



# The Strategic Importance of Supply Chains

Sir Michael Arthur  
President, UK & Ireland  
Boeing  
November 11, 2015

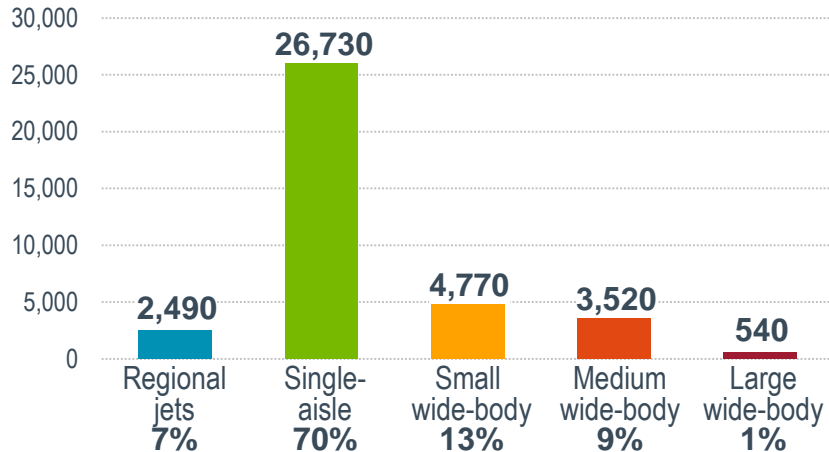
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# Airlines will need 38,000 new airplanes valued at \$5.6 trillion



