

An aerial photograph of a large commercial airplane, likely a Boeing 747, positioned on a runway. The aircraft is centered on a white centerline, with yellow edge lines visible on either side. The runway surface is dark asphalt, and the surrounding area appears to be a light-colored, possibly sandy or gravelly, landscape. The lighting creates a distinct shadow of the aircraft on the runway surface directly below it.

Air Transport Industry

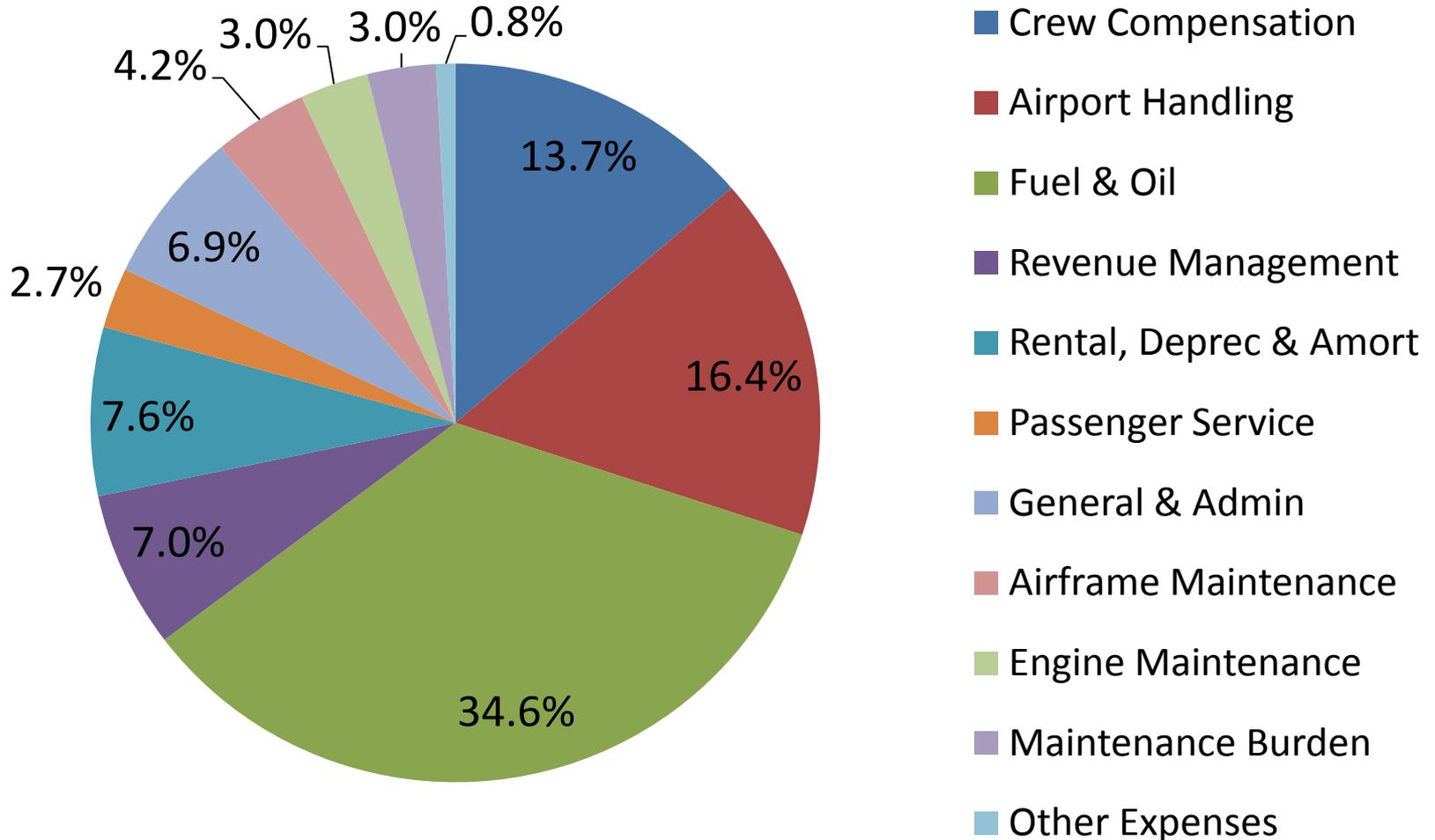
Structure, Economics, Operations

Northwestern University Transportation Center
April 28, 2016
Peter L. Smith

Context

- The Presenter
 - BA Harvard , MST Northwestern, MBA Foster School (U. of Washington)
 - Urban and regional transportation: 6 years including 1 ½ years in Lille, France
 - AT&T Communications, market analysis: 2 years
 - The Boeing Company: 29 years until retirement 7/1/2013
 - Telecommunications business strategy
 - IT design, project management, and quality assurance
 - Commercial Aviation Services and Marketing: airline value analysis, market analysis, and competitive analysis
- Not representing Boeing: all positions and opinions are presenter's
- Objectives vis-à-vis audience
 - Context, and something new about the industry
 - Spark questions for research and investigation
 - Give suggestions for those seeking to work in the industry

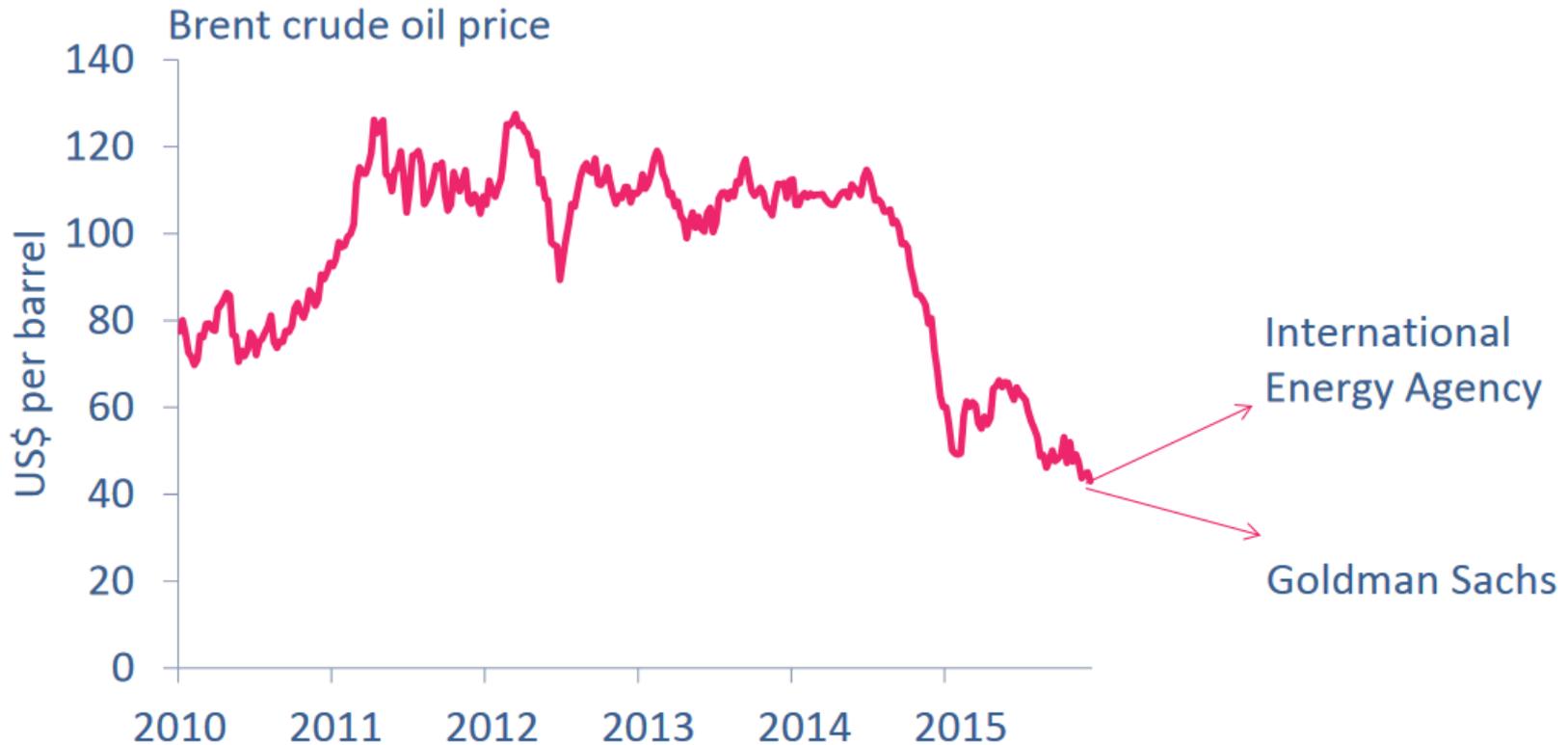
Airline Operating Costs ("Typical" Airline, 2014)



