



# Customer Perspectives in Aviation – A Process Oriented View –

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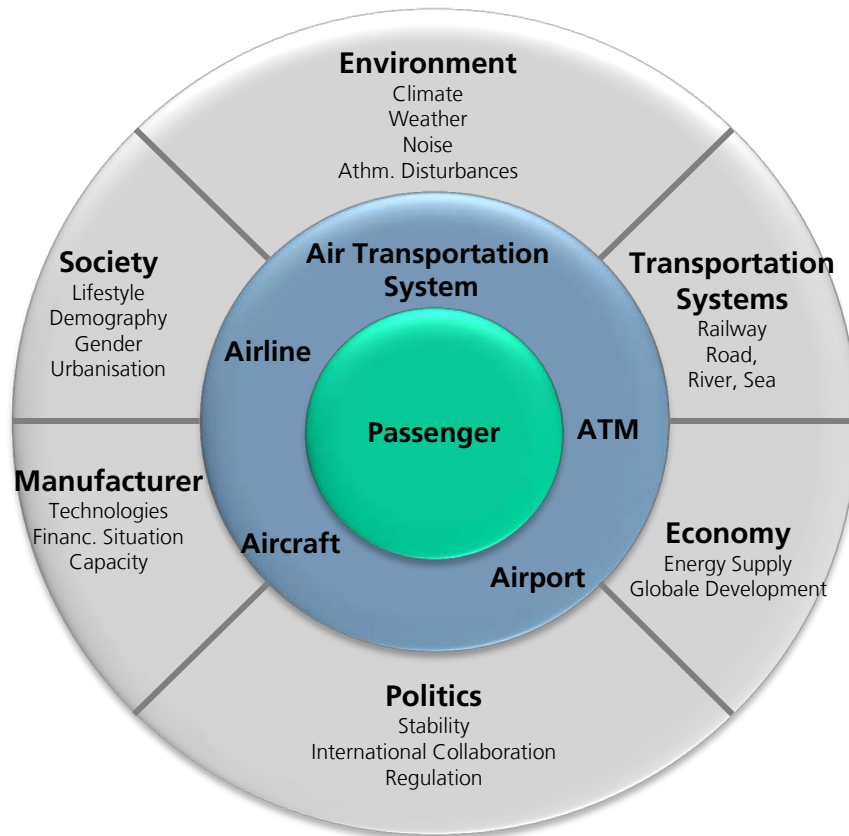
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für Luft- und Raumfahrt e.V.  
in der Helmholtz-Gemeinschaft

