



Current Market Outlook **2007**

How Will You Travel Through Life?





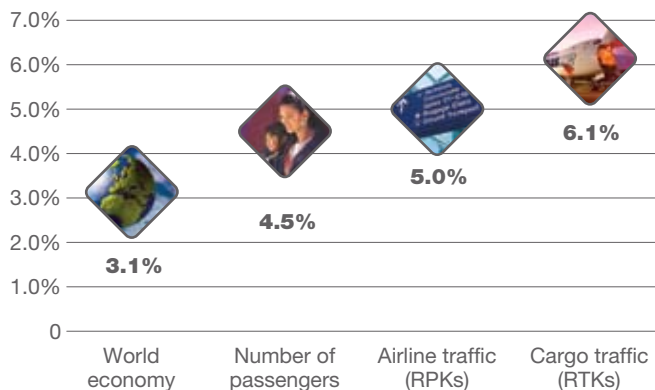
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## 2006 to 2026 Key Indicators

### Market growth rates



## 28,600 New Airplane Deliveries

### 747 and larger \$270 billion

- 960 new airplane deliveries over 20 years.
- Demand focused on long, heavily traveled routes.
- Asia-Pacific highest demand; 500 new airplanes.
- Europe second, 230; then Middle East; 110.

### Twin aisle \$1,270 billion

- 6,290 new airplane deliveries over 20 years.
- Asia-Pacific highest demand; 2,530 new airplanes.
- Europe second, 1,360; then North America, 1,330.

### Single aisle \$1,190 billion

- 17,650 new airplane deliveries over 20 years.
- North America highest demand; 5,840 airplanes.
- Asia-Pacific second, 4,690; then Europe, 4,630.

### Regional jets \$110 billion

- 3,700 new airplane deliveries over 20 years.
- North America highest demand; 1,880 airplanes.
- Asia-Pacific second, 630; then CIS, 460; then Europe, 450.

## Demand by Region

### Asia-Pacific 8,350 airplanes \$1,020 billion

The emphasis of the world airline fleet will move substantially toward Asia-Pacific, with well over a third of the deliveries by value going to airlines in the region.

**GDP** 3.7%  
**RPKs** 6.5%  
**RTKs** 7.3%

### North America 9,140 airplanes \$730 billion

Constrained domestic growth in the near term with capacity transfer to stronger international routes. Orders will be needed soon to replace large numbers of airplanes.

**GDP** 2.8%  
**RPKs** 4.0%  
**RTKs** 5.4%

### Europe 6,670 airplanes \$660 billion

Current high air travel growth within Europe will slow as the European Union consolidates. Strong potential for new long-haul routes as many international markets liberalize.

**GDP** 2.1%  
**RPKs** 4.2%  
**RTKs** 5.2%

### Middle East 1,160 airplanes \$190 billion

Continued expansion of long-haul twin-aisle routes worldwide will lead to the highest average value for each airplane delivered.

**GDP** 4.0%  
**RPKs** 5.7%  
**RTKs** 7.1%

### Latin America 1,730 airplanes \$120 billion

High traffic growth and increased affordability of air travel to a growing middle-class population is allowing indigenous airlines to expand and enjoy better economies of scale.

**GDP** 3.8%  
**RPKs** 6.2%  
**RTKs** 6.1%

### CIS 1,060 airplanes \$70 billion

Growth in oil-related activities, the service sector, and tourism, combined with consolidation and innovation among airlines, drives a requirement for more than 1,000 new airplanes.

**GDP** 4.3%  
**RPKs** 5.7%  
**RTKs\*** 5.7%

\*CIS to Europe.

### Africa 490 airplanes \$50 billion

Europe will continue to account for around two-thirds of African air travel, and there will be a particularly strong need for small and medium twin-aisle airplanes.

**GDP** 4.9%  
**RPKs** 5.4%  
**RTKs** 6.1%

## The Outlook on a Page

*Your complete reference guide to the future of air transport. And on the back, we welcome your feedback, questions, or thoughts on the outlook.*

### It's 20 years into the future...

Air travel has evolved.

- More people from all walks of life have access to affordable, direct, and efficient air services.
- And the largest share of the 6.8 billion airline passengers worldwide now travels to, from, or within the Asia-Pacific region.

The airline fleet has been revitalized.

- 80 percent of the airplanes in service have been delivered new since 2006.
- They have brought improved environmental performance, more comfort, more dependability, and lower costs.

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Response  
**Form**

## We at Boeing Value Your Opinion

*Please take a moment to complete this feedback form and fax it back to us.  
You may attach your business card to provide contact details. Thank you!*

**Name**

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Position

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Company

---

Address

---

**Michael Warner****Fax number**

---

Senior Manager  
Market Analysis

1.206.766.1022

**E-mail**

---

BoeingCurrentMarketOutlook@Boeing.com

**Mailing address**

---

Boeing Commercial Airplanes  
Market Analysis  
P.O. Box 3707, MC 21-28  
Seattle, WA 98124-2207 USA

**Web site**

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[www.boeing.com/commercial/cmo](http://www.boeing.com/commercial/cmo)

**Your perspective on future air transport markets**

- 
- What will be the main factors to affect the future market?
  
  - What will be the likely impact of these factors?

**Your feedback on the *Current Market Outlook***

- 
- What areas would you like to see covered in more detail?
  
  - What additional data would you like us to make available?
  
  - What did you find most valuable?
  
  - Was there anything you disliked?

**Any other comments?**





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# How Will You Travel Through Life?

Over the next 20 years, air transport will progressively unite friends, families, business partners, and ultimately cultures from all around the world.

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<b>The Outlook 2007 to 2026</b>		

## Continuous Improvement in Air Transport

*The future passenger and freight fleet will bring better efficiency and improved environmental performance, and will allow people all around the world to benefit from the essential connections that only air transport can deliver.*

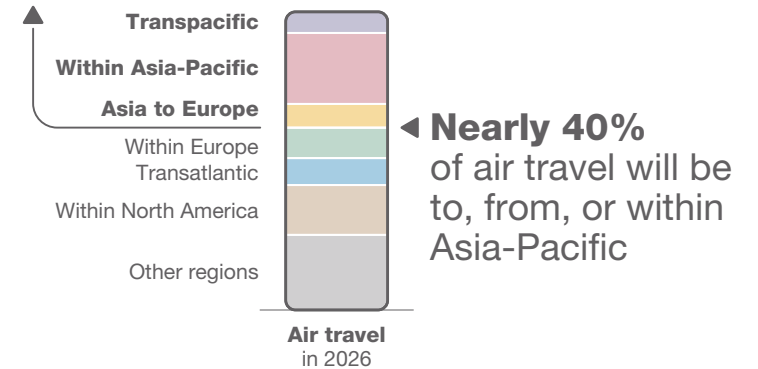


### It's the year 2026

Air travel has evolved.

More people from all walks of life have access to affordable, direct, and efficient air services.

And the largest share of the 6.8 billion airline passengers worldwide travels to, from, or within Asia-Pacific.



### 2006 to 2026 Key Indicators

Market growth rates	
<b>World economy</b> Gross domestic product (GDP)	<b>3.1%</b>
<b>Number of passengers</b>	<b>4.5%</b>
<b>Airline traffic</b> Revenue passenger-kilometers (RPK)	<b>5.0%</b>
<b>Cargo traffic</b> Revenue tonne-kilometers (RTK)	<b>6.1%</b>

### Demand by Region

\*Commonwealth of Independent States.  
Includes: Russia.

Market value and airplane deliveries	\$B	Airplanes
Asia-Pacific	1,020	8,350
North America	730	9,140
Europe	660	6,670
Middle East	190	1,160
Latin America	120	1,730
CIS*	70	1,060
Africa	50	490
<b>2006 total</b>	<b>\$2.8T</b>	<b>28,600</b>

Forecast numbers include both passenger and freighter airplanes. Market values are at list prices in 2006 dollars.





### Airplanes in Service

Airplane size	2006	2026
747 and larger	910	1,370
Twin aisle	3,320	8,070
Single aisle	10,920	22,800
Regional jets	3,080	4,180
<b>Total</b>	<b>18,230</b>	<b>36,420</b>

### Demand by Airplane Size

2007 to 2026	\$B	Airplanes
747 and larger	270	960
Twin aisle	1,270	6,290
Single aisle	1,190	17,650
Regional jets	110	3,700
<b>Total</b>	<b>\$2.8T</b>	<b>28,600</b>

### It's 20 years into the future

The world has changed.

The airline fleet has been revitalized.

80 percent of the airplanes in service have been delivered new since 2006.

They have brought improved environmental performance, more comfort, more dependability, and lower costs.



#### ◀ 80% new

- Better for the environment
- Better for passengers
- Better for airlines

#### ◀ 20% remaining from today's fleet



Future Air  
Transport





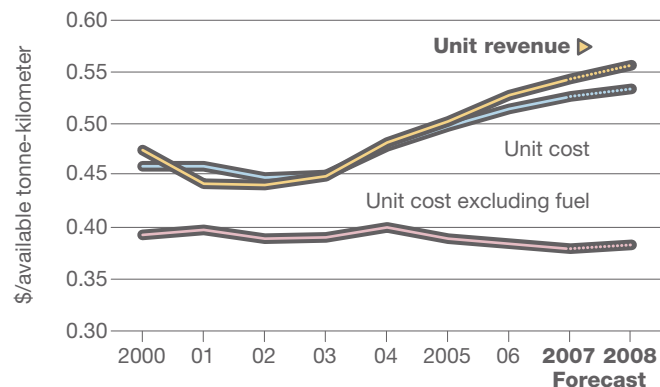
# Current Market Developments

Robust demand, high levels of efficiency, and overall profits.

## Airlines Now Profitable

Source: IATA, September 2007 Financial Forecast.

### Costs falling below revenues



## Positive Market Conditions Continue

*On a global scale, strong economic growth and liberalizing markets are generating robust demand for air travel, while airline efficiency improvements are offsetting high fuel prices and enabling overall industry profitability.*

### Strong, diverse economic growth

The world economy has grown at an average 3.6 percent annual rate since 2004 and is expected to continue this above-trend growth through the end of the current decade. At the same time, the global economy is becoming more diverse and less dependent on the performance of the United States. Current softness in the U.S. economy is being more than offset by strong growth in the European Union, Asia, and other emerging regions.

### Robust air travel demand and increased airline efficiency are boosting profitability

Strong economic growth combined with increasingly liberalized and competitive markets is driving above-trend air traffic growth, which continues to outpace airline capacity growth. Rising load factors have enabled airlines to use fuel surcharges and higher fares to increase yield.

Sustained high fuel prices have also resulted from the strong world economy. Between 2003 and 2006, fuel expense grew from 15 percent to more than 25 percent of airline operating costs. Airlines responded by improving the fuel-efficiency of their operations and reducing cost in many other areas. They implemented more efficient, Internet-based distribution systems, reduced or eliminated commission payments, and drew on their employees for labor cost reduction.

### Air cargo recovering

The recent slow growth of air cargo can be attributed to the continuing effect of high fuel costs, leading to higher prices to send freight by air and a corresponding shift to maritime capacity. Air cargo growth has begun to recover as dedicated freighter capacity on more efficient new and converted airplanes comes on line.

### Fundamental drivers of airplane orders

With both strong air travel demand and a need for productive and efficient airplanes, almost 4,500 airplane orders have been placed over the past 3 years. While deliveries of these airplanes take place over the next 6 or 7 years, additional demand will be driven by the need to replace substantial numbers of existing airplanes.

### Future challenges

Our forecast allows for challenges that may affect the future of air transport.

Three of the foremost challenges are expected to be

- Continuing to improve the environmental performance of air transport.
- Relieving airspace and airport congestion.
- Meeting the increased demand for resource in terms of additional airports and key skilled personnel such as pilots and maintenance engineers.



### Improving environmental performance

To continue improving the environmental performance of air transport, airlines are focusing on more efficient operations with newer airplanes. At the same time, the industry is actively determining which of the possible future sources of fuel provide the lowest life-cycle CO<sub>2</sub> emissions.

Biomass-to-liquid processes are particularly attractive as low-carbon life-cycle fuels—a distinct advantage over more carbon-intensive coal-to-liquid and gas-to-liquid processes. Plants, with algae showing particular promise, could supply biofuel to satisfy the world's aviation needs.

Community noise levels are also being addressed. New airplane types currently on offer deliver a 30 to 60 percent reduction in noise footprint over their predecessors, confining most noise disturbance to within the airport boundary.



### Relieving congestion and addressing resource requirements

Congestion in air traffic control and ground operations could be an inhibitor to growth in some areas. In addition to airlines providing flights from less congested airports, technological improvements such as continuous descent approach are already effective in alleviating local congestion. The pace of implementation of large-scale structural change in facilities such as air traffic control is largely driven by political considerations.

While the assumption is made that all necessary additional airports and skilled personnel will be available over the course of the forecast period, short-term growth rates underlying the forecast fully consider the rate at which these resources will become available.

## Critical to the Global Economy

*Air transport provides a unique, flexible means of adding transportation needed to facilitate economic growth.*



### Economic growth and air transport

Growth in economic activity is fundamental to the high proportion of the world's population in need of better living conditions as well as to the continued development of more prosperous nations. Expanding the movement of both people and cargo is most easily and flexibly achieved by adding air services, and the benefits are immediate.

Emerging economies rely on being able to access large markets, whether local or international. Road, rail, or marine transportation are fundamental components of the infrastructure of growing economies, but they demand high investment, primarily from government funds, and are not practical for rapidly traversing long distances or extreme terrain.

These alternatives cannot compete with the flexibility of air transport in rapidly delivering access to a wide variety of markets for either people or goods.

The growth of air transport is consistently most rapid in fast-growing economies, as can be seen in the chart below, which shows the relationship between air transport growth and economic growth for a sample of well-developed and emergent markets. This reflects the dynamic relationship between the two, where air transport both contributes to and benefits from economic growth.

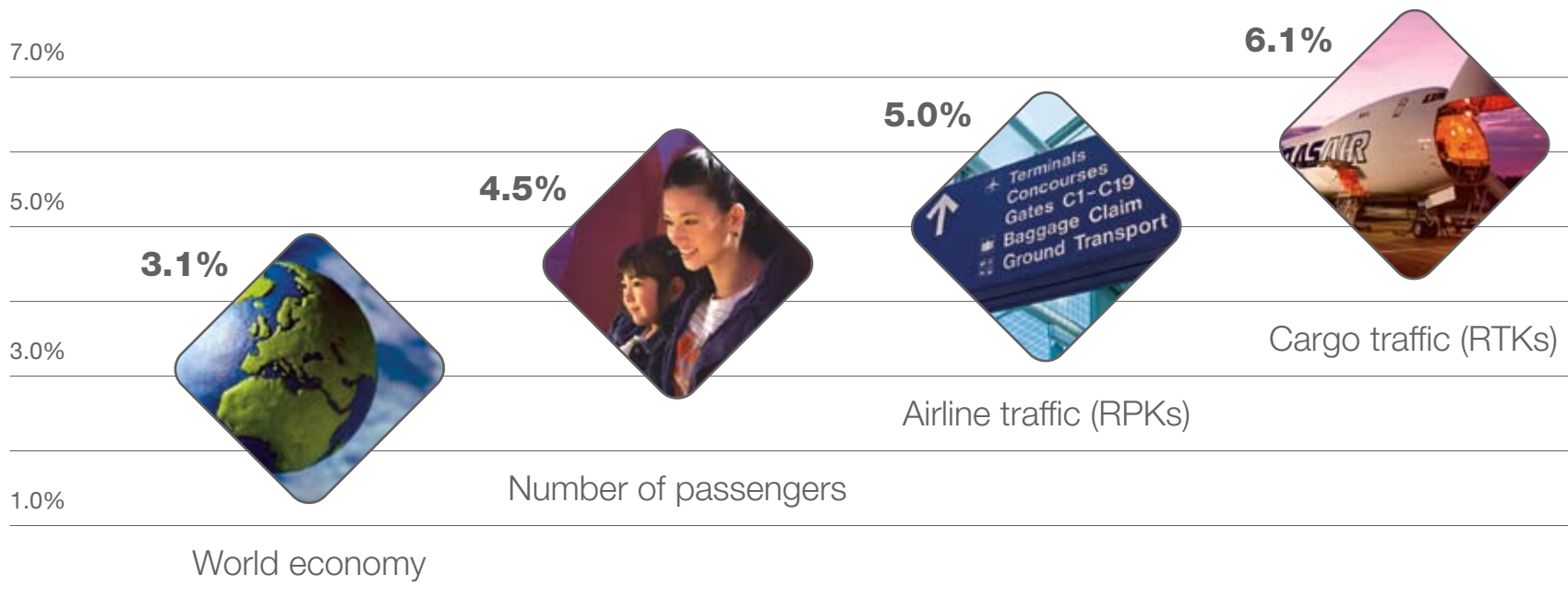
Growth in:	(Largely United States) North America		Europe		China		(Largely India) Southwest Asia	
	Past 20 years	Next 20 years	Past 20 years	Next 20 years	Past 20 years	Next 20 years	Past 20 years	Next 20 years
<b>Economic activity</b>								
GDP \$B added	5,390	7,780	3,380	5,450	1,780	6,510	590	2,280
GDP growth rate	3.2%	2.8%	2.0%	2.1%	9.9%	6.6%	5.6%	5.7%
<b>Passenger air travel (RPKs)</b>								
RPKs added	1,000	2,390	1,110	2,380	350	1,280	100	390
RPK growth rate	4.1%	4.0%	5.7%	4.2%	11.0%	8.0%	6.2%	6.9%
<b>GDP-to-RPK multiplier*</b>	<b>1.3</b>	<b>1.4</b>	<b>2.9</b>	<b>2.0</b>	<b>1.1</b>	<b>1.2</b>	<b>1.1</b>	<b>1.2</b>

\*The number of times faster traffic is growing than the economy: RPK growth rate divided by GDP growth rate.



