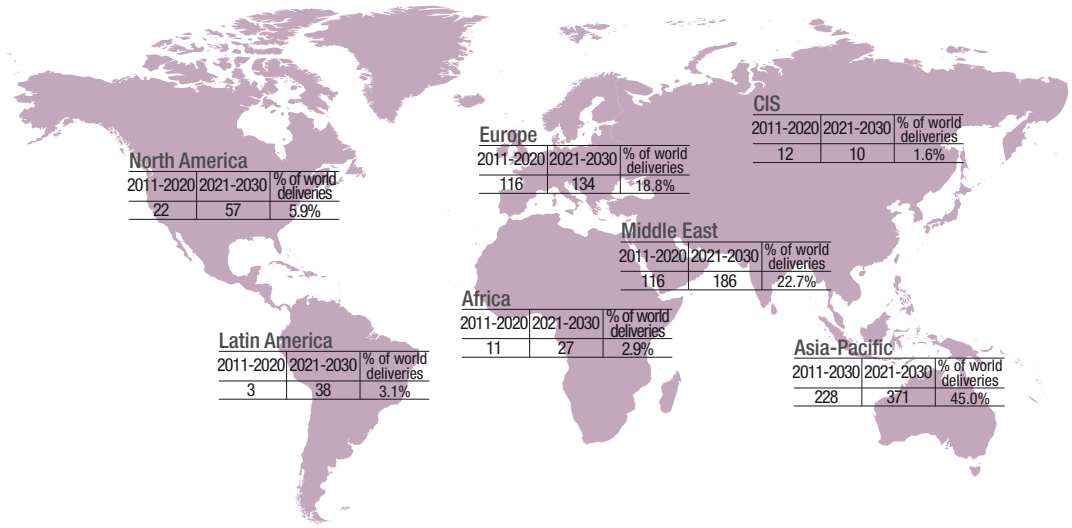
2011-2030	2021-2030	% of world deliveries
127	207	5.2%

Very Large **Aircraft**

Efficient, Flexible, Optimised

With an ever increasing number of Very Large Aircraft (VLAs) in the form of A380s now flying between the world's major airports and cities, need for such aircraft is evident. Through their size and new technologies, these aircraft are designed to meet demand efficiently by minimising seat costs in both fuel and CO_2, flexibly by offering airlines the ability to match the space onboard to their strategies and needs of their customers, and operationally optimal on routes which due to the amount of traffic need these aircraft. These requirements exist today and will grow with the world's network and the needs of people to fly. By 2030, the number of this category of aircraft will mean there will be in the region of 1,300 VLAs flying globally. This number is similar to that in our last forecast, but interestingly the average size of aircraft in this category has increased. Given the projected growth in Asia, both economic and air passenger traffic growth, the regions demographics, urbanisation trends and the dense traffic flows between Asia and Europe and North America, it is unsurprising that the region's airlines will take 45% of these aircraft over the next 20 years. Europe's airlines will take 19% with Middle Eastern carriers with their plans to exploit their geographical advantage forecast to take 23%.

New deliveries of very large aircraft by region

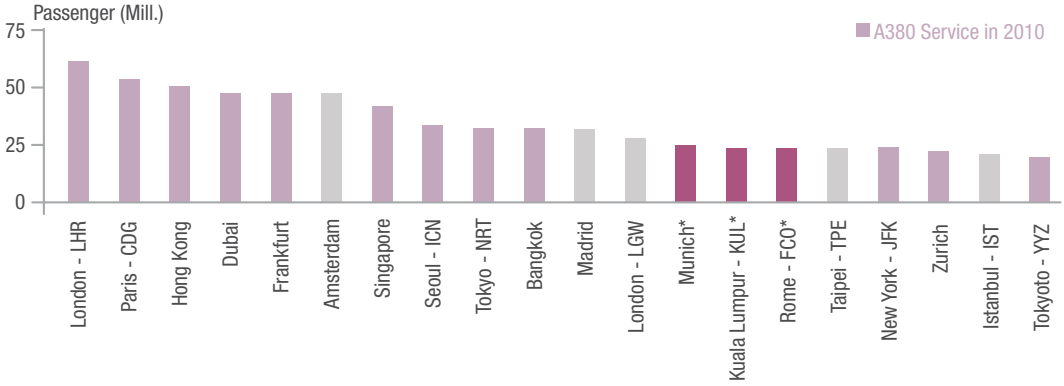


The need for large aircraft is evident as the network for the A380 grows and as more and more A380s enter service, more than 50 by the middle of 2011. Today, these aircraft are becoming a common sight at the world's most important hubs, already serving 12 of the top twenty international airports.

Whilst being an aircraft ideally suited to connecting the world's major population centers, it is also being used between aviation mega-cities and "secondary" cities (i.e. <10,000 daily long haul passengers per day) like Manchester in the UK, Toronto and Jeddah, a fact demonstrating the versatility of the aircraft, operating across inter-continental, intra-regional markets and we expect in the future domestically on some high density flows. Today, there are many more markets and routes which are ideally suited to VLAs and as more deliveries are made and more customers join the existing customer base of the A380, these too will become the home for these aircraft. Another fact that demonstrates its versatility is the range of seating configurations chosen by the airlines. Looking at the segmentation and seating chart in the summary section of this document shows it is the most adaptable aircraft in this respect, with seating, either in service or on order, ranging from just over 800 seats to just over 400 seats; a cabin with unrivalled versatility.

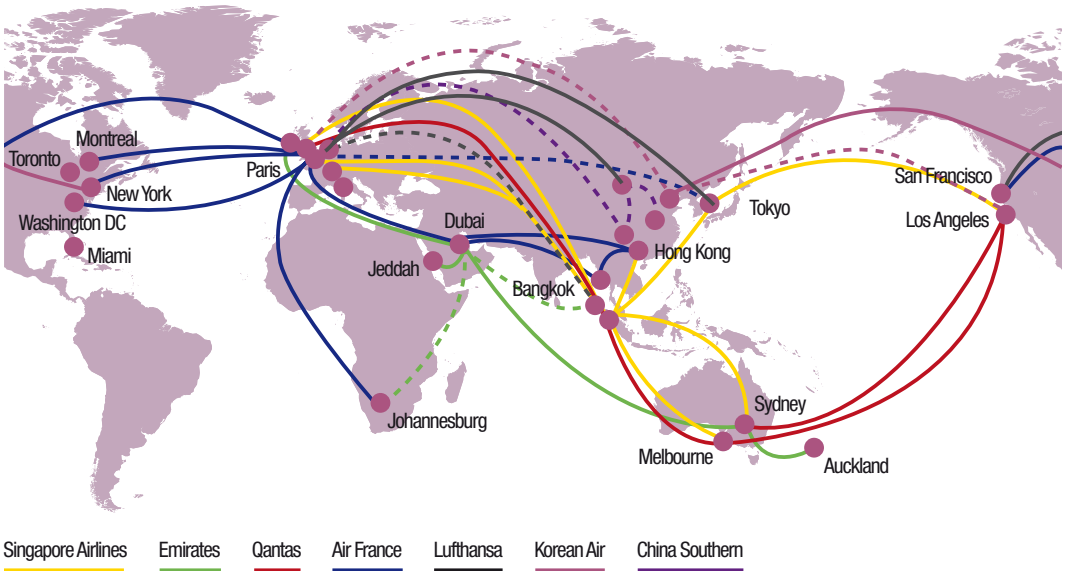
In 2010, the A380 served 12 of the top 20 international airports

International Passengers 2010

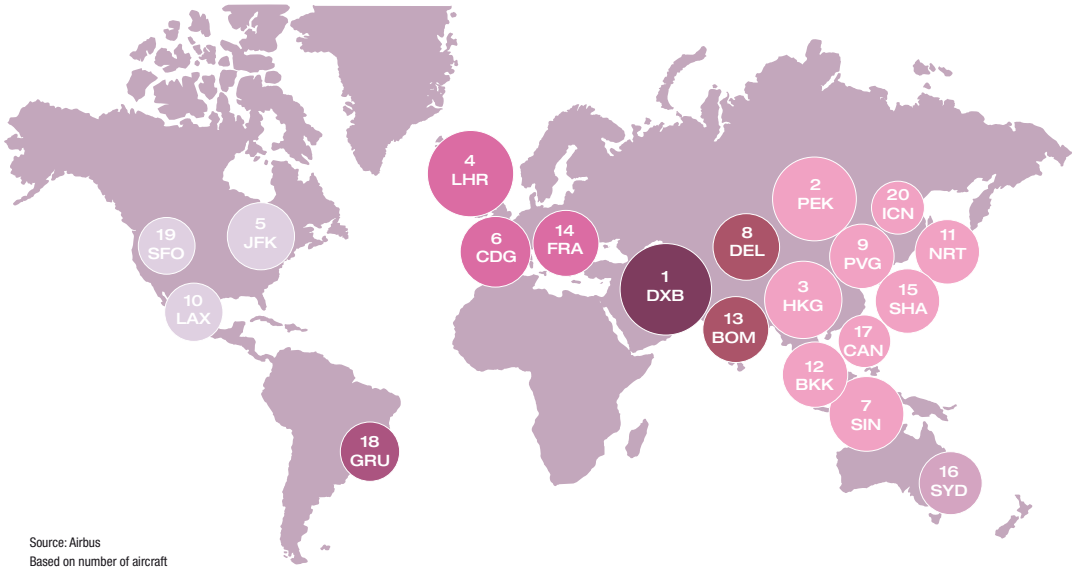


* Service scheduled for 2011/12

The A380 network keeps growing



By 2030 10 of the 20 largest VLA airports will be in Asia-Pacific



Source: Airbus
Based on number of aircraft

Asia-Pacific

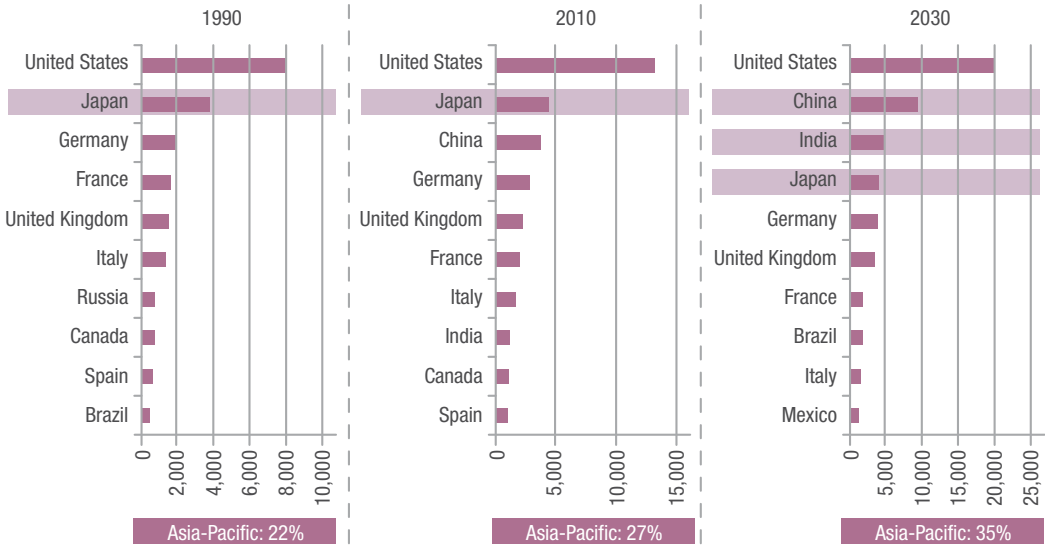
More People, More Wealth,

Whilst other regions suffered significantly during the economic turbulence caused by the financial crisis, the Asia-Pacific region, whilst also impacted, managed to return positive growth economically unlike many other regions, with air transport fairing much better as a result. A key reason for this resilience, is that the more traditional tiger economies in the region, were re-enforced by the emerging markets. India and China in particular, have helped to drive economic growth and air transportation through this difficult period, not only within the region, but also globally. Whilst already significant today, their influence is set to increase as time passes.

Over the next twenty years, these two economies will grow in real terms, to become the second and third largest economies in the world, helping to maintain Asia-Pacific GDP growth levels in the region of two to three percentage points above world levels.

Asia-Pacific will represent more than 1/3 of the world economy

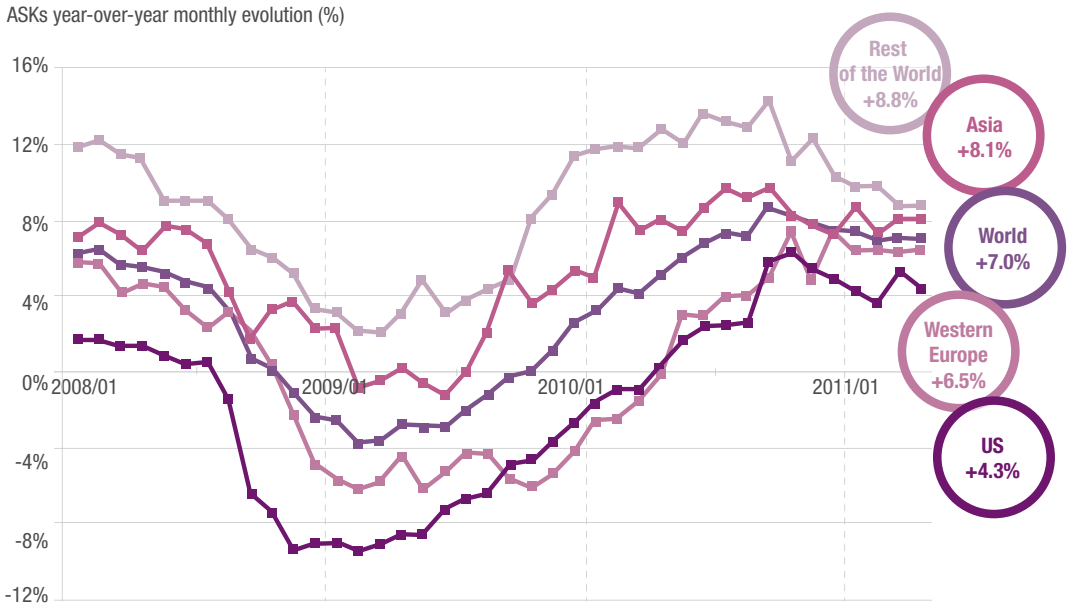
TOP 10: Real GDP, by Country (constant 2005 Billion $US)



3 Asian countries will be in the TOP 5 world economies by 2030

More flying

Asia and emerging markets have helped drive traffic recovery



Source : OAG, Airbus

Growth in the region has and will continue to be driven by this above average economic growth, itself driven in part by increasing urbanisation in the region, which is forecast to grow from ~40% to more than 50% by 2030.

At the same time the region's population is also forecast to grow to around five billion people or nearly 60% of the global population, which together with increased urbanisation, will increase their propensity to fly.

Liberalisation and Open Skies

1967
- The Association of Southeast Asian Nations (ASEAN) was established

1979
- Members: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, The Philippines, Singapore Thailand, Viet Nam

1982
- The US began persuing Open Skies agreement

1992
- The US signed 23 bilateral air service agreements worldwide, mainly with smaller nations
- The ASEAN Free Trade was established to eliminate tariff barriers

2001
- The US signed the Multilateral Agreement on the liberalisation of International Air Transportation (MALIAT) with Brunei, Chile, New Zealand and Singapore

2003
- Proposal of an extension of the Asian free trade zone into the skies, an open sky policy within the ASEAN region

2009
- The ASEAN Multilateral Agreement on Air Services and the ASEAN Multilateral Agreement on the Full Liberalisation of Air Freight Services were approved in Manila and Philippines

2010
- Call for a calibrated and gradual implementation of these two agreements in each contracting state. It is part of the broader ASEAN Air Transport Integration and Liberalisation Plan

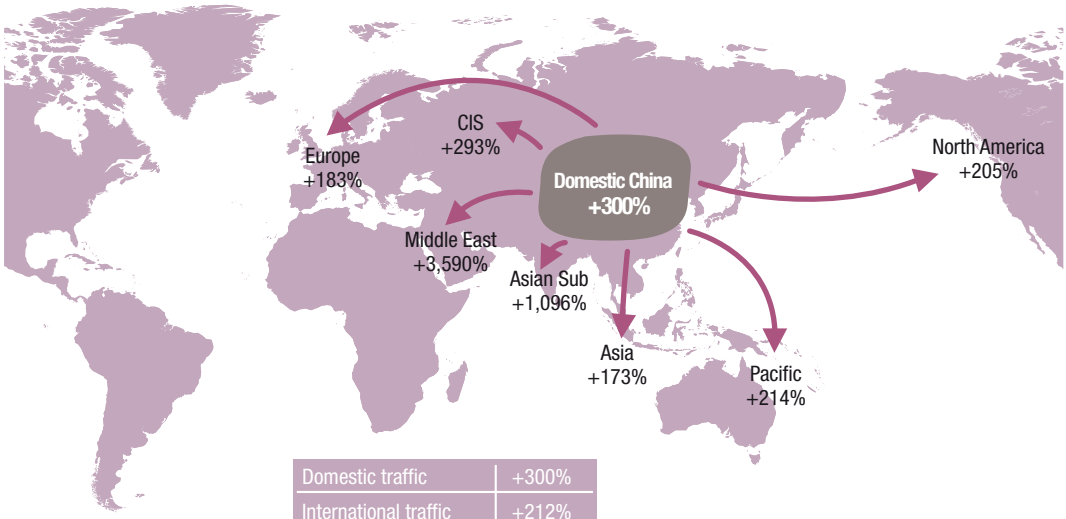
Another driver for air travel is the increased liberalisation of air services, by making air travel more accessible both in terms of routing, but also often through cheaper air fares as a result of increased competition or cost savings being passed on to passengers. Looking historically, it is clear that most activity took place in the more mature, traditional markets in the US and Europe, with pace now picking up in Asia. Liberalisation has also been key in opening up and growth of traffic from and to emerging markets.

China is a good example of the pace at which these agreements can be initiated with the political will, to the benefit of all those with connections, both commercial and personal to the country. Agreements like these have helped enable international traffic to and from China which has more than doubled in the last ten years, with even more significant growth to the Middle East (+3,600%) and India (+1,100%).

Other factors also expected to stimulate air travel growth in the region is the increasing wealth and developing consumerism in the region. Salaries in China for example are expected to grow at 14% per annum over the ten years from 2010 to 2019, leaving salaries more than three and a half times higher. Savings rates, which are traditionally high in Asia, are also projected by economists to decline, although already low in Japan, which should also feed into air travel growth. In China, where the social “safety net” is limited, and therefore savings rates have been high, they are also projected to fall, helping the country to move towards greater consumerism and serving to stimulate air travel further.

2010 Mainland China traffic at 260% above 2000 levels

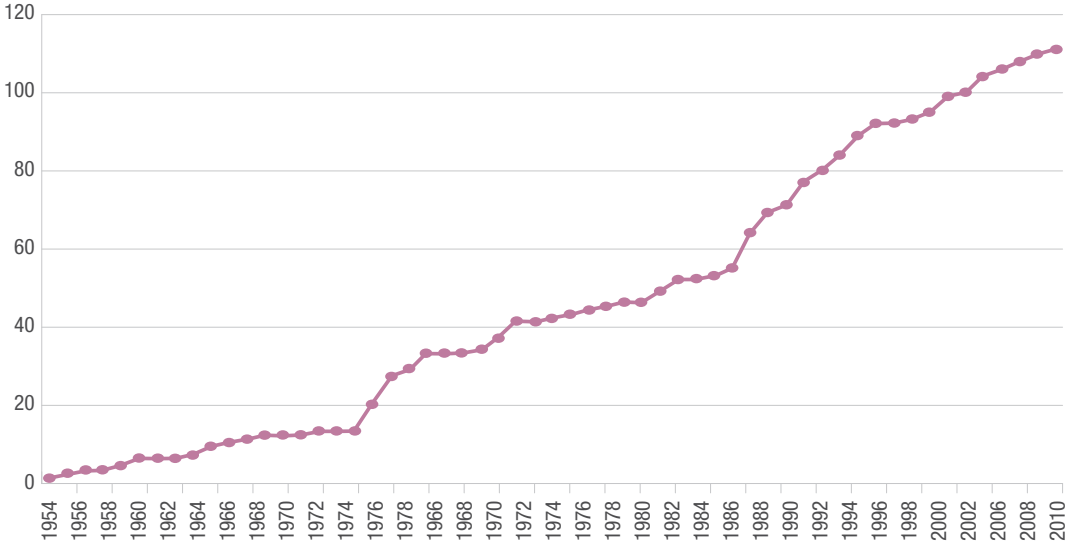
Traffic from and to Mainland China per region*, 2010 vs. 2000 ASK



Domestic traffic	+300%
International traffic	+212%
Overall traffic	+260%

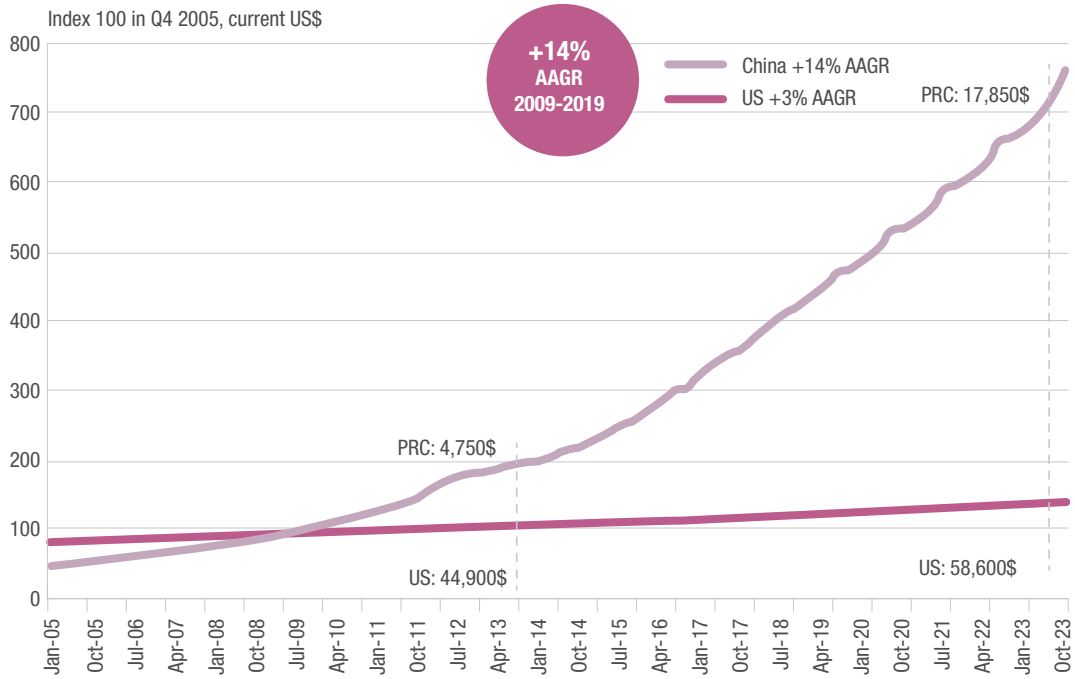
China bilateral agreements enabling growth