# Introduction

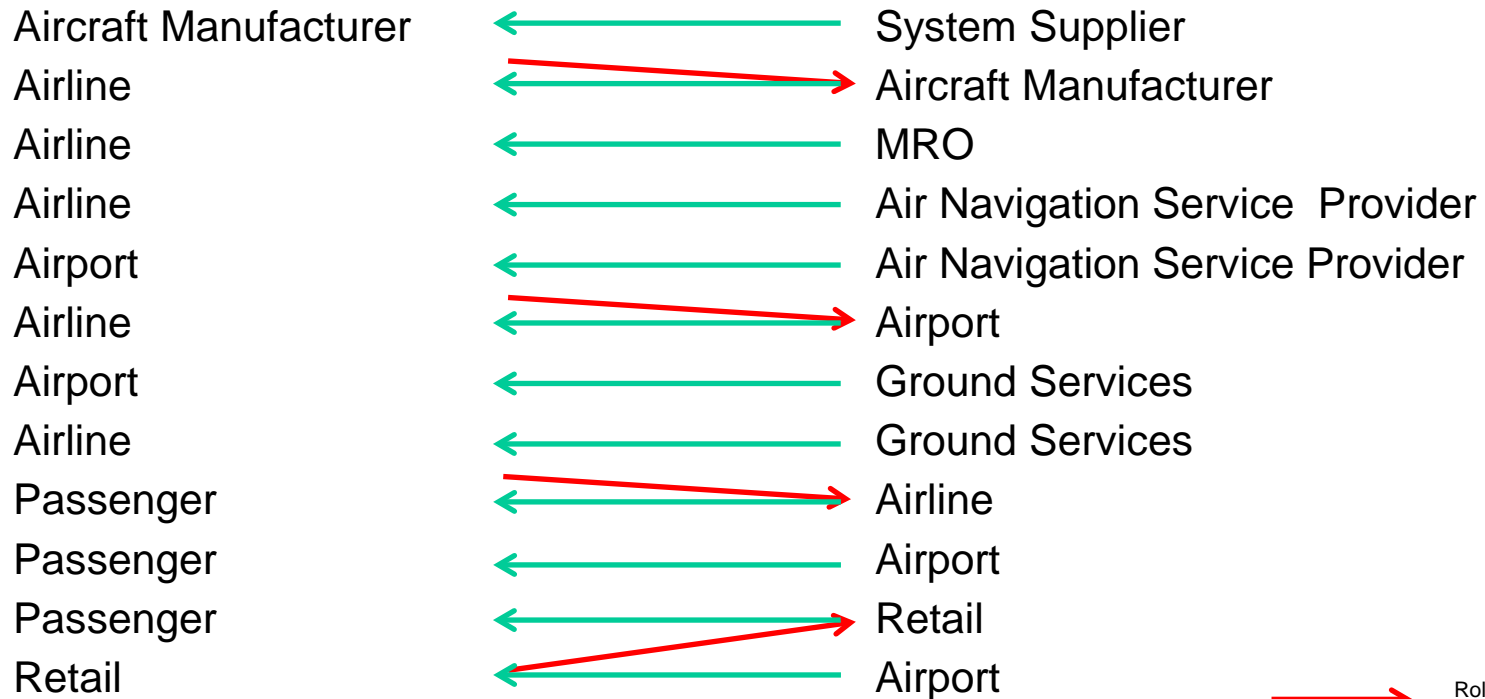


- Many activities in research and development have been **focussed on technological functions**, i.e. aerodynamics, aircraft, radars, airfield design, etc.
- Air transportation technologies have reached a very **high level of maturity**
- **No real breakthrough** since the seventies
- **Optimization and Quality** are mainly addressing **partial** areas of the entire transportation chain
- VISION2020 and FLIGHTPATH2050 are setting **extreme and holistic challenges**
- Air Transportation faces **increasing social concerns**
- Passengers are more **demanding**
- Are passengers the only **customer**?

# A Customer in the Air Transportation System – Who is it?

## Customer



## Service Provider



...

- Many provider are customer as well

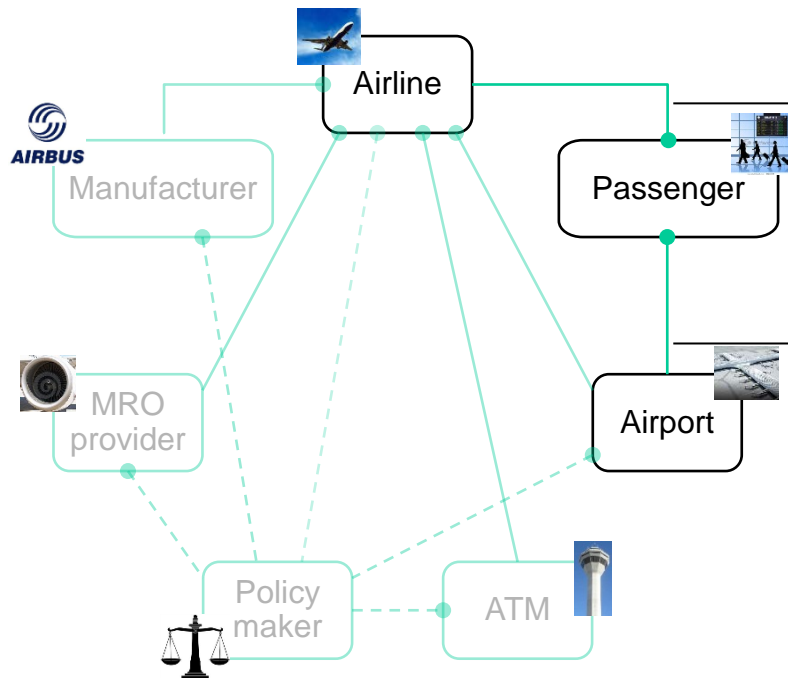
- Each service provider is optimizing himself to fulfil specific customer expectations in his area...

 Role Change Customer  
 – Service Provider  
 Service Provider

# A customer perspective... the passenger

A ● — B A is customer of B

- Overall travel Expectation :**
- Connectivity
  - Travel times
  - Comfort
  - Predictability
  - Fluency



