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# **High-Speed Rail (HSR): Partner or Competitor ?**

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# Headings

## ■ Introduction

The context at the start of HSR services

## ■ The (fierce) competitive aspect

quite at the beginning of the HSR services

## ■ Travel time and fare level on HSR, both as (main) argument for operating success

## ■ The inherent advantages/ constraints of HSR vs. Aircraft

## ■ The complementary aspect

Short-haul air transport versus  
High volumes of transport

Inter-modality at airports  
and the role of medium-sized airports

## ■ Conclusions

Background

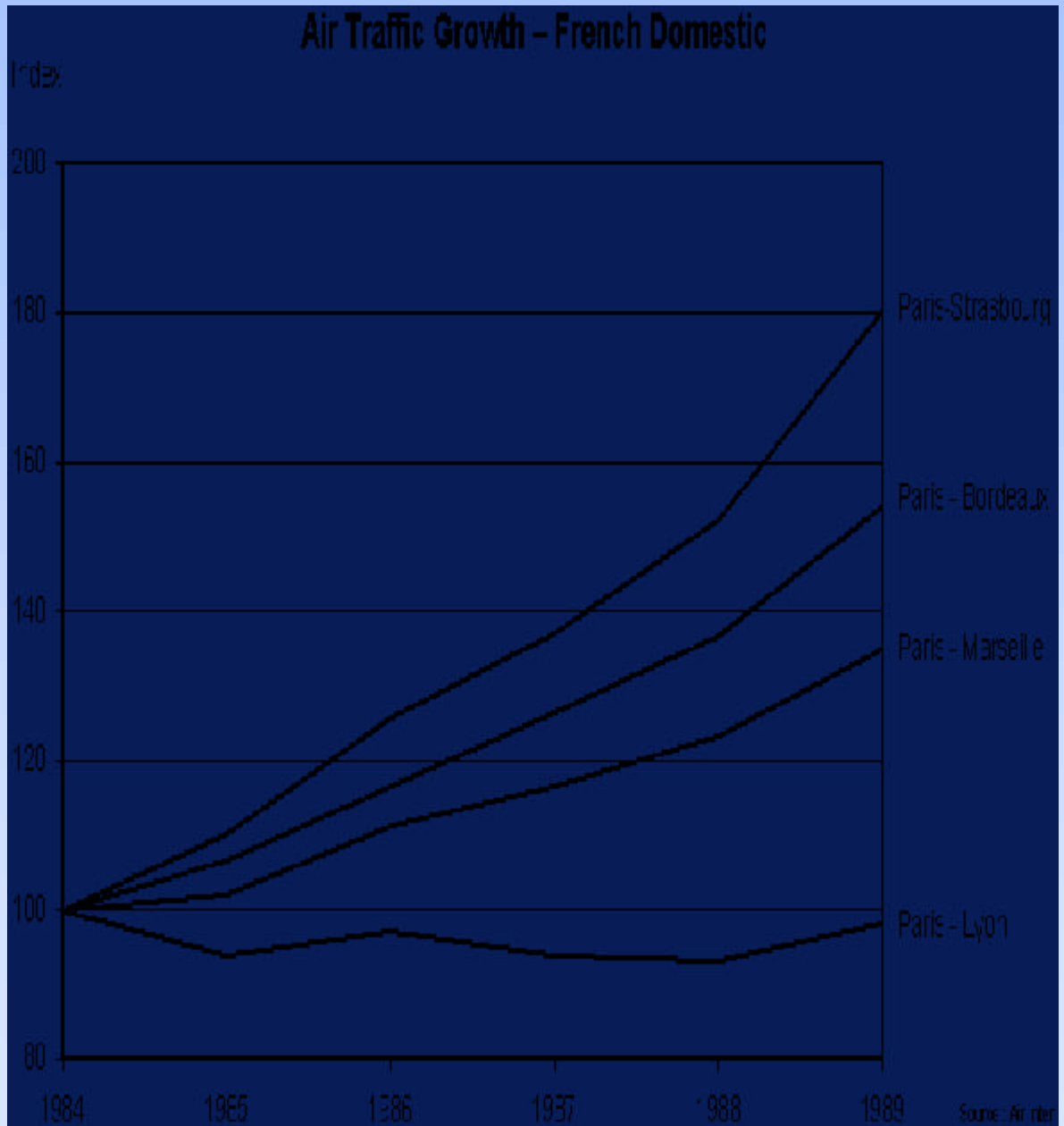
High-speed rail: Partner or competitor ?