Number of bilateral agreements between China other countris, cumulated 1954-2010



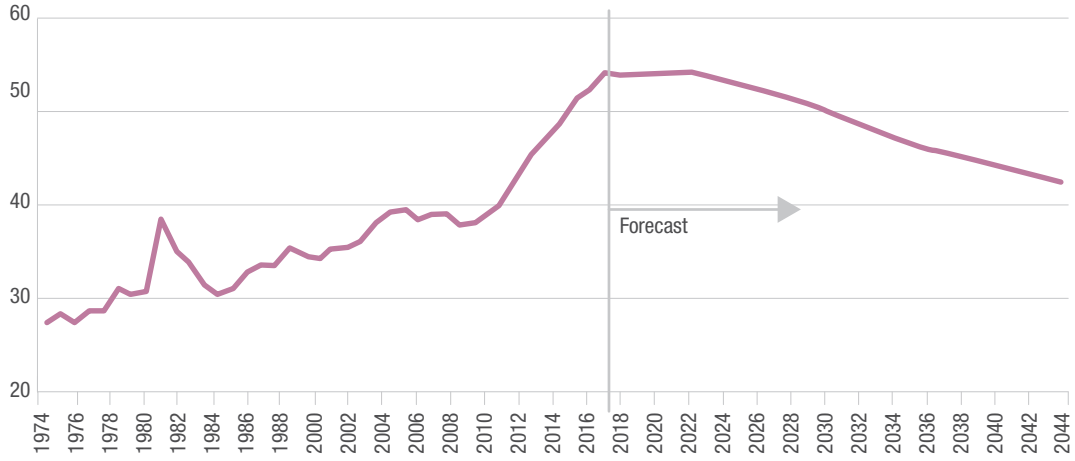
The rise of Chinese salaries will boost domestic consumption

Average annual machinery manufacturing wages in China & US



Reduced savings rates and increased consumerism to drive air travel

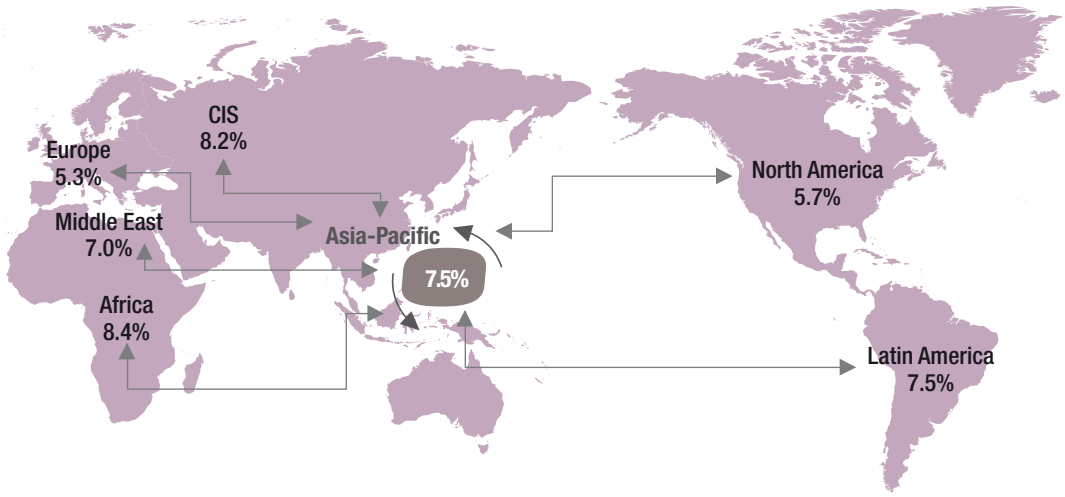
China Gross Domestic Saving Rate (% of GDP)



Source : IMS Global Insight, Airbus

Significant growth maintained in Asia-Pacific

RPK growth: annual average 2011-2020



Asia-Pacific		
2011-2020	2021-2030	20-year growth
6.9%	5.0%	5.9%

World		
2011-2020	2021-2030	20-year growth
5.4%	4.3%	4.8%

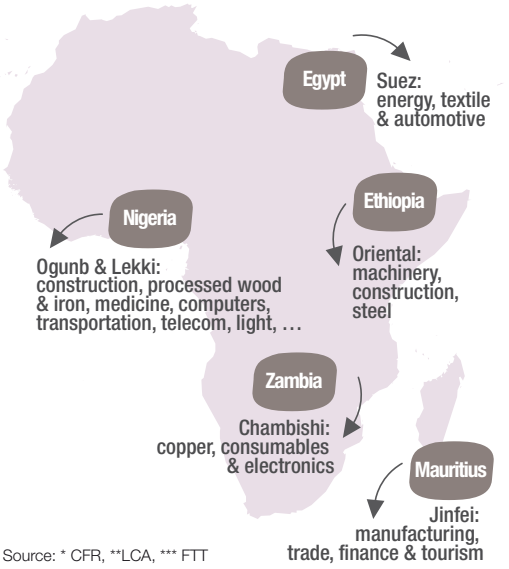
Source : Airbus

Over the next ten years domestic traffic in the region is forecast to grow at 7.5% per year, with growth within the emerging markets and opportunities for the low cost carriers helping to achieve this significant level. Traffic growth the US and Europe will also grow impressively at 5.7% and 5.3% per year respectively. Traffic growth to other developing markets like the CIS and Africa will also grow as trade and tourism develops between these regions.

China & Africa: Air travel both enables and benefits

Over the last ten years, air traffic between Asia and Africa has more than doubled. China's links to Africa have developed rapidly, with China making significant investments in the region and in return receiving goods and materials that have and will continue to enable them to maintain their economic progress. Some examples of Chinese investments in Africa include the Nigerian Lagos-Kano Railway, an investment of ~US$ 8bn, and involving 11,000 Chinese workers, in Algeria, 1,000 km freeway, in the Congo US$6.2bn to develop infrastructure and US$3.1bn to help the mining sector, 3000km of roads and railways, 31 hospitals, 145 health centers and 50,000 homes, the Imboulou barrage etc.

China has obtained privileged access to African resources & markets



Source: * CFR, **LCA, *** FTT

- Africa provides nearly one third of China oil needs*
- 85% of Africa's exports to China come from five oil countries (Angola, Equatorial Guinea, Nigeria, Congo & Sudan)**
- Significant non-oil imports: timber, copper & diamonds**

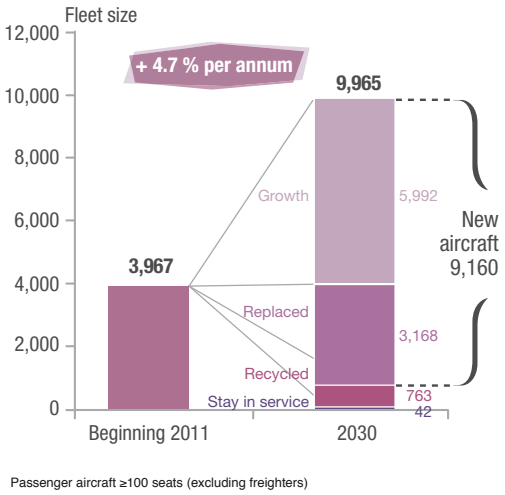
Six special economic zones were set up by PRC in Africa, to "create the enabling environment into which Chinese companies can follow" ***

In return China has received access to raw materials and other resources. African countries for example now provide nearly a third of China's oil needs. In 2010, total trade between Africa and China exceeded US$100bn, growing over ten fold in the last decade. Activity which is set to continue, further stimulating air travel in both directions.

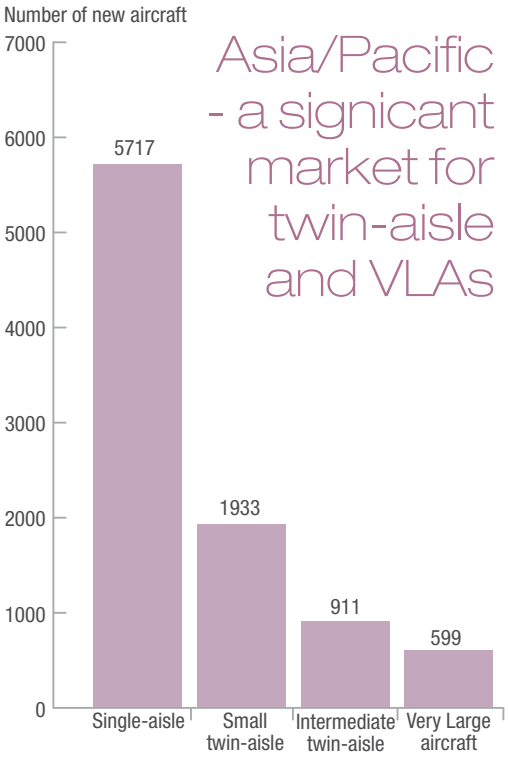
With the Asia-Pacific fleet containing more “new generation” aircraft than any other world region, the home of significant emerging markets, and with impressive growth forecast, it is not surprising that ~70% of the 8,200 new deliveries will be the result of growth. The regions fleet will more than double from 4,000 aircraft to nearly 10,000 by 2030.

The region, with its large and dispersed population centres will mean that larger longer range aircraft will be needed from the single-aisle, up to the very large aircraft (VLA). Over the next twenty years the region will need nearly 600 VLAs, or 45% of total demand. It is envisioned that these aircraft will be used for the complete spectrum of operations from inter-continental to Domestic. With over 2,800 other twin-aisle types the region is also expected to be an important market for these types.

Asia/Pacific Traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	6.9%	5.9%
Domestic & intra-regional traffic	7.5%	6.3%
International traffic	6.0%	5.5%
Asia/Pacific Fleet in-service and deliveries	2010 Fleet in-service	Deliveries 2011 - 2030
Passenger (>100 seats)	3,973	9,160
Passenger (<100 seats)	961	1,238
Total Aircraft	4,934	10,398



Passenger aircraft ≥100 seats (excluding freighters)



Asia/Pacific - a signicant market for twin-aisle and VLAs

Europe
3000 years of demand

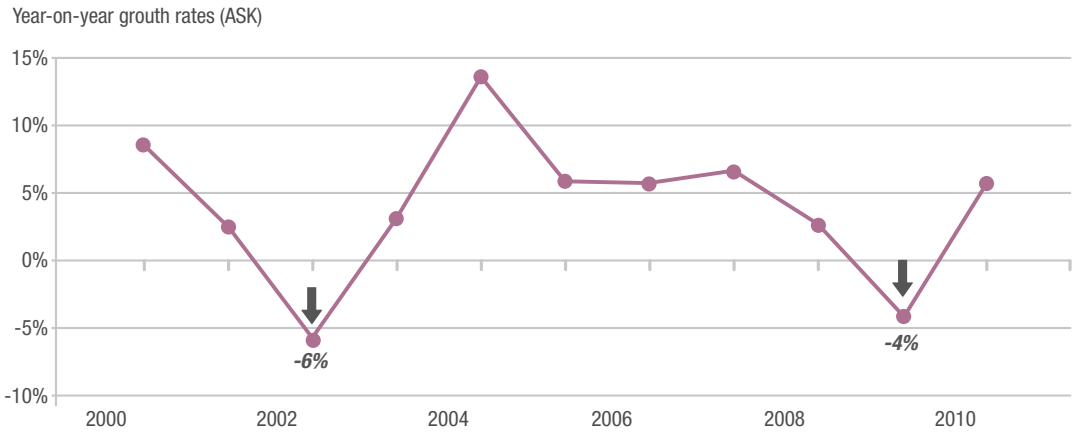
Europe, has been at the heart of aviation since its earliest days, from the dreams of flight transposed into the myth and storytelling of antiquity, to reality from the 1900s and its early pioneers, through to the passenger jet age, with the comet, supersonic passenger transport with Concorde. A technical achievement, but arguably a success industrially by paving the way to the vision and industrial collaboration that enabled the formation of Airbus a few years later. Yet more than all of this, Europe and its people have embraced flight and its benefits, from the very earliest days, with many of the region's airlines amongst some of the oldest in the industry. Airlines who as well as shaping the industry as it stands today, but who have also witnessed the massive changes in both technology and operating environment, through other factors such as deregulation, which has sought the reduction of artificial barriers to further drive improvements in industry efficiency and scope.

European Economy

Europe is still in the process of recovering from the recent recession, with some instability experienced in 2011 due to sovereign debt in the region. Concerns have lingered as a result of this in some parts of the Eurozone, on what effects correctional measures could have on confidence in general, and resulting short/medium term economic growth. European airlines were some of the hardest hit by the last recession, though this was in part caused by the volcanic eruption in Iceland which affected air travel across Europe in 2010. IATA projects that the eruption cost international carriers $1.8 billion in lost revenue and $296 million in passenger compensation. Even with the negative effects of the economy and the volcanic eruption, European airlines saw a quick return to positive traffic growth, as in previous downturns, and to net profits in 2010. IATA projects continued positive net profits in Europe for 2011, although at a lower figure than 2010. A result coming from higher fuel prices offset in part by some positive growth seen in the economy, which saw RPKs grow by 12.4% from the first half of 2010 compared to first half 2011. This is nearly six percentage points higher than the industry average of 6.5%.

100 years of supply

Strong and immediate recovery after downturns since 2000



Source: OAG, traffic as of September for each year

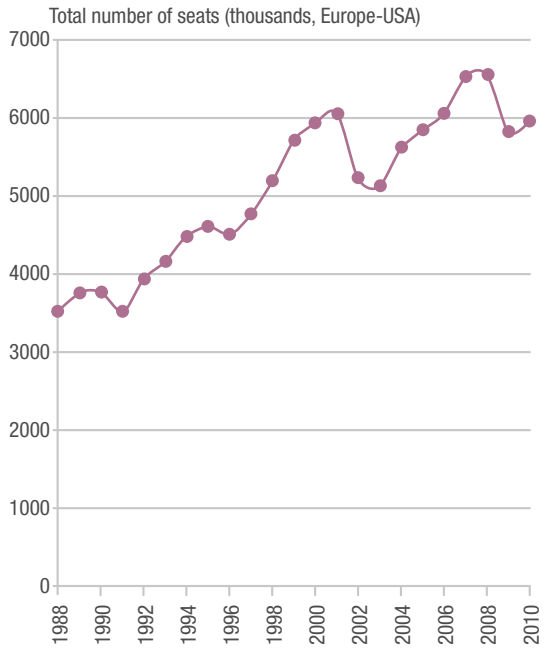
US-Europe Open Skies Agreement to generate more traffic

The open skies agreement between Europe and the USA had its first phase implemented in March 2008. It replaces a set of older bilateral agreements which mean that every US or European airline is now authorised to fly between every US and European airport. The goal of these agreements is to create more competition, more efficiency and more traffic, by the opening of new routes and the more effective use of existing airports. Developments on a flow which is already highly fragmented. Passengers on the other hand typically benefit through more choice and flexibility, as well as lower fares. The European Commission has estimated that the agreement will generate 12 billion Euros of economic advantage and the creation of 80,000 jobs.

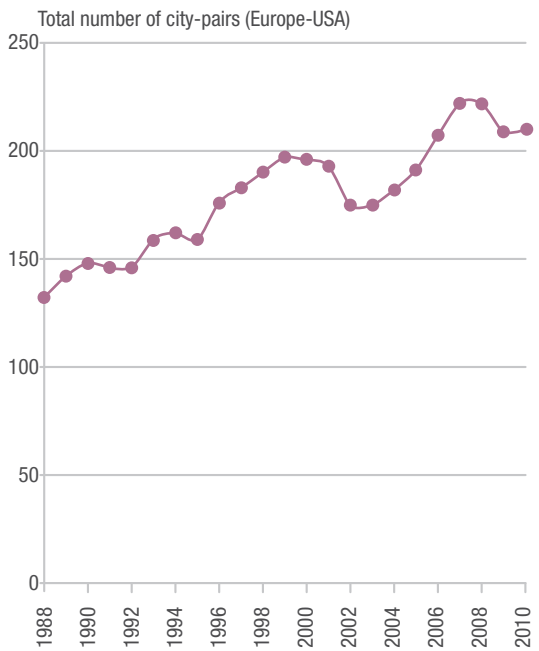
However, after the implementation of the open-skies agreements, the traffic and the number of routes between the USA and Europe did not increase dramatically, mainly due to the crises the industry faced in 2001 and 2009. Over the long term, we expect annual average traffic growth on the Europe to US flow to stand at 4% over the next twenty years.

The major impact of the agreement was on the London to US market, this market represents 28% of the total trans-Atlantic number of seats. More than ten years ago, PanAm and TWA were the only American airlines authorised to take off from London Heathrow to the USA. After these two airlines, American Airlines and United Airlines took their place in Heathrow (Bermuda 2 bilateral agreement). British Airways, Virgin Atlantic and several carriers benefiting from the 5th freedom rights completed the market. Today, every US airline is authorised to take off from Heathrow. One result was a movement of some operations from Gatwick to Heathrow from March 2008, when the agreement came into force.

Seats and routes have grown

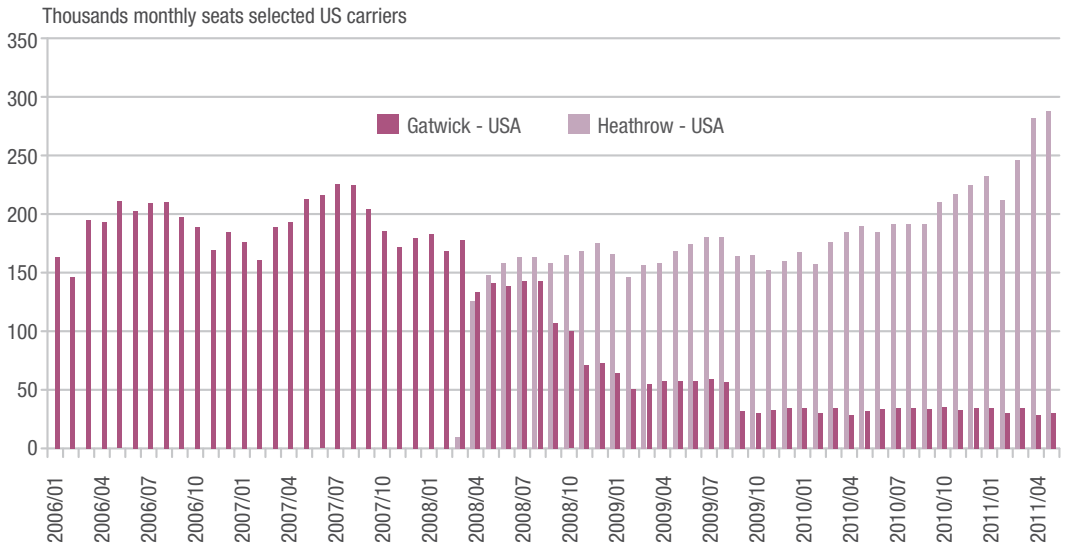


Source: OAG, September data of each year



Source: OAG, September data of each year

Some US-UK operations have become more concentrated



Source: OAG, September data of each year

International consolidation

As well as the effects of deregulation, another consideration that must be taken into account when putting together our forecast, is the effect that consolidation could will have on the shape and direction of the market in the coming years. Europe, as with deregulation, has been at the center of some of the new airline alliances.

Recently, anti-trust immunities have been given by the European and US authorities to the three main global airline alliances (One World, Skyteam, Star Alliance). As a result, the respective airlines are allowed to jointly set prices, to cooperate on departure times, the types of aircraft in use, distribution and marketing, to share revenues and costs for all trans-Atlantic flights, and also have the right to cede slots to their partners.

For the airlines, this anti-trust immunity gives them access to markets where they are weak, as they can “fly virtually” thanks to code-share agreements with their partners. In addition, this collaboration allows opportunity to cut costs, using their workforce and planes more efficiently, and reconfiguring route networks to make them more competitive as well as efficient.

On the face of it anti-trust immunity could seem counter to the objectives of Open-skies agreements, whose ideal is to reinforce competition. However, the efficiency effects of consolidation can counter-balance the potential anti-competitive effects of market concentration. The decisions of the European Commission in this area have been aided by studies showing that fares are lower if co-operative measures exist.

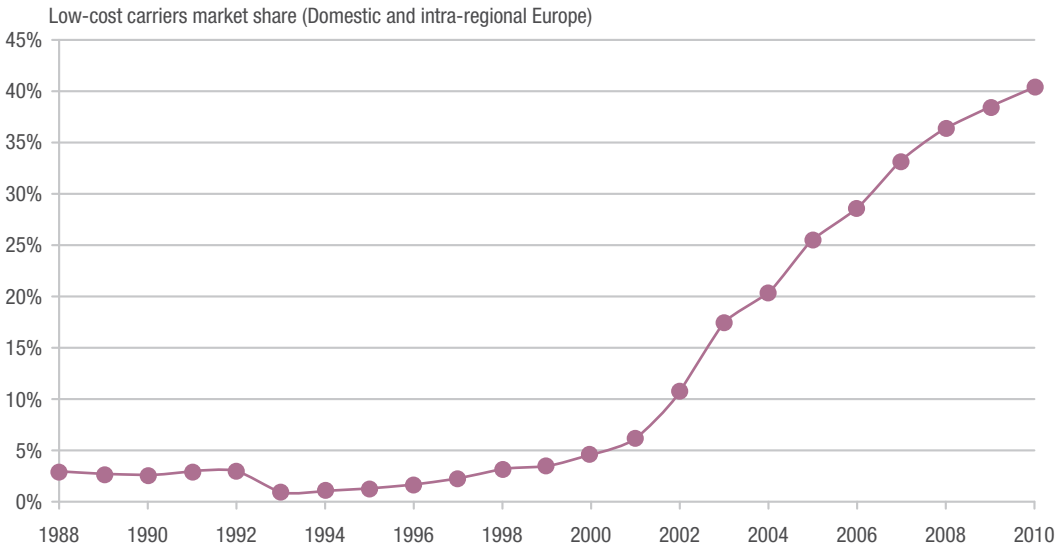
Intuitively, greater consolidation would lead to greater efficiency through aircraft selection for example. Typically, where there are routes with greater competition, aircraft size is driven down as demand is shared. With greater consolidation the aircraft size would naturally increase and the benefits this would bring in terms of cost and fuel burn per seat would be evident, for both the airline and the environment.

In 2010, the second phase of the open skies agreement formulated the idea to open EU and US airlines to greater foreign investment. Should this occur, perhaps we can expect more international mergers in the future.

Low-cost carriers continue to grow their importance

Low-cost traffic is at all-time highs in the domestic and intra-regional European markets, reaching more than 40% of total traffic (almost 50% if we only consider Western Europe). The low-cost model in Europe is supported by a very large market of leisure travellers, in spite of the historical power of legacy airlines and the development of high-speed train. It is represented by both well-established Western low-cost carriers and newer Eastern European low-cost carriers.

In reality, there is no single low-cost model. Hybrid airlines have several aircraft types, connect passengers at hubs, and start from non-secondary airports. A convergence in aspect of business models which has already begun, as more and more "legacy" airlines seek to develop their own low-cost subsidiaries, or to simply adopt the best from the low cost business model, particularly in their approach to ancillary revenue.