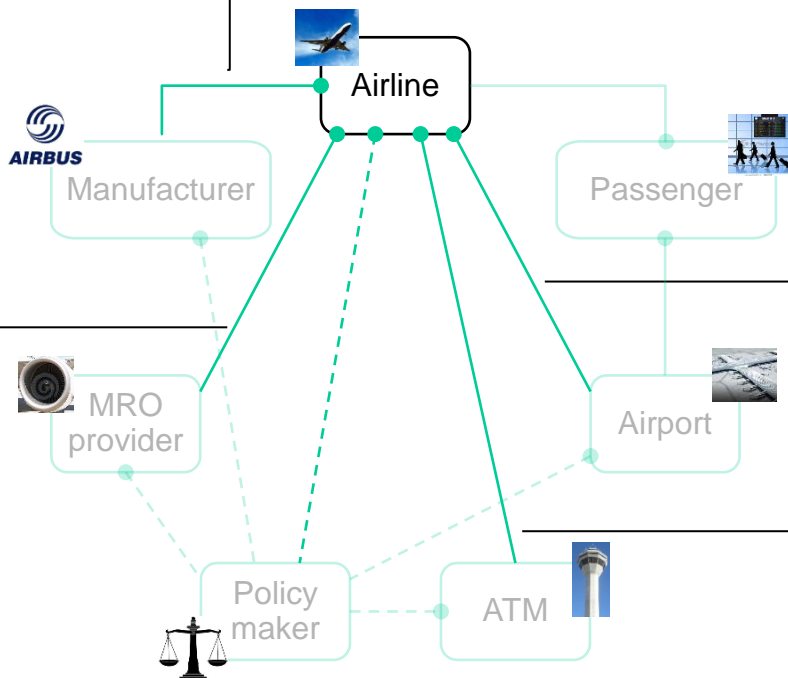
- |  |   |
|--|---|
| <p><b>Pre-booking:</b></p> <ul style="list-style-type: none"> <li>• Connectivity</li> <li>• Travel times</li> <li>• Predictability</li> </ul>  | <p><b>In-flight:</b></p> <ul style="list-style-type: none"> <li>• Comfort</li> <li>• Catering</li> <li>• IFE</li> </ul>                                       |
| <p><b>Pre-flight</b></p> <ul style="list-style-type: none"> <li>• Transport</li> <li>• Parking</li> <li>• Check-in</li> <li>• Security</li> <li>• Shopping</li> <li>• Lounges</li> <li>• Boarding</li> </ul> | <p><b>Post-flight</b></p> <ul style="list-style-type: none"> <li>• De-boarding</li> <li>• Baggage</li> <li>• Transfer flights</li> <li>• Transport</li> </ul> |

# A customer perspective... the airline

A ● — B A is customer of B

- Overall travel Expectation :**
- Connectivity
  - Travel times
  - Comfort
  - Predictability
  - Fluency

- Efficient aircraft (low SFC, low emissions, low MRO)
- Low acquisition costs
- Available as required



- Low costs
- High reliability
- High utilization)
- High availability

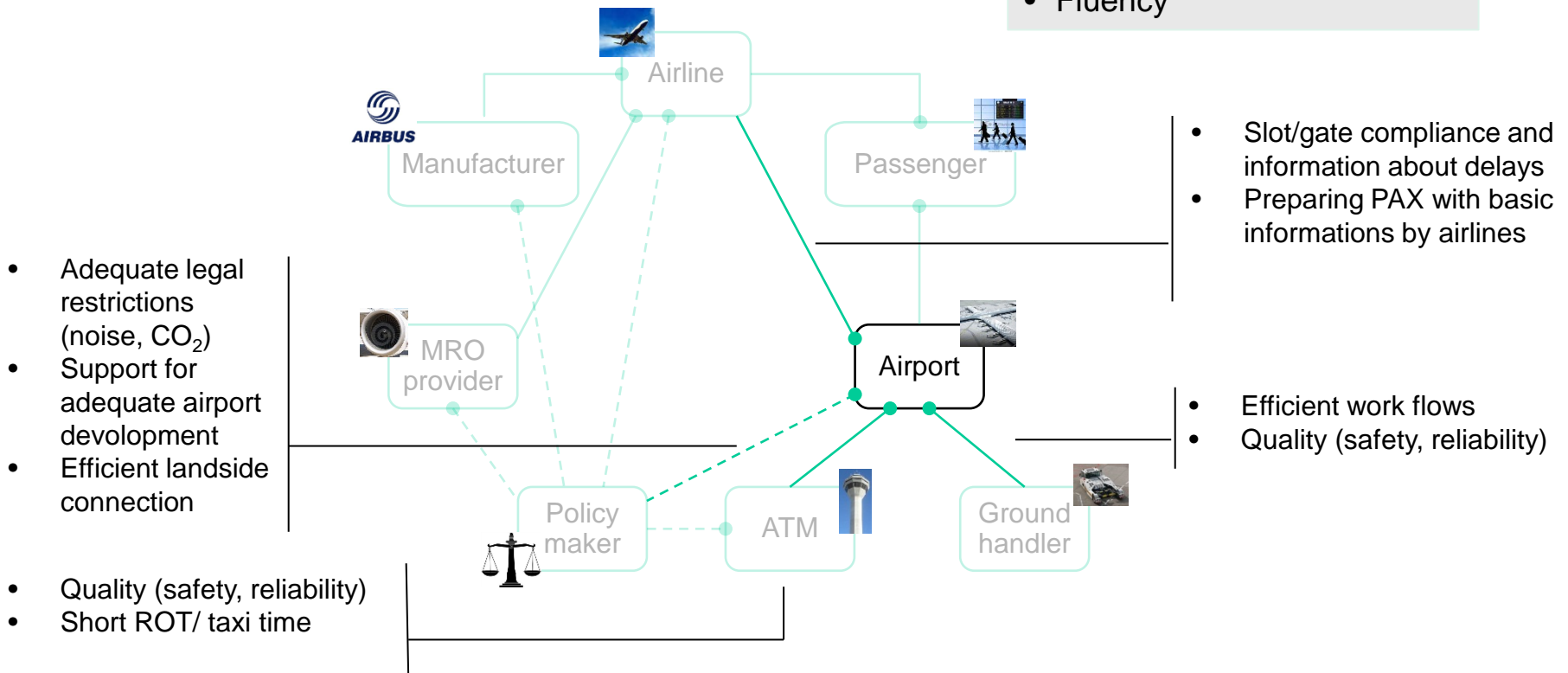
- Sufficient capacity (slots, gates)
- Low fees
- Low turnaround-times
- Low transfer times

