

The Economic Crisis and the Position of European Hubs in the STAR Alliance Network

Michael Stumpf

Airneth Workshop

The Hague, 22.09.2009



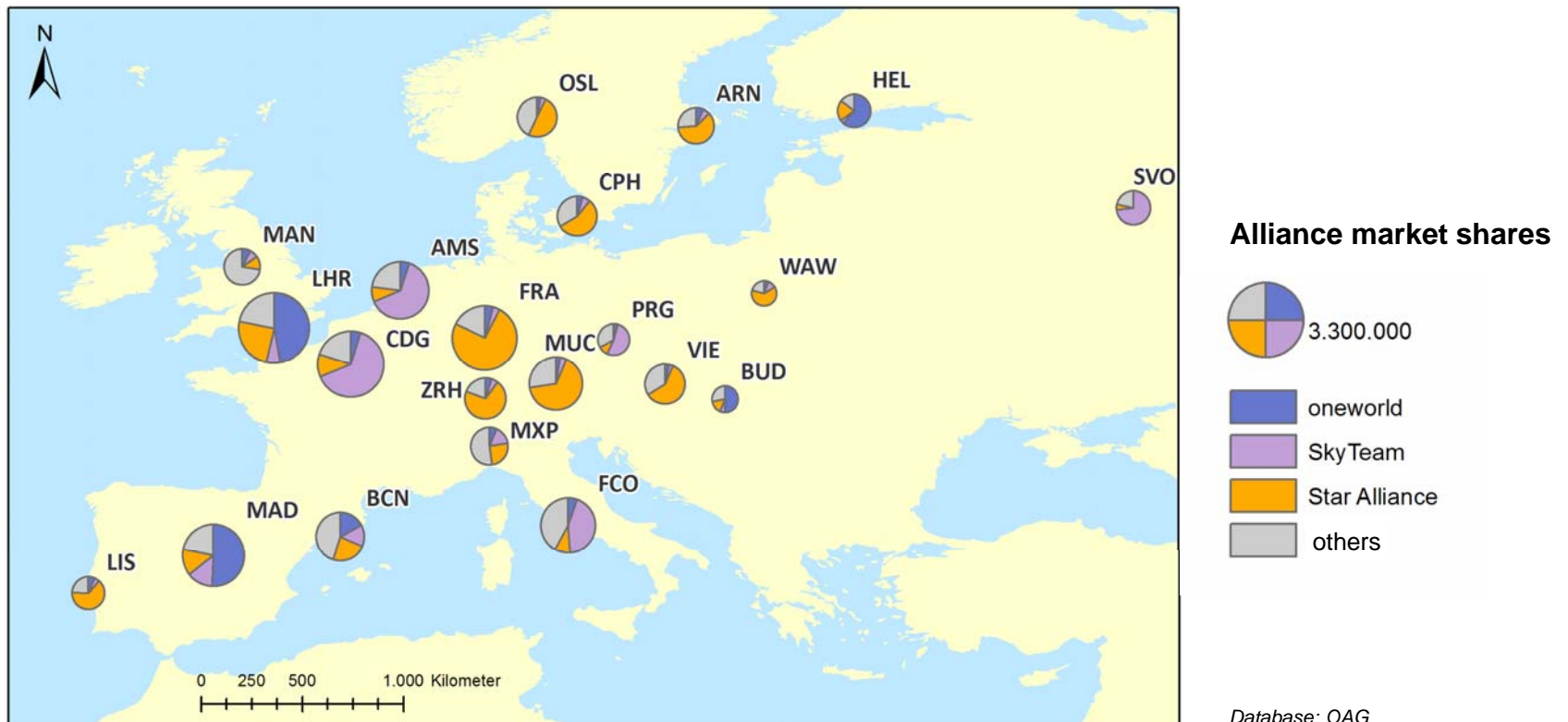
*European Center for
Aviation Development – ECAD GmbH*

Content

- 1. Current traffic situation at European hubs**
- 2. Network quality development at European airports**
- 3. Strategy behind: Lufthansa's multi hub system**
- 4. What happened in the current crisis?**
- 5. Conclusion**

Alliances' Market Shares at European Hubs

Scheduled Seats in September 2009



Star Alliance offers the largest hub system in Europe!
Does that mean that Star Alliance provides the best network quality in Europe?

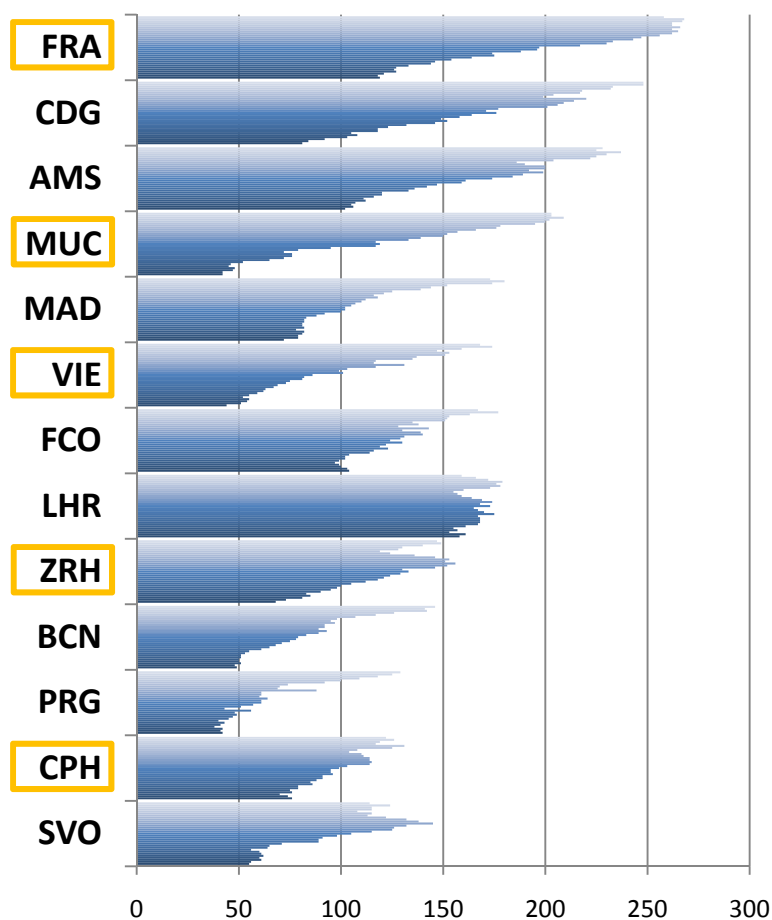
How to Measure Network Quality at Airports?

Two sources of traffic: O&D and transfer

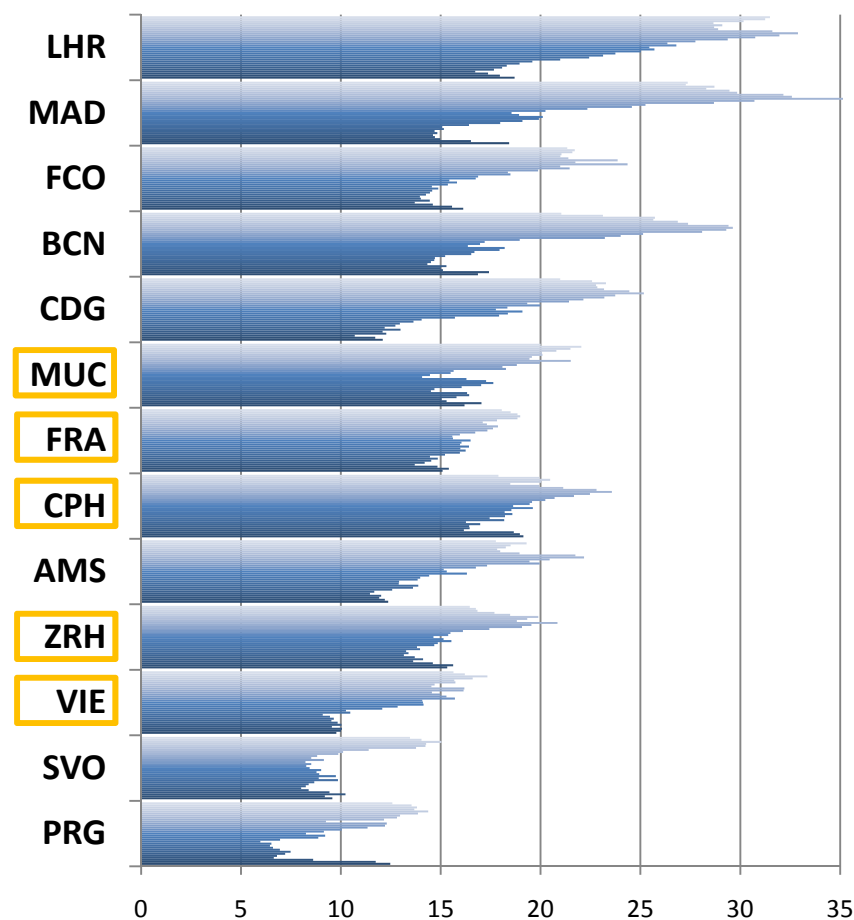
- Indicator for **O&D traffic**:
 - Number of destinations
 - Average weekly frequency per route
- Indicator for **transfer traffic**:
 - Number of transfer connections
 - Centrality (The airport's position and importance in the network)

Network Quality Offered at European Airports (O&D)

