

By DAWSALEE GRIFFIN

Predicting the future is a risky business. No matter how much detailed background research is done, the results are still an educated guess. Despite this, Commercial Airplanes has been studying the future of the commercial aviation market and sharing its outlook for more than 40 years.

Each year, the business unit's Market Analysis group produces the Current Market Outlook (CMO), a report that offers a 20-year look-ahead at the commercial aviation market. According to Mike Warner, senior manager of Market Analysis, the outlook is Boeing's baseline view of the market and how the company thinks it will perform over the next two decades. With the recent release of the newly updated CMO, employees can read the same analysis that Boeing uses to develop its long-term business and marketing strategy. Among the revelations in this year's report are:

- Since older airplanes are less economically viable as fuel costs rise, replacement airplanes make up a larger portion of future deliveries than was previously predicted.
- Strong growth in China, India, the Middle East and other emerging markets will lead to more-balanced airplane demand worldwide.
- The world will need 29,400 airplanes, valued at \$3.2 trillion, over the next 20 years.

"The Current Market Outlook has not only set the standard as the most accurate industry forecast, it's also something we do at Boeing that's truly critical to our future as an industry leader" said Randy Tinseth, vice president, Marketing, Commercial Airplanes. "The CMO helps us shape our strategy, it provides key input to our long-range business plan, and it produces data and analysis that's crucial to our planning and study activities with customers throughout the year."

COLLECTING THE DATA

The CMO is updated and released each summer just before the Farnborough and Paris air shows. In addition to forecasting markets and economic conditions, the initial report provides details by region and by airplane type (single-aisle, twin-aisle, regional jet, very large airplanes) for both the passenger and cargo markets. Later, usually in September, Commercial Airplanes publishes a comprehensive forecast with much more detailed discussion, data and charts. Then the process of reviewing the year's events and collecting new data begins all over again.

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Meet your new Current Market Outlook

What's in store for the next 20 years of the global jetliner market? The just-released version of this annual Boeing report offers the company's forecast

GRAPHIC: BRANDON LUONG; PHOTO: SHUTTERSTOCK

What to know FROM THE CMO

Here are some important findings from the new Current Market Outlook.

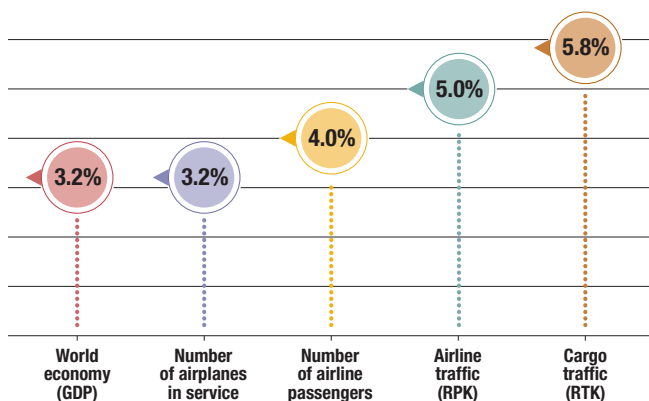
- Over the next 20 years, global air travel will continue to **grow 5 percent annually**, driven by economic growth, world trade, tourism, new airplane capabilities and market liberalization.
- Boeing forecasts a demand for **29,400 airplanes, valued at \$3.2 trillion**, over the next 20 years. Here's how the four product categories look.
 - 747 and larger: 980 units, \$290 billion market value: A small but significant market
 - Twin-aisle airplanes: 6,750 units, \$1.47 trillion: The largest segment by investment
 - Single-aisle airplanes: 19,160 units, \$1.36 trillion: The largest segment by units
 - Regional jets: 2,510 units, \$80 billion: This segment declines as airlines move up to larger airplanes, in light of capacity, economic and environmental constraints.
- Over the next 20 years, the world's **airplane fleet will grow to 35,800 units** from 19,000 today. This marks an annual increase of 3.2 percent per year—the same as the estimated economic growth rate.
- Replacement airplanes make up a **larger portion of future deliveries** than was projected in the previous forecast (43 percent, up from 36 percent) as older airplanes become less economically viable when fuel costs rise.
- Strong growth in China, India, the Middle East and other emerging markets will lead toward a **more balanced airplane demand worldwide**.
- Thanks to recent strong years, more than 30 percent of the forecast is **already in the backlog** of airplane manufacturers.

