Airport Planning to meet the needs of Low Cost Carriers

(and helping legacy carriers survive)

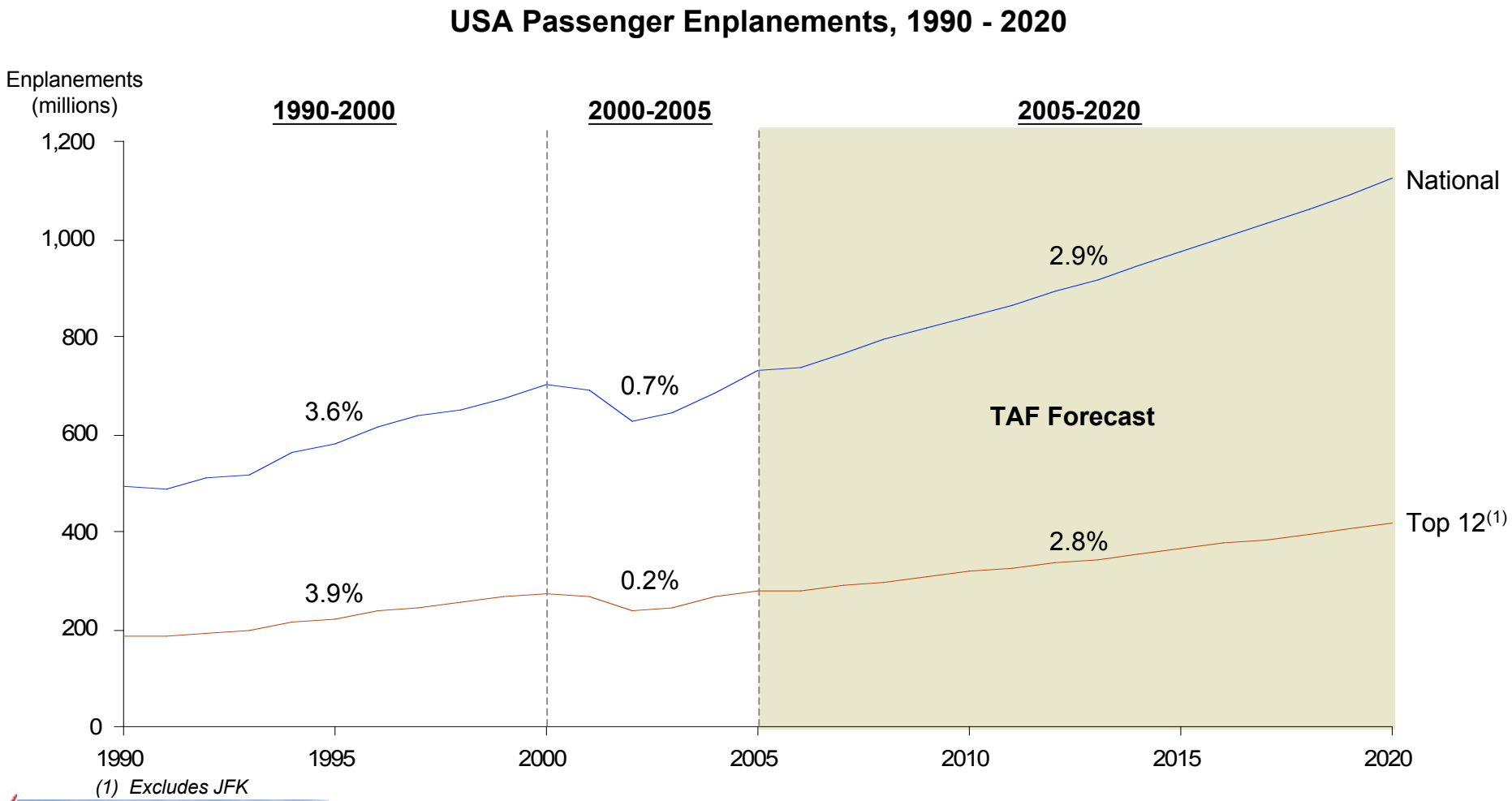
Today's Airport Planning Issues, Needs and Solutions: Landside

2006 NASA/Industry Airport Planning Workshop
September 12, 2006

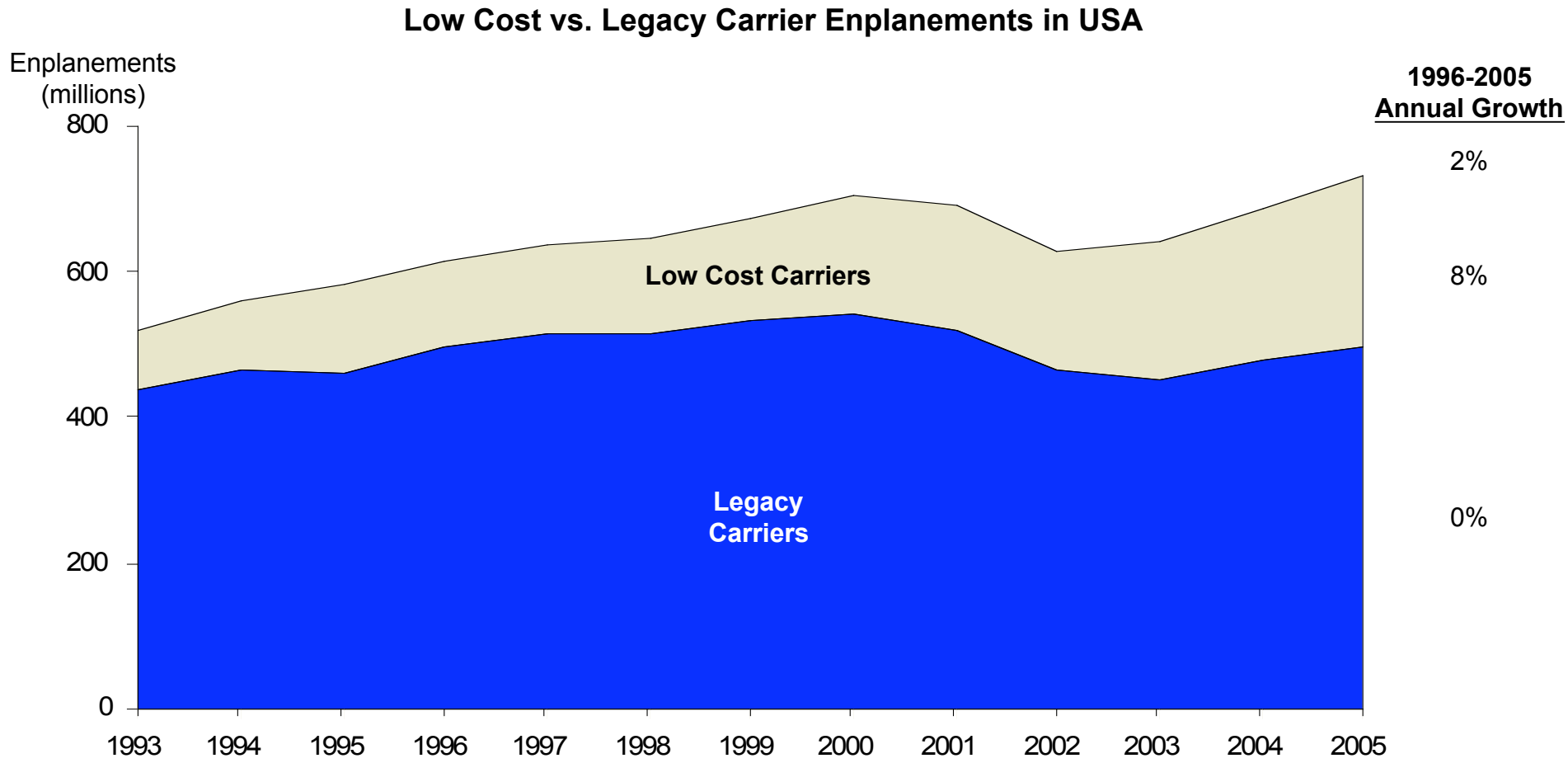
Contents

- True economics of LCC's vs. legacy carriers
- LCC's Airport needs; are they different, or just cheap?
- Planning and airport management approaches to accommodate LCC's business model
- Planning and airport management issues as legacy carriers try to protect their market share