Source: OAG, Airbus

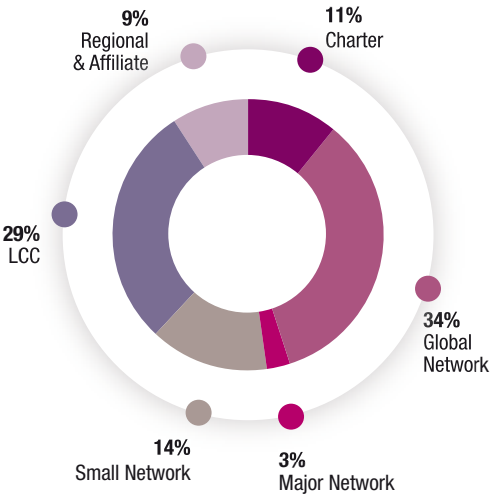
Europe Traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	4.6%	4.2%
Domestic & intra-regional traffic	3.9%	3.5%
International traffic	5.0%	4.6%
Europe Fleet in-service & deliveries	**2010 Fleet in-service**	**Deliveries 2011 - 2030**
Passenger (>100 seats)	3,810	5,950
Passenger (<100 seats)	1,174	807
Total Aircraft	4,984	6,757

GMF results for Europe

Globally, we expect the annual average growth rate from/to/within Europe to reach 4.2%, driven mainly by the traffic to/from Asia-Pacific. Even though this rate in Europe is lower than the expected world growth rate, there are a number of inter-regional connections that are expected to show strong growth, such as Impressive growth between Europe and the Middle-East at 5.7%, and between Europe and CIS at 5.3% over the next twenty years.

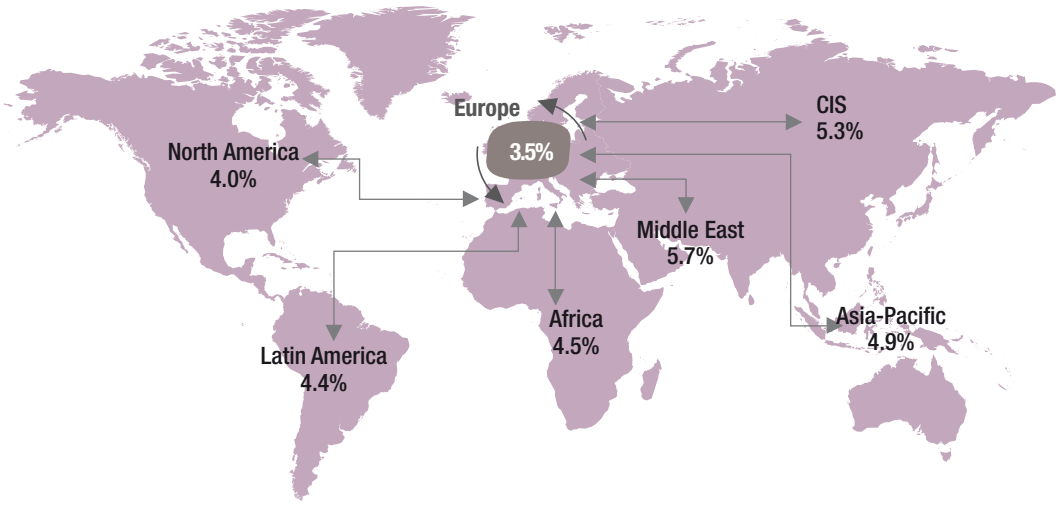
More than 20% of the European fleet is more than 15 years old and a large proportion of these will be replaced before 2020. This combined with growth expectations leads to a forecast of 5,950 new deliveries of more than 100 seats passenger aircraft. Among these deliveries, 1,421 twin-aisle and VLA aircraft are expected to meet the need for larger aircraft, and 4,529 single-aisle aircraft deliveries are expected, driven notably by the network carriers who will operate 50% of the total fleet by 2030 and low-cost carriers with their focus on the single aisle which will operate 29% of the European fleet by that time.

Fleet at end 2030 by operator type



Europe's traffic to grow 4.2% by 2030

RPK growth: annual average 2011-2030



Europe		
2011-2020	2021-2030	20-year growth
4.6%	3.8%	4.2%

World		
2011-2020	2021-2030	20-year growth
5.4%	4.3%	4.8%

North America
Rejuvination on course

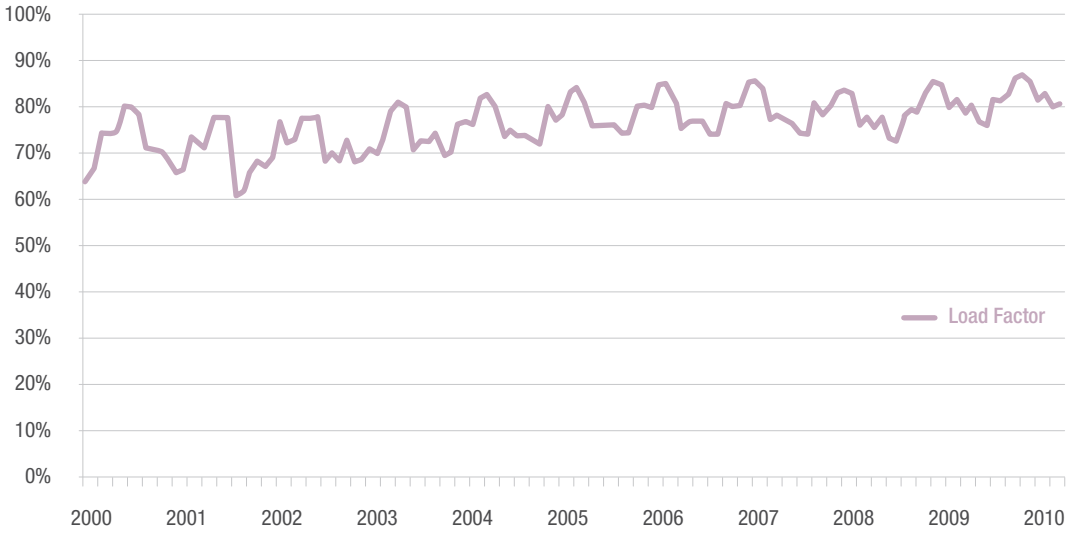
The North American economy is slowly improving after the recent recession, although some instability still exists due to the employment market and US national debt. Even with these instability, IHS Global Insight projects modest growth in both the US and Canadian economies for 2011 and 2012, with an average annual growth rate of 2.7% from 2010-2030. Economic issues have been compounded by rising and highly fluctuating jet fuel costs, which had an effect in North America, particularly in the US, even before the financial crisis, driving some capacity reduction, and today is stimulating airlines to replace the existing ageing fleet, with around 40% of the in service fleet considered old or mid-generation types, with newer and more fuel-efficient aircraft like the A320neo and A350XWB.

The downward pressure exerted by the economy on commercial aviation has forced airlines to reconsider their business models and examine methods of reducing operating expenses. This has been accomplished through the delay and/or curtailing of capacity expansion plans and reducing the overall number of flights. From 2004 to 2010, RPMs (Revenue Passenger Miles) increased by 9% for US carriers while the number of flights was reduced by 11%. To compensate for this reduction in flights, US airlines increased average load factor by 8% and the average aircraft capacity by 5% over the six year period. Airbus projects the load factor, which has been high within the United States, to remain relatively stable in the near tem with the growth in load factor slowed from 2007-2010.

Over the past several years, fuel costs have made up a larger portion of the operating expenses of airlines than it has in the past. Ageing fleets have led to airlines experiencing a three percentage point increase in fuel expenditures as a percentage of operating expenses from 2009 to 2010, up to 28% of total operating expenses. North American airlines have adapted their business models to compensate for this increase in cost. Increasing ticket prices and ancillary revenues, such as baggage fees, are two strategies that have been used to combat growing jet fuel expenditures. According to the US Department of Transportation, US airlines have increased their revenue from baggage fees by roughly 300% from 2007 to 2010, although this has begun to plateau and is not expected to grow relative to total revenue in the near future. In addition to passing increasing costs to passengers, airlines in the region are increasingly looking to purchase new aircraft to hedge against the high and volatile cost of fuel.

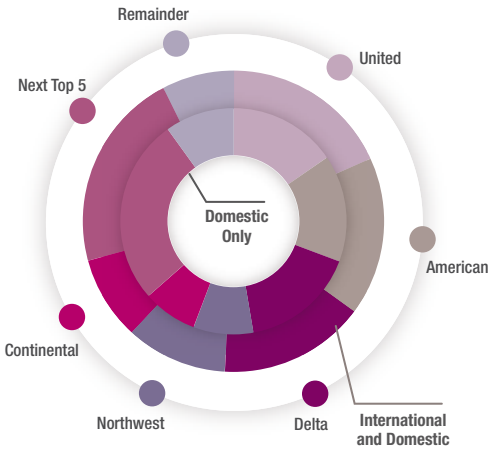
Recent economic upheaval has also motivated further consolidation in the industry, with a number of mergers and acquisitions occurring recently, in an attempt to increase profit and reduce costs. One way to accomplish this goal is to use acquisitions to leverage synergies in network structures. The most notable of these are the merger of Northwest Airlines and Delta Air Lines, the merger of Continental Airlines and United Airlines, the merger of SkyWest, Atlantic Southeast Airlines and ExpressJet Airlines, and the acquisition of AirTran by Southwest Airlines. These mergers and acquisitions have resulted in a considerably more consolidated competitive environment with the top 5 airlines constituting over 80% of the market, a factor that Airbus has taken into account in its annual forecast.

Load factors at historical highs is the US

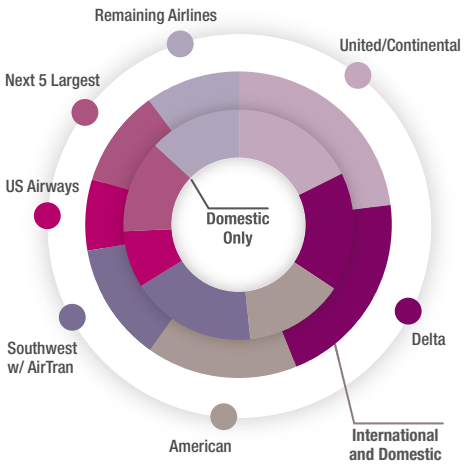


The market in North America is more consolidated

2000



2010



After several years of negative income, airlines in the region have benefitted from a modest return to positive net income figures in 2010, due to the growth in GDP, and fall in fuel prices from 2008's spike. LCCs in North America saw the smallest decline in profit margins through the downturn and the fastest return to profit. IATA projects global net profits to be lower in 2011 than 2010, although North America is projected to earn the second largest net profit after the Asia-Pacific region

Airport congestion has been a continuing issue within the North American market, even with a decline in the number of departures over the last five years. Within the United States, the Federal Aviation Administration (FAA) has examined several options to increase the capacity of airports, through both physical expansion and next generation Air Traffic Management (ATM) systems. The FAA's NEXTGEN ATM system is expected to increase the capacity of existing airports, through optimised flight plans and a reduction in delays at airports. This expected to have significant cost saving advantages to airlines, specifically through fuel consumption savings. The FAA predicts a potential reduction of around 1.4 billion gallons of jet fuel, which would equal $3.82 billion in savings at 2011 Q1 average per gallon fuel costs and 14.3 metric tonnes of CO_2. Privatisation of airports has also been considered as a way to increase available capital for airport expansion. The privatisation process has been slowed by the recent recession, but studies are on-going as to how to progress.

US Open Skies Agreements and Canadian Blue Skies Policy were put in place to further liberalise the airline markets for North American airlines and foreign airlines active in the region.

Some 85% of Canada's international air traffic and 70% of US's international traffic is covered under either Blue Skies or Open Skies agreements. In 2010, the second stage of the European Union – United States Open Skies Agreement was signed allowing for even greater liberalisation between US and Europe. Thus far, this agreement has had little effect on traffic between the US and Europe although traffic between these two regions is expected to grow by an average annual growth rate of 4.1% over the forecast period. Future iterations of this agreement are expected to allow for greater foreign ownership of voting shares in US airlines by EU companies and EU airlines by US companies. This provision has the potential to increase available capital to these airlines, allowing for further investment in fleets and investment in networks through the respective regions and open the way for further consolidation

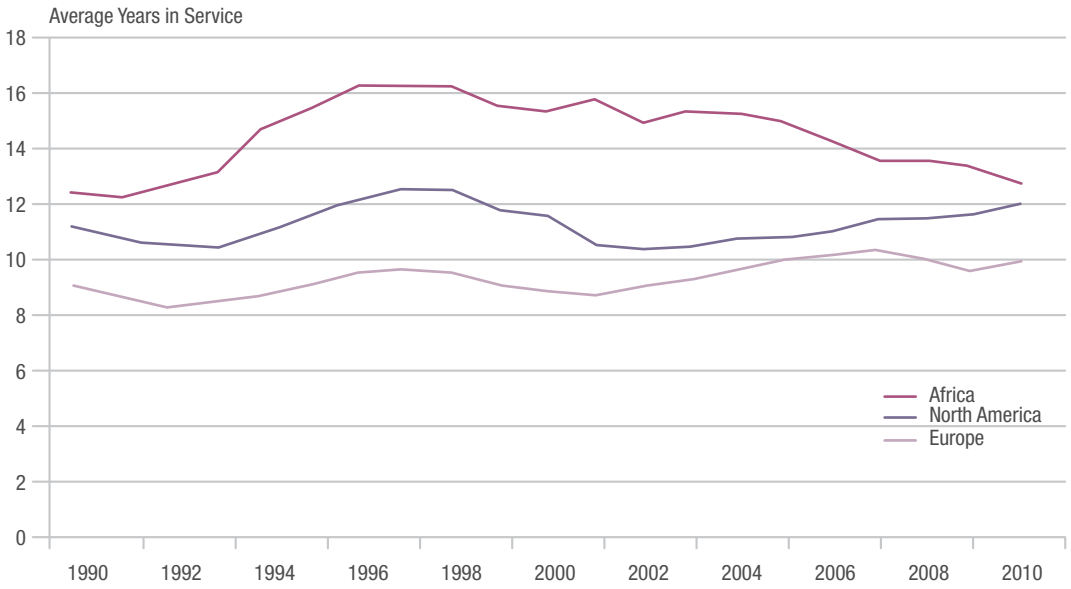
Over the next 20 years, Airbus forecasts that single-aisle aircraft will be the largest growth segment in this region, accounting for 84% of the 5,900 projected 100+ seat new deliveries over the forecast period. This as airlines look to replace older aircraft and expand fleet sizes. In 2010, the North American fleet consisted of ~1,660 old and mid-generation aircraft and ~2,360 new generation aircraft. Outside of Africa, North America has the oldest fleet of >100 seat aircraft with an average fleet age of 12 years, compared to Europe with 10 years and Africa with 13 years. In total, Airbus projects 5,900 new aircraft deliveries from 2010 to 2030 to North America.

Over the next 20 years, the LCCs in North America are expected to grow relative to global network carriers. From 1991-2010, 68% of delivered aircraft were to global network carriers

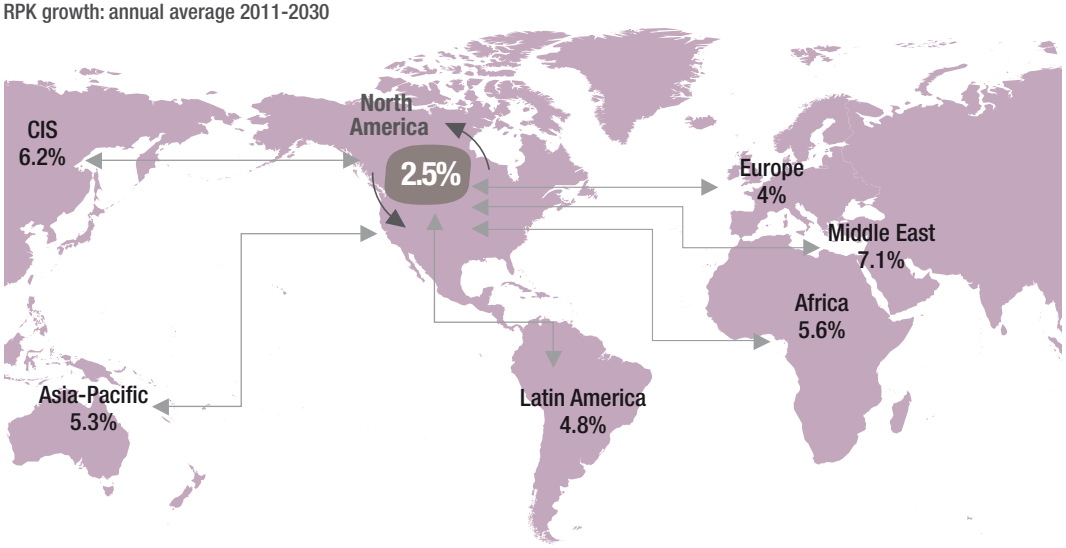
with only 25% delivered to LCCs. Whereas, from 2011-2030, Airbus projects 53% of deliveries in North America to global network carriers and 37% to LCCs. This due largely to the size and relative importance of the US domestic market in the region and the role the LCCs have developed in this market over the last 20 years. The North American as a whole is a relatively mature flow and the US domestic market remains as the largest single flow in the Airbus forecast. Largely due to its size and maturity, RPKs in the region will grow at 3.7% from 2010 to 2030, compared to the world annual average of 4.8%. Domestically, the market is expected to grow at 2.5%, which will lead to an overall decline in its share of the global market from 19.4% to 12.3%. Even at 12.3%, the North American domestic market will continue to be the largest single market through 2030. Much of the growth in RPKs in the North American market is derived from international travel (4.8%).

The North America fleet is old compared to other regions: renewel has started

Average Regional Fleet Age



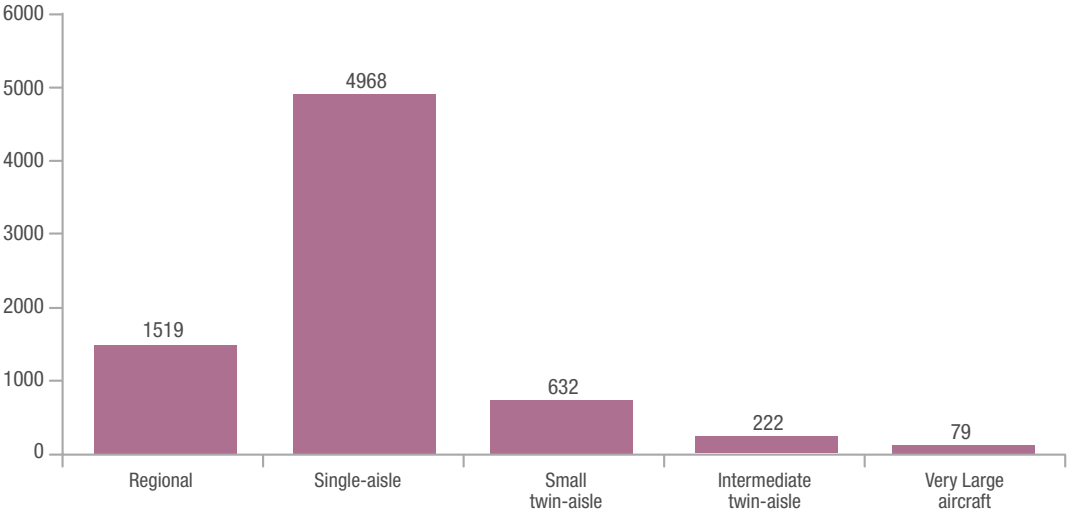
RPK growth: annual average 2011-2030



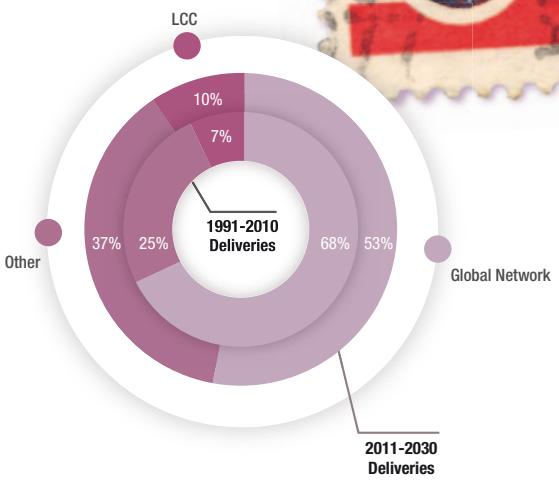
North America			World		
2011-2020	2021-2030	20-year growth	2011-2020	2021-2030	20-year growth
4.0%	3.5%	3.7%	5.4%	4.3%	4.8%

Passenger aircraft >100 seats (excluding freighters)

Number of new aircraft



Source: Airbus GMF 2011



North America Traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	4.0%	3.7%
Domestic & intra-regional traffic	2.7%	2.5%
International traffic	5.2%	4.8%
North America Fleet in-service & deliveries	2010 Fleet in-service	Deliveries 2011 - 2030
Passenger (≥100 seats)	4,025	5,901
Passenger (≤100 seats)	2,663	1,519
Total Aircraft	6,688	7,420

The Middle East

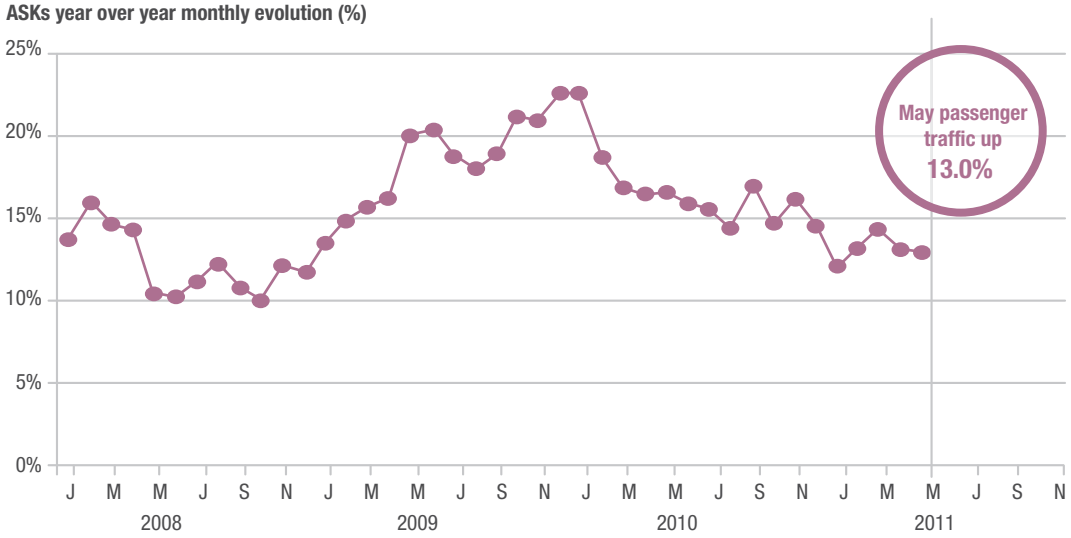
Aviation is at the heart of the region's plan for future economic growth. This been characterised by huge infrastructure investments and airport expansion. High air traffic growth benefiting from a liberal open skies policy has created the need for greater expansion to meet the regional goal of becoming the world's number one global aviation hub. According to Dubai airports, $7.8 billion will be spent on an airport and airspace expansion programme, boosting capacity at Dubai International from 60 million to 90 million passengers per year by 2018.

A look at the geographical location of the region clearly illustrates a special and unique position, lying between three major continents having the highest share of world's population. The region recognizes the importance of connectivity through air travel in this geocentric location. Because of this the region is now one of the most connected in the world.

IATA has reported that despite political unrest, that affected the region in the first quarter of 2011, the aviation industry has shown growth in scheduled international traffic from 2010 to 2011 over this period. As a result of this and the global economic situation, the short term economic outlook for 2011 GDP growth has been reduced, projected at 3.9% for the region as a whole, down from 5.3% anticipated before these events. However, as a consequence of increasing oil and natural gas prices, some key customer countries are enjoying improved 2011 economic prospects: Saudi Arabia (from 4.5% GDP growth up to 5.7%), Qatar (from 14.3% GDP growth up to 16.9%), United Arab Emirates (from 4.5% GDP growth up to 5.1%).