## Market Growth Rates

2006 to 2026



**Central to the smooth functioning of well-developed economies**  
 Air transport is also critical to well-established economies that may be growing at slower rates. Where economic growth rates are lower, the multiplier to air transport growth is typically higher than in emerging markets. This is largely a product of a lower degree of market regulation and existing well-developed infrastructure, providing easier market access and more competition than in many emerging markets. The GDP-to-RPK multiplier shows how many times faster traffic is growing than the economy and is calculated by dividing the RPK growth rate by the GDP growth rate.

The vastly greater volume of demand for air transport in more highly developed markets makes viable a larger range of competitive service offerings, which itself contributes to expanding the overall market.

**Moving a quarter of the world's merchandise**  
 The central role of air cargo in facilitating global trade is demonstrated by the fact that a quarter of the world's international merchandise trade, measured by value, is moved by air.



# New Market Opportunities

Many new route opportunities and a segmented approach to high-volume markets.



## More Travel Choices

*Emerging regions, the gathering pace of market liberalization, and new forms of competition will shape future markets.*

### Many opportunities from large cities

As seen in the chart below, many of the world's cities with a large population (more than 6 million people in the metropolitan area) have a remarkably low number of direct air connections to other key destinations. This is in part due to historic restrictions on air services—restrictions that are now receding—and provides a simple reflection of the high potential for opening up new direct air services as economic growth and market conditions allow.

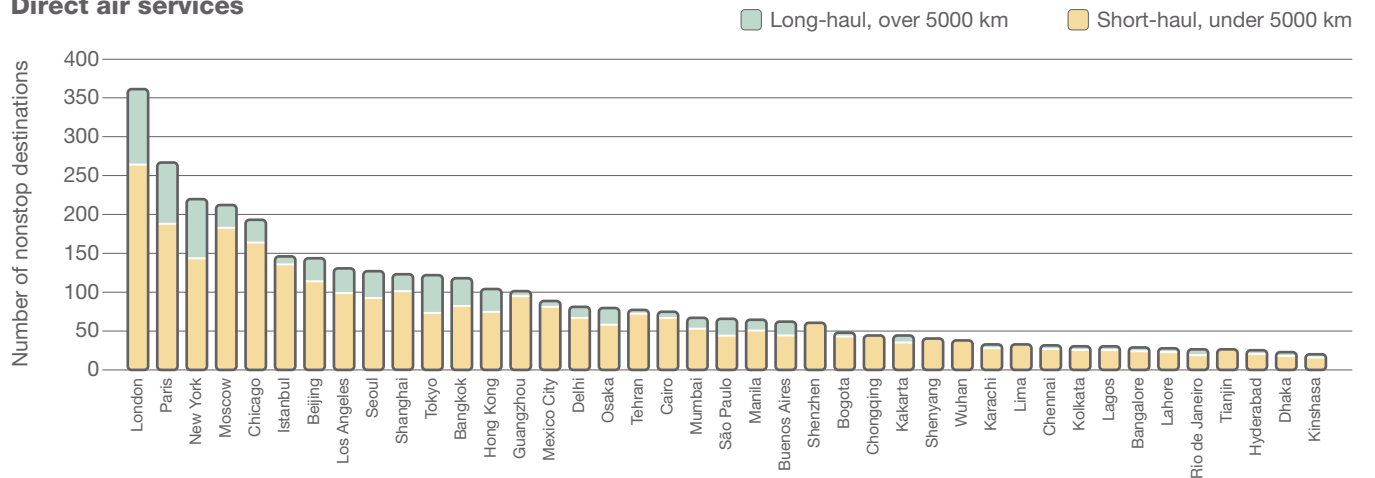
### New forms of competition

Markets are simultaneously opening up through reduced regulation (termed “liberalization” or “deregulation”).

Potential for New Destinations

Chart shows number of nonstop destinations served from cities with a metro area population of more than 6 million.

### Direct air services



This, along with future high absolute levels of travel demand, means that many markets are now open enough and large enough to support niche strategies by specialist airlines and multiple segmentation strategies by larger airlines.

The rapid pace of liberalization is evident not just with the European Union–U.S. Open Skies agreement that comes into effect in March 2008 but also with the continued opening up of markets in India, Africa, and Asia-Pacific.

In markets from London to the United States and Canada, recent entrants are providing dedicated service in segments such as full-service premium (Eos), business class (Maxjet and Silverjet), and low-cost (Zoom, flyglobespan).

Large airlines such as Lufthansa, Swiss, KLM, Air France, and ANA already provide dedicated business-class-only service on selected routes to the United States, Africa, China, and Japan. American Airlines and United Airlines have a specific focus on premium services between San Francisco, Los Angeles, and New York.

For the future, British Airways and Virgin Atlantic have announced plans to expand application of their core strengths (satisfying demand for premium services) to points outside their traditional U.K. markets. They both intend to serve points in the United States from a variety of European cities, using single-aisle airplanes focused on their premium products.



### **Low-cost, long-haul airlines**

The strongest features of low-cost airlines, such as ruthless attention to productivity, minimal complexity, highly efficient distribution (sales) systems, and maximum potential for ancillary revenues (such as from onboard sales or hotel and car-rental bookings), will be increasingly applied in a long-haul context. The operational practicality of this approach has been demonstrated for years by charter and inclusive tour airlines around the world.

However, only now is the regulatory environment becoming liberal enough for potentially successful application of these strategies to the wide variety of markets essential for the high volume of direct seat sales that will make rapid growth of low-cost, long-haul airlines feasible.

### **Opportunities for air cargo**

As international trade from countries with emerging economies develops, there will be more need for dedicated freighter airplanes offering a combination of medium to large capacity and long range.





# World Passenger Traffic Flows

Liberalization in international markets is a global phenomenon.



## Emphasis Shifting to Asia-Pacific

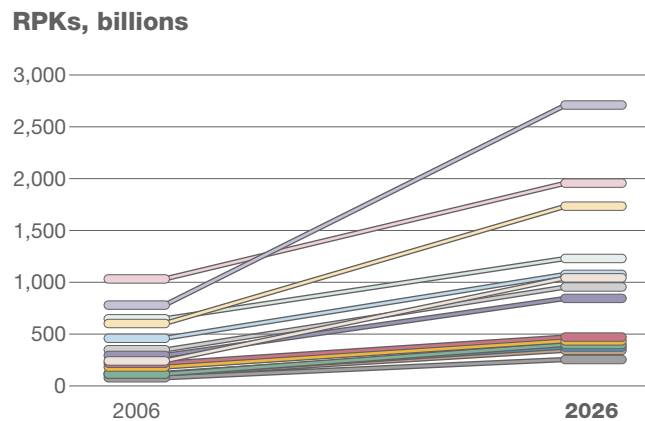
*With large economies and rapid growth rates, air travel to, from, and within Asia-Pacific will account for nearly 40 percent of the global market in 2026.*

### Changing travel patterns

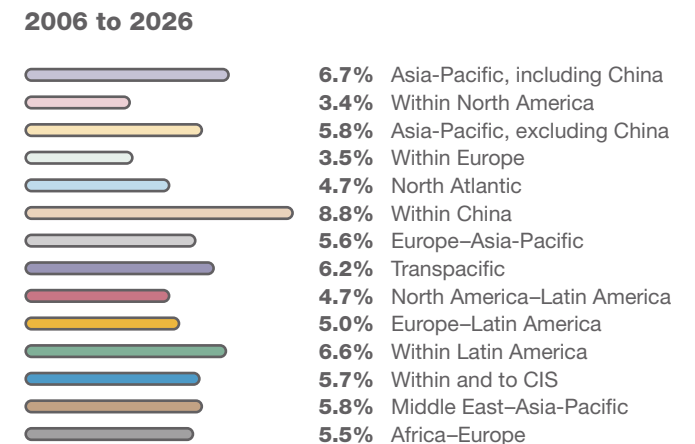
The more rapidly growing, and increasingly large, economies of Asia-Pacific will lead to travel within the region becoming greater than within North America, which is by far the dominant region today, with nearly a quarter of the world's airline traffic and a third of its passengers.

Even strong near-term growth in Europe's internal markets and increasing connections between Europe and Asia will not deliver quite such rapid growth as in markets within Asia. The share of traffic serving Europe will decline from about 30 percent today to 27 percent in 20 years' time.

Passenger Traffic Development



Annual Traffic Growth Rate



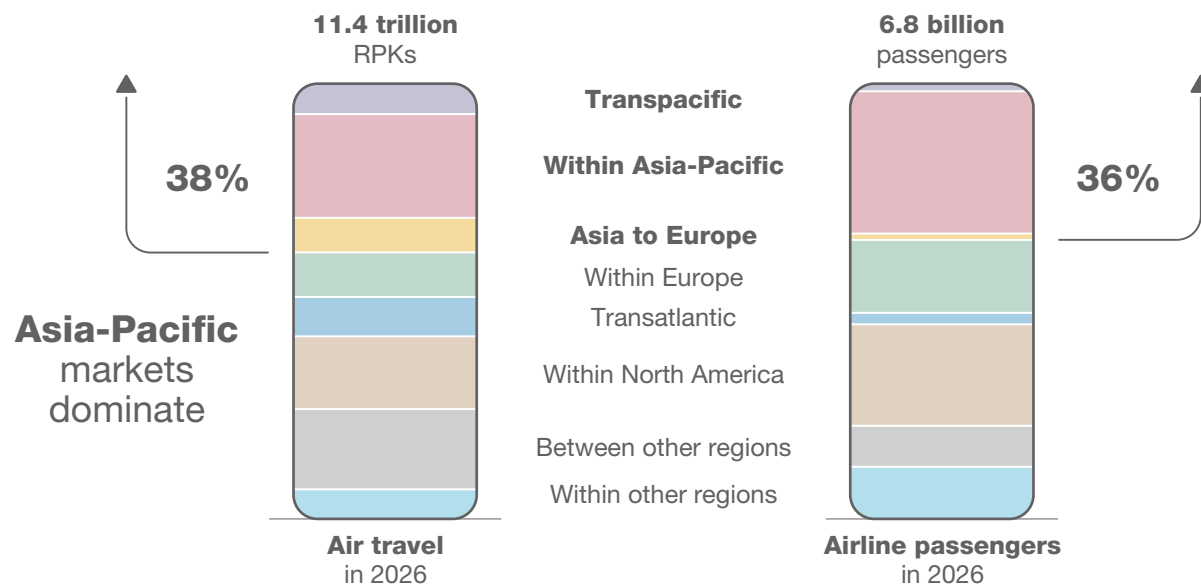


**Another market perspective: passenger numbers**

Air travel is typically quantified using the measure revenue passenger-kilometers (RPK), because this combines passenger counts with the distance flown and is a good reflection of the productivity of airlines and the airplanes they use.

Sometimes, it is more useful to consider the actual number of passengers carried, particularly in terms of shorter distance flights or for airlines that rely on a high proportion of ancillary revenues directly proportional to the number of passengers carried.

These two measures reveal different perspectives on the market. When considering how airplanes are used, those that are larger and fly longer distances carry more traffic (RPKs), but those that focus on shorter flights carry significantly more passengers.



For example, if a 747-400 full with 420 passengers in four classes performed one 9500-kilometer flight in a day (about 6,000 miles), it would generate nearly 4 million RPKs.

On the other hand, a 737-800 with 148 passengers in two classes might fly eight 1-hour sectors (of around 640 kilometers, or 400 miles, each) in a typical day. If full on every flight, this airplane would carry nearly 1,200 passengers and generate around 760,000 RPKs.

In this example, the 747-400 carries more than five times the traffic (RPKs) of the 737-800 in a day, but the 737-800 carries nearly three times as many passengers.

**Many more passengers fly within regions than between regions**

Approximately 85 percent of passengers will fly within the world's main regions in 2026, compared with nearly 90 percent today. Long-haul routes are growing at a faster rate, leading to an increased traffic share for twin-aisle airplanes. Some routes within regions cover very long distances, but the majority are most effectively served with single-aisle airplanes.

## Worldwide Air Cargo Growth

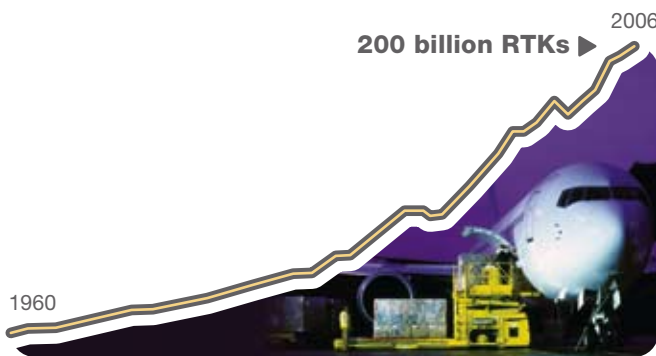
*Despite competition from other modes of transport, air cargo will continue to grow at an average of 6.1 percent a year.*

### An essential part of the logistics system

Air cargo has become an essential tool in the logistics of transporting materials and finished goods between businesses and to the final customer.

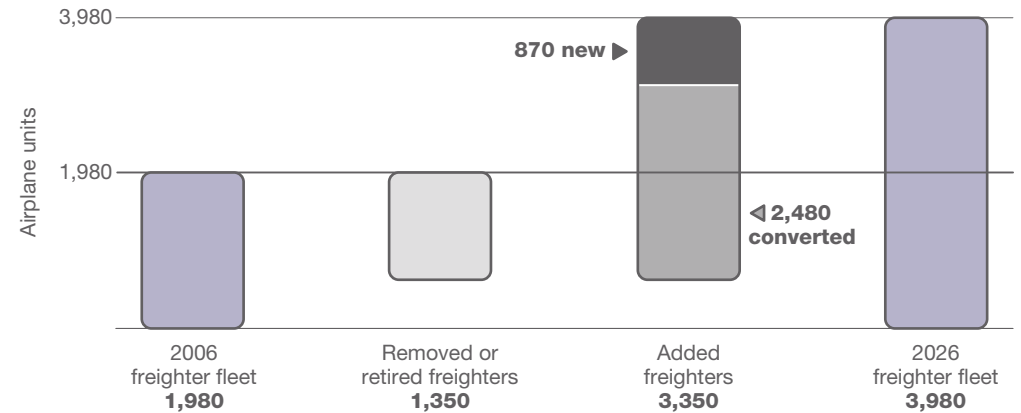
Almost a third of the \$75 billion revenue earned in 2006 by transporting air cargo is concentrated in a small number of express carriers that specialize in global just-in-time delivery of goods and packages.

**Air cargo grew by 50 times in 46 years**



## How the Fleet Grows

### Fleet development: 2006 to 2026



The critical role air cargo plays in enabling developing economies to participate in global markets is underscored by the fact that, putting aside movements within North America and Europe, 42 percent of the value of goods transported between international markets is carried by air. This is only 1 percent of the same market if measured by weight, as air cargo focuses on goods with high-value or high-time dependency or that are economically perishable.

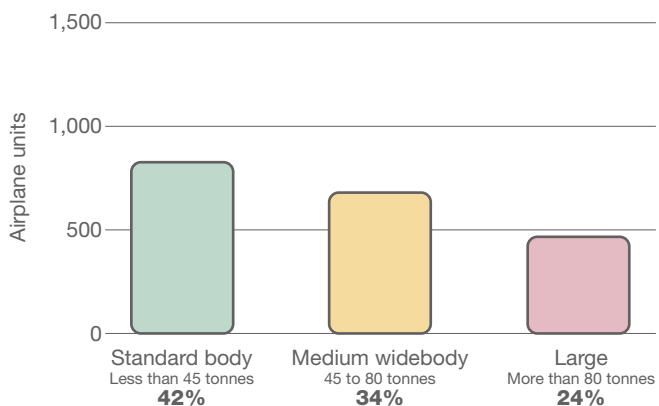
### Newer airplanes restoring the advantage

The addition of more recent airplane types from conversion (such as 767-300BCF and 747-400BCF) and new designs (such as the 747-8F and 777F) will restore some of the advantage that air freight has recently lost to container ships. The scale of unit cost improvement offered by these airplanes is higher than the relative improvement offered by large container ships.



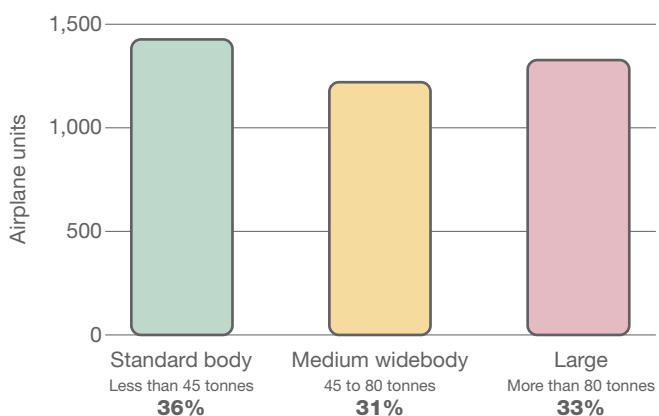
## 1,980 Freighters

### 2006 fleet



## 3,980 Freighters

### 2026 fleet



Dedicated freighters will carry an increasing proportion of air freight, as their high degree of flexibility better satisfies the need for rapid delivery of time-sensitive goods. By 2026, around 55 percent of freight capacity will be provided by dedicated freighters, up from less than half today.