The downturn and 9/11 resulted in a pause in growth for US air travel



Low Cost Carriers (LLC's) have captured much of the growth since 1996 nationally



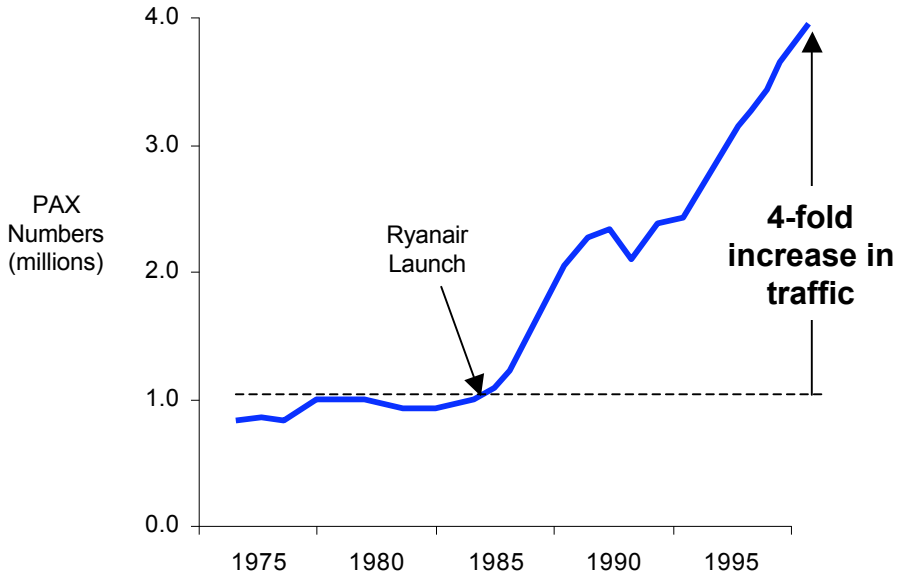
Source: FAA, Seabury APG, BAH analysis

LCC's have delivered significant cost savings, leading to huge increases in demand, but also continuing yield erosion for other airlines

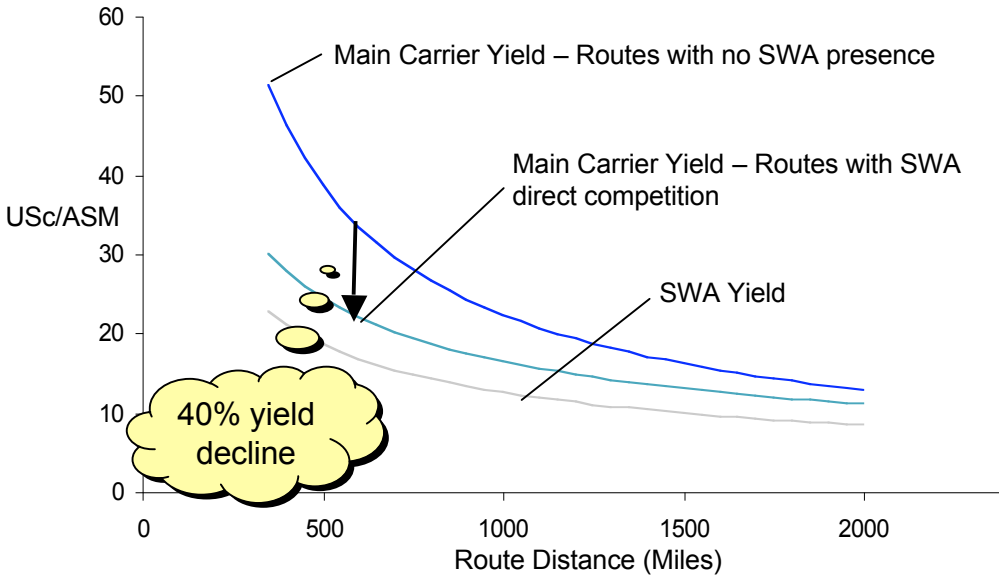
Massive stimulation effect on demand through market entry of LCCs ...

... but accompanied by severe yield drop

Example: Demand growth LON-DUB 1975-2000

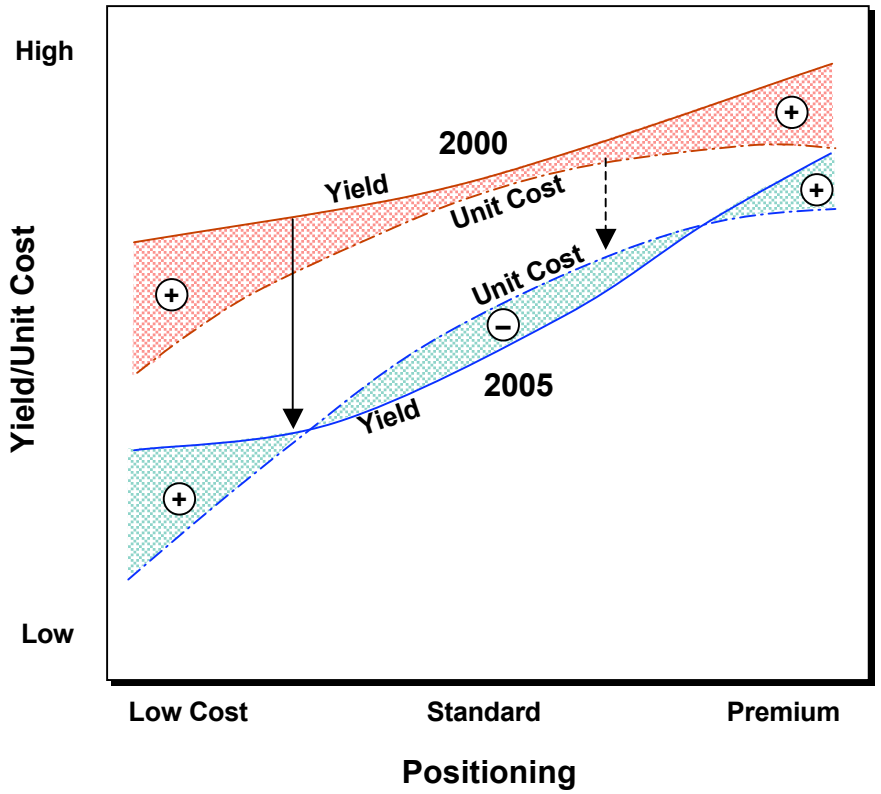


Average yield in U.S. hub markets (Impact of Southwest Airlines)

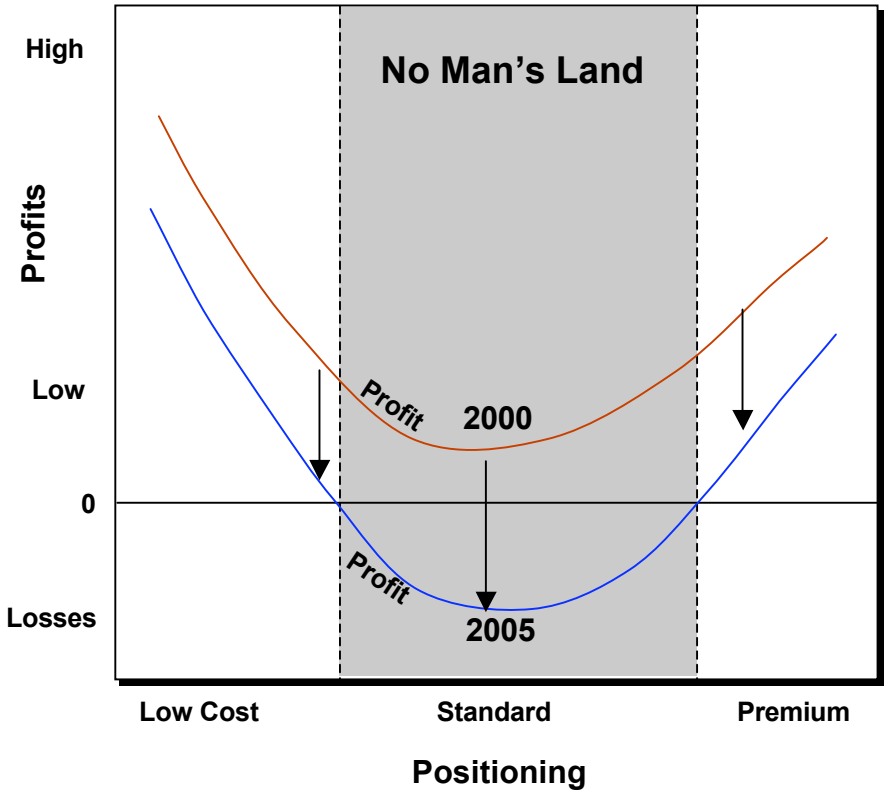


This has fundamentally altered the economics of air travel, leaving many traditional carriers in an unprofitable No Man's Land