Middle Eastern airlines are still enjoying 2-digit traffic growth

ASKs year over year monthly evolution (%)



Source: Airbus

The Middle East: an air traffic crossroads of global importance

Air traffic crossroads of global importance

Source: Airbus, OAG

Despite the uncertainty in 2011 surrounding the civil unrest in the MENA region, The Middle Eastern travel market is still expanding at an impressive rate. By focusing on hub traffic rather than domestic or intra-regional traffic, Middle Eastern airlines are enjoying double-digit traffic growth (13% capacity growth in May 2011). The Gulf airlines have built a strong reputation of connectivity and are leading this strategy. For example, from 1999 to 2008, air traffic passengers in Dubai and Abu Dhabi have increased by more than 300%. Both cities offer transiting visitors high quality hotels, museums, resorts and other attractions. These developments will provide an opportunity for tourism and relaxation between connecting flights should the passenger desire. Since the establishment of the United Arab Emirates, Dubai has developed a special identity as a financial and luxury tourism center globally. Abu Dhabi, has developed a plan to create a knowledge-based economy. This strategy articulated in the Abu Dhabi 2030 Vision focuses on further developing their higher education system and developing an innovation-based society. The main purpose of this strategy is to ensure that graduates will remain rather than travel abroad looking for opportunitis and can therefore further contribute to the economy.

2022: Qatar to be center of the football world

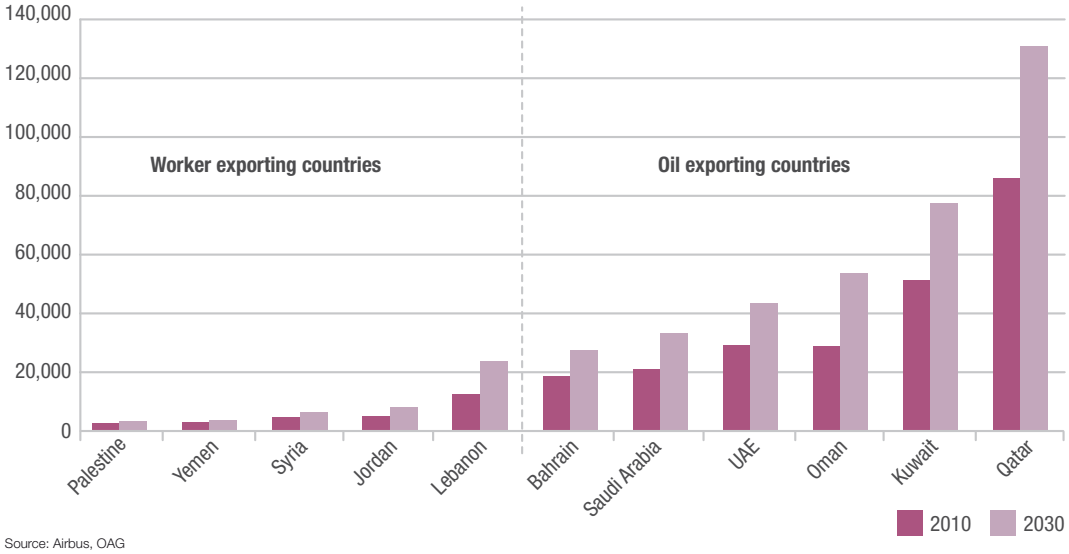
Qatar, the wealthiest country in the Middle East and ranked fifth in the world in terms of per capita GDP, is putting significant resources into tourism investments and aviation. The Qatar Tourism Authority is focusing on promoting Qatar as a destination for large events, exhibitions and meetings. In December 2010, the country won the right to host the 2022 World Cup creating a great opportunity for development. It is spending billions to build stadiums, roads, hotels and bridges in order to prepare not only for this event, but also after. For example, the hotels will be designed in such a way that they can be used later as serviced apartments and the stadiums such as financial centers. This event will, certainly give Qatar a fantastic opportunity to launch itself as a tourist destination and as a host nation for other important exhibitions and meetings. To cope with the high future demand, investment in both airport expansion and wide-body aircraft will be required. The New Doha International Airport (NDIA) will be designed and built specifically for the Airbus A380 – the largest passenger aircraft ever built. The airport is expected to be fully operational after 2015.

Domestic and intra-regional market also an opportunity

Labour mobility between Arab countries, population age and tourism are contributing to rapid growth in domestic and intra-regional transport, and acting as a stimulus to the development of new Low Cost operations in the region. One of the main purposes of travel in the Middle-East is to visit family-members abroad. Intra-regional migration and labour mobility have a long tradition and history in the Middle Eastern region, this developing after the oil boom of the 1970s. This mobility often occurs from non-Gulf Cooperation Council (GCC) countries, such as Syria, Lebanon, and Jordan, to countries in the GCC such as the UAE, Saudi Arabia and Qatar.

This labour mobility is driven by population age and economics between non-Gulf countries exporting workers yo oil-exporting countries in the GCC.

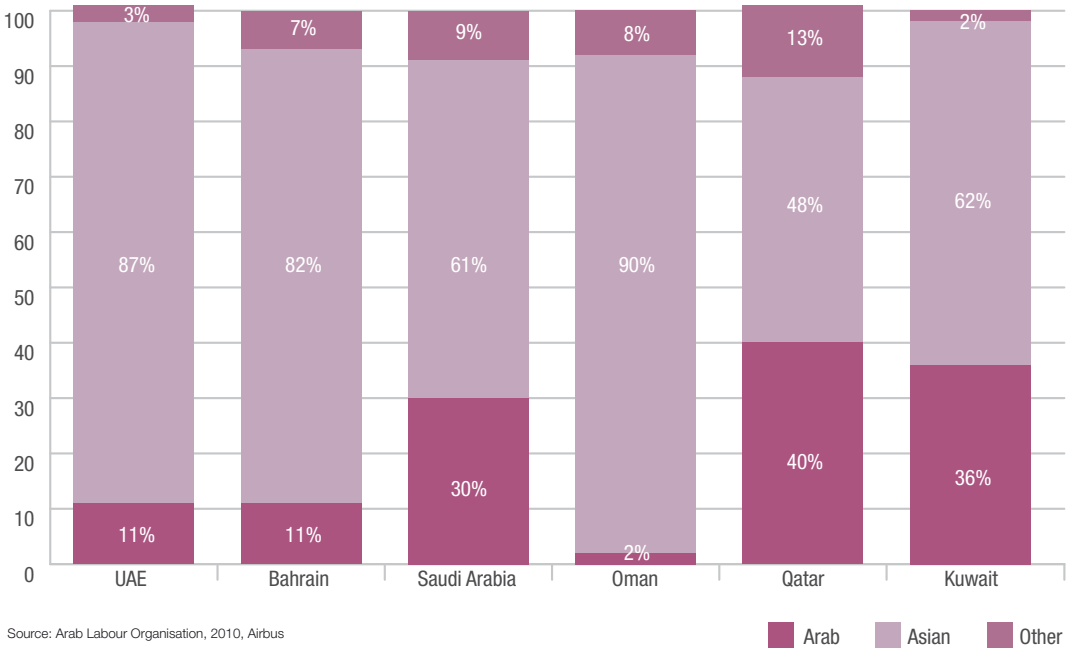
There is an economic differential between worker exporting countries and oil exporting countries



Source: Airbus, OAG

Labour mobility is still one of the most important drivers of the regional economic development. Remittance flows, for instance, represent the largest source of foreign exchange for a number of countries in the region, such as, Lebanon, Jordan and Syria. According to the Arab Labour Organisation, the labour market in GCC countries has an average of 66% of foreign workers (92% in the UAE, 76% in Bahrain, 51 % in Saudi Arabia, 74% in Oman, 62% in Qatar and 82% in Kuwait). A fact that will continute to stimulate new air travel in the future.

Percentages of Arab and non-Arab workers in the GCC, 2007-2008



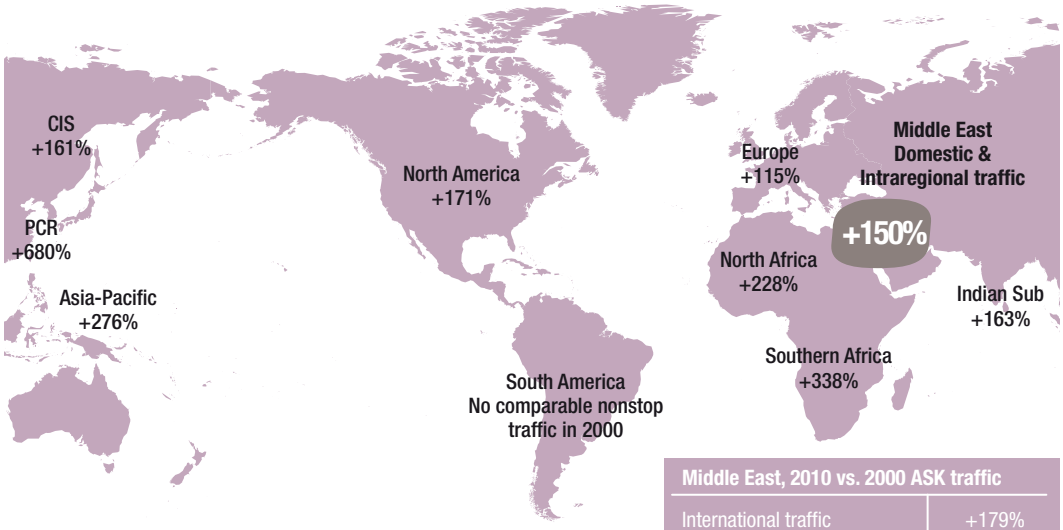
Source: Arab Labour Organisation, 2010, Airbus

Young people also represents a large proportion of the overall population as well as new air travelers in the Middle East. Today, this youthful region is taking a more strategic approach to shaping and creating new economic opportunity through job creation and spending more on education. According to the World Bank, Middle Eastern countries spent approximately 5% of their GDP on education compared to 3% in East Asia and Latin America. Education will increasingly give young people from the region greater access to labour markets, within the Middle East and in the wider global market, increasing both domestic, intra-regional and international air travel.

Since 2000, capacity to, from and between the Middle East has grown an impressive 175%, however, to and from China it has grown nearly seven times. However what is often overlooked is the fact that traffic within the region has grown 150% over the same period. Traffic driven by the increasing need and ability of the people of the Middle East to travel within their region.

Traffic to and from the Middle East 175% above 2000 levels

ASK growth from/to Middle East per global region, 2010 vs. 2000



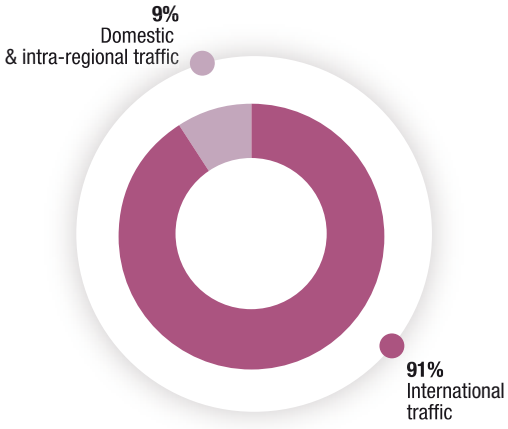
Middle East, 2010 vs. 2000 ASK traffic	
International traffic	+179%
Intra-regional and domestic traffic	+150%
Total	+175%

Passenger aircraft ≥100 seats (excluding freighters)

Source: Airbus

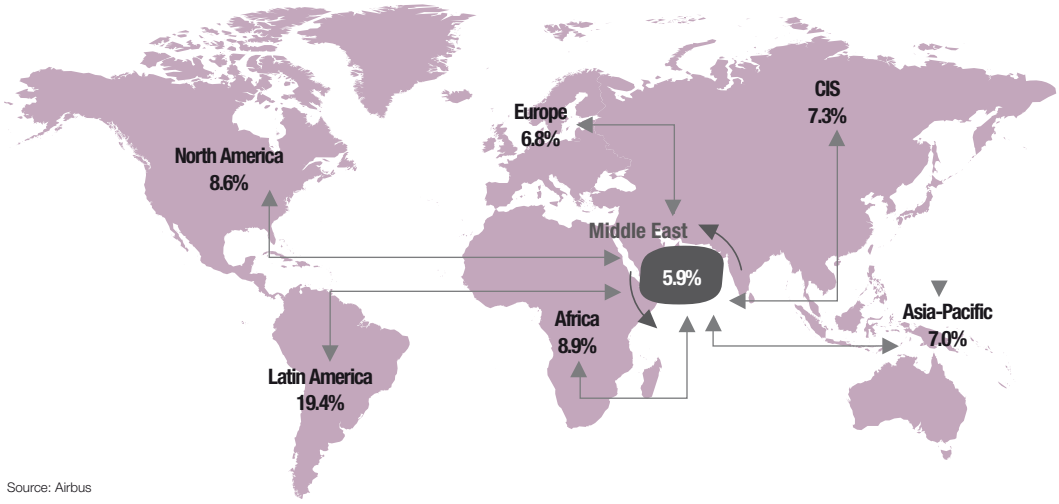
International traffic has been a key driver

During the next twenty years, the inter-continental network will grow rapidly as new routes are added and operations expand, this is forecast to grow by 6.5%, over the forecast period. In addition, the traffic between Latin America and the Middle East is projected to grow by 19.4% over the next ten years. For example, new routes linking Brazil with the UAE and Qatar, were added in 2008 and 2010 respectively. Therefore, more long and medium range capacity will be needed, resulting in the passenger aircraft fleet (>100 seats) in the region to more than double by 2030.



The region will sustain very strong traffic growth

RPK growth: annual average 2011-2020



Source: Airbus

Middle East traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	7.6%	6.4%
Domestic & intra-regional traffic	5.9%	5.1%
International traffic	7.7%	6.5%
Middle East Fleet in-service & deliveries	**2010 Fleet in-service**	**Deliveries 2011 - 2030**
Passenger (≥100 seats)	818	1,882
Passenger (≤100 seats)	72	91
Total Aircraft	890	1,973

Source: Airbus

Latin America and the Carribean "Air Dorado"

Economy & airline business status

Latin America has some of the most profitable airlines in the world. According to IATA, it is the only region in the world where airlines enjoyed profitability over the last three years: $500 million in 2009, $1 billion in 2010 and $300 million expected in 2011. Strong economic growth, market liberalization, and industry consolidation have helped drive these positive results.

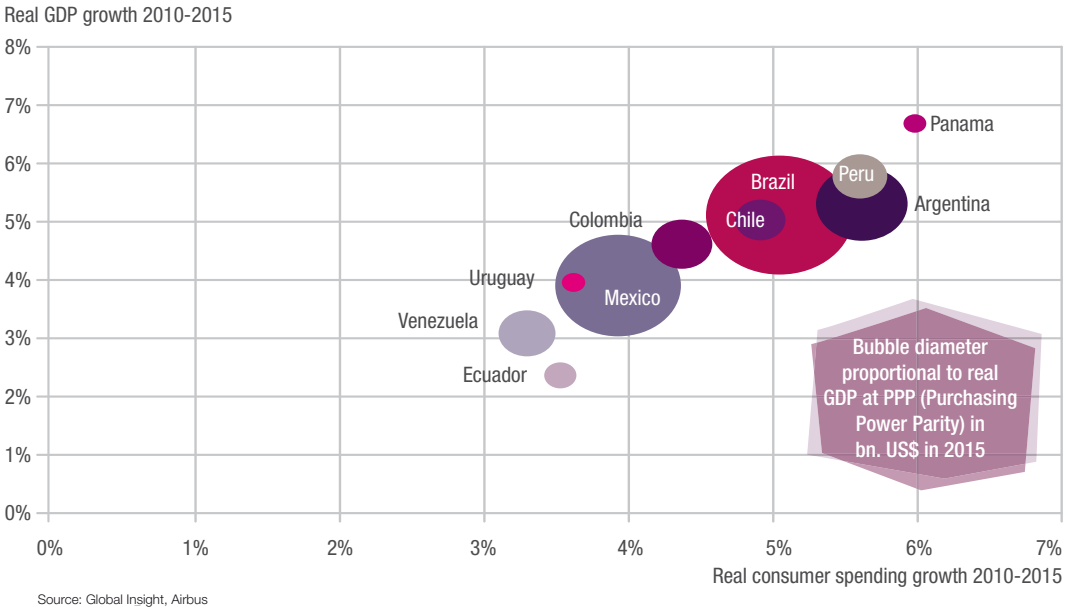
While Latin America, like other regions was impacted by the global economic crisis, the region achieved a fast and strong recovery. Driven by South America, Latin America's economy expanded at 5.8% in 2010. High commodity prices, easy external financing conditions, and accommodative macro-economic policies stimulated domestic demand. However, Central America's strong dependence on the slower recovering United States economy is still constraining its rebound: eg United States is the destination of 80% of Mexican exports.

According to the IMF, Latin America's Gross Domestic Product (GDP) is expected to slow to 4.5% in 2011, and to converge towards its 4% potential over the next two years. This moderation will result from the tightening monetary policies in the region, and the balanced impacts of sluggish growth in Europe and positive outlook for North America.

Major merger initiatives such as Avianca-TACA, or the LAN-TAM proposal are clear signs of a dynamic industry preparing for the growth and challenges of the coming decades. In order to understand the scale of this activity, the resulting airline from a LAN-TAM merger would rank third within the world's top airlines by market capital, with a combined market capitalisation of US$12 billion according to IATA. Other airlines in the top five are all in Asia-Pacific region.

Peru, Argentina, Brazil and Chile will be Latin America's driving forces for growth

Growth of real GDP at consumer spending 2010-2015



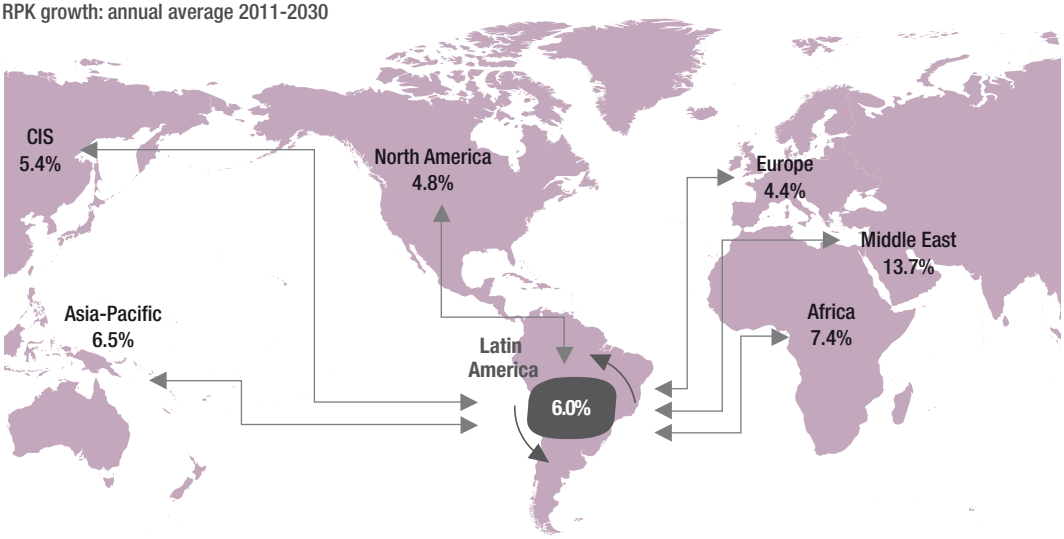
Source: Global Insight, Airbus

Traffic

At 5.4% per annum, the traffic growth forecast for Latin America over the next 20 years is well above the world average. This growth will be driven by the intra-regional and domestic traffic, taking benefit from the economic dynamism of the region, opening the access to air transport to a large part of the Latin America's population. The rapid development of low cost carriers, which over the last decade achieved a 33% market share on the domestic and intra-regional traffic, has and will be another efficient catalyst for growth.

Continuing the trend observed over the last decade, international traffic will experience outstanding growth over the period on the south-to-south flows, while north-to-south flows will remain closer to the world average.

RPK growth: annual average 2011-2030



Latin America		
2011-2020	2021-2030	20-year growth
5.9%	4.8%	5.3%

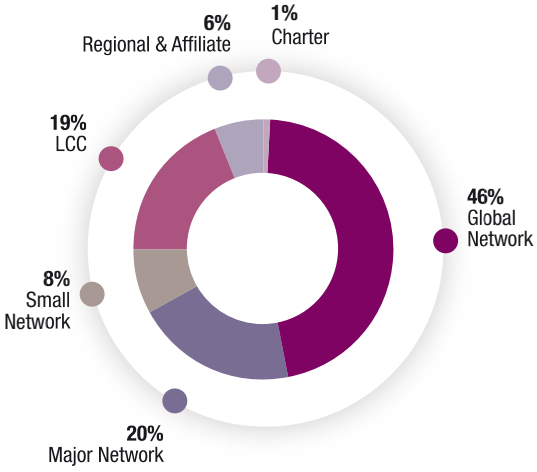
World		
2011-2020	2021-2030	20-year growth
5.4%	4.3%	4.8%

Source: Airbus

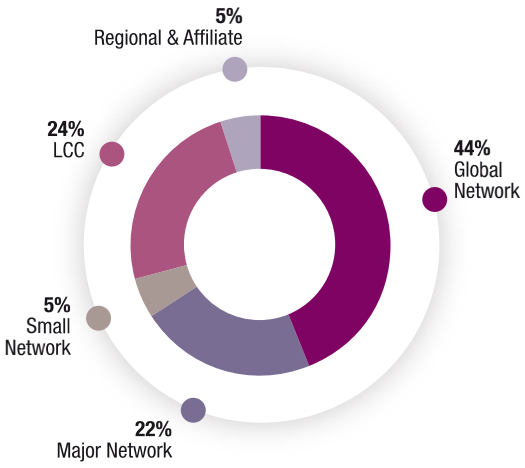
Passenger aircraft≥100 seats (excluding freighters)

Traffic share per airline type (RPK)

Fleet at end 2010



Fleet at end 2030



Includes regional aircraft.

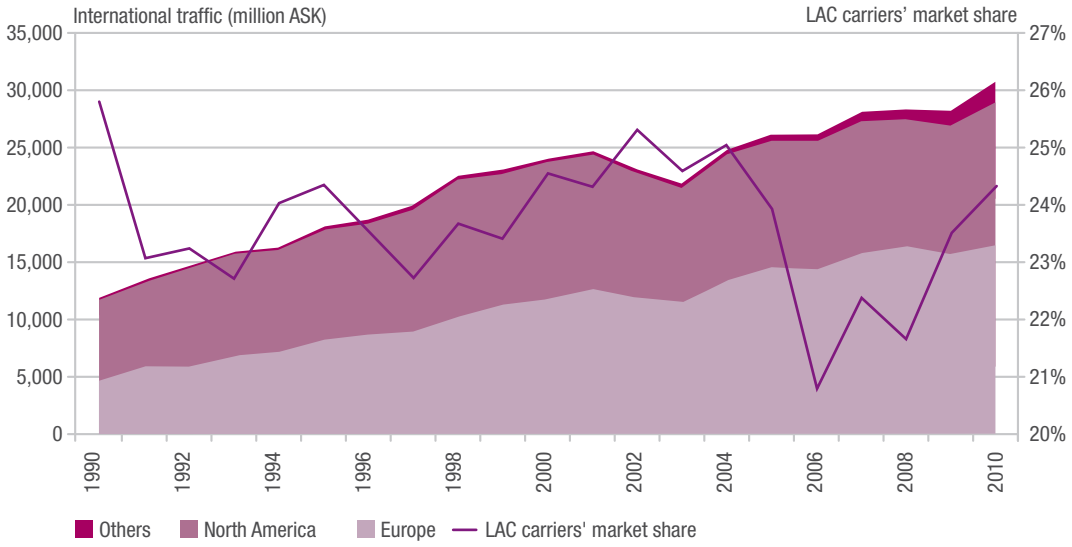
Source: Airbus

Inbound tourism has been and will continue to be a major catalyst of traffic growth (including intra-regional and domestic traffic), with an average annual increase of 3.5% per annum since 1992. The industry resisted the effects of the crisis well, and recovery was particularly impressive in South America with arrivals up 11% in 2010, as reported by the UNWTO (United Nations World Tourism Organization): "Argentina (+23%) was the star performer, followed by Uruguay (+16%), Ecuador (+8%), Brazil and Peru (both +7%). Results were boosted by strong intra-regional demand, with Brazil as one of the fastest growing source markets and now ranking as the third largest outbound market in the Americas by expenditure.