Source: Boeing internal analysis, used with permission for presentation at Northwestern University 4/28/2016

The Fuel Factor

Oil price outlook uncertain but low

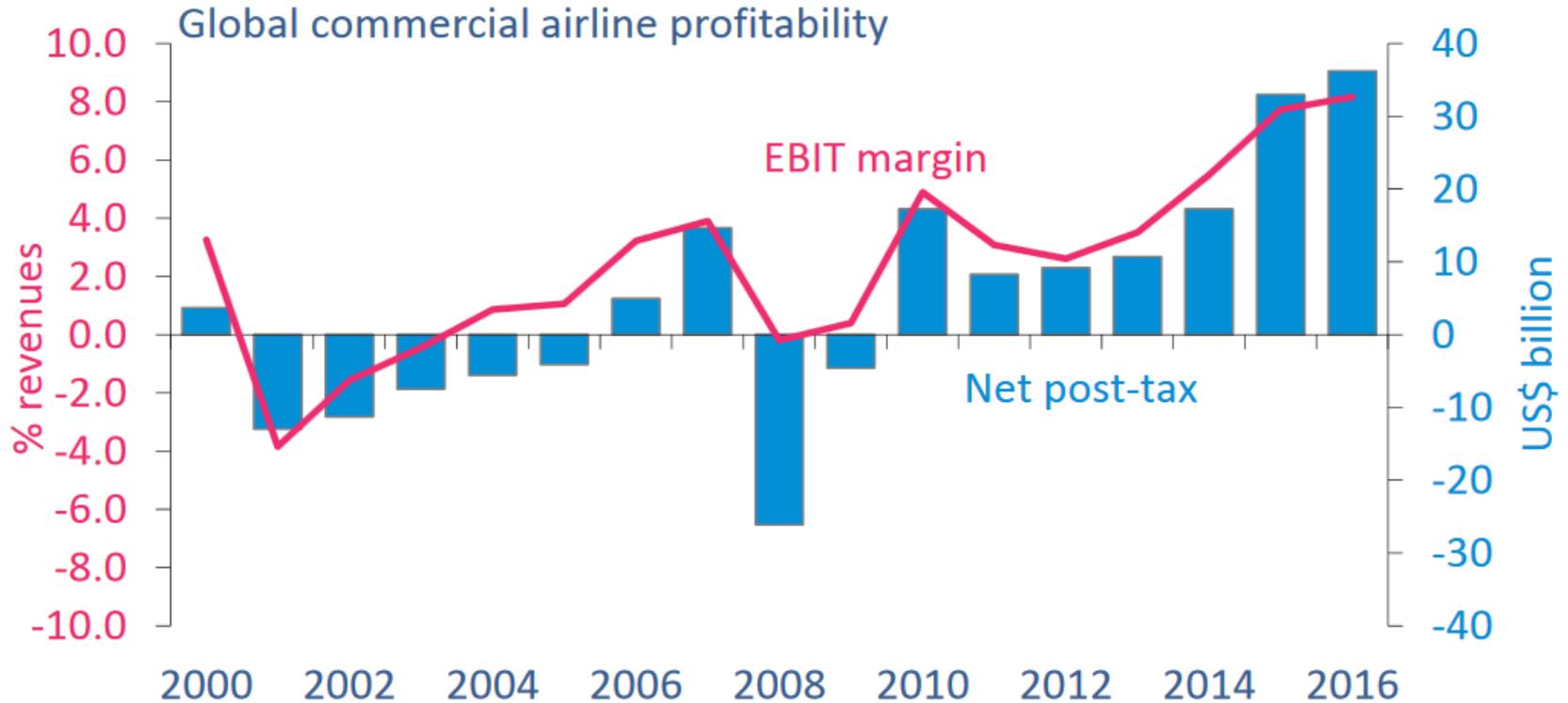


Source: Platts, IEA, Press reports

© International Air Transport Association, 2015. *Economic Performance of the Airline Industry*, end year 2015

Profit Trend

Record for the airline industry



Source: ICAO, IATA Economics

© International Air Transport Association, 2015. *Economic Performance of the Airline Industry*, end year 2015

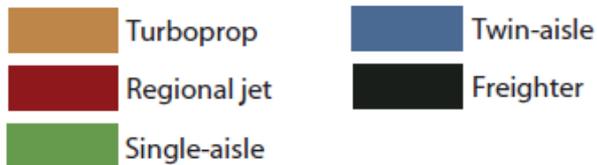
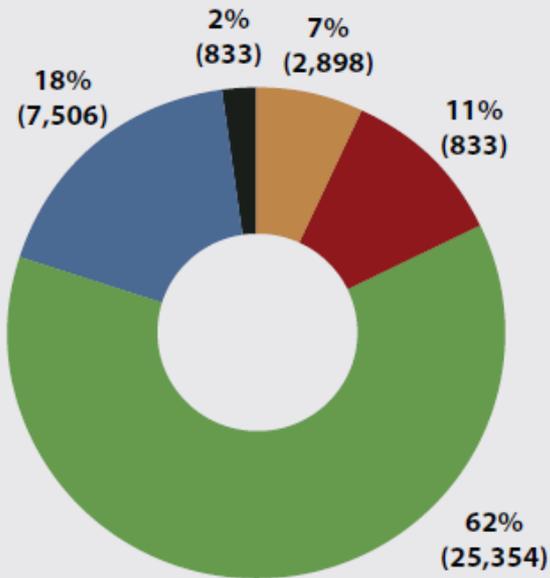
Career Factors in the Aviation Industry