Yields have declined, particularly at the low end…

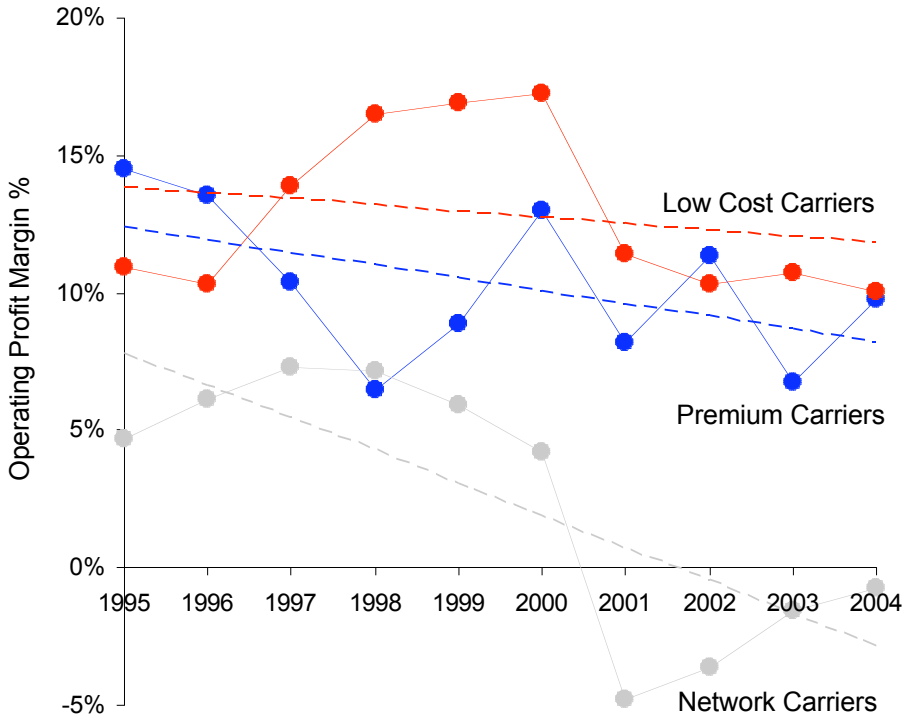


…as a result, profitability has collapsed in the middle of the market



There is clear evidence that the network carriers who remain "stuck in the middle" are becoming less and less profitable over time

Weighted Average Operating Profit Margin by Airline Category 1995 - 2004



LCCs in Sample	1	1	2	2	2	4	4	4	5	6

Increasing Margin Gap

- Low cost carriers have emerged relatively recently, but proven that their model can be highly profitable.
- However, there have been many attempts to replicate the model that have failed due to inability to aggressively manage costs and stimulate demand. Examples include: Go (UK); Virgin Express (Belgium); Jetsgo (Canada); Volare Group (Italy); Compass (Australia)
- As more successful Low-Cost Carriers have emerged and expanded their operations, the Network Carriers have become less and less profitable as yields have fallen and point-to-point volumes have been los from their networks
- The premium segment has so far proven far more resilient in the face of LCC competition

Premium Carriers

4 Cathay, Malaysia, Singapore

Network Carriers

4 American, United, Northwest, Delta, AF-KLM, Lufthansa, Alitalia, SAS, Iberia, British Airways, Air China, Asiana, EVA, Korean, Thai, Qantas, JAL

Low Cost Carriers

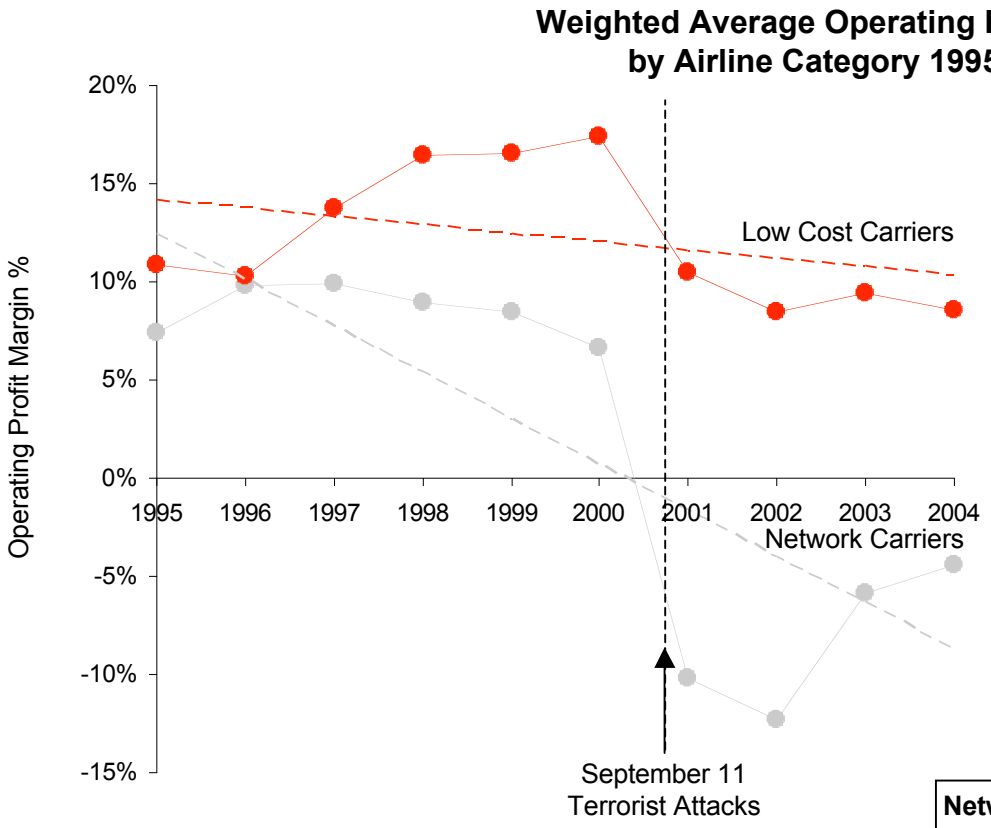
4 Southwest, Jetblue, EasyJet, RyanAir, Air Asia, Virgin Blue

	Average WAM(1) 1995-2004	10 year Trend
LCC	13%	-2%
Premium	10%	-5%
Network Carriers	2%	-12%

(1) Weighted average operating profit margin

Source: Datastream

This is particularly evident in the US where LCC performance far outstrips that of network counterparts and has proven more resilient to post-911 market weakness



Plight of US Network Carriers

- The US market has seen the greatest incursion of LCCs for the longes period of time. Southwest and JetBlue have shown how well the mode can work and have maintained a clear lead on the larger carriers.
- Without a clear premium segment brand in the market, all of the netwo carriers have struggled for profitability, particularly since the 2001 terrorist attacks
- The LCCs seem to have been relatively less impacted by 9-11, possib because they have less fixed network infrastructure costs and can adj their cost-base more rapidly in the face of changing demand