### Cargo fleet will double as air traffic triples

Cargo traffic is set to triple from 190 billion RTKs to 600 billion RTKs. To satisfy this growth, the world's freighter fleet will double from 1,980 to 3,980 airplanes, and the widebody fleet will grow from 58 percent of today's fleet to 64 percent of the fleet in 2026.

The freighter fleet will largely be renewed during the period, with 1,350 of the current 1,980 airplanes removed and retired, the addition of 2,480 airplanes converted from passenger roles, and 870 new freighter airplanes added. More than half of the large freighters added (58 percent) will be new, compared with about 23 percent of the medium widebody airplanes added and only a small number of new standard body freighters.

Asia-Pacific will account for the largest share of both future freight capacity (40 percent) and of the large freighters added (42 percent). In North America, demand from the large express carriers will lead to a focus on medium widebody and standard body freighters.



New Airplane Markets



## Markets Drive Airplane Selection

*Airlines select the right airplanes for their chosen strategy and the rapidly changing competitive environment.*

### Airplane selection and market size

The volume of the market for airplanes will be dictated by the choices that airlines make in selecting the right airplanes to maximize future profitability.

They make these decisions in the context of their chosen strategy to address market opportunities and maintain competitive advantage.

The schematic illustrates how the market shapes the rationale behind selection of airplanes in each category. It assumes that airplanes are not acquired because of any inherent attraction of their own but rather because they provide the best opportunity for airlines to maximize their profit potential in the markets they have decided to serve.

Hence, the volume and attractiveness of each travel market eventually determines the number of airplanes in each category that will be acquired over the next 20 years.



### Airline decision process

Determine strategic plan ▶

◀ 1. Review current routes  
2. Select best new routes ▶

◀ Evaluate competitive landscape

### Market context

Business strategy options

Volume and characteristics of addressable markets

Select markets and strategy to maintain competitive advantage

- Serve markets with high local demand in long-haul markets.
- Link alliance partner hubs.
- Maximize onward connections.

- High-volume routes with few alternatives and little room for added frequency.
- Select from a relatively limited number of new routes with very high traffic potential.

- Selected markets have few new competitors, or current competitors are adding volume with larger airplanes rather than additional flights.

- Serve a range of medium- and long-haul markets, taking advantage of increasingly liberal market regulations by providing frequent, direct flights wherever possible.

- Review volume and growth of traffic on existing routes, yield trends, and options for future capacity and service frequency.
- There are many new route possibilities as international routes are liberalized.

- Increasing competition and larger markets are bringing more developed market segmentation within cabins and unique service offerings.

- Provide a wide variety of service in markets demanding frequent flights, many network connections, a wide choice of destinations, or dedicated premium services.

- Current routes need constant review as these dynamic markets are always evolving.
- As the overall market grows, more direct (point-to-point) services become viable.

- Low barriers to market entry leads to many new competitors, bringing lower fares to many markets.

- Maximize market coverage with many connecting flights to small cities.
- Develop low-traffic volume, high-yield markets.

- Grow traffic base on existing regional jet routes until the use of larger airplanes with lower per-seat costs becomes viable.
- Select from many potential opportunities to add new cities to network.

- Extend market coverage into competitor's local markets at relatively low risk.
- Provide direct services that overfly competitor hubs.

- Focus on dedicated freighter services or use underfloor cargo capacity on passenger airplanes.

- More efficient airplanes may now be available for existing routes.
- Emerging global trade flows and demand for consumer goods shape new routes.

- Competition from other modes of transport can be significant.



Review airplane performance and characteristics	Propose flight schedule ▶	◀ Evaluate financial performance of the proposed flight schedule ▶	◀ Select or assign airplanes to implement chosen schedule
<b>Identify airplanes with range, capacity, and economics suited to market opportunities</b>	<b>Match supply and demand</b>	<b>Varied economic and market scenarios present different profit potential</b>	<b>Airplane selection suited to market opportunities within planning time scale</b>
<ul style="list-style-type: none"> <li>Range, fuel efficiency, and speed are critical performance measures in large-airplane markets.</li> <li>Airplane efficiency and long range enable many new routes to be served, and differentiation in onboard service delivery must be cost efficient.</li> <li>Key performance measures are the economy, ease and cost of maintenance, short turnaround times between flights, reliability, and resale values.</li> <li>Large regional jets offer lower trip costs than many larger airplanes, and their potential for two-class service favors them over small regional jets.</li> <li>Newer conversion and production freighter airplanes offer better payload and range capabilities.</li> </ul>	<ul style="list-style-type: none"> <li>Focus on markets where frequency of service is limited by slot constraints or a narrow range of viable departure times.</li> <li>International markets are opening up with strong potential for new, direct flights; higher frequency flights with medium-sized twin-aisle airplanes are replacing some large-airplane service.</li> <li>Growth can be accommodated through increasing frequency on key existing routes or adding new destinations or additional airports between cities already served.</li> <li>Regional jets may be used to provide more frequent service on existing routes by filling in gaps in schedules operated by larger airplanes or extending service to smaller communities.</li> <li>Demand for freighter service may be highly directional; freight doesn't return as passengers do.</li> </ul>	<ul style="list-style-type: none"> <li>Best results likely from low-risk, high-volume markets with stable long-term demand.</li> <li>Better financial returns are possible because of a step change in new airplane economics.</li> <li>Overall system profitability can be enhanced with the most productive and reliable airplane types.</li> <li>The critical assessment is the contribution of connecting traffic to financial performance of overall network.</li> <li>High cost of fuel favors the use of new production freighters.</li> </ul>	<ul style="list-style-type: none"> <li>Size differential to next largest airplane in fleet should not be too great. Focus is on replacement of older airplanes. Commonality with freighter fleets will spread risk.</li> <li>Twin-aisle airplanes are flexible assets because they are well suited to a wide range of possible routes.</li> <li>Simplify fleet structure across a range of markets; there is strong demand to replace existing airplanes.</li> <li>High cost of fuel and the effect of congestion tends to favor new large regional jets and is increasing the attraction of small single-aisle airplanes in place of large regional jets.</li> <li>The greater number of new freighter airplane models on offer allows better matching of airplane capability to market requirements.</li> </ul>

## Demand for New Airplanes

**Airlines acquire new airplanes that fit their chosen business strategy and market opportunities**

**Market-driven demand for 28,600 new airplanes from 2007 to 2026**

**590** ◀ Demand for new **747 and larger** passenger airplanes ▶ **2%**

**5,810** ◀ Demand for new **twin-aisle** (small and medium) passenger airplanes ▶ **20%**

**17,630** ◀ Demand for new **single-aisle** passenger airplanes ▶ **62%**

**3,700** ◀ Demand for new **regional jets** ▶ **13%**

**870** ◀ Demand for new **freighter airplanes** ▶ **3%**

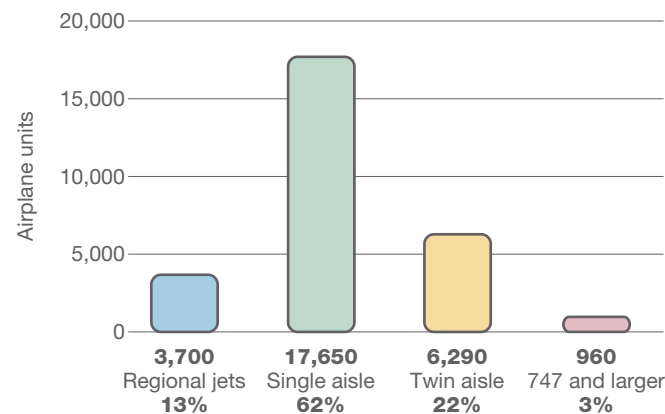


# Global Airplane Deliveries

How many and where airplanes will be delivered has widespread implications.

28,600 New Airplane Deliveries

2007 to 2026



## Airplane Deliveries

*The market for new airplanes is set to become considerably more geographically balanced.*

### More balanced deliveries

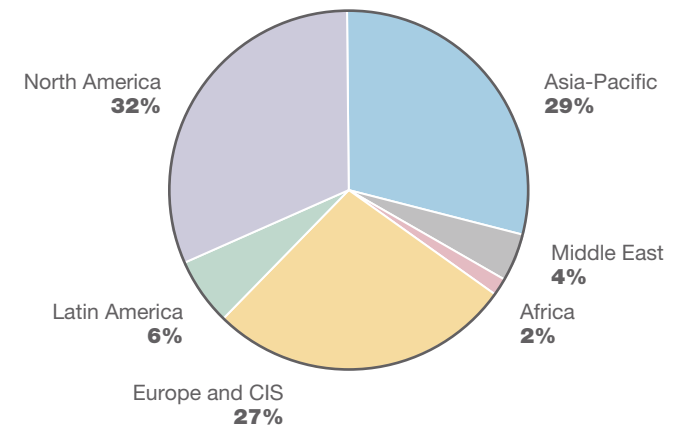
The increasing share of deliveries to large, rapidly growing regions such as Asia-Pacific, the Middle East, Latin America, and the Commonwealth of Independent States (CIS) will lead to a more stable long-term market. There will be reduced vulnerability to swings in regional economies or other variations in demand.

There will also be a shift toward twin-aisle airplane deliveries, with 22 percent of future deliveries and 23 percent of the 2026 fleet being twin aisle, compared with 17 percent of the fleet in 2006.



Deliveries by Region

2007 to 2026



### Implications for resourcing

These shifts in demand have strong implications for resourcing airline operations. The Asia-Pacific region will have the largest increase in fleet size. Its fleet will increase by 7,030 airplanes, from 3,370 to 10,400 airplanes, in the 20-year period. The additional 350 airplanes each year will demand more support personnel; higher training requirements; and expanded local maintenance, repair, and overhaul facilities.

The entire aviation infrastructure, including airports, ground equipment, air traffic control, aviation business professionals, and support services, is already expanding considerably in the rapidly growing regions.

Further expansion of aviation in Asia-Pacific is likely to be accomplished by a mixture of growth in Asian aerospace businesses, increased emphasis on overseas operations for Western firms, joint ventures with indigenous local companies, and locally developed expertise.

### Nearly two-thirds of deliveries will be single-aisle airplanes

The sheer volume of air transport in markets within regions (see page 11) and on short- to medium-range routes means that single-aisle airplanes will account for 62 percent of airplane deliveries.

While there is substantial demand from network airlines, rapidly growing low-cost or short-haul carriers will take well over half the single-aisle airplanes delivered.



Again, there is an implication for infrastructure, as single-aisle airplanes operate a high number of short flights each day, increasing their interaction with airports and air traffic control services.

Low-cost airlines typically source many of their support services from third parties. However, their airplanes tend to return to their home base more frequently, often overnighting there, which makes crewing and line maintenance resourcing less complex than for longer haul twin-aisle operations or more traditional network airlines.

### Deliveries by Airplane Size

Values above 20 have been rounded to the nearest 10.

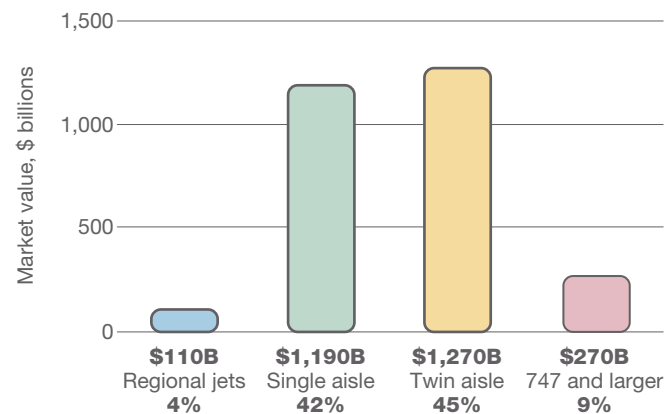
Region	Regional jets	Single aisle	Twin aisle	747 and larger	Total deliveries
Asia-Pacific	630	4,690	2,530	500	8,350
North America	1,880	5,840	1,330	90	9,140
Europe	450	4,630	1,360	230	6,670
Middle East	70	380	600	110	1,160
Latin America	140	1,370	210	10	1,730
CIS	460	470	110	20	1,060
Africa	70	270	150	0	490
<b>World total</b>	<b>3,700</b>	<b>17,650</b>	<b>6,290</b>	<b>960</b>	<b>28,600</b>

# Large Capital Market

New funding sources  
and more liquid assets.

\$2.8 Trillion Market Value

2007 to 2026



## Value of the Market

*\$2.8 trillion worth of airplane assets will need to be funded,<sup>1</sup> with more than half delivered outside Europe and the United States.*

### Increased diversification mitigates risk

The increased diversification of deliveries by region, described on pages 16 and 17, mitigates financing risk by making airplane assets more globally fungible.

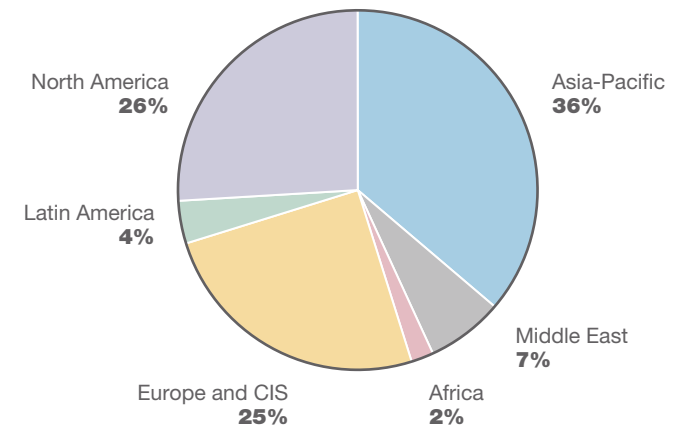
In such a large and dynamic capital market, rapid innovation in financing vehicles and global financing infrastructure will reduce airplane financing and ownership costs.

This evolution of airplane finance will be accompanied by the enhanced global legal framework exemplified by the Cape Town Treaty,<sup>2</sup> protecting the rights of the owners of the airplane asset and further increasing the attractiveness of participation in international airplane finance.



Market Value by Region

2007 to 2026



### Shifting geographic emphasis

As the value share of the market increases in Asia-Pacific, the Middle East, and Latin America, we will see new airplane financing sources evolve in these regions.

### Highest individual asset value in the Middle East

The average value of airplanes to be financed in world markets will be around \$100 million before discounts. The highest average asset value by region will be in the Middle East—60 percent more than the world average—at \$160 million. The lowest average asset value to be financed will be in Latin America and CIS markets, at \$70 million, closely followed by North America, at \$80 million.



### Market Value by Airplane Size

Values above \$20 billion have been rounded to the nearest \$10 billion in 2006 dollars.

Region	Regional jets	Single aisle	Twin aisle	747 and larger	Total market value
Asia-Pacific	19	320	530	150	1,020
North America	60	390	260	20	730
Europe	10	320	260	70	660
Middle East	2	30	130	30	190
Latin America	3	80	40	1	120
CIS	14	30	19	3	70
Africa	2	18	30	0	50
<b>World total</b>	<b>110</b>	<b>1,190</b>	<b>1,270</b>	<b>270</b>	<b>2,840</b>

### North America will be the largest source of used airplanes

Based on its large fleet of existing airplanes, North America will remain the largest source of used airplanes. Europe and the Middle East will have the lowest proportion of their existing fleet in service in 20 years' time, with just under a quarter of today's airplanes in each region lasting for the forecast period.

<sup>1</sup> Valued at manufacturers' 2006 list prices.

<sup>2</sup> Full text is at [www.unidroit.org/english/conventions/mobile-equipment/main.htm](http://www.unidroit.org/english/conventions/mobile-equipment/main.htm).



## New Airplanes Delivering Strong Benefits

*In 2026, 80 percent of the airplanes in service will be new as from today. These new airplanes will be better for the environment, better for passengers, and better for airlines.*

### Satisfying a wide spectrum of interests

The best way to ensure that critical issues in aviation are addressed is to find a way of doing so by aligning the interests of all parties concerned. This is what drives the process of development and delivery of new airplanes into the fleet. And now more than ever, the interest of our planet itself is central to this process.