- Sufficient capacity
- No detours
- Low fees

# A customer perspective... the airport

A ● — B A is customer of B

- Overall travel Expectation :**
- Connectivity
  - Travel times
  - Comfort
  - Predictability
  - Fluency



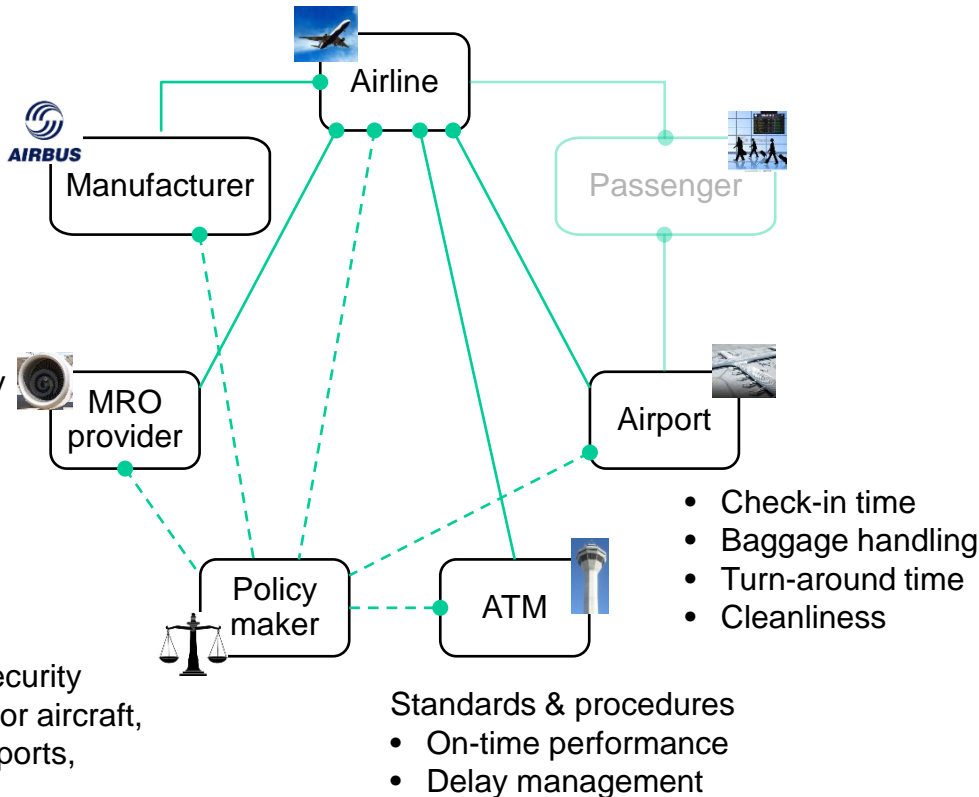
# ...but interactions between all stakeholders determine overall passenger satisfaction

## Aircraft design

- Flight time
- Noise level
- Cabin design
- Individual space
- Boarding time

- Safety and Reliability
- Availability

- Safety & security standards for aircraft, airlines, airports, ATM



needs to consider **all steps of the transportation chain**  
Air travel **quality and performance** are common goals

# Air travel performance and quality requires a common approach

Company	Ratings Factors				Displaying Factors 1-4 of 8 <a href="#">More ▶</a>	
	Overall Satisfaction	Reservation Experience	Check-in Experience	Boarding Experience		
	<b>Boarding Experience:</b> This is how passengers rate the time spent in boarding and exiting the aircraft, as well as time spent at baggage claim. <span style="float: right;"><a href="#">Close</a></span>					
Air Canada	●●●●●	●●●●○	●●●●○	●●●●○		
Alaska Airlines/ Horizon Air Award Recipient	●●●●●	●●●●●	●●●●●	●●●●●		
American Airlines/ American Eagle	●●●●○	●●●●○	●●●●○	●●●●○		
Continental Airlines	●●●●○	●●●●○	●●●●○	●●●●○		
Delta Air Lines	●●●●○	●●●●○	●●●●○	●●●●○		
United Airlines	●●●●○	●●●●○	●●●●○	●●●●○		
US Airways	●●●●○	●●●●○	●●●●○	●●●●○		

