



# Product Development Strategies In Aviation

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Boeing Commercial Airplanes  
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Management Association of Pakistan

To Lead the Change Process  
Towards Best Management Practices



# Today's Agenda

- Boeing Product Development Strategy
- Commercial Aircraft Market Outlook
- Aviation Opportunities in Pakistan
- 737 MAX

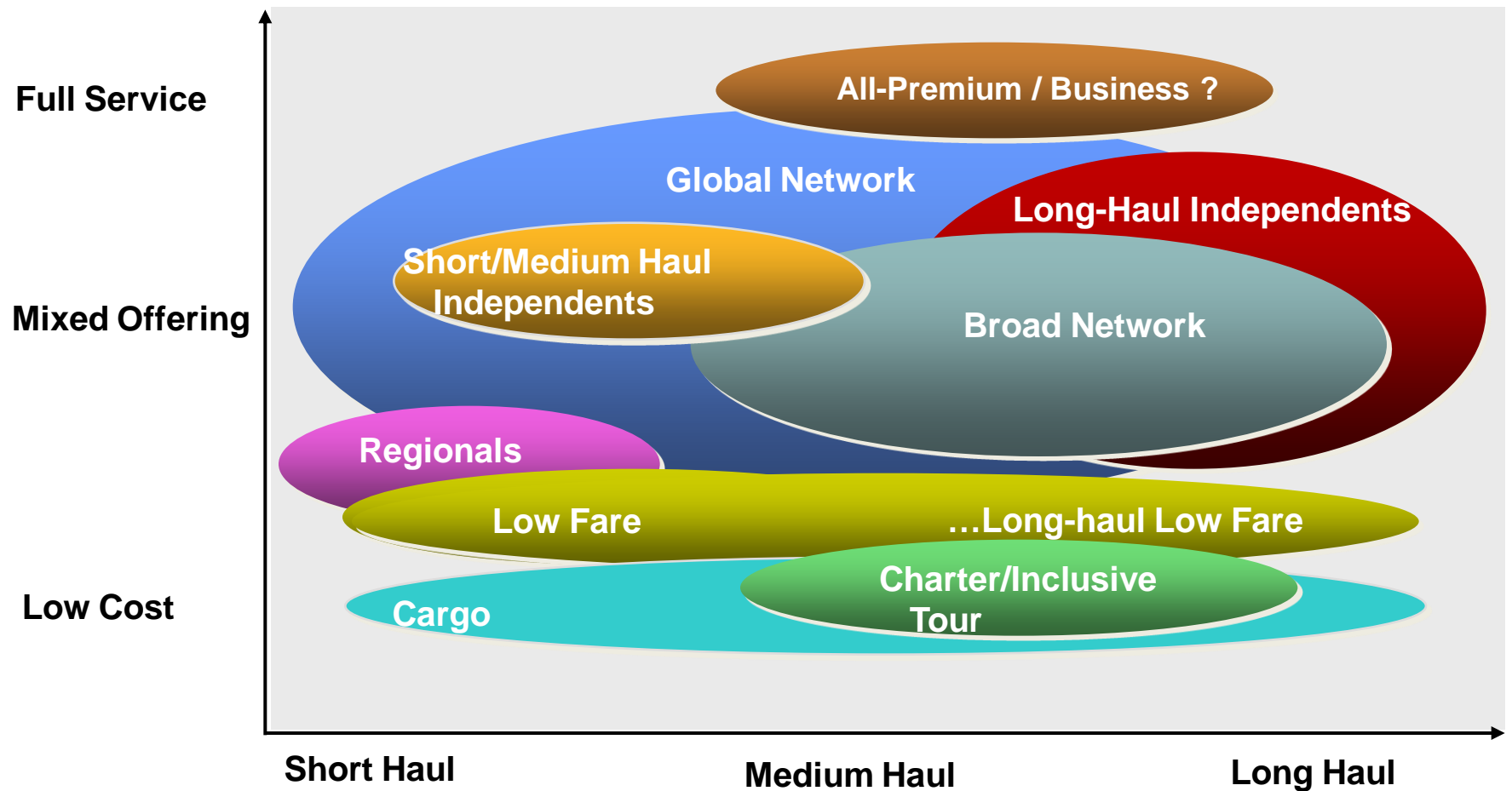
# The Boeing Airplane Family



- Full market coverage from 100-500 seats
- Low operating cost
- Operational commonality
- Long-range, fast, and reliable
- Environmentally progressive
- Standardization
- Passenger experience



