



Airline Business Models FSNCs, LCCs, ULCCs and Charter Carriers

Istanbul Technical University

Air Transportation Management, M.Sc. Program

Aviation Economics and Financial Analysis

Module 8

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Economic characteristics of

- FSNCs
- LCCs
- ULCCs
- Charter

Cost structure of the different carrier types

Market impact of LCCs/FSNCs

FSNCs versus LCCs

Future of LCCs/FSNCs

Evolution

Before deregulation

- Full service network carriers
- Significant number of charter carriers
- No low cost models
- No price competition (same price on a given route)
- Full-quality service
- Point-to-point route networks



Evolution – cont.

After deregulation

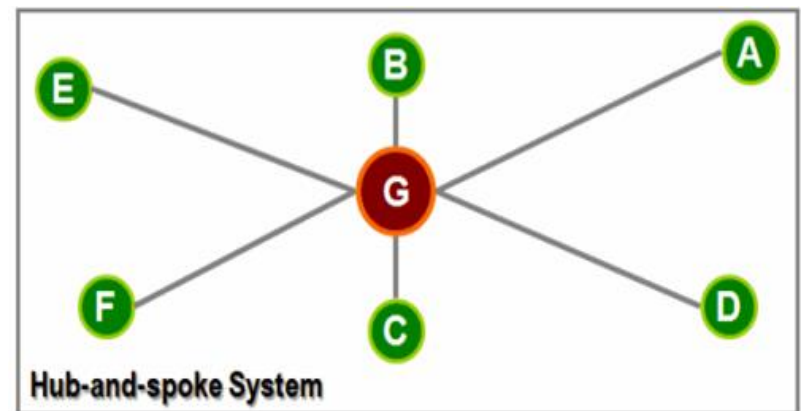
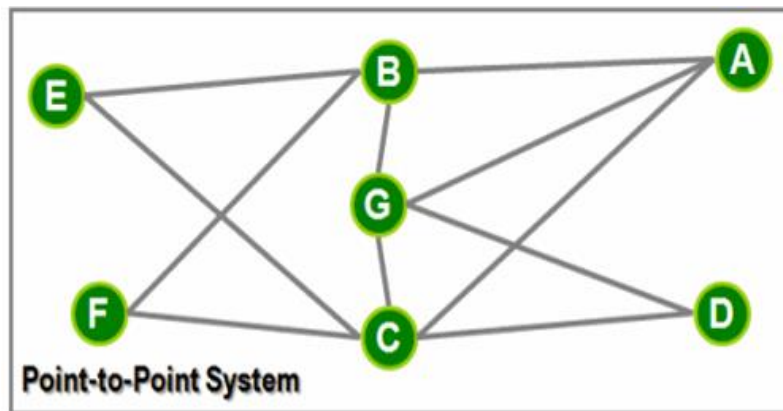
- Proliferation of LCC models
- Hybrid carriers
- Industry consolidation (mergers and acquisitions)
- Alliances and joint ventures
- Service debundling
- Hub-and-spoke route systems



Hub and spoke route network

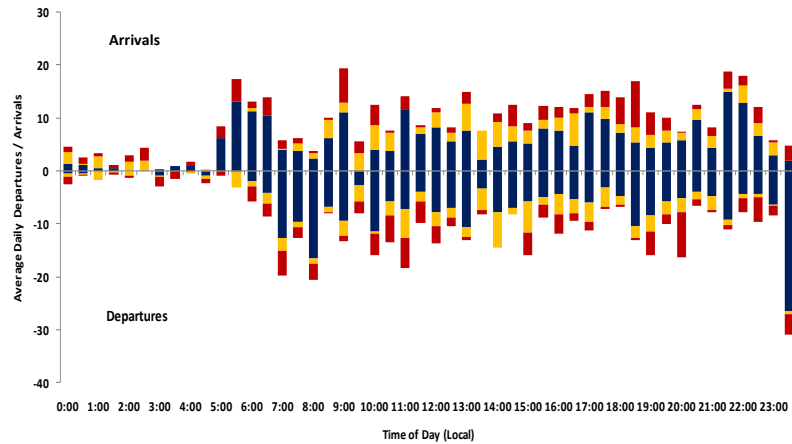
Hub and spoke - route network structure by which a carrier utilizes an airport to route a broad range of Origin & Destination markets.

- Hub = Central node or airport
- Spoke = Nonstop routes radiating out from the hub connecting with various other markets
- E-D, A-B, C-B etc. O&D market is routed via hub; market cannot sustain frequent nonstop service

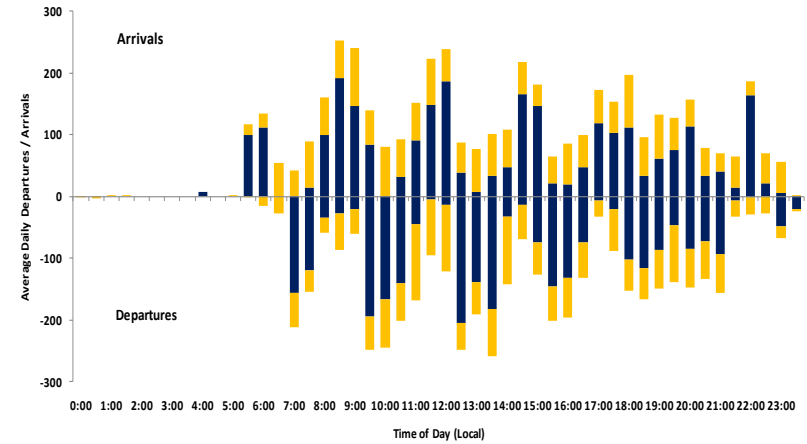


Hub Structures

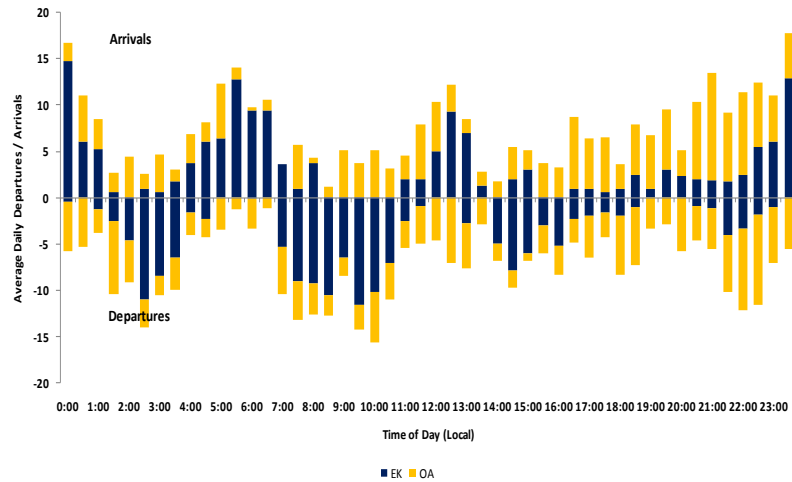
Hub Wave Pattern at IST and SAW



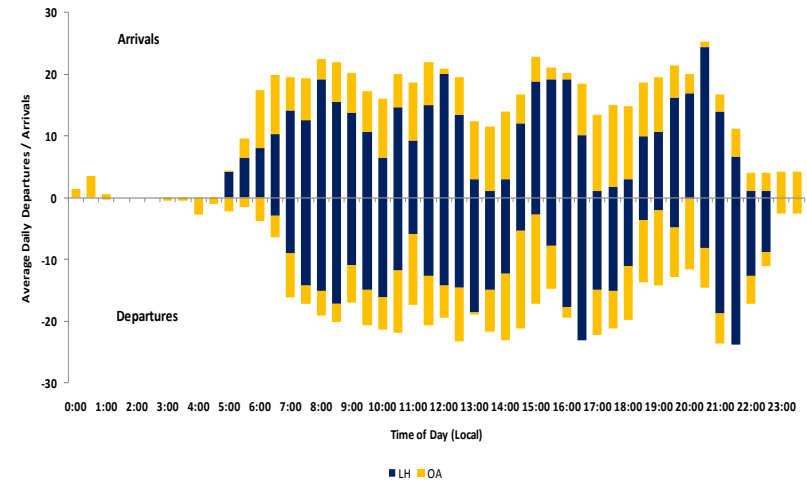
Hub Wave Pattern at CDG (AF)



Hub Wave Pattern at DXB (EK)



Hub Wave Pattern at FRA (LH)

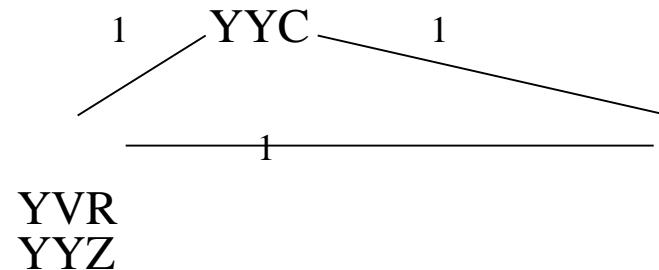


Hubs and traffic density

Vancouver (YVR), Calgary (YYC), Toronto (YYZ)

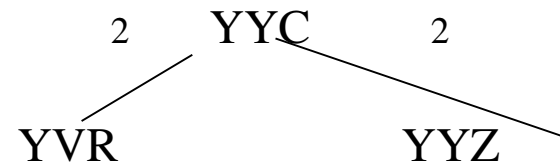
Linear Route

- Each route supports 1 flight/day
- Average traffic density



Hub Route

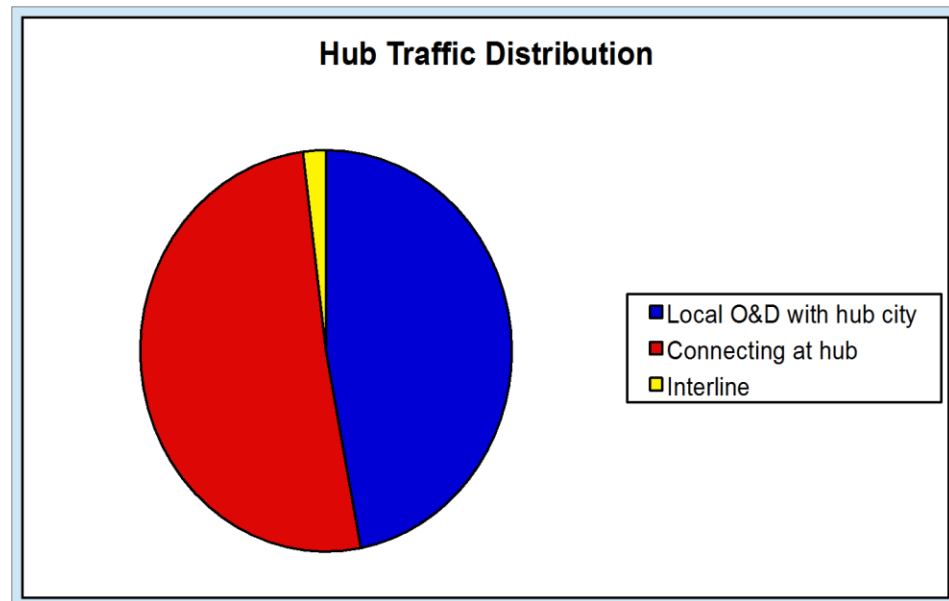
- Each route supports 2 flights/day
- Average traffic density
- 2 flights/day per route
- Same or more total traffic as linear



Types of hubs

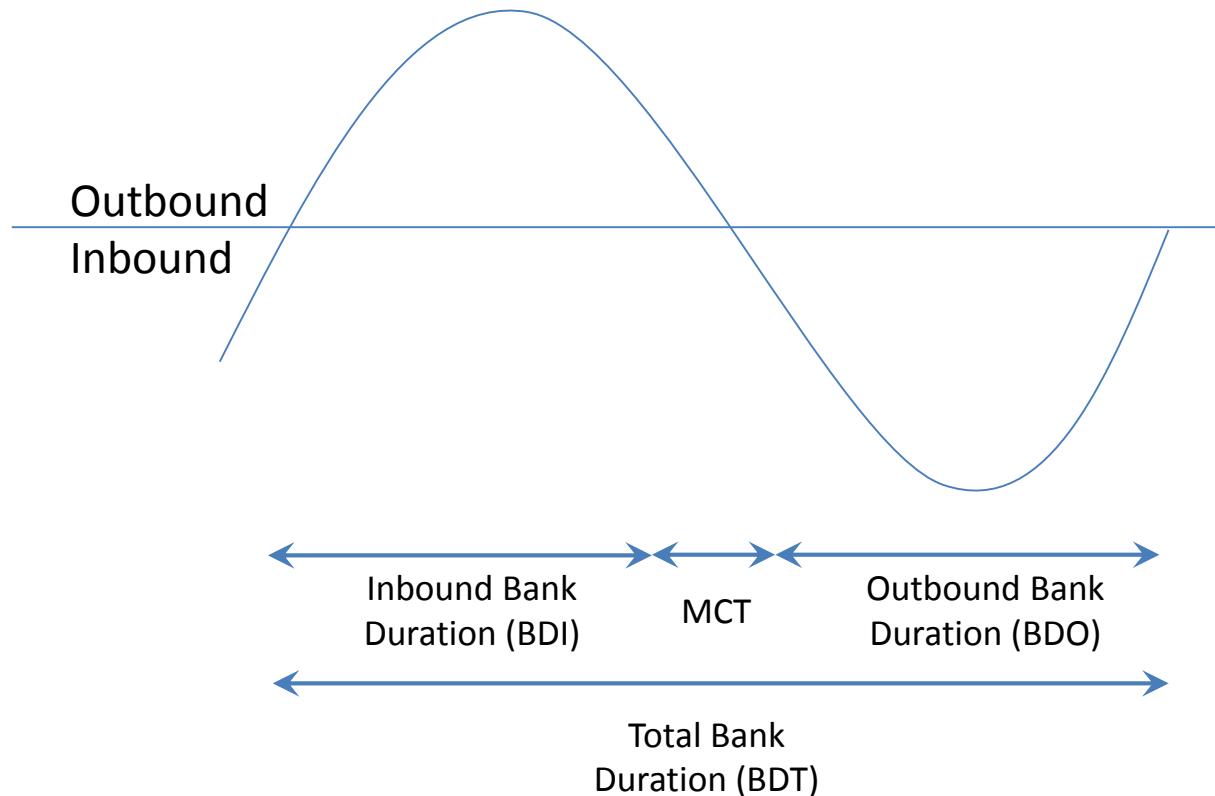
Simple hubs – little or no coordination between in- and outbound flights. Spokes scheduled independently.

- Complex hubs - flights are co-ordinated to arrive in “banks” (allow more and fast connections between flights but poor utilization outside banks and minimal interline traffic).



Typical bank duration lasts between 1.5 hours and four hours

- Bank Duration (BDT) = Inbound Bank (BDI) + MCT + Outbound Bank (BDO)
- Extended banks (> 4 hours) produce many hits, but most are poorer quality (i.e. MCT minimization) QSI factors
- “Fast” connections (utilization-driven)
 - sacrifice breadth of connectivity
- “Many” connections (volume-driven)
- sacrifice efficiency, i.e. minimize MCTs



Directional

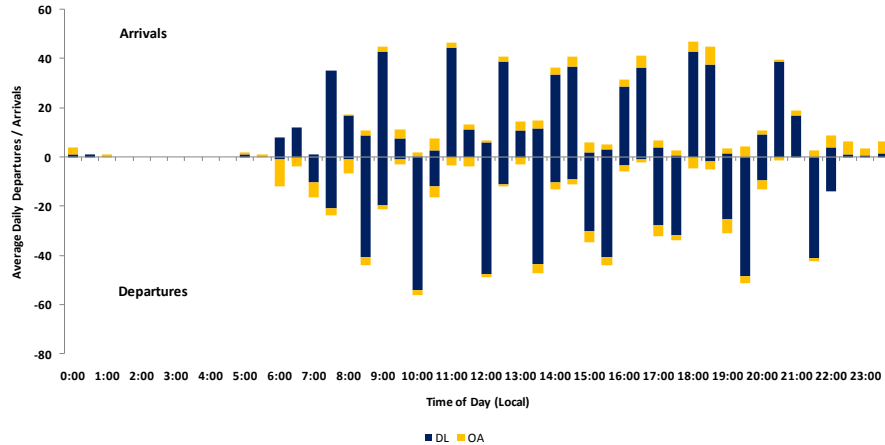
- all arrivals from east, all departures to west
- E-W or N-S aligned spokes due to market, regulatory conditions
- geographic constraints (i.e. Canada, CX)

Multiple (Omnidirectional)

- Reflective of mature hub development
- Broad domestic geographic network (i.e. U.S.)
- Geographic location with multiple International Destinations (e.g. THY and IST)
- Characteristic of all major U.S. carriers

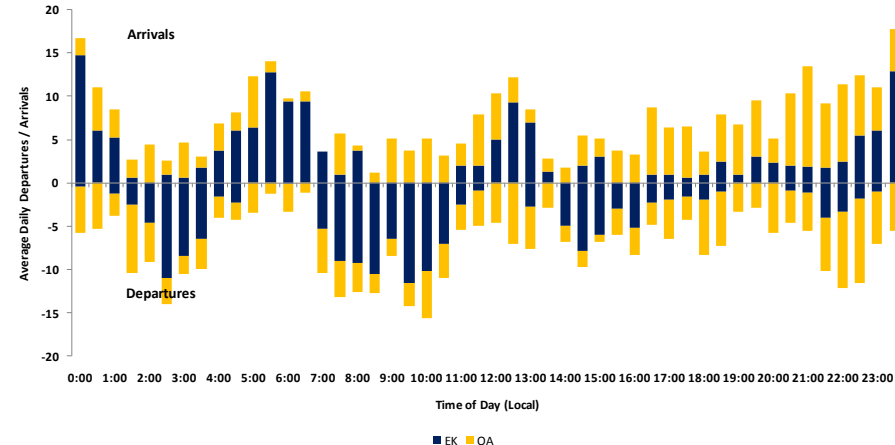
Examples of Directional and Omni Hubs

Hub Wave Pattern at DTW (DL)



- DL's DTW hub is bi-directional (east-west) and has a 9-wave pattern
- Bi-directional hubs typically have 6+ waves in their daily hub structure
- This type of structure is most commonly found in U.S. hubs

Hub Wave Pattern at DXB (EK)



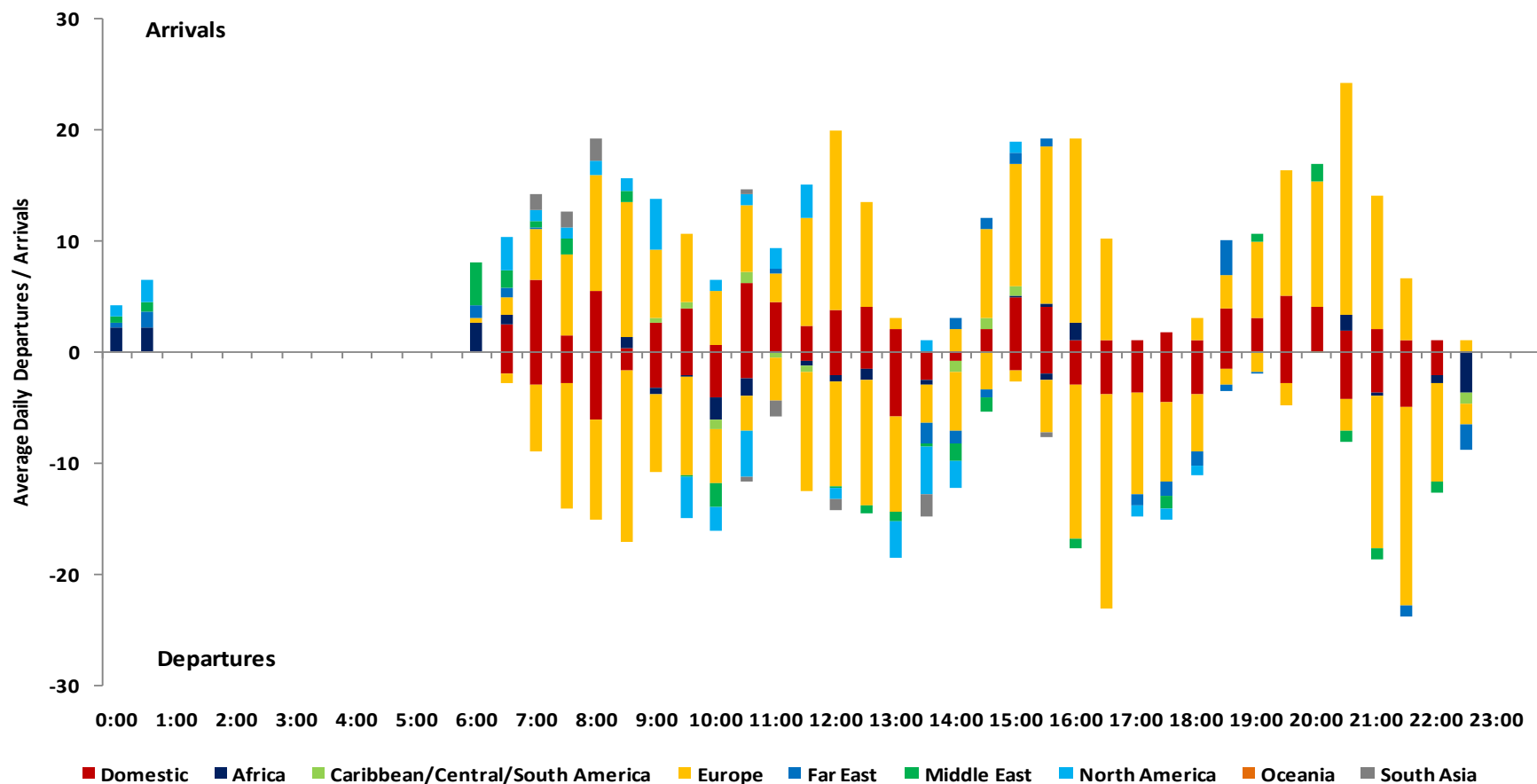
- EK's DXB hub is omni-directional and has a 3-wave pattern
- Omni-directional hubs are more commonly found in European, Gulf and Asian hub patterns and typically have 3-7 waves per day

International

- International & domestic networks co-ordinated
- Carriers primary international gateway for that region
 - i.e. YVR (AC), SFO (UA), MIA (AA), IST (THY)
 - i.e. HKG (CX), AMS (KL) - though no domestic networks

Hub Wave Pattern at FRA (LH) – by Region

Hub Wave Pattern at FRA by Region (LH)



Time penalties of hubs

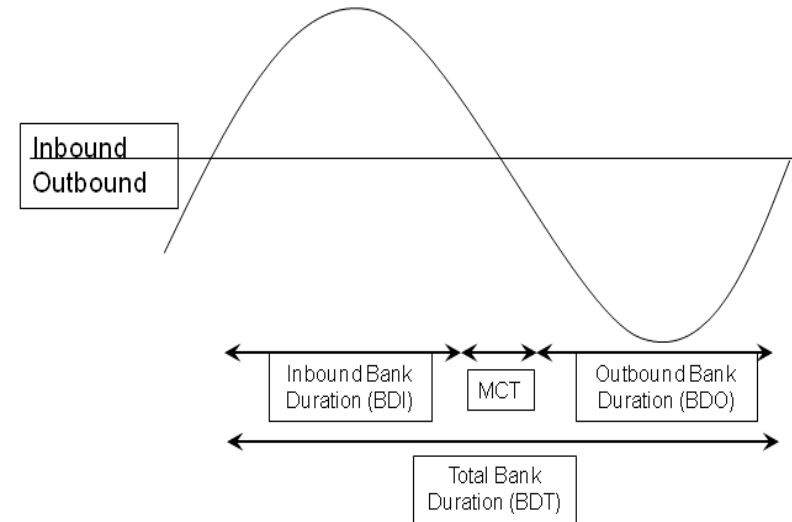
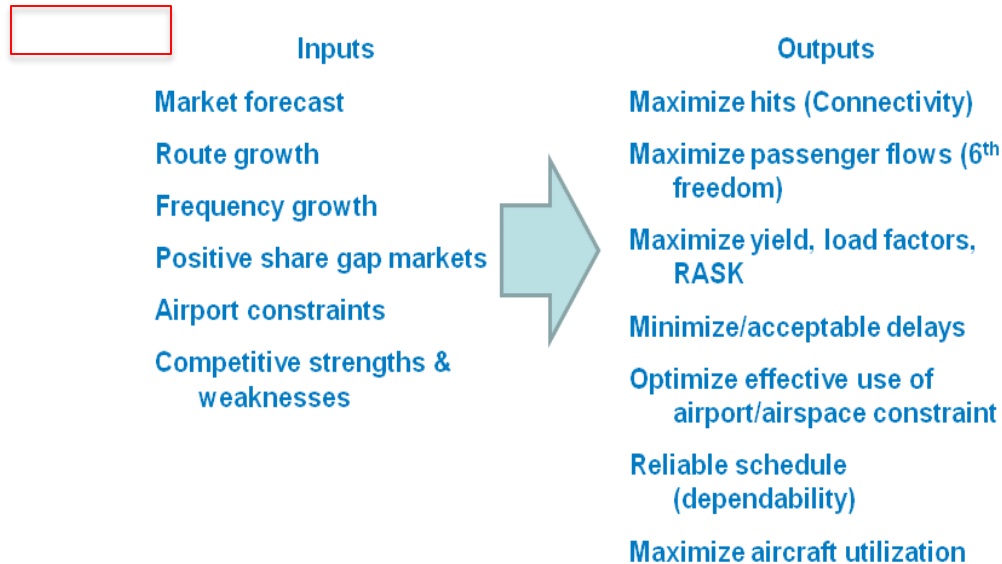
Three additional trip time components compared to nonstop flight:

- 30 minutes for additional ascent/descent (stop) at hub airport
- Extra cruise time (depending on the angle)
- Connection time (30-60 minutes between flights)

Extra trip time offset by better total time for traveler:

- Total time = trip time + waiting time
- Wait time = Time from Desired Departure to Actual Departure

Overview of the hub design principles



Design process schedule is a generator of alternatives, and selection of the best fit. Ideally, this is a combination of different optimization tools

Selecting the Best Hub Structure Requires Defining Alternative competing hub structures and selection of the best structure that leads to the optimal outputs

Peer Hub Bank Time Comparison			
	AF @ CDG	LH @ FRA	EK @ DXB
BDI	1.50	3.75	3.17
BDO	1.57	3.88	3.50
MCT	1.00	0.75	0.75
BDT	4.07	8.38	7.42
# Banks	7	4	3

Time penalties comparison

Linear:

- 2 flights per day nonstop, 8 hours apart.