Company	Ratings Factors				Displaying Factors 5-8 of 8 <a href="#">More ◀</a>	
	Aircraft Experience	Staff Experience	Service Experience	Cost and Fees Experience		
	<b>Aircraft Experience:</b> This score is based on how passengers rate seat comfort, availability of overhead storage, roominess of the seat area, and cleanliness of the aircraft. <span style="float: right;"><a href="#">Close</a></span>					
Air Canada	●●●●●	●●●●○	●●●●●	●●●●●		
Alaska Airlines/ Horizon Air Award Recipient	●●●●○	●●●●●	●●●●○	●●●●○		
American Airlines/ American Eagle	●●●●○	●●●●○	●●●●○	●●●●○		
Continental Airlines	●●●●○	●●●●○	●●●●○	●●●●○		
Delta Air Lines	●●●●○	●●●●○	●●●●○	●●●●○		
United Airlines	●●●●○	●●●●○	●●●●○	●●●●○		
US Airways	●●●●○	●●●●○	●●●●○	●●●●○		

Overall passenger satisfaction influenced by several factors that are partly beyond airline control (e.g., **boarding experience**, **baggage claim**, space in **overhead storage**)



# Air travel performance and quality requires a common approach

HONG KONG INTERNATIONAL AIRPORT : Web Site & Ground Transportation			
<b>AIRPORT WEBSITE</b>			
Ease of Use	★★★★★	Parking + Transportation information	★★★★★
Language Options	★★★★★	Transit Passenger Information	★★★★★
Flight Information	★★★★★	Terminal Guides	★★★★★
Shopping information	★★★★★	Flight Schedules	★★★★★
<b>GROUND TRANSPORT</b>			
Public Transport - Available options	★★★★★	Public Transport - national connections	★★★★★
Public Transport - Ease of Location	★★★★★	Parking - short term	★★★★★
Public Transport - downtown Express	★★★★★	Parking - long term	★★★★★
Public Transport - Taxi availability	★★★★★	Location of Car Rental	★★★★★
Hotel shuttle bus - Location	★★★★★	Hotel shuttle bus - Service frequency	★★★★★

HONG KONG INTERNATIONAL AIRPORT : Passenger Arrivals			
<b>TERMINAL 1/2</b>			
Arrival - Walking distances	★★★★★	Arrival - Direction Signage	★★★★★
Arrival - Distance to Baggage hall	★★★★★	Arrival - Baggage hall Facilities	★★★★★
Arrival - Bag Delivery times	★★★★★	Arrival - Baggage cart availability	★★★★★
Arrival - Terminal temperatures	★★★★★	Arrival - Meet and Greet facilities	★★★★★
<b>NORTH SATELLITE</b>			
Arrival - Walking distances	★★★★★	Arrival - Direction Signage	★★★★★
Arrival - Distance to Baggage hall	★★★★★	Arrival - Baggage hall Facilities	★★★★★
Arrival - Bag Delivery times	★★★★★	Arrival - Baggage cart availability	★★★★★
Arrival - Terminal temperatures	★★★★★	Arrival - Meet and Greet facilities	★★★★★

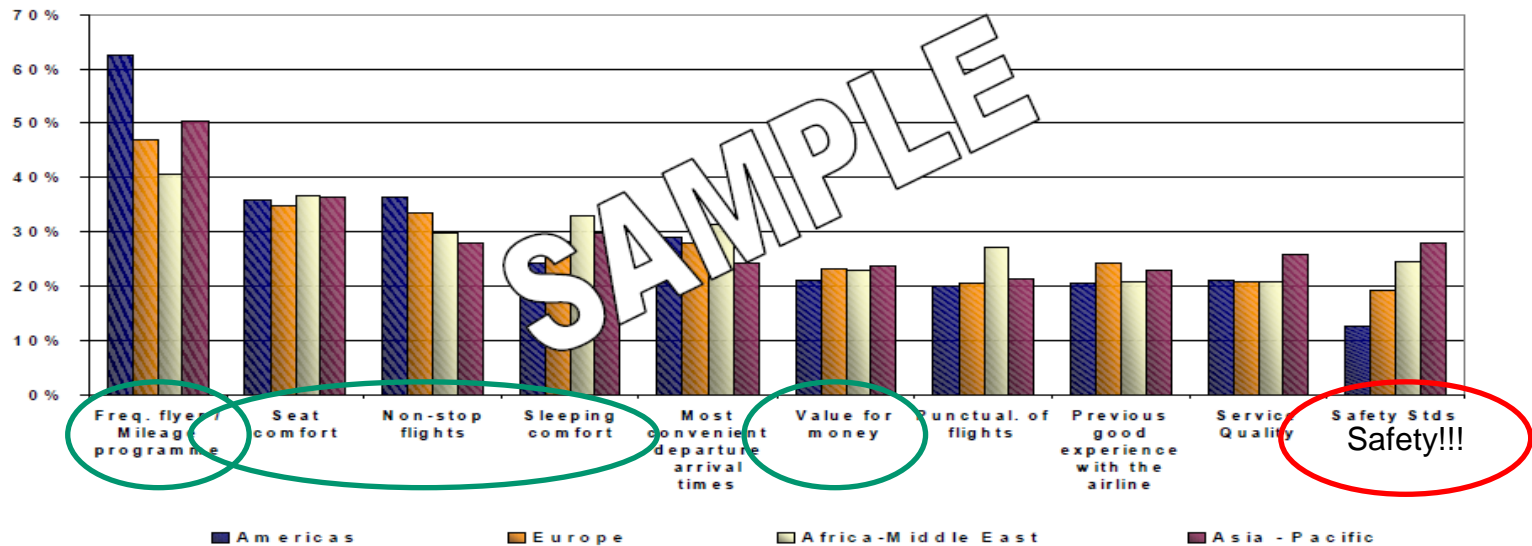
HONG KONG INTERNATIONAL AIRPORT : Security and Immigration Service			
Security screening - Waiting Times	★★★★★	Immigration - Arrival Queue times	★★★★★
Security screening - Staff Efficiency	★★★★★	Immigration - Departure Queue times	★★★★★
Security screening - Staff Attitude	★★★★★	Immigration - Fast Track channel	★★★★★
Security screening - Staff Languages	★★★★★	Immigration - Staff Attitude	★★★★★
Security screening - Fast Track	★★★★★	Immigration - Staff languages	★★★★★