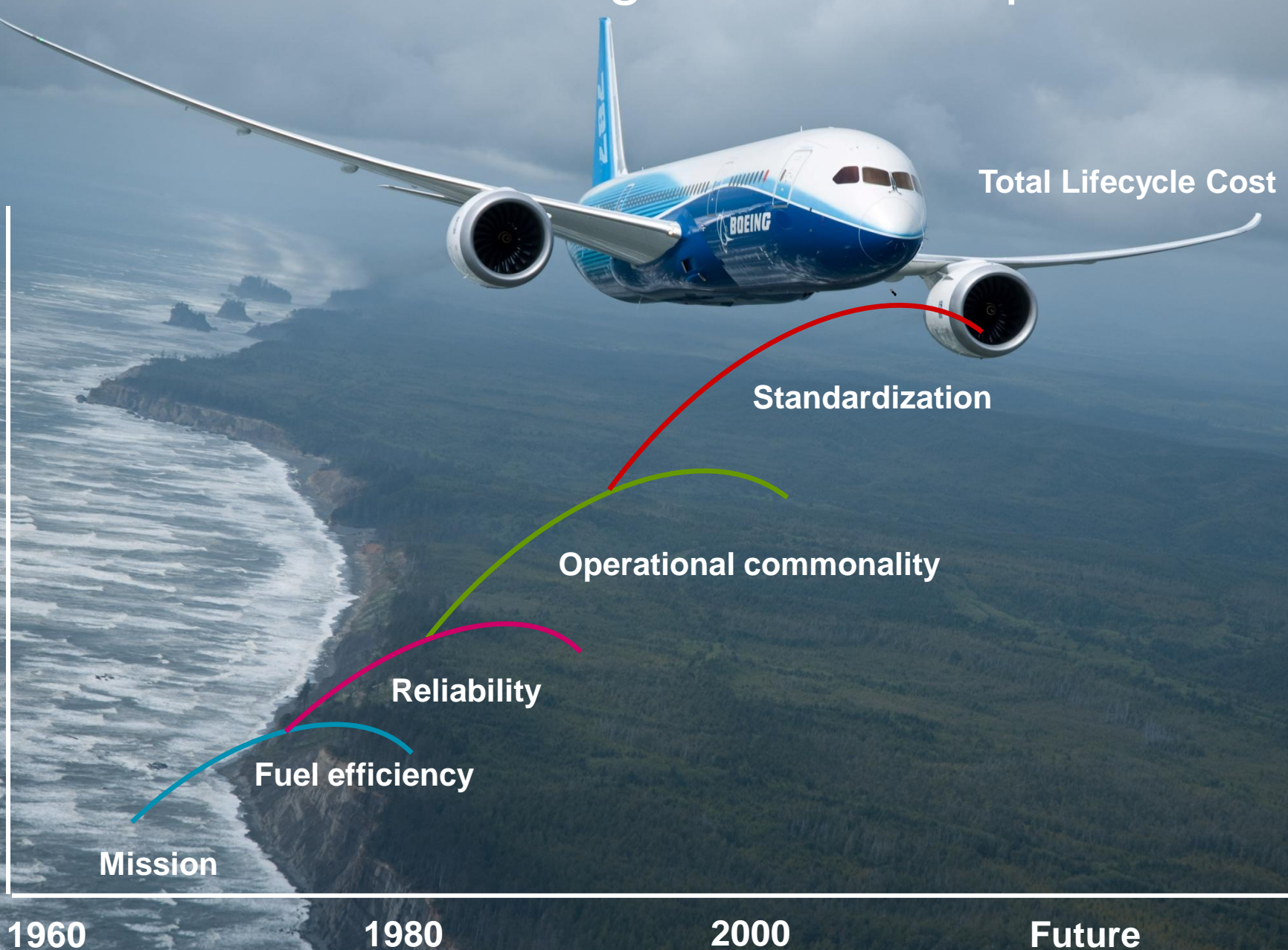
# Serve multiple customer business models