➔ **average wait = 4 hours**

Hub:

- 4 flights per day, but via hub

- 2 hours apart

➔ average wait = 1 hour

➔ + 0.5 h ascent/descent

➔ + 0.5 h extra cruise

➔ + 0.5 h connection

➔ **total wait & incremental flight time = 2.5 hours**

N cities in a hub network → $N(N-1) / 2$ potential city pairs

N	2	3	4	5	20	98
$\frac{N(N-1)}{2}$	1	3	6	10	190	4,743

Supporting a hub - total traffic needed to support an additional flight can be small

eg Airline has 200 destinations connecting to hub 1 passenger per destination could fill an aircraft

“Hubbing” keeps more traffic on-line (less interline)

Feeder links can be important - hubs led to the rise of extensive “commuter” or “regionals” aligned, contracted with or subsidiaries of major air carriers (e.g. AC Jazz)

Competition

Weather

- especially for cargo hubs

Geographic location

Distance from the airline's other hubs

Local O&D market

Airport congestion

- groundside & air traffic
- access to gates & facilities
- room for future growth
- community support
- Restrictions (e.g. night operations)

No of City Pairs within 40% circuitry

Criteria for evaluating hubs

Primary Hubs

Evaluation Criteria	Minimum Requirement
Intl O&D demand	>1.5 million annual pax in 2008
Dom O&D demand	>1.5 million annual pax in 2008
Good circuitry for 6th Freedom markets	>30 of top markets <130% circuitry
Potential for strong presence	achieves ranking in top 2 by seat share
Apt capacity for hubbing	>40 gates available simultaneously

Secondary Hubs

Evaluation Criteria	Minimum Requirement
Regional O&D demand	>1 million annual pax in 2008
Dom O&D demand	>1 million annual pax in 2008
Good circuitry for regional markets	>20 of top regional markets <130% circuitry
Good circuitry for domestic markets	>20 of top domestic markets <130% circuitry
Apt capacity for hubbing	>20 gates available simultaneously

Apply criteria to hubs in India: Example

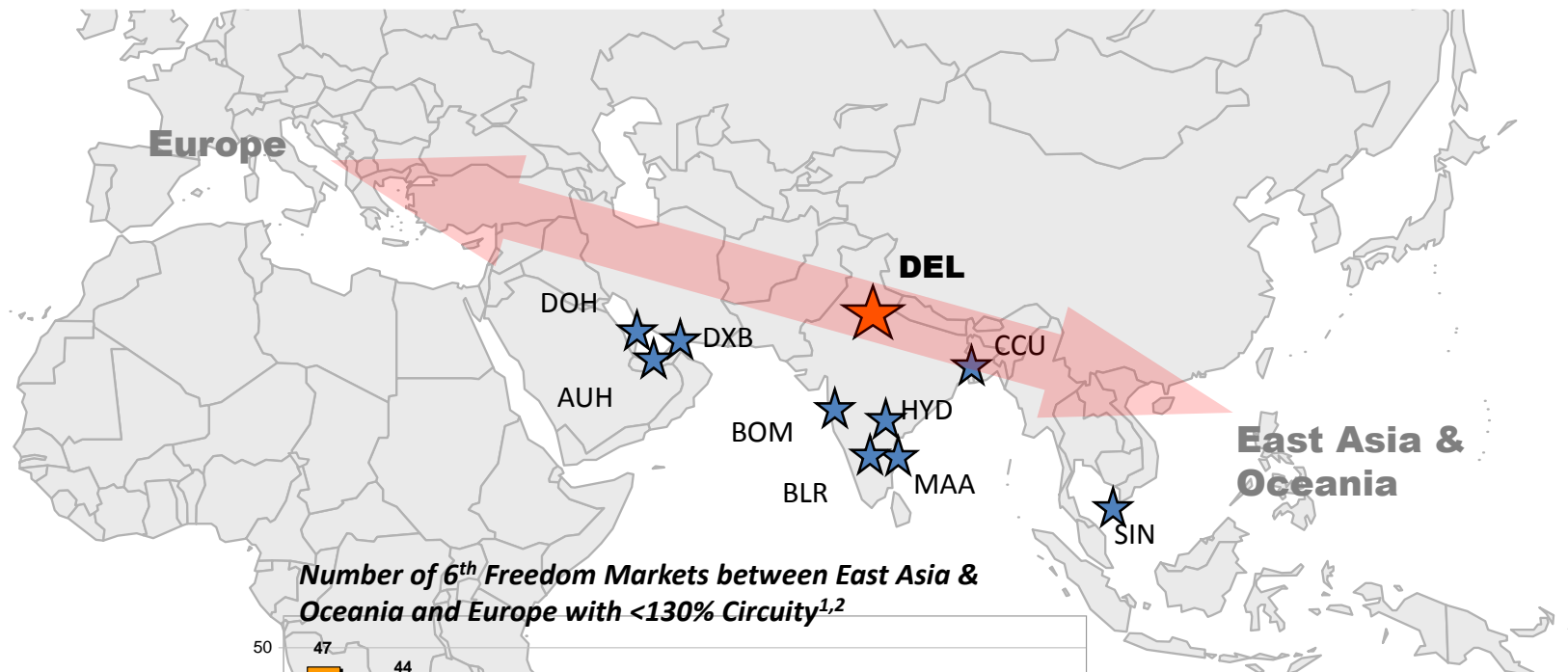
✓ = Meets criteria

Evaluation Criteria	BOM	DEL	CCU	MAA	BLR	HYD	AMD	COK	CCJ	TRV	PNQ	NAG	ATQ	GOA	TRZ
Intl O&D demand	✓	✓		✓				✓							
Dom O&D demand	✓	✓	✓	✓	✓	✓									
Good circuitry for 6 th f ^o dom mkts	✓	✓	✓												
Strong presence	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
Apt capacity for hubbing	✓	✓		✓	✓	✓									
Conclusion															

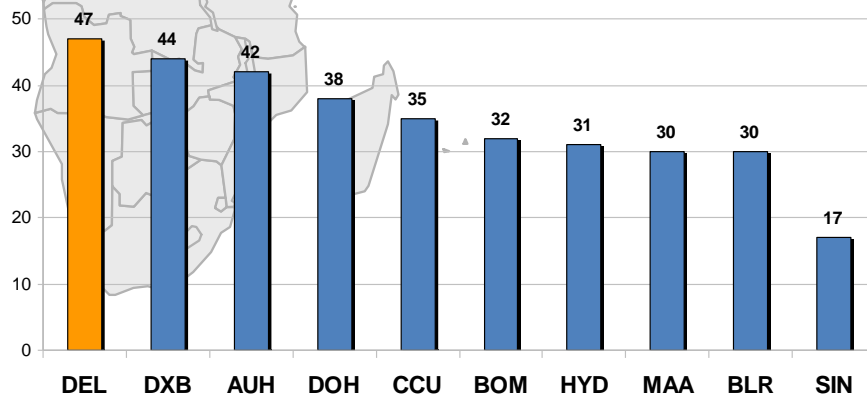
✓ ✓

Only BOM and DEL satisfy all of the criteria to be a Primary Hub

Delhi is geographically positioned to provide direct routings to the greatest number of *6th Freedom markets*, when compared to major hubs like Dubai and Singapore



Number of 6th Freedom Markets between East Asia & Oceania and Europe with <130% Circuity^{1,2}



DEL is also better located than other major Indian airports to connect Asia & Oceania with Europe

Source: Industry Data
Notes: 1/ Analyzed Top 100 6th Freedom O&Ds between East Asia/Oceania and Europe; 2/ 130% circuity means that the total flown distance between two cities via the hub is 30% greater than the nonstop distance

Industry Challenges

A key source of fragility is increased competition from low cost carriers

- **Low Cost Carriers have redefined the industry and its economics.**
 - .Low cost carriers have redefined the airline product
 - .One-way versus return trips
 - .Point-to-point versus hub-and-spoke route system
 - .Less connectivity
 - .One type of aircraft
 - .Quicker to adjust capacity
 - .Focus on what adds value, remove the rest
 - .Many have achieved high, consistent profitability
- **Air Canada has launched a new low cost model with their leisure focused *Rouge*.**
- **WestJet has launched a new regional service, *Encore*.**

The Internet effect

• Industries Profoundly Impacted by Internet Companies:

- Music
- Video
- Newspapers
- Book publishing & retail
- Traditional Phone Companies
- Big Box Electronics
- Income tax preparation
- Travel Agents
- Aviation

- **Google purchased travel software company ITA Software Inc**
- **ITA powers Orbitz, Kayak, Cheap Tickets, AA, UA, Virgin, ANA and others**

Google/Social Media/Visa Int'l: Re-packaging Airline Product?

Internet companies have potential to repackage airline products:

.Kayak "hacker fares" create connections not available from carriers;

.Google invested in airline res system;

.Could develop platform to enter business directly;

.Could offer value added packages for trip fulfillment:

.Would you pay \$125 for guarantee that you will get to your destination today?

Internet creates new interline products

KAYAK Flights Hotels Cars Deals Vacations More

Halifax, NS, Canada → Sydney, NSW, Australia 04/24/2012 → 04/30/2012 Find Flights

35 of 502 flights

Sort Price* Airline Takeoff Landing Duration Matrix +/- 3 days

Price alert Fare charts

Stops: ☒ 2+ stops \$1802

Times: ☒ Take-off ☐ Landing

Departure take-off: Tue 5:30a - 6:30p

Return take-off: Mon 10:00a - 4:30p

Cabin: ☒ Economy \$1802 ☒ Business \$9359 ☒ First \$20498 ☒ Mixed \$15554

Airlines: ☒ Air Canada \$2086 ☒ Delta \$2105

United \$9359 YHZ 12:35p → SYD 6:10a 26h 35m 2 stops (EWR...) SYD 2:45p → YHZ 1:55a 24h 10m 2 stops (BFO...)

United \$9361 YHZ 3:00p → SYD 6:10a 26h 10m 2 stops (YYZ...) SYD 2:45p → YHZ 1:55a 24h 10m 2 stops (BFO...)

Air Canada / US Airways \$16045 Hacker Fare YHZ 5:00p → SYD 8:15a 26h 15m 2 stops (YYZ...) SYD 1:50p → YHZ 12:45p 35h 56m 2 stops (LAX...)

Hotwire Compare **Expedia** Compare **travelocity** Compare

Sydney Group Hotel Deal HotelPlanner.com/Sydney Group Hotel Rates in Sydney

Google Gets into the Airline Reservation Business

Google isn't only selling real-time pricing strategies today, the company is also dipping its toes in the airline reservation business.

Google and partner Cape Air, a small regional carrier based in Boston, Mass., announced the airline would be using an air reservation platform built by TRS Software, which was purchased by Google in July 2010.

According to Cape Air, the TRS booking platform will give its travelers:

- Easier shopping for one-way, round-trip and multi-city flights and fares.
- Self-service tools for quickly making changes to reservations and itineraries.
- A booking flow that's smooth and secure.

The new reservation system can be accessed at the newly redesigned website for Cape Air and Harbor Air.

TRS's platform for Cape Air was built from scratch using modular, scalable technologies, according to Jeremy Weatherman, the company's vice president for travel.

Up-to-date interface design makes the system easy to learn and use, he explained. The platform also apparently collects personal information about travelers that is stored in a database so an airline can personalize the service it gives to customers.

In addition, the modular technology makes it easier to change the system as an airline's needs change.

Which means the system is built to be able to support airlines of all sizes.

Predicting the future of the Internet is easy: anything it hasn't yet dramatically transformed, it will.

Automation

Automated kiosks are playing a greater role

.90% of domestic AC passengers use kiosk, mobile check-in or automated bag-tag process

.WestJet has approximately 85% of passengers check-in online or a kiosk

.Ryanair charges fee if kiosk is not used

.Amsterdam airport - fully automated bag drop function

Automation & Check-In:

.Mobile check-in and boarding passes have nearly replaced the traditional check-in process.

.Canada was a pioneer in self bag-tag.



Auckland, New Zealand



August 2011, Amsterdam Bag-Drop



Legacy or full-service network carriers

Low cost carriers (LCCs)

Ultra low cost carriers (ULCCs)

Charter carriers

Regional carriers

Hybrid carriers

Legacy carriers

Legacy carriers (or FSNCs)

- Wide range of pre-flight and onboard services
- Multiple seat classes
- Hub-and-spoke route systems

Still account for a large share of passenger traffic

- Larger market share in international routes
- Smaller in domestic markets (loss to LCCs)

Ownership (private, majority or minority stake owned by the government, multi-country)

Major airlines by the number of passengers carried

International		Domestic		Total (International + Domestic)	
Rank	Airline	Rank	Airline	Rank	Airline
1	Ryanair				
2	Lufthansa	1	Southwest Airlines	1	Delta Air Lines
3	easyJet	2	Delta Air Lines	2	Southwest Airlines
4	Emirates	3	China Southern Airlines	3	American Airlines
5	Air France	4	American Airlines	4	China Southern Airlines
6	British Airways	5	US Airways	5	Ryanair
7	Air Berlin	6	China Eastern Airlines	6	Lufthansa
8	KLM	7	Air China	7	China Eastern Airlines
9	Delta Air Lines	8	United Airlines	8	US Airways
10	American Airlines	9	All Nippon Airways	9	United Airlines
		10	Gol Airlines	10	Air France

Source: IATA, January 2013

Major international cargo carriers

The world's busiest airlines

	<i>Airline</i>	<i>FTK (millions)</i>
1	FedEx	15,743
2	UPS Airlines	10,194
3	Cathay Pacific Airways	9,587
4	Korean Air Lines	9,542
5	Emirates	7,913
6	Lufthansa	7,428
7	Singapore Airlines	7,001
8	China Airlines	6,410
9	EVA Air	5,166
10	Cargolux	4,901

	<i>International</i>	<i>FTK (millions)</i>
1	Cathay Pacific Airways	9,587
2	Korean Air	9,487
3	Emirates	7,913
4	Lufthansa	7,422
5	FedEx	7,421
6	Singapore Airlines	7,000
7	China Airlines	6,410
8	UPS Airlines	5,215
9	Eva Air	5,166
10	Cargolux	4,901

Source: IATA, June 2011

Profit vs Compensation

2010 Airline CEO Compensation vs. Earnings

Name	Airline	2010 Pay	2010 Earnings
Richard H. Anderson	Delta	\$8,041,271	\$593 million
Gerard J. Arpey	AMR	\$5,952,675	\$471 million (loss)
Jeffery Smisek	United Continental	\$4,359,766	\$253 million
Gary C. Kelly	Southwest	\$3,357,570	\$459 million
William S. Ayer	Alaska	\$3,357,350	\$251.1 million
W. Douglas Parker	US Airways	\$2,757,981	\$502 million
David Barger	Jetblue	\$1,226,017	\$097 million

Source: Dallas News (04/2011)

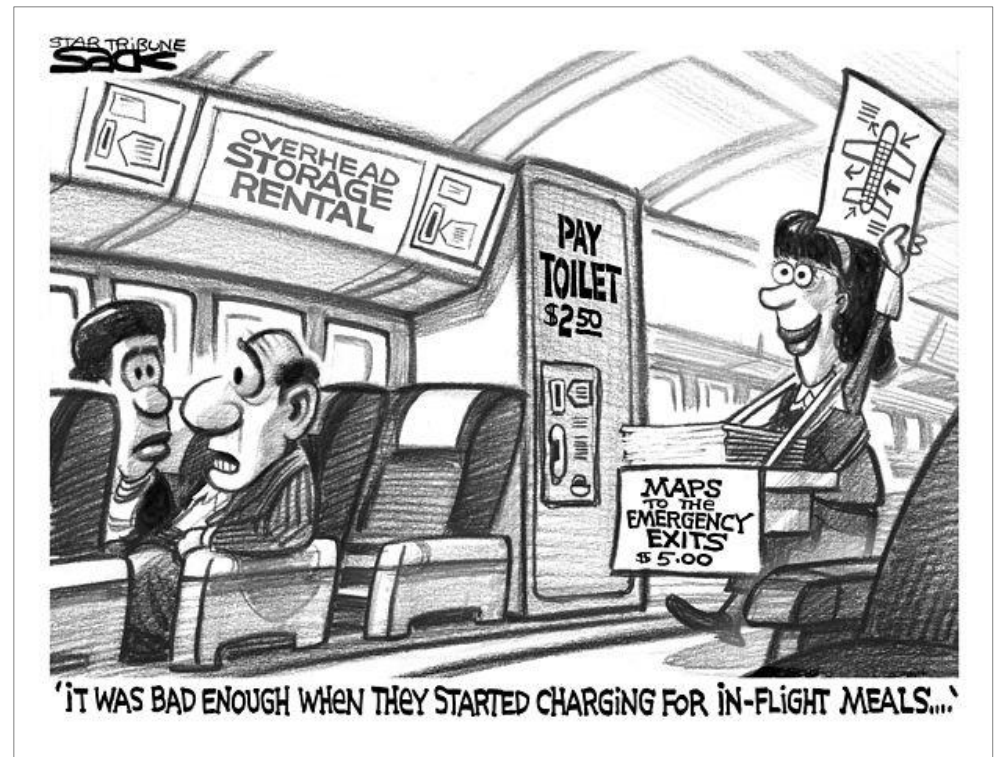
Low cost carriers (LCCs)

“No, we shouldn’t give you a bloody cup of coffee. We only charge 19 euros for the ticket”

Michael O’Leary, President of Ryanair

“When someone comes to me with a cost saving idea, I don’t immediately jump up and say yes. I ask: what’s the effect on the customer?”

Herb Kelleher, former CEO Southwest Airlines



LCCs

Low cost carriers have contributed to profit erosion of majors

LCC differ from legacy carriers:

- .Do not offer 'frills'
- .Have point-to-point route systems as opposed to 'hubs'
- .Use simple fleet composition, typically one type of aircraft
- .Non-unionized labour

US-based Southwest Airlines is a notable example of success with over 40 consecutive years of profitability

Ryanair is the most profitable passenger airline in Europe

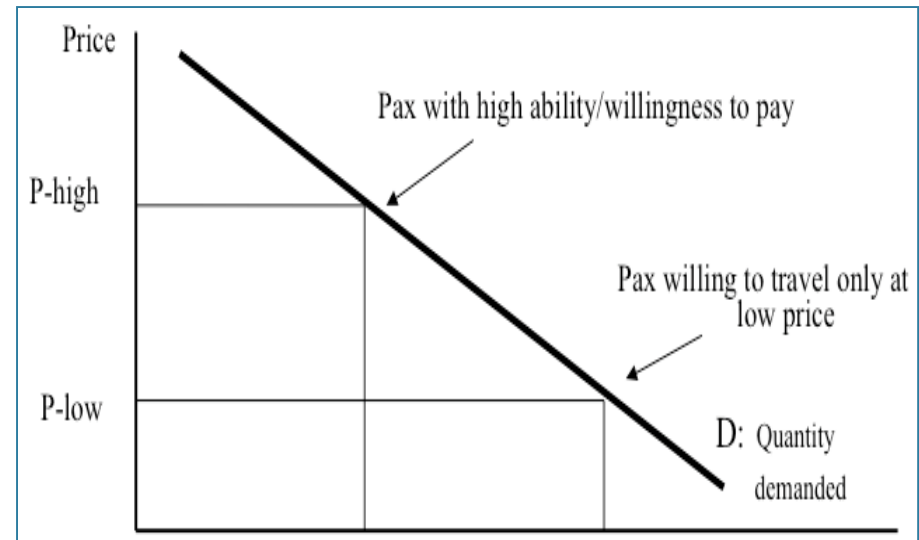
Canada's LCC WestJet was modeled on Southwest



Major expansion of LCCs in the US, Canada, Europe, Australia, Asia and Latin America.