Network Carriers

4 American, United, Northwest, Delta

Low Cost Carriers

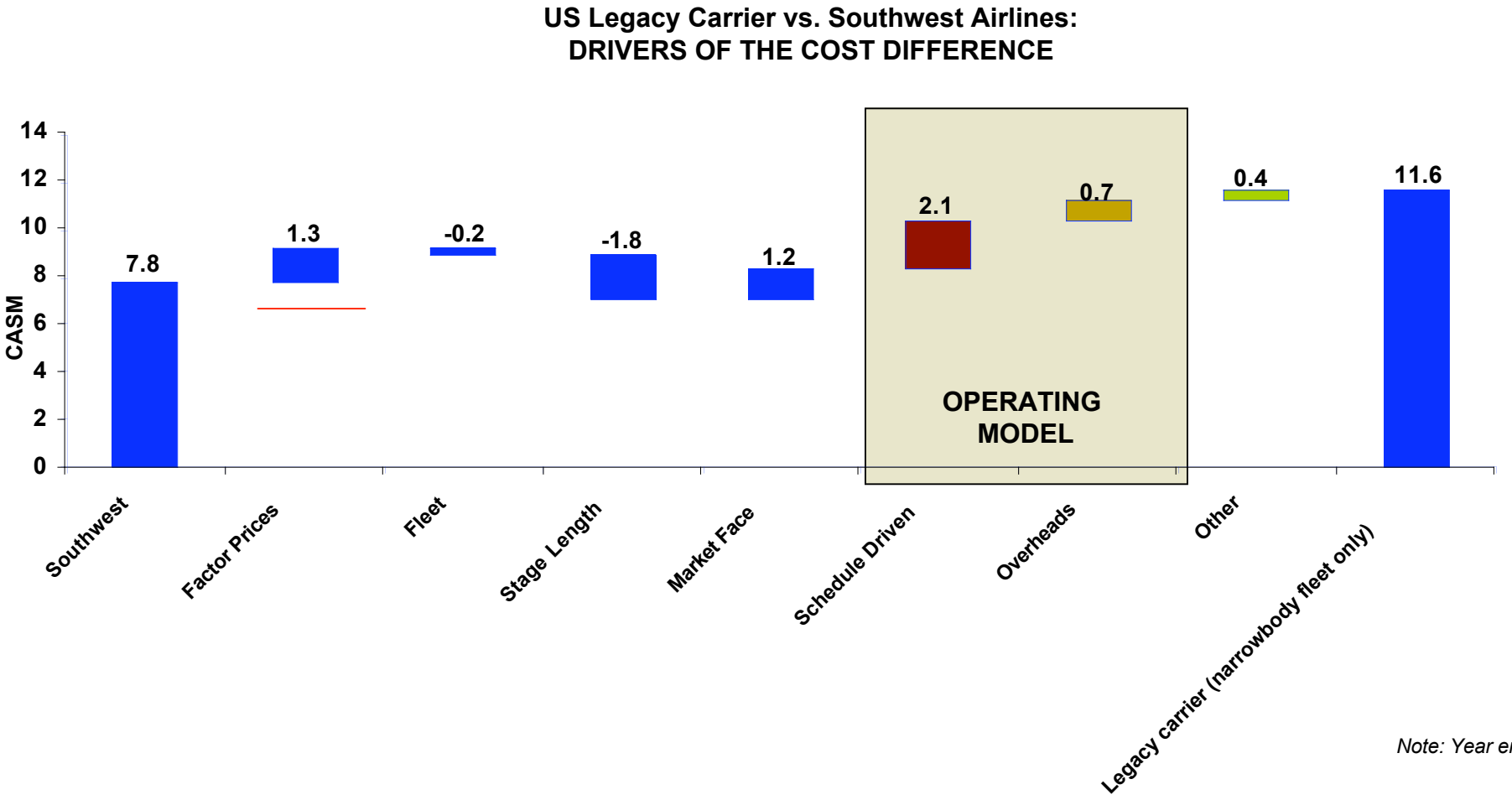
4 Southwest, Jetblue

	Average WAM(1) 1995-2004	10 yea Trend
LCC	12%	-4%
Premium	2%	-23%

(1) Weighted average operating profit margin

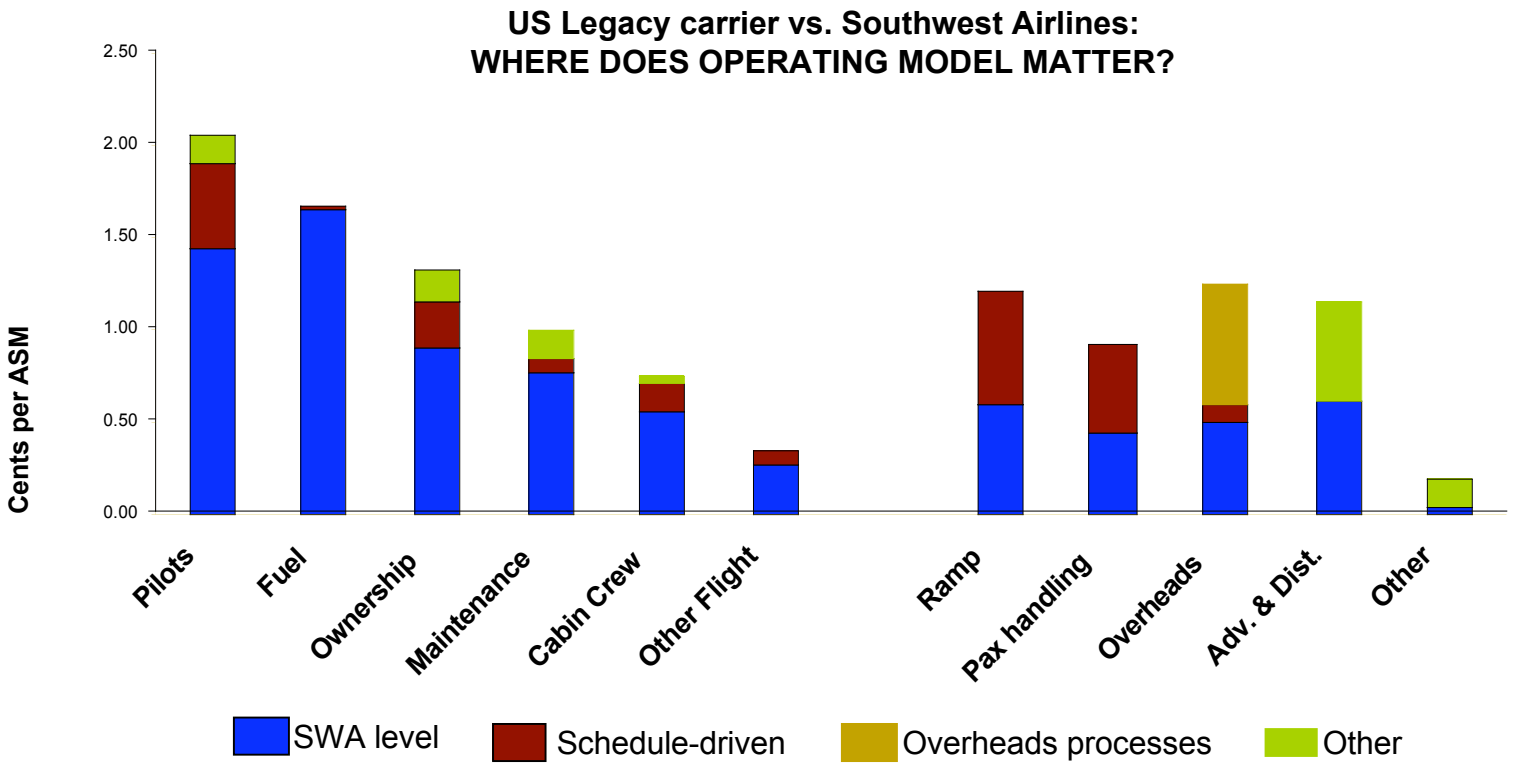
Source: Datastream

Southwest's operating model largely accounts for its cost advantage



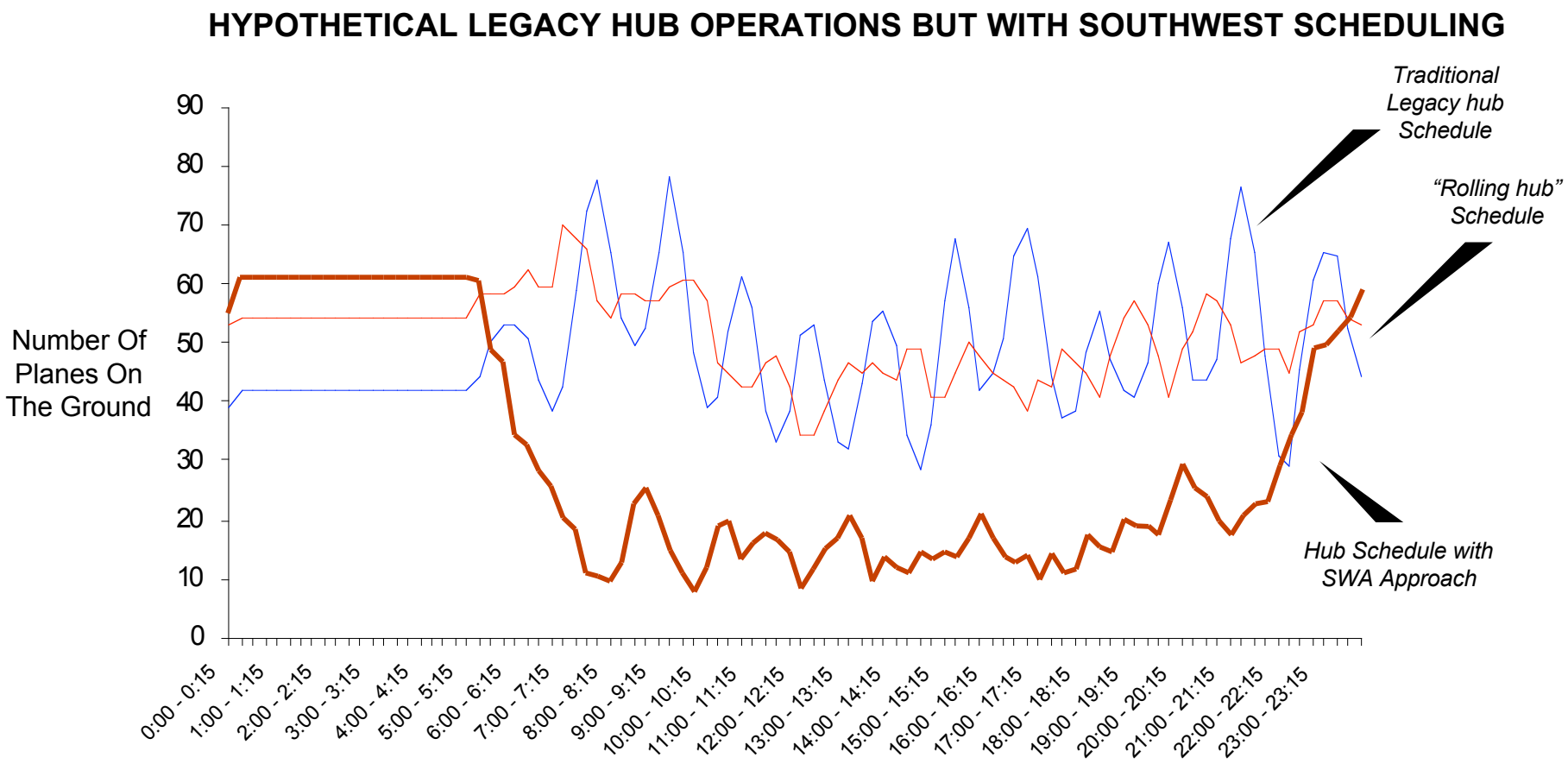
Note: Year ending 9/04

Southwest's operating model drives dramatically-lower costs all across the airline



A significant portion is accrued due to ground handling efficiency

Continuous scheduling with shorter turns would significantly reduce aircraft on the ground for a legacy carrier's hub operations



This has the potential to dramatically reduce ground costs

Primary Levers

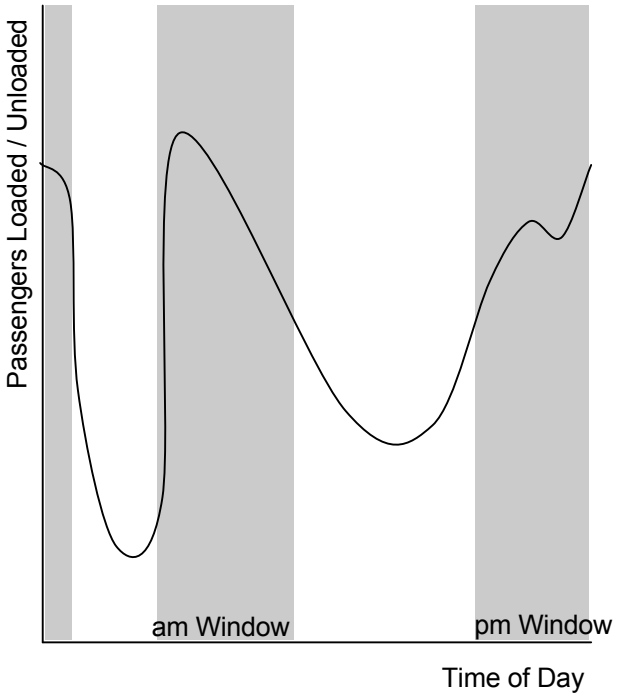
- Reduced variability
  - Eliminates work-load valleys between arrival and departure peaks
  - Reduces self-induced disruptions and associated staffing buffers
- Turn compression
  - Eliminates large proportions of the down-time that exists within a turn
- Foot-print simplification
  - Allows airport operations to be much more geographically concentrated
  - Reducing staff travel times, baggage transfer times and infrastructure requirements
- Increased baggage connect times
  - With reduced variability of aircraft arrivals, potentially also through policy to simplify handling