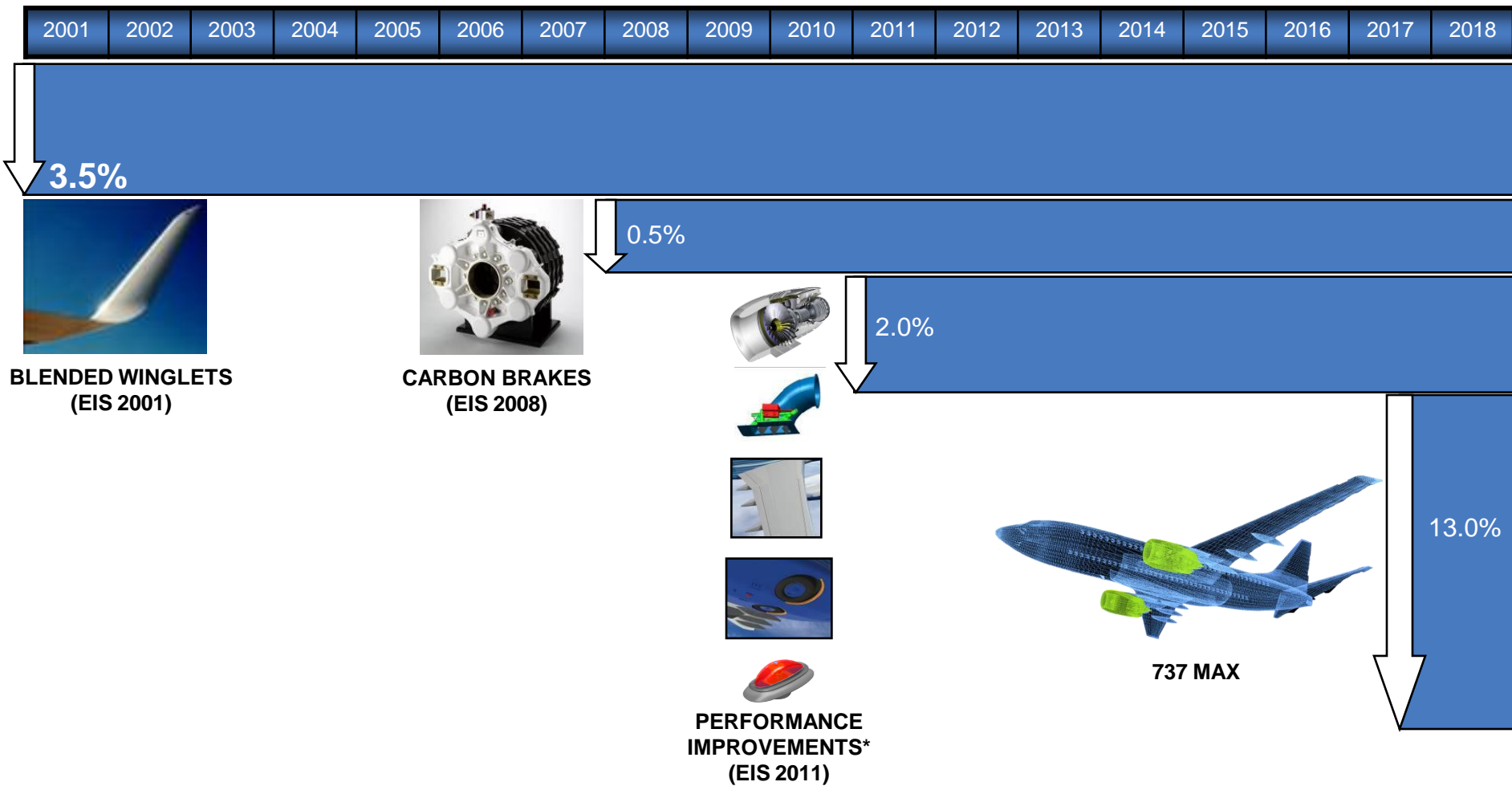
*Airline business models evolve to meet changing passenger requirements*



# Address ever-increasing customer expectations



# Continuously lower operating costs



*737 Family fuel efficiency improvement since 2000*

# Continuously innovate

## ■ Improved performance



**180-minute ETOPS**  
(EIS 2000)



**Blended winglet**  
(EIS 2001)



**High-altitude airport**  
(EIS 2005)



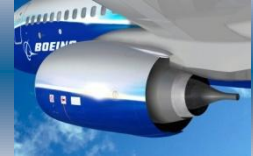
**Short field performance**  
(EIS 2006)