HONG KONG INTERNATIONAL AIRPORT : Departures & Transit			
<b>TERMINAL 1/2</b>			
Check in - Counter Location	★★★★★	Check in - Waiting times	★★★★★
Check in - Queue Management	★★★★★	Check in - Waiting facilities	★★★★★
Terminal - Information screens	★★★★★	Terminal - Walking distances	★★★★★
Terminal - Transfer area location	★★★★★	Terminal - Transfer Queue times	★★★★★
Ease of Transfer	★★★★★		

Overall passenger satisfaction influenced by several factors that are partly beyond airport control (e.g., **public transport, security screening, staff attitudes, baggage delivery times**)

# What passengers are looking at when selecting an airline

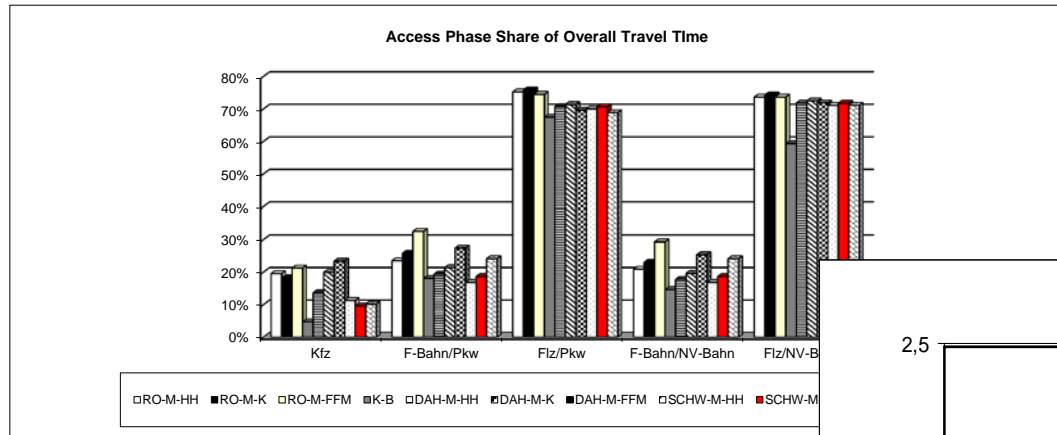
Top 10 factors of airline choice for long-haul flights (Business air travellers by region of residence)



Passenger request for:

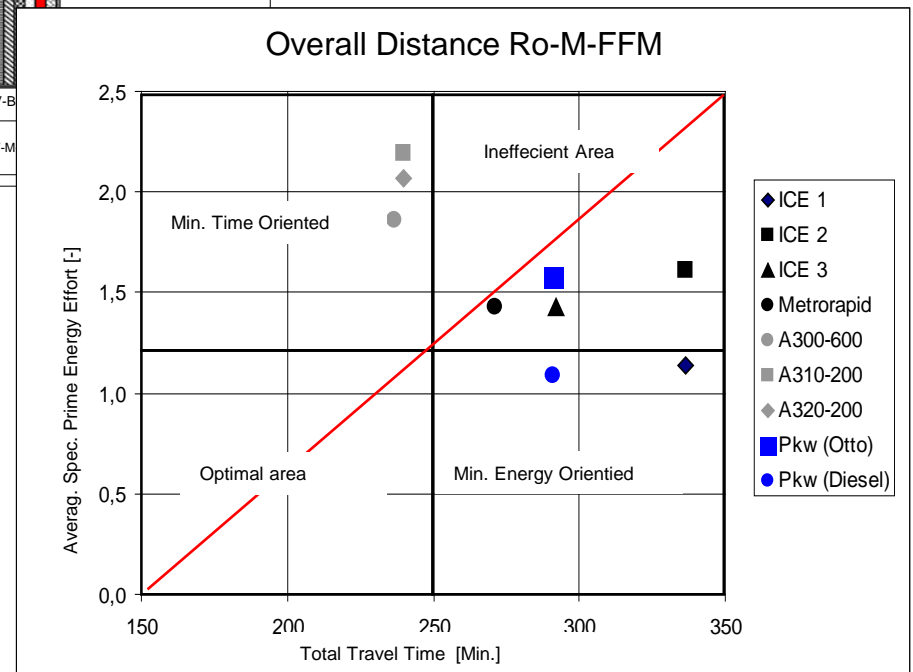
- Airline customer orientation
- Comfort
- Value for money