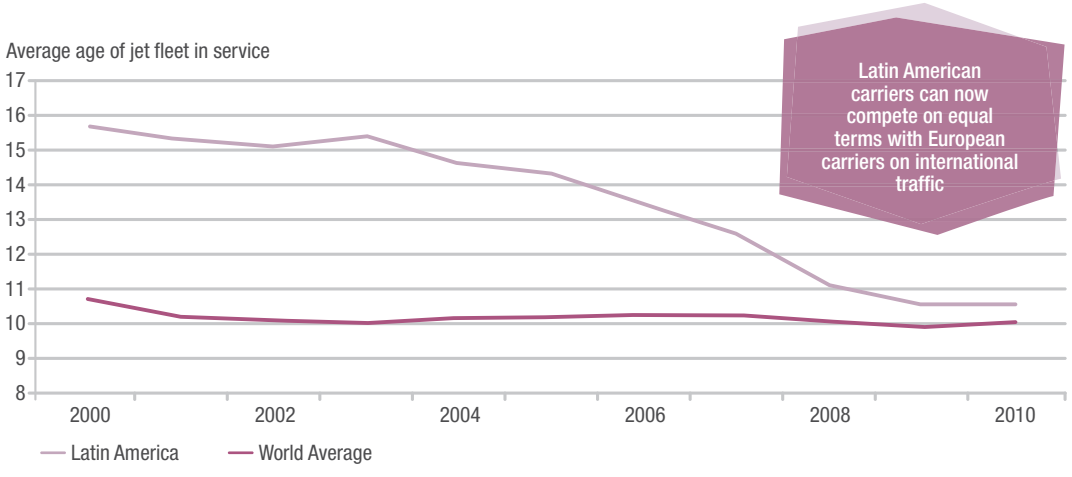
Whist still below 25%, the Latin American carriers' share of the international traffic has started a rebound in the last four years. Ongoing market consolidation and a modern fleet are key elements to ensure Latin American carriers competitiveness on these flows.

Strong growth of Latin America int'l traffic, LAC* carriers share rebounding but still below 25% in 2010

Market share of LAC carriers on international traffic**



* Latin American Carriers **Includes Asia-Pacific, Africa, Middle-East & CIS
Source: OAG (data as of September for each year), Airbus

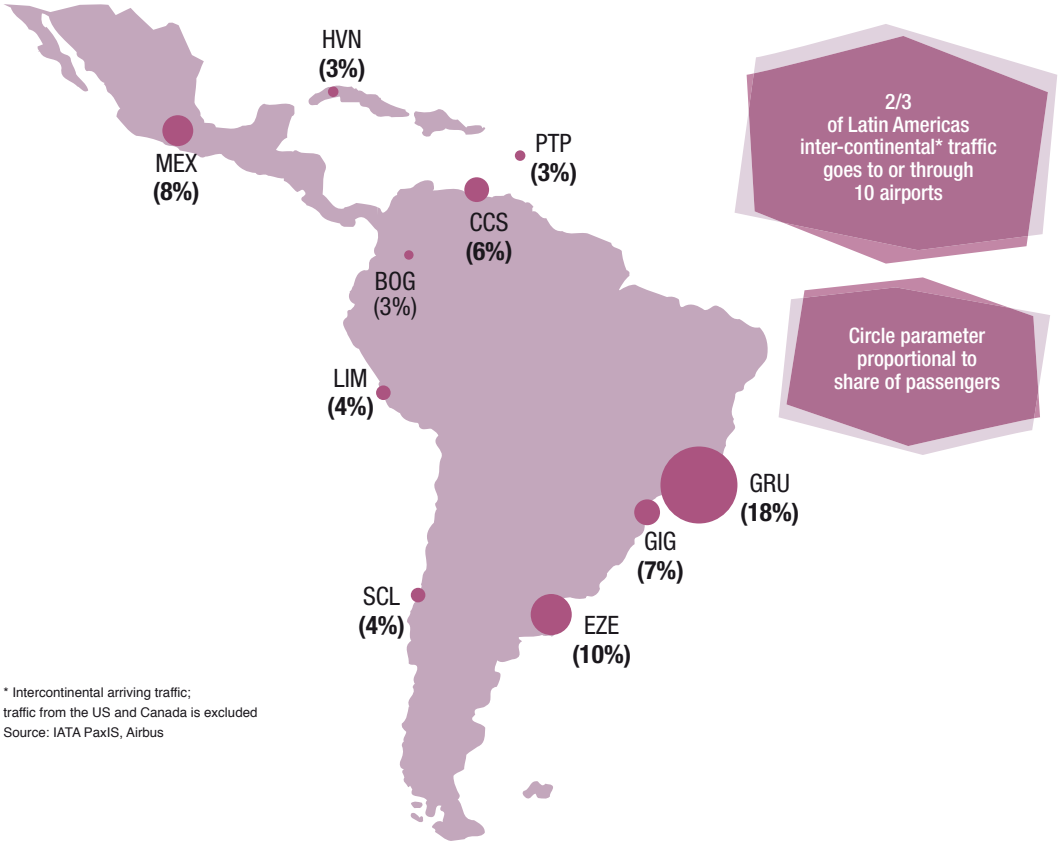


Source: Airbus

Airport infrastructure

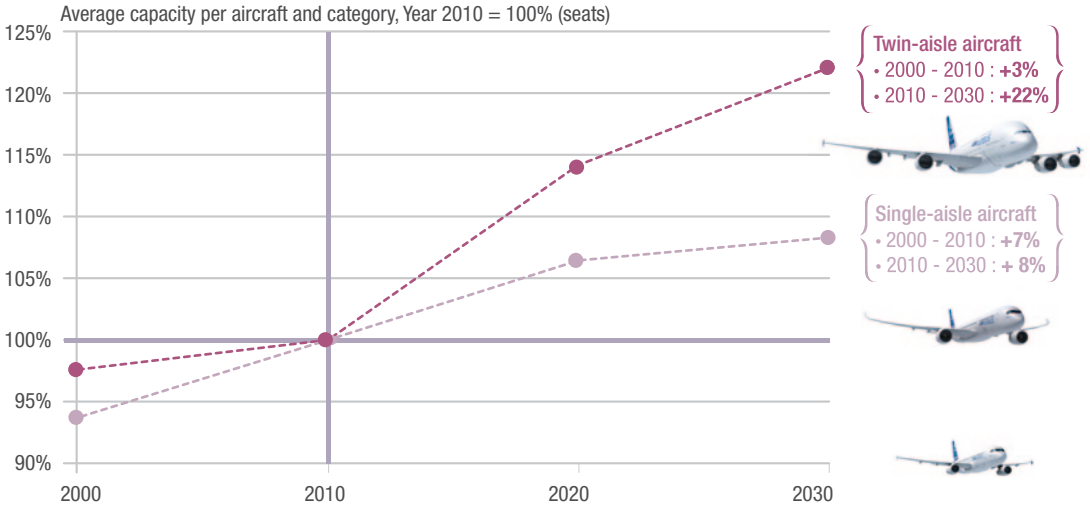
Sao Paulo, which handles 25% of Brazil's air traffic, is today the only airport in Latin America facing critical congestion issues. Still, Latin America's international traffic is heavily concentrated on a very few airports: two thirds of the inter-continental traffic goes to or through just 10 airports. In general it is felt that airport infrastructure in the region will need greater investment in modernisation in order to meet forecast growth.

Share of arriving passengers* to Latin America per entry airport (09/2010)



* Intercontinental arriving traffic;
traffic from the US and Canada is excluded
Source: IATA PaxIS, Airbus

Development of average aircraft capacity observed over 2000-2010 and forecasted for 2010-2030

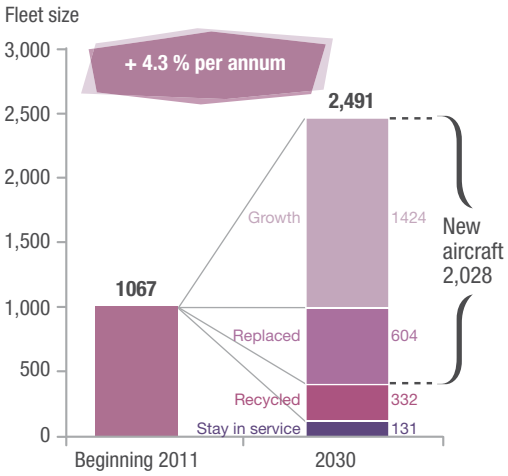


Passenger aircraft ≥100 seats
Source: Ascend, Airbus

Fleet and deliveries

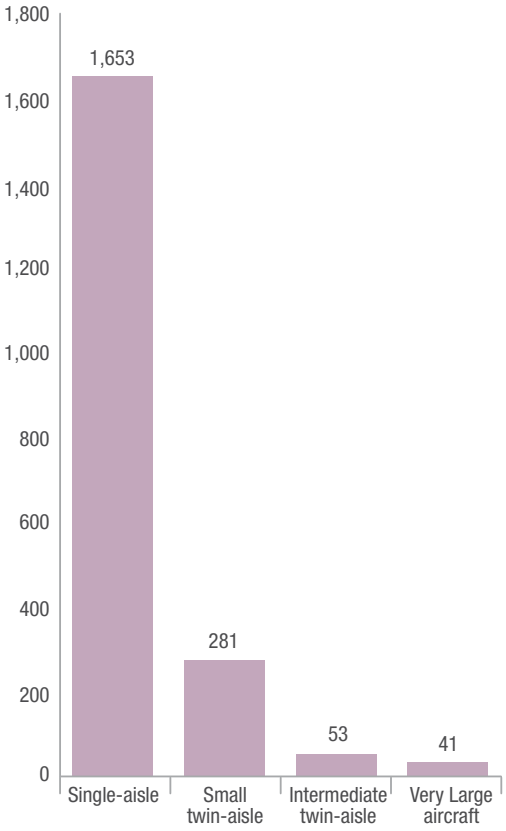
The average aircraft capacity in the region consistently increased over the last ten years. Forecasted market consolidation and growth, considering the highly concentrated airport topology, are clear indicators that this trend will continue.

As a result of the forecast traffic growth in the region, Airbus predicts a demand for 2,360 new and used passenger aircraft with over 100 seats in Latin America, resulting in more than doubling the fleet from 1,067 aircraft to 2,491 over the next 20 years.



Passenger aircraft ≥100 seats (excluding freighters)

2011-2030 new passenger aircraft deliveries



Passenger aircraft ≥100 seats (excluding freighters)
Source: Airbus GMF 2011

Latin America Traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	5.9%	5.3%
Domestic & intra-regional traffic	6.6%	6.0%
International traffic	5.5%	5.3%
Latin America Fleet in-service & deliveries	**2010 Fleet in-service**	**Deliveries 2011 - 2030**
Passenger (≥100 seats)	1,067	2,028
Passenger (≤100 seats)	661	480
Total Aircraft	1,728	2,508

Columbia: ready to take off!

Quoting Colombian President Juan Manuel Santos when announcing Colombia is ready to join the OECD: «Colombia is ready to take off toward new horizons!»

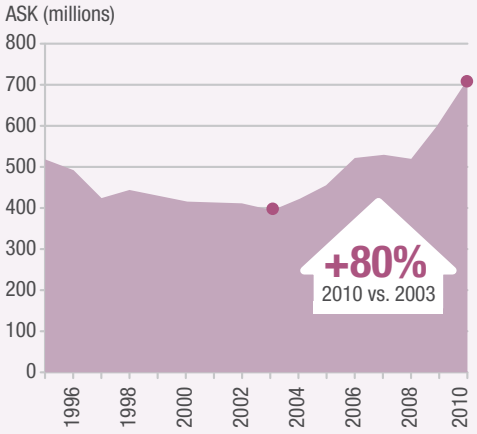
Looking back at Colombia's last decade is indeed impressive. By 2003 the country was close to being labeled a "failed state". Only eight years later, Colombia is now part of the "beyond-BRIC" list of countries: the best candidates to become tomorrow's world growth engines.

During the same period, the country has maintained strict and market oriented reforms, enabling Colombian exports to triple and foreign direct investment (FDI) to grow four fold. Columbia even managed to secure moderate growth during the global crisis, proving its economic sturdiness. Unemployment remains the next challenge to be overcome.

While security and external image improve, Colombia is revealing its extraordinary touristic potential. Across its million square kilometers, separating the Caribbean from the Pacific, Colombia presents a rich cultural patrimony and contrast landscapes, from rain forest to the Andes.

The Colombian business travel market is emerging aslo, together with striking improvements in the business climate, and good prospects, particularly in the oil and mining sector.

Domestic Colombian traffic



Source: OAG (data as of September for each year), Airbus

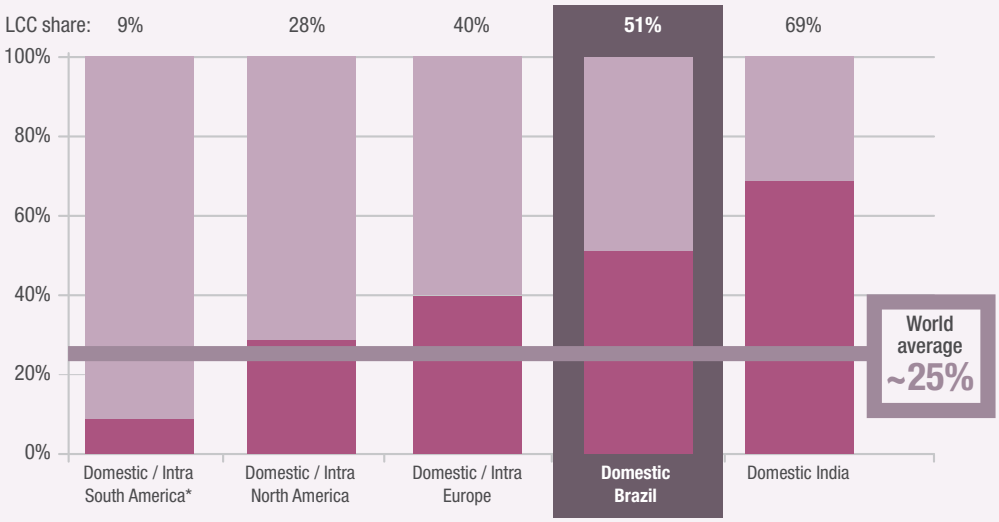
Brazil: football, now aviation, dynamic and exciting

According to IHS Global Insight, Brazil is on its way to become the fifth largest economy in the world in the next 5 to 10 years. Accordingly, Airbus sees Brazil as one of the top ten markets for new passenger aircraft in the next 20 years.

Overall, 2010 Brazilian traffic is 71% above 2000 levels, while domestic traffic more than doubled, boosted by the emergence of low cost carriers. While traffic flows to emerging countries are the growth frontrunners, dependence on North America is steadily decreasing.

Aviation is key to Brazil, as travel and tourism support 9.1% of the GDP and over 8 million jobs. In the next few years Brazil will host the FIFA World Cup and the Olympics. Important challenges must then be faced in the very short term. Jet fuel price is still about 15% higher than the regional average, with a medium long term focus on airport infrastructure and air traffic management modernization needed to meet its potential effectively

Market share of LCCs on different traffic flows (offered seats)



* Domestic South America excl. Domestic Brazil
Source: OAG 2010/09

CIS: More productive and more aircraft

With more than 22 million km² split between Asia and Europe (17 million km² and 5 million km² respectively), the Commonwealth of Independent States (CIS) is geographically the largest region covered in this 20-year market study. Such a vast expanse makes transportation within and between twelve nations a real challenge. Therefore, expanding the air transport network appears to be the quickest and simplest way forward in linking the countries and their people, both within this massive region, and with the rest of the world.

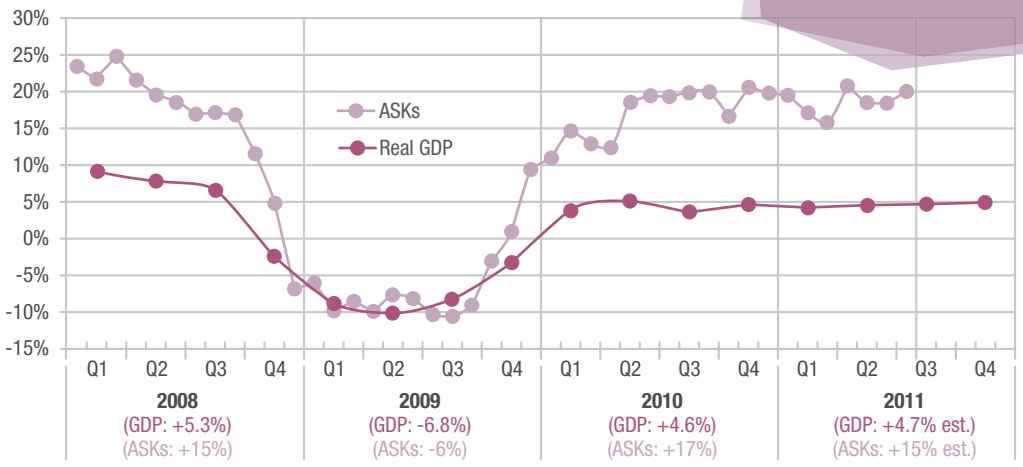
The economies of the CIS are gradually recovering from the deep recession which occurred in 2009, the effects of the global contraction having been more severe here than in other emerging markets. The CIS economy shrank a dramatic 6.8% in 2009, but recovered gradually in 2010 (4.6%) and in 2011 (~4.7% forecast). Passenger air traffic however, has risen much more strongly with 17% ASK growth in 2010, and a further 15% expected in 2011.

Recovering commodity prices, which are anticipated to remain high, are expected to trigger sustained growth in the value of the CIS exports in the short and longer term. As a result, the long term economic outlook in the CIS has been revised upwards compared with early 2009, in the middle of the financial crisis, expectations at 3.4% yearly average over the next 20 years (about a 10% upward revision by 2030).

Russia is the major economic player in the CIS, accounting for 75% of GDP in 2010, followed by Ukraine and Kazakhstan. Although Russia's share of the CIS economy is expected to slightly decrease to 73% by 2030, bat will remain the largest driver of the CIS economy.

GDP and passenger traffic development in the CIS

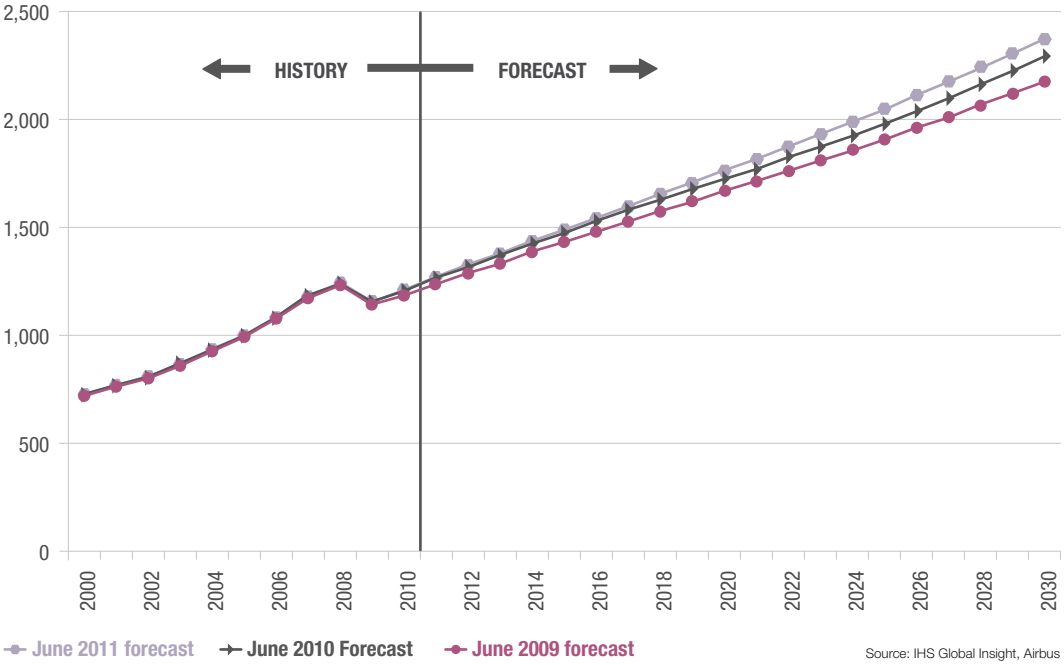
CIS real GDP and passenger offered capacity (year-over-year)



Source: IHS Global Insight, OAG, Airbus

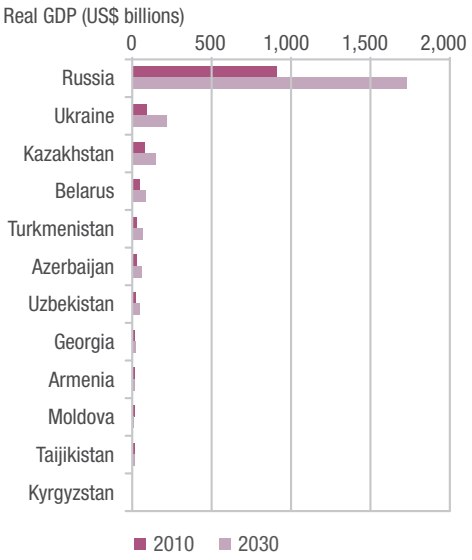
Improved long-term economic outlook in the CIS after the financial crisis

Real GDP (US$ billions)

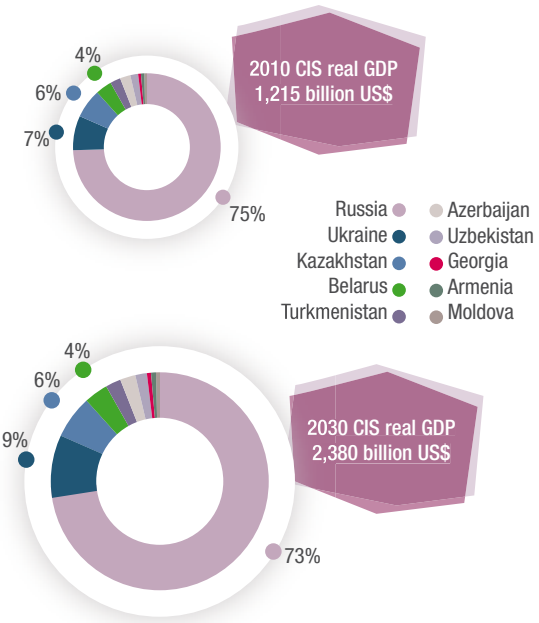


Source: IHS Global Insight, Airbus

Russia to remain the major economic player in the CIS



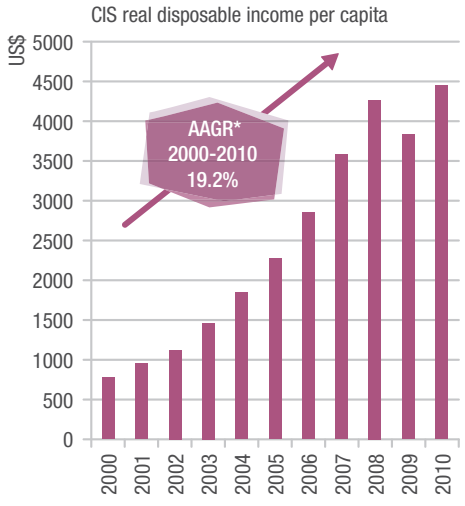
Source: IHS Global Insight, Airbus

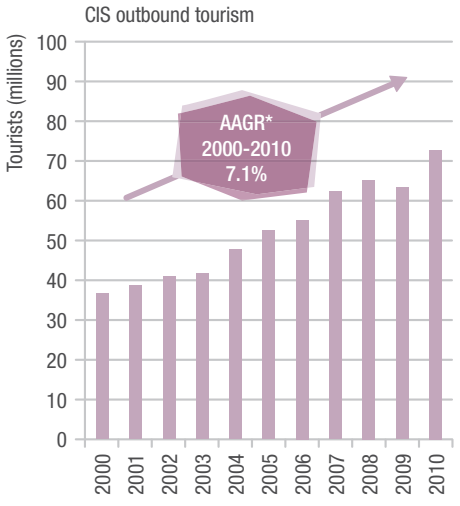


Over the last 10 years, CIS economic performance has been strong, averaging an annual growth rate of 5.3% from 2000 to 2010. This performance has been achieved through strong inflows of energy exports earnings, expansion in manufacturing and construction sector in parallel with booming domestic demand.