**CFM Tech Insertion**  
(EIS 2007)



**Carbon brakes**  
(EIS 2008)



**Performance Improvements**  
(EIS 2011)

## ■ Improved comfort



**BigBins™**  
(EIS 2002)



**Flight deck noise reduction**  
(EIS 2004)



**New lavatory**  
(EIS 2005)



**In-seat video system**  
(EIS 2006)

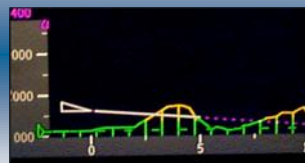


**737 Boeing Sky Interior**  
(EIS 2011)

## ■ Improved navigation



**Head-up display**  
(EIS 2001)



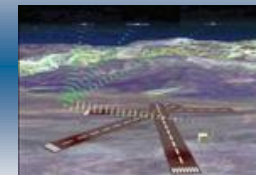
**Vertical situation display**  
(EIS 2003)



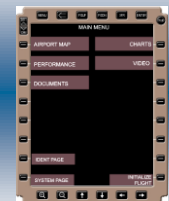
**Cat IIIB**  
(EIS 2003)



**Navigation performance scales for RNP**  
(EIS 2003)



**GPS landing system**  
(EIS 2005)



**Electronic flight bag**  
(EIS 2006)

***737 Family improvements since 2000***



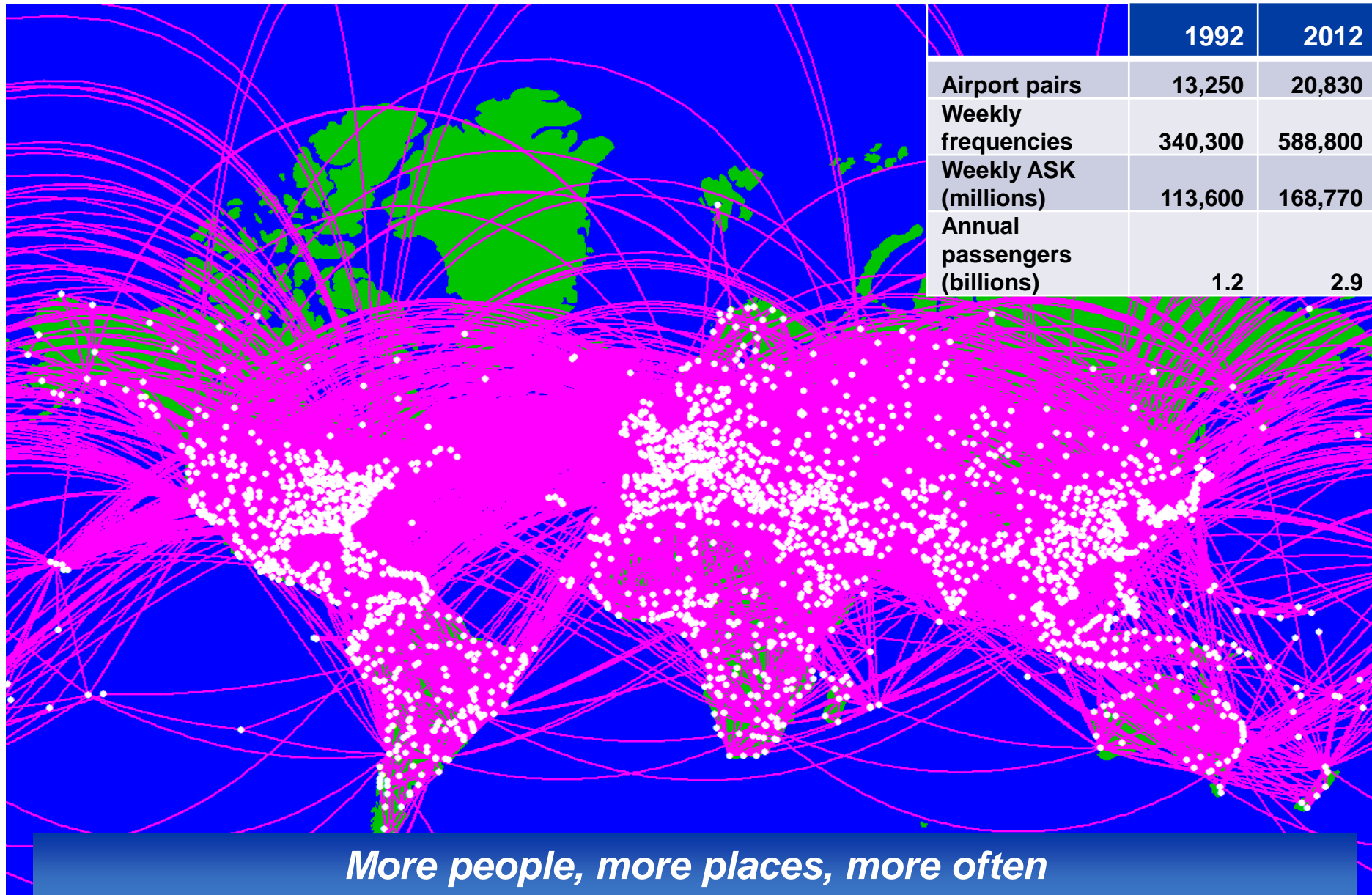


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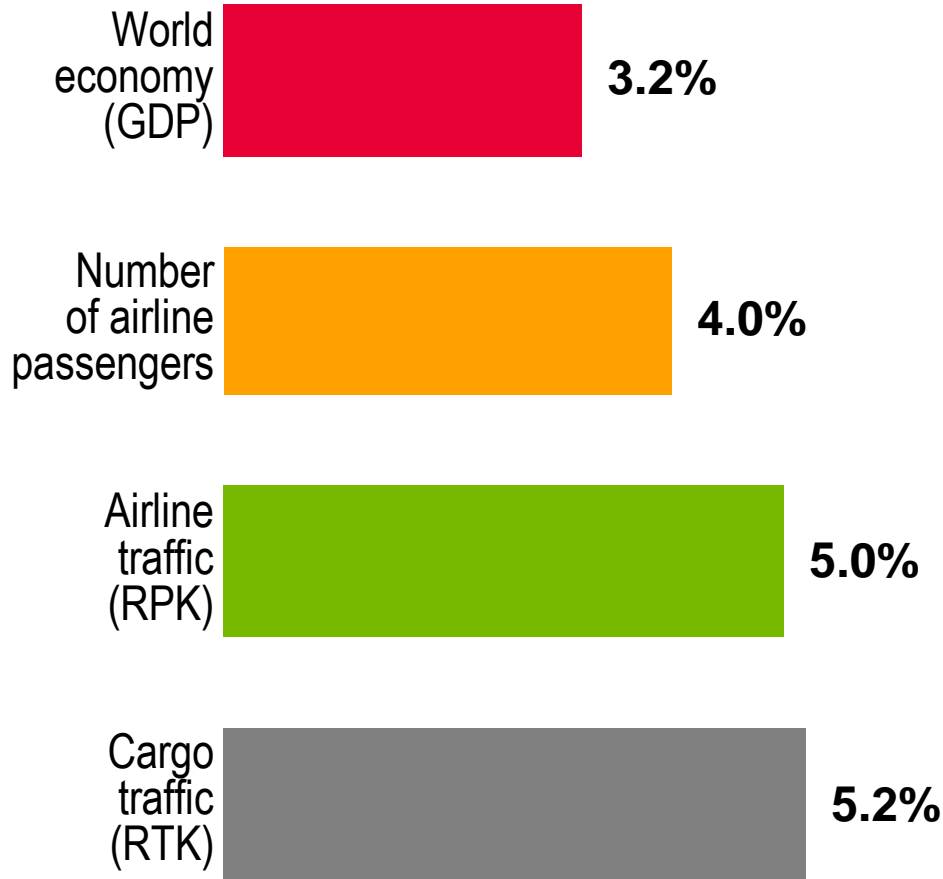