Number of destinations



Average weekly frequency per route

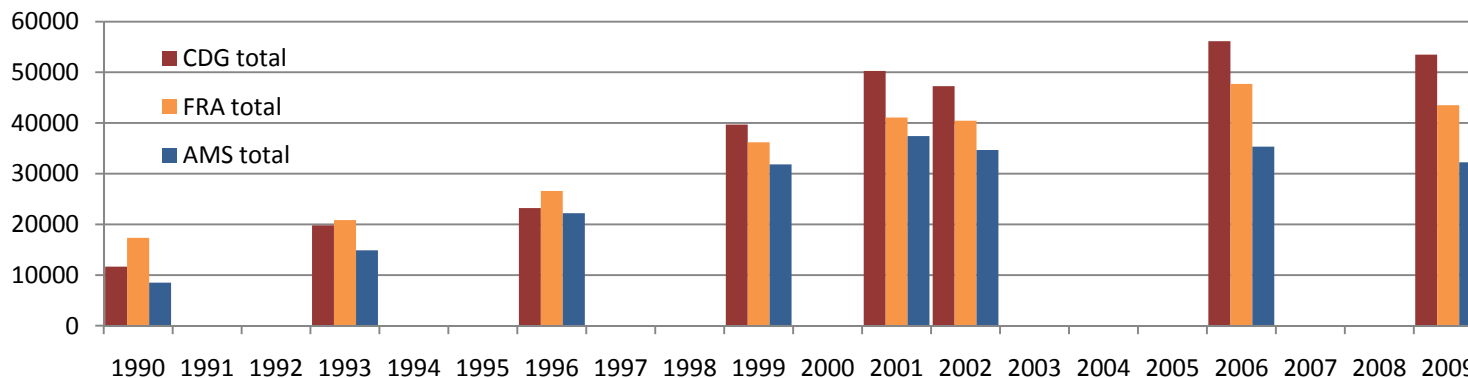


Database: OAG

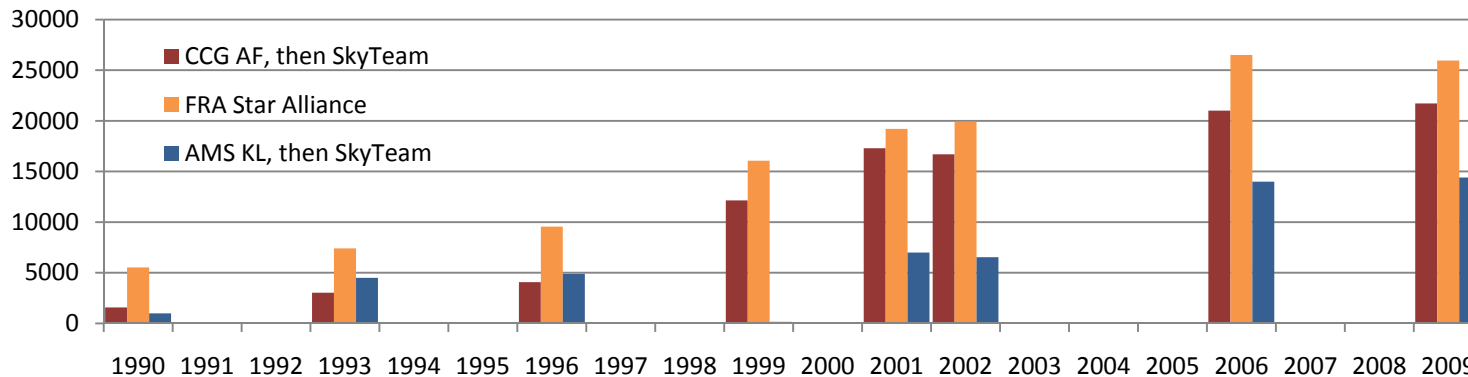
Network Quality Offered at European Airports (Transfer)

Star Alliance offers more connection options at FRA than SkyTeam at CDG or AMS

All guided connections per day



Guided connections per day within the alliance



Data source: OAG. Calculation: ECAD; 1st Monday in July; Waiting time window: 3h; MCTs: FRA 45 min, CDG 45 min., AMS 40 min. (according to VIE annual report 2005); distance coefficient 1.4.

Centrality in the European Network

Airport Ranking by Centrality			2006	2003	2000	1997	1994
DME	Moscow (Domodedovo)	Russia	1	5	29	45	2
CPH	Copenhagen	Danmark	2	1	2	1	5
OSL	Oslo (Gardermoen)	Norway	3	2	1	4*	6*
SVO	Moscow (Sheremetyevo)	Russia	4	8	3	7	8
STN	London (Stansted)	UK	5	6	5	58	40
ARN	Stockholm (Arlanda)	Sweden	6	7	8	3	7
LED	St. Petersburg (Pulkovo)	Russia	7	10	12	10	1
ORY	Paris (Orly)	France	8	3	6	6	4
FRA	Frankfurt	Germany	9	4	4	2	9
IST	Istanbul	Turkey	10	14	7	9	22
MUC	Munich	Germany	11	13	11	14	17
AMS	Amsterdam	Netherlands	13	11	10	5	11
CDG	Paris (Ch. de Gaulle)	France	20	15	13	12	13
LHR	London (Heathrow)	UK	38	27	23	8	10

Centrality

is the number of shortest paths (connections with the lowest number of stops) that run over an airport.

Calculations are based on network topology analyses with dichotomised data.

Database: OAG



- Frankfurt is today the only international hub in the top 10
- Since 1994 Munich and Frankfurt persistently hold their strong importance in the European air traffic network
- Multi airport systems: European traffic shifts from Heathrow to Stansted
- Russia dominates the top 10 (Moscow links plenty of scarcely connected airports)

Content

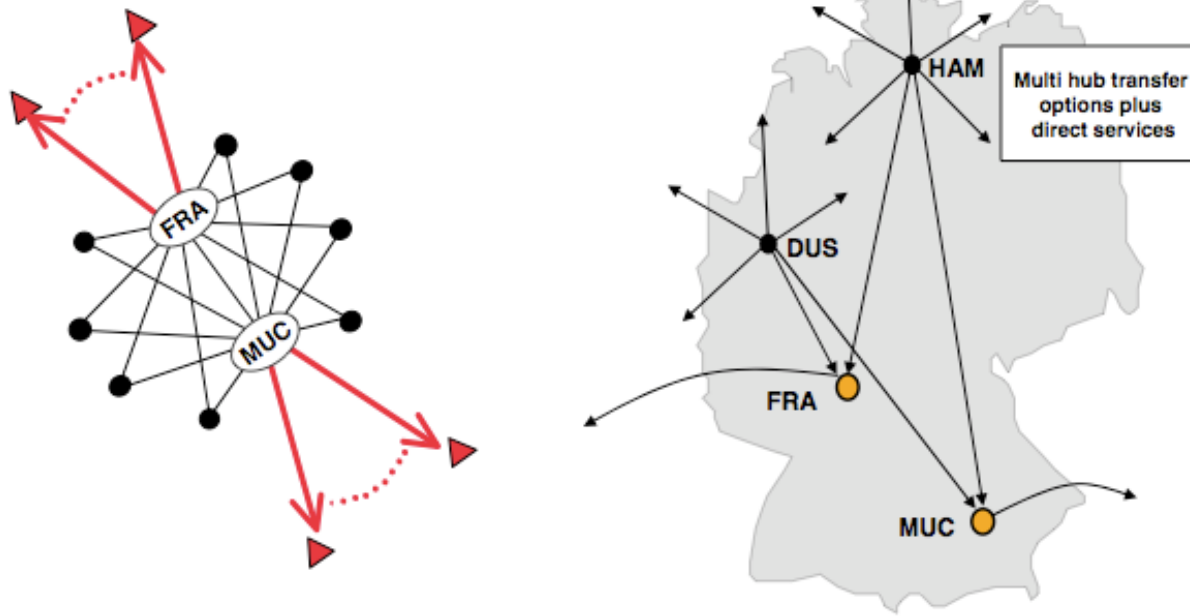
1. Current traffic situation at European hubs
2. Network quality development at European airports
3. Strategy behind: Lufthansa's multi hub system
4. What happened in the current crisis?
5. Conclusion

Lufthansa's Strategy as Star Alliance Key Player

Development of a multi hub system

In theory a pure hub and spokes network is most efficient. Why have multiple hubs?
Because different market structures drive different strategies!

Lufthansa's development of a multi hub system

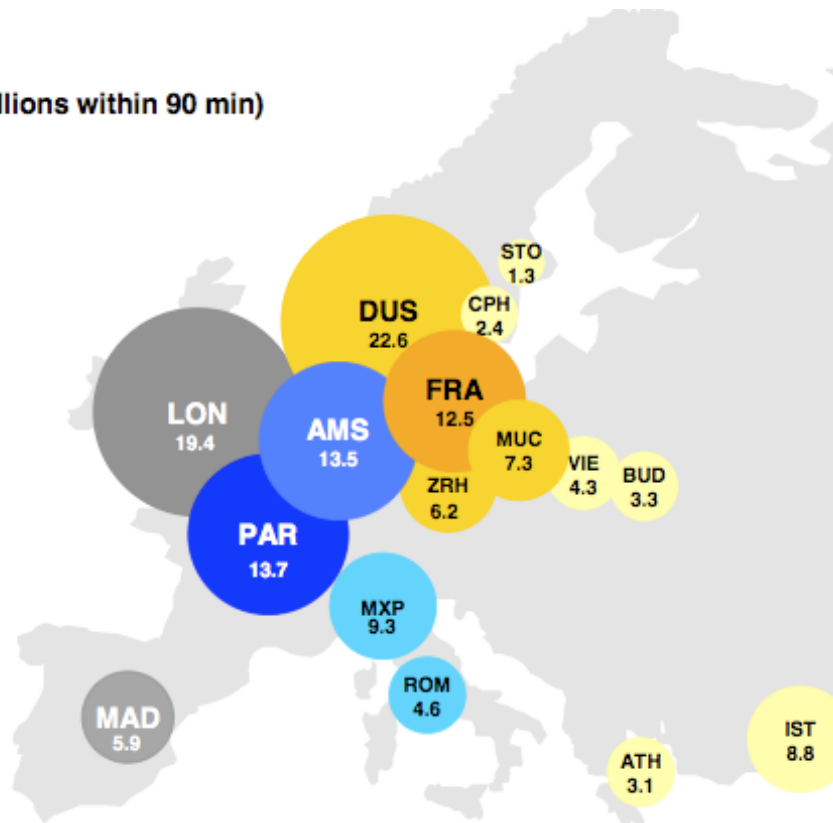


Source: Lufthansa, Garnadt, Investorentag, June 2008

Why Does LH have a Multi Hub System? (I)