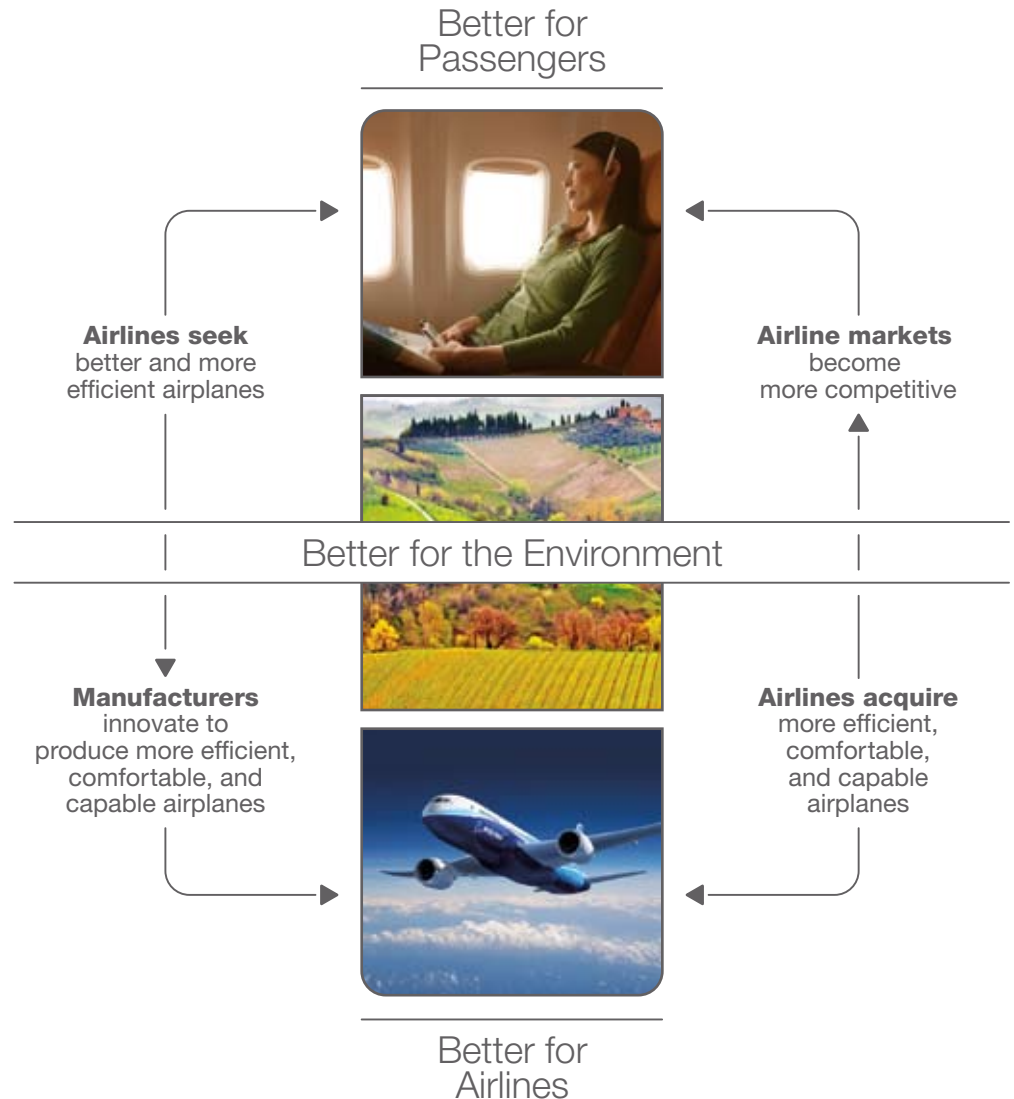


Continued evolution of the market through deregulation, privatization, and globalization increases competition and forces airlines to operate at much higher levels of efficiency. In response, airlines typically focus on reducing cost and increasing the revenue potential of their offerings, with the emphasis being determined by their business orientation.

As airplane manufacturers compete to succeed in the airplane market, they are driven to respond to these needs by providing more efficient airplanes, which in turn increases competition between airlines and so on.

## Passengers Seek More Value

### Driving continuous improvement



### Better for the environment

To achieve lower costs, airlines will use more fuel-efficient airplanes and implement more efficient operating procedures. As they do so, emissions will be lowered and noise levels decreased. The relationship between airline cost cutting and the environment provides benefits for both.

Air travel today is one of the most efficient and environmentally friendly forms of transportation and continues to improve. Since 1970, emissions per passenger-kilometer and noise have been cut in half.

Environmental considerations will be integral to the design of future airplanes. New types such as the 787 and 747-8 will offer up to a 20 percent reduction in fuel use per passenger, reducing greenhouse gas emissions, and will offer up to a 60 percent reduction in noise footprint.

#### For more environmental information

Boeing New Airplane Web site

- [www.newairplane.com](http://www.newairplane.com)

Air Transport Action Group Web site

- [www.enviro.aero](http://www.enviro.aero)

### Better for passengers

Passengers want the convenience of nonstop travel and more frequency choices—they want to fly where they want to go, when they want to go there.

More direct, reliable, and comfortable journeys will be made possible as new airplane types such as the 787 become prevalent over the forecast period. And the travel experience itself will be more comfortable, as new airplanes will have better interiors and better air quality.

Lower airline costs and increased competition will drive down fares—making air transport more affordable and accessible to more people.

### Better for airlines

Technology and innovation offered in new airplanes will provide increased airplane capability (range and payload), greater productivity (less time out of service for maintenance and repair), and lower operating costs (lower fuel burn and maintenance cost).

These airplane improvements will allow airlines to add new direct flights, attract more passengers, and become more productive while lowering their costs.



The Outlook  
by Region



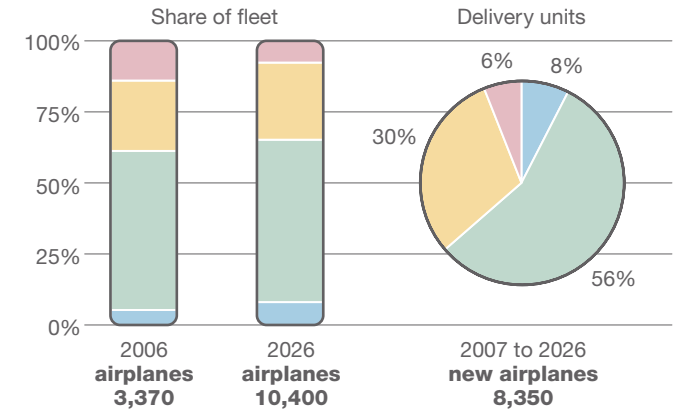
# New Airplane Markets by Major Region

In diverse future markets, each region has a distinctive fleet composition.

## Asia-Pacific

**Includes:** China, Northeast Asia, Oceania, Southeast Asia, and Southwest Asia.

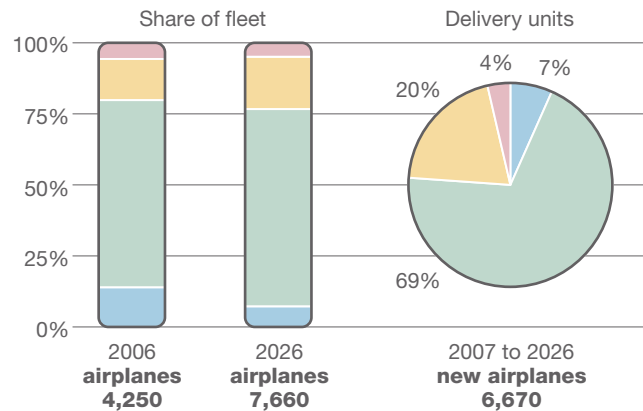
**Value: \$1,020 billion**



## Europe

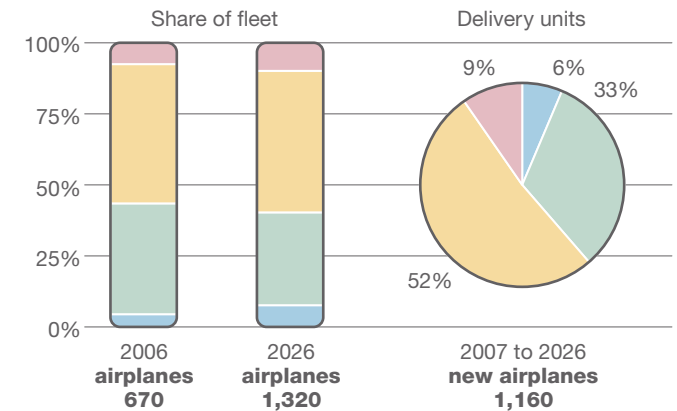
**Value: \$660 billion**

- 747 and larger
- Twin aisle
- Single aisle
- Regional jets



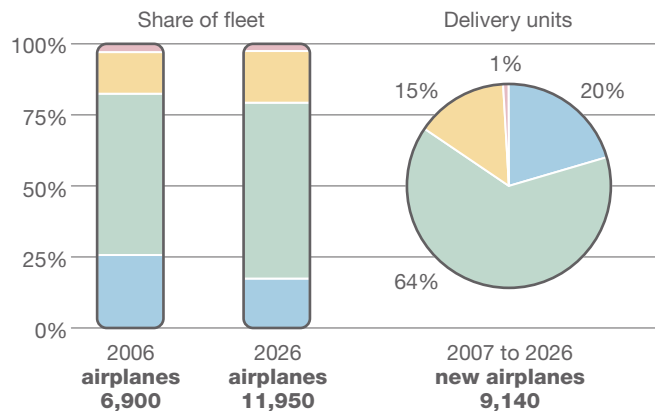
## Middle East

**Value: \$190 billion**



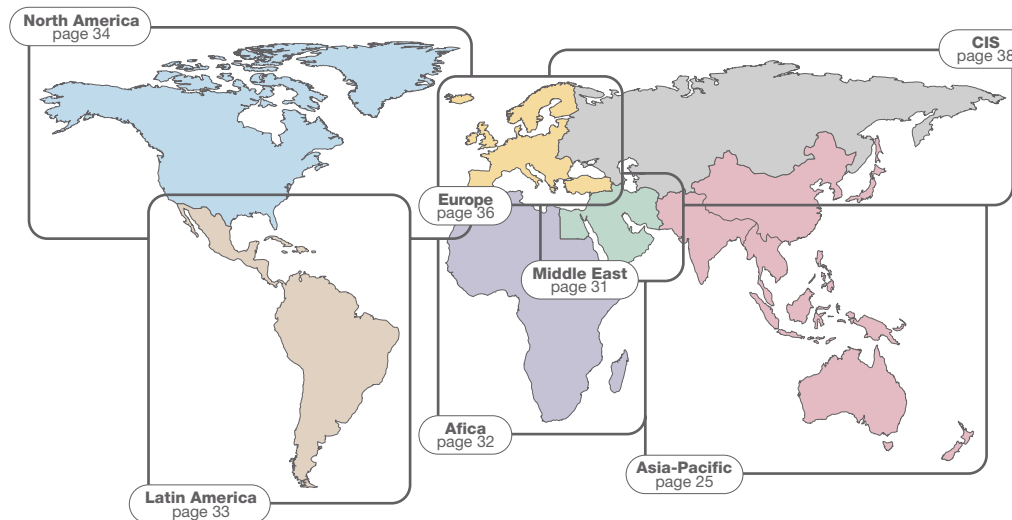
## North America

Value: \$730 billion



## World Regions

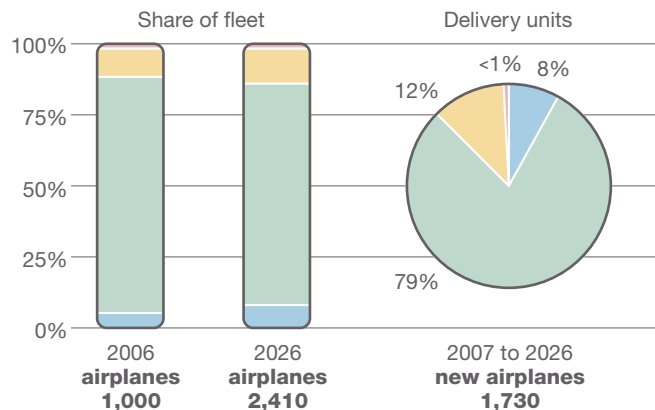
Value: \$2,840 billion



## Latin America

Includes: Central America and South America.

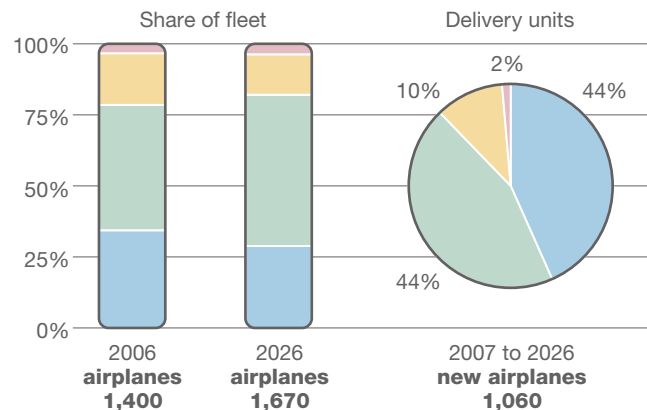
Value: \$120 billion



## CIS

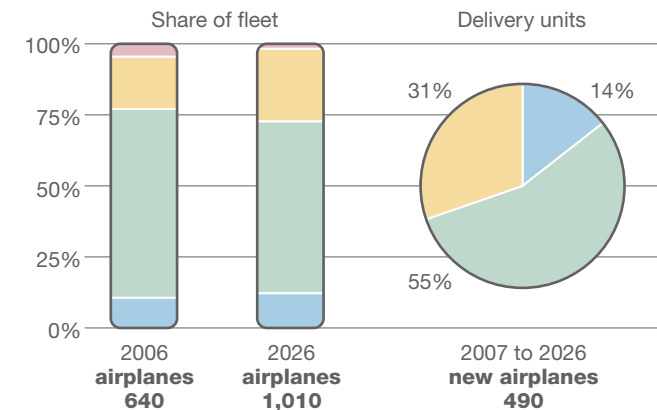
Commonwealth of Independent States. Includes: Russia.

Value: \$70 billion



## Africa

Value: \$50 billion







## World Summary

### Annual growth

GDP	3.1%
RPKs	5.0%
RTKs	6.1%

### Deliveries

Value, \$B	2,840
Average, \$M	100
New airplanes	28,600
747 and larger	960
Twin aisle	6,290
Single aisle	17,650
Regional jets	3,700

### Total fleet

2006	18,230
2026	36,420

## World Summary

*The fundamental contribution of air transport to everyday life will continue to support strong demand for new and better airplanes.*

### 28,600 new passenger and freighter airplanes

Forecast numbers include demand for both passenger and freighter airplanes.

Published for the first time this year, and included in all totals, is our extensive analysis of markets in the CIS, including Russia (see page 38), and all Russian and Ukrainian-built airplanes in the world market.

### 43 percent of the current fleet will remain in service

Of the current fleet of 18,230 airplanes, 7,820 (43 percent) will be in service in 2026, of which 2,480 will have been converted to freighters.

### 6.8 billion passengers in 2026

To provide efficient, cost-effective transport for the anticipated 6.8 billion airline passengers in 2026, each airplane in the passenger fleet of 32,440 (see page 43 for a breakdown) will carry an average of 210,000 passengers, or roughly 575 for each and every day of the year.

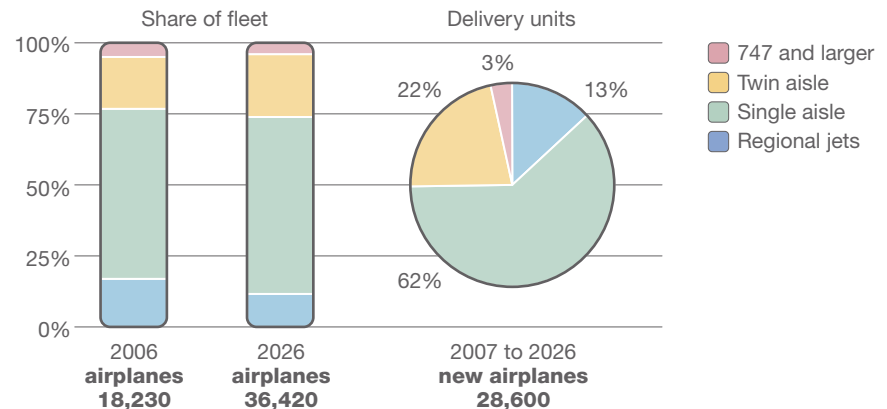


### Low-cost and short-haul services

The share of capacity provided by low-cost (which includes long-haul services) and short-haul airlines (many of which are similar to low-cost airlines in nature) will grow from 22 percent in 2006 to around 30 percent in 2026. Charter and inclusive tour carriers will provide a further 4 percent.

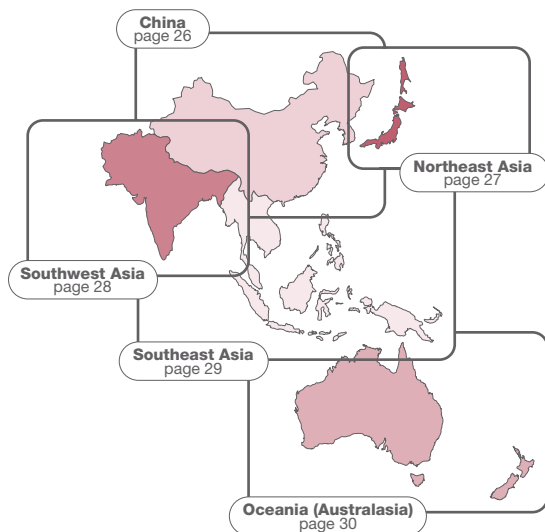
## World Deliveries

Value: \$2,840 billion



## Five Asia-Pacific Regions

8,350 new airplane deliveries



## Share of Fleet That Is Leased

Source: Ascend CASE, in service, excluding parked airplanes, year-end 2006.

Asia-Pacific regions	Fleet in 2006	Average age, years	Share of fleet that is leased
China	1,150	8	38%
Northeast Asia	650	11	14%
Oceania (Australasia)	320	10	37%
Southeast Asia	880	12	32%
Southwest Asia	360	12	50%
<b>Asia-Pacific</b>	<b>3,370</b>	<b>10</b>	<b>33%</b>
<b>World total</b>	<b>18,230</b>	<b>13</b>	<b>30%</b>

## Asia-Pacific

Nearly 40 percent of world traffic in 2026 will be to, from, and within Asia-Pacific.

### Presented in five regions

To provide a full analysis of demand in this large and varied region, Asia-Pacific is presented in five regions as shown on the map.

Overall, air traffic in Asia-Pacific will increase at a rate 1.8 times higher than that of economic growth (GDP)—which compares to a multiplier of 1.6 for the world as a whole.

The table illustrates how airlines in the region operate a large proportion of new airplanes, many of which are leased.