# Air travel growth has been met by increased frequencies and nonstops



# 20-year forecast: strong long-term global growth

2011 to 2031

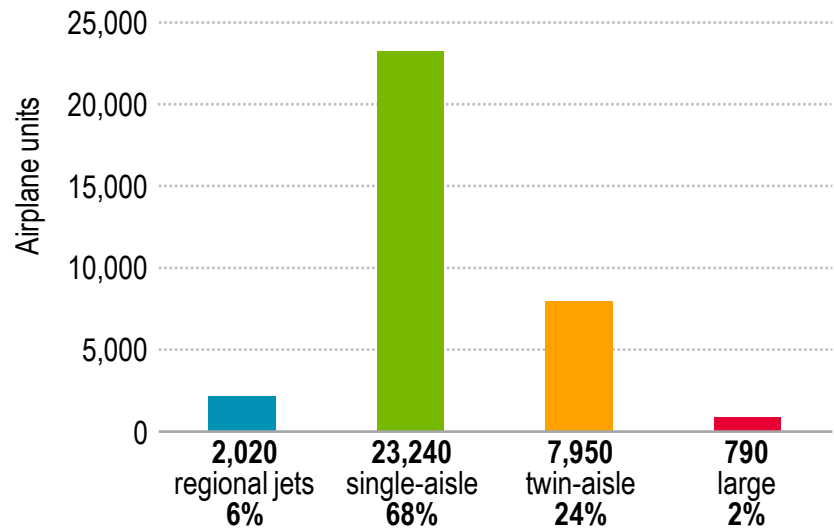




# Airlines will need 34,000 new airplanes valued at \$4.5 trillion

## Airplane deliveries: 34,000

2012 - 2031



## Market value: \$4.5T

2012 - 2031





# Low-Cost Business Model is changing the industry

## *LCC Network in 1990*



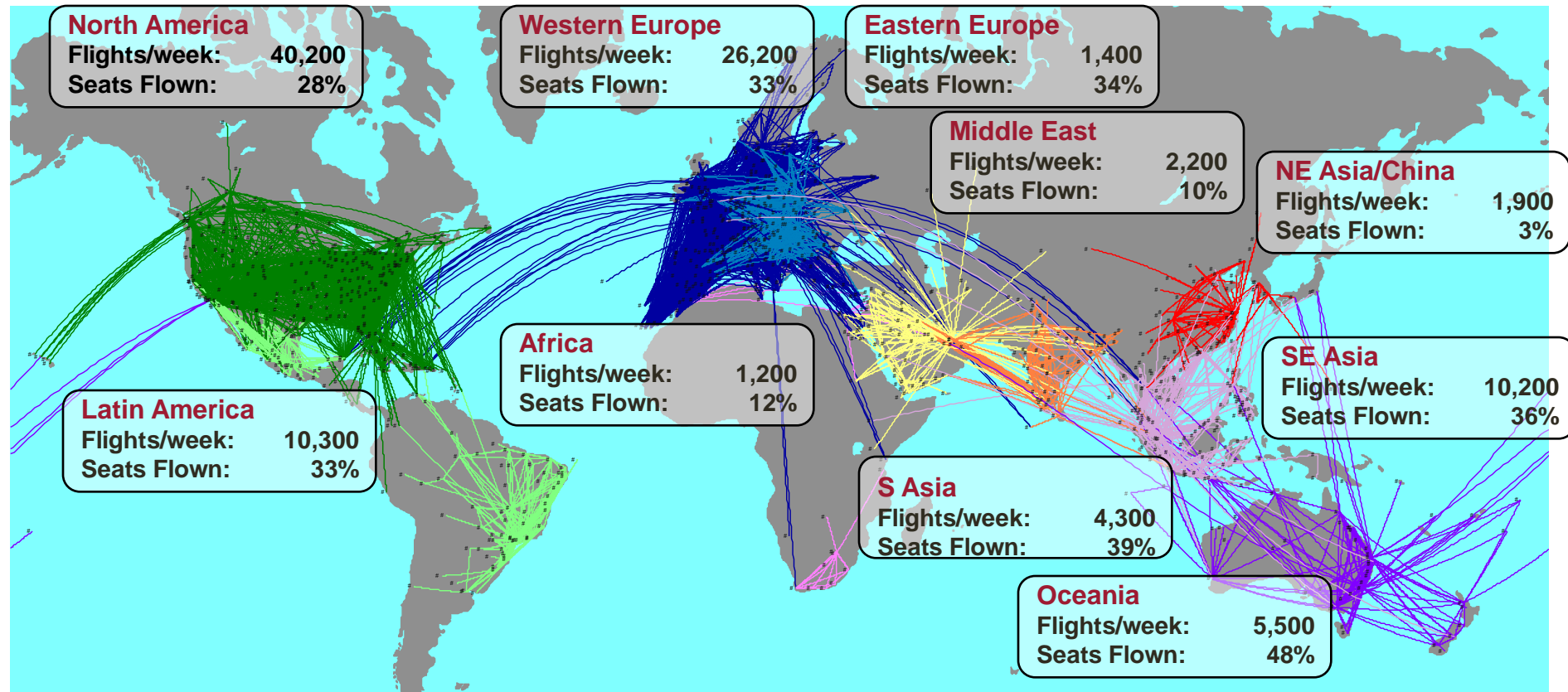
### What is a Low-cost Carrier?