Traditional LCC business model:

- one type of aircraft
- ‘no frills’ product
- charge for ‘ancillaries’
- price sensitive travellers
- high density routes
- high aircraft utilization
- secondary airports
- point-to-point route systems



- **Product design (simplicity)**

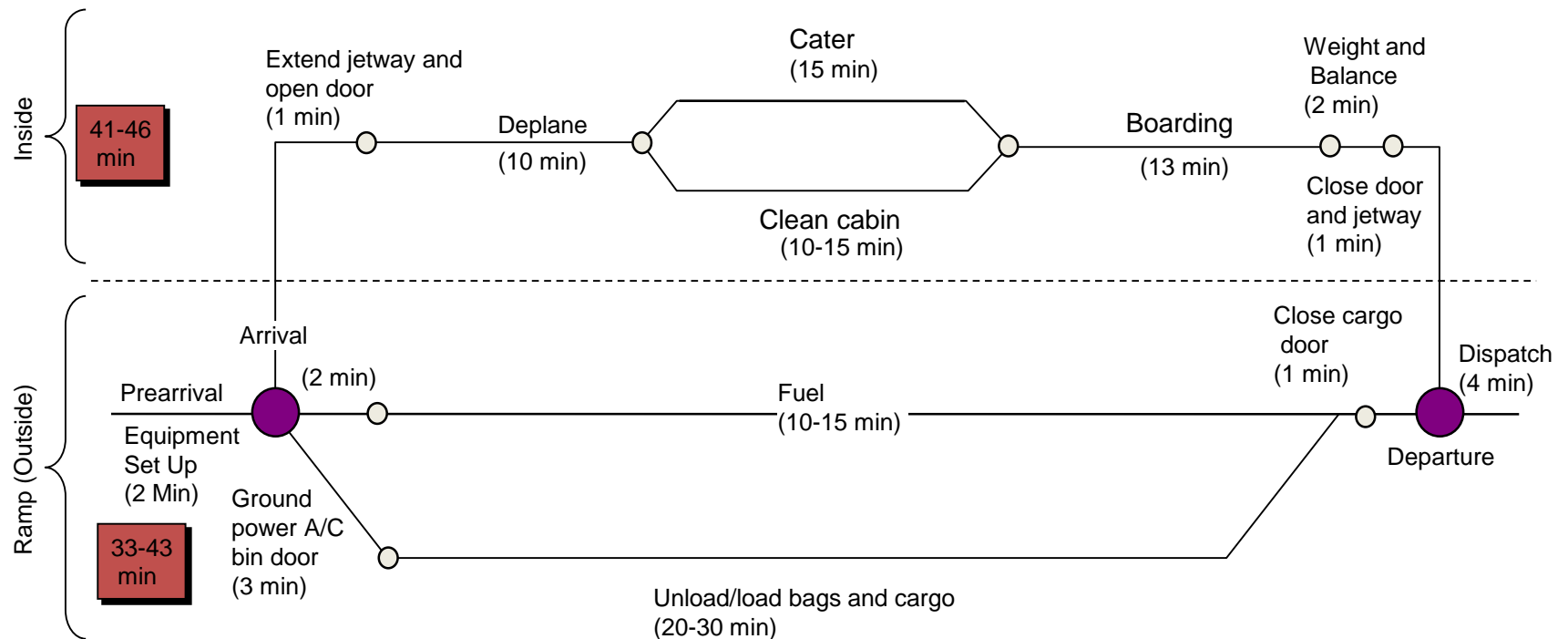
- Single class
- Higher density seating
- No assigned seating (e.g., Southwest)
- 'cheap and cheerful'

- **Process design (simplicity)**

- Use of secondary airports
- Minimum turn-around time
- High aircraft utilization
- No connections, interlining
- Short to medium haul routes (up to 750 miles)

With a banked schedule, minimum connect times drive turnaround times – not ground operations

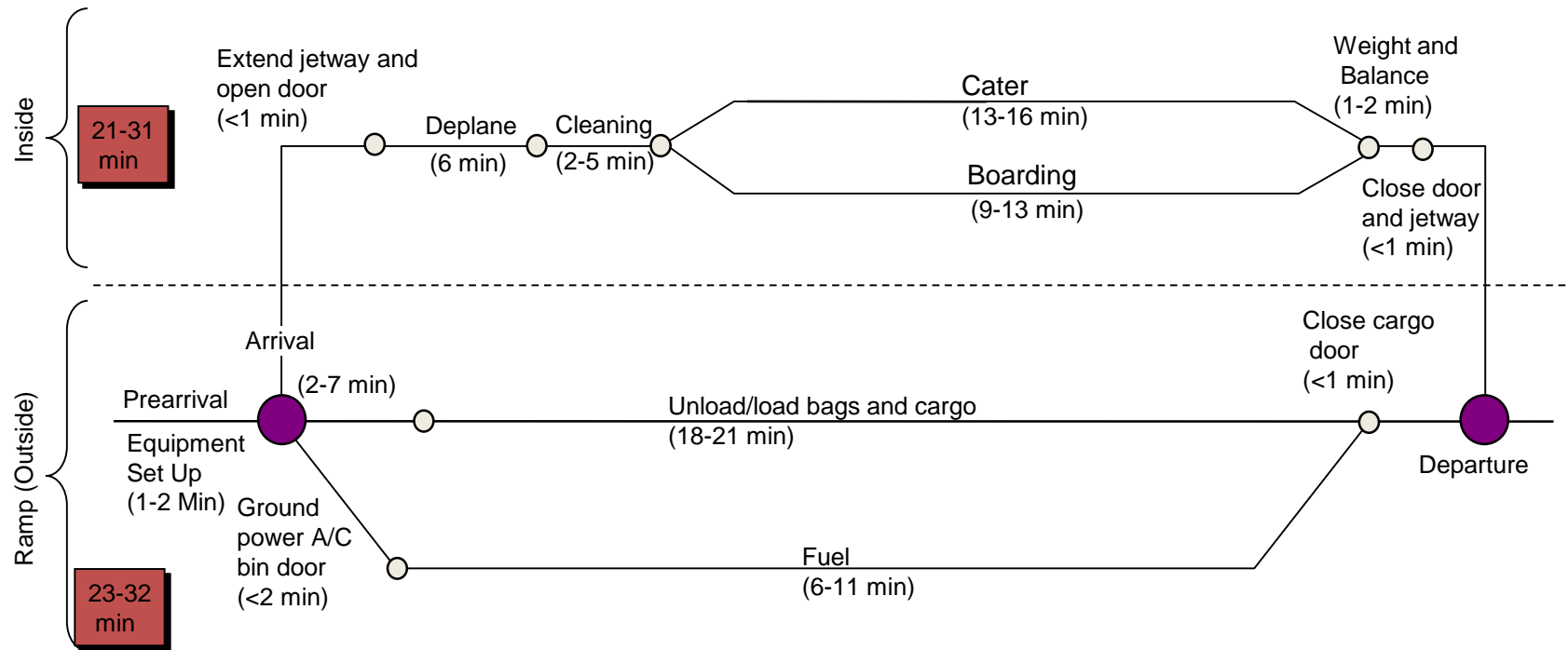
Ground Operations – Required Time for a Turnaround (Carriers – 737-300)



Opportunities To Compress Ground Operations' Turnaround Times

But, with a continuous schedule, ground operations drives turnaround time, and thus airplane/crew utilization

Ground Operations – Required Time for a Turnaround (Southwest – 737-300)



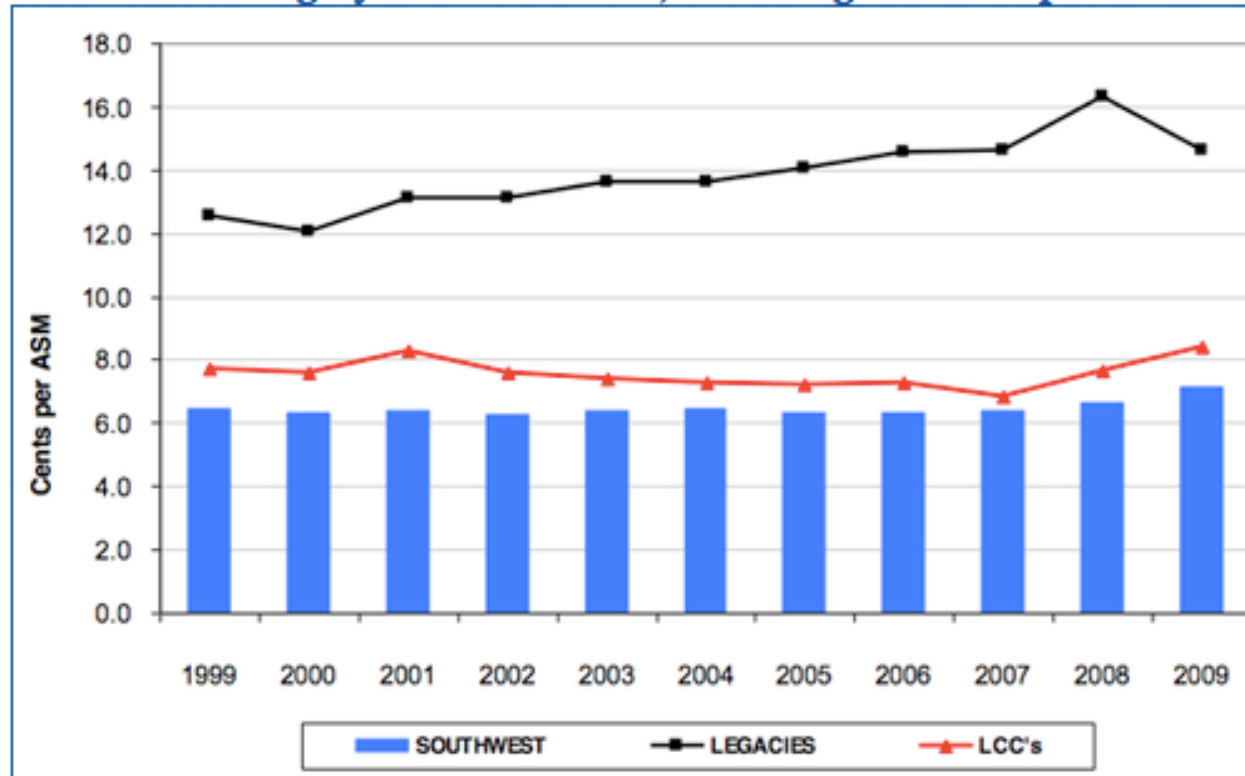
The LCCs Have Engineered Rapid Turnaround Processes emulated on short haul routes by network carriers

Differences between legacy and low cost models

	HUB & SPOKE CARRIER	LOW-COST CARRIER
Model	Convenient <u>connecting</u> travel via hub	Efficient <u>point-to-point</u> (P2P) travel
Scheduling	<i>Synchronized banks:</i> <ul style="list-style-type: none">– enable rapid connections– lower utilization of flight equipment/crews– uneven workload for ground crews	<i>Continuous flow</i> uses flight and ground resources efficiently (minimal down time and level-loading)
Turnarounds	Lengthy (65 min), due to the minimum connect times for passengers and bags	Minimized (25 – 30 min) -- key to high utilization of flight resources
Baggage Handling	<ul style="list-style-type: none">– Schedule creates uneven work load– Two parallel baggage-handling systems	<ul style="list-style-type: none">– Schedule creates level work load– Simpler baggage-handling system
Passenger Handling	<ul style="list-style-type: none">– Schedule creates uneven work load– Intense re-work to maximize service to preferred pax (e.g., re-seating)	<ul style="list-style-type: none">– Schedule creates level work load– Simpler process provides adequate customer service
Fuel	Banked schedule creates hub congestion that consumes extra fuel	Continuous schedule minimizes congestion, reducing fuel consumption
Objective	Heavy use of high-cost channels (GDS)	Heavy use of low-cost channels (direct)

LCC cost advantage

Southwest vs Legacy and LCC CASM, excluding fuel and special items: 1999 to 2009

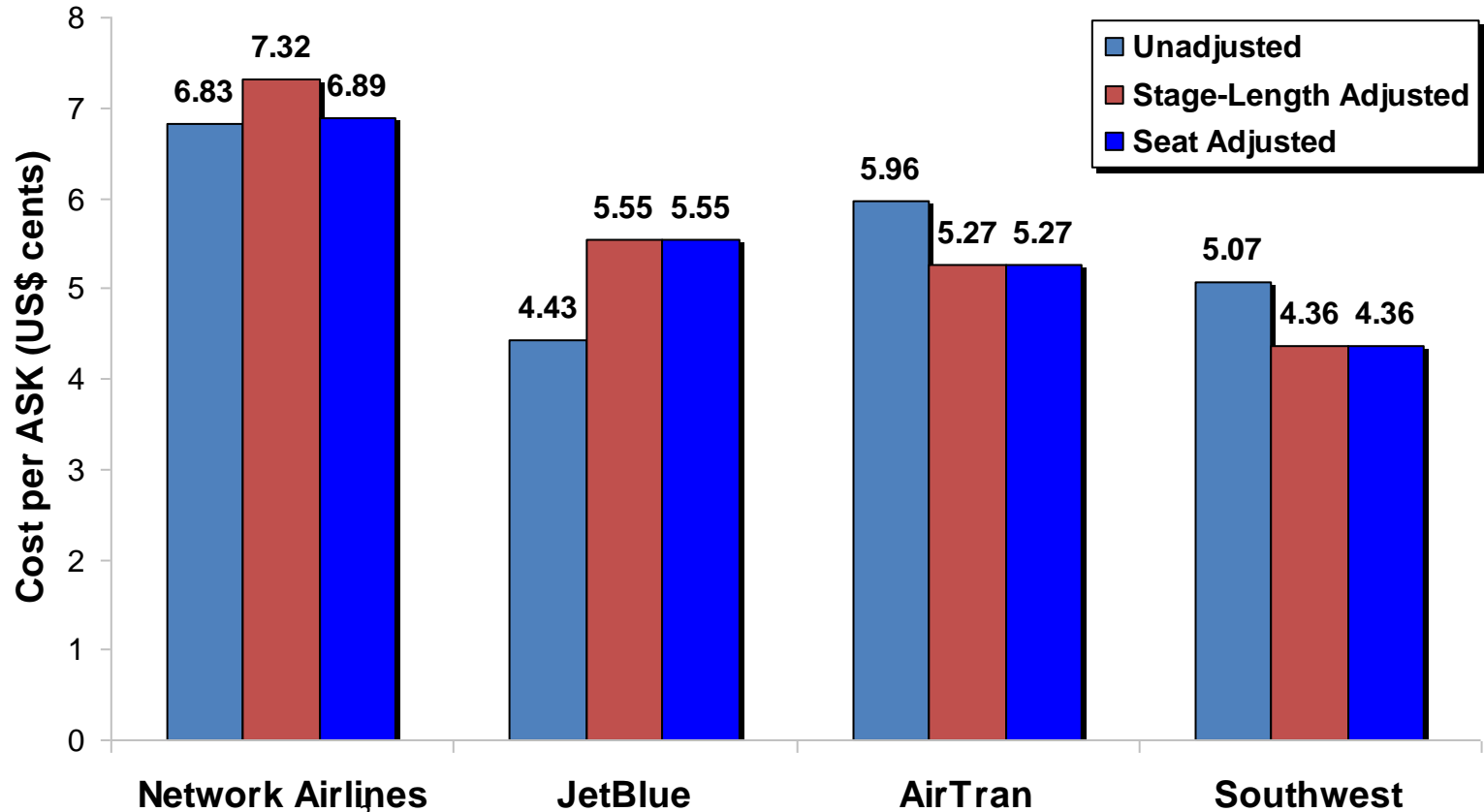


Source: Southwest Airlines

Source: CAPA Centre for Aviation (2010)

Mid 2000@s US LCCs had still a cost advantage of up to 37% over US network carriers

Operating Cost per ASK ^{1/}



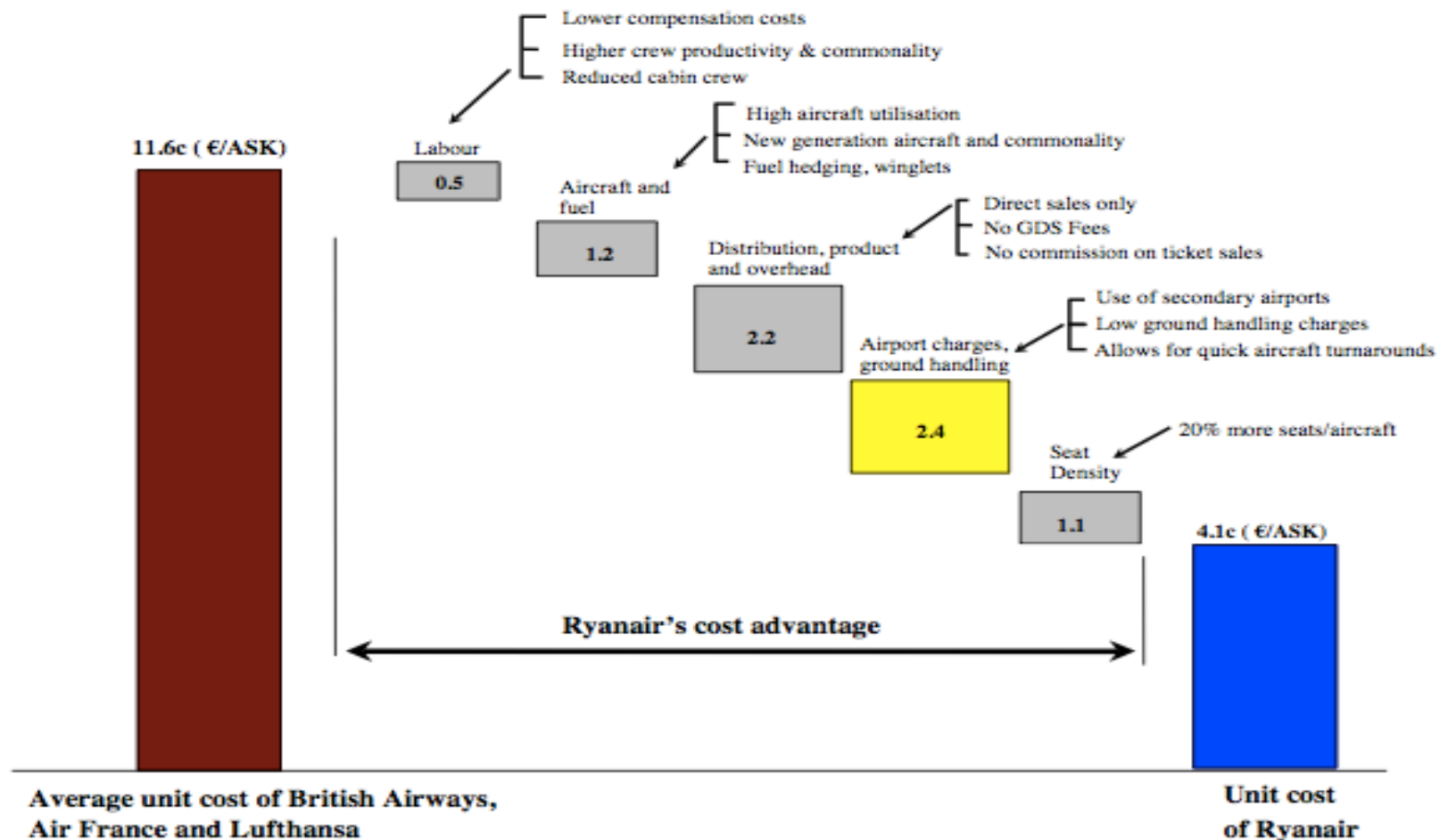
1/ CY 2005.

2/ American, Delta, United.

Source: IATA Airline Cost Performance Economics Briefing, March 2007.

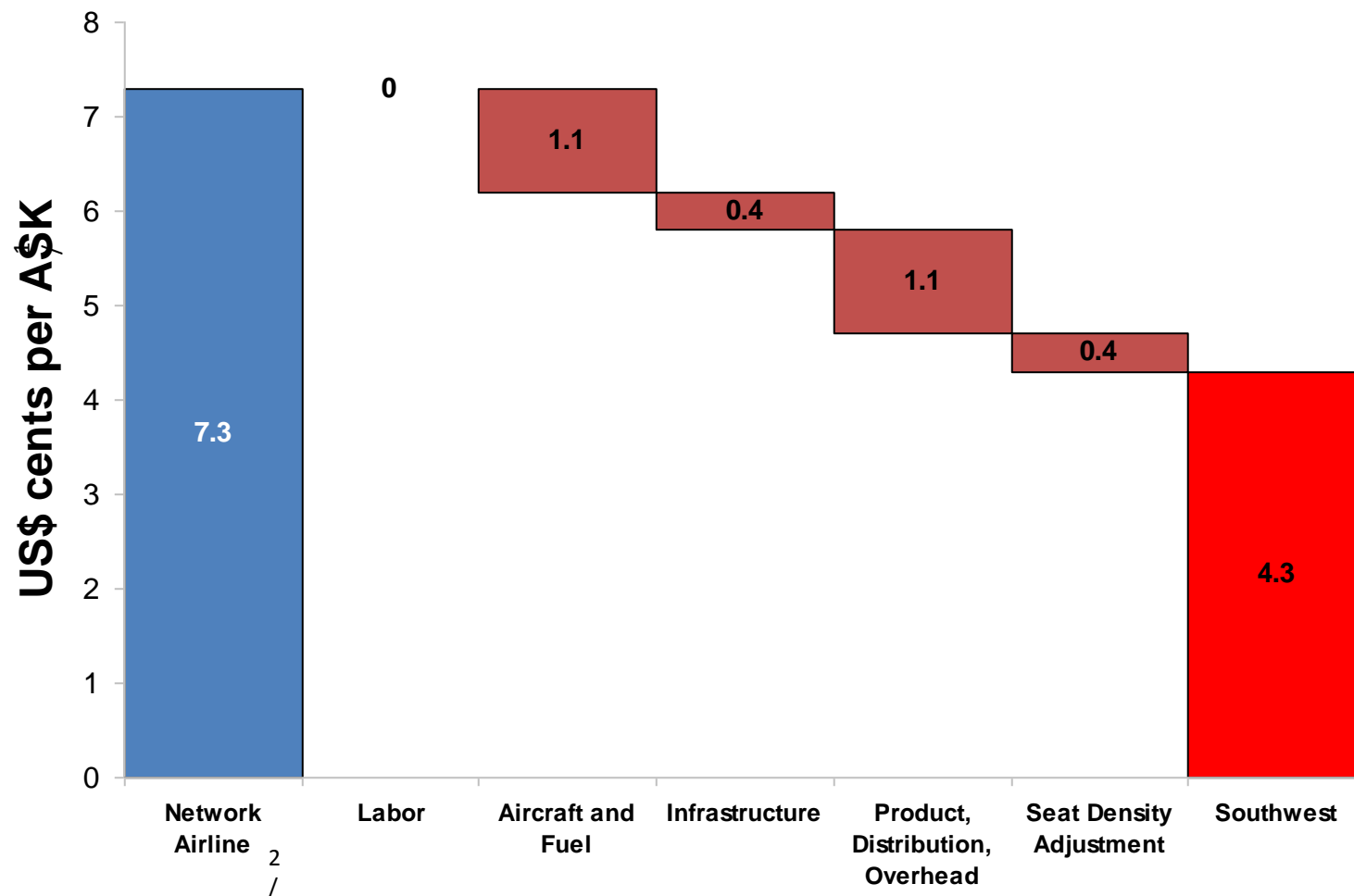
LCCs cost advantage

The competitive advantage of the low cost carrier (2005 data)



Source: O'Connell (2008)

Southwest achieves 75% of its cost advantage through fuel hedging and product, distribution, and overhead cost savings

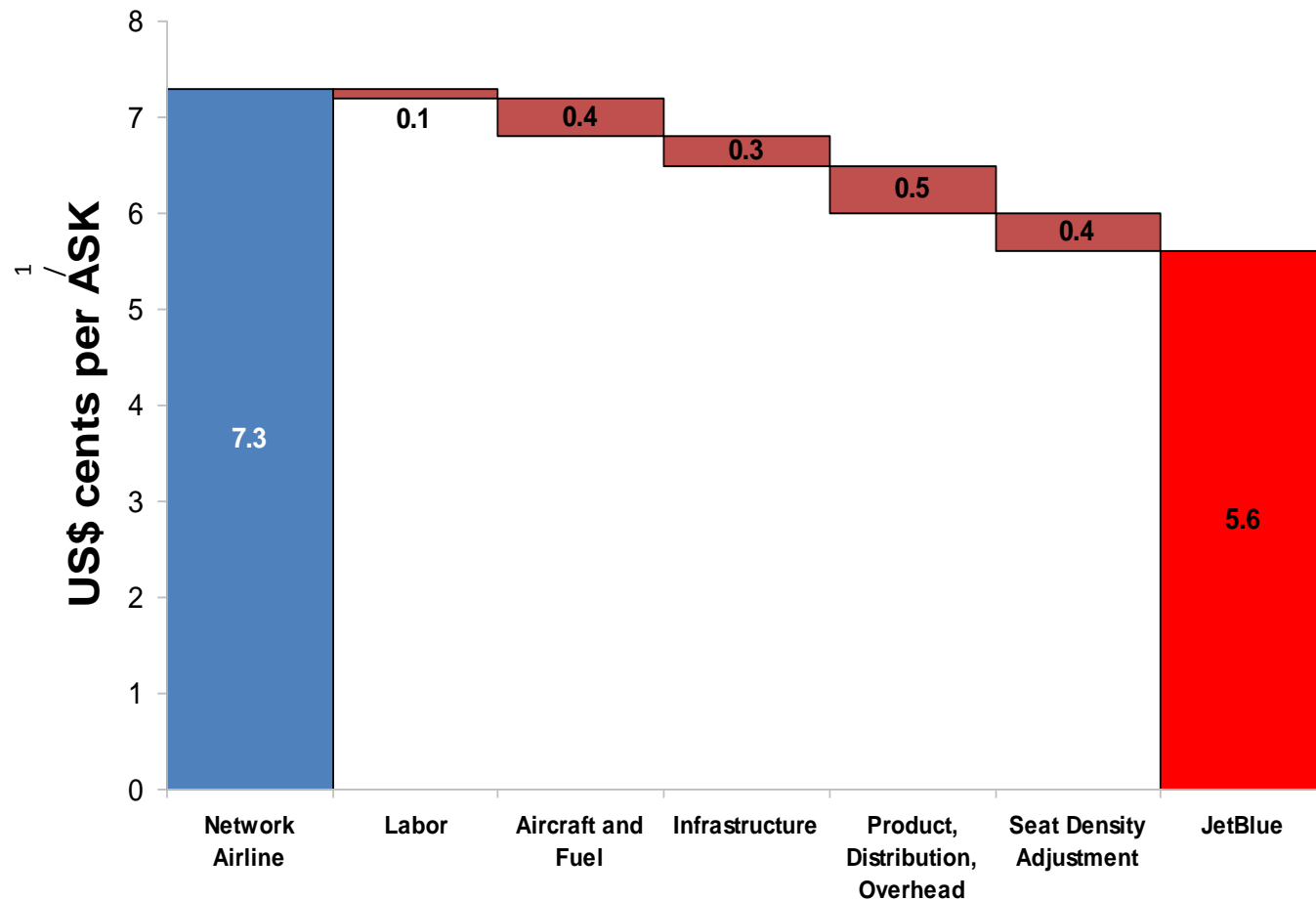


1/ CY 2005.