It all starts WITH GDP

Many factors drive air transport, but the most fundamental one is economic activity. As economies grow, so do the demands for air travel and air cargo. According to the Current Market Outlook, the world's gross domestic product to increase 3.2 percent annually over the next 20 years—and various metrics relating to air transport will follow suit.

MARKET GROWTH RATES

2007–2027



Months before the CMO forecast is published, the six-member Market Analysis team begins collecting the data it will use to form the basis for its conclusions.

According to Anthony Ponton, regional director of market analysis, it's essential that team members thoroughly understand today's state of the market, including current travel trends, the world airline fleet and how it is being used, the age of the fleet, airline growth potentials and strategies, and world and regional economic forecasts. The current market state forms the baseline against which emerging trends and issues are viewed and measured to identify future demands for products and services.

The team gathers and analyzes general information from industry-standard sources such as the Official Airline Guide, aircraft utilization databases and databases of orders, deliveries and backlog. The team consults industry experts, both inside and outside the company, about the current and future market environment.

The team reviews all of the world's airplanes with more than 30 seats, to understand where and how they're being used—airline schedules, short versus long haul, and between what regions and city pairs. To complete the analysis of the world airline system, the team factors in unscheduled services (such as charter flights), which add an additional 10 percent or so of traffic.

Other staff in Marketing and Sales have constant access to the latest market information and provide valuable input about the future direction of the airline business. This gives the analysis team insight on how these airlines may grow within regions, networks and even between important city pairs.

At the same time, team members also look at travel patterns, including a route-by-route analysis to understand current traffic patterns using all possible combinations of information (for example, airplane size, length of route, frequency).

Emergent issues and trends also are reflected in the report, which is one reason the CMO is released just before the air show. However, the focus in the CMO is on what the long-term impact may be, according to Ponton. "The world forecast is really based on an understanding of future travel needs," he said.

WHO USES THE CMO

Although the CMO presentation and book are aimed at external audiences such as

media members, financial analysts, airlines and suppliers, the background data and conclusions also are used widely within Boeing. "It's the only place where we summarize all the different market numbers in a form that is easy to understand," said Ponton.

Warner agreed that although the most visible parts of the CMO are the book, the Web site (www.boeing.com/cmo) and public presentations, the most important use for the forecast and its supporting data is internal. Boeing bases its long-term business planning and marketing strategy on this look at the demand for air travel and the resulting products and services needed over the long term.

"The bottom line, what the forecast is really all about, is how people travel and how Boeing can make that better," Tinseth said. ■

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REGIONAL HOTSPOTS

World total: 29,400 new airplane deliveries

Projected new airplane deliveries by region, and the total market value of these airplanes