- Simplified, point-to-point network
- Short-medium haul
- One-class cabin
- Basic, no-frills service
- Common, single airplane type fleet  
= Market-setting low fares

***Growth resulting from emerging economies, retirements and new business models***

# LCC business model has gone worldwide

## LCC Network Today



*LCCs have grown 20% year-over-year over the past decade*

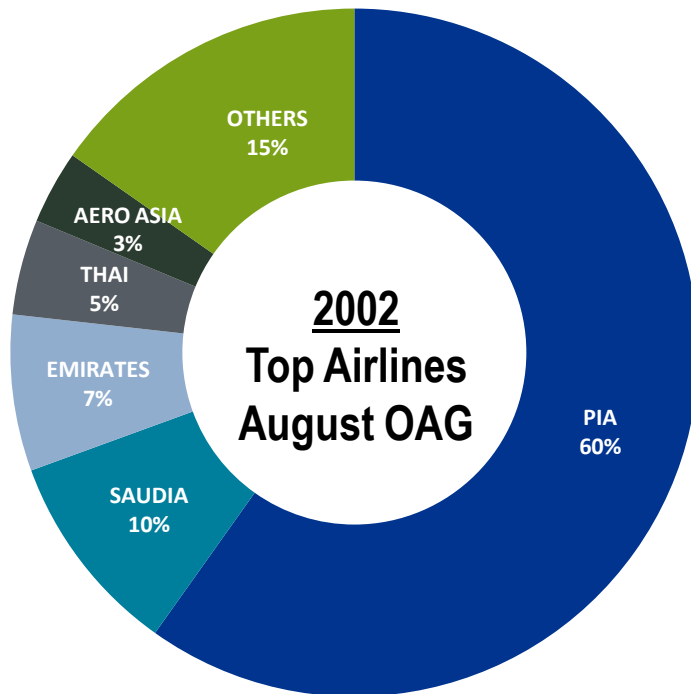


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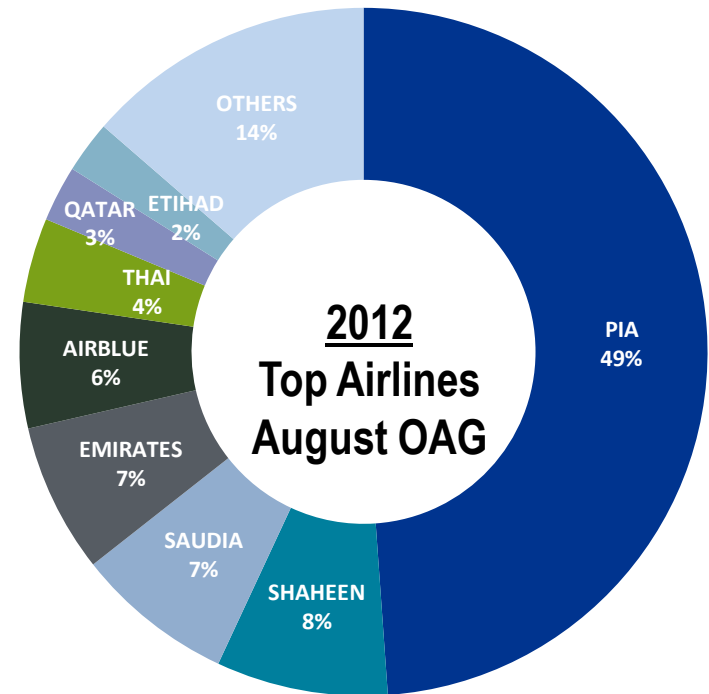
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# Pakistan's air transportation system has grown 80% since 2002