2/ American, Delta, United.

Source: IATA Airline Cost Performance Economics Briefing, March 2007.

JetBlue's cost savings are more evenly spread across all cost centers



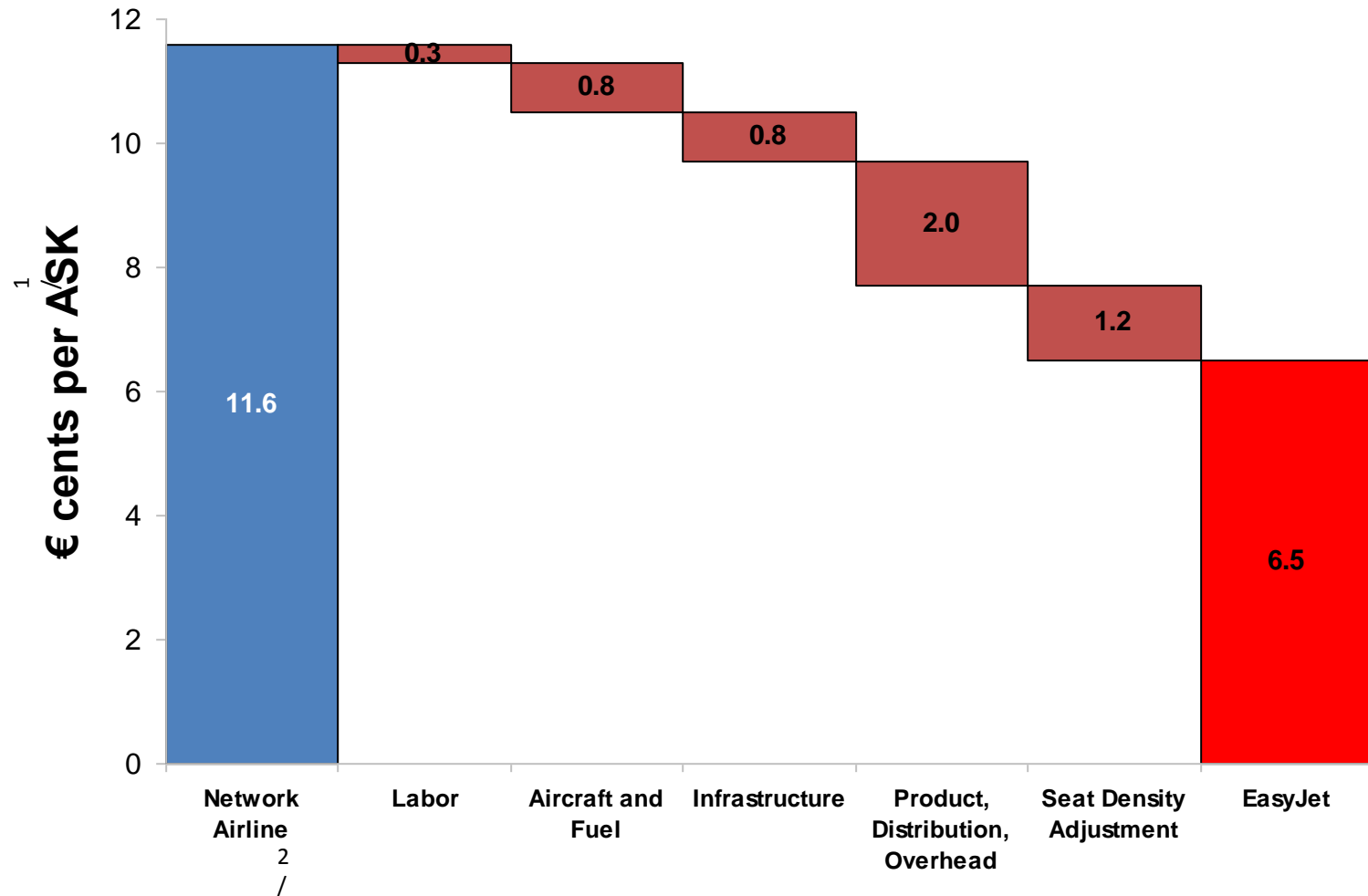
1/ CY 2005.

2/
/

Source: IATA Airline Cost Performance Economics Briefing, March 2007.

2/ American, Delta, United.

EasyJet has far less of a gap in infrastructure costs as it operates at more major airports than Ryanair



1/ CY 2005.

2/ Air France, British Airways, Lufthansa.

Source: IATA Airline Cost Performance Economics Briefing, March 2007.

LCCs profit margin



Source: The Economist (2012)

Large airfare reduction

[Hof, Dresner & Windle (2004), Morrison & Winston (2003), Kim & Singal (1993), Borenstein (1990, 1992)]

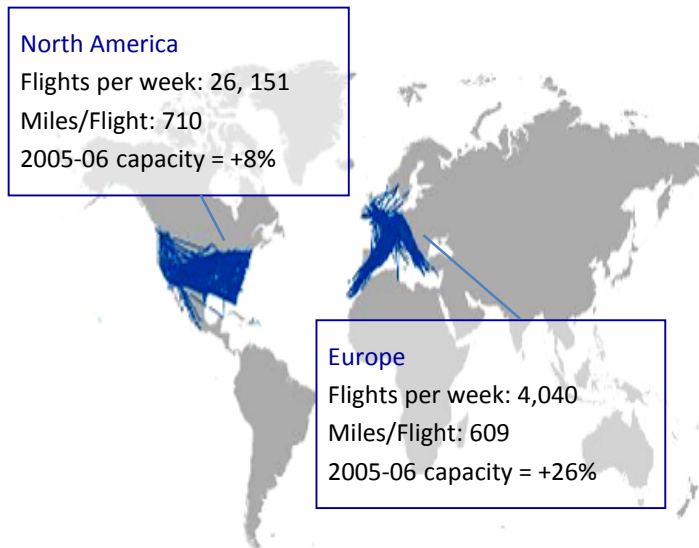
- Network carriers reduced average airfares by 35-40%

Huge expansion of stimulated demand as well as passengers attracted from adjacent airports thus dramatic increase in travelers at LCC airports

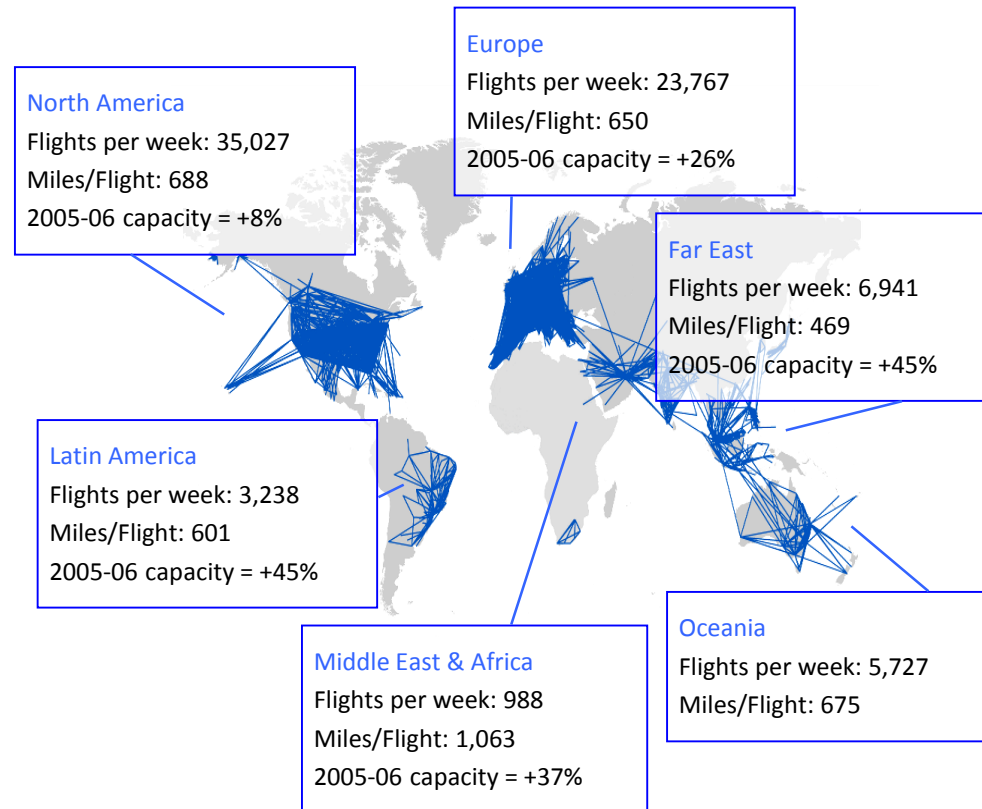
Network carriers' hub premiums decreased significantly when one or more LCCs are present at the hub

LCC expansion globally is a continued driving source of growth

LCC routes in end 90's

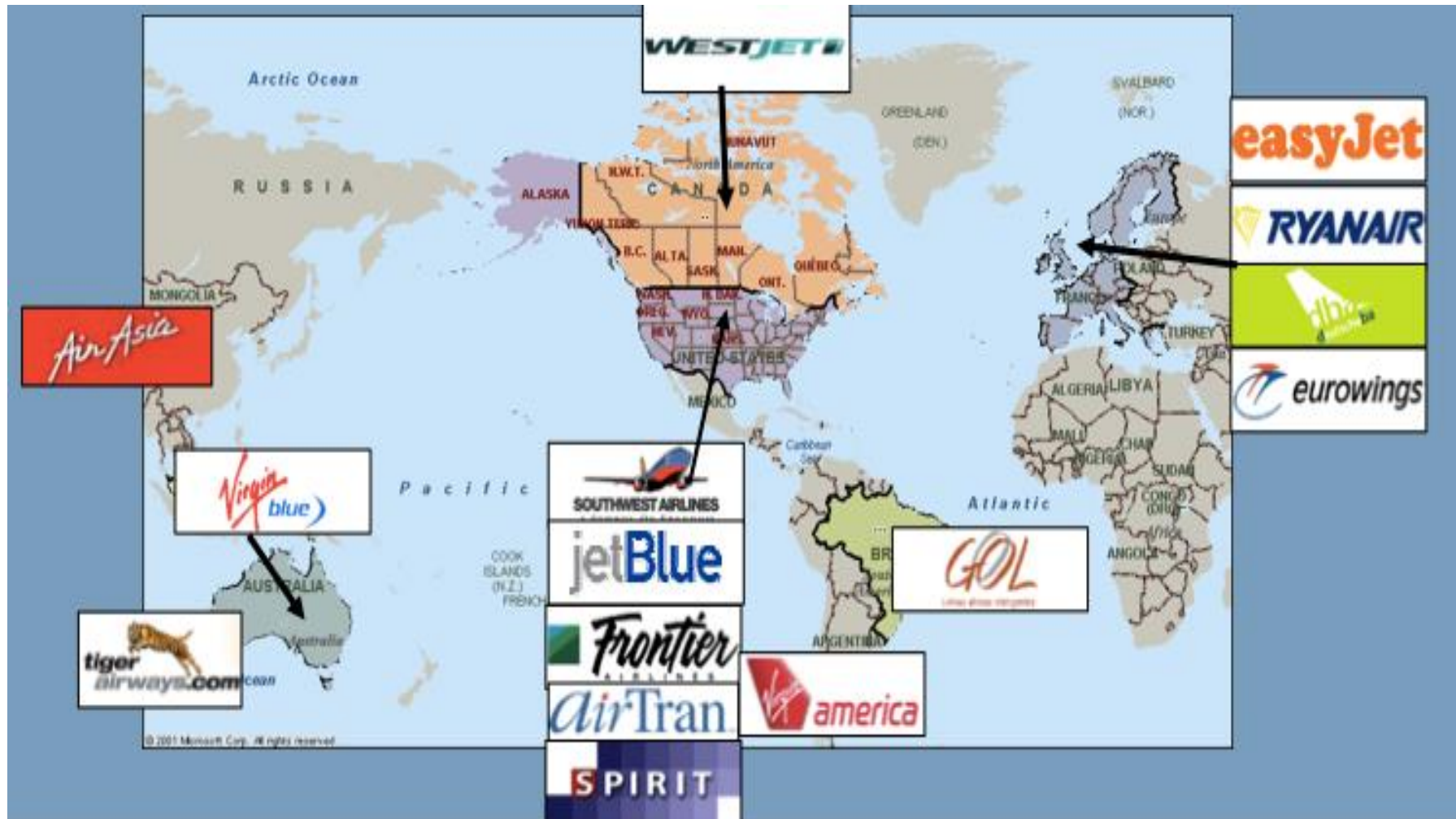


LCC routes mid 2000's

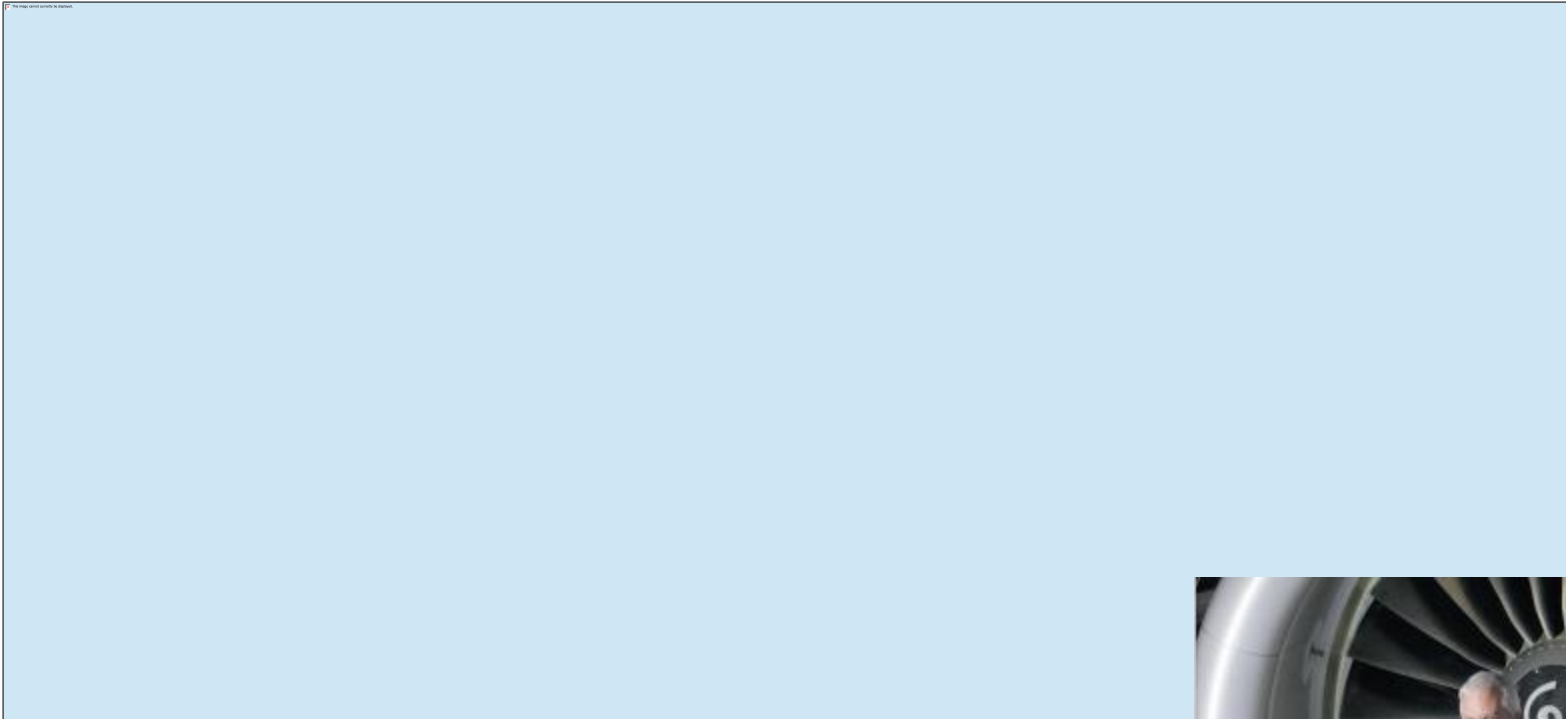


Sources: OAG,

Current status of LCCs

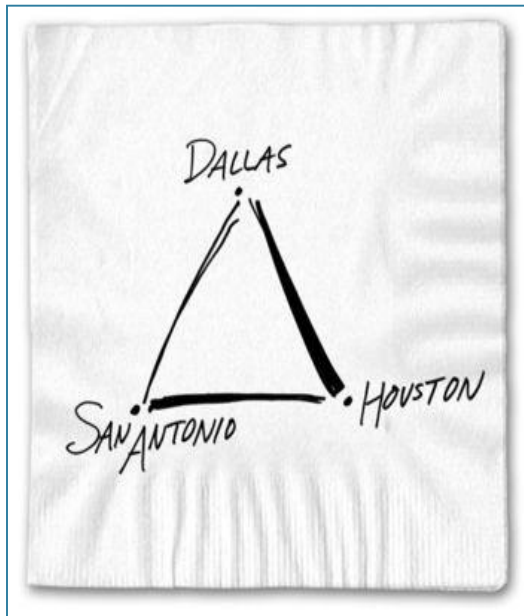


LCCs in North America

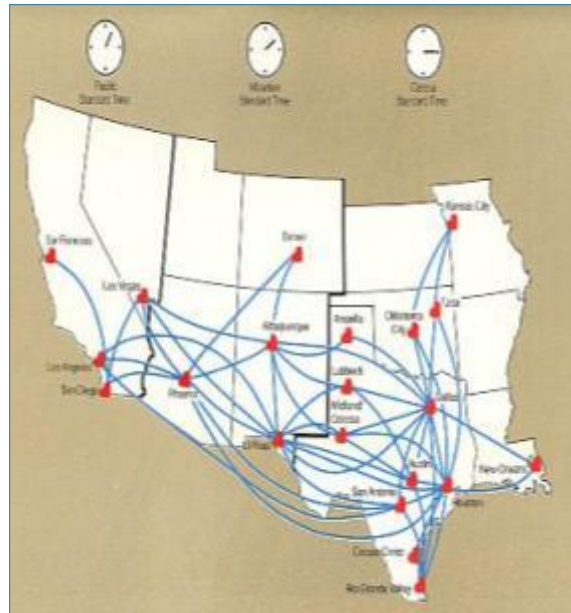


Southwest Airlines

1971



1983



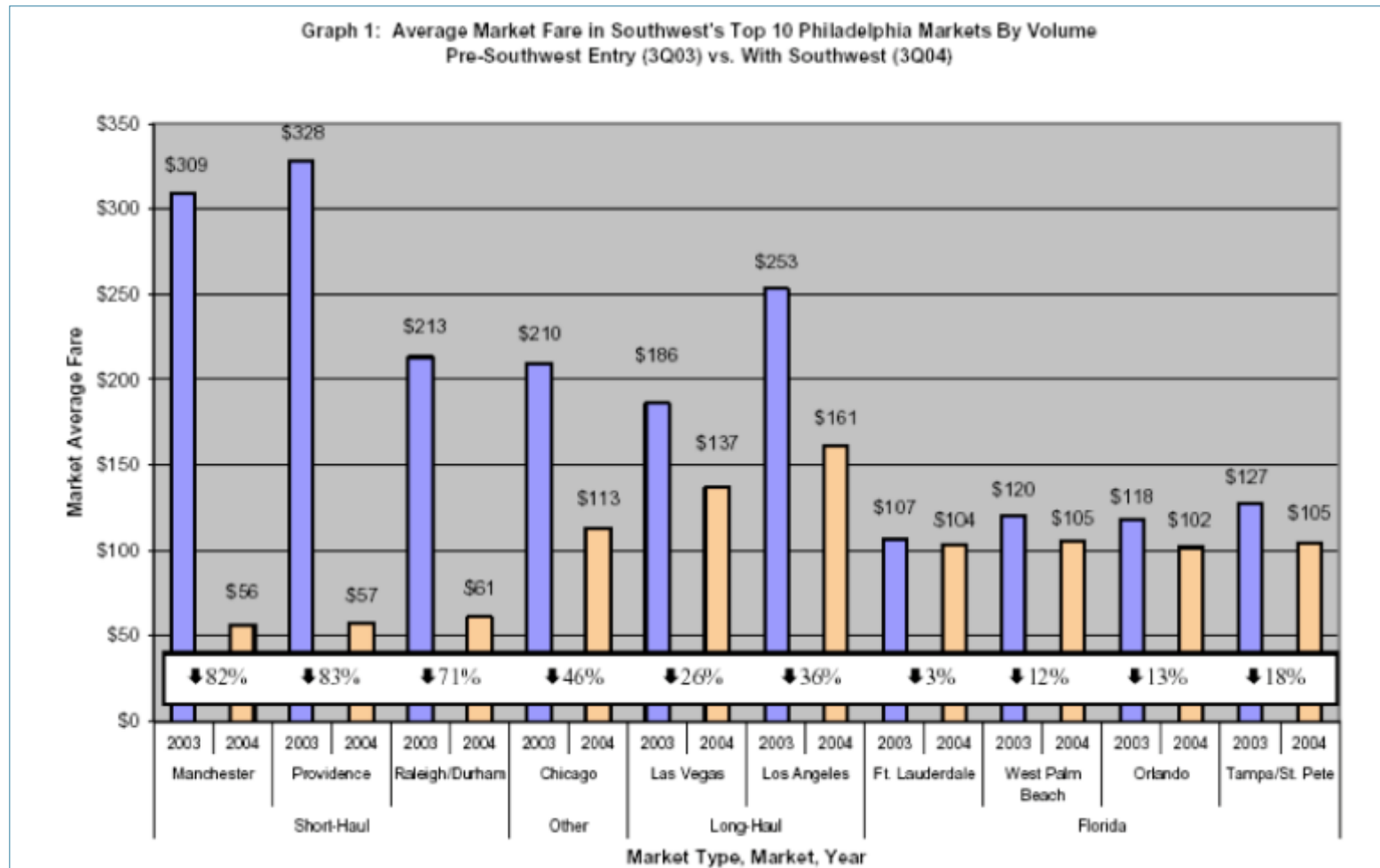
2013



Source: Southwest Airlines

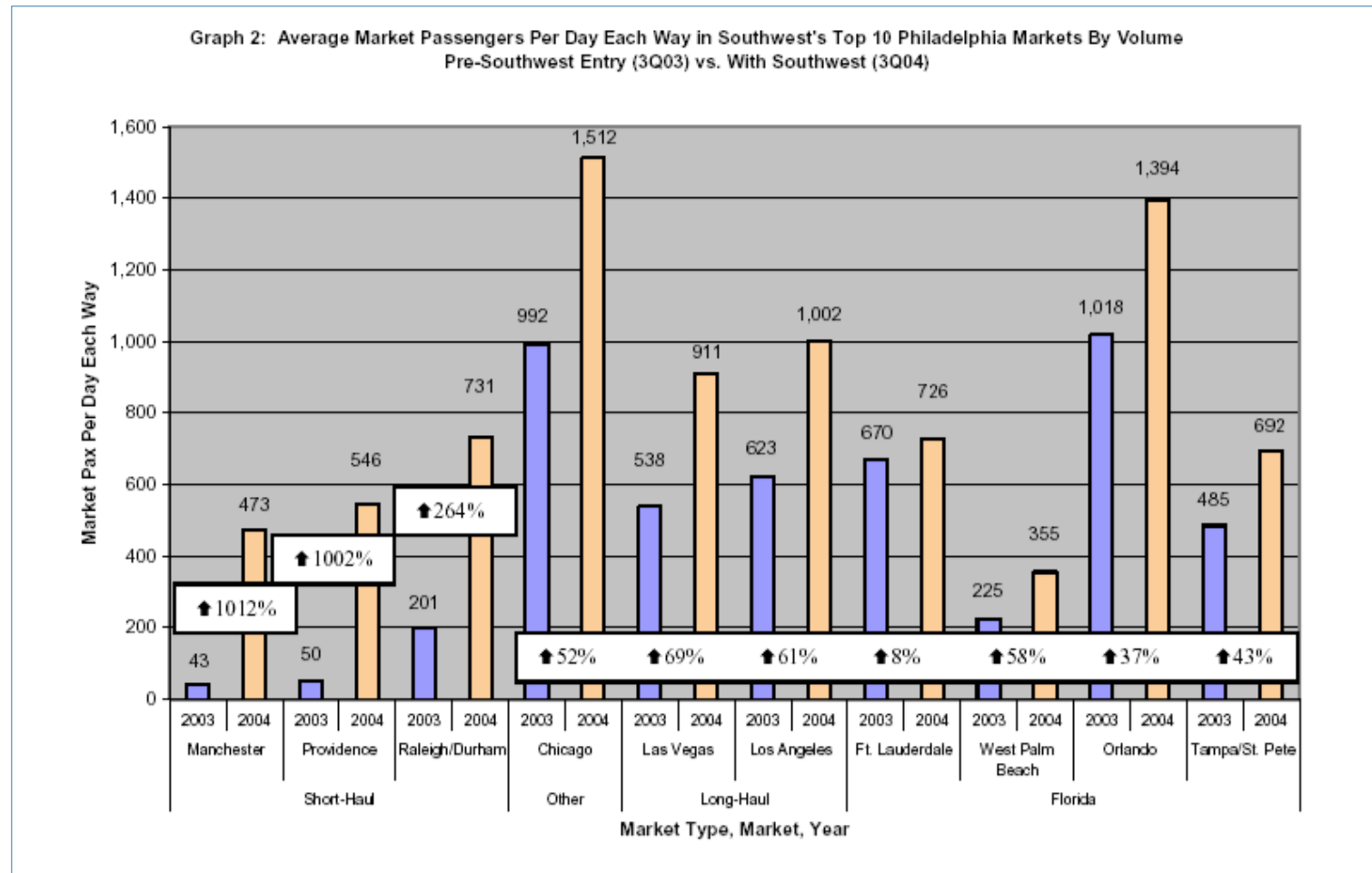
Impact on fares before and after Southwest entry