## Airplane deliveries: 38,050

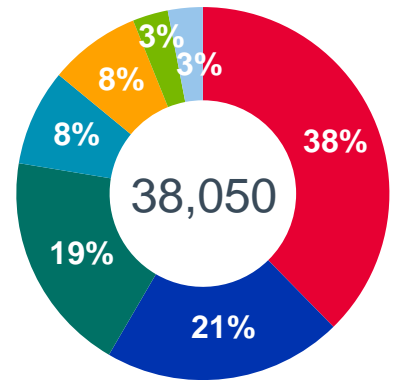
2015 - 2034



## New airplane deliveries by region

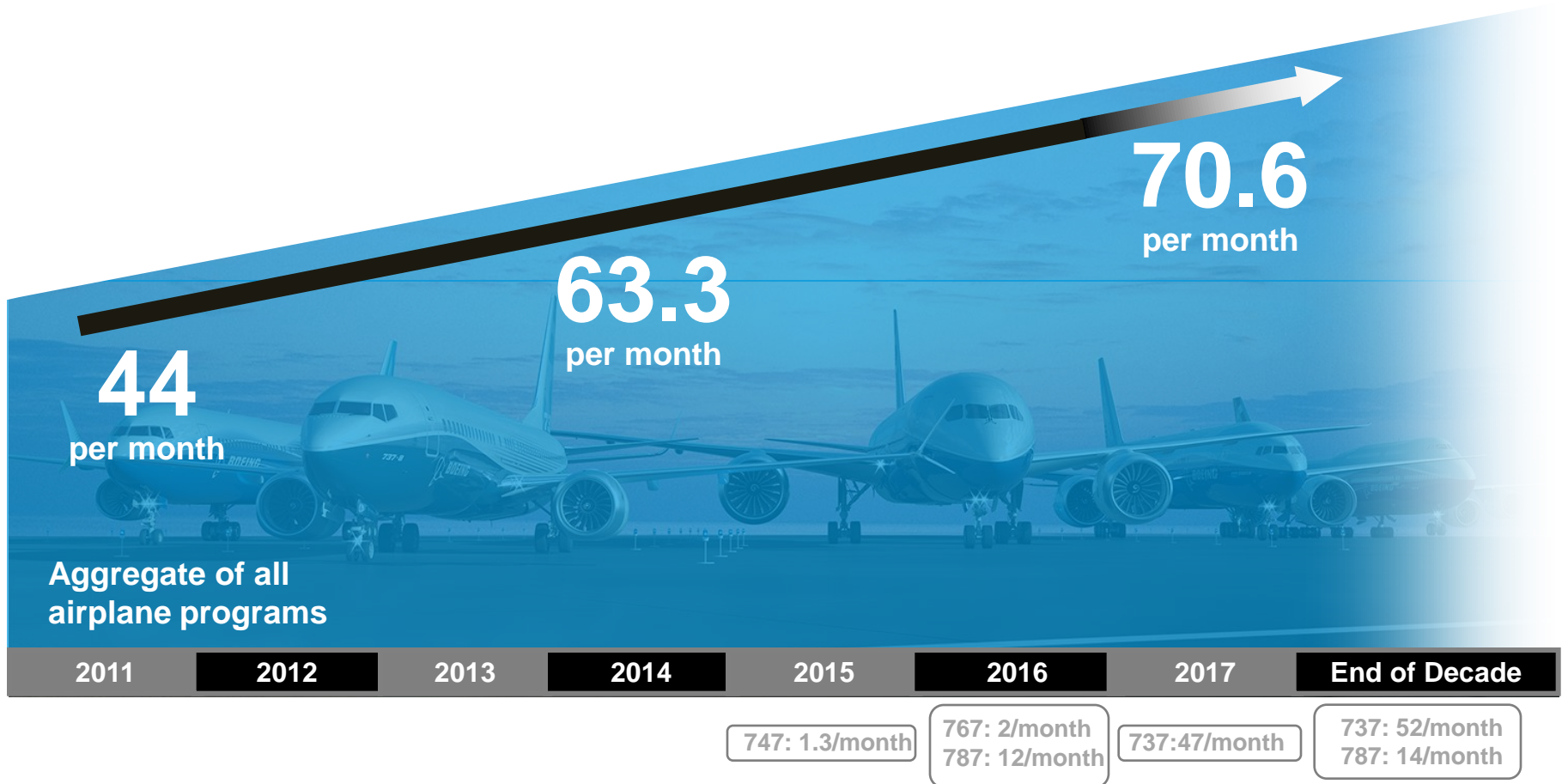
2015 - 2034

Region	Airplanes
Asia	14,330
North America	7,890
Europe	7,310
Middle East	3,180
Latin America	3,020
Africa	1,170
C.I.S.	1,150
<b>World Total</b>	<b>38,050</b>