- OEM
 - Desired background
 - Engineering background preferred; business supplemental
 - Airline experience valued
 - Departmental alignment enhances: e.g. fleet management, maintenance
 - Functional: e.g. accounting, law, supplier management, IT, non-commercial aviation
 - Entry
 - Networking
 - Internships
 - Jobs advertised
 - Career paths
 - Management
 - Technical: many disciplines
 - Marketing and Sales
- Airline
 - Fast paced: “day of” emphasis
 - Timeliness and accuracy
- Business cycle – timing

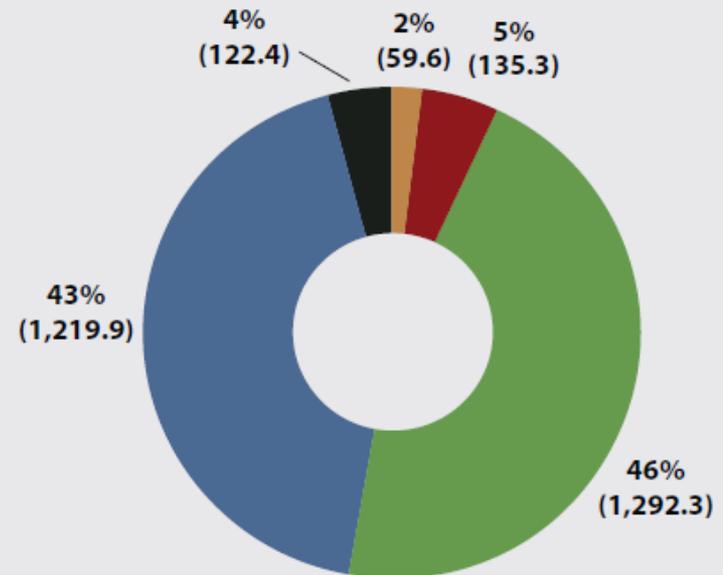


Scope: Single and Twin-Aisle > 90 Seats

FORECAST 2015-2034 DELIVERIES

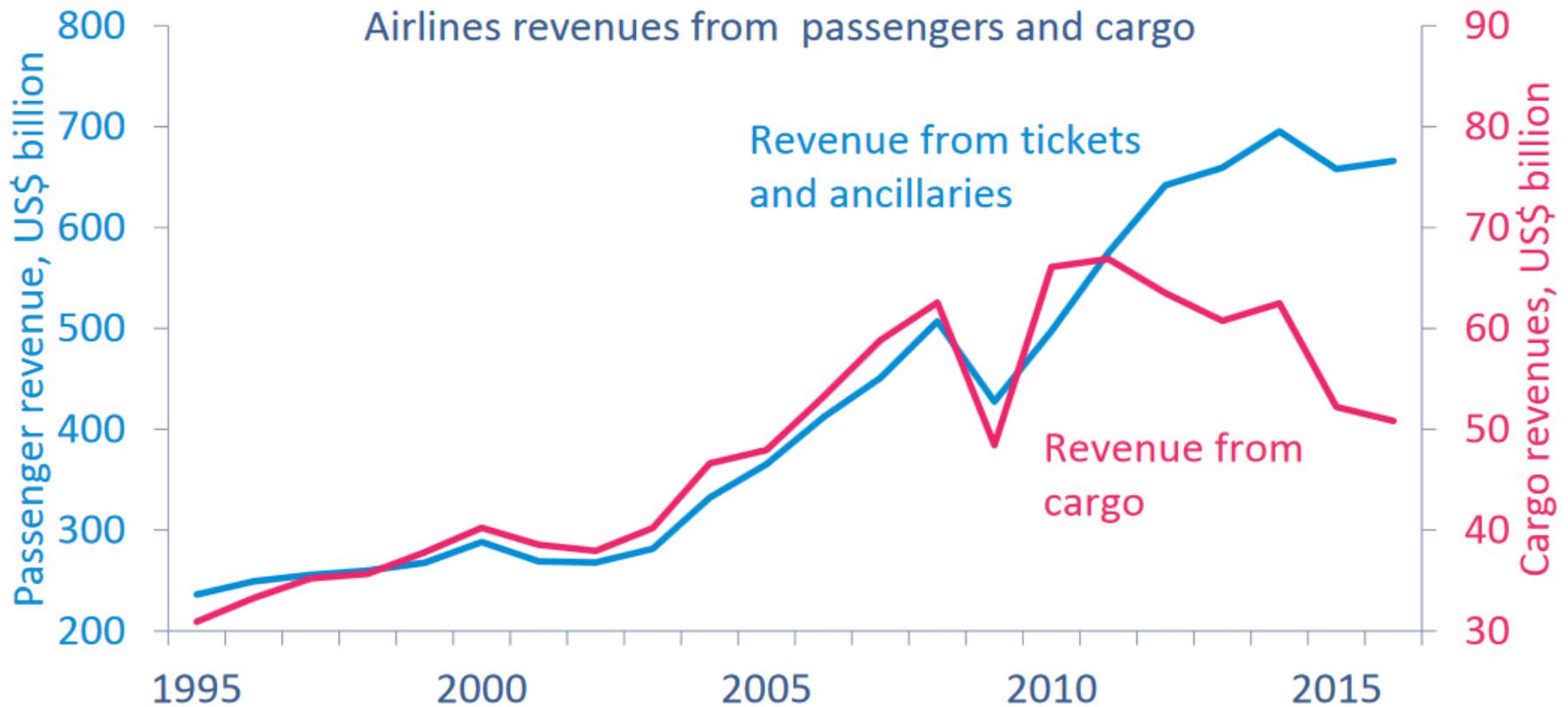


FORECAST 2015-2034 DELIVERY VALUE (\$BN)