In top 10 Philadelphia markets



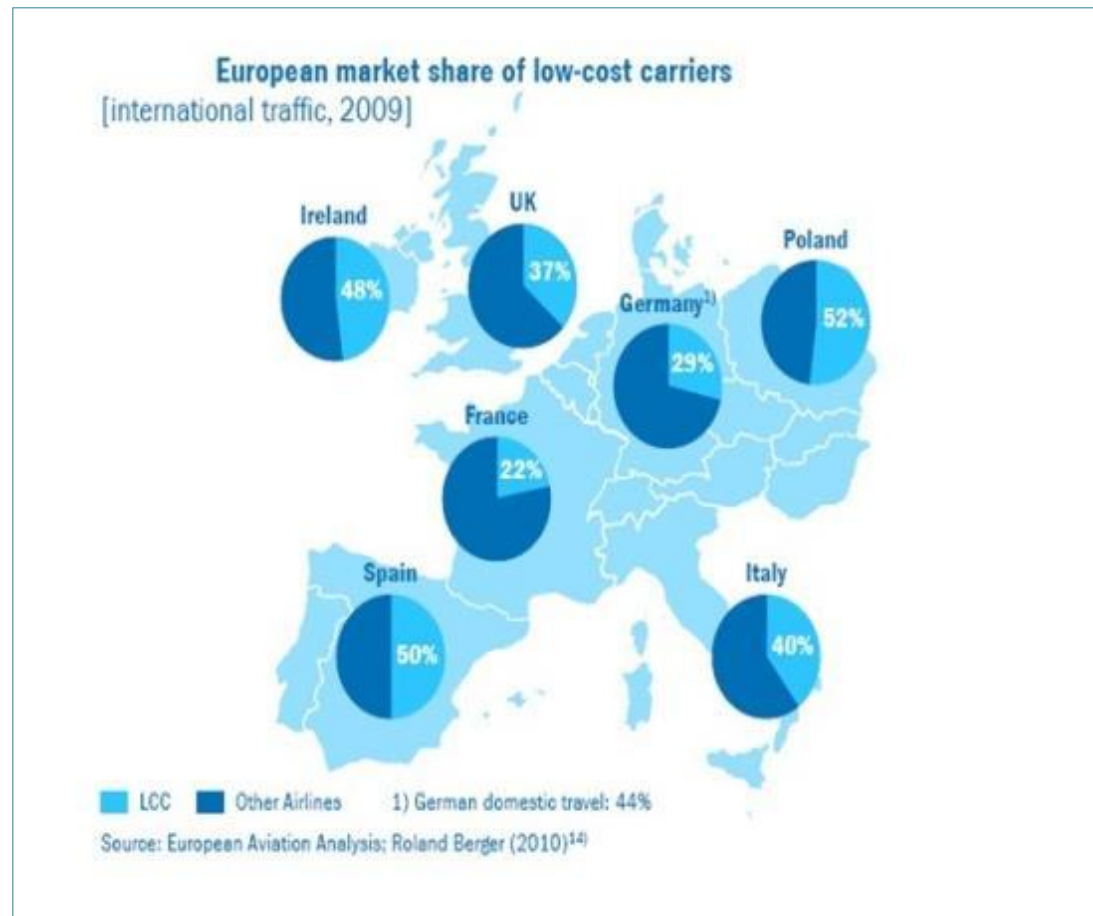
Impact on traffic before and after Southwest entry

In top 10 Philadelphia markets



Trends:

- Increased LCC penetration
- LCC subsidies (lower airport landing fees)
- Ryanair allegedly benefited from 660 million EURO in subsidies

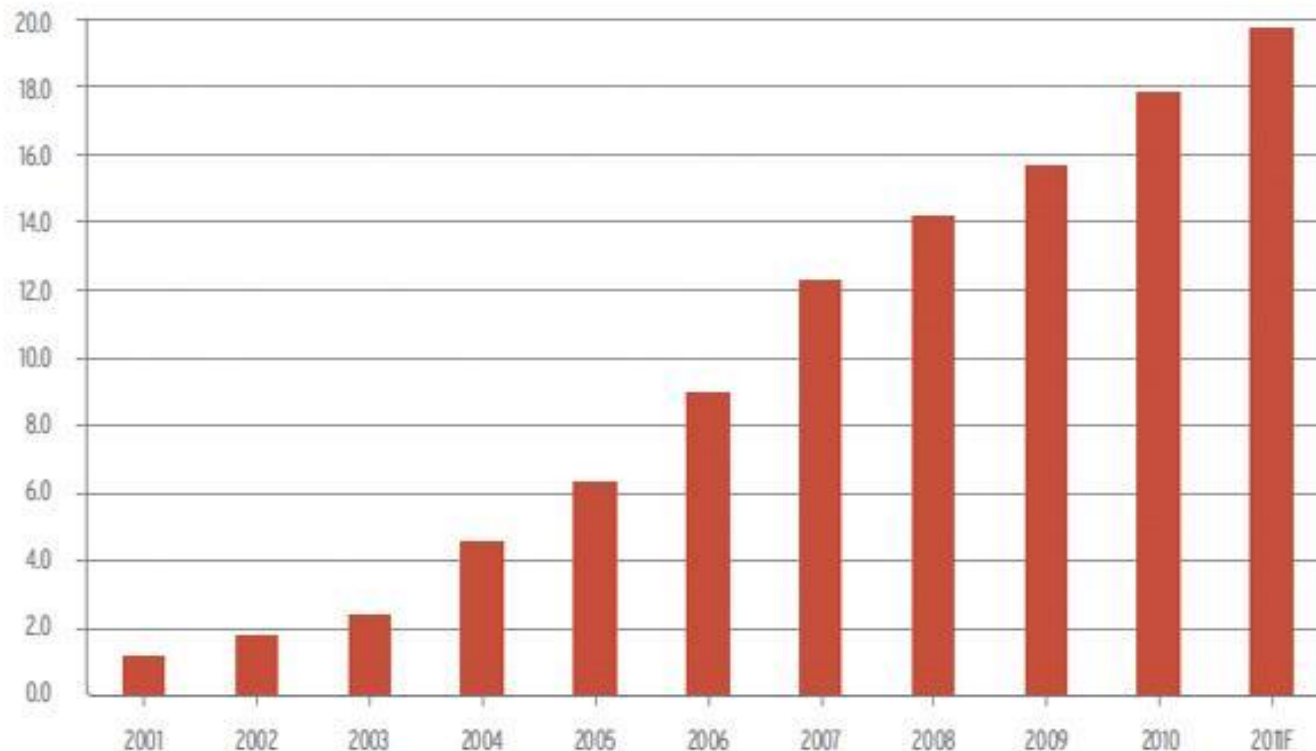




LCCs quickly gain domestic market share in Asia

LCC CAPACITY SHARE (SEATS) WITHIN ASIA (%), 2001 TO 2011F

SOURCE: CAPA - CENTRE FOR AVIATION AND OAG FACTS



Source: CAPA as quoted by Airline Leader (2012)

The difference between LCCs and ULCCs is relative

- tend to incorporate the majority of LCC features
- rely on traffic stimulation more than market steal
- max number of a la carte services
- do not offer 'frills' if they add to costs

Marketing tool of self-promotion

- ("Ryan Air – Europe's only ULCC")

József Váradi distinguishes between ULCCs, a category in which he places Wizz Air, and LLCCs, lazy-low-cost carriers, that have lost their original focus and are "diverting from the basic fundamentals of being really low-cost".

ULCCs

ULCCs differ from LCCs :

Rely on traffic stimulation more than market steal

High proportions of ancillary revenues

Do not offer 'frills', even if they enhance revenues, if the frill adds to costs.

ULCCs have power to shift passenger travel and airport usage patterns to much greater degree than traditional LCCs.

The ULCC business model is based strictly around low fares, which requires low costs.



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Ancillary services are an important source of revenue for ULCCs

Ancillary revenue = revenue from non-ticket sources

Charging for everything: blankets, entertainment, beverages, food, priority boarding, credit card handling fee (!) etc.

Becoming a major source of revenue for LC, LCC and ULCC – 43.8% increase world wide to \$32.5b in 2011

United \$1,527m, Qantas \$783m, Ryanair \$663m, Air Canada \$534m (2009)

ULCCs and ancillary revenue

Top 10 Airlines – ancillary revenue as % of total revenue:

Rank	Percentage of total	Airline
1	29.2%	Allegiant
2	23.9%	Spirit Airlines
3	22.2%	Ryanair
4	19.4%	EasyJet
5	19.4%	Tiger Airways
6	18.1%	Jet2.com
7	14.4%	Aer Lingus
8	13.3%	Alaska Airlines
9	13.2%	FlyBe
10	13.1%	AirAsia

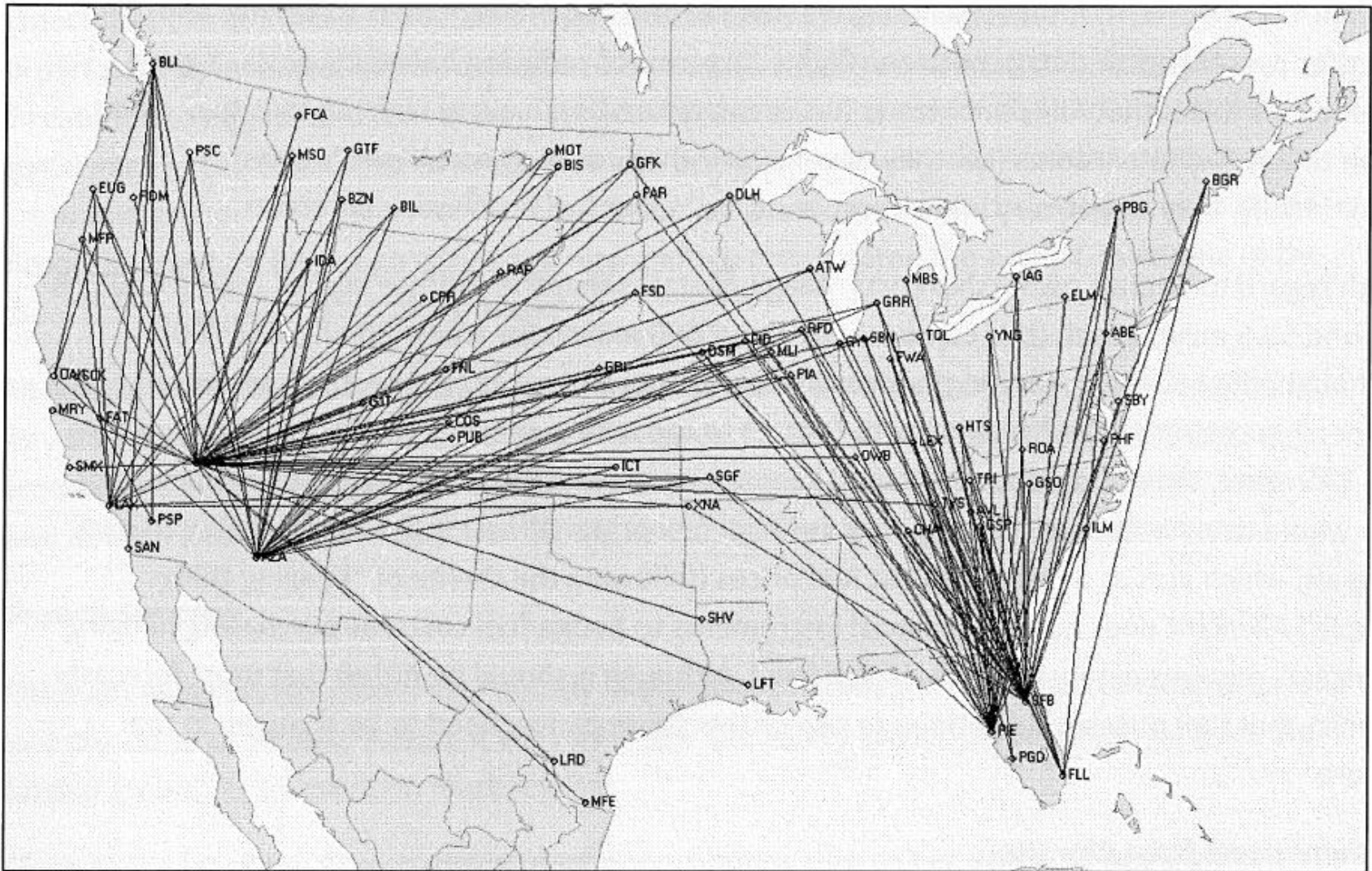
Source: tnooz (2010)

ULCC at a glance: Allegiant Air

- Founded in 1997
- Based in Las Vegas (focus cities in Florida and Phoenix)
- A travel company (hotels, car rentals, show tickets distribution)
- Route network has minimal overlap with LCCs
- Profitable (EBITDA 16.4% in 2011)
- Low debt ratio



Allegiant's focus is on leisure markets



Route map as of February 2012

Fleet

- 51 MD-80
- 1 B757-200 (5 more on order)

Costs

- Low aircraft ownership costs
- Simple IT systems (no connecting flights)
- Uses low cost airports
- No dedicated counters at airports

Product

- No frills service at a low price
- Canadian traffic at US airports (e.g. Bellingham and Plattsburgh)
- \$133 BLI-LAS versus \$274 YVR-LAS with Air Canada

Europe

- Ryanair, Wizz Air, Aer Lingus
- (Michael O'Leary "Ryanair is the only ULCC")

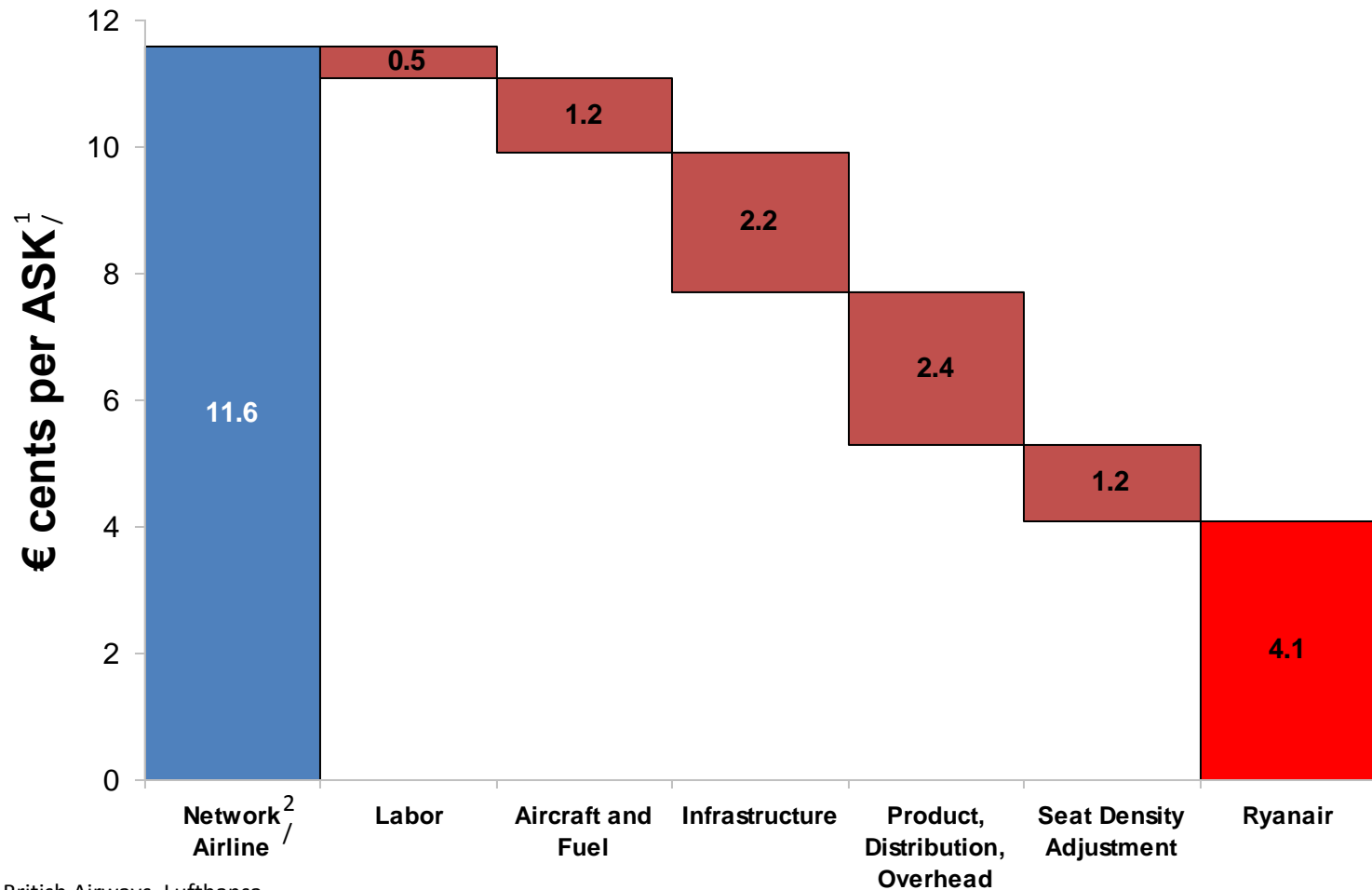
North America

- Spirit Airlines, Allegiant Air

Canada

- no ULCCs presently
- Rouge will not be ULCC according to AC's CEO.
- "Is it ultra-low cost à la other low-cost carriers elsewhere in the world? You know, that was not necessarily achievable within the context of our unionized environment."

A newer fleet explains part of Ryanair's cost gap, but the largest gap still exists for product and distribution costs

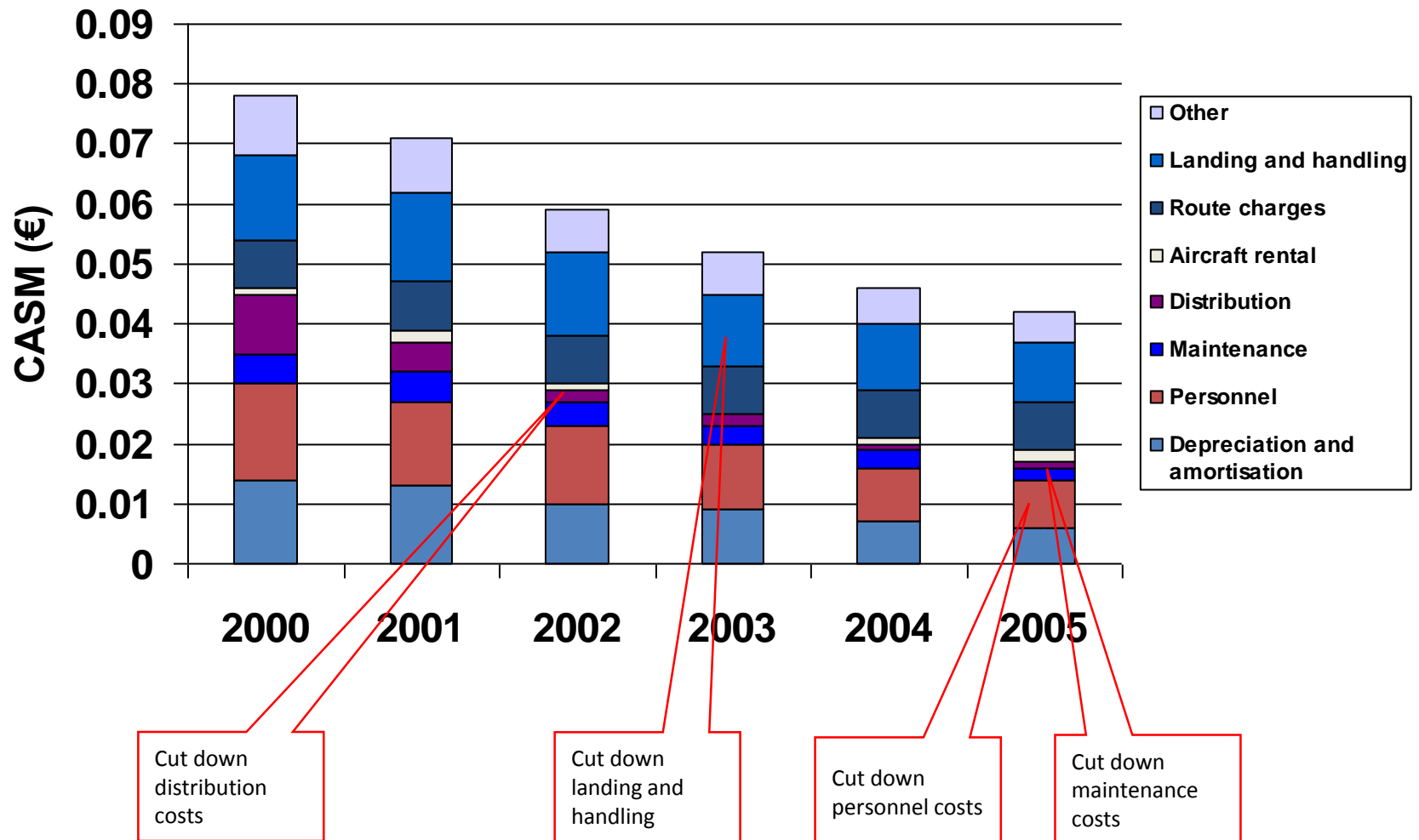


1/ CY 2005.

2/ Air France, British Airways, Lufthansa.