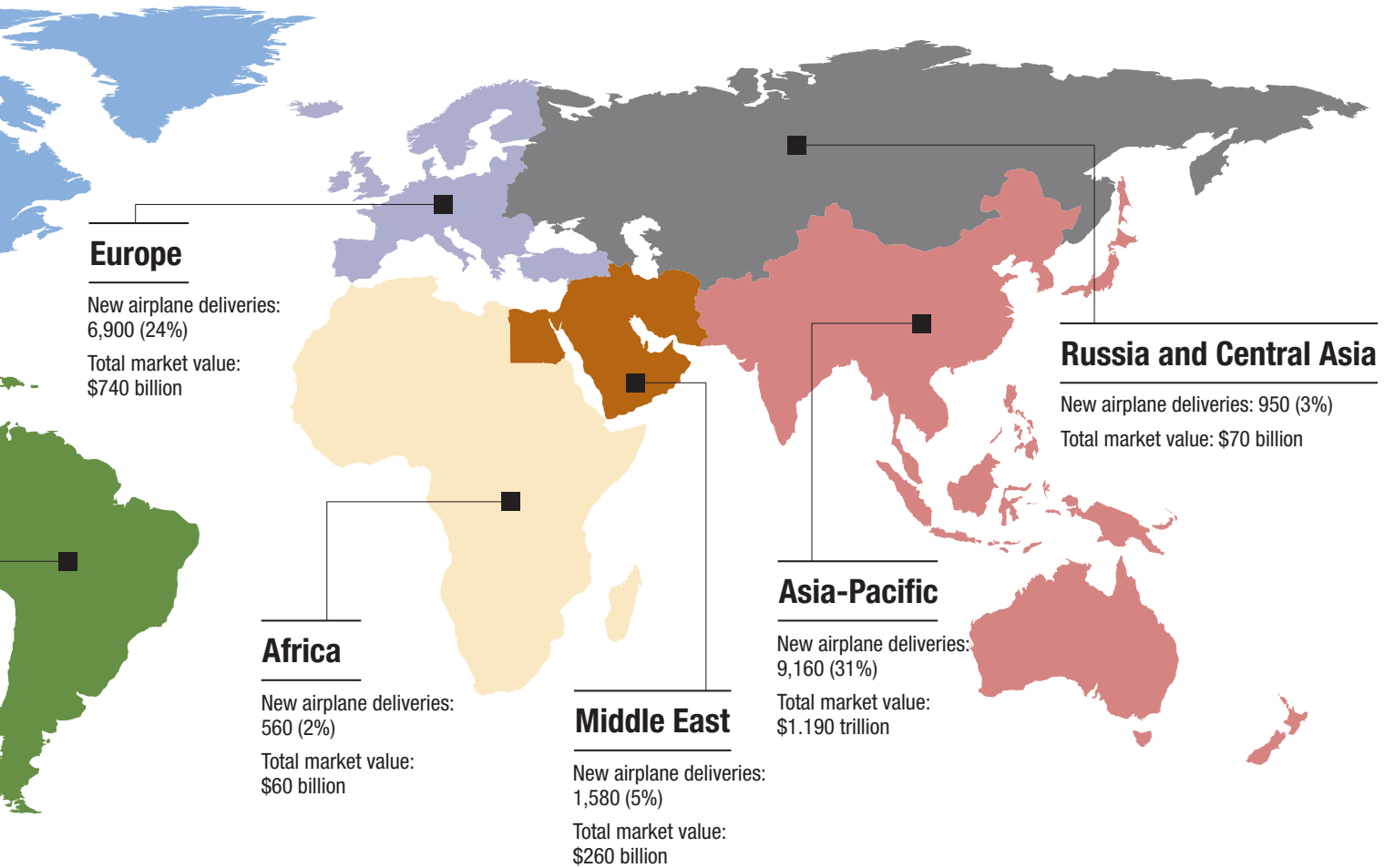
Balanced global DEMAND

Geographic distribution of future deliveries is more evenly dispersed across the world than it's been in the past. What's the leading region in terms of both airplanes needed and market value of these units? Asia-Pacific.



SHUTTERSTOCK

eries, \$3.2 trillion total market value



Where WE'RE GOING

A look at growth in worldwide air travel patterns

CHANGE IN WORLDWIDE AIR TRAVEL PATTERNS

Region	Revenue passenger-kilometers 2007*	Revenue passenger-kilometers 2027*	Annual percentage change, 2007-2027
Within China	210	1,156	8.9%
Asia-Pacific, including China	783	3,058	7.0%
Within Latin America	120	441	6.7%
Asia-Pacific, excluding China	573	1,902	6.2%
Middle East to Asia-Pacific	93	282	5.7%
Europe to Asia-Pacific	307	921	5.7%
Transpacific	251	750	5.6%
Africa to Europe	122	350	5.4%
Within and to Russia and Central Asia	132	370	5.3%
North America to Latin America	182	469	4.8%
Europe to Latin America	163	411	4.7%
North Atlantic	418	1,040	4.7%
Within Europe	631	1,259	3.5%
Within North America	1,017	1,750	2.8%

* In billions of revenue passenger kilometers



GRAPHICS: BRANDON LUONG

Airline passenger traffic within and between regions in 2007 and 2027, and annual growth rates during this span

How to read this chart:

To see the projections of airline passenger traffic in 2007 and 2027, as well as the annual growth rates during this span, locate the square where the row and column of the regions of interest intersect.