Passenger vs. Cargo

Very different businesses

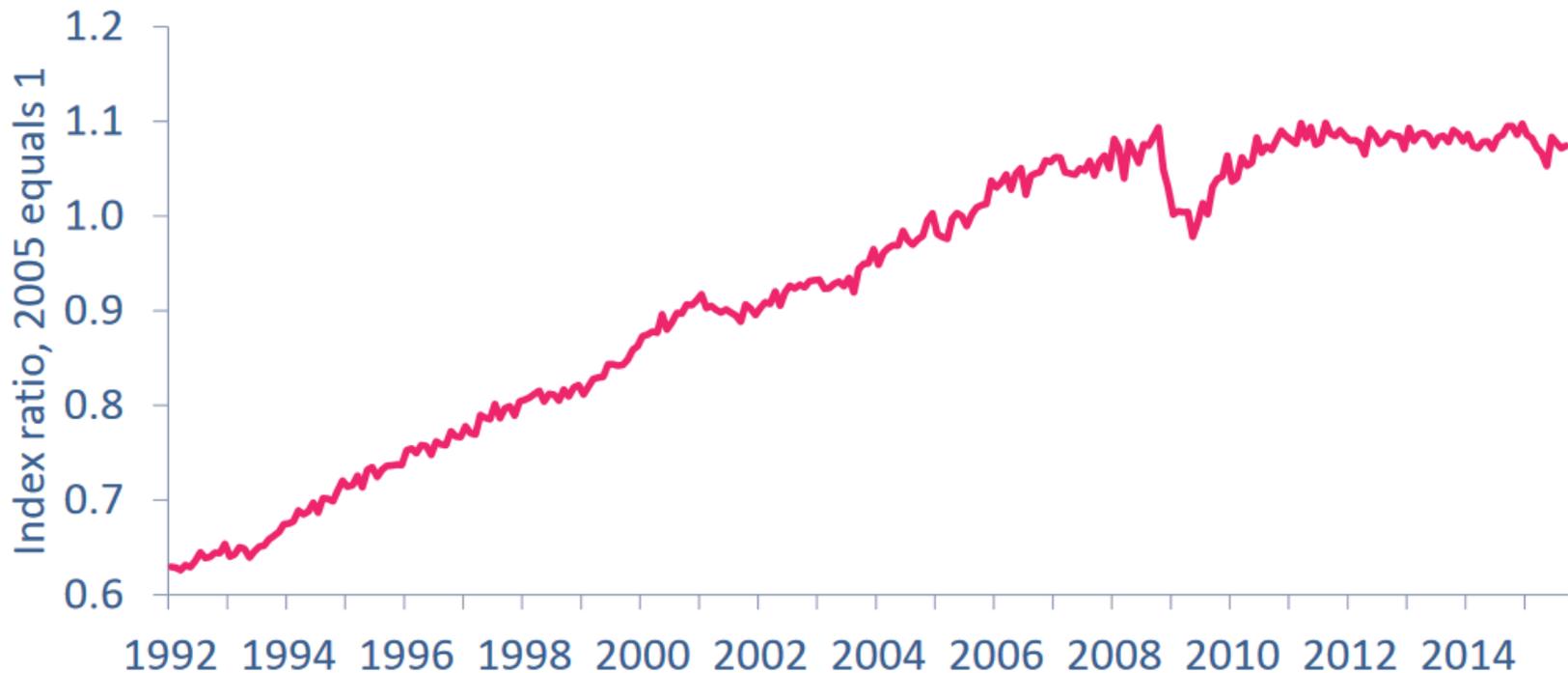


Source: ICAO, IATA Economics

Economic Dynamics

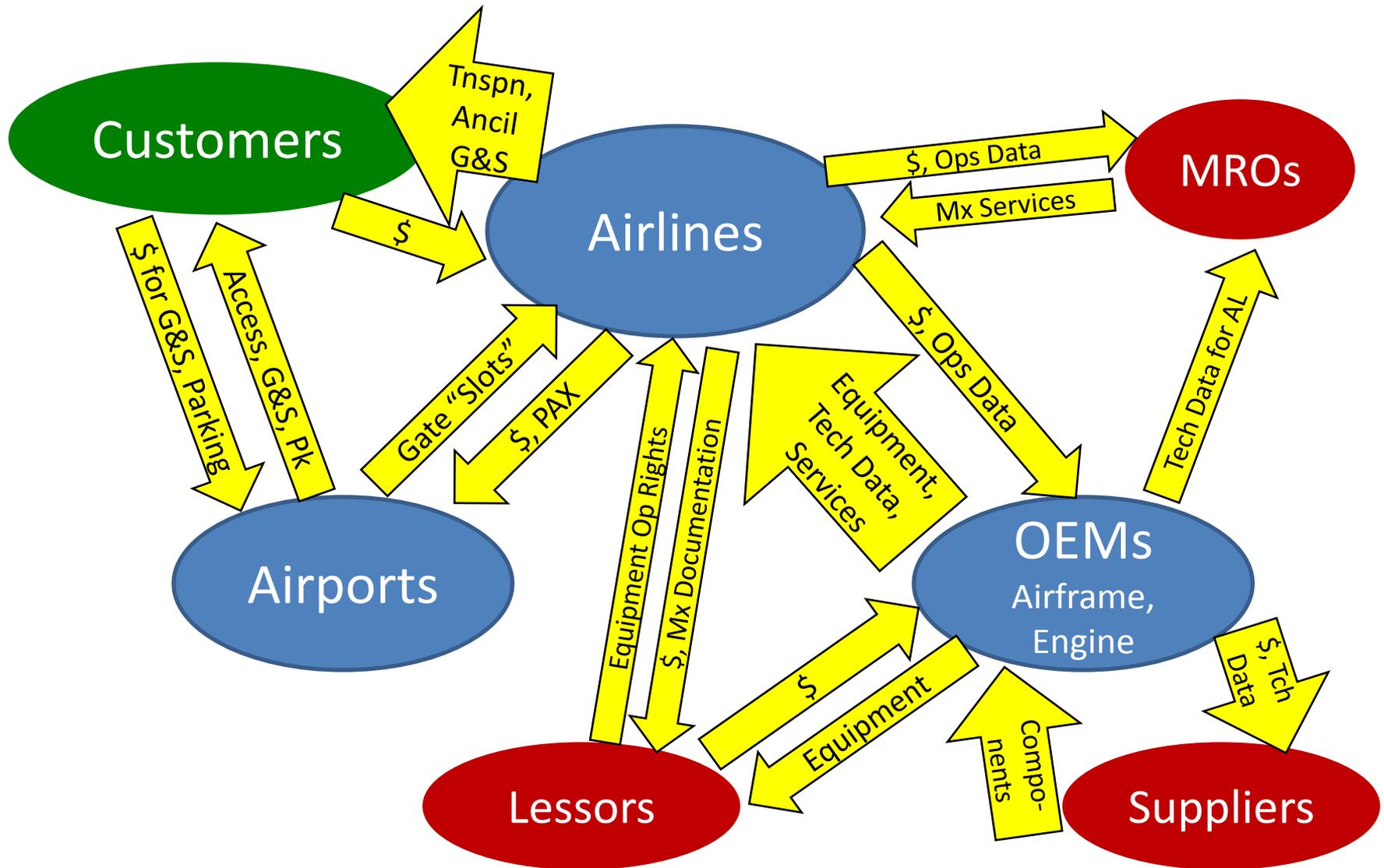
Globalization has paused

International trade compared to global industrial production

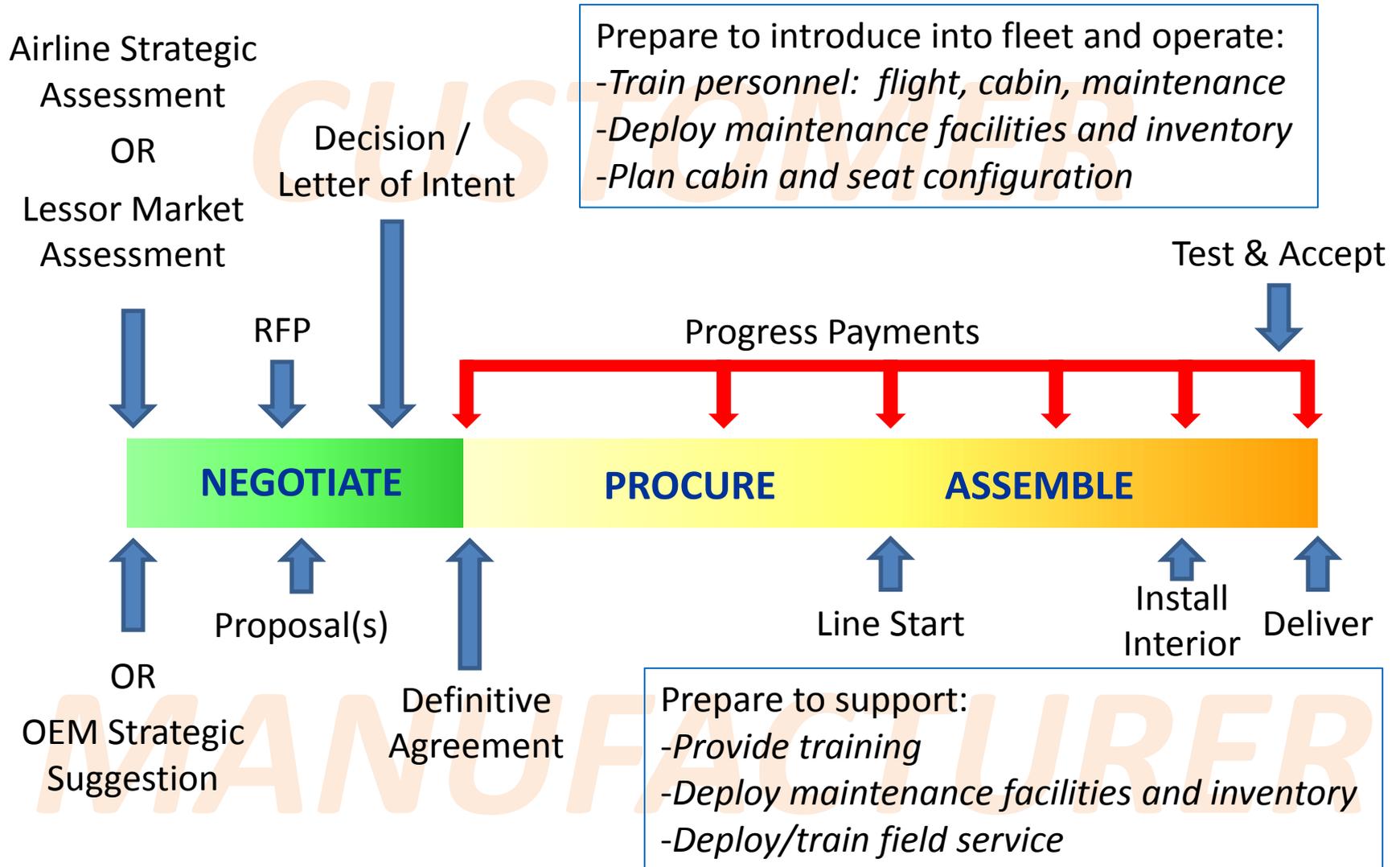


© International Air Transport Association, 2015. *Economic Performance of the Airline Industry*, end year 2015

How the Industry Works – Major Players



Life Cycle of an Airplane Sale



OEM Aftermarket “Services & Support”

- Training
- Parts: “spares” & routine
- Engineering support
 - Field Service: 100’s of offices worldwide
 - Repairs

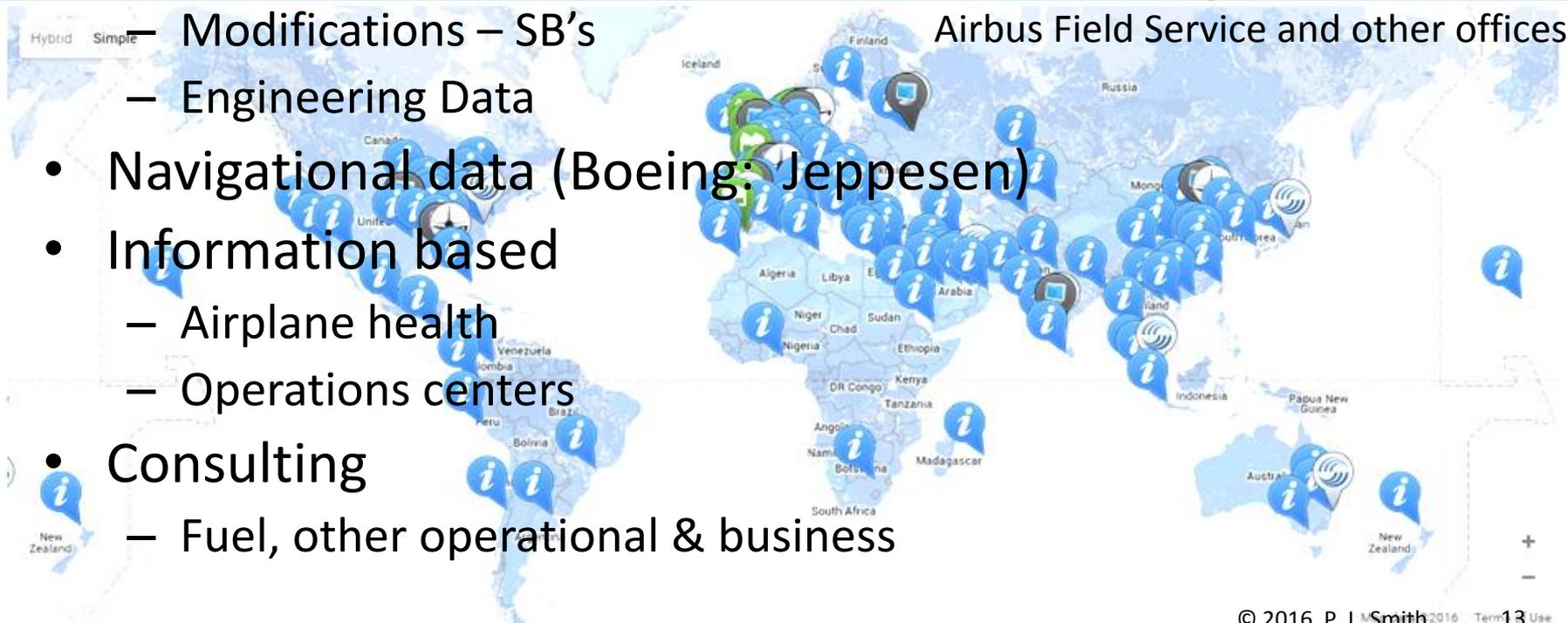
- Modifications – SB’s
- Engineering Data

- Navigational data (Boeing: Jeppesen)
- Information based
 - Airplane health
 - Operations centers

- Consulting
 - Fuel, other operational & business

Boeing Field Service offices

Airbus Field Service and other offices



Airbus & Boeing Fleet Statistics 2015

	Airbus	Boeing
2015 Net Orders	1,080	768
2015 Aircraft Delivered	635	762
Total Orders (to 3/16)	16,361	23,132
Total Deliveries (to 3/16)	9,643	17,392
In Operation (3/16)	8,762	10,000 +

Airbus & Boeing Financial Statistics 2015

	Airbus Group	Airbus Commercial	Boeing Company	Boeing Commercial
	(\$ billions)			
Employees	136,574		~ 160,000	
New Orders (1)	\$178.7	\$156.2	\$83.0	\$57.0
Order Book (1)	\$1,130.2	\$1,070.2	\$489.0	\$432.0
Revenue	\$72.5	\$51.5	\$96.1	\$66.0
Op. Earnings (Boeing)			\$7.4	\$5.2
PBFCIT (2) (Airbus)	\$4.6	\$2.6		
Net Earnings / PfP (3)	\$3.0		\$5.2	
Cash & Equivalents – EoP	\$8.2		\$11.3	

(1) New Orders and Order Book / Backlog are based on list prices. Actual prices may be lower.