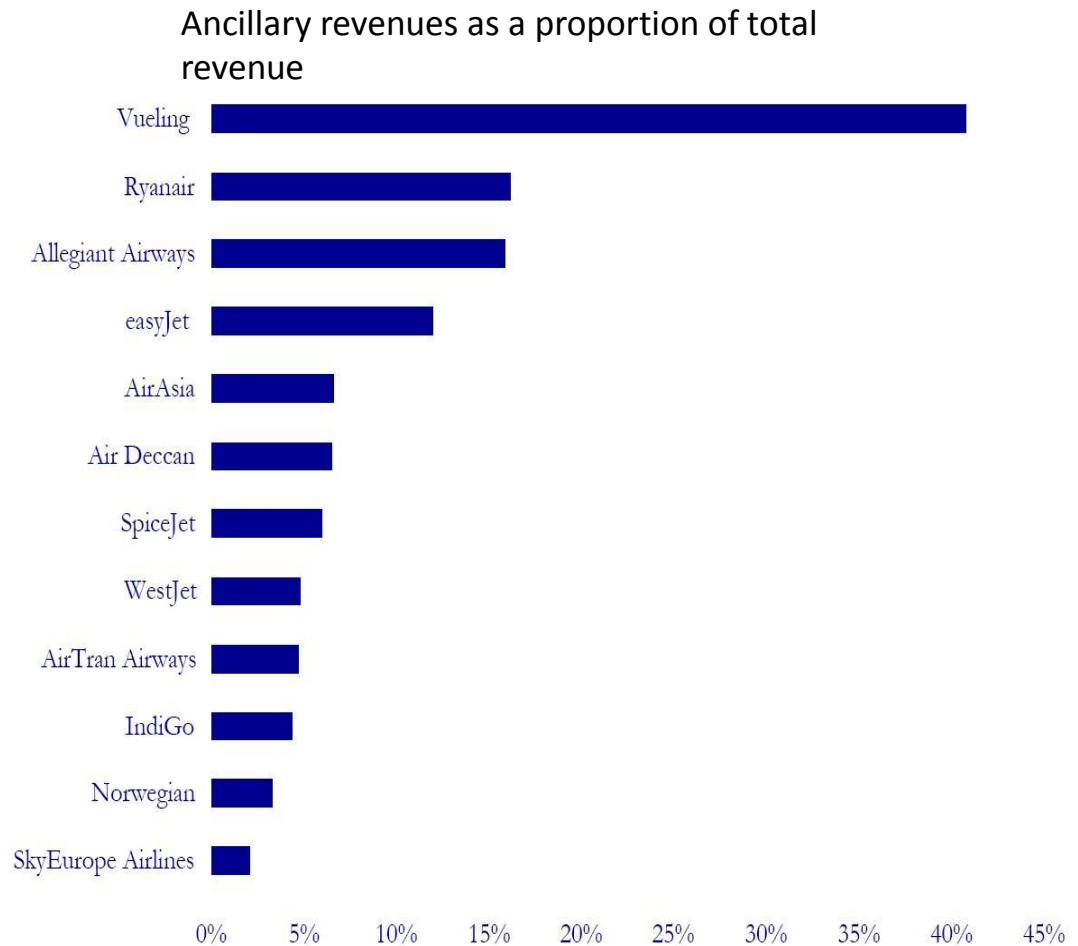
Source: IATA Airline Cost Performance Economics Briefing, March 2007.

Ryanair – pursuit to reduce its operational costs



Ancillary revenues significantly contributes to revenues and profitability of low cost carriers

- **Ancillary services can bring substantial revenues**
- **But to generate them requires complex marketing and sales effort**
- **Passengers want to save with LCCs, instead of spending**



Source: Centre for Asia Pacific Aviation

Regional carriers

Beech

- 19 seats 1.5-2 hours

Dash 8

- 37-74 seats 2+ hours

CRJ/ERJ

- 50-90 seats 3 hours

Embraer

- 70-180 seats 4 hours



Charter carriers

Canada & Europe: important industry players

U.S. & Asia: not common

Seasonal niche opportunities (35% of summer Europe are Charters)

Commonly 1- 4 freq/wk. Maximize aircraft utilization

Varies significantly from year to year

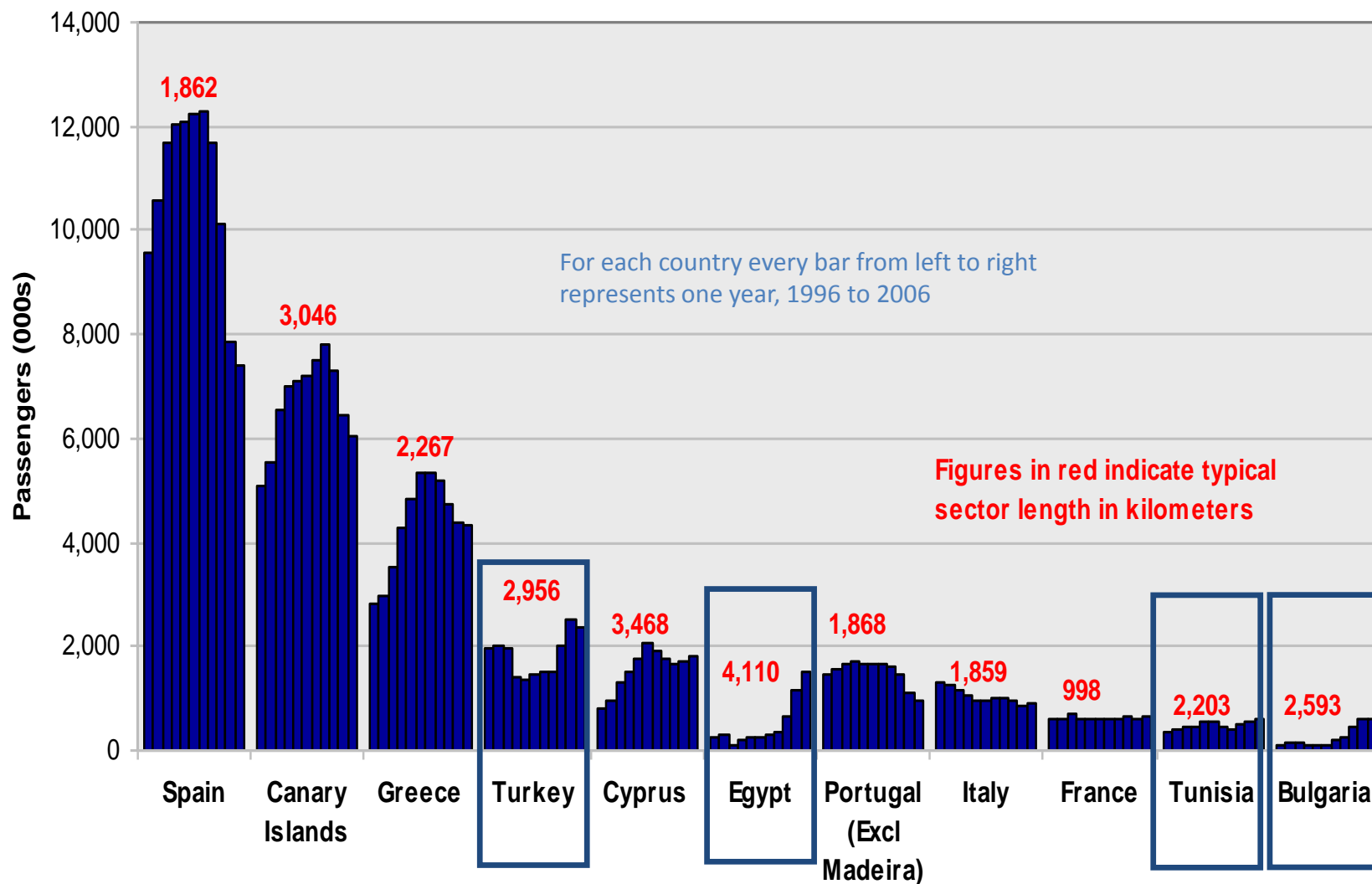
Often affiliated with tour operators (i.e. Canadian Affairs)

Canada: Zoom, Air Transat, Skywings

Europe: Thomas Cook, LTU, MyTravel

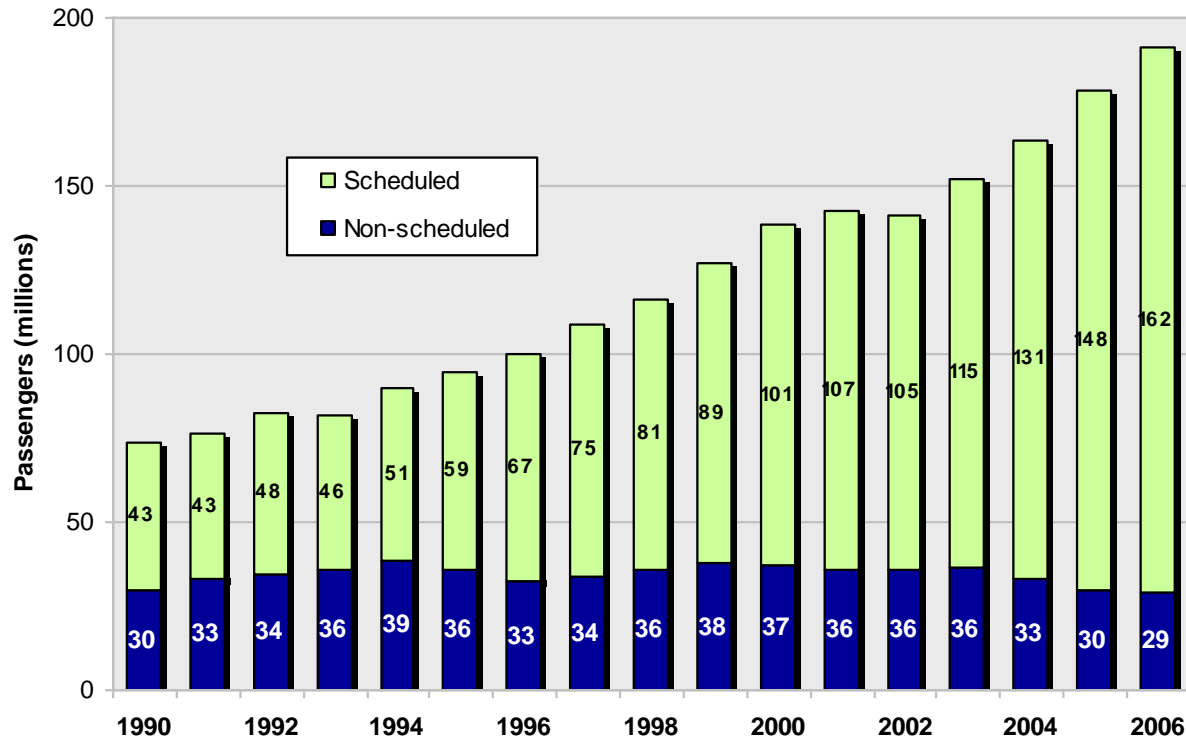
Charter carriers in Europe

Number of charter passengers from the UK to top destinations, 1996-2006



The growth in individual (seat only) travel has had a significant impact on the traditional charter market

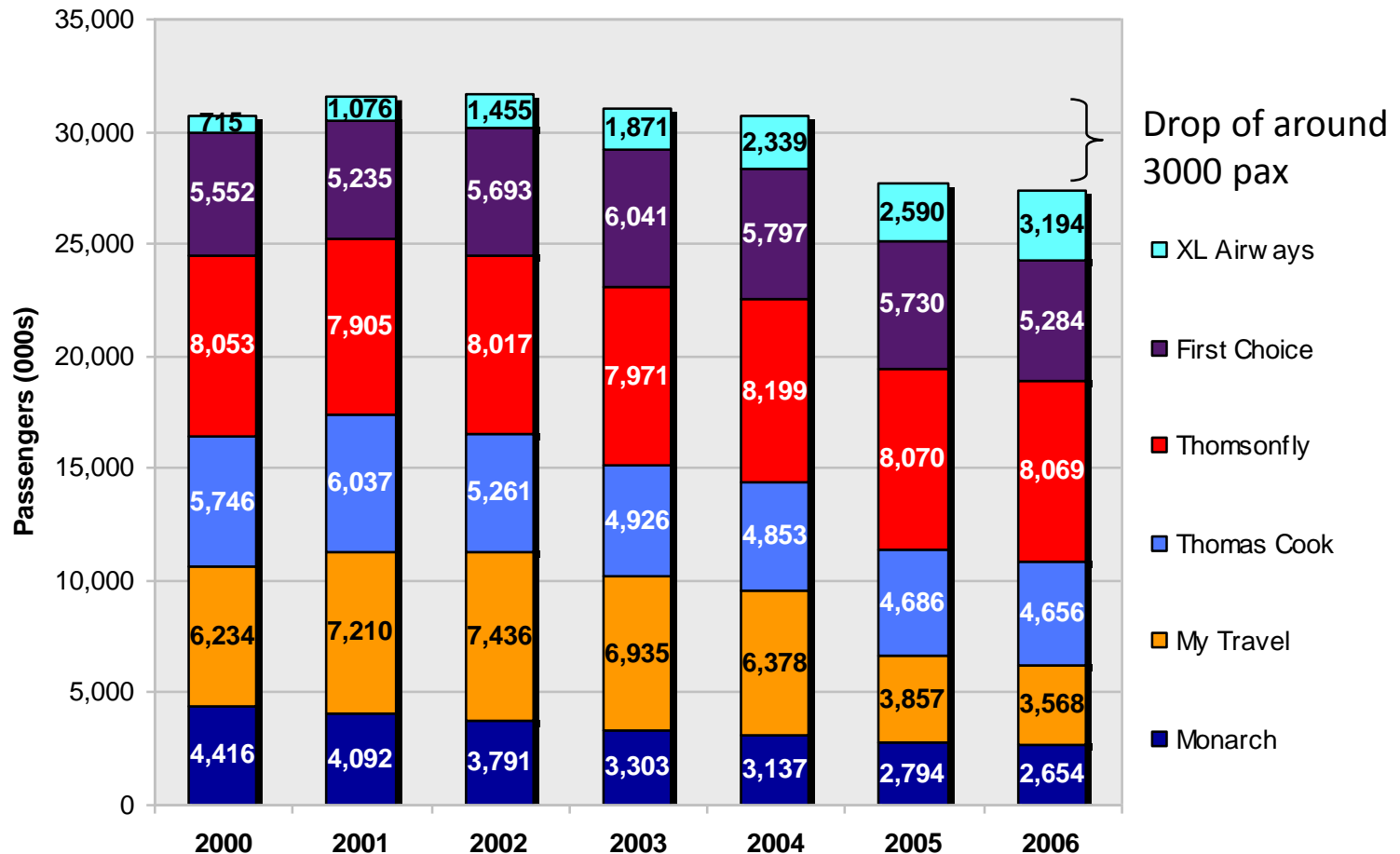
Passengers at Spanish airports (1990-2006)



- In Spain the charter market peaked in 1994 and has declined by 25% in 12 years
- In the same period the total market has trebled, with scheduled carriers growing four fold.
- Much of the scheduled growth since 2002 has been with Low Cost Carriers

Example Decline of UK charter airlines

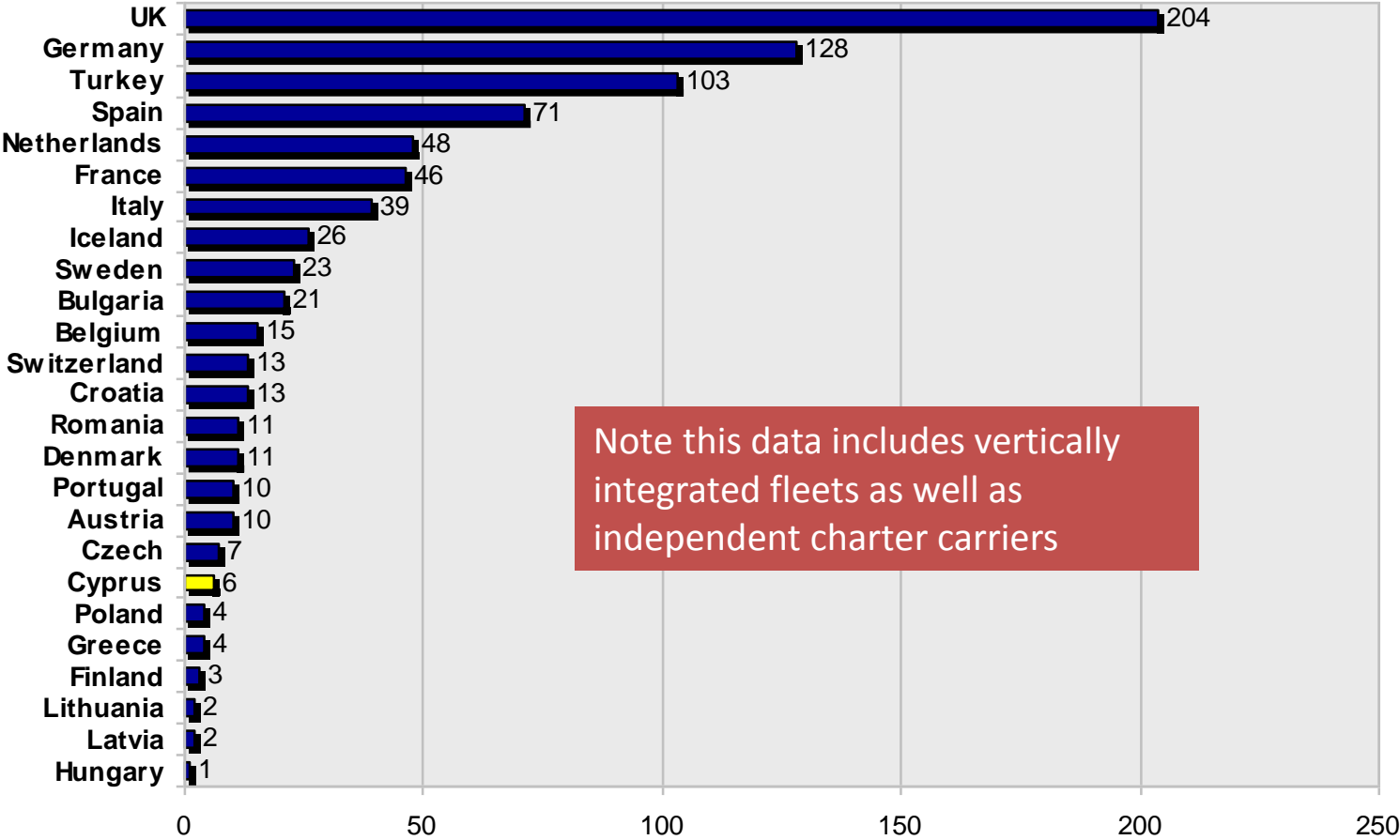
Non-scheduled passengers carried by key UK airlines



Circa 100 charter airlines in Europe, with over half of all charter aircraft operated by carriers from the UK, Germany or Turkey (2008)



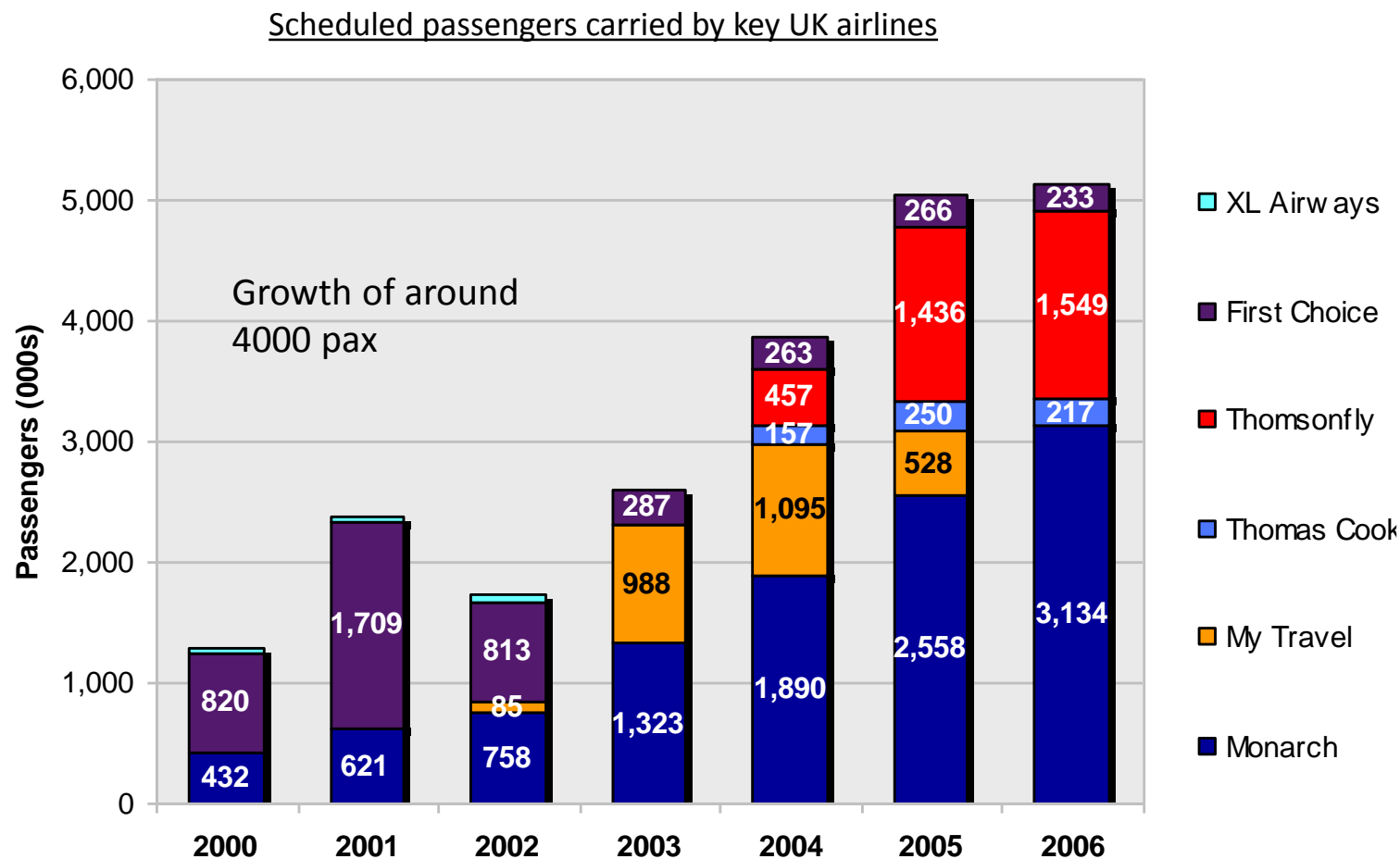
Number of aircraft over 50 seats operated by charter carriers



Note this data includes vertically integrated fleets as well as independent charter carriers

Note: Europe includes EU27, plus Croatia, Iceland Norway, Switzerland and Turkey

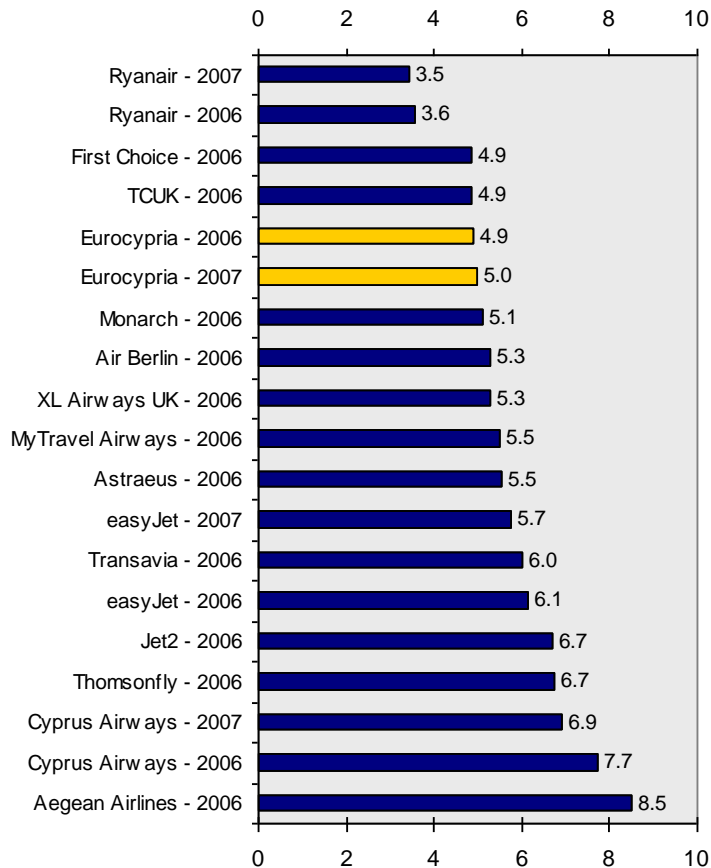
Growth of seat-only market to try to compensate decline of the traditional package tour market