Outlook

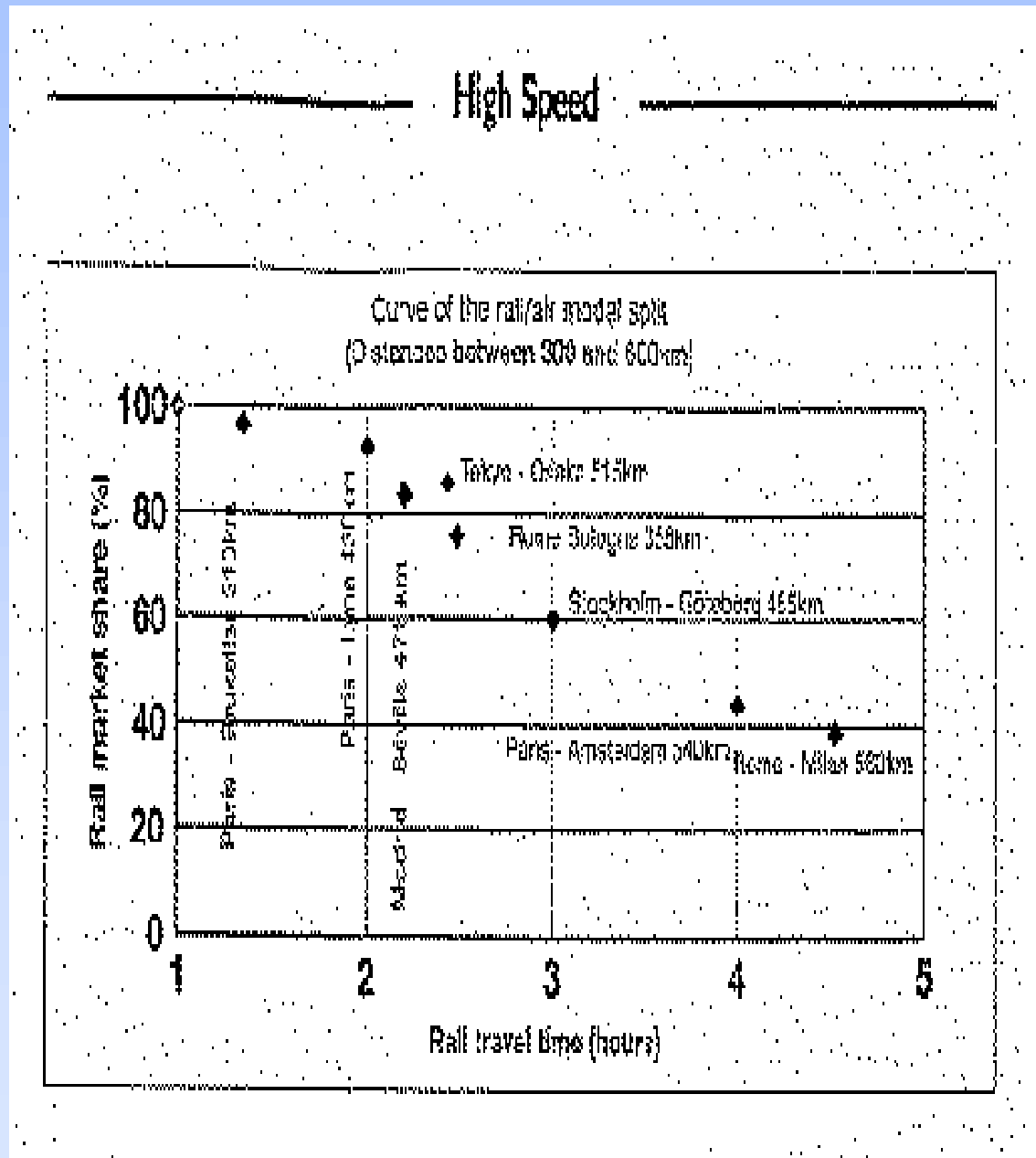
# Introduction

- The main context
- The example of Japan
- The start in Europe
- HSR is the challenger