Catchments in Europe

Catchments*
(population in millions within 90 min)



* exemplary
Source: LH Catchment Data

BA: Mega-catchment LON

- Limited European feed

AF/KL: Mega-catchment PAR

- Hubs PAR and AMS
- Moderate feed in PAR
- Extensive feed in AMS

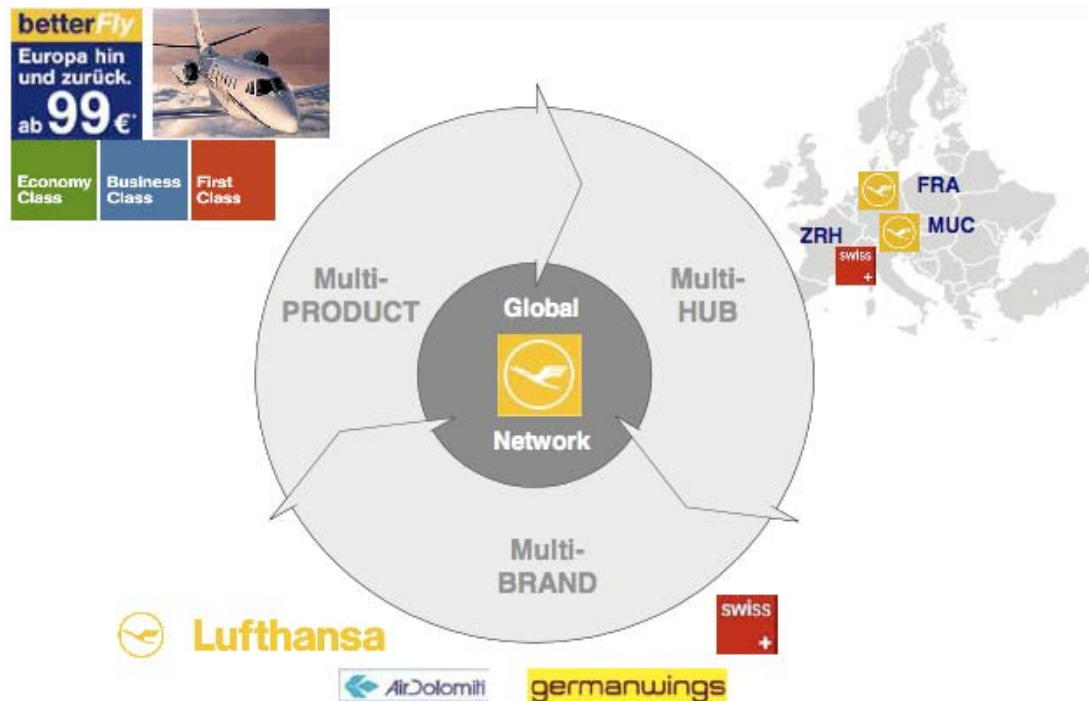
LH: No mega-catchment
→ **Multi hub strategy**

- European feed is essential

Source: Lufthansa, Garnadt, Investorentag, June 2008

Why Does LH have a Multi Hub System? (II)

Fragmented market and demand patterns in Central Europe require a broad strategic approach



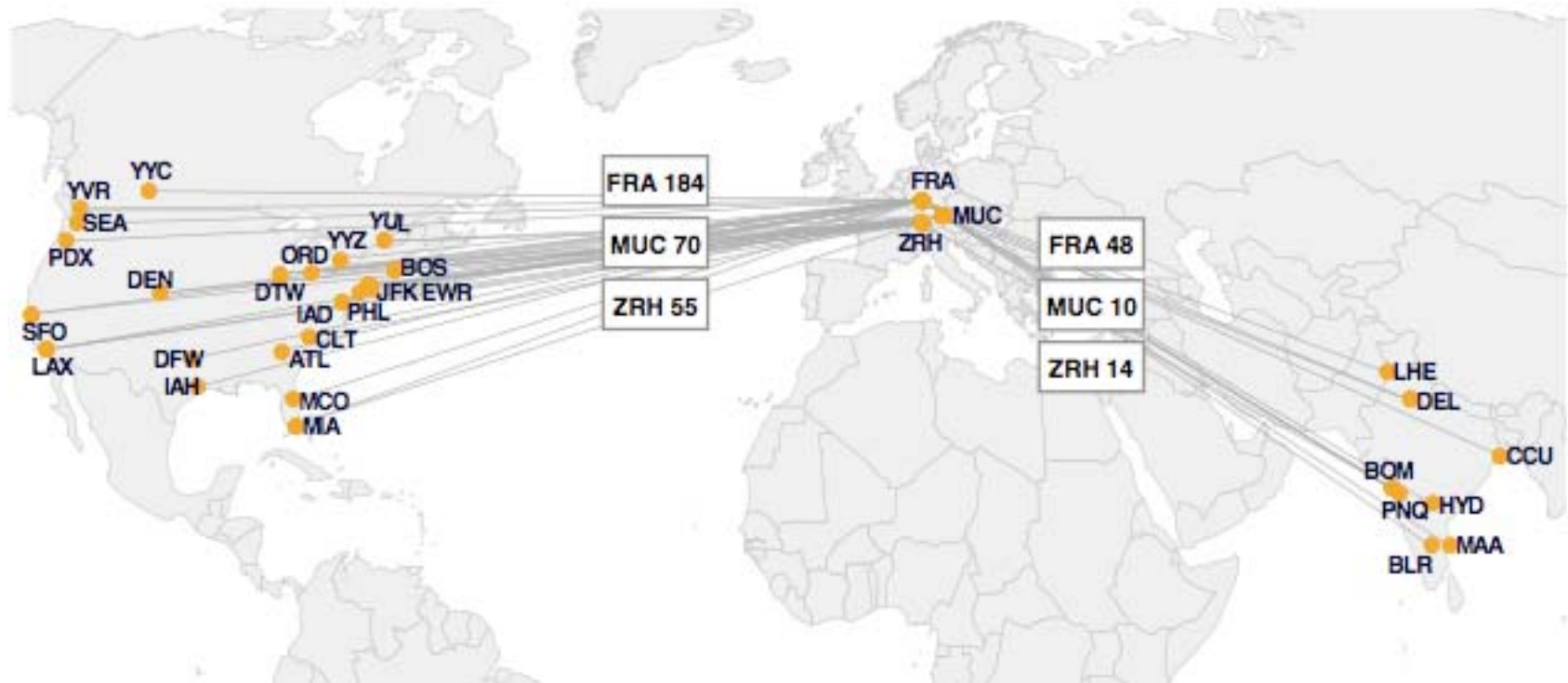
**➔ Lufthansa's strategy is the "360° offer":
Multi-HUB, Multi-BRAND, Multi-PRODUCT**

Source: Lufthansa, Garnadt, Investorentag, June 2008

How is Lufthansa’s Multi Hub System Organised? (I)

Matching important traffic flows: Maintain high connectivity

Example: Number of frequencies per week
from a Lufthansa hub to North America and India/Pakistan