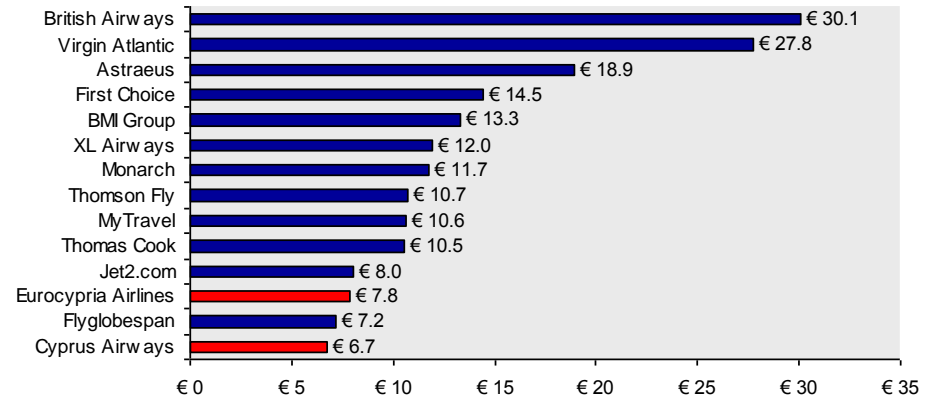
Source: UK CAA

Unit costs of charter carriers

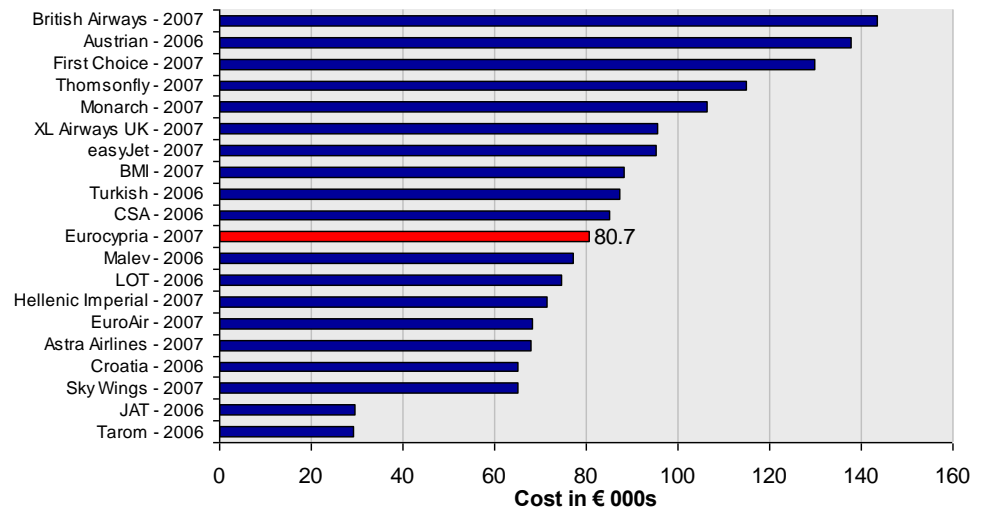
Adjusted unit cost (@ 800 km, eurocent)



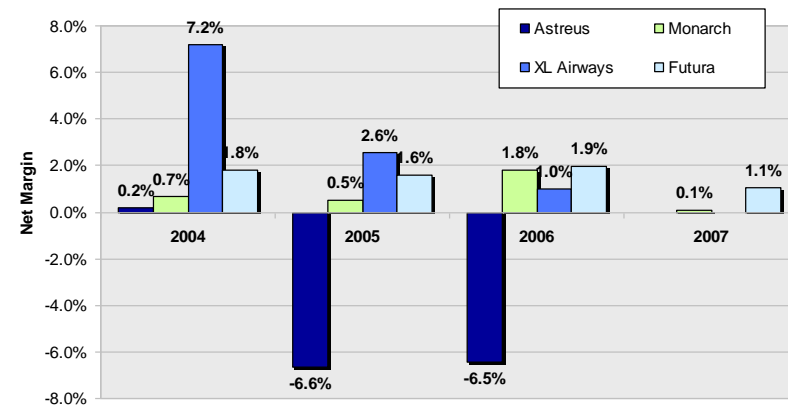
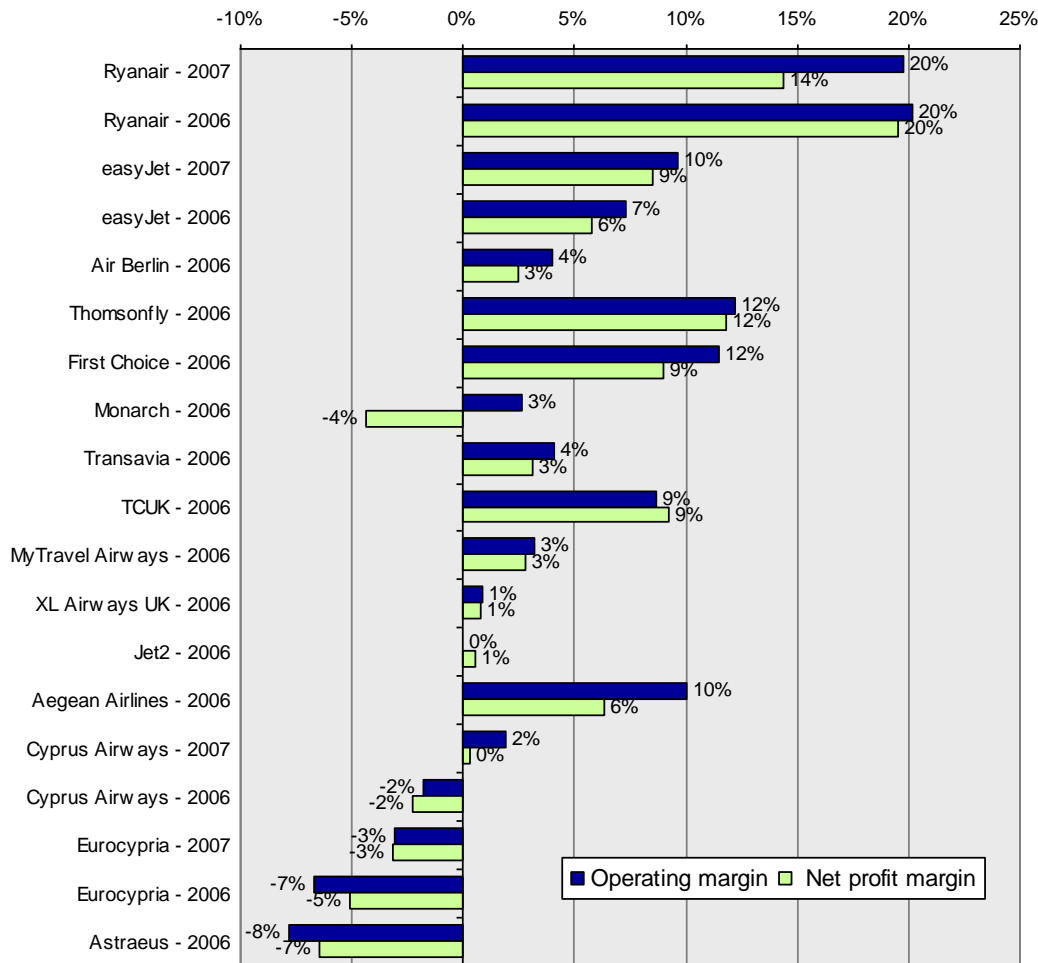
Handling Charge Per Passenger €, 2006/07



Average Cost Per Pilot in € 2006/07



.Profitability of Charter Carriers



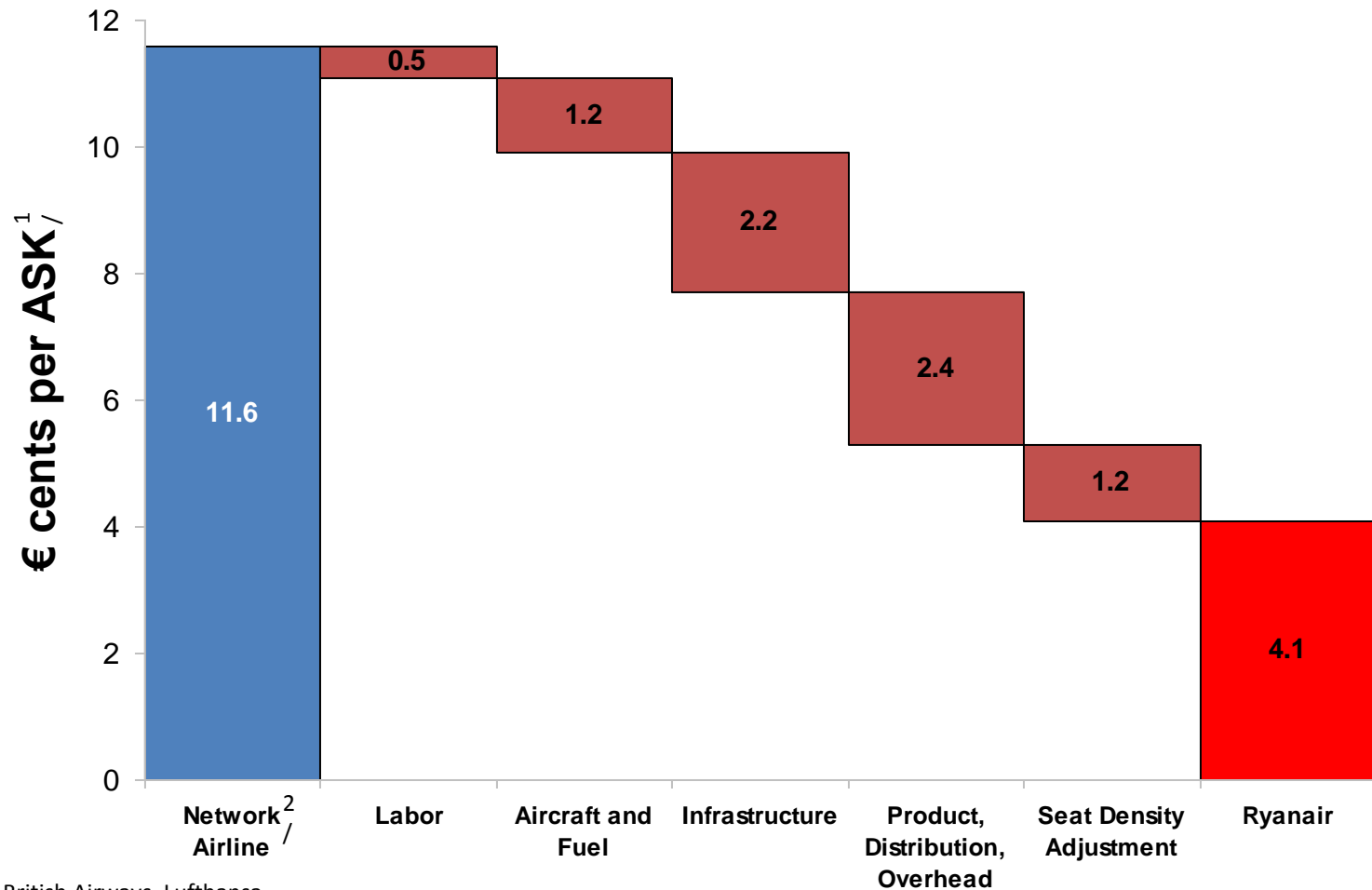
Charter operators must extract higher prices in the market to survive.

Hybrid models develop as airlines move away from 'pure' legacy or low cost models.

Airline business models are converging towards one another as:

- Legacy carriers face increased pressure to lower costs, cut on 'frills', charge for 'ancillaries', renegotiate labour contracts, etc.
- Low cost carriers look for new markets and expansion opportunities

A newer fleet explains part of Ryanair's cost gap, but the largest gap still exists for product and distribution costs

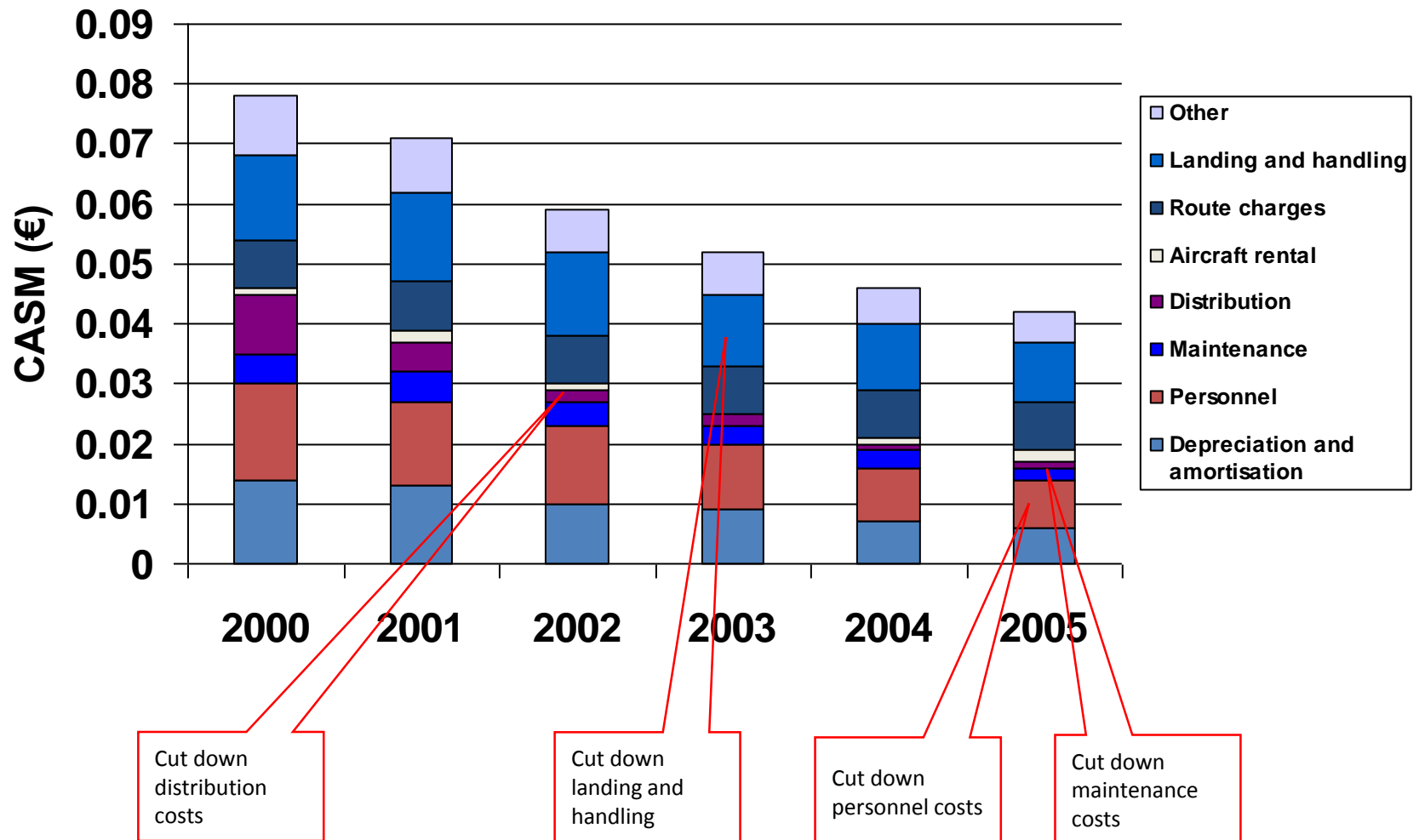


1/ CY 2005.

2/ Air France, British Airways, Lufthansa.

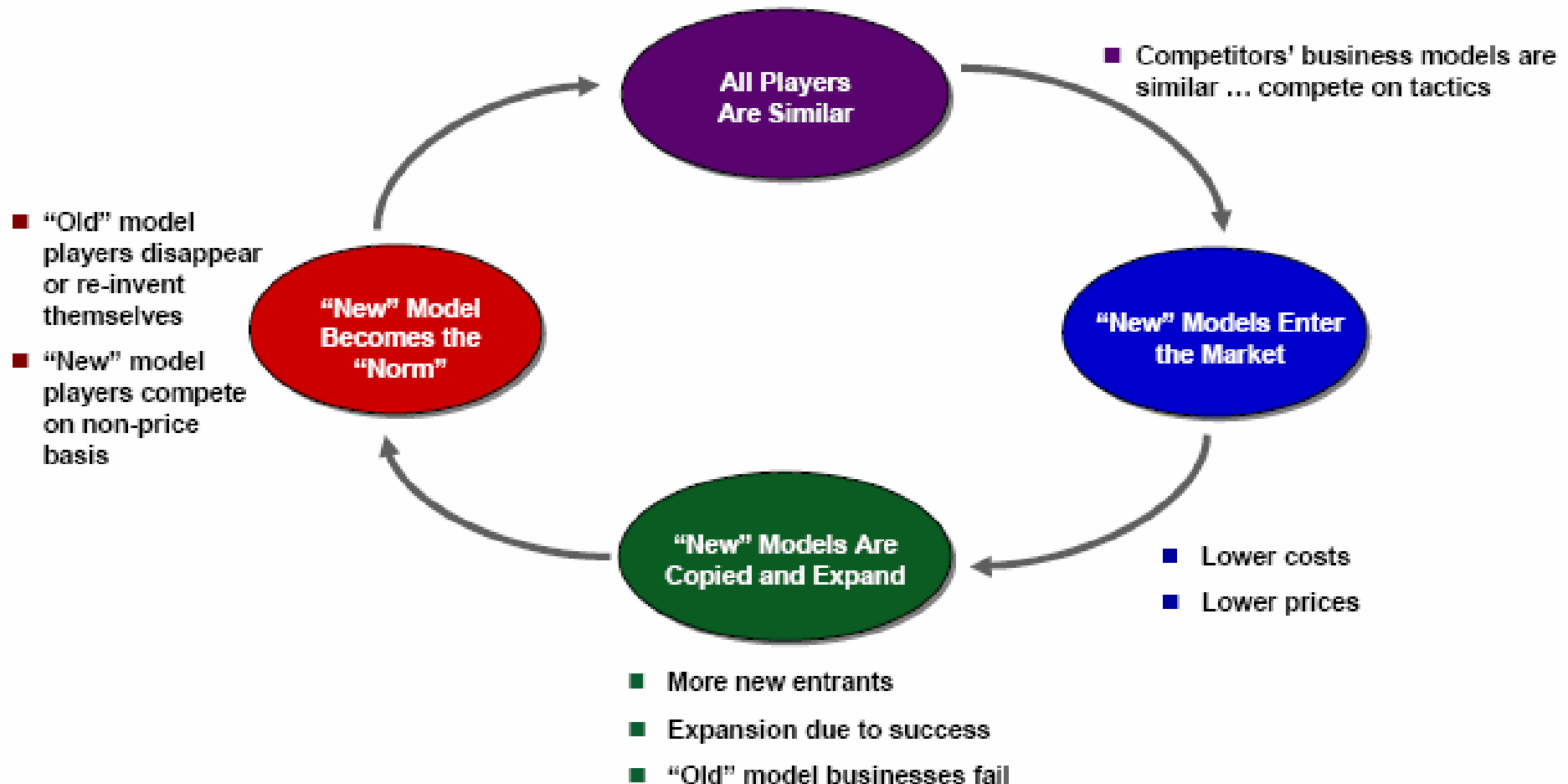
Source: IATA Airline Cost Performance Economics Briefing, March 2007.

Ryanair – pursuit to reduce its operational costs



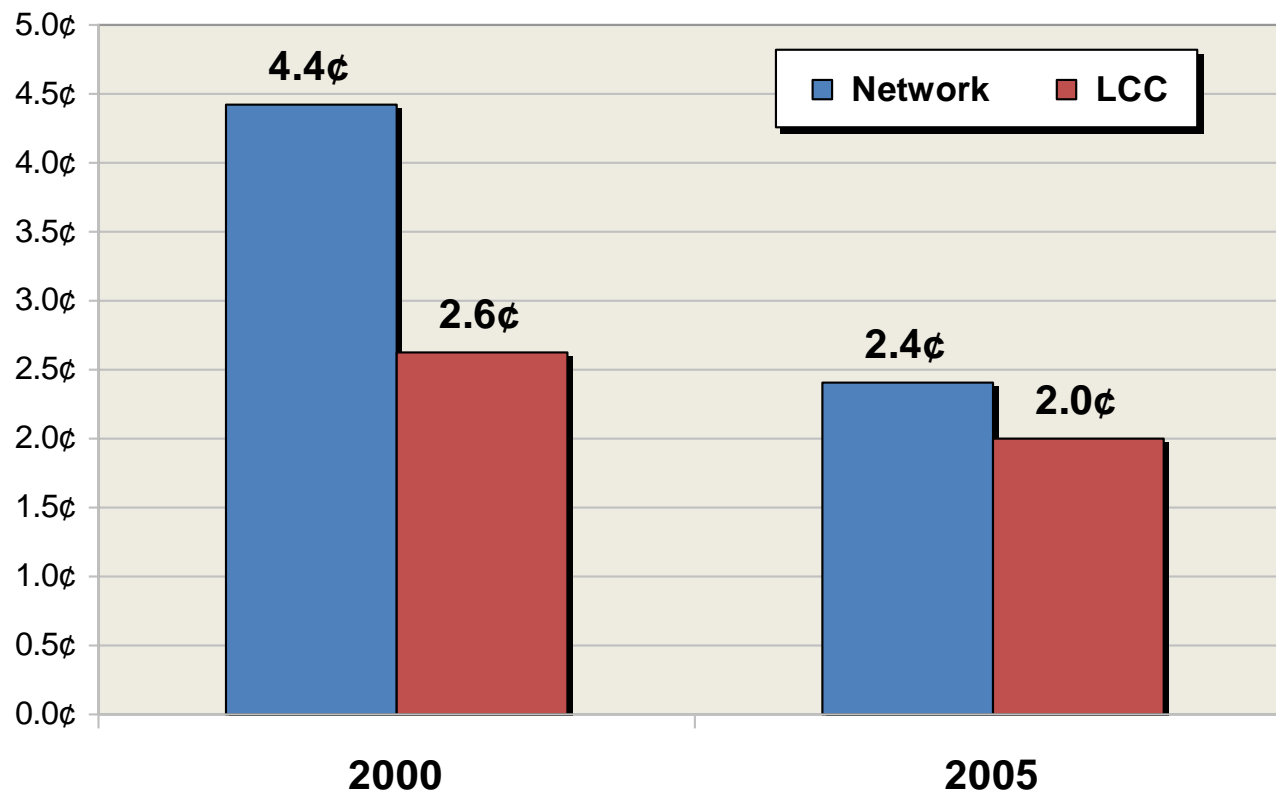
Are we seeing the evolutionary business model in action and changing the industry ?