  - Allowing baggage transfer to be significantly simplified through more efficient runs (e.g. ATL.) and reduced needs for runners (e.g. CVG)

Key Enablers

- Passenger handling processes must be designed to enable higher paced operations
  - Boarding process and sequencing
  - Seat re-assignments
- At hubs and major cities, the operational approach must be designed to:
  - squeeze out down-time and double productivity
  - Fully exploit on the freedom from traditional schedule constraints and connect policies
- *Note:* For this reason, among others, Southwest avoids very small out-stations (<20 departures/day). At smaller stations, in-sourcing or outsourcing (working with alliance partners where possible) will likely be required to provide sufficient work-load to capitalize on the productivity potentials

An essential ingredient to making this work is to radically change the airline's approach to network management

Typical Hub Passenger Flow



New Approaches to Network Management

Separate out PTP

- Trunk and point-to-point schedules separated from the hub-and-spoke operations help reduce peaking
- Operated for fast turnaround, high utilisation with small efficient aircraft

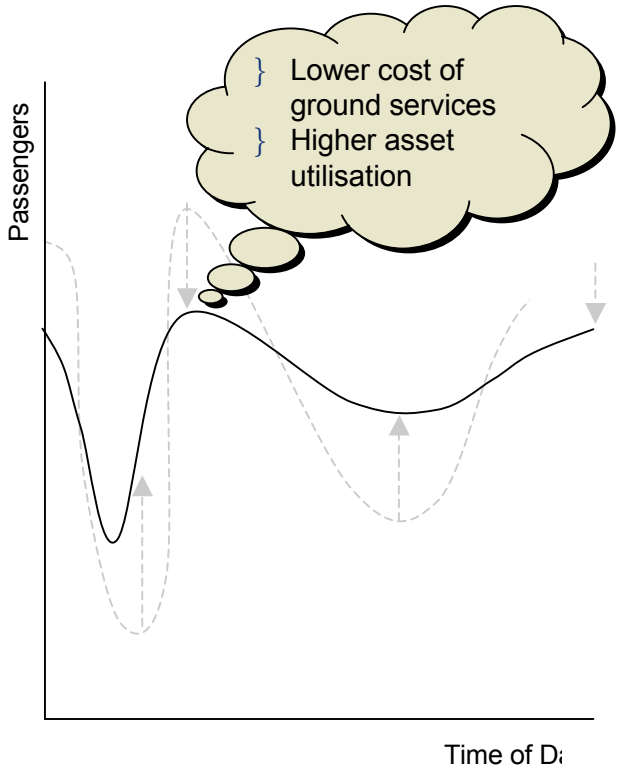
2 Hubs / Mergers

- Airline mergers will facilitate multi-hubbing and allow new connection strategies (eg. random hubbing) and greater overall connectivity