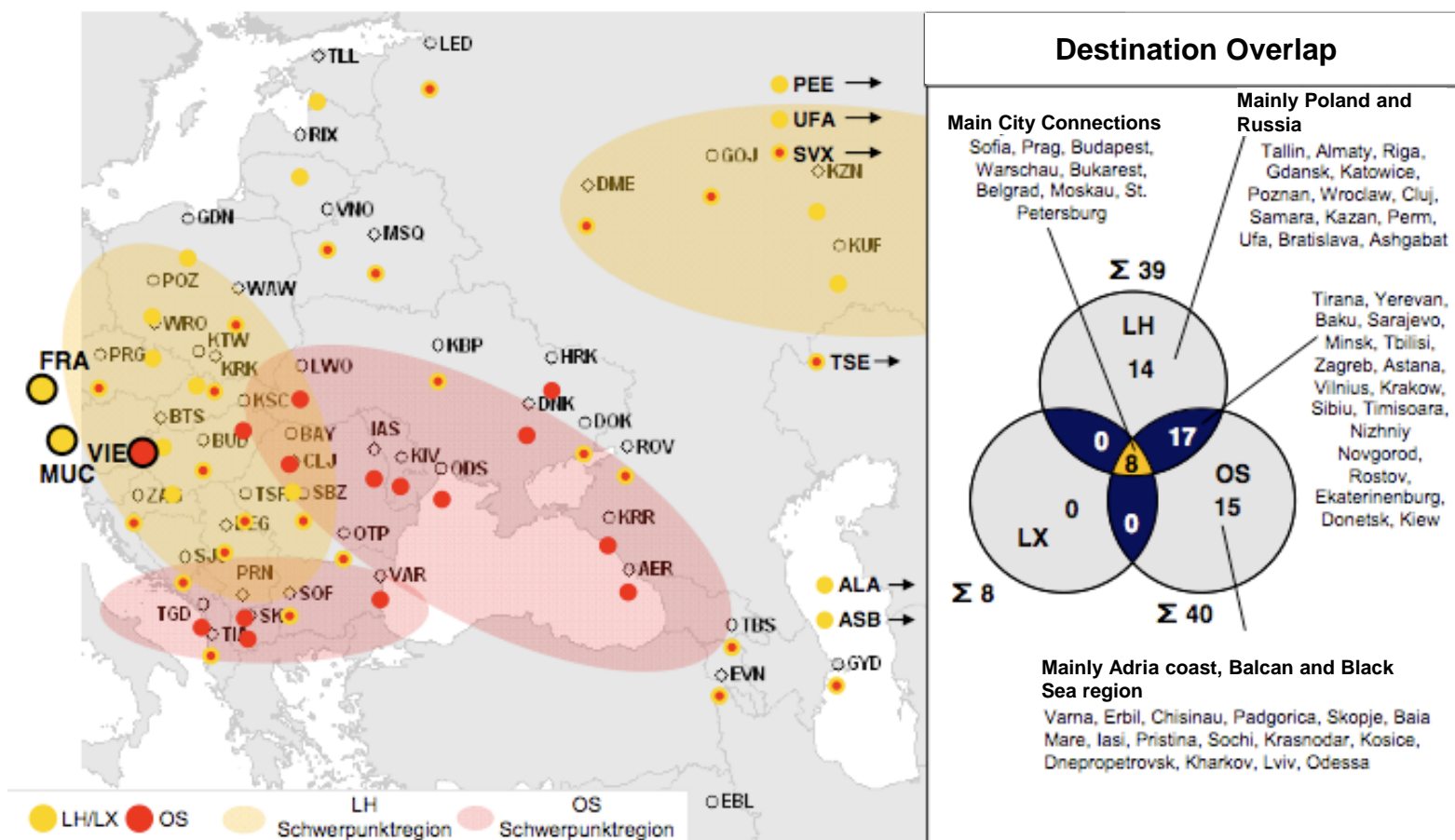


Database: OAG, week 38 2008; Source: Lufthansa, Garnadt, Investorentag, June 2008

How is Lufthansa's Multi Hub System Organised? (II)

Regional complements

Example: Traffic from FRA, MUC and VIE to Eastern Europe is complementary

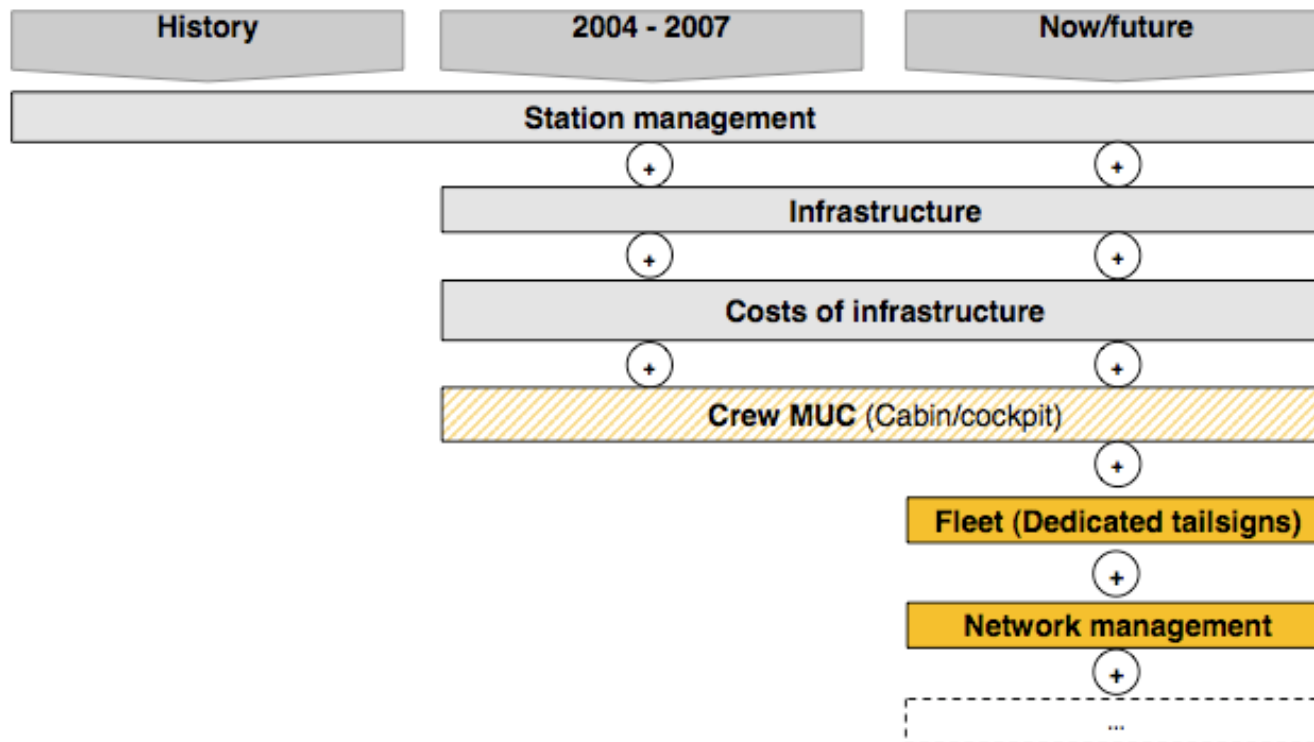


Source: Lufthansa, Background AUA-Project, April 2008

How is Lufthansa’s Multi Hub System Organised? (III)

Decentralisation: Closer to the customer and the competition

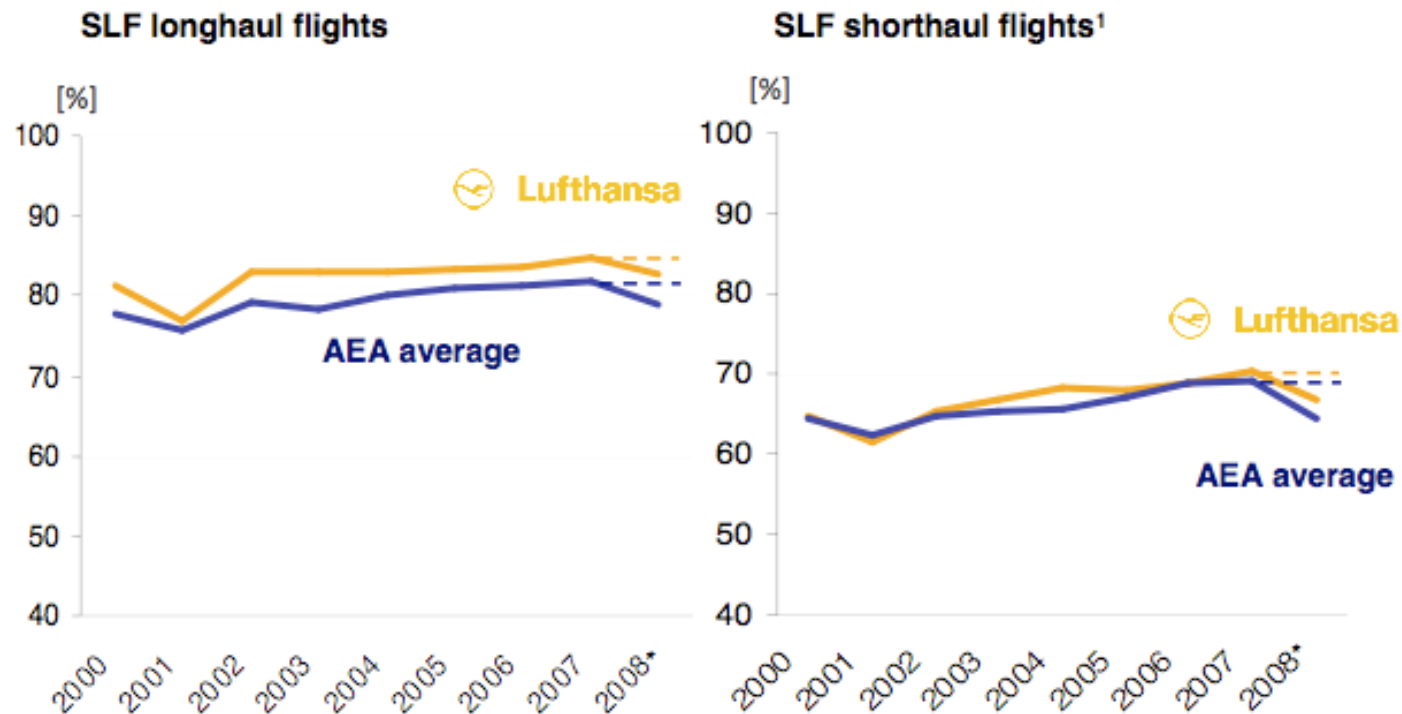
- From “Hub Management” to “Divisions” with increased responsibility
- Core operational, service and management functions have be assigned to decentralised units



Source: Lufthansa, Gamadt, Investorentag, June 2008

Success of Lufthansa's Multi Hub Strategy (I)