As a consequence of this strong economic growth, household real disposable income has risen, on average at 19.2% a year since 2000, cumulating an impressive compounded growth of 480% over the last 10 years. Thus, more and more CIS inhabitants have been able to afford travel abroad, generating a new wave of CIS outbound tourists, leading to a doubling of outbound tourism since 2000. As an example, Russia is now the fourth largest market in the combined Europe/CIS region in volume of trips abroad.

A new wave of CIS outbound tourists generated by booming disposable income





* Average Annual Growth Rate
Source: IHS Global Insight, World Tourism Organisation, Airbus

In order to accommodate strong demand for air transport and to build competitive strength, airlines in the CIS have realized they have to match the efficiency and productivity of other airlines. As a result, they have gradually taken delivery of western built eco-efficient and more productive aircraft. From 3% western built aircraft in service in CIS in 1994, the share has grown to 25% by 2005 and represented 77% of the CIS fleet in service by the end of June 2011. This replacement pattern has been very strong over the last 6 years, with more than three quarters of the in service fleet in the CIS currently western-built.

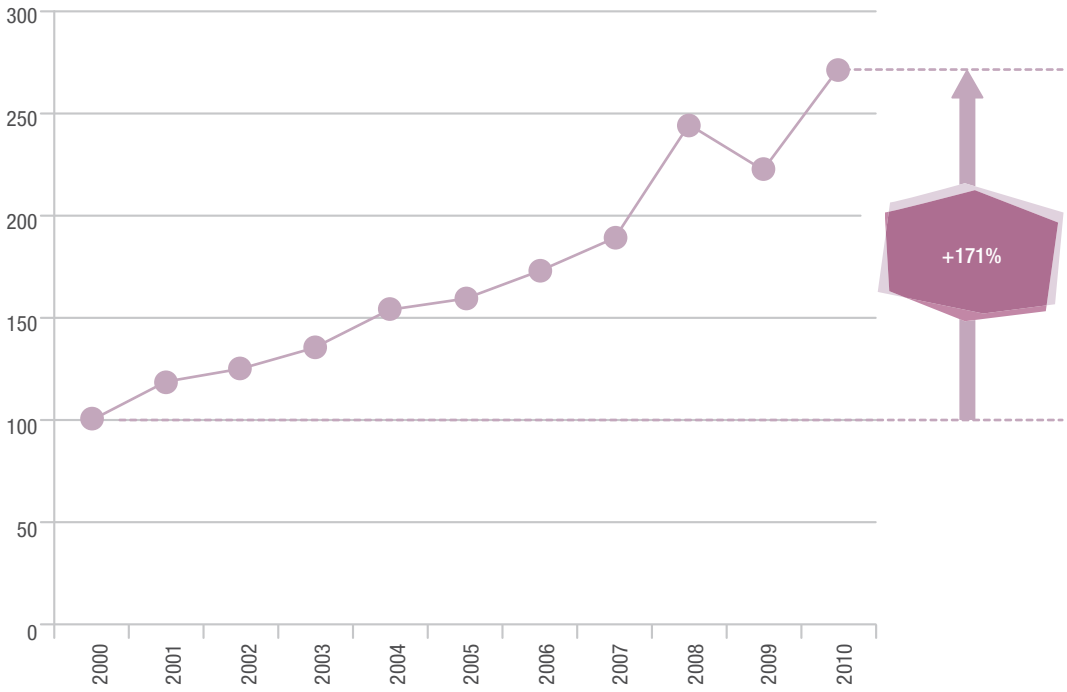
Building an index of CIS aircraft productivity, with a base of 100 in 2000, it appears that, on average, an aircraft in service in 2010 was much more productive than an aircraft in service 10 years earlier, generating 171% more RPKs, an outstanding improvement. The main explanation for this surge relates to improved airline operations with newer types.

Consolidation, with the potential emergence of trend setting airlines, will be an additional lever of increased market coverage and better operational efficiency resulting in productivity improvement.

This consolidation has already begun as shown by the number of scheduled carriers in the CIS region having decreased from 83 operators in 2000 down to 64 in 2010.

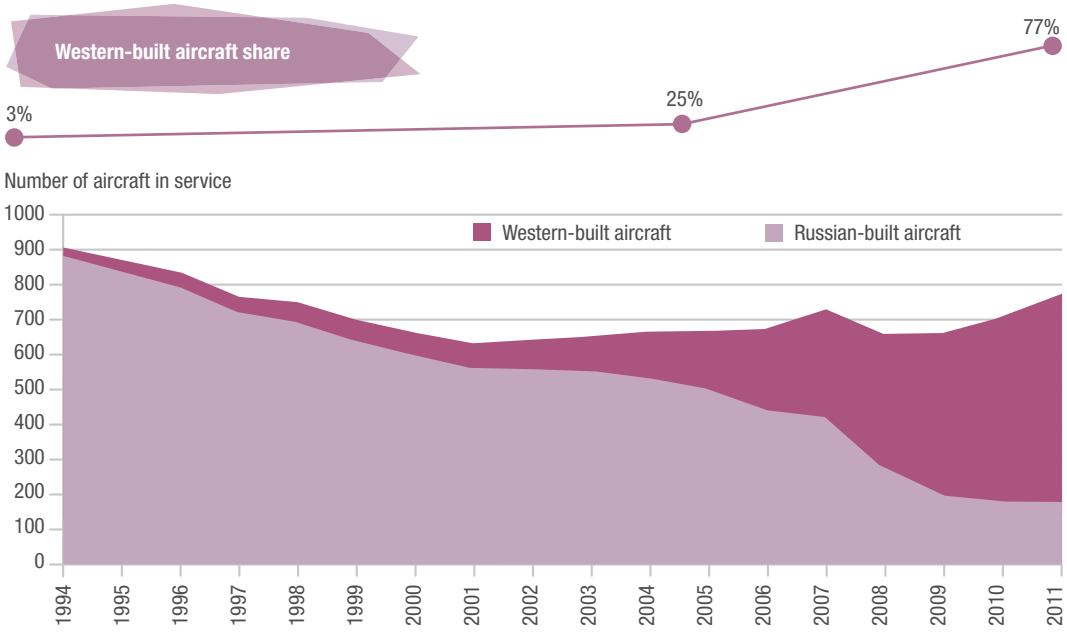
Strong productivity growth of the passenger fleet in service in the CIS

RPK per aircraft in service index
Index base 100 in 2000



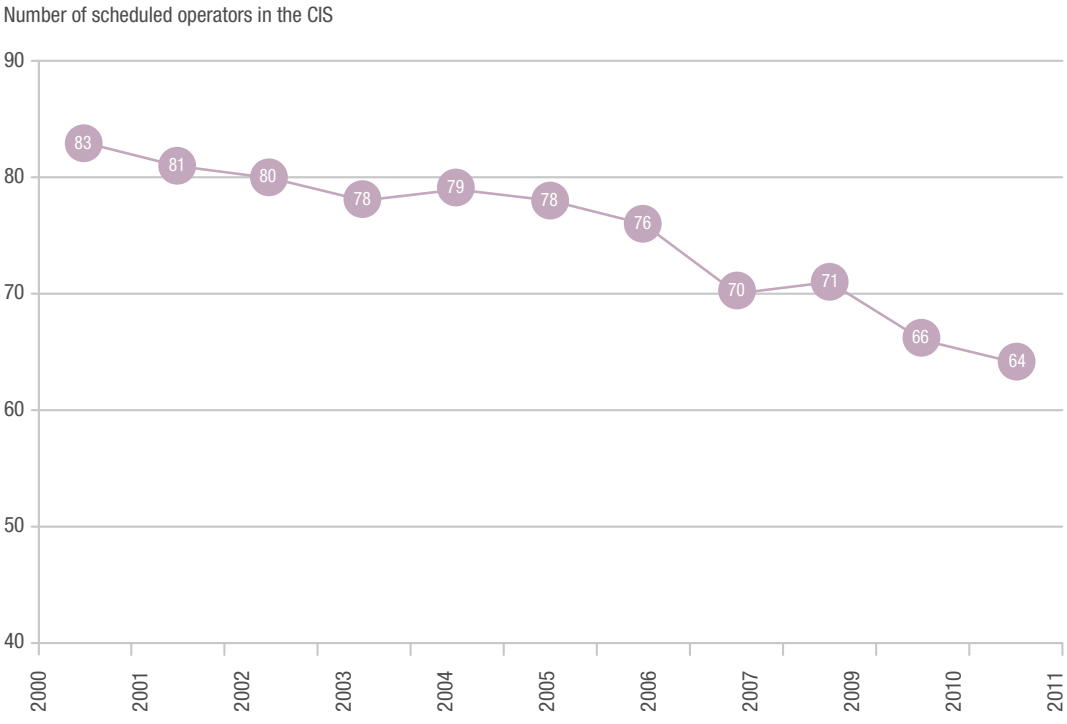
Source: Ascend, Airbus

Western-built aircraft now represent more than three quarters of the CIS fleet in service



Source: Ascend (passenger aircraft in service ≥100 seats, data as of December for each year except for June 2011), Airbus

Airline consolidation in the CIS also driving improved market coverage, better efficiency and productivity

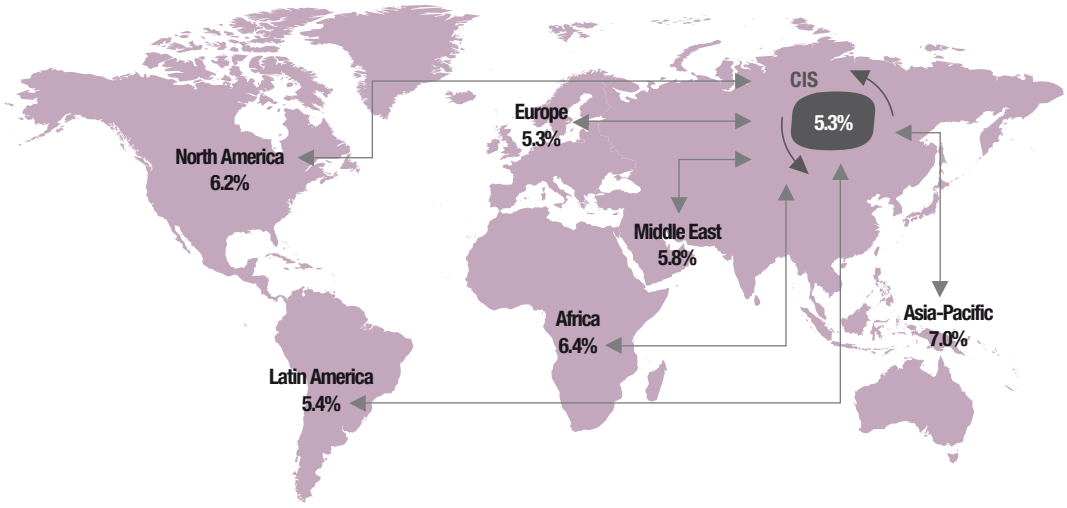


Source: OAG, Airbus

A growing regional economy, improving wealth, flourishing trade and tourism, greater efficiency through newer eco-efficient aircraft and more competitive airlines will drive a positive increase in CIS passenger traffic. Airbus forecast that revenue passenger kilometres will grow well above the world average, at 5.6% per annum over the next 20 years, with more significant growth of 6.4% over the next 10 years. Fuelled by domestic demand driven by long distances between cities and under-developed highway and rail systems, intra-regional traffic has the potential to grow at 5.3% per year. International markets are also expected to grow strongly. Traffic to Africa and North America will increase by 6,4% and 6.2% respectively while traffic to Asia-Pacific will rise by an impressive 7.0% per year.

Over the next 20 years, the CIS passenger fleet with more than 100 seats is expected to grow from 1,208 aircraft today to 1,945 by 2030. This is the result of strong passenger demand, which together with aircraft replacements particularly in the single-aisle market, will result in increased productivity levels as the region replaces its existing fleet with more efficient new built aircraft.

RPK growth: annual average 2011-2030

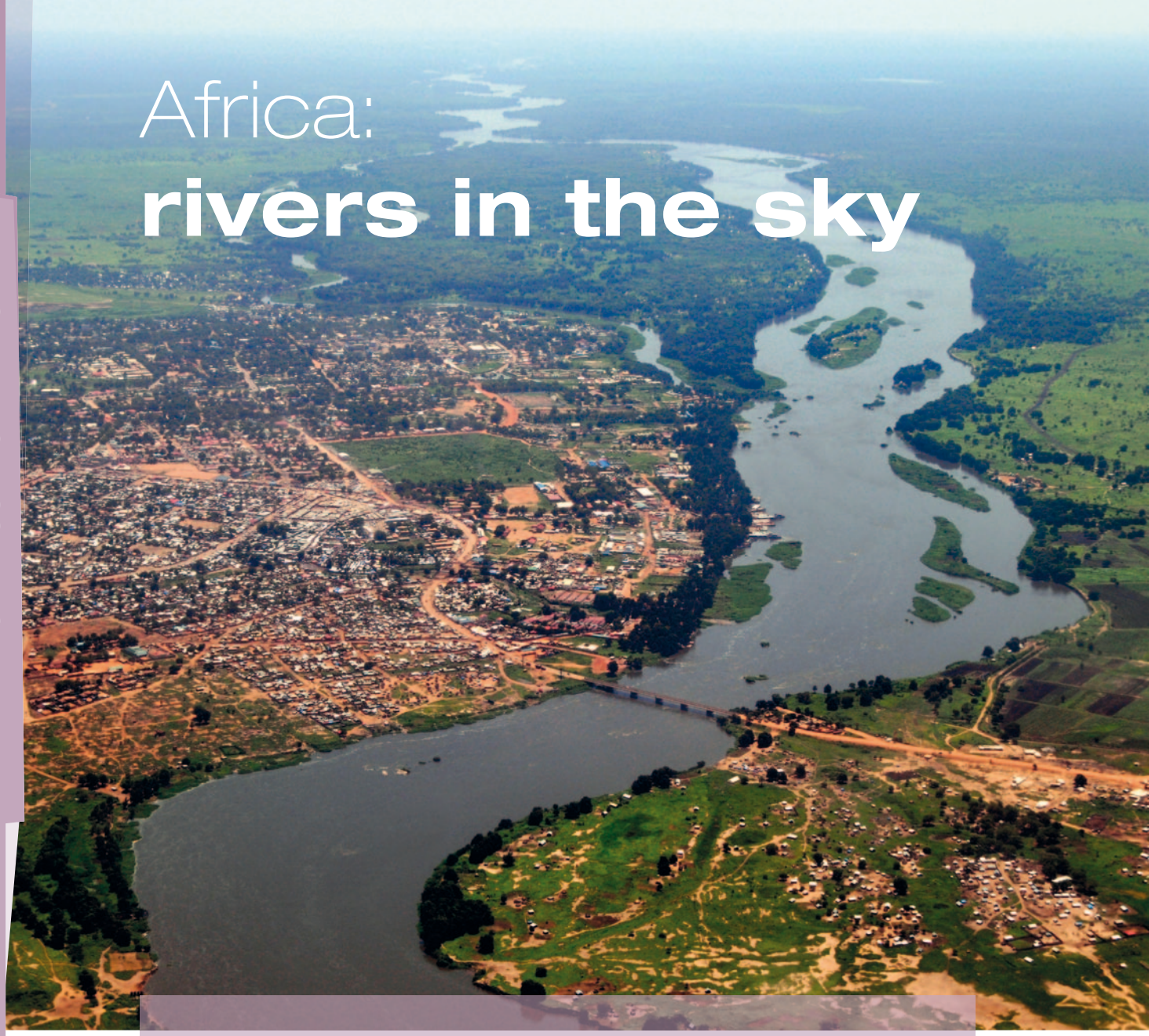


CIS		
2011-2020	2021-2030	20-year growth
6.4%	4.9%	5.6%

World		
2011-2020	2021-2030	20-year growth
5.4%	4.3%	4.8%

CIS Traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	6.4%	5.6%
Domestic & intra-regional traffic	5.8%	5.3%
International traffic	7.0%	5.9%
CIS Fleet in-service & deliveries	2010 Fleet in-service	Deliveries 2011 - 2030
Passenger (≥100 seats)	715	899
Passenger (≤100 seats)	493	332
Total Aircraft	1,208	1,231

Africa: rivers in the sky

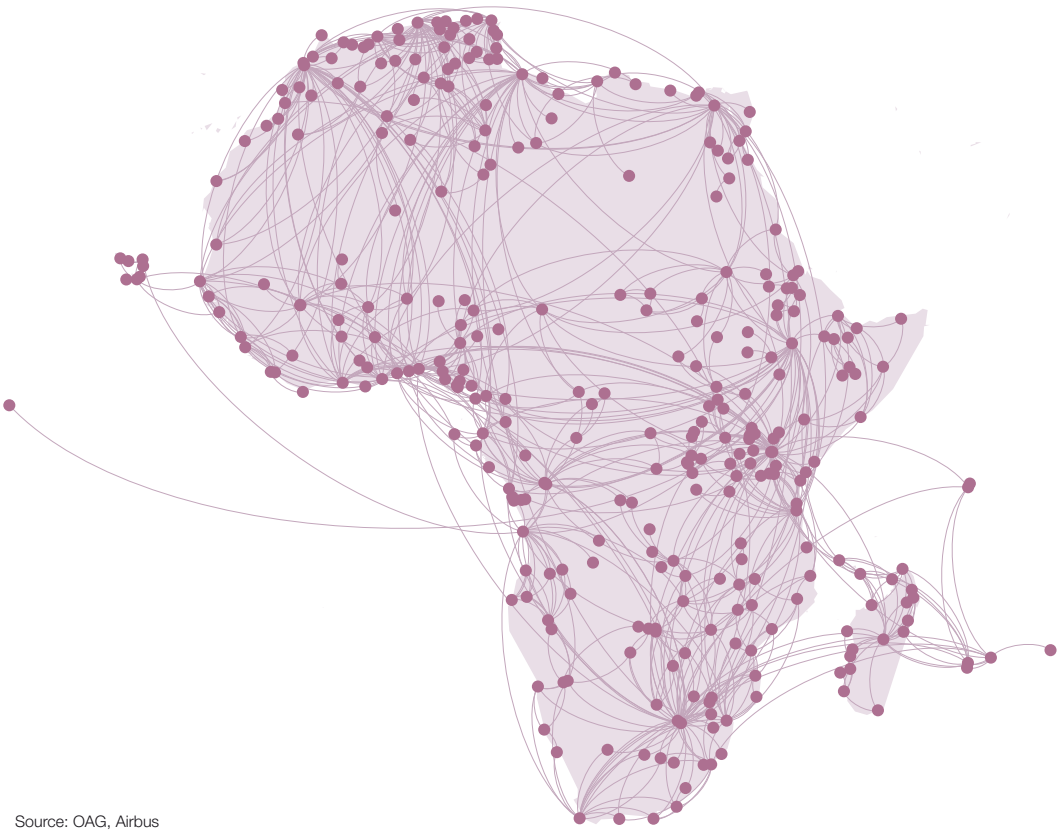


Historically, the great rivers of Africa have been used as the means of mass transportation of people and goods through a difficult environment, where the construction of other forms of transport such as road and rail would be challenging and costly. As air transport developed, so too did its use on the African continent. Today, a map of the continent showing cities and routings that serve them visibly demonstrates how these can save time, effort and cost as they overfly difficult terrain and national boundaries, a benefit that only rivers could provide in the past.

With a size of more than 30 million km² and a population of more than 900 million inhabitants, representing 20% of the world's land mass and 15% of the World's population, Africa is the second largest and most populous continent of the World. The continent is composed of 55 independent countries with heterogeneous economic and political organisations, and strong differences in terms of level of development.

Aviation connecting the African continent

Intra-Regional Traffic, Africa

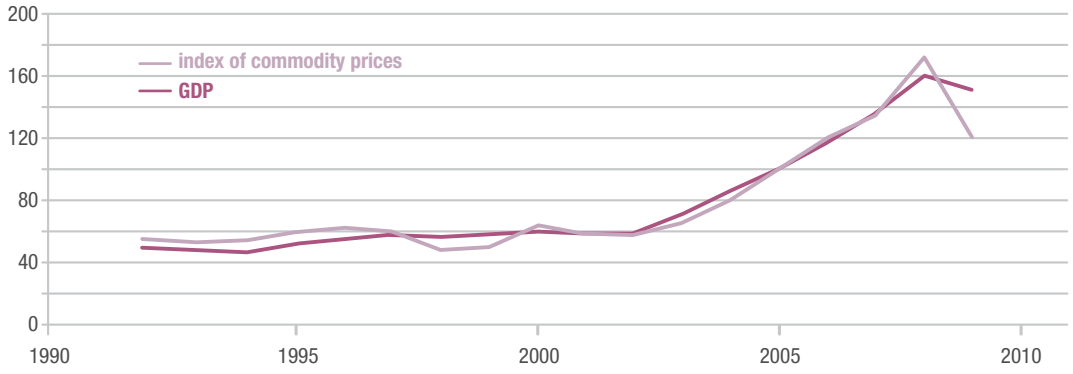


Source: OAG, Airbus

Year-on-year real GDP growth by region (1998-2010)

Source: Global Insight.