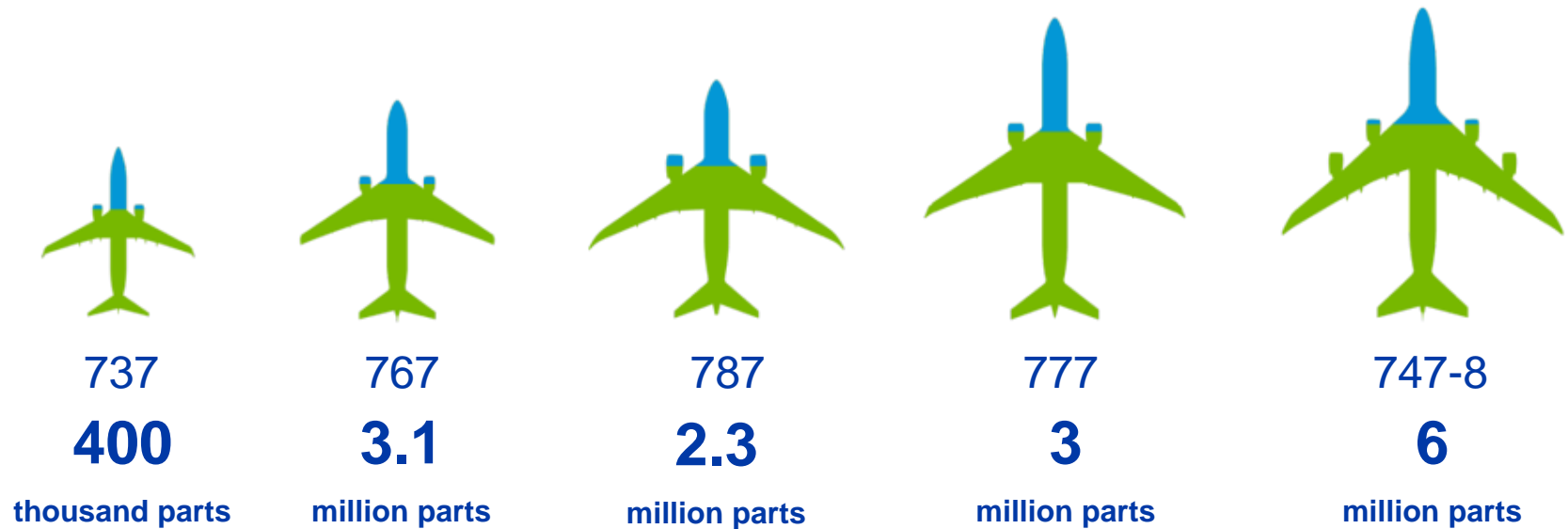
# BCA production rates outlook

Updated As of: 2/10/15



**Anticipate ~60% rate increase from 2011 through 2017**

# Boeing will not be successful if our supply chain partners are not successful



**\$43 billion** spend • **5,400** factories • **500,000** people

# 65%

Suppliers



Boeing

Percent of Boeing airplanes cost that comes through the supply chain

# A broad range of UK capabilities on the 787

**-GKN Aerospace Transparency Systems**

**-Ultra**

**De-icing system**

**Zodiac Seats UK**  
**First and business**  
**class seats**

**IPECO**  
**Flight Deck**  
**Seating**

**BE Aerospace**  
**First class seats**

**UTC Aerospace Systems**  
**Nitrogen generating system**  
**(Fire suppression system)**

**Messier-Bugatti-Dowty**  
**Landing gear and**  
**steering system**

**Rolls-Royce**  
**Engines**

**GE Aviation**  
**Electronic data**  
**distribution and control**  
**systems**

**UTC Aerospace Systems**  
**Nacelle systems**

**On a Dreamliner with Rolls-Royce engines, U.K. companies make 25 percent of the 787 by value**

**Eaton Aerospace**  
**Fuel pump and**  
**valves - fuel system**

**- AMRC**  
**- Cranfield University**  
**- QinetiQ**  
**Research - Manufacturing**  
**and aerodynamics**

# Competition and customer expectations

## Aggressive competition

- Traditional
- Emerging



## Customers' "more-for-less" expectations

- Affordable and mission-capable
- Low operating cost
- Environmentally progressive
- In-service reliability
- Standardization, first-time quality



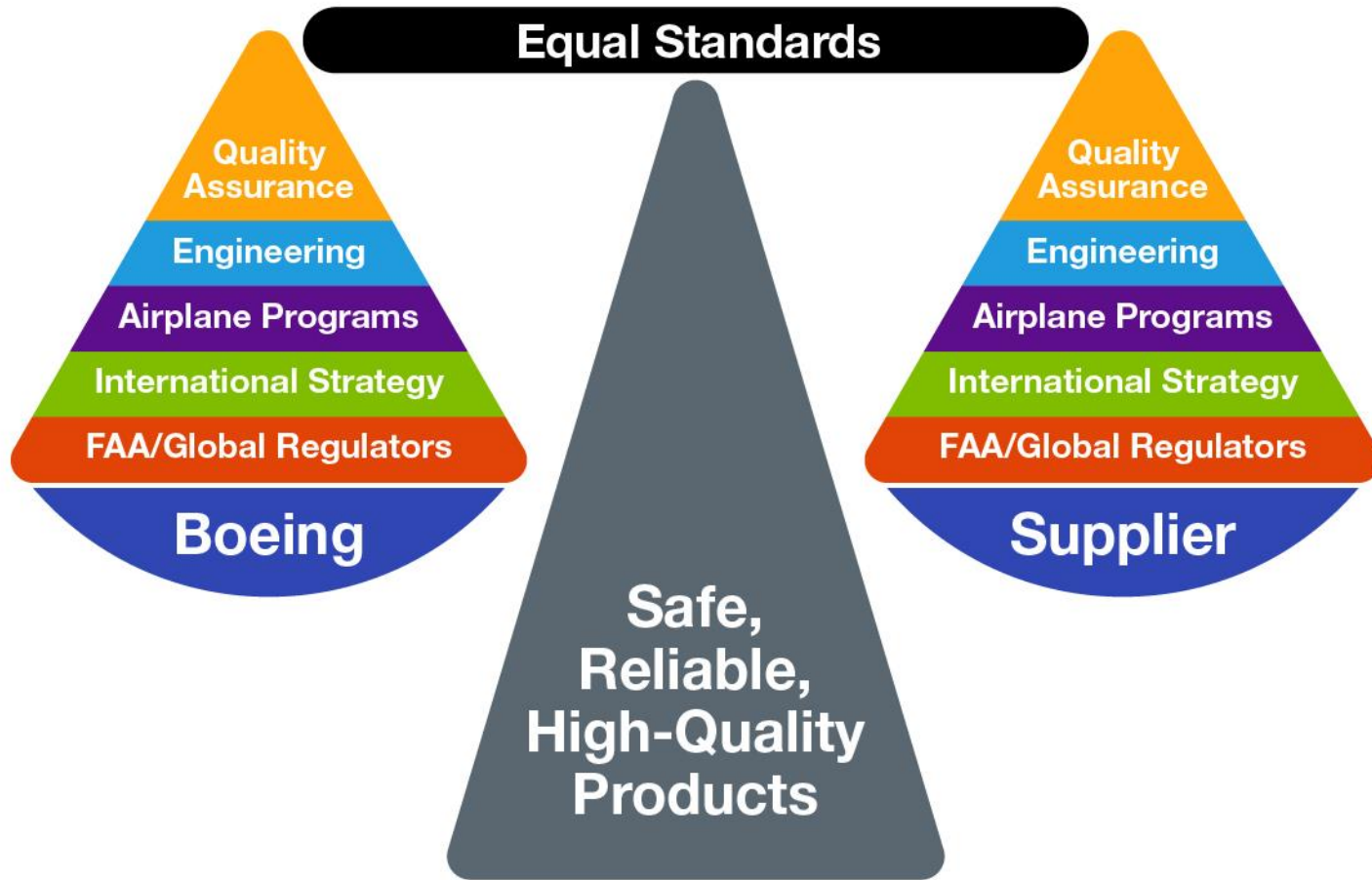
***Aggressive competition; customers demanding more for less***