(2) Airbus PBFCIT = Profit Before Finance Costs and Income Taxes.

(3) Boeing Net Earnings believed to be roughly equivalent to Airbus Profit for Period.

Currency conversion: \$1 = €0.89 representative rate for 2015. \$1 = €0.92 at EoP on 12/31/15.

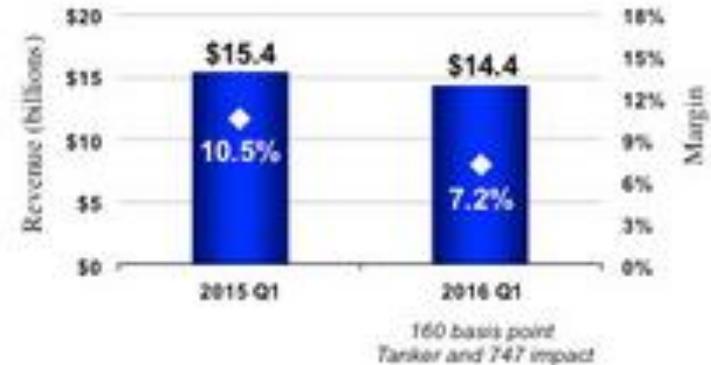
Commercial Airplanes

Boeing | Investor Relations

Excerpt from Boeing Earnings Webinar 4/26/16

- Delivered 176 airplanes in Q1
- Orders valued at \$6B in Q1; robust backlog of \$424B
 - Won 121 net orders
- Achieved 737 MAX first flight and began flight test
- Began 12 per month rate in 787 Final Assembly
- Started major assembly early on the 787-10

Revenues & Operating Margins



737 MAX First Flight

Focusing on execution, quality and productivity

Some Causes of Flight Schedule Delays

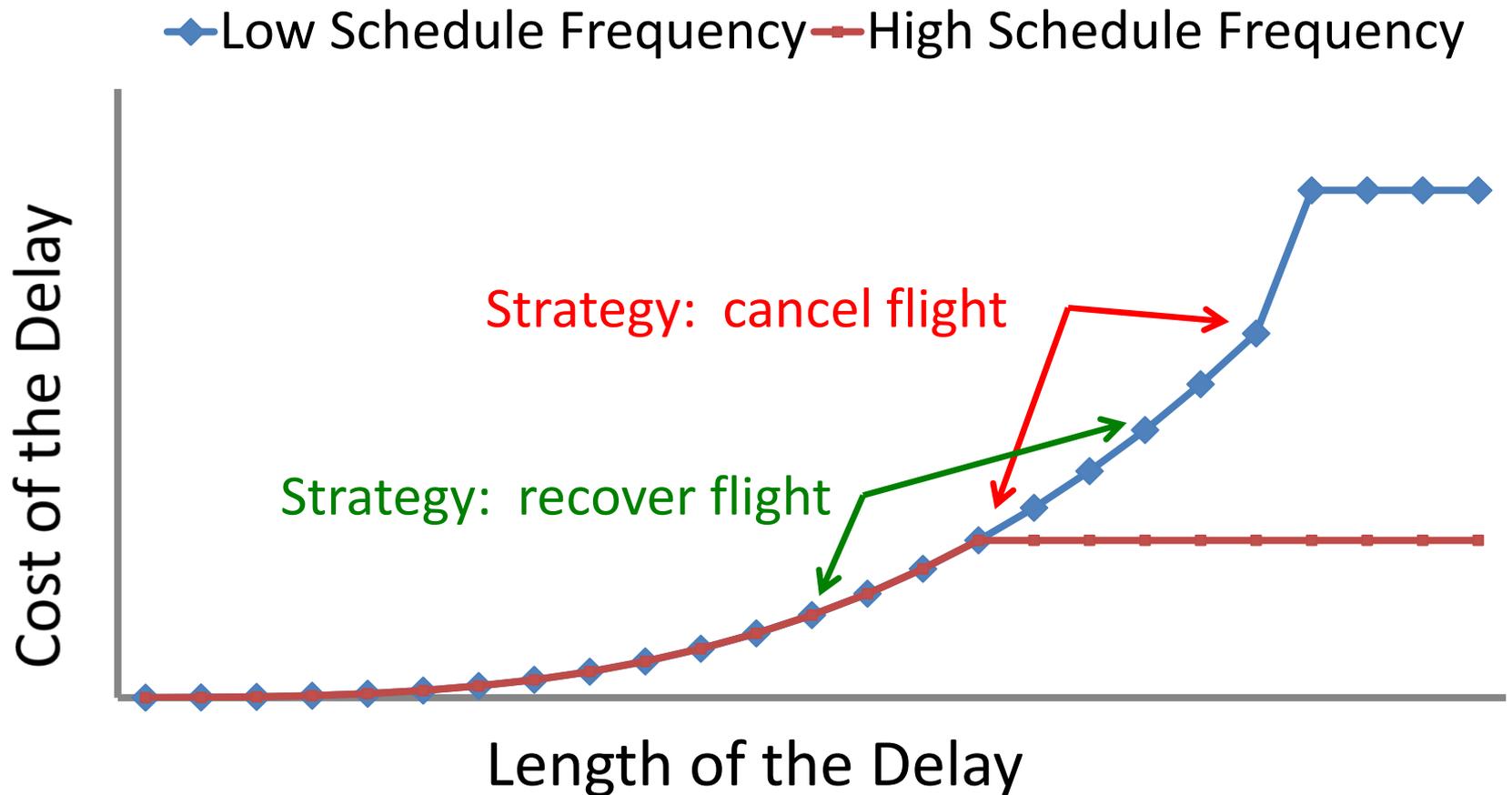
- Weather
- Air traffic control
- Passenger
- Security
- Mechanical / technical (tend to be long, “creeping”)
- Flight crew not available
- Cabin crew not available
- Equipment not available
- Previous delay (“Consequential”)
- Facilities
- Damage
- Connecting passenger
- Ramp



NOTE: Many airlines do not track the lengths of delays, and/or do not understand their true costs.