Prioritise Connections

- Opportunities to prioritise connections through the network with high yield and volume rather than simple maximum hub connectivity

Effect of De-peaking



Going forward, Airports have to be increasingly cognisant of these economics and operational requirements. Future revenue growth will have to come from non-aviation or commercial activities

Increase Commercial Activities

Identification of problem areas

- Review of current situation vs. best performing airports
- Spend per pax
- Income per pax
- Quality of operators/ retailers
- Contract Terms and Conditions
- Passenger flows
- Day-to-day operational requirements
- Airport management of existing operations

Short term optimisation

- Optimise existing operations
- Streamline daily routines to improve supervision and pinpoint actions to be taken
- Consider terminating contracts/negotiate improved financial conditions
- Upgrade overall operations
- Train airport staff in optimisation methods and supervision tools

Long term turn around

- Gantt sheet of overall planning
- Development of tender document
- Development of contracts
- Tender process management
- Identification of participants
- Assistance in negotiation of final contract
- Implementation of new operators and start up collaboration
- Development of monitoring tools
- Training of airport staff in further development of operations

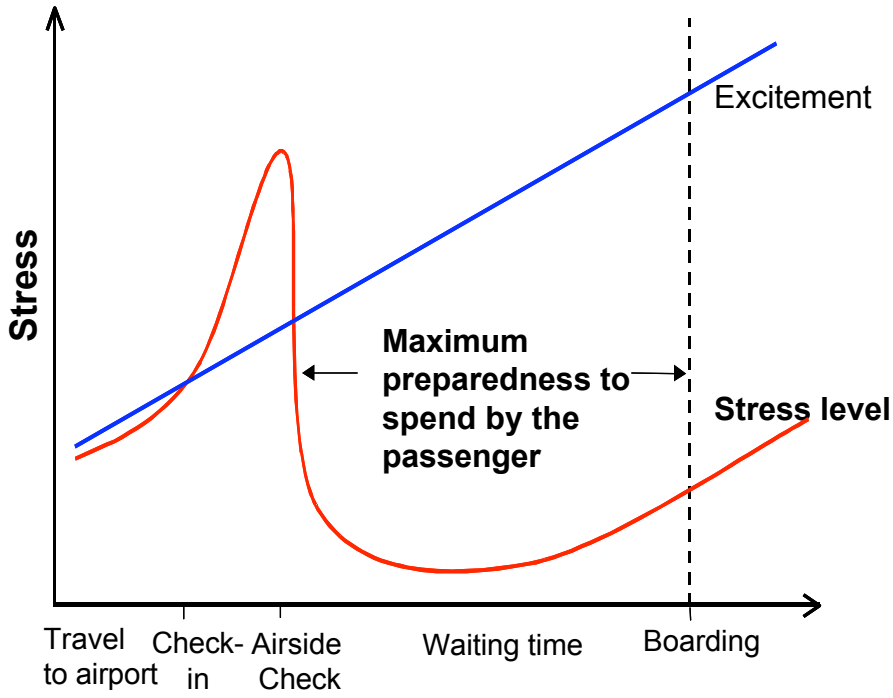
To optimize commercial revenue, passenger flows and layout principles need to be considered

Layout Principle	Best in Class Examples	Typical US Hub
Layout and Space utilisation of the terminal is oriented according to passenger types	✓	X
Differentiated layout for leisure versus business passengers	✓	X
Ideally separate terminals for leisure and business passengers Best in Class Examples: Singapore Changi, Gatwick, Manchester	✓	X
Leisure: Larger outlets, room to “lose yourself in the shop”, “waiting areas” Business: Easy-orientation units with fast access to the till	✓	X
Especially business: Avoid obstacles, allows passengers with trolleys free access (Avoid problems such as display stands and narrow spaces between shelves)	✓	X
Differentiated layout for leisure (e.g. charter) and scheduled passengers	✓	X
Central security clearance reduces subjective insecurity, that passengers will reach the gate late, allows stress free shopping and less (wasted) waiting time at the gate Best in Class Examples: Munich, Frankfurt, Helsinki	✓	✓
Easily understandable layout of routes to gates, with indicators showing how many minutes are required to reach each gate area Best in Class examples: Heathrow, Schiphol	✓	X

Developing the non aviation business requires optimal passenger flows and an efficient use of the available space

- „Best in class“-Design of airports to maximise the spending behaviour of the passengers…
  - Strategic orientation of passenger flows past the outlets
  - Provide stress-free opportunity after check-in and security requirements
- … allows additional potential customers access to the shopping and eating areas
  - “Meeters and Greeters“, airport visitors
  - Staff (of airlines, airport, other organisations at the airport)
- … and ensures efficient logistic processes
  - Optimal relationship of stores to sales areas (less than 10% stores / support areas)
  - Access to supply and storage near the airport, to avoid lost sales due to stock shortages

Purchasing behaviour & stress levels



Parking and advertising revenues should be tailored to different passenger segments too

Area	Customer structure	Price	Product	Competition	Marketing
Advertising	▸ Advertising agencies ▸ Airlines ▸ Other tenants ▸ Stakeholders, communities	▸ Price structure (Differentiation according to customer segment, contract length, etc.) ▸ Benchmarking (Transport sector, CBD, Shopping malls, etc.)	▸ Positioning (Areas/allocation, Special offers) ▸ Channels (e.g. posters, magazine, moving displays, audio) ▸ Integration with other airport businesses	▸ Adverts on routes to the airport ▸ Other channels at the airport e.g. airline branding (payment for branding above basic signage)	▸ Management ▸ Sales channels ▸ Match of offer to available advertising / promotional areas
Parking	▸ Define segments ▸ Investigate value creation	▸ Fixed costs ▸ Variable costs ▸ Positioning of short, long term and leisure ▸ Compare to central city parking, competing airports	▸ Attractiveness ▸ Situation (Walking distance to the Terminal) ▸ Special offers e.g. security parking, Valet Service, servicing and cleaning car	▸ Other parking options (nearby parking lots, hotels) ▸ Other transport methods (Price comparison of taxi, limousine, bus)	▸ Special offers ▸ Direct sales in advance ▸ Signposting ▸ Combination tickets