High capacity utilisation in lauhaul markets as well as European traffic



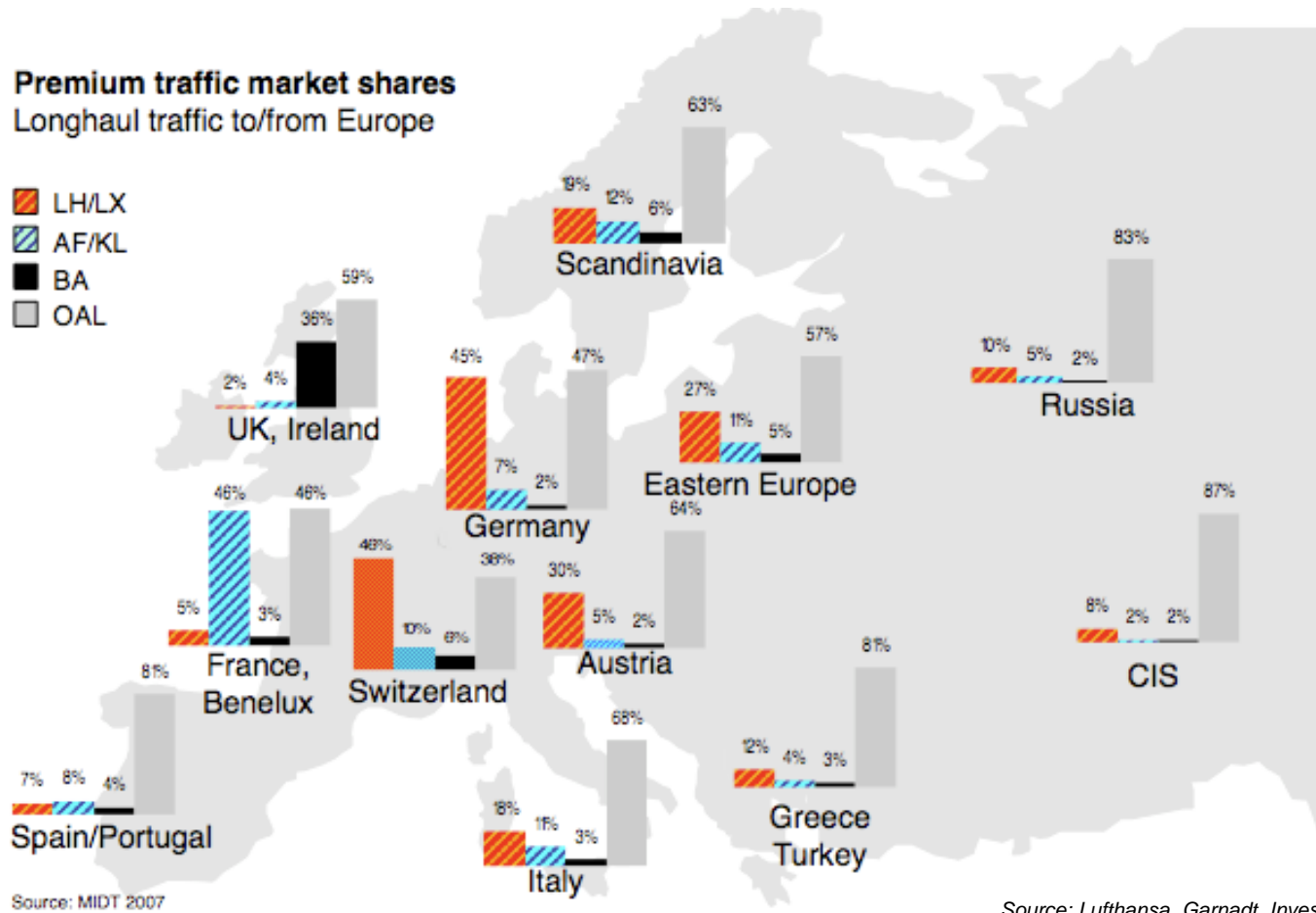
1) domestic and cross border Europe
 * 2008: Jan-April only. SLF cum. 2008 expected to remain stable.
 Source: AEA (Association of European Airlines)

Success of Lufthansa’s Multi Hub Strategy (II)

In premium air traffic Lufthansa holds the leading position in most European markets

Premium traffic market shares
Longhaul traffic to/from Europe

-  LH/LX
-  AF/KL
-  BA
-  OAL



Source: MIDT 2007

Source: Lufthansa, Garnadt, Investorentag, June 2008

Content

1. Current traffic situation at European hubs
2. Network quality development at European airports
3. Strategy behind: Lufthansa's multi hub system
4. What happened in the current crisis?
5. Conclusion

Current Economic Crisis

Consequences of the crisis – estimation for 2009

- Economic outlook is still uncertain
- Global economy would contract by 2.9 per cent (Worldbank)
- World merchandise exports contract by 10 per cent (WTO) – consisting of a 14 per cent decline for developed economies, and a 7 per cent decline for developing countries
- Deepest declines in 60 years

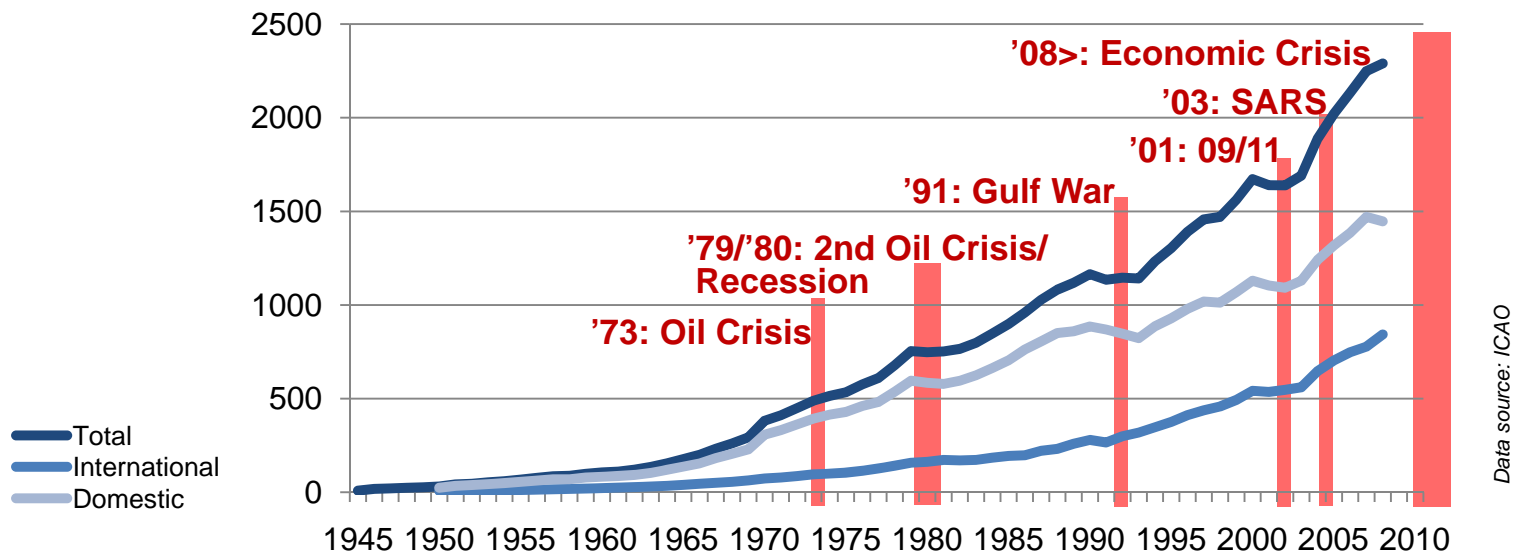
Current Economic Crisis and Implications for Aviation

2008/9: „The outlook is bleak. The chronic industry crisis will continue into 2009 with USD2.5 billion in losses. We face the worst revenue environment in 50 years.“

Giovanni Bisignani, IATA Director General & CEO, 09-Dec-2008

2001/2: "We have lost more in one year than we have made in our entire history,"

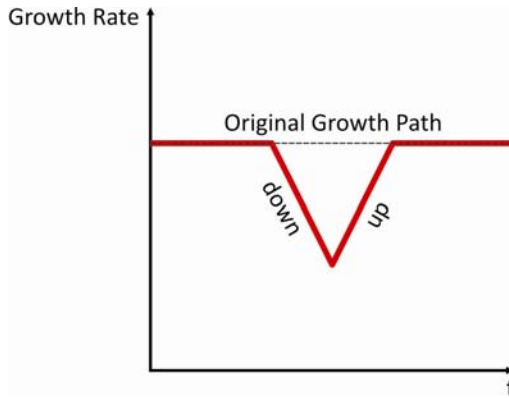
Pierre J. Jeannot, IATA Director General & CEO, 8-Apr-2002



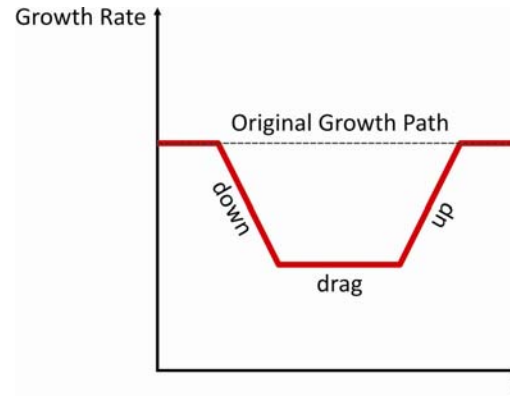
What effects did the current crisis have in detail? What are the prospects?