Index of commodity prices and GDP (Current $US, Base 100 in 2005, 1992-2009)



Source: IMF

From 1998, economic growth has been impressively stable in Africa: real GDP growth has always been larger than 2% and well above the world average. An analysis of the index of commodity prices and Africa's GDP, over the period 1992-2009, shows a strong correlation between these two variables.

As well as this stable economic growth, several other reasons make us think that the real take-off of Africa has already begun.

- Africa is at the beginning of its demographic transition: whereas the workforce will decrease in Europe and will mature in the other regions, it will increase in Africa, reaching more than 1 billion people in 2040.

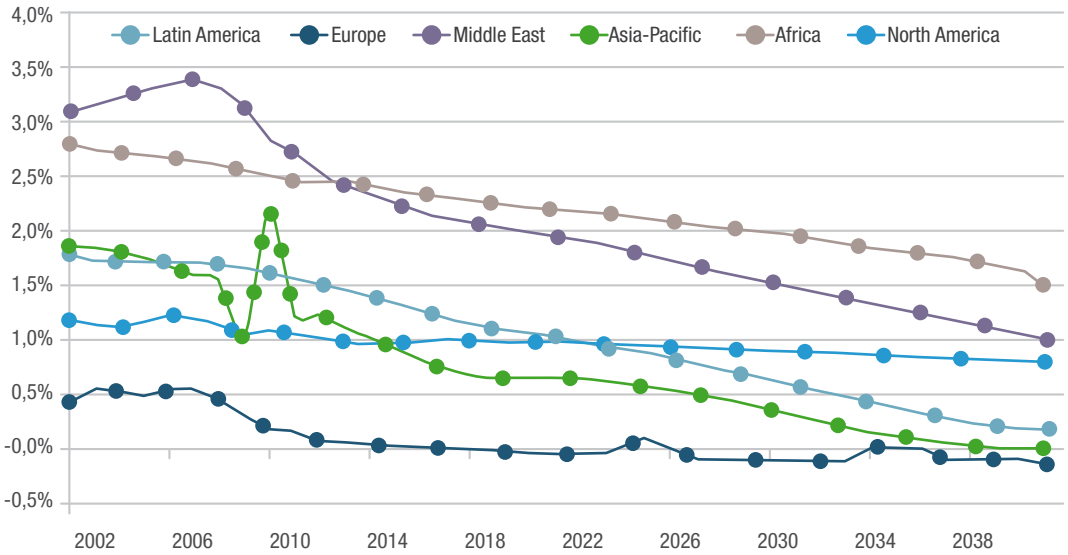
- More and more African people live in cities, which favours increased productivity, better incomes and the emergence of a larger middle class. The United Nations Population Division estimates that the urban population of Africa will reach 56% of its total population in 2040.

- Macro economic stability has improved with countries diversifying their economy and implementing social policies. At the same time, in real terms, financial deficits have been reduced and the total African external debt has decreased by 38% over the period 1994-2009.

- The number of intense conflicts has significantly decreased from nine in 1998 to two in 2010. More than bringing improved stability in the continent, this makes foreign investments potentially less risky.

- Africa's attractiveness has increased as more investments projects have been initiated. In real terms, stocks of Foreign Direct Investments have increased by 335% on the period 1994-2009.

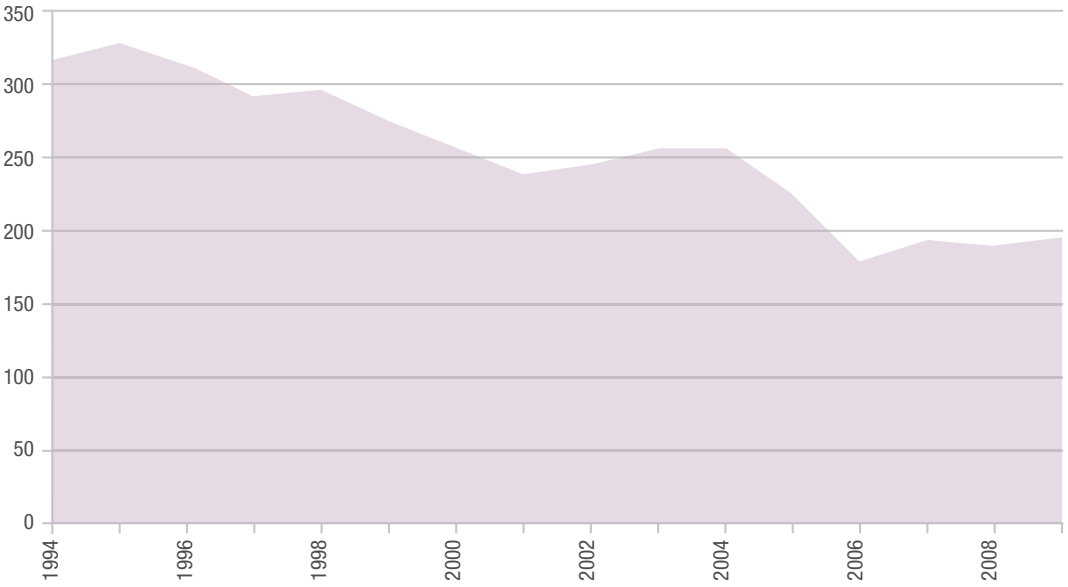
Year-on-year growth rate of the working age population by region



Source: Global Insight

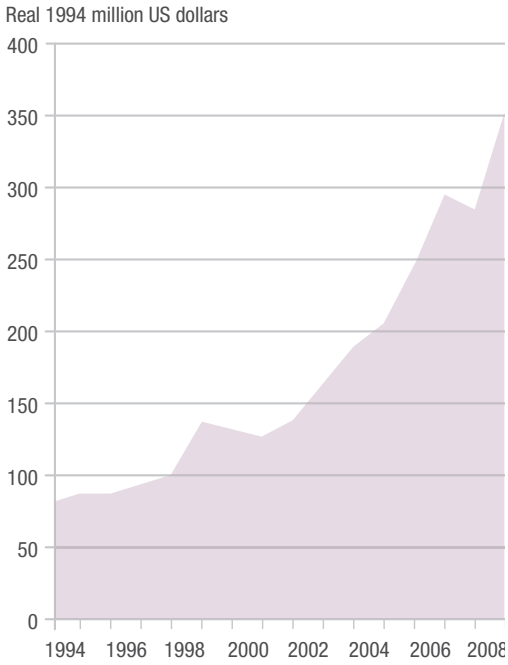
Total external debt of Africa

Real 1994 $US billions



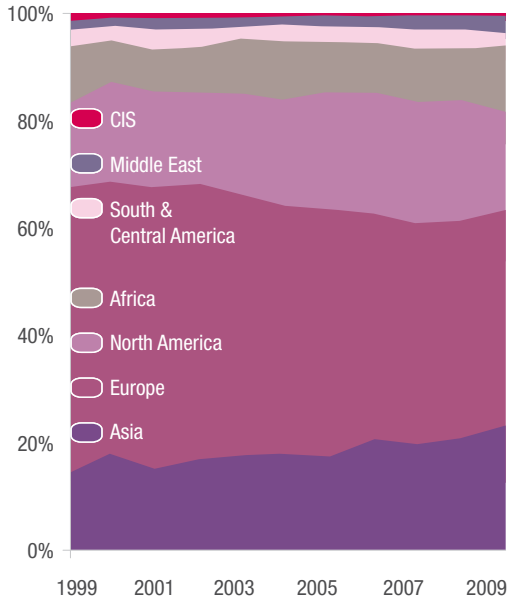
Source: World Bank

Foreign Direct Investment



Source: UNCTAD

Share of inter and intra-regional trade by region



Source: WTO

Emerging countries are leading the way in investment growth in Africa. Asian countries, especially China, have received a large number of concessions in Africa for their major companies. In return, they often develop new infrastructure in countries where they are active.

This has led to increased trade with these new partners. In 2009, Asia accounted for 23% of the total trade with Africa, compared to 14% in 1999.

However, some difficulties remain and still have to be taken into account.

Economic growth has been centralised in the most developed countries, with little development occurring in the least developed countries in the region. While the ten most populous countries of Africa account for 63% of Africa's total population, the ten most developed countries account for 80% of Africa's total GDP.

In spite of having a large number of regional economic organisations at its disposal, Africa lacks regional integration. In 1991, the treaty of Abuja was signed to create the African Monetary Union, but today intra-regional trade in Africa represents only 12% of its total trade, the lowest out of all World regions.

At the air transport level, the necessity for more regional integration has been persued for years. In Africa, air transport has always been seen as an essential sector for economic development. Not only because of the benefits of air transport to the economy, but also because roads and rail are underdeveloped, many cities are at a high elevation, and distances between economic centres can be great.

Therefore, many African countries ratified the Yamoussoukro decision in 2000. This decision has been a major step to promote open-skies agreements between African countries, with the idea that more liberalisation would increase competition and would in turn increase intra-regional traffic. Another objective was to reinforce cooperation between the African airlines, so as to be able to better compete with the European, American and Middle-East airlines increasingly flying into the region.

Intra-regional air traffic below its potential

Since the Yamoussoukro decision was taken, many bilateral agreements have been signed. Never-the-less, air transport, like intra-regional trade, is well below its potential. Domestic traffic increased at an average growth rate of 3% over the period 2000-2010 (vs. 2% on 1990-2000) and intra-regional traffic increased at an average growth rate of 5% over the period 2000-2010 (vs. 3% on 1990-2010). Thus, the Yamoussoukro decision has not had the desired effect as of today.

In contrast to the traffic growth, the total number of routes in the region has decreased. This was largely driven by a decrease in domestic routes, even though there was a slight increase in intra-regional routes.

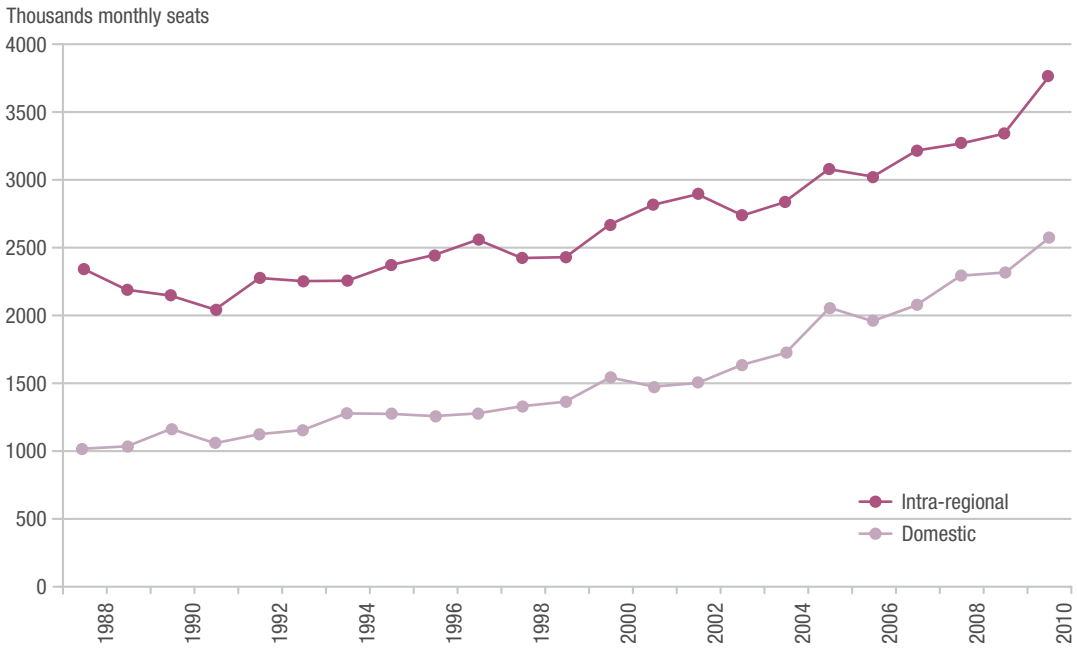
The traffic growth has been accomplished by a concentration on the largest cities and on the densest routes. Consequently, there is still an under provision of services in Africa.

Up to now, the Yamoussoukro decision has benefited the leading African carriers, reinforcing their positions, although too many hurdles remain between neighbouring countries to allow for significant liberalisation, however it is clear that in many cases there is a desire.

Inter-continental traffic is largely driven by Europe, with 60% of total seats from/to Africa. Whilst North African carriers have a high share of traffic to/from North Africa, European airlines have a high share of traffic to/from Sub-Saharan Africa.

Traffic to/from Middle East has almost trebled over the period 2000-2010, due to the strategy of Middle-East airlines connecting Asia-Pacific to Africa.

Domestic and intra-regional traffic in Africa

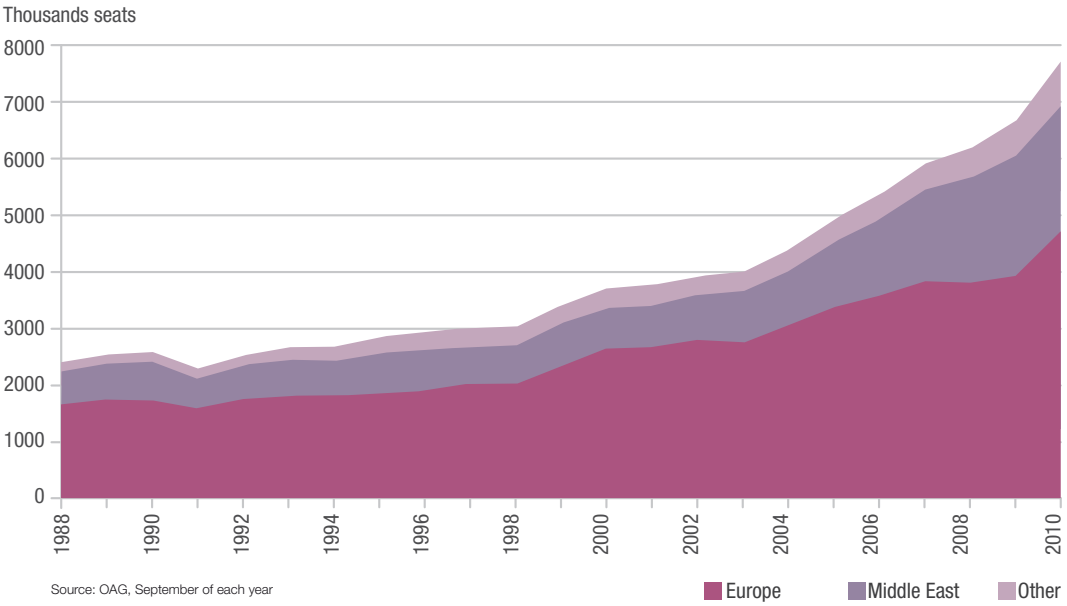


Source: OAG, September of each year

Number of city-pairs in Africa (domestic and intra-regional traffic)

Source: OAG, September of each year

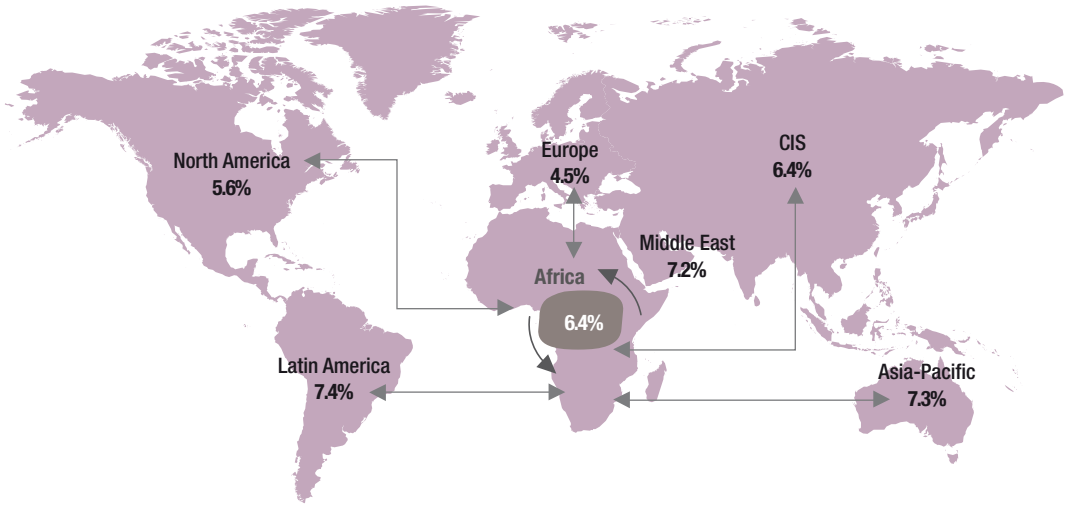
Inter-continental traffic to/from Africa



Source: OAG, September of each year

GMF Results for Africa

RPK growth: annual average 2011-2030



Africa		
2011-2020	2021-2030	20-year growth
6.5%	4.9%	5.7%

World		
2011-2020	2021-2030	20-year growth
5.4%	4.3%	4.8%

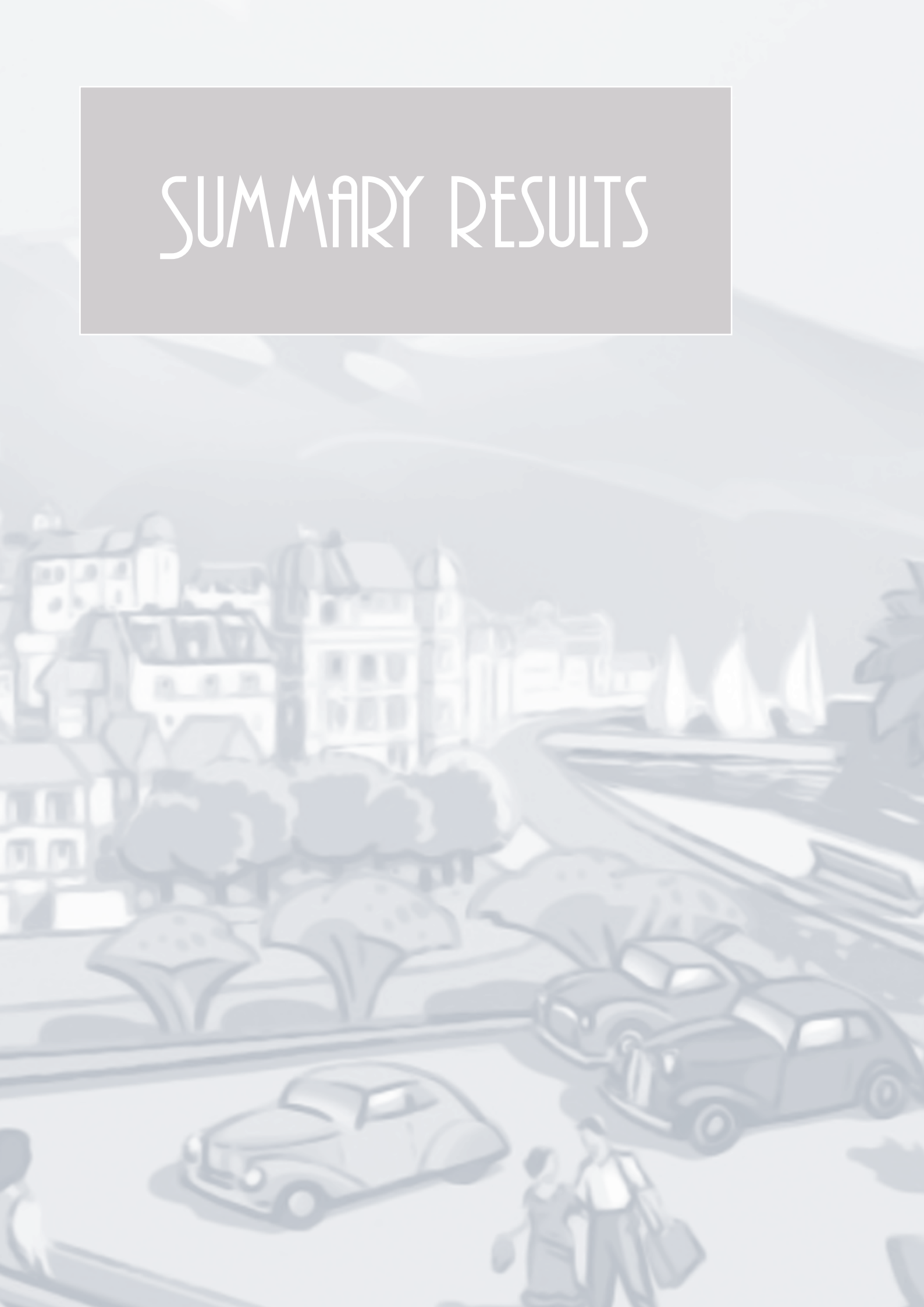
Passenger aircraft ≥100 seats (excluding freighters)

Airbus forecasts traffic to grow at an average 20-year growth rate of 5.7%, and at 5.6% for African airlines.

Because of this strong demand and replacement needs, we expect over 1100 deliveries of new passenger aircraft of more than 100 seats to Africa, which represents 4% of World deliveries. Of these 1100 deliveries, we expect single-aisle aircraft to account for 790 aircraft.