Cost of a Flight Delay, by Length of Delay

"Notional", normalized by seat capacity



The Low-Cost Carrier (LCC) Model

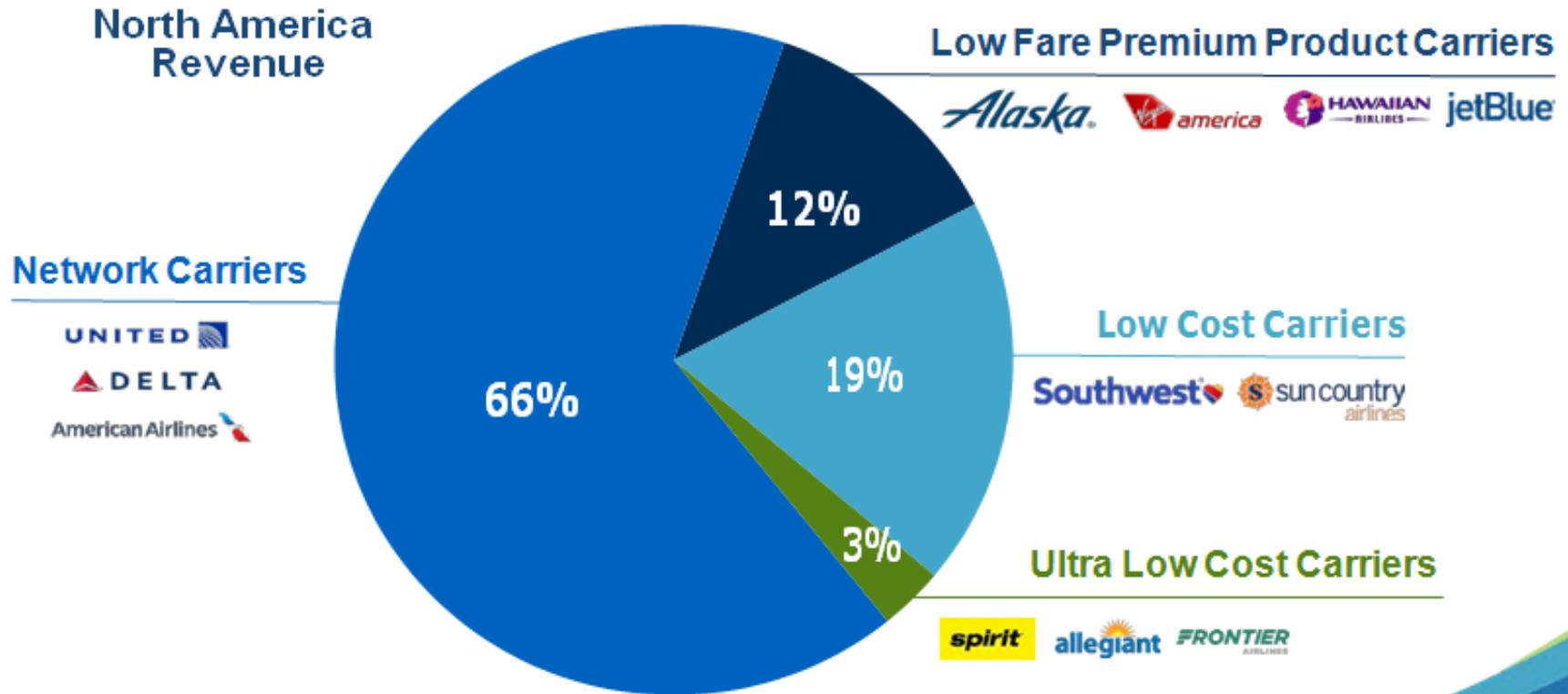
- Primarily point-to-point operations.
- Serving short-haul routes, often to/from regional or secondary airports.
- A strong focus on price sensitive traffic, mostly leisure passengers.
- Typically one service class only, with no (or limited) customer loyalty programmes.
- Limited passenger services, with additional charges for some services (e.g. on-board catering).
- Low average fares, with a strong focus on price competition.
- Different fares offered, related to aircraft load factors and/or length of time before departure.
- A very high proportion of bookings made through the Internet.
- High aircraft utilisation rates, with short turnaround times between operations.
- A fleet consisting of just one or two types of aircraft.
- Private-sector companies.
- A simple management and overhead structure with a lean strategic decision-making process.

Alaska to Acquire Virgin America



Airline Market Segments – N. America

We believe there is significant demand for low-fare carriers that offer a premium product.



VIRGIN AMERICA'S SUPERIOR BUSINESS MODEL

PREMIUM REVENUE GENERATION WITH A LCC COST BASE

			LOW COST CARRIERS	LEGACY CARRIERS
MAXIMIZING REVENUE...	FIRST CLASS SERVICE	✈		✈
	LEADING IN-FLIGHT EXPERIENCE	✈		✈
	BRAND PREMIUM	✈		✈
	TOP DESTINATIONS WITH STRONG ALLIANCE NETWORK	✈		✈
	CORPORATE SELLING FOCUS	✈		✈
	ANCILLARY REVENUE STRATEGY	✈	✈	✈
	LOYALTY PROGRAM	✈	✈	✈
WHILE KEEPING COSTS LOW....	SINGLE FLEET TYPE	✈	✈	
	YOUNG AND FUEL EFFICIENT FLEET	✈	✈	
	POINT-TO-POINT NETWORK	✈	✈	
	OUTSOURCING	✈	✈	
	HIGH LABOR PRODUCTIVITY	✈	✈	