Business Cycle



In US legacy carriers started closing the gap from mid 2000's

Labor Costs per ASM
CY 2000 & CY 2005



US carriers have been successful in reducing their distribution costs taking advantage of lower cost distribution channels

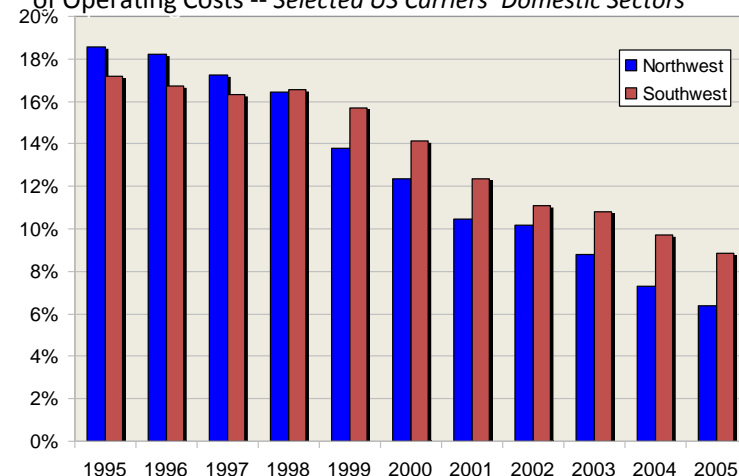
Continental increased internet sales from 5% of total to nearly 50% of total between 2000 and 2005

- **Hawaiian went from around 3% to 50% as well**

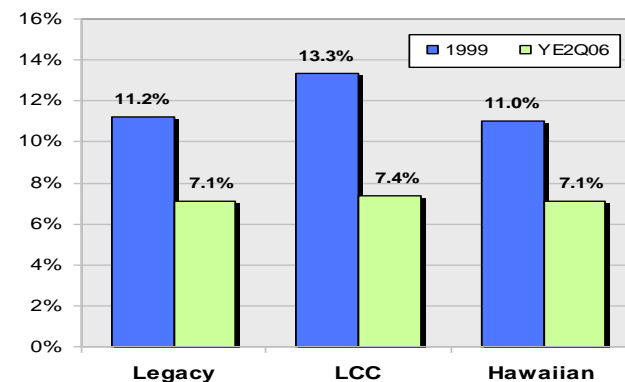
Airlines have brought their costs down by:

- **Redirecting customers to direct channels**
 - On to websites and away from agents
 - B2B
 - On line agencies
- **Renegotiating contracts with GDS providers**
- **Increasing e-ticket use**
- **Significant reduction in ATO**

Promotion and Sales Costs as a Percentage of Operating Costs -- Selected US Carriers' Domestic Sectors



US Airline Distribution Costs as a Share of Operating Revenue 1999 vs. YE2Q06

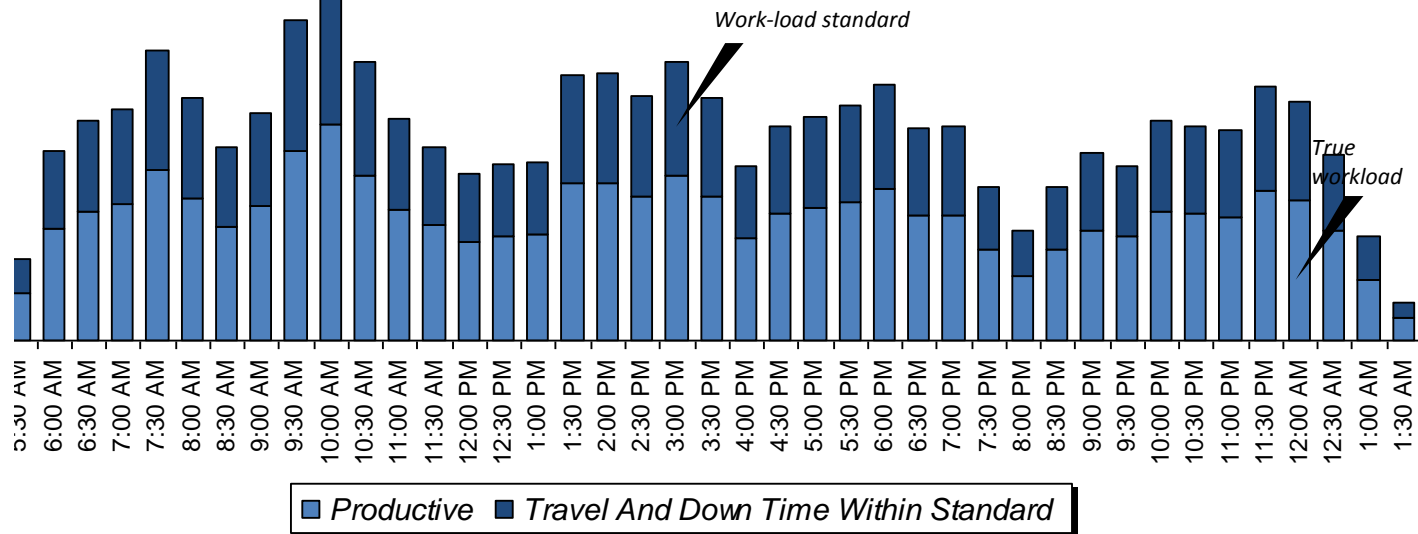


- **Divestiture of business units airline MRO etc and provide focus on that with holding company**
- **Privatisation, formation of new labour contracts in business friendly environment with hire and fire and performance based compensation**
- **Delayer and rationalise the business: most airlines can achieve that by leveraging growth**
- **Intelligent use of front office back office strategies to maintain focus and synergies across back office**
- **Creation of focused airlines with front office specialisation and back office synergies Network focus on variable contribution and restructuring**
 - Focus assets on few destinations (concentrate fewer destinations and dominate the city pair)
 - Eliminate tag flights, two stop one stop routes
 - Day of week, time of day and convenience of the schedule
 - Hub Optimisation - improve flight connection either side of the banks
 - Use of professional modelling tools and develop scheduling skills

Depeaking is reducing costs through squeezing out the embedded unproductive time within a 'bank', while crews wait for baggage to travel

CLIENT EXAMPLE

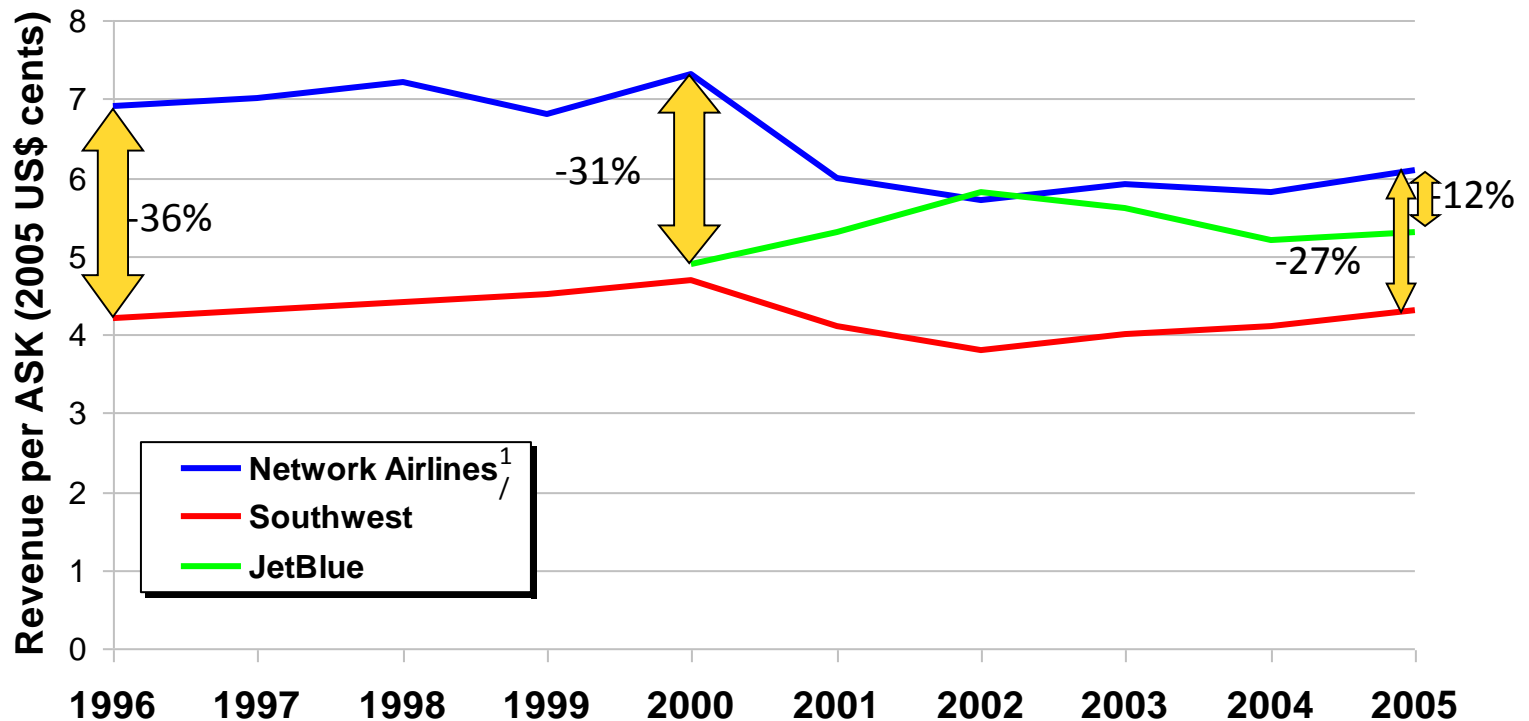
Baggage Handling: Workload vs. Staffing Requirement
(Within A Turnaround)



Continuous scheduling eliminates a lot of the underlying complexity

Rising revenues also helped US network carriers improve operating profitability

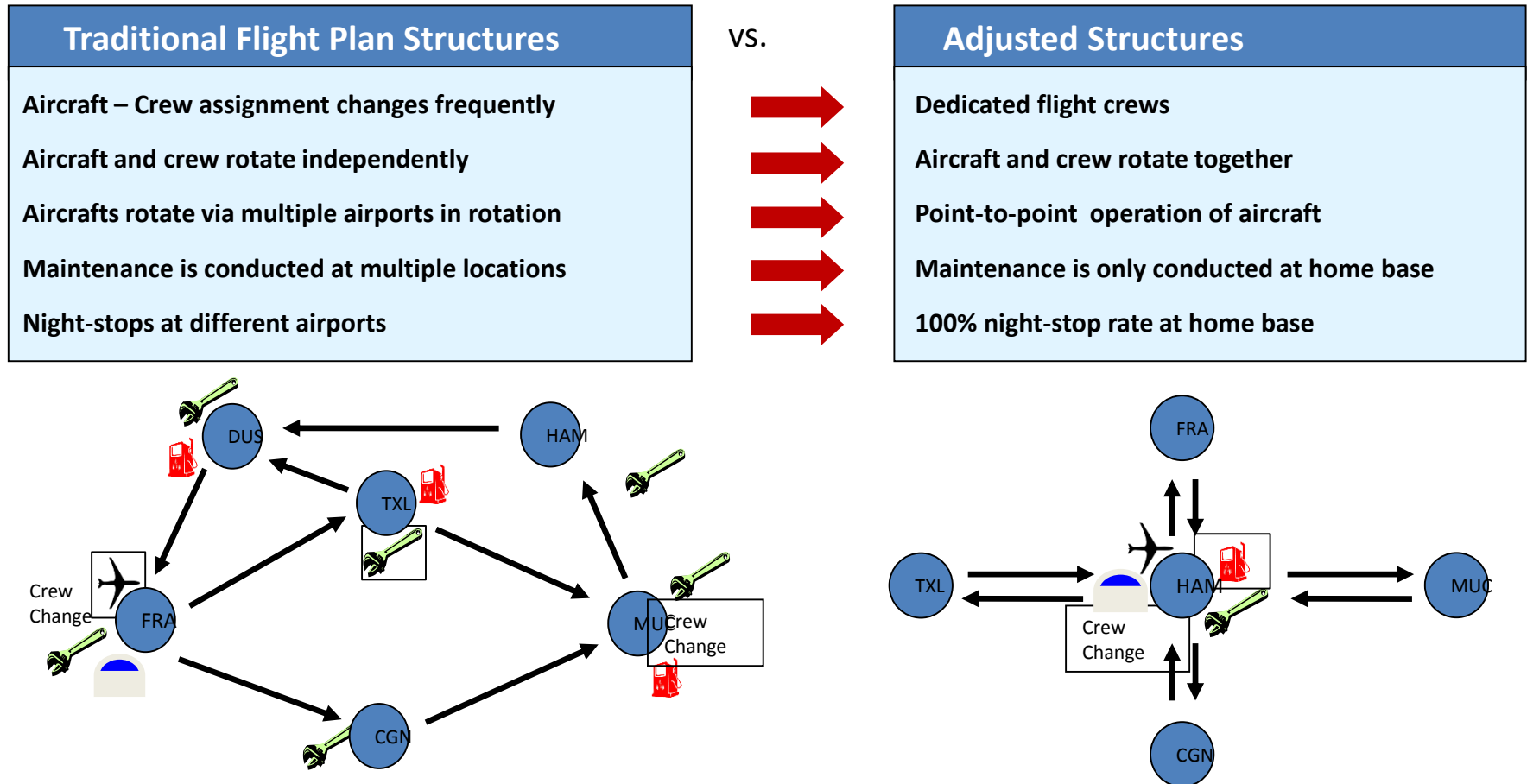
Adjusted Revenue per ASK



1/ American, Delta, United.

Source: IATA Airline Cost Performance Economics Briefing, March 2007.

Full service carriers have implemented some of LCC's practices into their business model to improve efficiency



Dedicated Hamburg Operations profits from using LCC Structures

Aspects of Lufthansa Hamburg

- ➞ Dedicated 737 Fleet
- ➞ Autonomous MRO Teams with fix Members
- ➞ Point to point Operation of Aircrafts
- ➞ Nightstop Rate 100% in Hamburg
- ➞ Dedicated Flight Crews



- ➞ Easy and efficient Flight Planning
- ➞ Easy and reliable Prediction of available Capacity
- ➞ Optimized Maintenance Planning
- ➞ Simplified Crew Roster Creation
- ➞ Effective Reaction on Disturbances

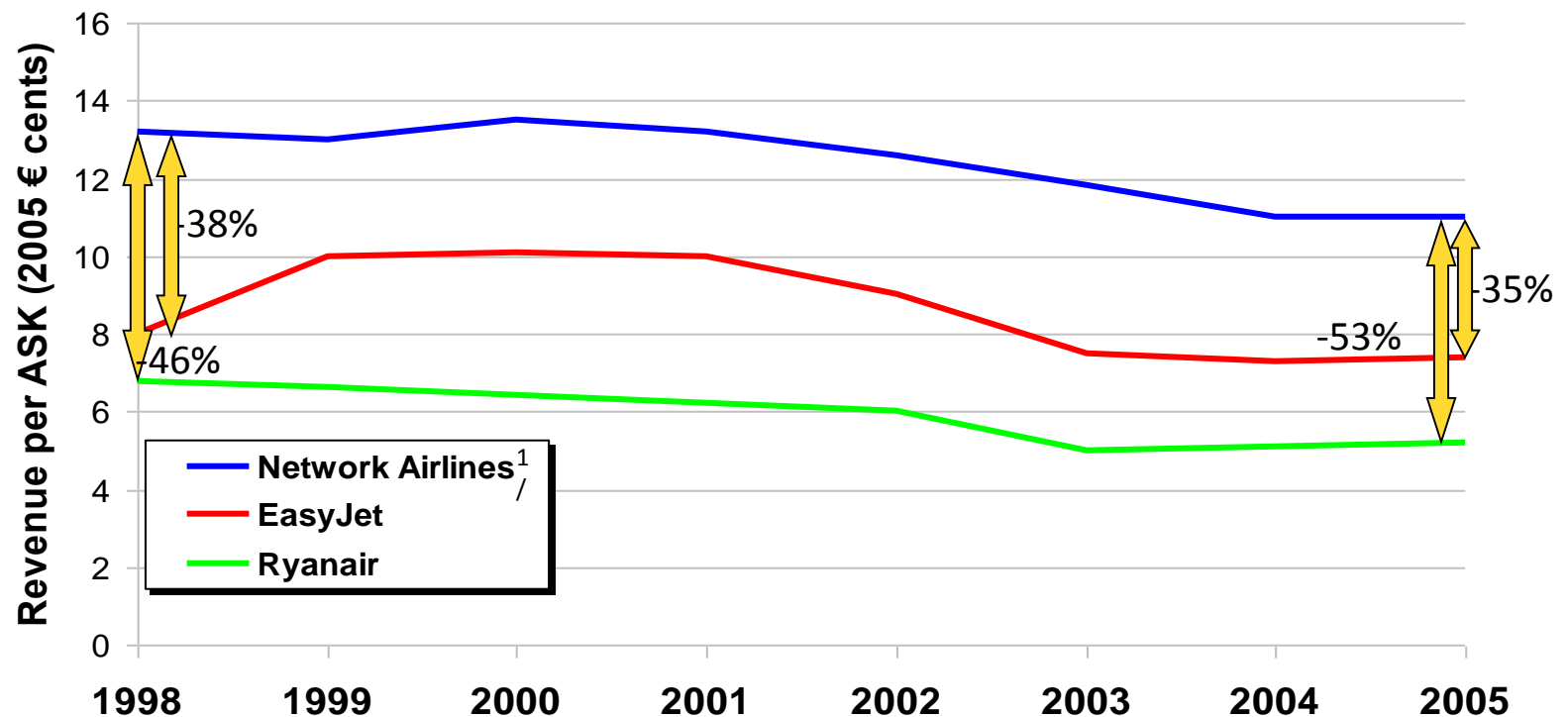


Measurable Benefits

- | | |
|-------------------------------|-------------|
| ➞ Ground Time at Airports: | 30 min avg. |
| ➞ Aircraft Rotation: | 5 per day |
| ➞ Air - Ground Ratio: | 7:1 |
| ➞ Fleet Utilization improved: | *** |

European network airlines are able to achieve a much higher revenue premium over LCC competitors on short-haul markets than their counterparts in the US

Adjusted Revenue per ASK

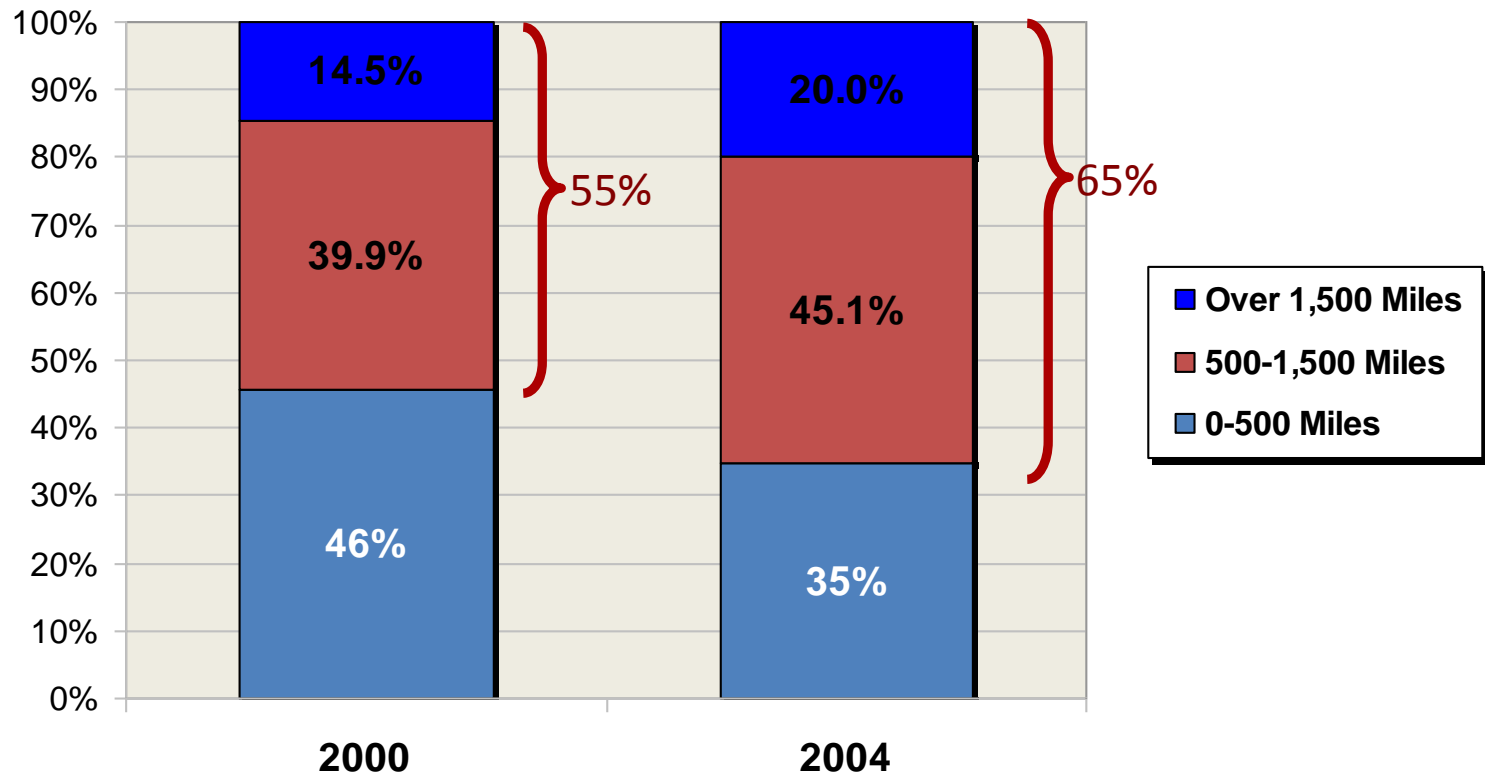


1/ Air France, British Airways, Lufthansa.

Source: IATA Airline Cost Performance Economics Briefing, March 2007.

LCCs have targeted longer haul markets for expansion: *they operate 65% of their domestic capacity in markets over 500 mi.*

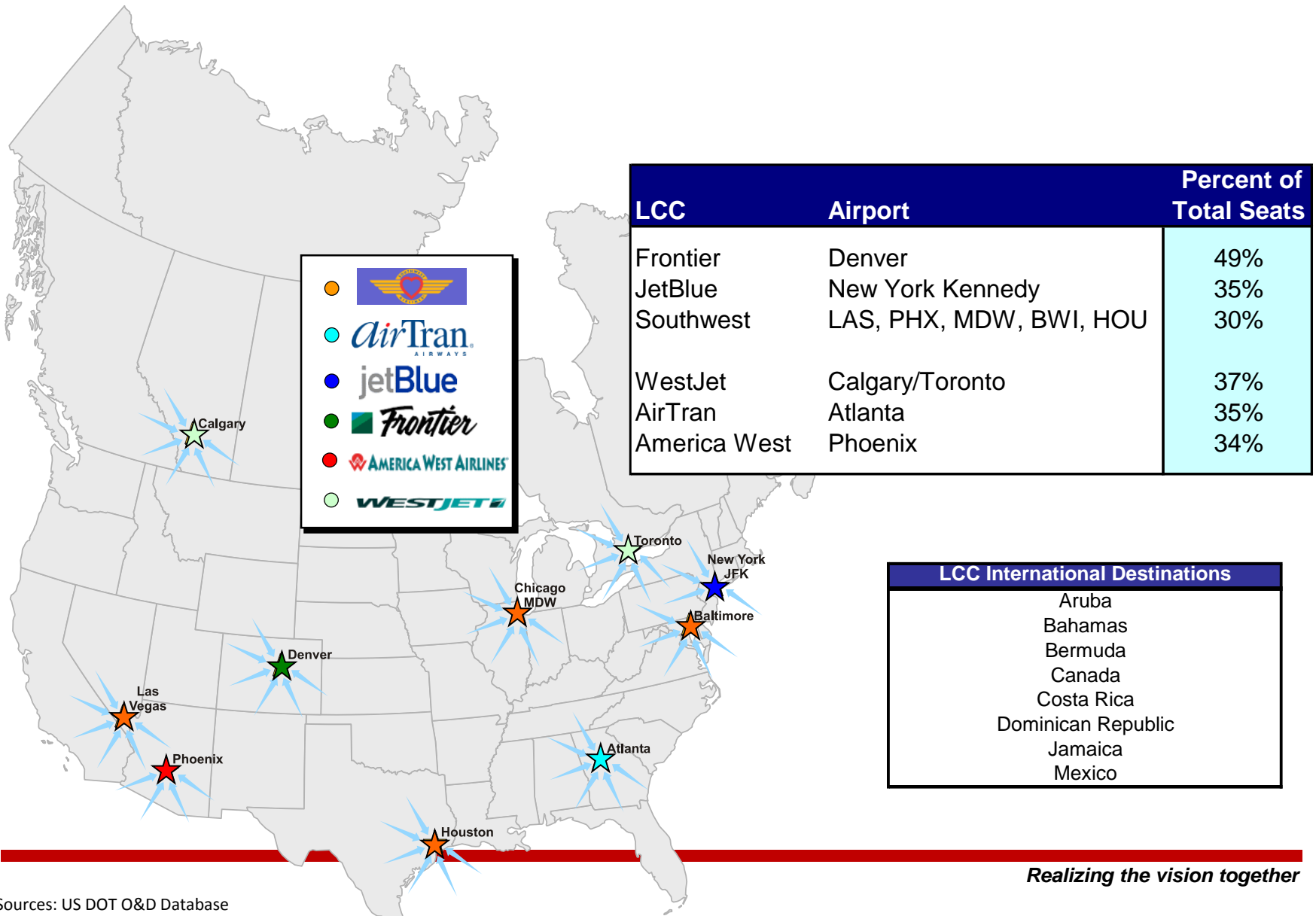
LCC Distribution of Traffic By Trip Stage Length
U.S. Domestic Markets >75 Passengers Per Day Each Way
CY 2000 vs. CY 2004



LCCs -WN,JetBlue,HP,Airtran,ATA,Frontier

Sources: US DOT O&D Database, via Database Products Hub Supplement Database

Low-cost carriers increasingly resemble hub & spoke systems, in addition to expanding their previously limited international offerings



As legacies increasingly erode LCC advantages, LCCs will increasingly hybridize to meet the growing challenge

Southwest Airlines in 2000

Number of Aircraft in Fleet	326
Percent of Markets Under 2 Hrs	83.9%
Avg No. of Daily Flights per Market	4.4
Average Stage Length	470
Code-Share Agreements	None



Southwest Airlines in 2005

Number of Aircraft in Fleet	412
Percent of Markets Under 2 Hrs	76.5%
Avg No. of Daily Flights per Market	4.1
Average Stage Length	584
Code-Share Agreements	ATA



Legacy carriers introduce low cost subsidiaries

- Air Canada – Rouge
- Qantas – Jetstar
- Lufthansa – Germanwings



Thank You!

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