Each square has three figures:

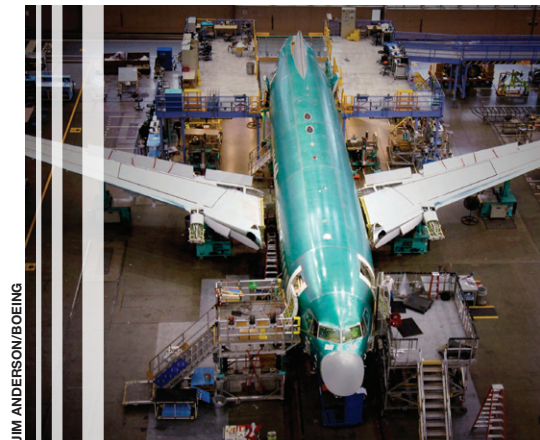
The **black** number represents airline passenger traffic, in billions of revenue passenger-kilometers, in 2007.

The **blue** number represents airline passenger traffic, in billions of revenue passenger-kilometers, in 2027.

The **brown** number represents the annual percentage growth rate during this period.

For instance, traffic between Africa and Asia-Pacific is projected to rise from 6 billion RPKs in 2007 to 20 billion RPKs in 2027. That jump represents a 7.3 percent annual growth rate.

	Africa	Latin America	Middle East	Europe	North America	Asia-Pacific
Asia-Pacific	6 20 7.3%	5 11 9.4%	90 280 5.7%	310 920 5.7%	250 750 5.6%	780 3,060 7.0%
North America	8 20 5.4%	180 470 4.8%	30 90 5.9%	420 1,040 4.7%	1,020 1,750 2.8%	
Europe	120 350 5.4%	160 410 4.7%	160 270 4.9%	630 1,260 3.5%		
Middle East	20 60 6.1%	— — —	40 120 5.7%			
Latin America	3 6 5.6%	120 440 6.7%				
Africa	30 100 5.6%					



JIM ANDERSON/BOEING

Backlog and THE CMO

The Current Market Outlook provides a thorough outlook on the next 20 years of the commercial aviation business. But comparing its numbers with Commercial Airplanes' backlog offers market analysts valuable insight on the future potential of regions.

For example, the forecast for the North America market—8,550 new airplanes needed in this timespan—is surprisingly large, according to Anthony Ponton, regional director of Market Analysis. Ponton explained that although many North American airlines haven't recently been in a position to buy new airplanes, at some point they will have to replace their older, less-efficient airplanes.

Boeing and Airbus currently have record backlogs. Understanding the connection between the backlogs and demand forecasts is important. Boeing's 2008 CMO forecast for a demand for 29,400 planes over the next 20 years generated some skepticism, according to Mike Warner, senior manager of Market Analysis. "However," Warner said, "nearly a third of those planes are already in the backlog." Understanding that fact helps industry observers—and CMO readers—put the numbers in better perspective.

—Dawsalee Griffin

Space to CARRY MORE

According to the CMO, cargo traffic is projected to triple. To satisfy this growth, there will be more cargo jetliners, and there will be more big airplanes. The world's freighter fleet will be largely renewed by 2027, thanks mainly to conversions.

CARGO MARKET, BY THE NUMBERS

605 billion

Number of revenue-tonne kilometers of air cargo projected for 2027. That mark is more than triple the 2007 traffic level of 200 billion RTKs

3,890

Number of cargo airplanes projected for the world's 2027 fleet. That represents a doubling of the 2007 fleet of 1,950 airplanes

64

Percentage of the 2027 fleet to be made up of widebody airplanes, up from 61 percent in 2007

14

Percentage of freighters in service in 2027 that are part of today's fleet (530 of 3,890)

64

Percentage of freighters in the world's 2027 freighter fleet to be comprised of new conversions (2,500 of 3,890)

Load masters

How the projected freighter fleet of 2027 will be composed, in number of airplanes by category.