Focus on European Star Alliance hubs

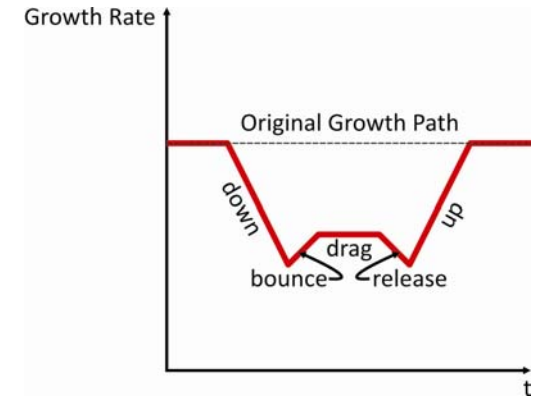
Recovery Shapes



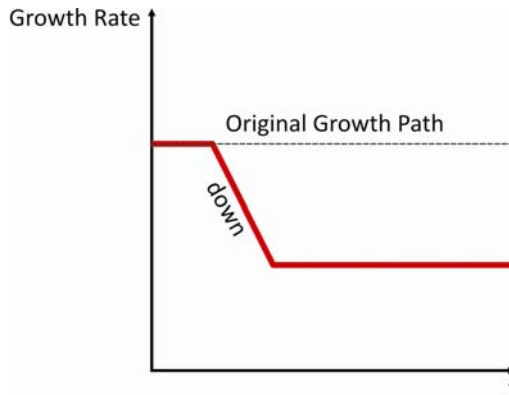
V-shaped Recovery



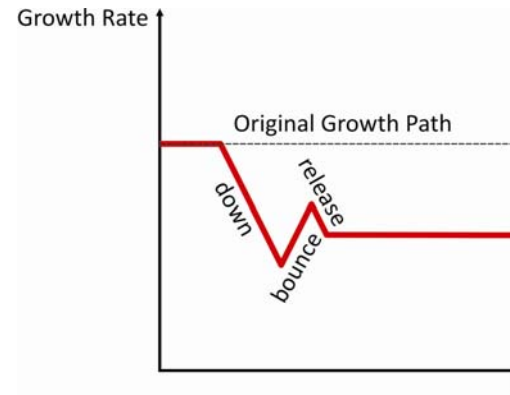
U-shaped Recovery



W-shaped Recovery



L-shaped Recovery

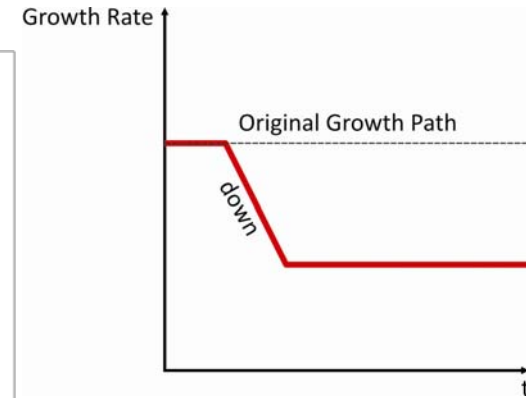
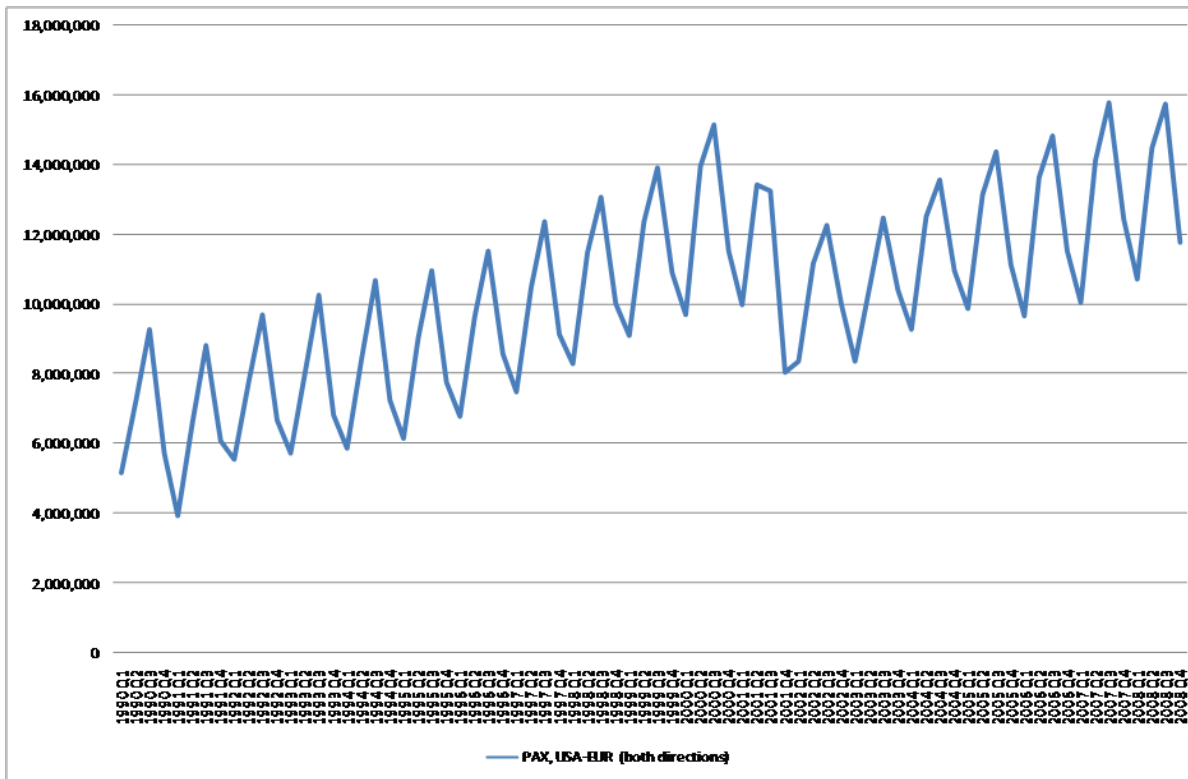


VL-shaped Recovery

World Economy:

Currently most experts regard a V-shaped recovery as the most likely scenario but some warn of U- or W-shaped scenarios.

Recovery Shapes in Aviation



L-shaped Recovery

Aviation:

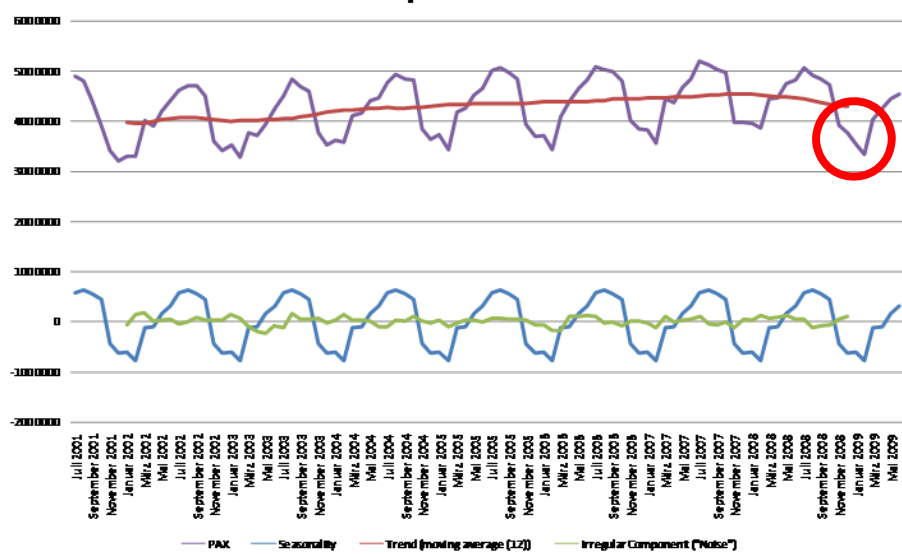
Depending on the actual O&D or region aggregated PAX data usually shows an L- or VL-shaped recovery after an external shock, e.g. on the transatlantic market after 9/11.



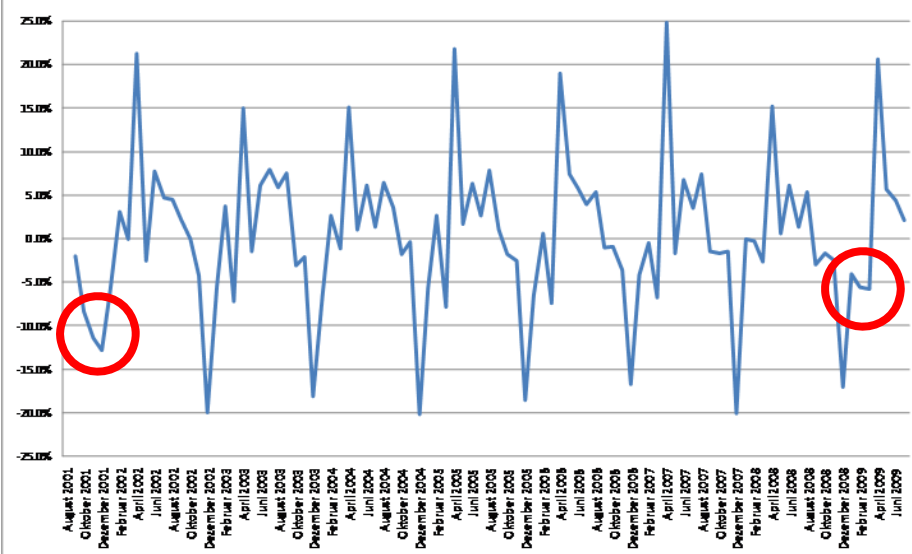
What impact did the current economic crisis have on individual airports?