Combined Airline Statistics

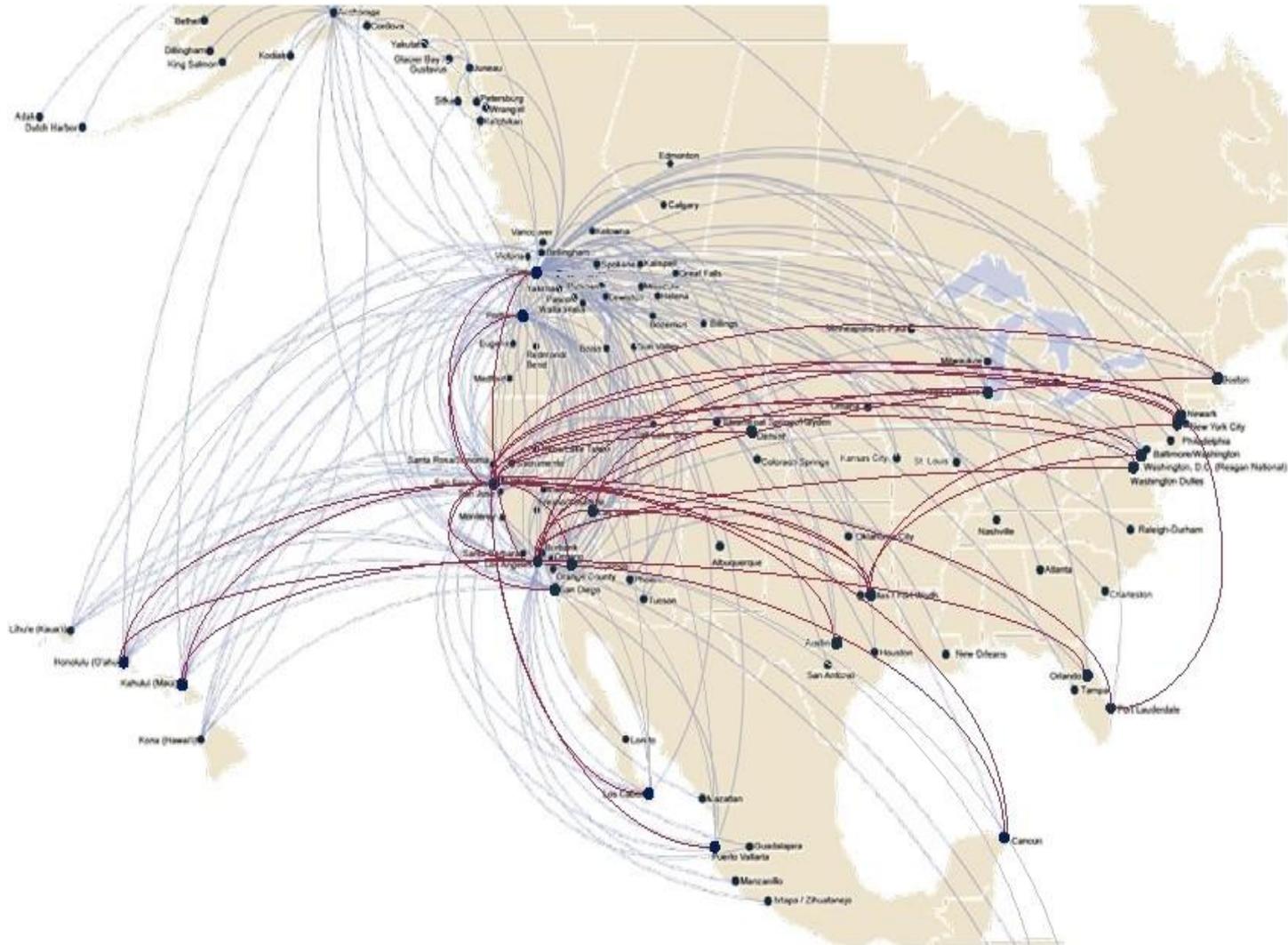
Alaska + Virgin by the Numbers



Annual Revenues	Alaska		Virgin America			
	\$5.6 Billion		\$1.5 Billion		\$7.1 Billion	
	Annual Passengers	32 Million		7 Million		39 Million
		152 Boeing 52 Q400 15 regional jets	+	63 Airbus	=	282
	Aircraft					
	Daily Departures	1,000		200		1,200
	Destinations	112		24		114*
Pre-Tax Profit	\$1.3 Billion		\$200 Million		\$1.5 Billion	

*AS and VX have 22 current destinations that overlap.

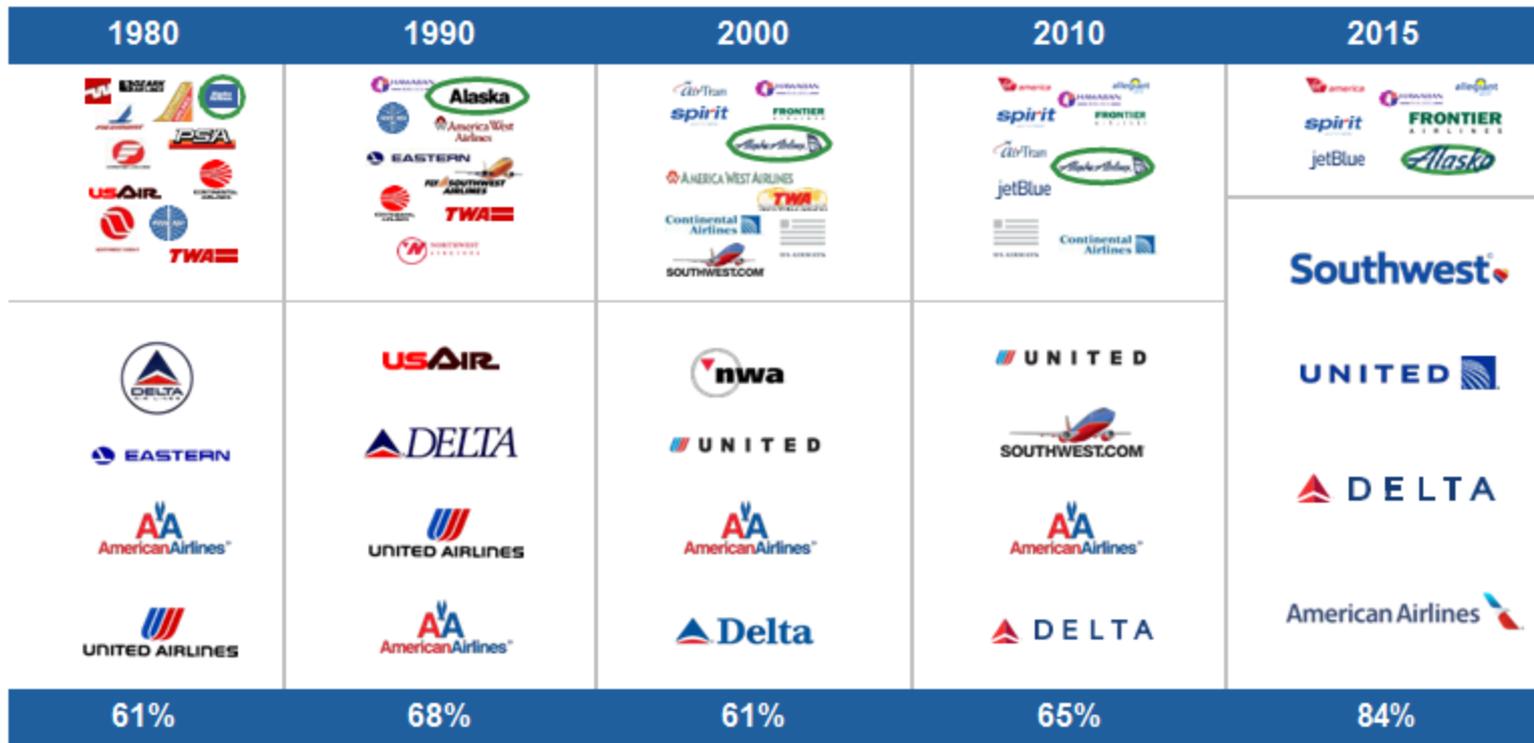
Alaska / Virgin American Route Networks



Emergence of Fewer, Larger Airlines

Consolidation has led to dominance of just four airlines.

Airline Domestic Market Share (Revenue)



Total domestic revenue pulled from Form 41 data. Airlines included in sample set: American, Aloha, Alaska, JetBlue, Continental, Delta, Frontier, AirTran, Hawaiian, America West, Midway, Spirit, Northwest, Pan American, Sun Country, TWA, ATA, United, US Airways, Virgin America, Southwest and Midwest Express

Acquisition Economic Overview

Significant synergies create value for our owners.

We expect one-time costs to total ~\$300M - \$350M

	Average Annual Run Rate Estimates
Revenue Synergies	\$175 M
Net Cost Synergies	\$50 M
Total Synergies	\$225 M

Acquisition Financial Overview

We expect to finance the transaction with cash on hand, aircraft debt and a temporary slowdown of share buybacks.

Acquisition Price	
Equity Purchased	\$2.6B
Net Debt and Leases Assumed	\$1.4B
Total	\$4.0B

Financing Sources	
Cash	\$0.6M
Debt and Leases Assumed	\$1.4B
New Debt Issued	\$2B
Total	\$4.0B

Traditional Maintenance Checks

	A	B	C	D / HMV
Interval – FH	400-600	(1)	(2)	
Interval – Cycles	200-300	(1)		
Interval - Months		6-8	20-24	72
Maintenance Hrs	20-60	120-150	Up to 6,000	Up to 50,000
AC Down Time	Overnight	1-3 days	1-2 wks +	Up to 2 months
Purposes	Systems, etc.	Systems, etc.	Structural and zone inspections	Deep inspection , overhaul, cabin

- (1) May be the same as for A checks.
- (2) May be defined by manufacturer.