Size category	End of 2007	-	Removed from service	+	Converted to freighter	+	New deliveries 2008 to 2027	=	End of 2027
Large (more than 80 tonnes)*	500	-	260	+	460	+	640	=	1,340
Medium (40 to 80 tonnes)	690	-	450	+	100	+	210	=	1,160
Standard body (less than 45 tonnes)	760	-	710	+	1,330	+	10	=	1,390
Total freighter	1,950	-	1,420	+	2,500	+	860	=	3,890

* Large passenger and large freighter categories differ.

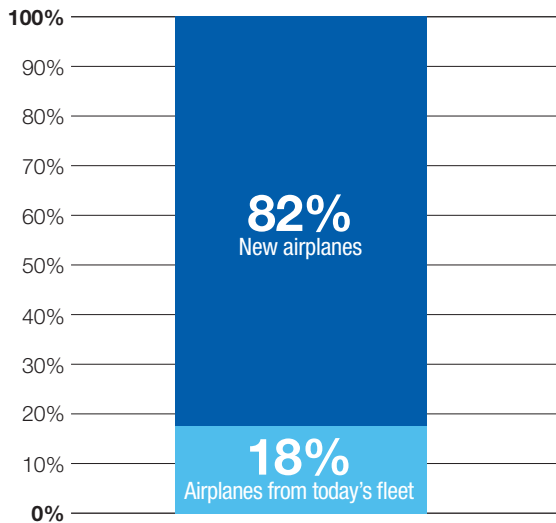


Continuous improvements IN AIR TRANSPORT

Like any good business forecast, the Current Market Outlook takes into account challenges that the industry faces. According to the CMO, noteworthy future challenges that the aviation industry faces include continuing to improve the environmental performance of airplanes, and relieving airspace and airport congestion.

As a result, the CMO projects that for the world's fleet of 35,800 airplanes in 2027, only 18 percent will be made up of airplanes that exist today. The remaining 82 percent will include airplanes that have yet to be built.

Because airplanes will continue to provide improved performance thanks to future technologies, the great majority of the airplane fleet in 2027 will be made up of airplanes that are better for the environment, passengers and airlines.



GRAPHIC: BRANDON LUONG; PHOTO: SHUTTERSTOCK



How accurate IS THE CMO?

Each year's CMO update uses the best available information to ensure optimal accuracy. Although there have been surprises along the way—such as the impact of the rise of low-cost carriers on the travel market—overall, the CMO projections have been very close.

“If you go back 20 years and look at what [we] forecast,” said Mike Warner, senior manager of Market Analysis, “you’ll see we are conservative and tend to underestimate all the markets but one. We have consistently overestimated demand for the largest airplanes.”

Anthony Ponton, regional director of Market Analysis, said they’ve also been tracking the 2000-2019 market forecast to see how accurate it has been. Nearly halfway through, the overall forecast numbers are very close: It called for 22,300 airplanes, and orders from 2000 to July 2008 totaled 13,800. The forecast was slightly low for single-aisle and twin-aisle airplanes and slightly high for the smallest and largest airplanes (see chart at right).

The goal is to make the material more objective, relevant and accurate with each edition of the CMO. Improved tools offer more time to understand the market forces and will, ultimately, make the forecast even more accurate.

—Dawsalee Griffin

The 2000 CMO: HOW IT'S FARED

How the product forecast in the 2000 Current Market Outlook compares to actual orders since then.

PERCENTAGE SHARE OF TOTAL FLEET TAKEN BY EACH PRODUCT CATEGORY

	2000 Current Market Outlook (2000-2019)	Net orders, 2000-present
747 and larger	5%	3%
Twin-aisle airplanes	21%	23%
Single-aisle airplanes	55%	59%
Regional jets	19%	15%
Total units	22,300 predicted	13,800