# Supply chain and production system design decision process



Supplier Management leads the development and continuous improvement of an extended supply chain that ***creates a sustainable competitive advantage***







**Disciplined  
Operational  
Rhythm**



**Continuous  
Improvement**



**Visibility  
and  
Execution**

# Quality and Safety



**Manage  
Risk and  
Opportunity**



## People



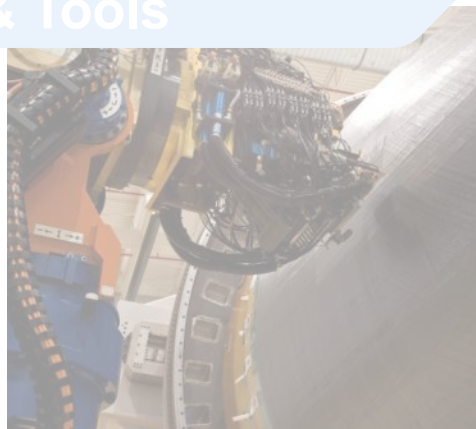
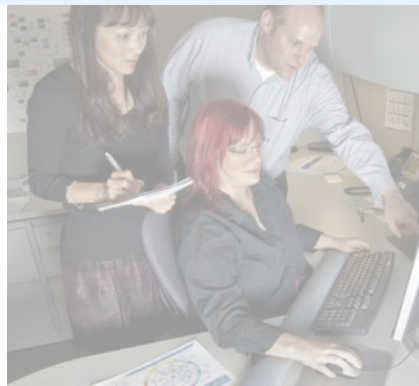
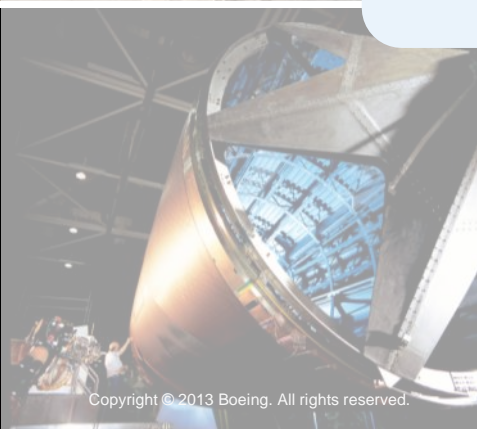
**Requirements  
& Oversight**