Airport Planning workshop

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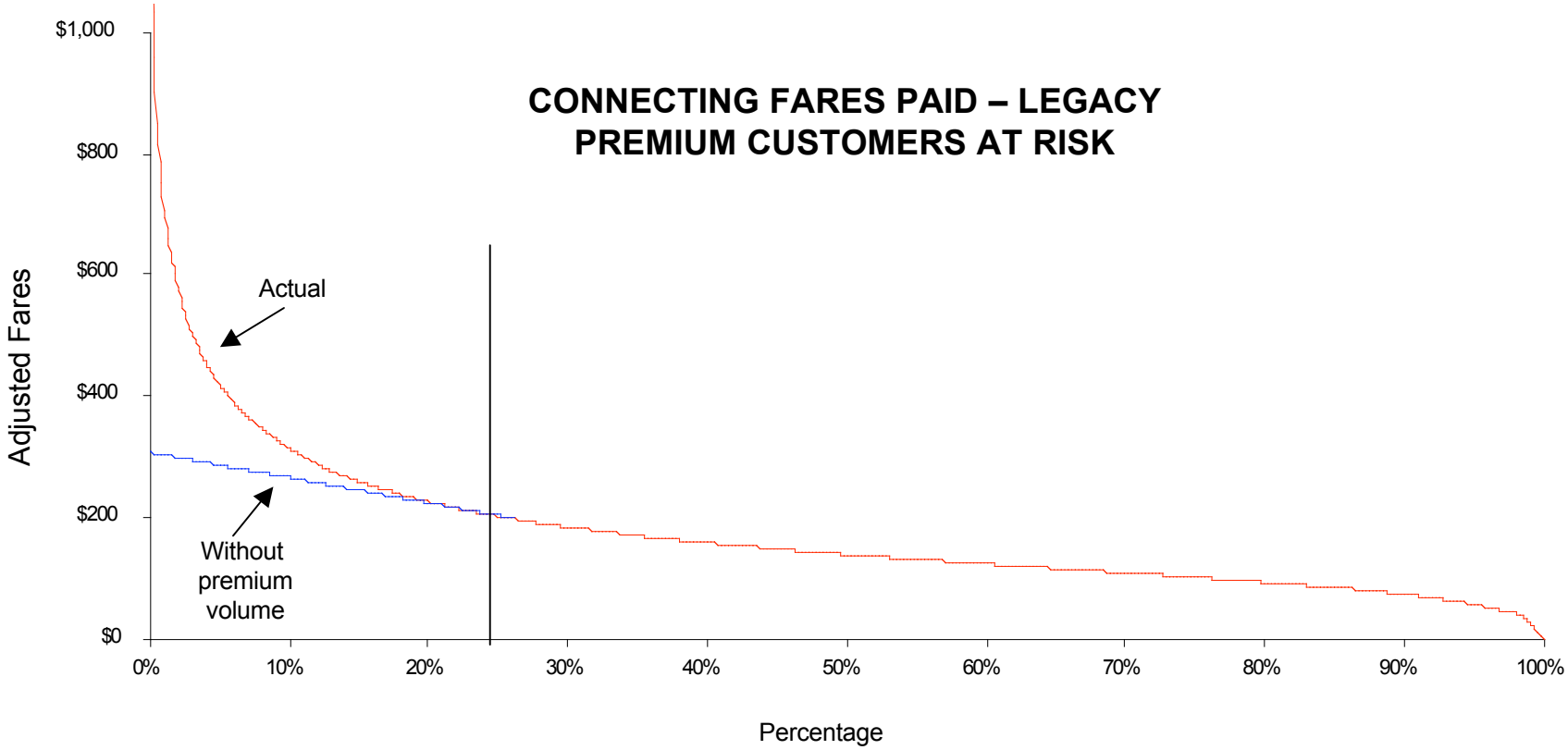
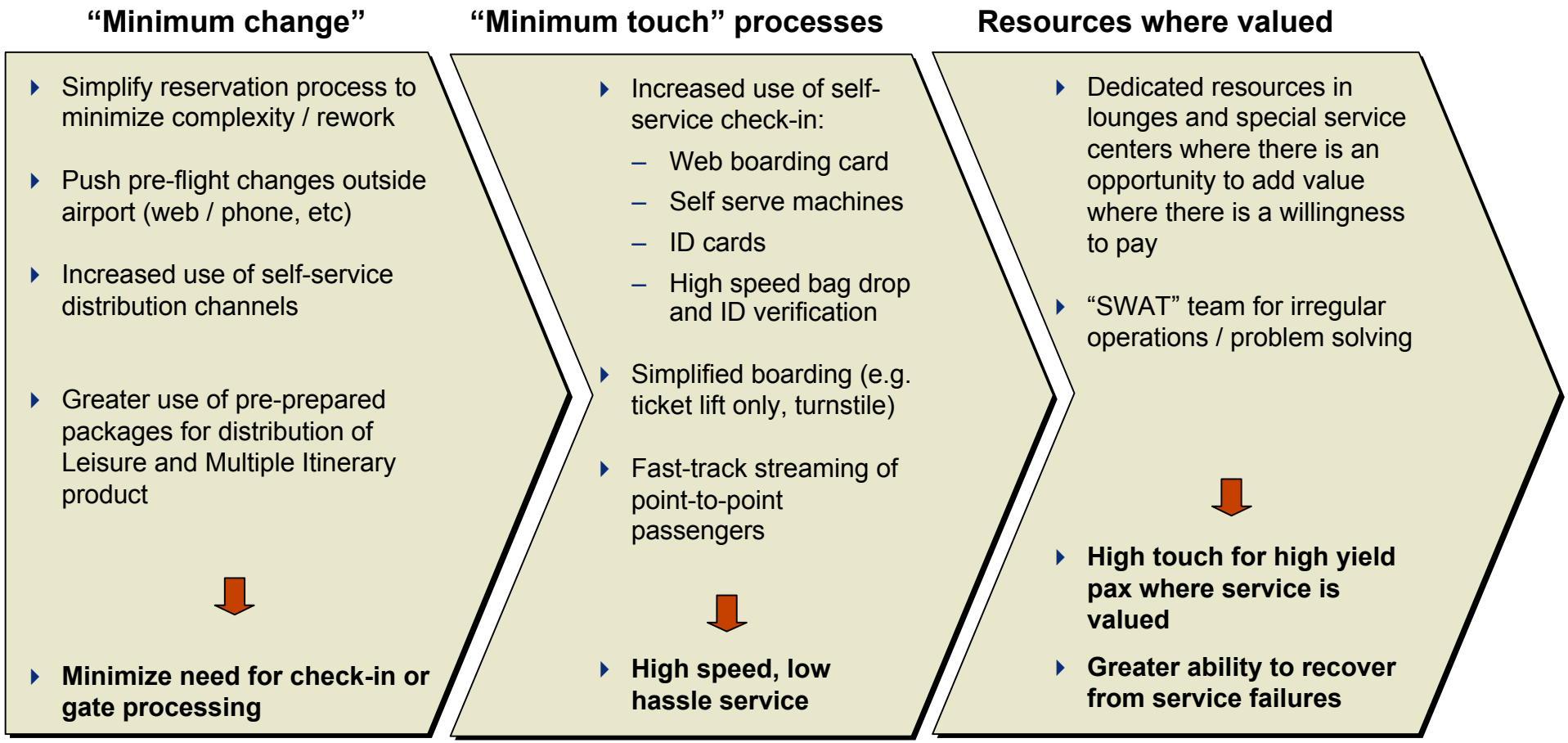
Premium carriers depend on the top 20% of their passengers for the profitability of their business model



Legacy carriers can also benefit from streamlined processes and reduced passenger interaction to reduce cost while improving service for high-yield passengers



Airline lounges and other ancillary semi-operational costs can be a rich source of income if managed effectively