## Asia-Pacific

### Annual growth

GDP	3.7%
RPKs	6.5%
RTKs	7.3%

### Deliveries

Value, \$B	1,020
Average, \$M	120
New airplanes	8,350
747 and larger	500
Twin aisle	2,530
Single aisle	4,690
Regional jets	630

### Total fleet

2006	3,370
2026	10,400



## China

*China will account for 12 percent of world demand for airplanes.*



### China

Annual growth		Rank 1-11
GDP	6.6%	1
RPKs	8.0%	1
RTKs	7.6%	3
Deliveries		
Value, \$B	350	3
Average, \$M	100	5
New airplanes	3,380	3
747 and larger	90	5
Twin aisle	750	3
Single aisle	2,210	3
Regional jets	330	4
Total fleet		
2006	1,150	4
2026	4,470	3

### China has a young fleet

Over the past 6 years, the Chinese airline fleet has doubled, from 560 to 1,150 airplanes. At the same time, the average age of the airplanes has declined substantially, from 13 years in 2000 to 8 years today. The Chinese fleet is more than 2 years younger in average age than the overall Asia-Pacific fleet.

### A higher proportion of airplanes are leased

To flexibly manage their fleet, Chinese airlines find leasing airplanes an attractive option. In 1990, around 10 percent of the Chinese airline fleet was leased. Today, that proportion is nearly 38 percent—higher than in Asia-Pacific (33 percent) and than the world average (30 percent).

### Growing to be equivalent in size to today's North American market

Following an anticipated surge in passenger traffic for the 2008 Beijing Olympic Games, the China domestic market will grow nearly fivefold by 2026 to become slightly larger than today's North American market.

## Leased Fleet

### Growth from 10% to 38%



### Increased deregulation to spur China's economic development

China's aviation system is rapidly developing and moving toward deregulation. Along with continued investment in aviation infrastructure, this will be central to realizing the potential for air travel demand and its contribution to growing the economy.

Airlines in China are expected to continue to work with partner airlines from overseas through joint venture partnerships and alliance membership. They will focus on developing management, flight operations, maintenance engineering, and cabin services.

### Rising foreign investment and low labor rates supporting cargo growth

China's role as a premier manufacturing center for products such as telecommunications equipment, computers, and clothing generates strong demand for exporting these goods by air. As such, China will have the third highest air cargo growth rate, well above the world average.

## Northeast Asia

*Prosperous economies, growing national travel demand, and expanding links to China.*

### Growing national travel demand

Japan has the world's second largest economy, but per capita air travel in Japan is low relative to its economic status. (See chart below.) As Japan's air travel market is liberalized, airlines are continually improving service at more competitive prices, and Japanese travelers are responding by traveling more. South Korea is also seeing a continued expansion of air travel as its economy continues to grow, and a rise in personal incomes increases the propensity to travel.

Air travel markets of Northeast Asia are characterized by a healthy mixture of business and personal travel. As travel per capita continues to rise, the personal travel growth rate will likely exceed that of business travel.

### Hub development in Tokyo and Seoul

Tokyo and Seoul are the most significant hubs in the region. Their airports are both reaching capacity limits today, but expansion is planned to deliver greater capacity and reduced congestion by around 2010.

The region provides natural geographic hubs to support and capitalize on the explosive growth and fragmentation of services to and from China. Cooperation between airlines in Northeast Asia and China will continue to increase—as exemplified by recent agreements between ANA, Asiana, Air China, and Shanghai Airlines.



### Strongest growth potential

Markets to China, Southeast Asia, and Southwest Asia have the greatest growth potential, with strong and expanding business ties and increasing tourism. Recent multilateral air service agreements among China, Japan, and South Korea will play a large role in developing air travel.

### Northeast Asia

Annual growth	Rank 1-11
GDP	1.4% 11
RPKs	5.4% 6
RTKs	7.2% 4

### Deliveries

Value, \$B	210	5
Average, \$M	150	2
New airplanes	1,390	6
747 and larger	130	3
Twin aisle	650	5
Single aisle	530	7
Regional jets	80	8

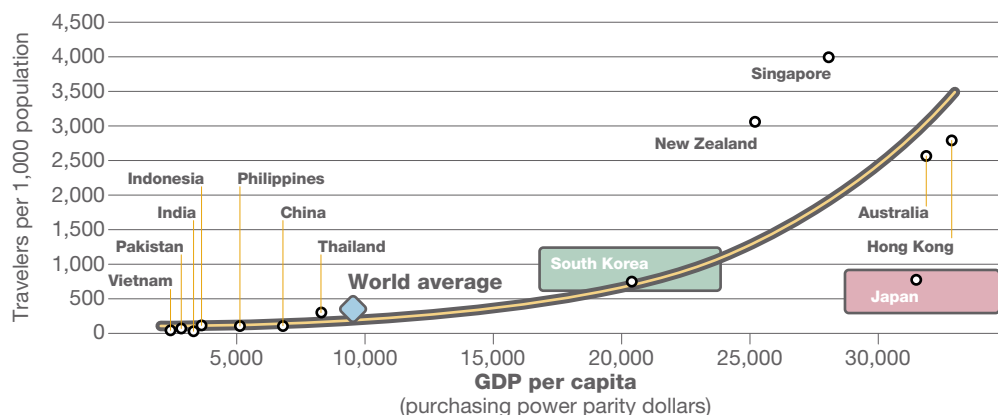
### Total fleet

2006	650	8
2026	1,680	6

## Travel Propensity

Source: ICAO 2005 total passengers by country. Estimated GDP per capita (PPP), CIA. World Population Statistics, U.S. Census, 2002.

### Potential for more Japanese travelers





## Southwest Asia (including India)

*Liberalized markets are producing unprecedented growth and competition.*



### Rapid international growth fueled by liberalized markets

Robust economic growth and market liberalization have made Southwest Asia the second fastest growing passenger market in the world. India's gateway airports handled close to 26 million international passengers during the 12 months ending March 2007, a 15 percent increase over the previous year.

New bilateral air service treaties are permitting greater market access, additional seats, higher frequencies, more airlines, and new airport pairs. A recent U.K. Civil Aviation Authority (CAA) study credits loosened regulatory constraints for increasing U.K.–India service from 34 weekly flights to 112. The number of airlines flying between the United Kingdom and India doubled from 3 to 6, yielding consumer benefits valued at £39 million (\$78 million) a year in lower fares and time savings.

### Airlines compete with rail for a growing middle class

About half of India's 1.1 billion people are under the age of 25, representing an increasingly prosperous segment of potential air passengers.

## Southwest Asia

Annual growth		Rank 1–11
GDP	6.6%	1
RPKs	6.7%	2
RTKs	9.9%	1
Deliveries		
Value, \$B	100	8
Average, \$M	90	8
New airplanes	1,070	8
747 and larger	20	8
Twin aisle	220	7
Single aisle	750	6
Regional jets	80	7
Total fleet		
2006	360	10
2026	1,260	9

According to a report from McKinsey Global Institute (MGI), India's middle class will grow to nearly 600 million people as consumption balloons from \$380 billion to \$1.5 trillion by 2025.

Airlines offer travelers the opportunity to reach their destination in a fraction of the time required by train at fares that are competitive with air-conditioned rail. India's population averages only 0.02 air trips per capita per year, indicating the potential for attracting rail passengers to the skies.

### Critical infrastructure improvements under way

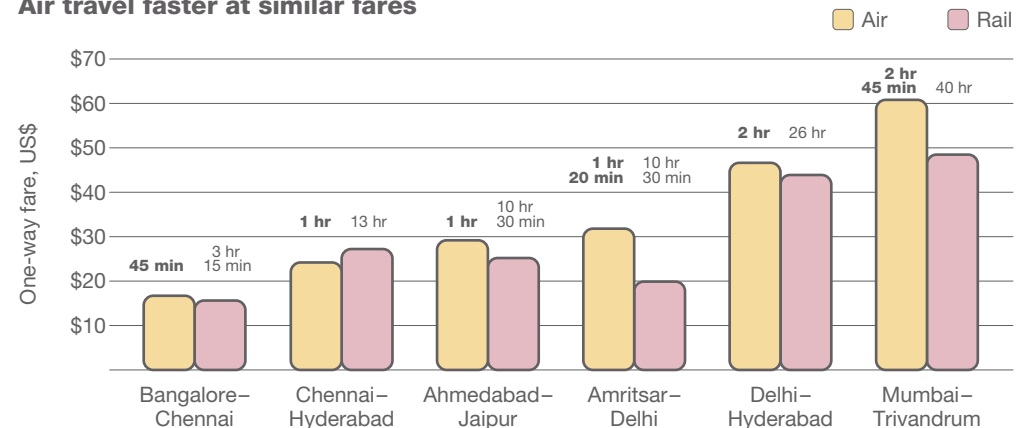
Tempering the prospects for rapid traffic growth is the burden on existing airport and related infrastructure. For example, primary facilities such as Mumbai and Delhi have already exceeded their design capacities.

Public and private interests are addressing critical requirements. More than \$9 billion in public and private financing is being invested over the next 3 years to improve and modernize India's airports. In addition, more than \$1 billion is being invested at 35 nonmetropolitan airports in less developed parts of India.

## Air-Rail Competition in India

Source: Air Deccan/Indian Rail Web sites, July 2007.

### Air travel faster at similar fares



## Southeast Asia

*“Open Sky will be an important component of the overall economic integration of ASEAN.”<sup>1</sup>*

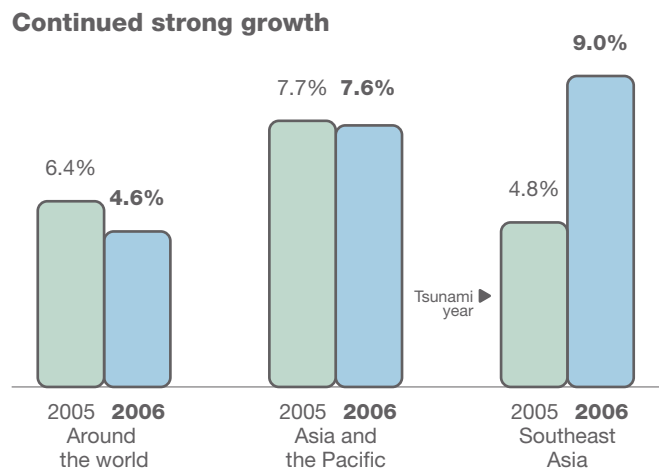
### Ongoing growth in a rapidly developing economic community

Through the activities of ASEAN, the region’s 10 countries have evolved into a significant economic community, increasingly integrated in the global economy. Demand for air transport has flourished, driven by the region’s accelerating economic development. Passenger traffic is projected to grow 5.9 percent per year over the next 20 years, while cargo traffic grows 6.8 percent, outpacing the global average.

The region’s substantial number of airplane orders, including significant orders for twin-aisle airplanes that will enter service over the next few years, reflects confidence in continued economic growth.



International Tourism Source: World Tourism Organization.



Additional aviation capacity will be needed to keep pace with growing air transport demand, creating a requirement for an estimated 1,930 new airplanes, which represents \$290 billion in investment opportunities.

ASEAN’s plan for further liberalization of international air links will drive continued strong growth. Air transport is a key component of ASEAN’s “Ten Nations, One Community” goal, stimulating trade and investment, fostering leisure travel, and promoting tourism.

### New entrants in the low-cost segment

Southeast Asia contributes significantly to the burgeoning expansion of international tourism enjoyed by the entire Asia-Pacific region. A thriving tourism market and potential for strong domestic and regional traffic growth create conditions favorable to the development of low-cost long-haul carriers.

Successful adoption of the low-cost carrier business model at airlines such as Lion Air and AirAsia is a recent but rapidly developing trend. Low-cost startup airlines have expanded in both domestic and international markets, even as established flag carriers have created their own low-cost subsidiaries to take advantage of the rapidly growing market for these services.



## Southeast Asia

Annual growth		Rank 1-11
GDP	4.4%	4
RPKs	5.9%	4
RTKs	6.8%	6
<b>Deliveries</b>		
Value, \$B	290	4
Average, \$M	150	3
New airplanes	1,930	4
747 and larger	220	2
Twin aisle	730	4
Single aisle	860	5
Regional jets	120	6
<b>Total fleet</b>		
2006	880	6
2026	2,310	5

<sup>1</sup> Preparing ASEAN for Open Sky—Final Report. The ASEAN nations are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

## Oceania (Australasia)

*Australia and New Zealand have achieved greater integration into the global economy through major macroeconomic restructuring.*



### Oceania

Annual growth		Rank 1-11
GDP	2.9%	8
RPKs	5.0%	9
RTKs	8.2%	<b>2</b>
Deliveries		
Value, \$B	70	9
Average, \$M	120	<b>4</b>
New airplanes	580	10
747 and larger	40	7
Twin aisle	180	9
Single aisle	340	10
Regional jets	20	11
Total fleet		
2006	320	11
2026	680	11

### Global integration and expanding air services

The region is strongly focused on inbound tourism and anticipates higher growth in the near future, with accelerating airplane deliveries. The largest air travel flows are consistently to and from South-east Asia and within Oceania. Average annual traffic with North America and Northeast Asia is expected to grow at 7 percent and 6.6 percent per year, respectively, exceeding the world average.

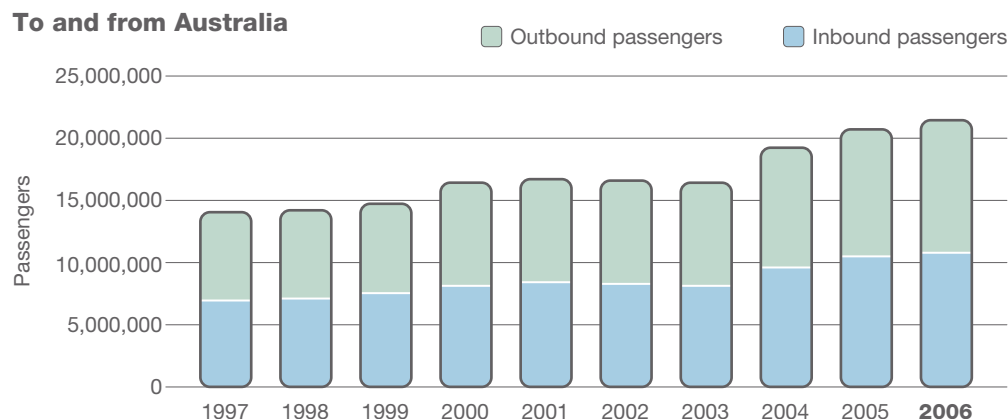
### International expansion

Growth in international markets provides great opportunities to established carriers, while inviting new competitors.



## International Scheduled Traffic

Source: Australian government, Department of Transport and Regional Services.



The region's airlines have booked significant numbers of new airplane orders to support expansion plans. Qantas, Air New Zealand, and Air Pacific will introduce a large number of small twin-aisle airplanes, which will bring more affordable, more comfortable service and allow these three airlines to expand their market presence in a wide range of destinations.

In March 2007, Australia expanded its bilateral agreements with the United Arab Emirates and Qatar. These agreements provide greater market access to competing airlines between Australia and the Middle East, as well as inbound from Europe.

### Transformation in low-cost carriers

The recent emergence of low-cost carriers in Asia gives budget travelers more affordable opportunities to visit Oceania. Virgin Blue is soon expected to introduce flights to the United States, under the brand V Australia. Along the same lines, Qantas' JetStar is growing rapidly in both long- and short-haul, low-fare markets.

## Middle East

*Ambitious growth plans, modern air transport infrastructure, and a central world location.*

### Tremendous growth

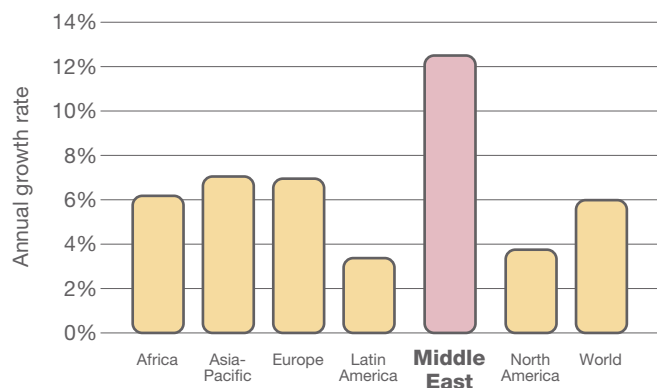
Air travel has grown faster in the Middle East than in any other world region, averaging more than 12 percent for each of the last 5 years.

Airlines based in the Gulf have successfully exploited their geographic location to connect passengers traveling between Europe, Asia, Africa, Oceania, and recently, the Americas. New airports such as Dubai World Central, whose eventual capacity of 120 million passengers exceeds the world's largest existing airport, will support further growth.

### Traffic (RPKs)

Source: ICAO.

#### 2001 to 2006



### Low-cost carrier potential

Growth opportunities in the Middle East are being driven not only by geography, deregulation, liberalization, and economic growth, but also by the region's demographics.

While typically known for its wealth and high-end passengers, who are particularly well-served by the region's international air carriers, the region is home to a large number of Asian laborers who seldom fly and are often prevented from going home by the cost of air travel.

Recognizing the great potential for low-cost service in this market, four startup airlines have launched in the past few years. Air Arabia of Sharjah and Jazeera Airways of Kuwait have already become well established, and NAS Air and Sama of Saudi Arabia began service in 2007. These carriers already carry 5 percent of the region's internal air traffic. Further easing of government restrictions is necessary throughout the region for these efforts to realize their full potential in stimulating new passenger traffic.