**Supplier  
Approval &  
Product  
Acceptance**

**Improve  
Suppliers'  
Quality  
Performance**



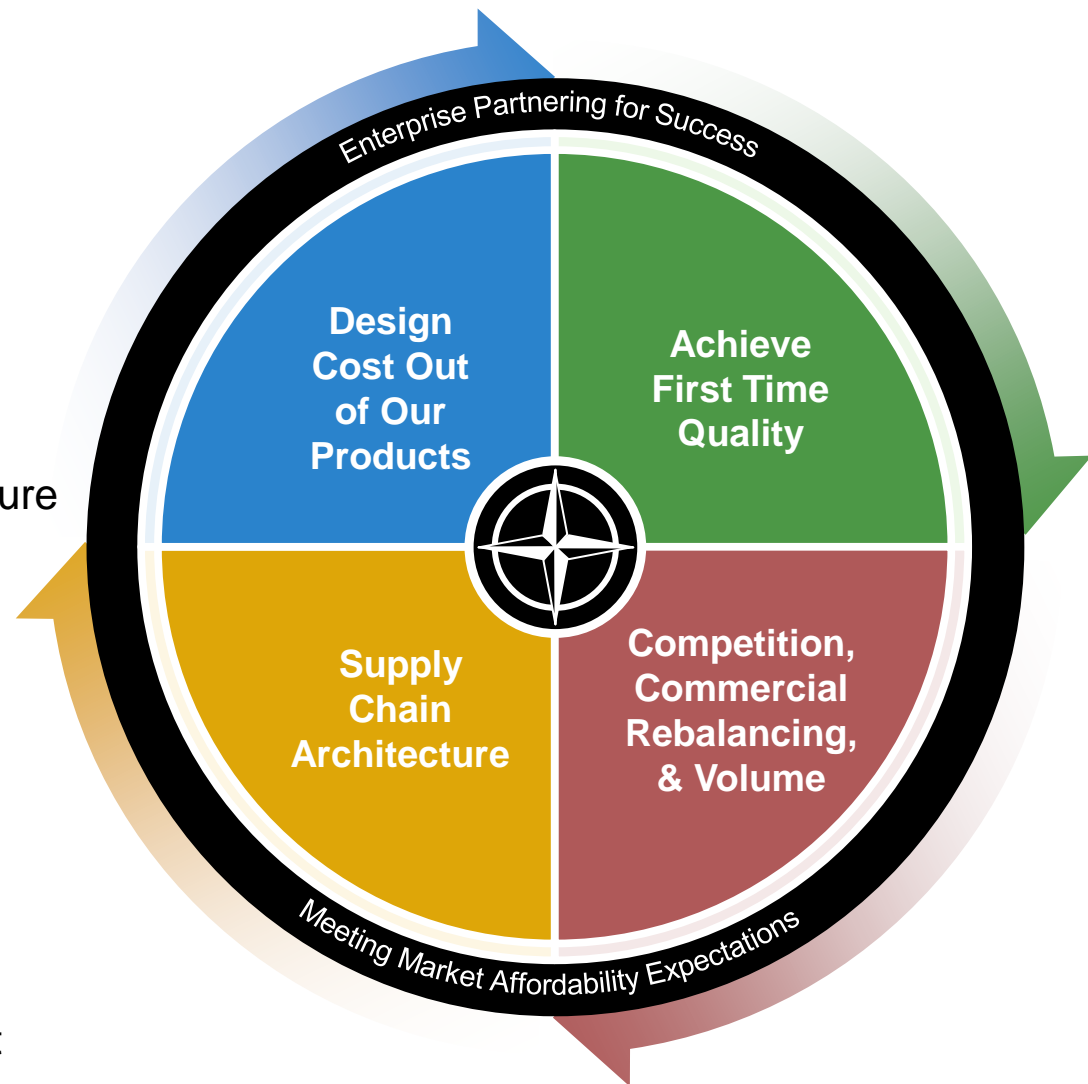
## Systems & Tools



# Partnering for Success

## Affordability focus areas

- 1<sup>st</sup> Time Quality
  - Quality parts
  - Rate readiness
- Design Cost Out / Lean+
  - Value Engineering
  - Accelerated Opportunity Capture
- Supply Chain Architecture
  - Value creation / innovation
  - Strategic sourcing
- Competition / Commercial Rebalancing / Volume
  - Risk / Reward
  - Statement of work adjustment



# Managing a global supply chain

Shaping the supply base –  
(5-20 years)

Early engagement –  
(3-10 years)

- Production system summit --100 suppliers
- Shared strategy & vision
- Customer expectations

Rate readiness – (1-5  
years)

- Robust assessment of capability and capacity
- Team of 480 to support in-person or virtually

Managing risk – (Daily)

- Production Integration Center (PIC)





# Procurement Commodities

## Structures

- Major assemblies
- Body sections
- Movable wing sections
- Doors
- Flight Control Surfaces
- Fuselage



## Systems

- Avionics
- Flight Systems
- Hydraulics
- Wheels & Brakes
- Landing Gear
- Environmental Control Systems
- Electrical Systems



## CAS

- Materials Management & Spares
- Technical & Engineering Services
- Customer Support
- Internal
- Non-Production

## Interiors

- Passenger Seats
- Cabin Systems
- Galley Inserts
- Interiors
- Cargo Systems



## Propulsion

- Engines
- Struts
- Nacelles



## Common Commodities

- Machined parts
- Sheet metal parts
- Assemblies
- Tubing
- Wiring
- Tooling
- Raw materials
- Standards



*Boeing commodities present opportunities across the corporation*

# Supply chain strategies

- Rate readiness
- Dynamic architecture
- Increase competition
- Partnering for Success







Questions?