# Time & Energy Efficiency of Overall Air Transportation



Nearly 70% of overall travelling time is associated with airport access, stay and departure

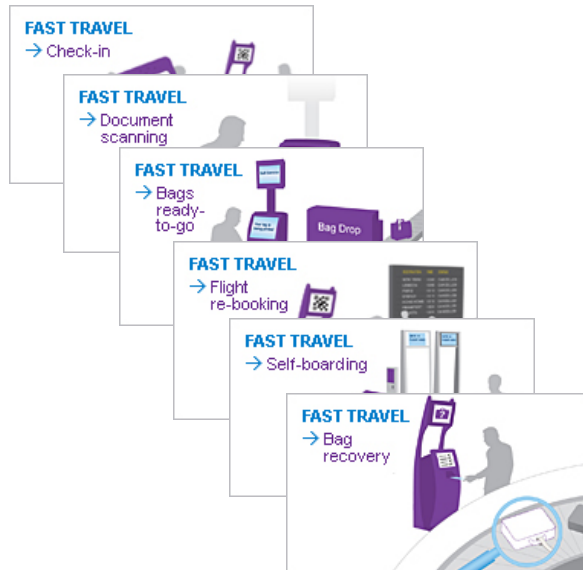
These losses in time are compensated by higher energy and emission effort of air transport



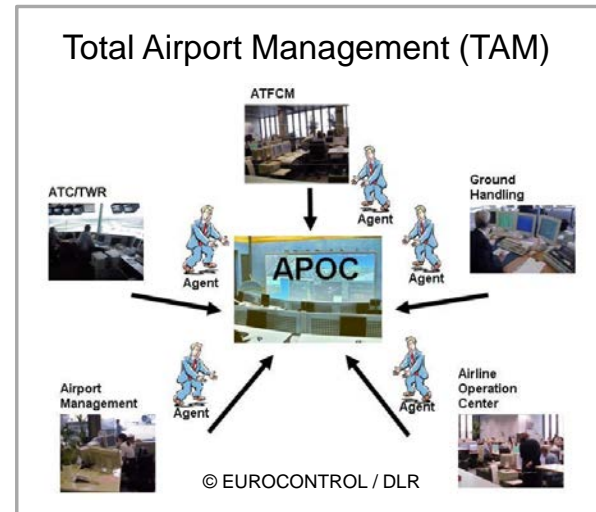
Balancing speed and energy effort provides a better transportation chain



# Technologies to improve Fluency



Passenger Services and Flow



Total Airport Management

## Communication and Software Technologies

Measures for quality:

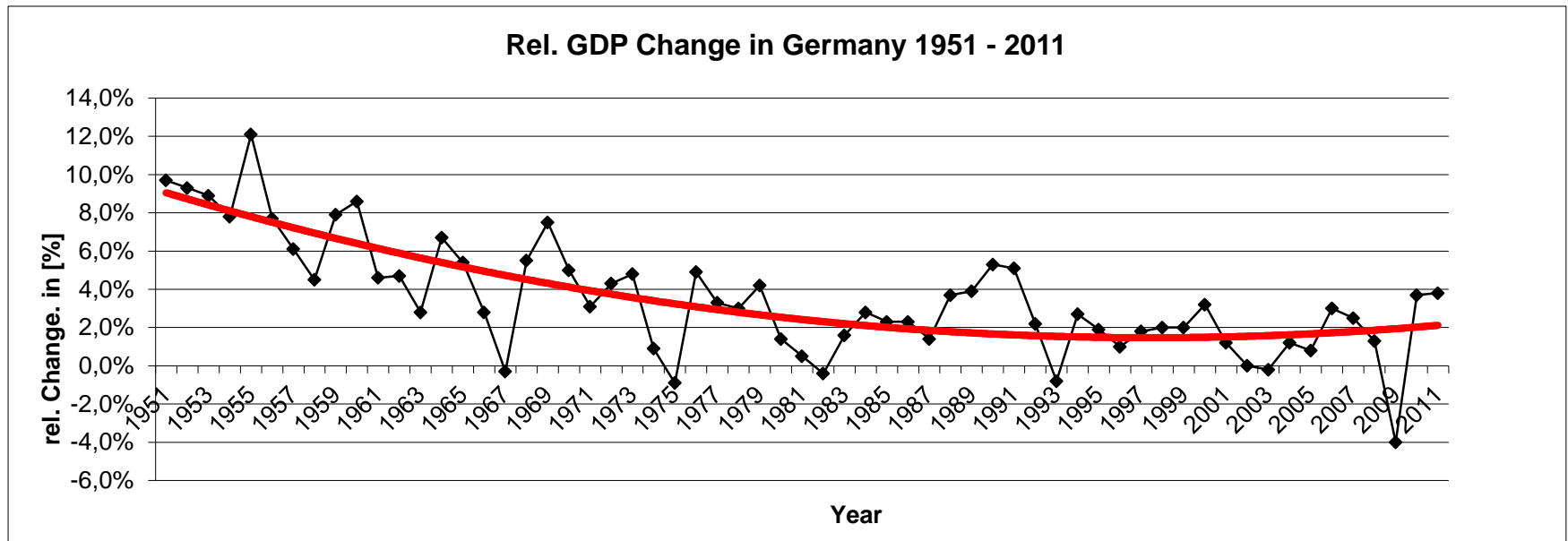
- Total trip time =  $t(\text{fixed}) + t(\text{flight}) + t(\text{displacement})$
- Fluency = no delay or remarkable distortion