### Middle East

Annual growth		Rank 1-11
GDP	4.0%	6
RPKs	5.7%	5
RTKs	7.1%	5

### Deliveries

Value, \$B	190	6
Average, \$M	160	1
New airplanes	1,160	7
747 and larger	110	4
Twin aisle	600	6
Single aisle	380	9
Regional jets	70	9

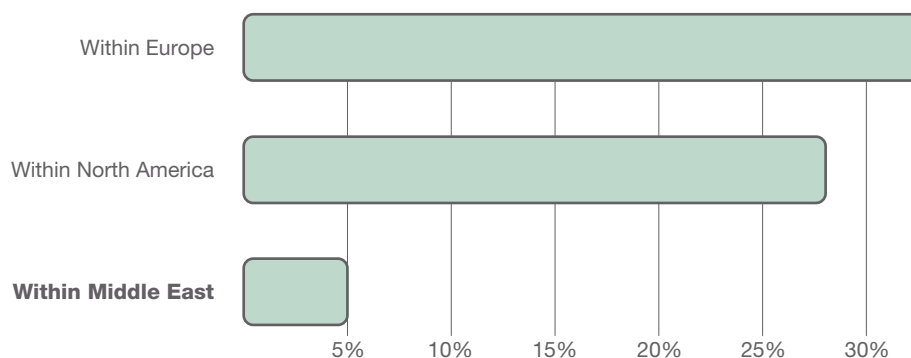
### Total fleet

2006	670	7
2026	1,320	8

### Low-Cost Carrier Competition

Source: OAG/Boeing research, May 2007.

#### Share of capacity





## Africa

*Abundant resources, agricultural and commercial centers, and natural wonders are a strong draw for business and leisure travelers.*



### Africa

Annual growth		Rank 1-11
GDP	4.9%	3
RPKs	5.4%	6
RTKs	6.1%	7

### Deliveries

Value, \$B	50	11
Average, \$M	100	7
New airplanes	490	11
747 and larger	-	11
Twin aisle	150	10
Single aisle	270	11
Regional jets	70	10

### Total fleet

2006	640	9
2026	1,010	10

### Above average growth

The distances and geographic challenges of travel within the continent, compounded by the lack of good roads and railways, foster strong growth in regional air transport, as increased trade and commerce and a growing middle class boost demand. The anticipated annual traffic growth of 5.4 percent will be above the world average.

Single-aisle airplanes dominate air travel within the continent, accounting for about three-fourths of the available seat-kilometers flown within the region. Low-cost airlines are now offering service in many markets.

Intercontinental travel will nonetheless remain the mainstay of air transport, constituting about 80 percent of Africa's total air commerce. Travel between Africa and Europe will continue to be the largest international market, although African carriers are extending their operations to destinations in North and South America, the Asia-Pacific region, and China. As in other parts of the world, small and intermediate twin-aisle airplanes have become more significant in serving these international markets.

Air cargo is also an important component of African air service, with Europe the major trade partner, followed by the Middle East and North America. Air cargo traffic is also growing rapidly between Africa and China.

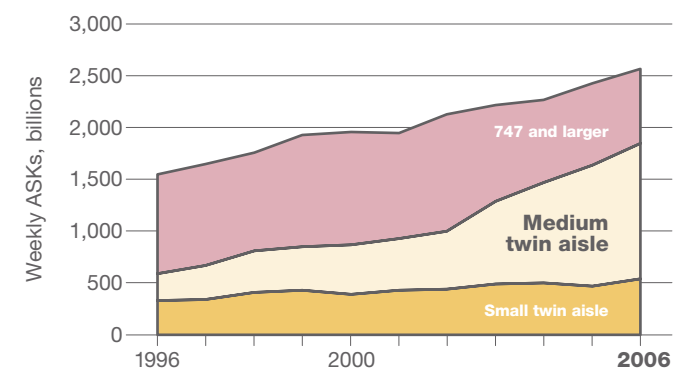
### Progress on aviation policies

Positive developments in the aviation industry within Africa are also contributing to growth. Countries within Africa continue to promote progress on aviation policies and to harmonize civil aviation legislation, licensing, and technical standards across the African continent.



## Long-Haul Market Trend

### Growing with twin-aisle airplanes



## Latin America

*Projected traffic growth rates for Latin American carriers are among the highest in the world.*

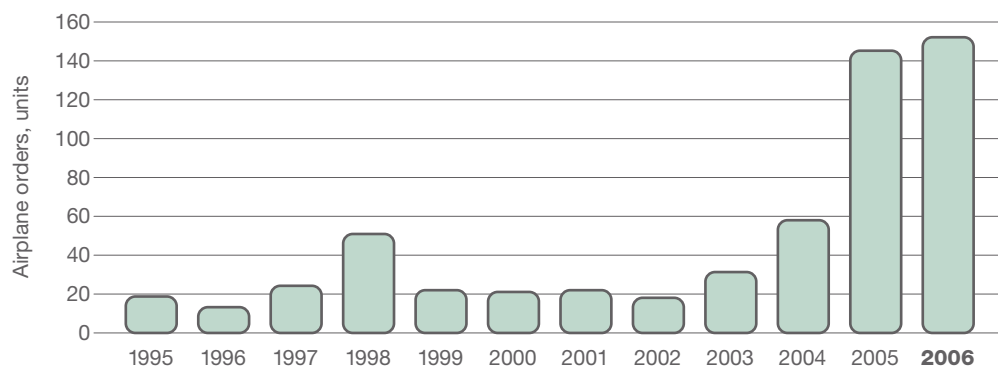
### Latin America air travel becoming more convenient and less expensive

Latin America is knitting together a strong aviation market. One of the region's most respected airline CEOs cites "the three Cs" of success as capital, capacity, and cost. All three have improved dramatically in recent years.

Increased access to private capital is having a profound impact. The ability to fund new airplane purchases is allowing airlines to revitalize their fleets and pursue growth strategies. The efficiency and economy of the recently ordered airplanes will bring improvement in the other two areas, helping airlines manage costs and earn profit while boosting capacity.

### Airplane Order Surge

#### Orders by year



Added capacity is giving the region's carriers an operating scale they have never enjoyed before, enabling them to compete with the many U.S. and European carriers that serve the region. Latin American carriers currently provide only 25 percent of the capacity into the region. Passengers are benefiting from service to new destinations and the convenience of more frequent flights.

### Low-cost airlines stimulate the market

New low-cost airlines are expanding service, lowering fares, and stimulating traffic. Latin America lends itself well to the low-cost model, with large domestic and regional markets, long distances between major cities, and limited surface transport options. GOL and other low-cost carriers now account for more than 40 percent of Brazil's domestic market.

In Latin America's second largest market, Mexico, six low-cost airlines have initiated service since 2005. These new startup carriers have a large pool of potential new passengers. Currently, 95 percent of the Mexican population does not travel by air. With a growing middle class, Mexico seems ripe for a transition from bus-dominated transport toward low-cost air travel. The large number of Latin American residents in the United States also presents great potential for new cross-border service.



### Latin America

Annual growth		Rank 1-11
GDP	3.8%	7
RPKs	6.2%	3
RTKs	6.1%	7

#### Deliveries

Value, \$B	120	7
Average, \$M	70	10
New airplanes	1,730	5
747 and larger	10	10
Twin aisle	210	8
Single aisle	1,370	4
Regional jets	140	5

#### Total fleet

2006	1,000	5
2026	2,410	4



## North America

Annual growth		Rank 1-11
GDP	2.8%	9
RPKs	4.0%	11
RTKs	5.4%	10
Deliveries		
Value, \$B	730	<b>1</b>
Average, \$M	80	9
New airplanes	9,140	<b>1</b>
747 and larger	90	6
Twin aisle	1,330	<b>2</b>
Single aisle	5,840	<b>1</b>
Regional jets	1,880	<b>1</b>
Total fleet		
2006	6,900	<b>1</b>
2026	11,950	<b>1</b>

## North America

*A return to overall airline profitability may signal widespread fleet renewal.*

### Competitive and highly dynamic markets

With nearly 7,000 jet airplanes, the airlines of North America have 38 percent of the world's jet airplane fleet. Although this highly developed market has relatively modest growth rates, it will still require about 9,100 new airplanes.

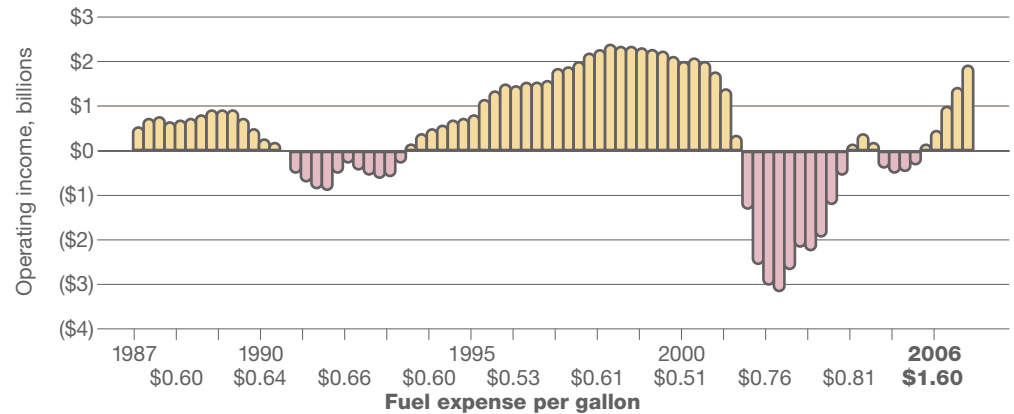
84 percent of new deliveries to North America will be single-aisle and regional jets, driven by the vast domestic air travel market. Single-aisle jets will account for 63 percent of the fleet by 2026, up from 58 percent today. Expanding international service will drive the small- and mid-size twin-aisle airplane category to an 18 percent share of the North America fleet by 2026, up from 14 percent today.

### Return to industry profitability despite oil prices

After years of losses totaling billions of dollars, the majority of U.S. airlines have returned to profitability. Restructuring by established network airlines led to cuts in unprofitable off-peak flying and saw outsourcing of other flights to regional partners using smaller jets. Other cuts included reductions in staff and reworked labor agreements.

## U.S. Industry Operating Income

### Form 41, four-quarter moving average



Capacity reductions combined with sky-rocketing fuel prices drove large numbers of mainline airplanes into retirement. Between 2000 and 2006, nearly 800 mainline airplanes were either parked or permanently retired.

As difficult as the restructuring was, U.S. network carriers emerged with lower costs and greater efficiency. Continued fuel price pressure leaves airline planners considering the need to replace many current airplanes with newer, more economical types.

**Network carrier fleet aging**

By the year 2013, more than 500 airplanes, mostly single-aisle types, would be at least 25 years old if there were no retirements from existing North American fleets.

The economic case for wide-scale fleet renewal is compelling, with the significant improvements in airplane capability, fuel efficiency, and maintenance costs of new airplanes. The resurgence of network carrier profits is expected to prompt a significant replacement cycle as near-term action appears crucial.

Ordering new airplanes within the next 2 years will allow network airlines to avoid unmanageable replacement activity when fleet aging becomes a critical concern in 6 to 8 years' time.

**Network airlines focus on international growth**

Although traditional network carriers have significantly reduced domestic service, they have by no means given up on plans for expansion.

International services have not felt the same yield impact as the highly price competitive domestic market. Network carriers have realized the profit potential of increasingly liberalized, higher yield international markets and have shifted domestic capacity overseas.

Intercontinental operations account for more than 40 percent of U.S. network mainline flying. Liberalization of key international markets such as Europe will continue to drive strong demand for long-haul services.

**Low-cost carriers gain domestic share as network carriers restructure**

The LCC sector has grown explosively over the past several years, with an 80 percent increase in capacity since the year 2000 as LCCs filled the void left by retreating network airlines.

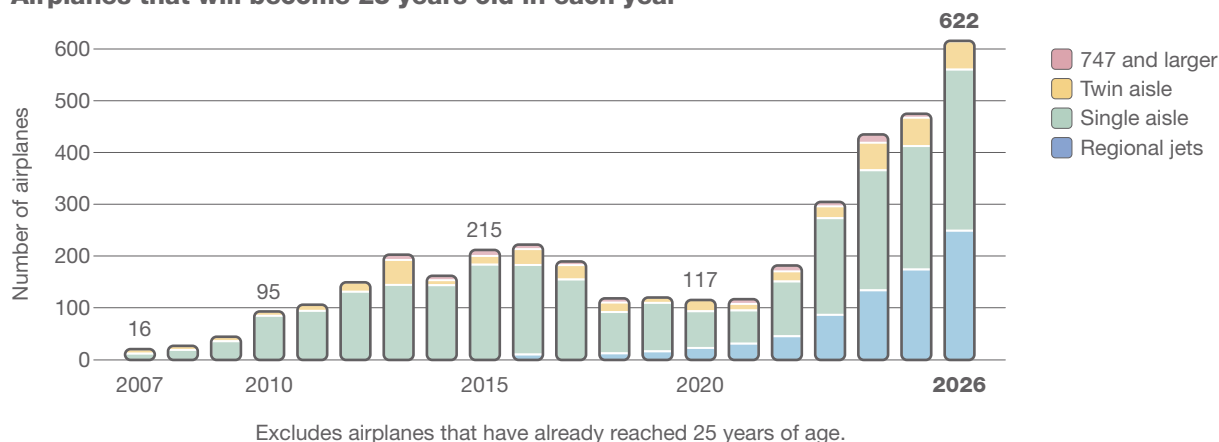
With nearly 500 new single-aisle airplanes added since 2000, LCCs have gained 10 points of domestic market share. This shift combined with unprecedented load factor pressure signals a new paradigm for the hypercompetitive U.S. market.

We anticipate further pressure from high-growth LCCs on network carrier market share over the next 10 years, while load factors will continue to float at already high levels.

**Emerging Need to Replace Older Airplanes**

Source: Acend, June 2007.

**Airplanes that will become 25 years old in each year**







## Europe

Annual growth		Rank 1-11
GDP	2.1%	10
RPKs	4.2%	10
RTKs	5.2%	11
Deliveries		
Value, \$B	660	<b>2</b>
Average, \$M	100	6
New airplanes	6,670	<b>2</b>
747 and larger	230	<b>1</b>
Twin aisle	1,360	<b>1</b>
Single aisle	4,630	<b>2</b>
Regional jets	450	<b>3</b>
Total fleet		
2006	4,250	<b>2</b>
2026	7,660	<b>2</b>

## Europe

*Emerging competitors and a long-term possibility of slowing domestic markets will force European airlines to innovate to compete.*

### Traffic growth strong now, slower later on

The remarkable strength of European airline traffic growth relative to the region's recent economic growth is expected to continue for some time. There is still much potential to be realized from newly acceded nations in the European Union and from stronger ties with other neighboring European and North African nations. For example, Morocco is now part of the single European aviation market.

In the longer run, European traffic growth could be impeded by taxes and emissions-trading policies intended to slow growth in air travel. Many European airlines are taking a proactive stance toward openly measuring and improving performance in areas related to the environment. In addition to acquiring new, more efficient airplanes, they are working closely with airplane manufacturers to ensure that future designs deliver the highest possible environmental performance.

### Reduced market regulation in international markets

Reduced market regulation will be a near-term feature of many international markets to Europe, beginning with the European Union–U.S. Open Skies agreement that comes into effect in March 2008. The largest impact of this agreement is likely to be in markets from continental Europe to the United States rather than U.K. markets, as U.K.–U.S. markets outside London were already under a liberal regulatory regime. The agreement for the first time allows airlines of one European country to serve the United States directly from another European country, which is where the largest opportunity lies.



Early next year, there will be a flurry of new route introductions as U.S. routes from London Heathrow open up. However, the largest impact will inevitably be delayed until the reorganization of its terminals, which should be completed in phases through to 2015. This will group the airlines of each major alliance (Star Alliance, Oneworld, and SkyTeam) in the same respective terminals, for the first time allowing same-terminal transfers for connecting passengers on many international services. Mixed-mode runway operations, more efficient air traffic procedures, and the proposed third runway will be needed to substantially increase airplane movements (and thus available slots) at the airport.



### Competing with airlines in emerging regions

Airlines in emerging regions are gaining increased freedom to compete in international markets that provide European airlines with a sizable portion of their revenue base. Some, in the Middle East, for example, have the benefit of newly installed, efficient, and attractive infrastructure and a wide variety of open skies agreements. Others, such as in Southwest Asia (India, in particular), draw on large indigenous populations with strong ties to Europe.

The map shows how European airlines can rely on large traffic flows that competitors from regions such as the Middle East cannot easily draw traffic from. European airlines are building their business from a largely different world perspective—one that features large point-to-point markets and plenty of growth opportunities through connecting traffic on flows where they have a natural advantage.

### European airlines highly innovative

European airlines are traditionally pioneering and intensely competitive in developing new service offerings and in providing better value to passengers.

Their next area of innovation is likely to be in large-scale low-cost, long-haul service. This development is anticipated in our forecast. European charter airlines have proven the operational viability of long-haul services with a very low cost product.

Reduced market regulations offer the opportunity to apply elements of the low-cost business to an immense selection of potential markets. Short-haul, low-cost airlines have proven the feasibility of high-volume, direct selling of seats with low transaction costs.