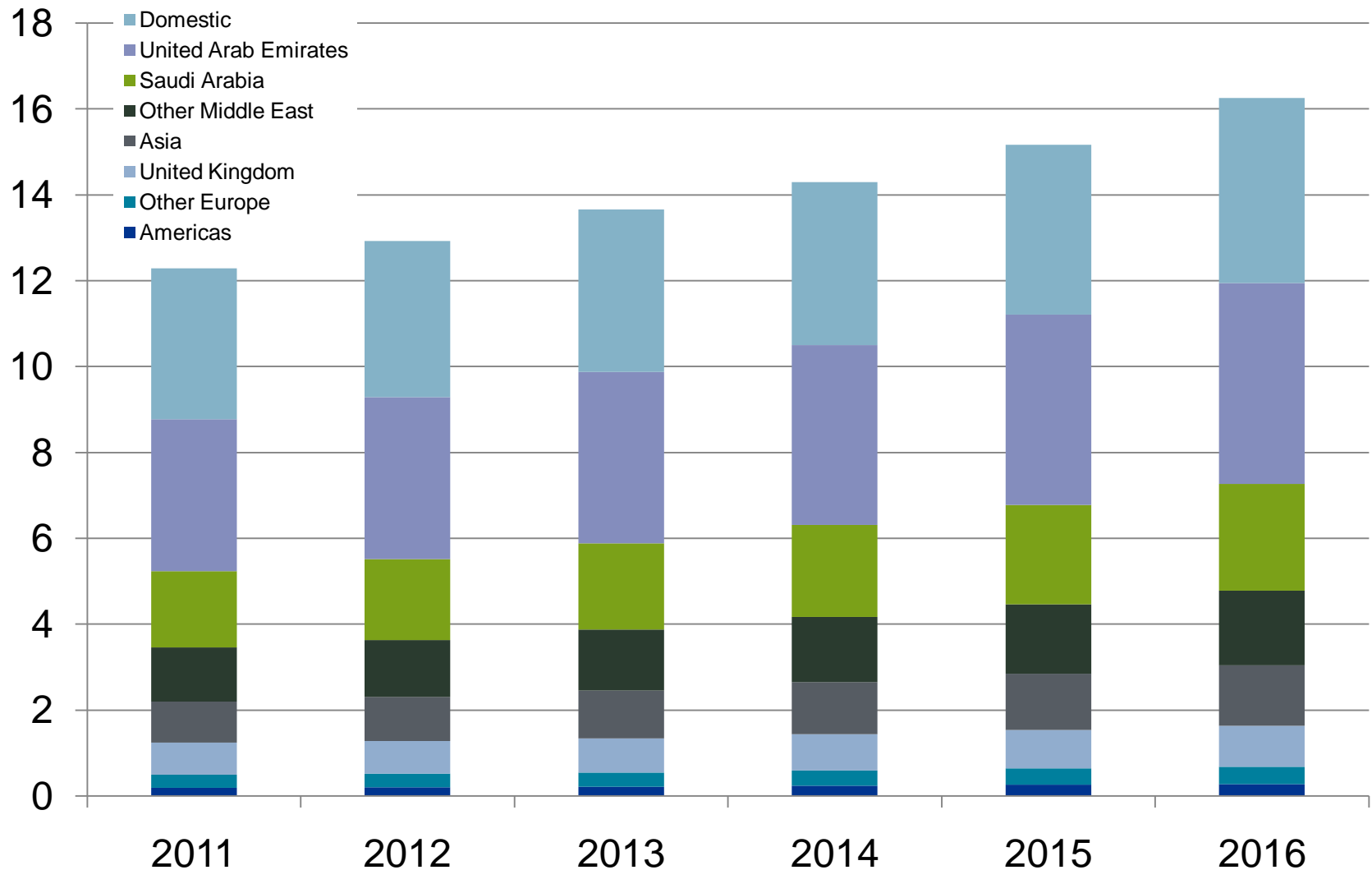
390 million weekly  
available-seat-kilometers  
flown



690 million weekly  
available-seat-kilometers  
flown

*Capacity grew nearly 6% annually*

# IATA Traffic Forecast – Pakistan



***75 airplanes required today***  
***230 airplanes required in 20 years***

# Boeing 777

## Worldwide

1,283 orders  
918 deliveries  
365 in backlog  
63 customers

## PIA

9 in-service  
5 on-order



***Today's premier 300 – 400 passenger airplane***





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## Next-Generation 737

6,305 net orders

4,325 deliveries

1,980 in backlog



# 737 MAX is designed for maximum advantage

Increased range with reduced noise and fuel burn

Local empennage  
strengthening

Local fuselage  
strengthening

Systems  
revisions

Wing  
modifications

Flight deck  
revisions



Aft body aero  
improvements

New strut and  
nacelle

CFM LEAP-1B  
engine

Main landing gear  
strengthening

Nose landing gear  
lengthening

*Changes from 737-800W with 2011 PIP*



# The 737 MAX advantage

737 MAX 8 vs. 737-800



Boeing Sky Interior

40%  
smaller  
noise  
footprint

13%  
lower  
fuel burn

400-500nmi  
more range

Firm Concept	Firm Configuration	Design	Build	First Flight	Entry into Service
2012	2013	2014	2015	2016	2017



# Air transport is a major contributor to economic growth

Liberalization

New and  
Better  
Services at  
lower prices

Traffic  
Growth

Economic  
Growth

Job Creation



***Globally, the air transport industry supports 32 million jobs and contributes \$3.6 trillion (or 7.5%) to global GDP***