Time is value, more than only money



# Future Perspectives



- Low quantitative growth should be supplemented by qualitative growth
- Qualitative growth requires better overall performance and quality to add value
- **Each part of air transport reaches higher quality if the entire chain improves**

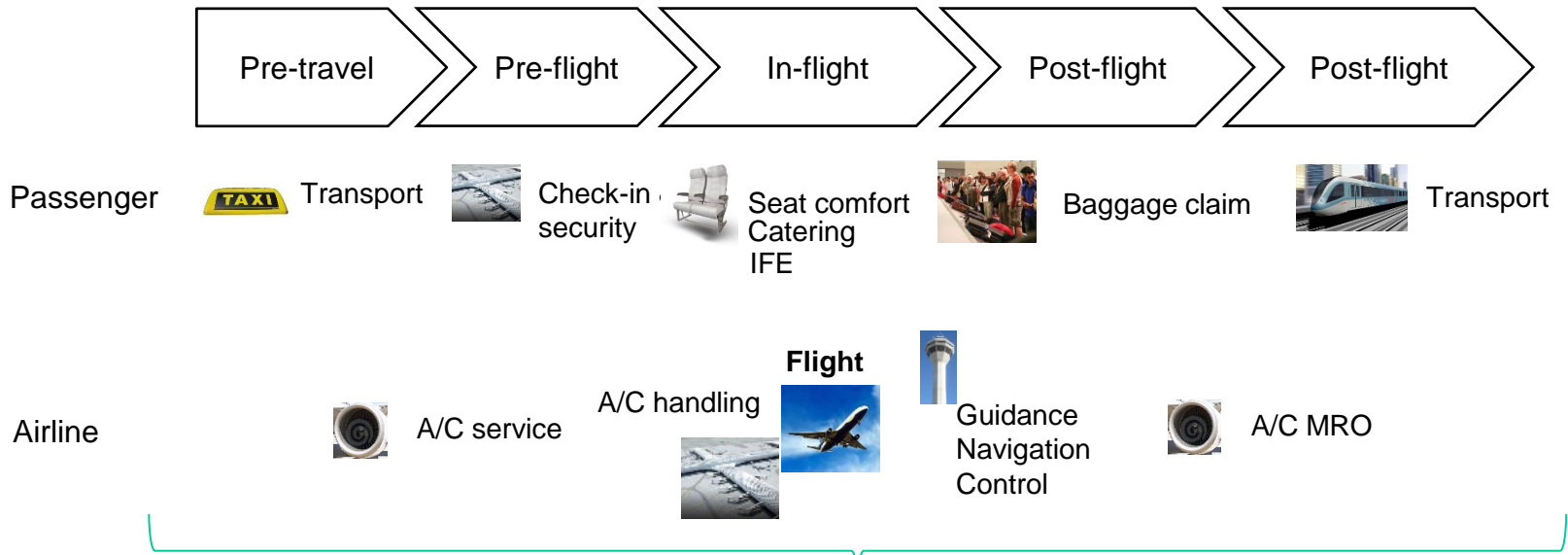
# What leads to quality and satisfaction in Aviation?

- Fluent, comfortable travel from door to door without delay
- Robustness and predictability, which includes recovery of small disturbances
- Balance of time, cost, emissions, effort

## What is needed

- a) Change in mindset to take quality and performance as global and common goals
- b) Toined target setting and measurement by industry (not by government)
- c) Mutual support, rather than separation
- d) Not responsibility should drive action but the best solution/provider
- e) Technologies, which provide predictive information exchange and common situation awareness
- f) Scientific research on understanding of complex systems interdependences not only disciplinary, physical research

# High Quality Air Transportation is Process Orientation and Teamwork rather than Stakeholder orientation



- Overall travel Expectation :**
- Connectivity
  - Travel times/Utilization
  - Comfort/Safety
  - Predictability/Reliability
  - Fluency