Africa Traffic (yearly growth)	2010 - 2020	2010 - 2030
Total passenger traffic	6.5%	5.7%
Domestic & intra-regional traffic	7.4%	6.4%
International traffic	6.4%	5.6%
AFRICA Fleet in-service & deliveries	2010 Fleet in-service	Deliveries 2011 - 2030
Passenger (>100 seats)	594	1,101
Passenger (<100 seats)	450	480
Total Aircraft	1,044	1,581

SUMMARY RESULTS



Passenger traffic forecast

Sub market	AAGR*2011-2030
Africa Sub-Sahara - Asia	5.2%
Africa Sub-Sahara - Australia/New Zealand	4.5%
Africa Sub-Sahara - Caribbean	8.6%
Africa Sub-Sahara - Indian Subcontinent	7.1%
Africa Sub-Sahara - Middle East	7.3%
Africa Sub-Sahara - North Africa	7.9%
Africa Sub-Sahara - Pacific	4.5%
Africa Sub-Sahara - P.R. China	8.5%
Africa Sub-Sahara - Russia	4.1%
Africa Sub-Sahara - South Africa	6.4%
Africa Sub-Sahara - South America	8.6%
Africa Sub-Sahara - US	6.6%
Africa Sub-Sahara - Western Europe	4.4%
Asia - Australia/New Zealand	5.2%
Asia - Canada	4.6%
Asia - Central Europe	6.0%
Asia - CIS	6.5%
Asia - Indian Subcontinent	7.7%
Asia - Japan	2.5%
Asia - Middle East	5.5%
Asia - North Africa	5.5%
Asia - Pacific	5.1%
Asia - P.R. China	6.8%
Asia - Russia	6.1%
Asia - South Africa	6.8%
Asia - South America	6.5%
Asia - US	4.8%
Asia - Western Europe	4.3%
Australia/New Zealand - Canada	4.8%
Australia/New Zealand - Caribbean	4.8%
Australia/New Zealand - Indian Subcontinent.	5.0%
Australia/New Zealand - Japan	3.2%
Australia/New Zealand - Middle East	6.9%
Australia/New Zealand - Pacific	6.0%
Australia/New Zealand - P.R. China	6.0%
Australia/New Zealand - South Africa	5.8%
Australia/New Zealand - South America	7.1%
Australia/New Zealand - US	4.8%
Australia/New Zealand - Western Europe.	3.1%
Canada - Caribbean	5.3%
Canada - Central America	8.5%
Canada - Central Europe	5.5%
Canada - CIS	5.9%
Canada - Indian Subcontinent	9.0%
Canada - Japan	3.8%
Canada - Middle East	7.3%
Canada - North Africa	5.1%
Canada - P.R. China	7.1%
Canada - Russia	4.3%
Canada - South America	7.3%

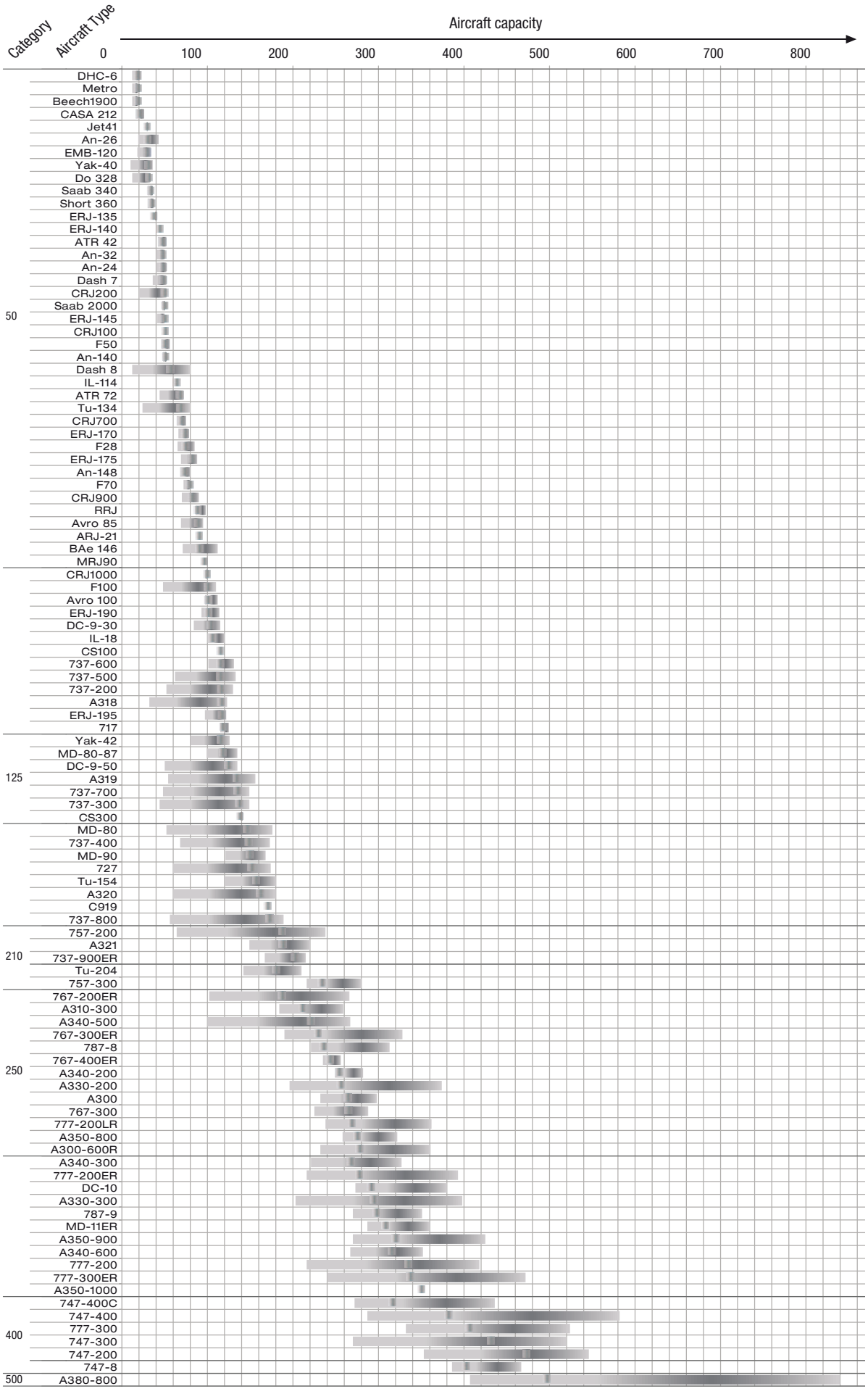
Sub market	AAGR*2011-2030
Canada - US	3.3%
Canada - Western Europe	4.3%
Caribbean - Central America	6.0%
Caribbean - Russia	5.2%
Caribbean - South America	3.2%
Caribbean - US	2.5%
Caribbean - Western Europe	3.2%
Central America - Japan	4.8%
Central America - P.R. China	7.1%
Central America - Russia	6.4%
Central America - South America	7.2%
Central America - US	4.6%
Central America - Western Europe	3.9%
Central Europe - CIS	7.0%
Central Europe - Middle East	5.0%
Central Europe - North Africa	5.3%
Central Europe - P.R. China	4.7%
Central Europe - Russia	6.5%
Central Europe - US	3.9%
Central Europe - Western Europe	5.7%
CIS - Indian Subcontinent	4.4%
CIS - Japan	5.1%
CIS - Middle East	6.0%
CIS - North Africa	5.6%
CIS - P.R. China	8.4%
CIS - Russia	6.7%
CIS - US	5.8%
CIS - Western Europe	5.0%
Domestic Africa Sub-Sahara.	6.6%
Domestic Asia	5.6%
Domestic Australia/New Zealand	4.3%
Domestic Brazil	6.6%
Domestic Canada	2.6%
Domestic Caribbean	1.8%
Domestic Central America	7.0%
Domestic Central Europe	4.1%
Domestic CIS	5.5%
Domestic India	9.8%
Domestic Indian Subcontinent	4.4%
Domestic Japan	1.6%
Domestic Mexico	5.5%
Domestic Middle East	3.7%
Domestic North Africa	5.6%
Domestic Pacific	5.2%
Domestic P.R. China	7.2%
Domestic Russia	4.8%
Domestic South Africa	5.8%
Domestic South America	3.7%
Domestic Turkey	5.5%
Domestic US	2.4%

Sub market	AAGR*2011-2030
Domestic Western Europe	2.7%
Indian Subcontinent - Japan	5.7%
Indian Subcontinent - Middle East	6.2%
Indian Subcontinent - North Africa	7.1%
Indian Subcontinent - P.R. China	9.2%
Indian Subcontinent - Russia	4.5%
Indian Subcontinent - South Africa	7.2%
Indian Subcontinent - US	8.1%
Indian Subcontinent - Western Europe	6.3%
Intra Africa Sub-Sahara	6.1%
Intra Asia	6.4%
Intra Australia/New Zealand	3.5%
Intra Caribbean	2.4%
Intra Central America	6.7%
Intra Central Europe	6.3%
Intra CIS	5.7%
Intra Indian Subcontinent	6.5%
Intra Middle East	6.0%
Intra North Africa	5.2%
Intra Pacific	5.0%
Intra South America	6.3%
Intra Western Europe	3.2%
Japan - Middle East	7.0%
Japan - North Africa	5.5%
Japan - Pacific	3.5%
Japan - P.R. China	6.0%
Japan - Russia	4.2%
Japan - South America	4.1%
Japan - US	3.8%
Japan - Western Europe	2.8%
Mexico - US	4.6%
Middle East - North Africa	6.6%
Middle East - P.R. China	7.7%
Middle East - Russia	5.7%
Middle East - South Africa	8.7%
Middle East - South America	13.7%
Middle East - US	7.1%
Middle East - Western Europe	5.7%
North Africa - P.R. China	9.2%
North Africa - Russia	6.4%
North Africa - South Africa	7.1%
North Africa - US	6.0%
North Africa - Western Europe	4.6%
Pacific - P.R. China	6.0%
Pacific - South America	4.1%
Pacific - US	3.3%
Pacific - Western Europe	3.9%
P.R. China - Russia	8.1%
P.R. China - South Africa	8.2%
P.R. China - South America	7.1%

Sub market	AAGR*2011-2030
P.R. China - US	6.6%
P.R. China - Western Europe	6.2%
Russia - South America	6.4%
Russia - US	6.4%
Russia - Western Europe	4.9%
South Africa - South America	6.4%
South Africa - US	3.9%
South Africa - Western Europe	4.5%
South America - US	5.2%
South America - Western Europe	5.1%
US - Western Europe	3.9%
World	4.8%

*AAGR: Average Annual Growth Rate,»»

Aircraft segmentation and in service seating profile



Note: Source, is ascend database, and is purely indicative for seating data.

New passenger aircraft deliveries by region

	Africa	Asia Pacific	CIS	Europe	Latin America & Caribbean	Middle East	North America	TOTAL
50-seats	207	313	48	224	169	21	503	1,485
70/85-seats	273	925	284	583	311	70	1,016	3,462
100-seats	108	266	102	406	278	72	503	1,735
125/210 seats	682	5,451	627	4,123	1,375	707	4,465	17,430
Small twin-aisle	214	1,933	128	807	281	523	632	4,518
Intermediate twin-aisle	59	911	20	364	53	278	222	1,907
VLA	38	599	22	250	41	302	79	1,331
TOTAL	**1,581**	**10,398**	**1,231**	**6,757**	**2,508**	**1,973**	**7,420**	**31,868**

Passenger fleet development

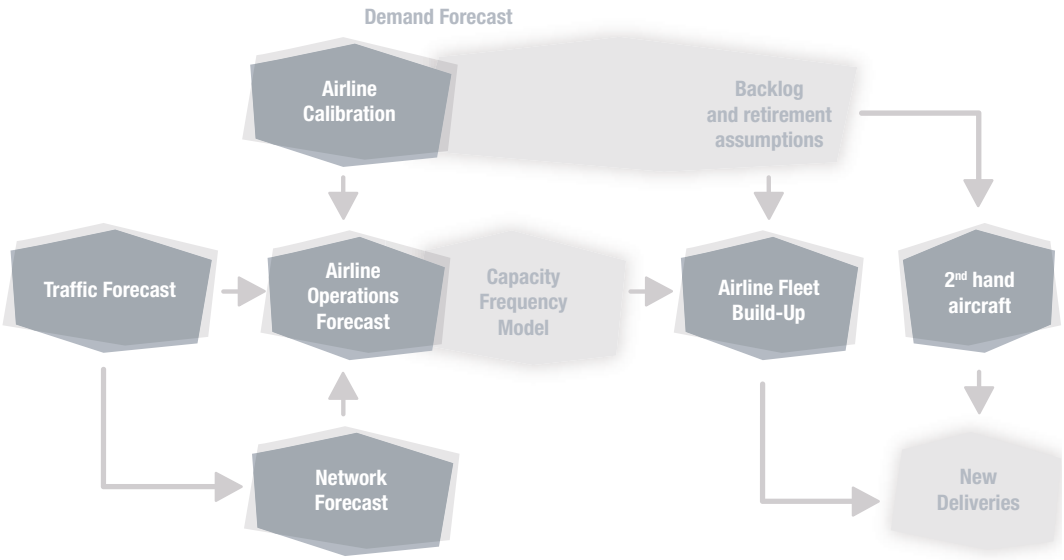
	Fleet 2010	New Aircraft deliveries 2011-2020	New Aircraft deliveries 2021-2030	New Aircraft deliveries 2011-2030	Recycled	Remaining in service With same operator	Fleet 2030
50-seats	4,917	642	843	1,485	828	101	2,414
70/85-seats	1,557	1,619	1,843	3,462	344	172	3,978
100-seats	1,455	996	739	1,735	147	130	2,012
125/210 seats	10,232	8,246	9,184	17,430	2,715	818	20,963
Small twin-aisle	2,348	2,318	2,200	4,518	455	57	5,030
Intermediate twin-aisle	916	787	1,120	1,907	116	52	2,075
VLA	51	508	823	1,331	7	6	1,344
TOTAL	**21,476**	**15,116**	**16,752**	**31,868**	**4,612**	**1,336**	**37,816**

GMF Methodology

The making of the Airbus Global Market Forecast follows a process which has been continuously improved for more than 20 years. Each major change in the industry (such as the appearance of low cost business models or the strong development of hub and spoke operations) have been the occasion for Airbus to refine and improve its modelling in order to identify and forecast current and future trends.

The GMF process consists in three main steps: the traffic forecast giving the overall shape of traffic evolution for each of over sub flows based on econometrics, the network forecast identifying the future evolution of the airlines networks, both of which have been discussed earlier, and the demand forecast estimating the number of aircraft which will be required to accommodate the traffic growth.

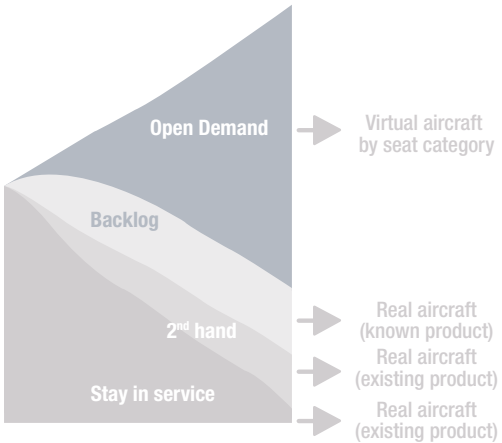
GMF Process steps



Forecasting aircraft demand

The demand forecast aims to estimate the number of aircraft which will be required over the next 20-years to satisfy the world's traffic growth. The new demand identified by the Airbus GMF (on top of current fleet and known orders) is expressed in neutral seats categories. The use of such virtual aircraft allows a view of future demand unconstrained by product supply. This "theoretical" demand represents a solution which best matches the airlines needs in terms of aircraft size, if no considerations of supply are made (specific product performance, production availability, etc.). Based on this undistorted view, the results can be used to consider such things as new product introduction, size requirements and timing. By examining the market route by route and airline by airline this also allows a large number of other uses, from discussions with airlines to our supplier partners for example.

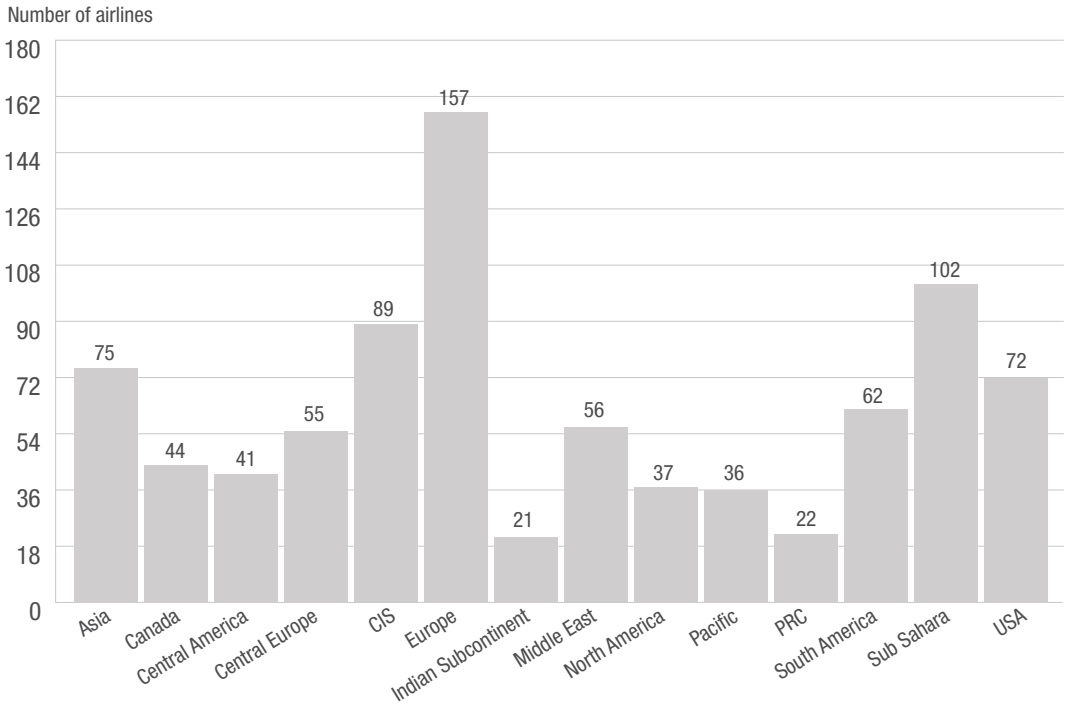
The Airbus GMF is a demand forecast



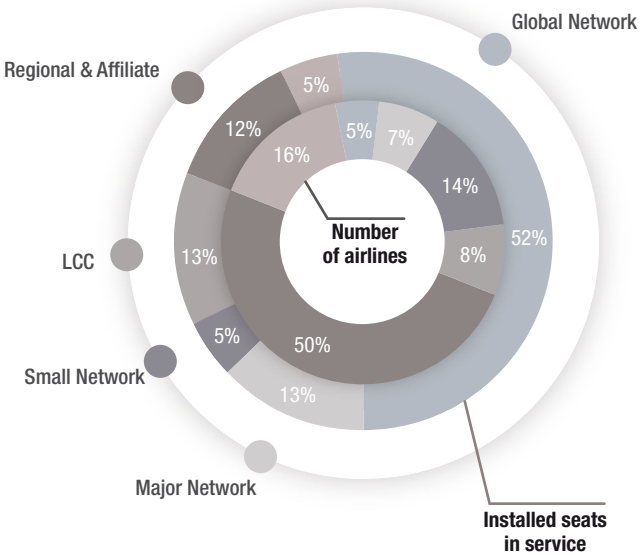
The airline calibration process

869 airlines and their subsidiaries are analysed

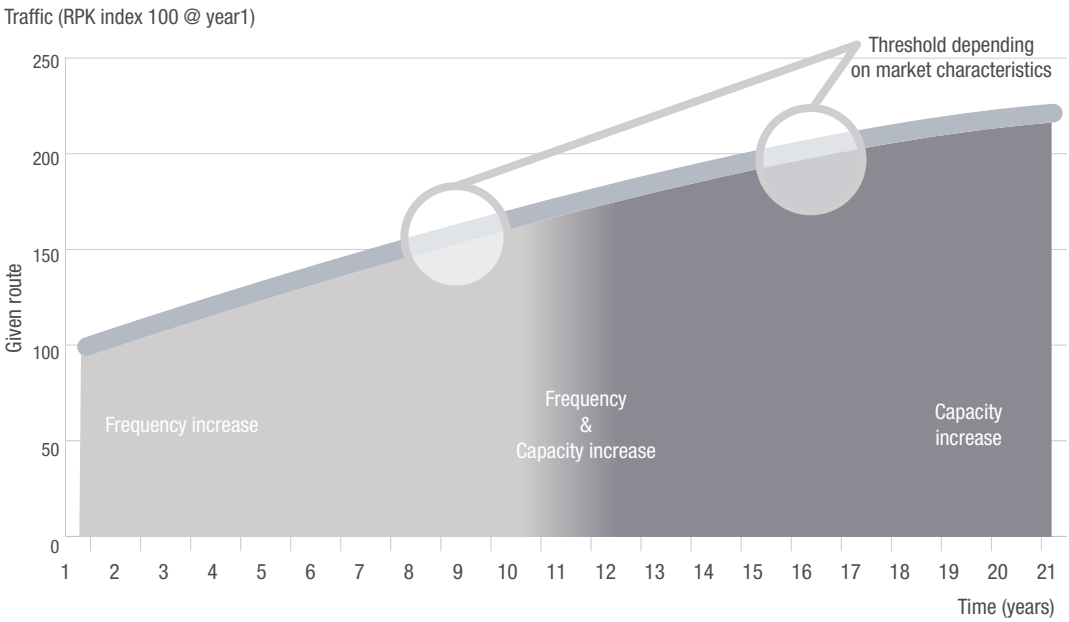
Airlines distribution per region



Airlines distribution per type



Typical evolution on a route enjoying growth



As a first step and for each of these airlines, a dedicated calibration process is carried out. It aims to take the best of several sources of information concerning the airlines in order to understand how an airline is operating each of its aircraft. Precise fleet data allows us to calibrate the detailed operations of a given airline (either scheduled or unscheduled) and therefore deduce which type of aircraft has been flying on which sector for a particular month of the year. This detailed adjustment allows us effectively apply the way an airline utilizes its aircraft on its network.

The airline operation forecast

Once the calibration of an airline has been carried out, real aircraft are converted into virtual aircraft in a fashion that keeps the overall number of seats in the fleet constant. The whole forecast is then based on neutral category values, our seat categories e.g. 100, 125, 150, 210 for single aisle types and requirements.

Traffic growth rates are applied to each airlines' network, also taking into consideration future developments, as anticipated in the network forecast process. There are few ways an airline can accommodate traffic growth: load factor improvement, improvement of its aircraft utilization, frequency or capacity increase.

The split between frequency increase and/or capacity increase is one of the most important factors influencing the shape of the future demand. A dedicated model (the Airbus Capacity/Frequency Model) has been developed to address this issue. Each market in the world has its own specifics. Passengers in North America for instance, are used to a very high level of service (i.e. very frequent flights between two airports) which is not true for other regions in the world.

A market in this case can be defined as a set of routes on a given traffic flow for a certain type of airlines business model. For each of these markets one or more airlines may compete and each route might have a different length. Taking all this into account allows us to specify how frequencies and capacity will develop over time, for a given traffic growth.

The calibration of this model has to be reviewed each year based on the market definitions and in light of any market evolution (e.g. infrastructure development plans).

As a result, the airline operation forecast outputs year by year, the demand in terms of aircraft numbers (yearly utilization, flight frequencies and capacity) expressed in neutral categories for the complete network of each airline.

Airline fleet build-up

Once the overall demand is forecast, each airline fleet build-up can be carried out. This demand is re-allocated to the existing fleet and the known orders.

Generic assumptions are made for each region regarding the retirement age of the fleets, but these schemes are adapted for each airline. Elements such as replacement plans (new aircraft replacing older types), end of contract lease, airline business models or economic and financial environment have to be taken into account in determining replacements.

The remaining demand which cannot be satisfied by the current fleet or the known orders corresponds to the open market.

As well as identifying demand, the GMF also allows us to extract all forecast operational details e.g. traffic flow, route, frequencies, utilisation, load factors, etc.

Second hand aircraft

The final step of the GMF process consists in estimating second hand or re-cycled deliveries as they account for a significant share of the total deliveries (~13% including regional aircraft).

Survival curves applied to the GMF start fleet per aircraft type allow identification of the gap between the statistical world fleet attrition and the shape of those that “stay in service” from the GMF fleet build-ups. The delta corresponds to the maximum potential for second hand aircraft.

In parallel to this, candidate aircraft are identified amongst the existing fleet and re-allocated as deliveries to another airline if the corresponding demand exists.

This study is carried out on a worldwide basis as a first step and then refined by region and by airline. At the end of the process, these “second hand” deliveries are subtracted from total deliveries, leaving only the “new deliveries” which are the figures displayed in this publication.


AIRPORT

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AN EADS COMPANY

AIRBUS S.A.S. 31707 Blagnac Cedex, France

Concept design by Art & Caractere
Photos by EXM company H. Goussé, P. Masclet. Losevsky Pavel / Ho Philip / Jarno Gonzalez Zarraonandia / TOSP Photo / Ssguy / trekandshoot / Tristan tan / S.Borisov / Frontpage / Goran Mihajlovski / Isak55 / Anastasios71 / Vatikaki / Shutterstock.com. Fabrice Valentin, Andrew Gordon, Airbus. EIAI. Computer renderings by Fixion. Illustration André Boos.

September 2011. Printed in France by Art & Caractère.

The printing inks use organic pigments or minerals. There is no use of basic dyes or dangerous metals from the cadmium, lead, mercury or hexavalent chromium group.

The printer, Art & Caractère (France 81500), is engaged in a waste management and recycling programme for all resulting by-products.

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