Airport Data: Star Alliance Hub Frankfurt

Frankfurt: Decomposition of Time Series Data



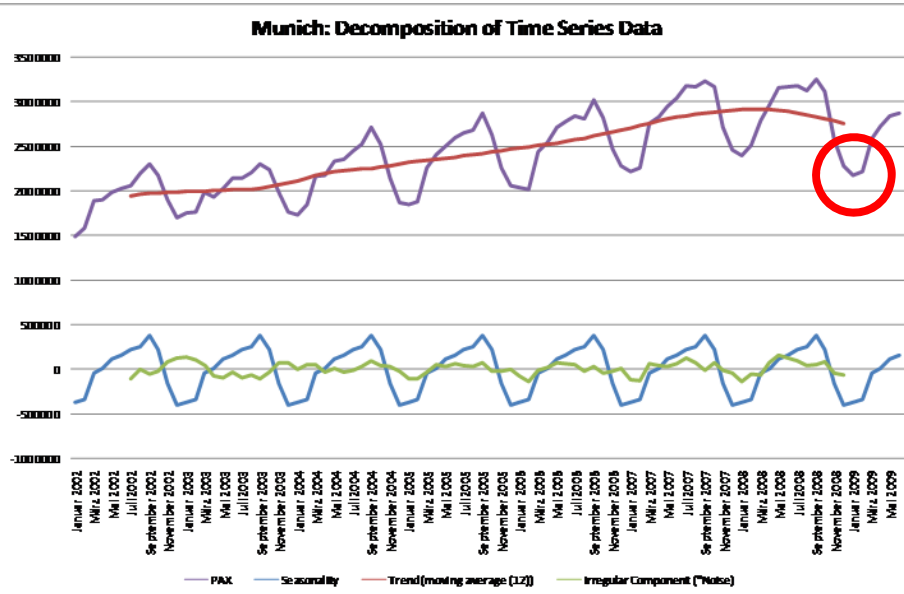
Frankfurt: Growth Rates



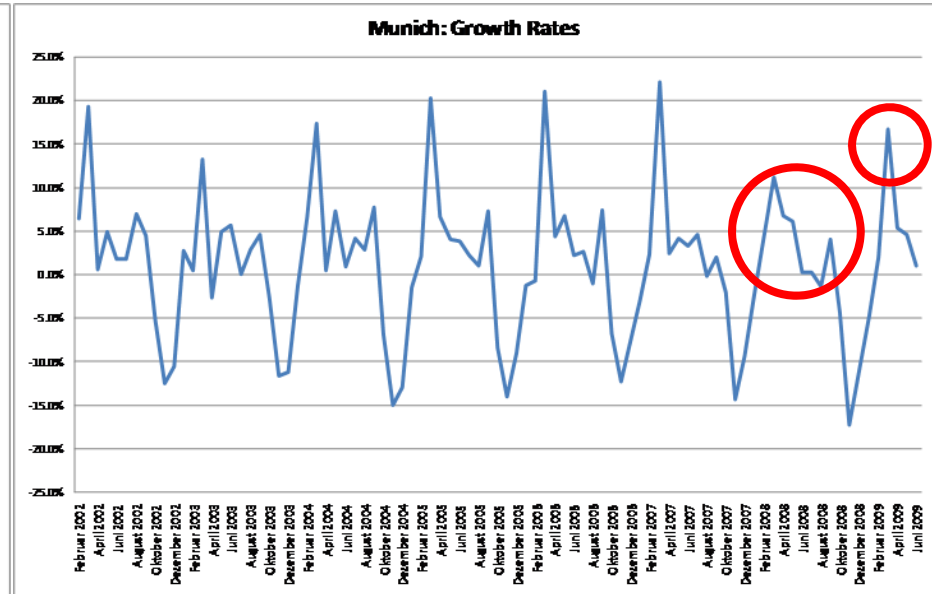
Frankfurt is likely to be “back on track” and might have reached its original growth pattern (V-shaped recovery?).

Airport Data: Star Alliance Hub Munich

Munich: Decomposition of Time Series Data



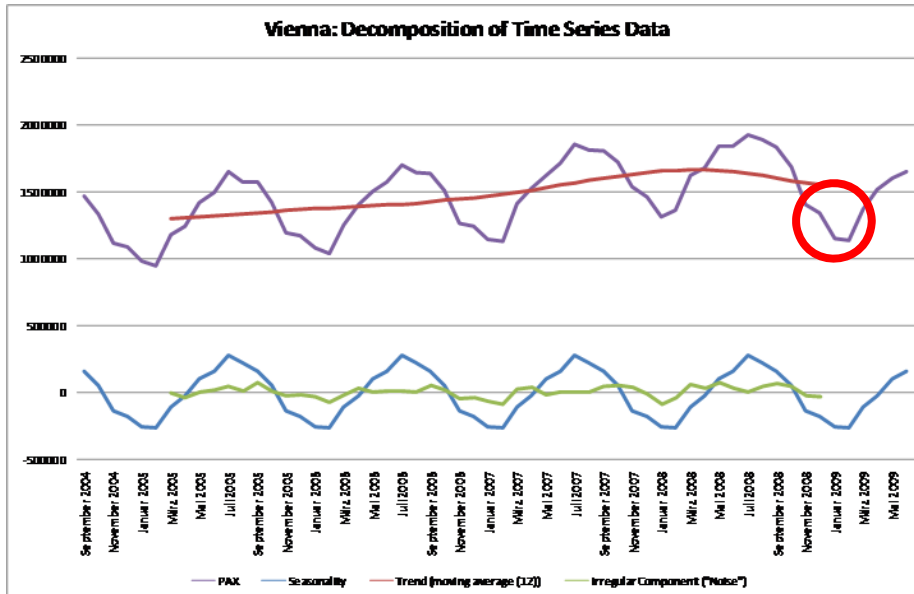
Munich: Growth Rates



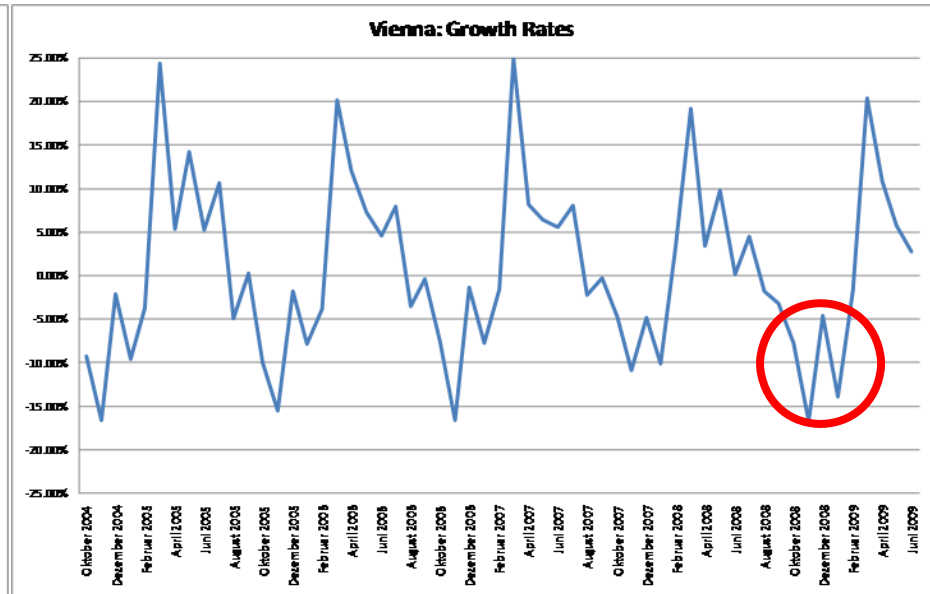
Munich experienced significant PAX growth during the previous years and is also likely to be “back on track” (V-shaped recovery?). However, 2008 shows a structural change in seasonality. Will this structural change be permanent?

Airport Data: Star Alliance Hub Vienna

Vienna: Decomposition of Time Series Data



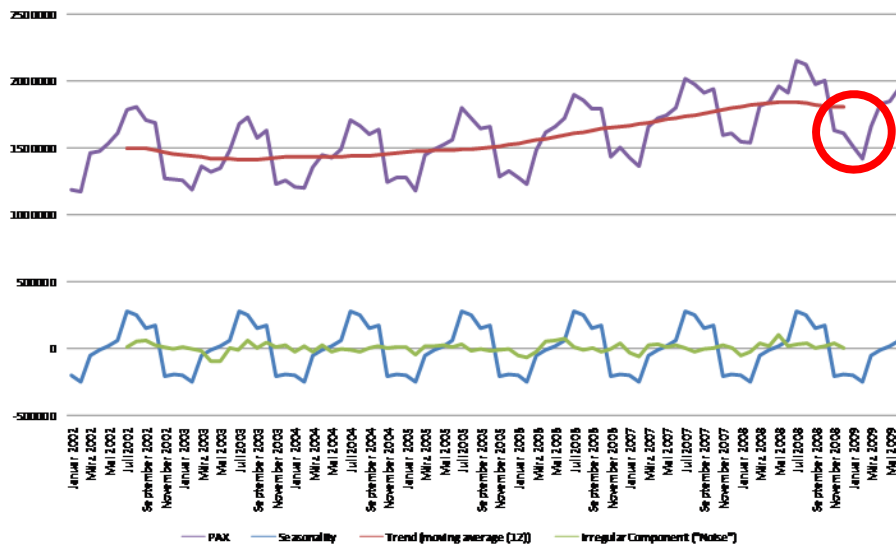
Vienna: Growth Rates



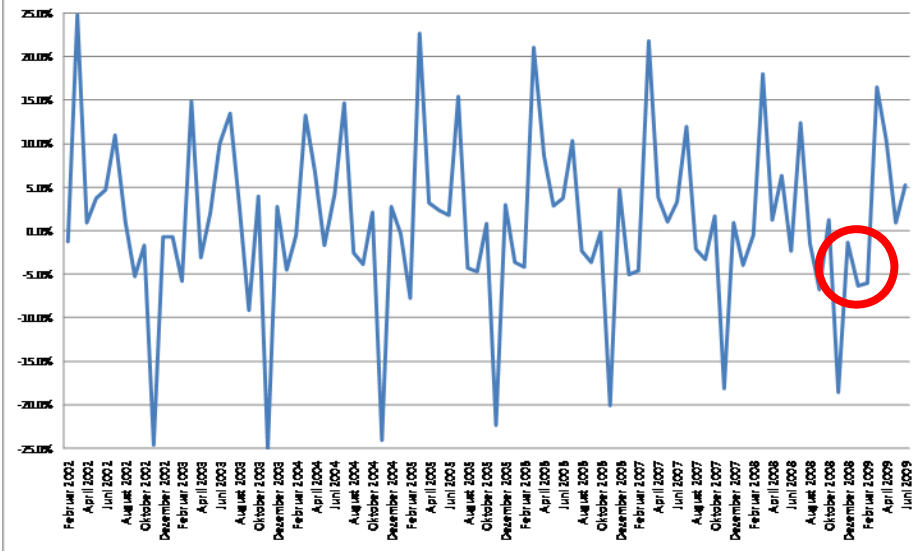
Vienna experienced a steep decline in PAX at the end of 2008 but growth rates rebounded to positive rates since then. Will route and PAX structure (seasonality) change following the Lufthansa/Austrian Airlines merger?