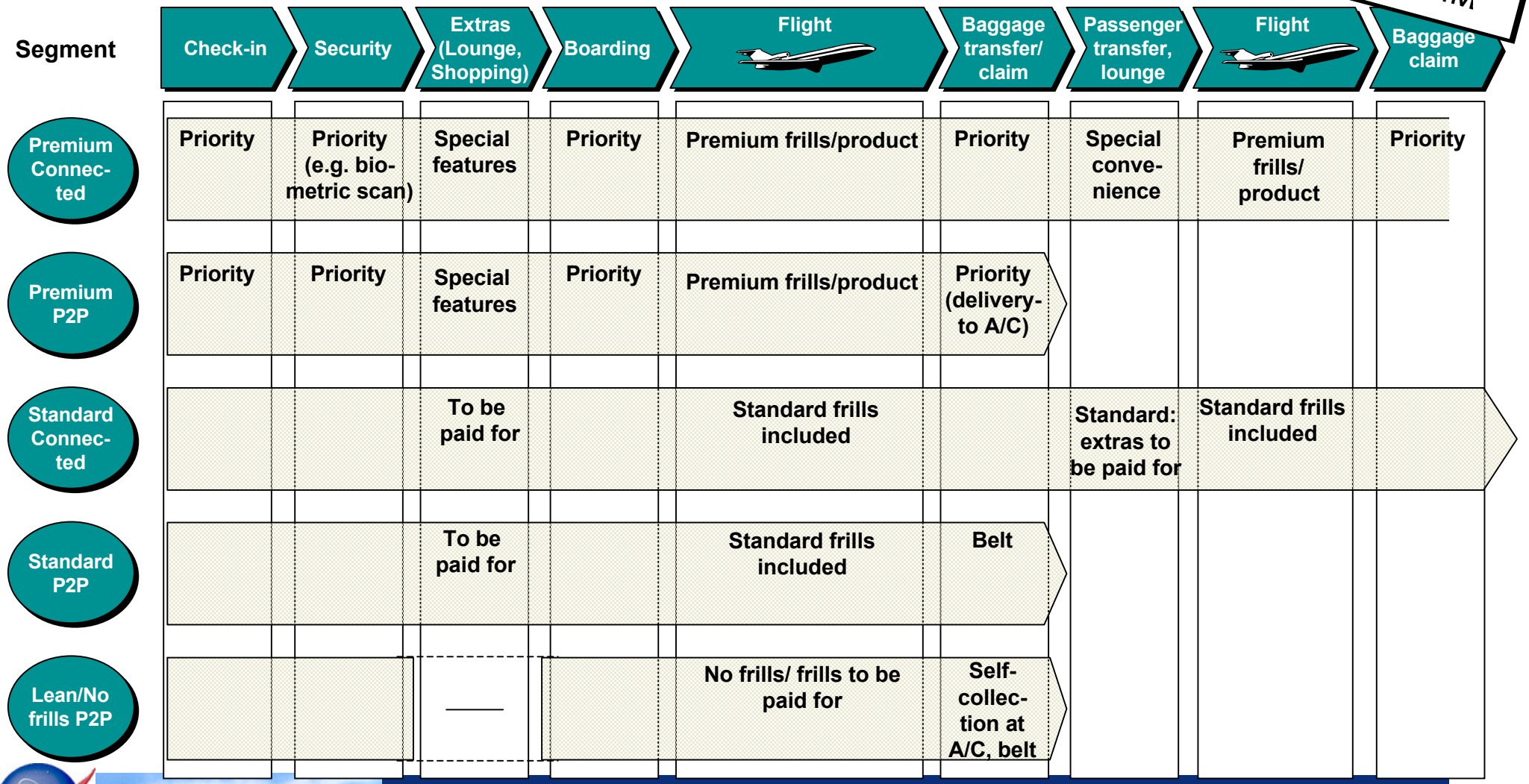
Examples

Additional income opportunities

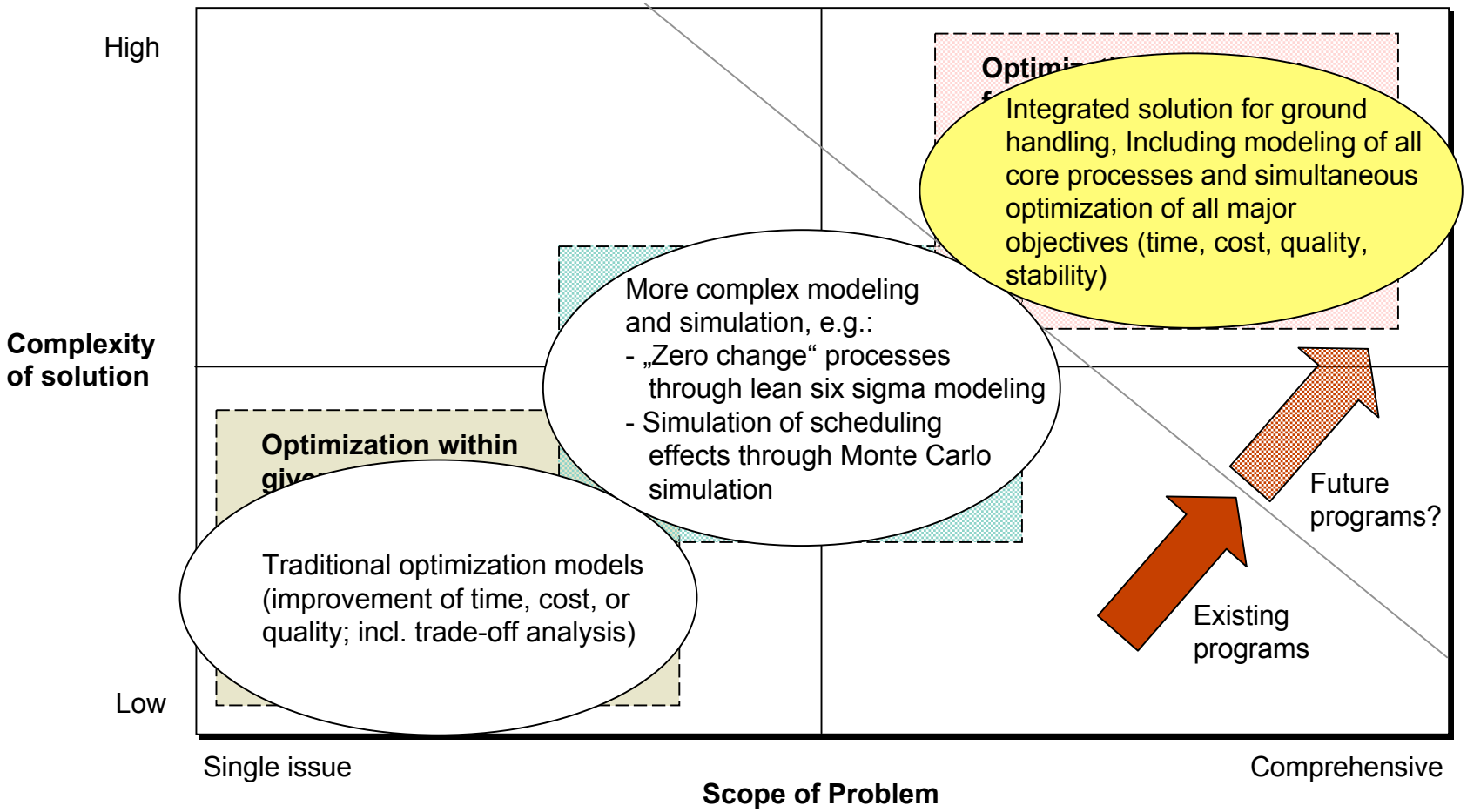
Lounges	Communications	Sales levies	Access fees	Utility supply
▸ Individual airline lounges, including for foreign airlines ▸ Alliance lounges for groups of airlines ▸ Non-airline VIP lounges	▸ Commercial agreements with mobile phone operators ▸ On-airport operational communications e.g. TETRA system ▸ WLAN access point charges	▸ Airline ticket sales levy (including for self-service machines) ▸ Aircraft fuel surcharges	▸ Cable wayleave and communications rights charges ▸ Service company fees ▸ Taxi and shuttle bus levies	▸ Electricity, gas, water, heating, telephone connections etc – provision to tenanted areas

Smart customization of process flows in accordance with extended client segmentation

ILLUSTRATIVE



For comprehensive solutions, sophisticated modeling of levers and effects is indispensable

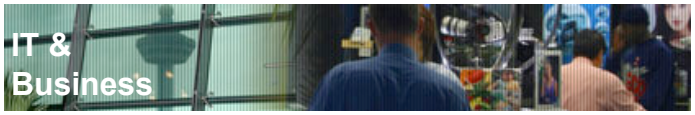


When positioning an airport for non-aviation, there are many possibilities. Example: Changi Airport (Singapore) offers one of the widest service offerings in any airport

Example

Changi's Commercial Offering

- Different Gardens (Bamboo, Orchid,…),
- Ponds
- …



- Business Centres,
- LAN, Airport wide Wireless LAN,
- Free Internet corners, …

- Napping Areas,
- Spas, Fitness & Lifestyle
- Massage, Transit Hotel, Music Bar Lounges,…

- Movie Theatre,
- Mobile Entertainment Corners,
- Televisions, …

- Largest shopping mall in Singapore in terms of sales

Others: Events & Promotions, Award Program for Friends of Changi, General Facilities and Services

Changi's Success

- Today **60 %** of revenues from **commercial activities**[1]
  - Compared to 32% at MUC and 28.7% at Fraport[2] in 2002
- Recognized as **World's Best Airport** – awarded 12 times in 2005, e.g.
  - Condé Nast Traveller: 'World's Best Airport' (5th year)
  - Travel Savvy: 'Best Airport in the World' award (2nd year)

(1) Commercial activities (Source: webpage Changi Airport)
(2) Source: trl – Airport Performance Indicators 2004
(3) Source: trl – Review of Airport Charges 2004

Yet it has recently opened a Budget Terminal for LCC's with amongst the lowest aviation fees and charges of any Asian airport

Example

- Charges lower landing fees, handling fees, and airport tax as compared to the main terminal
- Does not provide the frills that the main terminals provide:
  - a shuttle bus instead of a people-mover system connects the Budget Terminal to the main terminals
  - no aerobridges are provided to connect the plane and terminal building i.e. passengers have to walk a short but unsheltered distance from the terminal building to the plane
- However, 13 duty-free shops and 4 Food & Beverage outlets etc. are provided
- Like Terminal 1 and 2, the Budget Terminal will provide free local calls and internet access