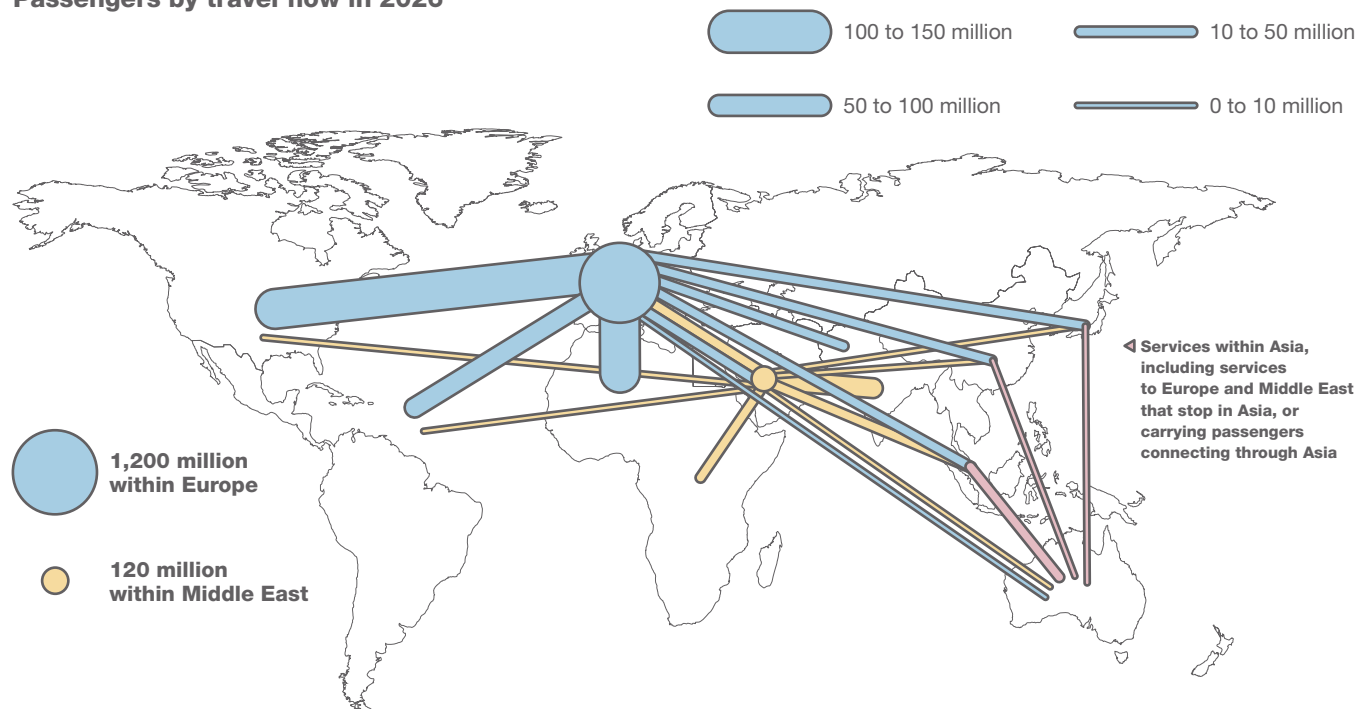
Now, airlines have the opportunity to marry these two disciplines and to further benefit from ancillary sales.

Low-cost, long-haul flights have always been popular with European travelers, who treasure their freedom to use their ample holiday allowance for an escape to far-off places on at least an annual basis.

Strong interest in this sector is signaled by the acquisition of LTU by Air Berlin and the announcement by current Ryanair Chief Executive Michael O’Leary of his intended exploitation of emerging possibilities for low-cost service to the United States.

## Europe and Middle East Airline Market Development

Passengers by travel flow in 2026



## The Outlook by Region



### CIS

\*CIS to Europe.

#### Annual growth

		Rank 1-11
GDP	4.3%	5
RPKs	5.4%	6
RTKs*	5.7%	9

#### Deliveries

Value, \$B	70	10
Average, \$M	70	11
New airplanes	1,060	9
747 and larger	20	9
Twin aisle	110	11
Single aisle	470	8
Regional jets	460	2

#### Total fleet

2006	1,400	3
2026	1,670	7

## CIS (includes Russia)

*CIS airlines will purchase approximately 1,060 new airplanes worth \$70 billion by 2026.*

### Half of CIS airlines are in Russia

In the past 20 years, there has been a strong surge of new airlines in the CIS. Previously, Aeroflot was the main airline serving the region, but today there are over 230 airlines operating out of the CIS. Russia has the largest concentration of airlines, followed by Kazakhstan, Kyrgyzstan, and Moldova.

### Oil-driven economic boom

The economy of the CIS continues to grow at a rapid pace. GDP growth is anticipated at 4.3 percent per year over the next 20 years—well above world GDP growth of 3.1 percent per year.

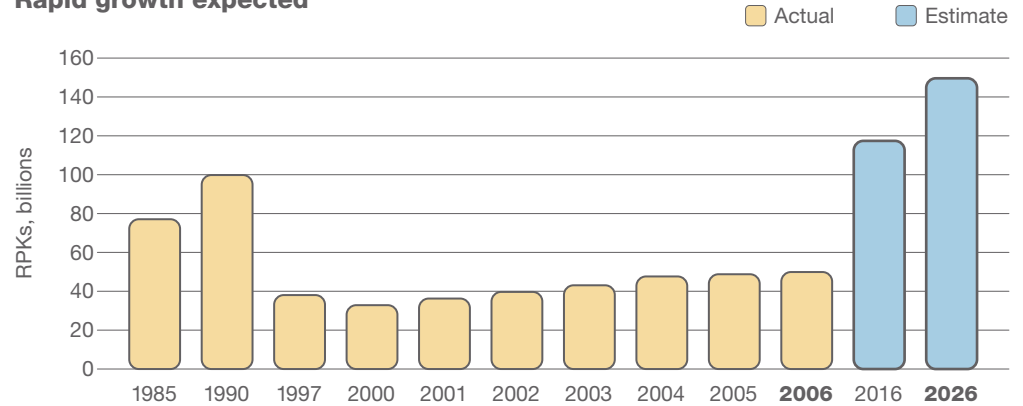
In addition to economic growth through exploitation of oil reserves, many countries are strengthening their economies in the service sector by promoting tourism and increasing manufacturing output. Rising personal incomes are creating more disposable income for travel.

Projected annual traffic growth of 5.4 percent is almost equally divided between travel within the CIS and travel to and from the CIS.

## Airline Traffic Projections

Source: ICAO/Boeing.

### Rapid growth expected



### Airlines have begun to evolve new business strategies, join strategic alliances, and modernize their fleets

As the industry evolves, we are starting to see consolidation among airlines. Currently, there are 120 commercial passenger and cargo carriers operating in Russia. By 2015, it is estimated that there will be 15 major airlines in Russia.

For example, in May of this year, AirUnion formed through the merger of KrasAir, Domodedovo Airlines, Samara Airlines, Omskavia, and Sibaviatrans, and Rossiya merged with Pulkovo Airlines.

Consolidation is also taking place in Ukraine. AeroSvit and Donbassareo plan to collaborate under the brand Ukrainian Aviation Group.



## Global E-ticketing

Source: International Air Transport Association.

Share of all tickets	April 2006	December 2007 (estimated)
Middle East/North Africa	11%	89%
China/North Asia	32%	96%
Asia-Pacific	37%	89%
Africa	36%	84%
Europe	66%	93%
Americas	64%	89%
United States	87%	97%
CIS	1%	66%
<b>Total</b>	<b>48%</b>	<b>92%</b>

## Internet Use

Source: www.internetworldstats.com.

Proportion of Internet users	June 2007
Middle East/North Africa	9%
China/North Asia	14%
Asia-Pacific	10%
Africa	2%
Europe	47%
Americas	22%
United States	70%
CIS	15%
<b>Total</b>	<b>18%</b>

## Code sharing and alliances

Code sharing is also growing in the region. Transaero signed an agreement with Malaysia Airlines for flights to Kuala Lumpur and with Aeroflot on the Moscow–St. Petersburg route. Rossiya has a code share agreement with Austrian Airlines for Vienna–St. Petersburg and Vienna–Krasnodar flights.

Aeroflot recently became a member of the SkyTeam alliance. Code sharing and alliances will give CIS airlines access to new markets, which will increase passenger numbers and revenues and allow profits to be used to invest in fleet growth and replacement of older airplanes.

## Airlines are improving efficiency through e-ticketing

Today's airline business models rely heavily on e-ticketing, which helps cut airline costs and makes ticket purchases easier. CIS airlines also facilitate payment for e-tickets through local banks, post offices, and retail outlets. E-ticketing is typically correlated with Internet use, and regions with the highest Internet use (North America and Europe) also have the highest e-ticket use. The CIS lags slightly behind the world average in Internet use at 15 percent, which indicates potential for growth in both of these areas.



Useful  
Data

# Passenger Traffic

World passenger traffic will grow from 4.2 trillion RPKs in 2006 to 11.4 trillion in 2026.



## Growth by Regional Flow

RPKs, billions	1985	1990	1995	2000	2001	2002
<b>Africa–Africa</b>	<b>13.5</b>	<b>14.7</b>	<b>14.8</b>	<b>19.4</b>	<b>19.9</b>	<b>21.2</b>
<b>Africa–Europe</b>	<b>43.0</b>	<b>47.7</b>	<b>57.2</b>	<b>99.4</b>	<b>96.2</b>	<b>97.2</b>
<b>Africa–Middle East</b>	<b>5.2</b>	<b>7.4</b>	<b>6.5</b>	<b>9.8</b>	<b>10.6</b>	<b>13.2</b>
<b>Africa–North America</b>	<b>1.2</b>	<b>1.3</b>	<b>2.6</b>	<b>4.4</b>	<b>4.6</b>	<b>4.3</b>
<b>Africa–Southeast Asia</b>	<b>0.3</b>	<b>0.9</b>	<b>3.2</b>	<b>3.2</b>	<b>3.4</b>	<b>3.6</b>
Central America–Central America	12.8	14.3	18.3	24.0	23.0	23.4
Central America–Europe	17.9	27.6	44.2	66.4	69.8	68.1
Central America–North America	43.3	63.7	71.1	90.1	88.6	87.7
Central America–South America	3.3	3.5	4.3	7.3	7.2	7.1
<b>China–China</b>	<b>8.4</b>	<b>18.3</b>	<b>56.6</b>	<b>76.7</b>	<b>86.9</b>	<b>101.5</b>
<b>China–Europe</b>	<b>9.6</b>	<b>16.9</b>	<b>26.6</b>	<b>40.1</b>	<b>40.2</b>	<b>42.6</b>
<b>China–North America</b>	<b>7.8</b>	<b>13.4</b>	<b>21.6</b>	<b>33.2</b>	<b>36.2</b>	<b>33.2</b>
<b>China–Northeast Asia</b>	<b>6.8</b>	<b>10.9</b>	<b>16.0</b>	<b>19.4</b>	<b>18.4</b>	<b>24.5</b>
<b>China–Oceania</b>	<b>3.0</b>	<b>5.8</b>	<b>9.2</b>	<b>12.1</b>	<b>12.4</b>	<b>13.2</b>
<b>China–Southeast Asia</b>	<b>8.1</b>	<b>14.5</b>	<b>23.0</b>	<b>29.3</b>	<b>31.7</b>	<b>36.9</b>
CIS Region–CIS Region	175.8	224.2	63.4	39.4	43.5	46.9
CIS Region–International	15.9	24.1	33.9	42.9	48.1	51.4
<b>Europe–Europe</b>	<b>170.0</b>	<b>258.3</b>	<b>306.8</b>	<b>440.1</b>	<b>449.3</b>	<b>453.8</b>
<b>Europe–Middle East</b>	<b>43.4</b>	<b>41.5</b>	<b>44.9</b>	<b>65.0</b>	<b>59.8</b>	<b>58.6</b>
<b>Europe–North America</b>	<b>158.6</b>	<b>230.7</b>	<b>278.9</b>	<b>420.0</b>	<b>373.8</b>	<b>346.0</b>
<b>Europe–Northeast Asia</b>	<b>17.0</b>	<b>29.3</b>	<b>46.5</b>	<b>63.6</b>	<b>55.8</b>	<b>53.3</b>
<b>Europe–South America</b>	<b>12.2</b>	<b>22.3</b>	<b>32.9</b>	<b>53.2</b>	<b>52.1</b>	<b>49.2</b>
<b>Europe–Southeast Asia</b>	<b>26.6</b>	<b>46.4</b>	<b>65.9</b>	<b>95.8</b>	<b>95.9</b>	<b>96.4</b>
<b>Europe–Southwest Asia</b>	<b>11.9</b>	<b>17.5</b>	<b>20.7</b>	<b>26.2</b>	<b>27.5</b>	<b>27.6</b>
Middle East–Middle East	17.7	19.5	20.7	27.8	27.1	27.5
Middle East–North America	5.0	6.6	10.3	16.1	12.0	10.4
Middle East–Southeast Asia	15.1	11.0	20.6	24.0	22.9	24.0
Middle East–Southwest Asia	14.5	16.6	23.2	29.4	29.9	31.1
<b>North America–North America</b>	<b>470.6</b>	<b>589.1</b>	<b>670.5</b>	<b>857.5</b>	<b>812.8</b>	<b>783.5</b>
<b>North America–Northeast Asia</b>	<b>46.9</b>	<b>95.2</b>	<b>121.5</b>	<b>140.2</b>	<b>127.5</b>	<b>121.2</b>
<b>North America–Oceania</b>	<b>11.0</b>	<b>19.0</b>	<b>24.1</b>	<b>30.0</b>	<b>27.6</b>	<b>26.5</b>
<b>North America–South America</b>	<b>14.5</b>	<b>19.6</b>	<b>35.9</b>	<b>47.2</b>	<b>44.8</b>	<b>42.7</b>
<b>North America–Southeast Asia</b>	<b>8.0</b>	<b>15.3</b>	<b>25.9</b>	<b>32.1</b>	<b>29.3</b>	<b>30.5</b>
Northeast Asia–Northeast Asia	32.3	50.0	67.4	79.0	80.2	85.0
Northeast Asia–Oceania	6.1	12.9	31.8	24.1	22.5	24.5
Northeast Asia–Southeast Asia	16.0	32.5	44.3	48.5	47.8	54.4
<b>Oceania–Oceania</b>	<b>18.6</b>	<b>26.2</b>	<b>42.7</b>	<b>49.2</b>	<b>50.7</b>	<b>50.2</b>
<b>Oceania–Southeast Asia</b>	<b>12.2</b>	<b>24.3</b>	<b>33.1</b>	<b>46.2</b>	<b>47.6</b>	<b>46.6</b>
South America–South America	29.5	33.8	39.7	53.5	50.8	52.7
<b>Southeast Asia–Southeast Asia</b>	<b>17.7</b>	<b>29.9</b>	<b>53.8</b>	<b>53.7</b>	<b>57.0</b>	<b>60.6</b>
<b>Southeast Asia–Southwest Asia</b>	<b>5.7</b>	<b>5.8</b>	<b>8.1</b>	<b>10.9</b>	<b>11.6</b>	<b>12.6</b>
Southwest Asia–Southwest Asia	10.5	11.6	15.2	16.0	16.6	17.4
<b>Rest of the world</b>	<b>5.7</b>	<b>7.3</b>	<b>9.2</b>	<b>15.2</b>	<b>16.0</b>	<b>16.9</b>
<b>World total</b>	<b>1,573</b>	<b>2,182</b>	<b>2,567</b>	<b>3,381</b>	<b>3,290</b>	<b>3,279</b>

## Growth Rate (Percent)

2003	2004	2005	2006	2026	1986 to 2006	2006 to 2026
22.5	24.0	26.4	29.7	94.9	3.9	6.0
99.1	105.2	111.3	115.3	337.7	5.0	5.5
13.9	13.9	16.4	17.9	54.2	6.1	5.7
4.4	3.9	3.8	4.8	15.2	7.0	5.9
3.7	3.9	4.7	4.8	16.6	13.5	6.4
24.8	26.0	25.2	26.0	103.2	3.5	7.1
69.8	75.7	80.1	82.1	188.7	7.5	4.2
92.0	103.5	104.9	108.0	222.0	4.3	3.7
7.1	8.3	10.7	12.7	43.2	6.9	6.3
106.9	143.8	163.8	182.6	986.9	15.6	8.8
37.5	51.2	60.9	73.9	236.8	10.1	6.0
24.9	34.4	40.2	48.6	167.4	9.0	6.4
20.1	27.3	29.0	30.0	93.3	7.2	5.8
10.6	15.0	17.1	19.4	47.8	9.0	4.6
27.7	41.2	48.9	48.6	153.2	8.7	5.9
50.2	54.7	56.0	57.4	184.6	-5.7	6.0
56.4	63.0	65.2	66.7	189.8	7.0	5.4
474.7	521.2	561.9	594.0	1,172.8	6.0	3.5
58.9	67.7	74.1	88.4	200.5	3.7	4.2
349.5	375.7	390.7	403.8	1,017.9	4.4	4.7
48.3	59.8	61.0	61.8	178.2	6.1	5.4
49.5	57.9	65.4	71.8	223.5	8.5	5.8
95.0	104.5	111.3	110.4	319.6	6.8	5.5
29.5	35.7	44.3	54.2	161.0	7.5	5.6
28.1	32.0	34.0	36.3	108.9	3.6	5.6
9.6	12.6	14.4	19.5	57.1	6.8	5.5
26.4	29.2	33.3	38.3	111.2	5.0	5.5
33.8	35.6	38.3	44.1	141.5	5.6	6.0
828.3	927.7	972.3	978.5	1,906.1	3.5	3.4
103.0	120.8	126.2	122.6	333.5	4.1	5.1
25.9	30.1	31.5	32.3	124.7	4.9	7.0
37.6	39.9	49.9	59.1	194.9	7.0	6.2
26.8	33.6	36.5	36.5	167.2	7.1	7.9
86.1	83.6	83.9	84.2	215.1	4.5	4.8
22.8	27.1	25.7	24.6	87.7	6.3	6.6
45.7	61.5	67.1	74.4	242.2	7.1	6.1
55.5	58.8	63.0	67.9	154.9	6.3	4.2
42.0	54.6	60.1	57.4	156.9	7.2	5.2
47.9	52.9	60.8	72.9	252.3	4.5	6.4
59.4	73.9	82.4	89.3	286.2	7.9	6.0
12.5	14.9	17.1	19.2	78.5	6.3	7.3
17.7	21.3	25.0	29.6	160.1	5.2	8.8
18.2	26.7	31.9	38.8	158.0	9.8	7.3
3,304	3,754	4,026	4,238	11,346	4.8	5.0





# 28,600 New Deliveries

Including CIS markets and passenger and freighter airplanes in all markets.