Airport Data: Star Alliance Hub Zurich

Zurich: Decomposition of Time Series Data



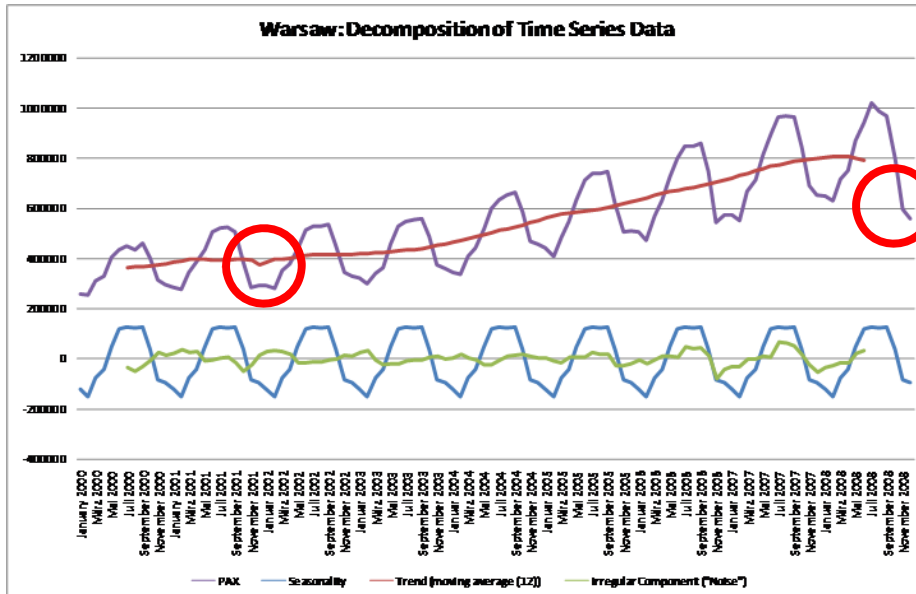
Zurich: Growth Rates



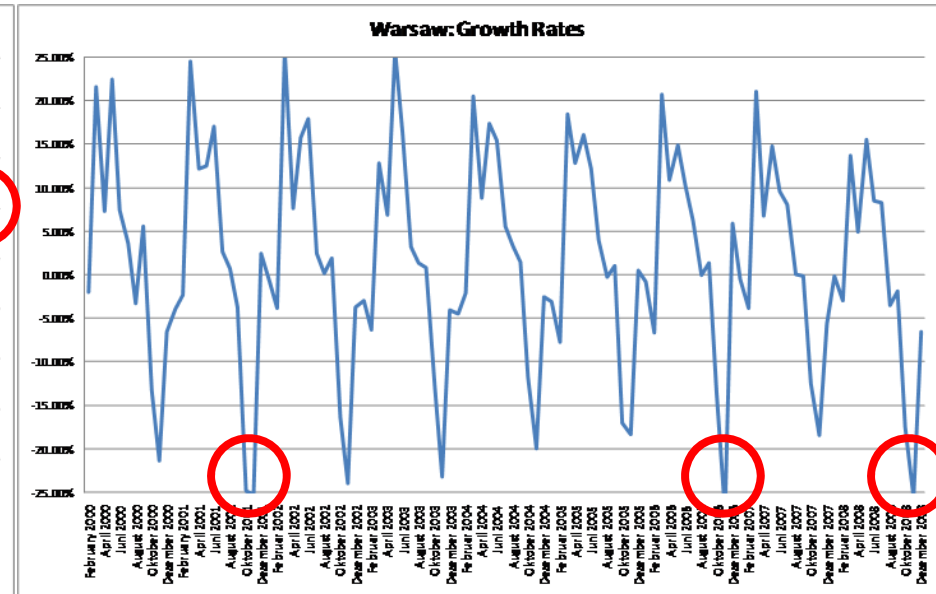
Zurich experienced considerable PAX growth during the last years and already returned its original growth pattern (V-shaped recovery).

Airport Data: Star Alliance Hub Warsaw

Warsaw: Decomposition of Time Series Data



Warsaw: Growth Rates

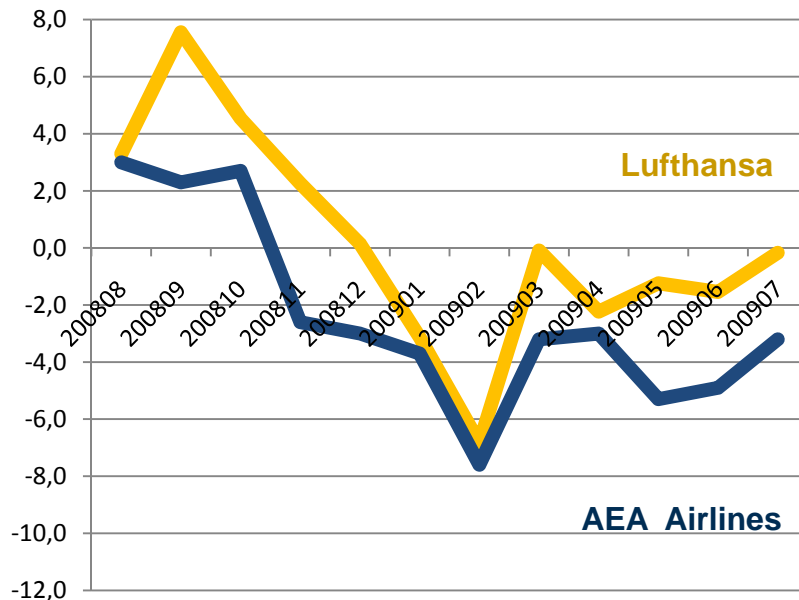


Warsaw is an example for a Star Alliance hub with rapidly increasing PAX numbers. 9/11 merely caused a tiny blip and no real change in Warsaw's growth pattern (clear V-shaped recovery). The influence of the current economic crisis seems to be more pronounced.

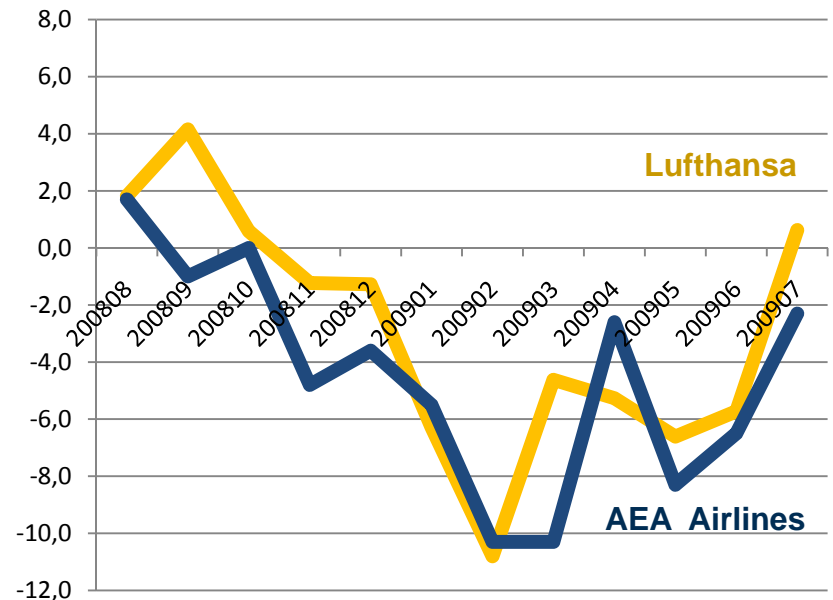
How Are the Star Alliance Airlines Coping?

Example: Effect of the crisis on Lufthansa

Change in ASK (in %)



Change in RPK (in %)



Database: AEA Traffic Data Airline Sample



- Lufthansa is doing comparably well in the crisis
- Star hubs benefit from their airlines' performance

Conclusion (I)

1. Current situation

Star Alliance airlines hold strong market shares at many European airports

2. Network quality

- O&D traffic:
 - Star hubs offer a wide range of destinations with more than two departures per day on average
 - FRA is clearly the leading European airport in terms of destinations offered
- Transfer traffic:
 - Star Alliance offers more connection options at FRA than SkyTeam at CDG or AMS
 - FRA is today the only international hub in the top 10 ranking by importance (=centrality) in the inner European traffic. MUC also persistently holds its position since 1994.

Conclusion (II)

3. The strategy behind

Lufthansa, the Star Alliance key player, uses a multi hub strategy and is successful with it!

- Reasons for the multi hub system:
 - LH's original hub FRA does not have a mega-catchment like PAR or LON
 - Fragmented market and demand patterns in Central Europe require a broad strategic approach: Multi-hub, multi-brand, multi-product
- How is the system organised? What are the airports' roles?
 - Important traffic flows are matched
 - Airports complement each other on the regional level
 - The system is decentralised, airports hold increasing responsibilities in order to be closer to the customer and the competition

4. Today's crisis

- Star Alliance airlines are coping comparably well
- As a consequence, traffic at their hubs seems to recover quickly and follow the world economy's V-shaped recovery pattern, not the L-shaped permanent downturn observed in aviation after 9/11

Thank you very much for your attention!

Michael Stumpf

Managing Director

06151/3605-430

michael.stumpf@ecad-aviation.de

Eva Cronrath

Consultant

06151/3605-424

eva.cronrath@ecad-aviation.de

Andreas Eichinger

Economist

06151/3605-475

andreas.eichinger@ecad-aviation.de

Lise-Meitner-Str.10, 64293 Darmstadt, Germany



*European Center for
Aviation Development – ECAD GmbH*