## Single-Aisle Passenger Airplanes

More than 175 seats	90 to 175 seats	Regional jets
Boeing 707, 757 <b>Boeing 737-900ER</b> <b>Airbus A321</b> Boeing/MDC DC-8 <b>Tupolev TU-204, TU-214</b>	Boeing 717-200, 727 Boeing 737-100 through -500 <b>Boeing 737-600, -700, -800</b> <b>Airbus A318, A319, A320</b> Boeing/MDC DC-9, MD-80, -90 Fokker 100 BAe 146-300, Avro RJ100 <b>Embraer 190, 195</b> <b>Bombardier CRJ-1000</b> Yakovlev Yak-42 Tupolev TU-154 Ilyushin Il-62 <b>AVIC ARJ-900</b>	Dornier 328 Jet Fokker 70, F28 BAe 146-100, -200 Avro RJ70, RJ85 <b>Bombardier CRJ Embraer 170, 175</b> <b>ERJ-135, -140, -145</b> <b>Sukhoi Superjet 100</b> <b>Antonov An-148</b> Tupolev TU-134 Yakovlev Yak-40 <b>AVIC ARJ-700</b>

## Market by Airplane Size

2007 to 2026

Size category	Market value 2006 \$B	Market share value	New airplane deliveries	Market share units
Large*	270	9%	960	3%
Medium	680	24%	2,880	10%
Small	590	21%	3,410	12%
<b>Total twin aisle</b>	<b>1,540</b>	<b>54%</b>	<b>7,250</b>	<b>25%</b>
More than 175 seats	240	8%	2,560	9%
90 to 175 seats	950	34%	15,090	53%
<b>Total single aisle</b>	<b>1,190</b>	<b>42%</b>	<b>17,650</b>	<b>62%</b>
<b>Total regional jets</b>	<b>110</b>	<b>4%</b>	<b>3,700</b>	<b>13%</b>
<b>Total market</b>	<b>2,840</b>	<b>100%</b>	<b>28,600</b>	<b>100%</b>

## Twin-Aisle Passenger Airplanes

**Bold:** Airplanes in production or launched.

Large	Medium	Small
3 class: More than 400 seats	2 class: 310 to 400 seats 3 class: 250 to 370 seats	2 class: 230 to 310 seats 3 class: 180 to 250 seats
<b>Boeing 747</b> <b>Airbus A380</b>	<b>Boeing 777</b> <b>Airbus A330-300, A340</b> <b>Airbus A350-900, -1000</b> Boeing/MDC MD-11 Ilyushin Il-86	<b>Boeing 767, 787</b> Airbus A300, A310, <b>A330-200</b> <b>Airbus A350-800</b> Boeing/MDC DC-10 Lockheed L-1011 <b>Ilyushin Il-96</b>

\*Large passenger and large freighter categories differ.

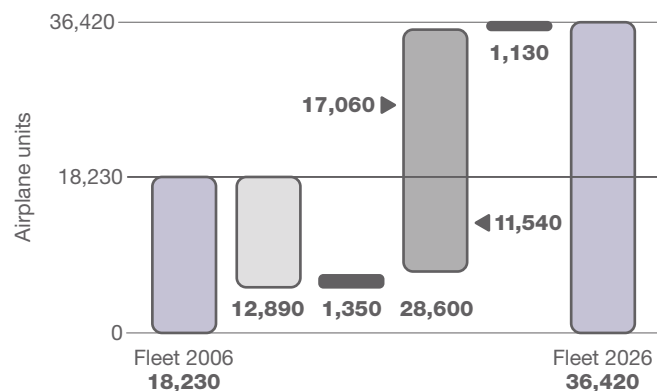


## Passenger Fleet Development

Size category	End of year 2006	Removed from service	Converted to freighter	New deliveries 2007 to 2026	End of year 2026
Large*	580	560	–	590	610
Medium	1,180	870	–	2,620	2,930
Small	1,310	1,160	–	3,190	3,340
<b>Total twin aisle</b>	<b>3,070</b>	<b>2,590</b>	<b>1,210</b>	<b>6,400</b>	<b>6,880</b>
More than 175 seats	1,290	1,030	–	2,540	2,800
90 to 175 seats	8,890	5,400	–	15,090	18,580
<b>Total single aisle</b>	<b>10,180</b>	<b>6,430</b>	<b>1,270</b>	<b>17,630</b>	<b>21,380</b>
<b>Total regional jets</b>	<b>3,000</b>	<b>2,520</b>	<b>–</b>	<b>3,700</b>	<b>4,180</b>
<b>Total passenger</b>	<b>16,250</b>	<b>11,540</b>	<b>2,480</b>	<b>27,730</b>	<b>32,440</b>

## How the Fleet Grows

### Fleet development, 2006 to 2026



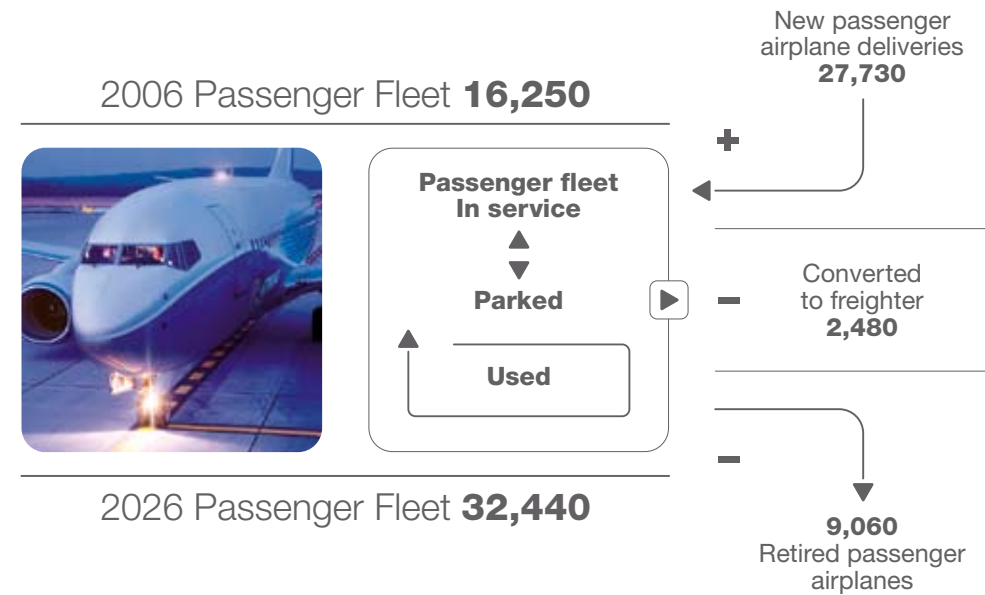
## Freighter Fleet Development

Size category	End of year 2006	Removed from service	Converted to freighter	New deliveries 2007 to 2026	End of year 2026
Large*	470	220	460	630	1,340
Medium widebody	680	430	750	220	1,220
Standard body	830	700	1,270	20	1,420
<b>Total freighter</b>	<b>1,980</b>	<b>1,350</b>	<b>2,480</b>	<b>870</b>	<b>3,980</b>
<b>Total fleet</b>	<b>18,230</b>	<b>12,890</b>	<b>2,480</b>	<b>28,600</b>	<b>36,420</b>

- Total fleet
- Removed or converted airplanes
- Airplanes converted to freighters
- New airplane deliveries

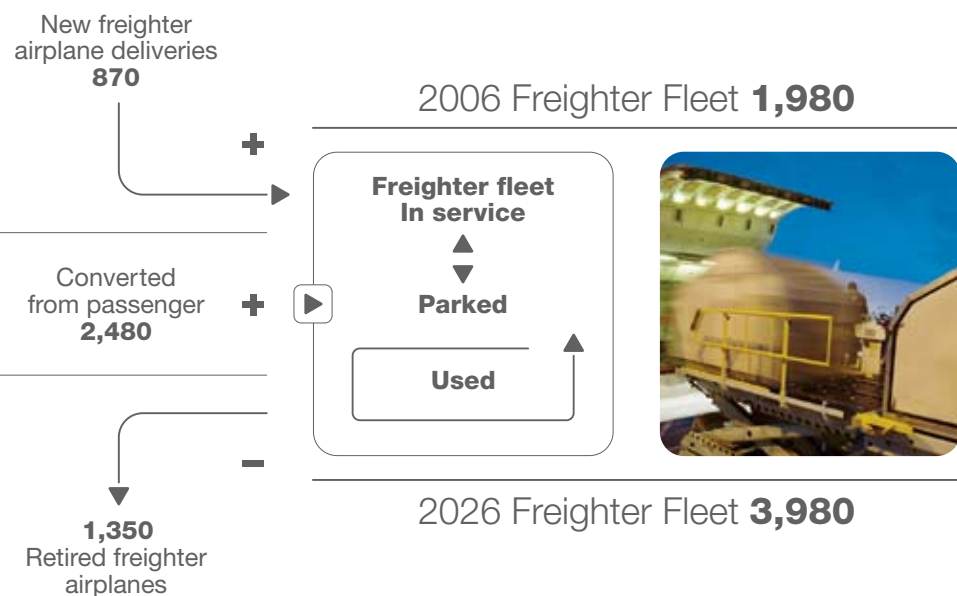
# How the Fleet Changes

The fleet, including freighters, will grow from 18,230 to 36,420 airplanes by 2026.



Fleet by Region in 2006

Region	Regional jets	Single aisle	Twin aisle	747 and larger	Total fleet
Asia-Pacific	140	1,920	860	450	3,370
North America	1,770	3,990	1,000	140	6,900
Europe	560	2,830	650	210	4,250
Middle East	20	270	330	50	670
Latin America	40	850	100	10	1,000
CIS	480	640	250	30	1,400
Africa	70	420	130	20	640
<b>World total</b>	<b>3,080</b>	<b>10,920</b>	<b>3,320</b>	<b>910</b>	<b>18,230</b>



## Fleet by Airplane Size

Size category	2006 airplanes in service	2006 fleet share	2026 airplanes in service	2026 fleet share
Large*	910	5%	1,370	4%
Medium	1,330	7%	3,510	10%
Small	1,990	11%	4,560	13%
<b>Total twin aisle</b>	<b>4,230</b>	<b>23%</b>	<b>9,440</b>	<b>27%</b>
More than 175 seats	1,550	9%	3,390	9%
90 to 175 seats	9,370	51%	19,410	53%
<b>Total single aisle</b>	<b>10,920</b>	<b>60%</b>	<b>22,800</b>	<b>62%</b>
<b>Total regional jets</b>	<b>3,080</b>	<b>17%</b>	<b>4,180</b>	<b>11%</b>
<b>Total fleet</b>	<b>18,230</b>	<b>100%</b>	<b>36,420</b>	<b>100%</b>

## Fleet by Region in 2026

Region	Regional jets	Single aisle	Twin aisle	747 and larger	Total fleet
Asia-Pacific	740	6,030	2,920	710	10,400
North America	2,090	7,500	2,180	180	11,950
Europe	490	5,380	1,490	300	7,660
Middle East	90	450	660	120	1,320
Latin America	170	1,920	310	10	2,410
CIS	480	910	240	40	1,670
Africa	120	610	270	10	1,010
<b>World total</b>	<b>4,180</b>	<b>22,800</b>	<b>8,070</b>	<b>1,370</b>	<b>36,420</b>

\*Large passenger and large freighter categories differ.

# Passenger Traffic Flow Changes

Market size and growth rates  
for the 20-year forecast.



## Airline Traffic Distribution in 2006

By region (RPKs)	Asia-Pacific	North America	Europe	Middle East	Latin America	Africa
Asia-Pacific	<b>54%</b>	13%	18%	32%	0%	3%
North America	18%	<b>54%</b>	24%	8%	39%	3%
Europe	22%	22%	<b>36%</b>	36%	35%	67%
Middle East	6%	1%	5%	<b>16%</b>	–	10%
Latin America	< 1%	9%	9%	–	<b>25%</b>	1%
Africa	< 1%	< 1%	7%	7%	< 1%	<b>17%</b>
<b>World total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## Passenger Traffic

**For both tables:** Growth data between Latin America and the Middle East is insufficient to be represented in these tables at this time.

### Within and between regions

		Traffic within regions in 2026, RPKs, billions					
		2,660	1,910	1,170	400	110	90
Traffic between regions in 2006	<b>Asia-Pacific</b>	<b>790</b>	<b>900</b>	<b>11</b>	<b>250</b>	<b>17</b>	Traffic between regions in 2026
	240	<b>North America</b>	<b>1,020</b>	<b>420</b>	<b>60</b>	<b>15</b>	
	300	400	<b>Europe</b>	<b>410</b>	<b>200</b>	<b>340</b>	
	2	170	150	<b>Latin America</b>	–	<b>7</b>	
	80	20	90	–	<b>Middle East</b>	<b>50</b>	
	5	5	120	2	18	<b>Africa</b>	
		730	980	590	110	40	30

Traffic within regions in 2006, RPKs, billions

**For both tables:** Sum data down the table only. **Bold:** Share within region. Excludes other small flows that are not included in the summary table (less than 1% of each region).



## Passenger Traffic Growth Rates

### Within and between regions

		Future growth within regions, 2006 to 2026					
		6.7%	3.4%	3.5%	6.6%	5.6%	6.0%
Historic growth between regions	<b>Asia-Pacific</b>	<b>6.2%</b>	<b>5.6%</b>	<b>9.3%</b>	<b>5.8%</b>	<b>6.4%</b>	Future growth between regions
	5.3%	<b>North America</b>	<b>4.7%</b>	<b>4.7%</b>	<b>5.5%</b>	<b>5.9%</b>	
	7.4%	4.4%	<b>Europe</b>	<b>5.0%</b>	<b>4.2%</b>	<b>5.5%</b>	
	11.5%	5.1%	7.9%	<b>Latin America</b>	-	<b>7.4%</b>	
	5.3%	6.8%	3.7%	-	<b>Middle East</b>	<b>5.7%</b>	
	13.5%	7.0%	5.0%	2.5%	6.1%	<b>Africa</b>	
		7.8%	3.5%	6.0%	4.5%	3.6%	3.9%
Historic growth within regions, 1986 to 2006							

## How to Read the Tables

Examples for the two tables on the left and the two tables below.

**Tables to the left: Look up from the region name (for future data) or down (for historic data) and across.**

- Past growth between North America and Middle East was 6.8 percent.
- 2026 traffic within Asia-Pacific will be 2,660 billion RPKs.
- Future growth between Asia-Pacific and Europe is 5.6 percent.
- 2006 traffic between Europe and Africa was 120 billion RPKs.

**Tables below: Read down the selected column.**

- In 2006, traffic within North America accounted for 54 percent of the total traffic to, from, and within North America.
- In 2026, traffic from the Middle East to Europe will account for 30 percent of the total traffic to, from, and within the Middle East.
- Traffic within Asia-Pacific will rise from 54 percent of the total traffic to, from, and within Asia-Pacific in 2006 to 57 percent by 2026.

## Airline Traffic Distribution in 2026

By region (RPKs)	Asia-Pacific	North America	Europe	Middle East	Latin America	Africa
Asia-Pacific	<b>57%</b>	19%	22%	37%	1%	3%
North America	17%	<b>45%</b>	25%	9%	34%	3%
Europe	19%	24%	<b>29%</b>	30%	33%	66%
Middle East	5%	1%	5%	<b>16%</b>	-	10%
Latin America	< 1%	10%	10%	-	<b>32%</b>	1%
Africa	< 1%	< 1%	8%	7%	1%	<b>17%</b>
<b>World total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



## Data Sources

ACAS  
Air Transport Association  
Ascend  
Association of Asia Pacific Airlines (AAPA)  
Association of European Airlines (AEA)  
Boeing Primary Research  
European Regions Airline Association (ERA)  
Global Insight  
International Air Transport Association  
International Civil Aviation Organization (ICAO)  
Jet Information Services  
Official Airline Guide (OAG)  
Regional Airlines Association (RAA)  
ROM Associates  
U.S. Department of Transportation (Form 41)

## Glossary

**ASK:** Available seat-kilometers. The number of seats on an airplane multiplied by the number of kilometers flown by that airplane (i.e., airline capacity).

**CIS:** Commonwealth of Independent States. The former Soviet Union, with the exception of the Baltic states.

**GDP:** Gross domestic product. The total output of goods and services produced within a country.

**Liberalization:** The removal or reduction in government-imposed regulation of the market for air services. Also known as deregulation.

**Load factor:** The measure of how full flights are. The number of fare-paying passengers divided by the total number of seats on that flight.

**RPK:** Revenue passenger-kilometers. The number of fare-paying passengers multiplied by the number of kilometers they fly (i.e., airline traffic).

**Yield:** Revenues divided by revenue passenger-kilometers (i.e., the money received by an airline for each kilometer flown by each passenger).

## Example

**Capacity:** If an airplane with 100 seats flies 1000 kilometers, a capacity of  $100 \times 1000 = 100\,000$  available seat-kilometers (ASK) is generated by that flight.

**Load factor:** If 76 fare-paying passengers are on the 100-seat airplane, 76 percent of the seats available will be occupied, which represents the load factor of the flight.

**Traffic:** The traffic generated by the 76 passengers on the 1000-kilometer flight will be  $76 \times 1,000 = 76,000$  RPKs.

**Yield:** If the average net fare received from each of the 76 passengers is \$200, the yield is  $\$200/1,000 = \$0.20$  per passenger-kilometer.

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