# The (fierce) competitive aspect



# Modal split Rail/ Air based on (HSR) travel time

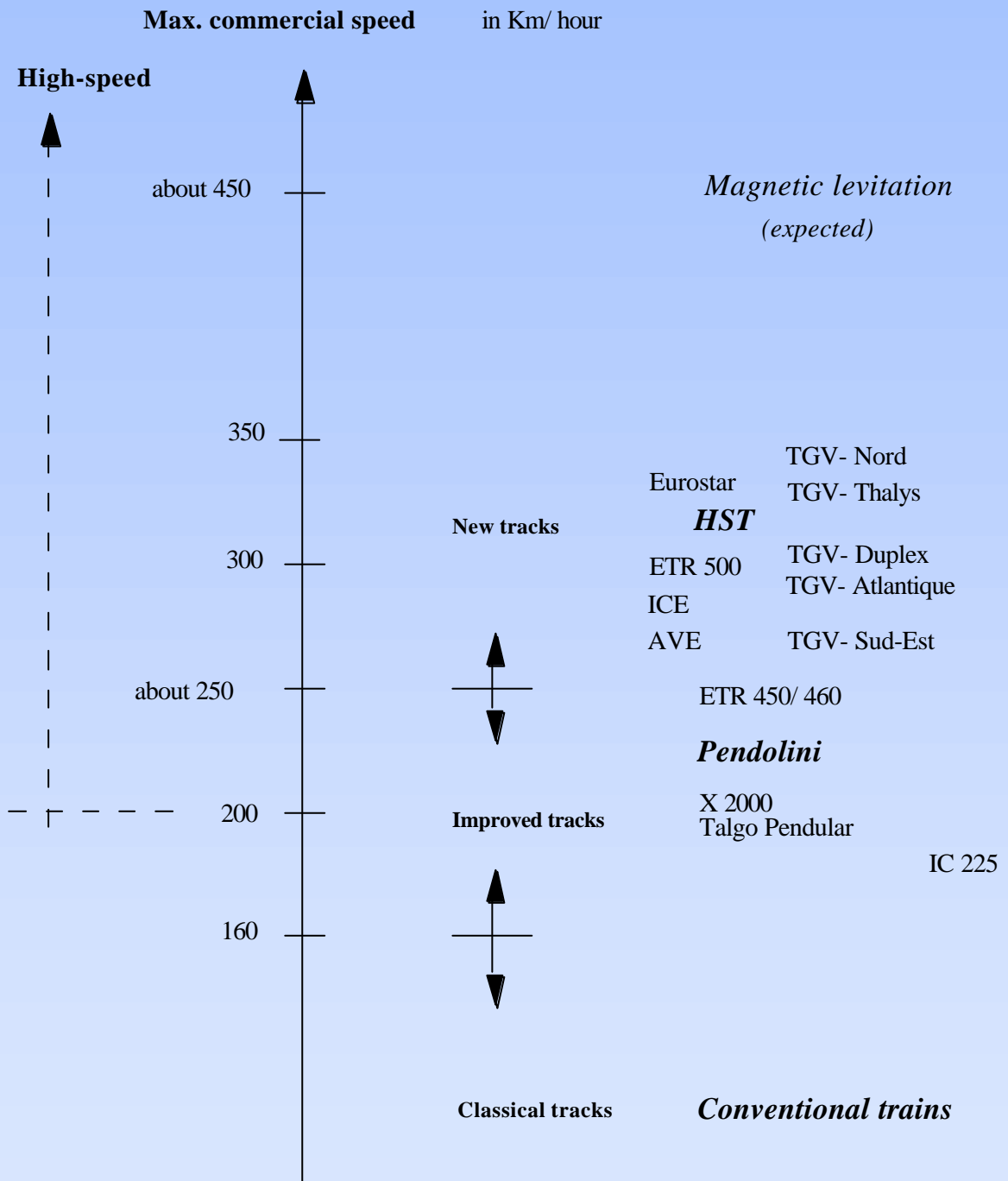


# Fare level on HSR

(Geneva-Paris, 1999)

TGV	Schedule	Fare
1 <sup>st</sup> Class : CHF 20.-	Business class :	CHF 40.-
1 <sup>st</sup> Class : CHF 80.-*	Spec 1 Business class :	CHF 90.-
2 <sup>nd</sup> Class : CHF 60.-	Economy class :	CHF 48.-
2 <sup>nd</sup> Class : CHF 10.-*	Spec 1 Economy class :	CHF 50.-
	Excursion fare :	CHF 70.-
	SUPER X :	CHF 76.-
	SUPER X :	CHF 81.-
	SUPER X :	CHF 97.-
	SUPER X :	CHF 78.-
	EUROfer :	CHF 12.-

# Max. commercial speed on HSR

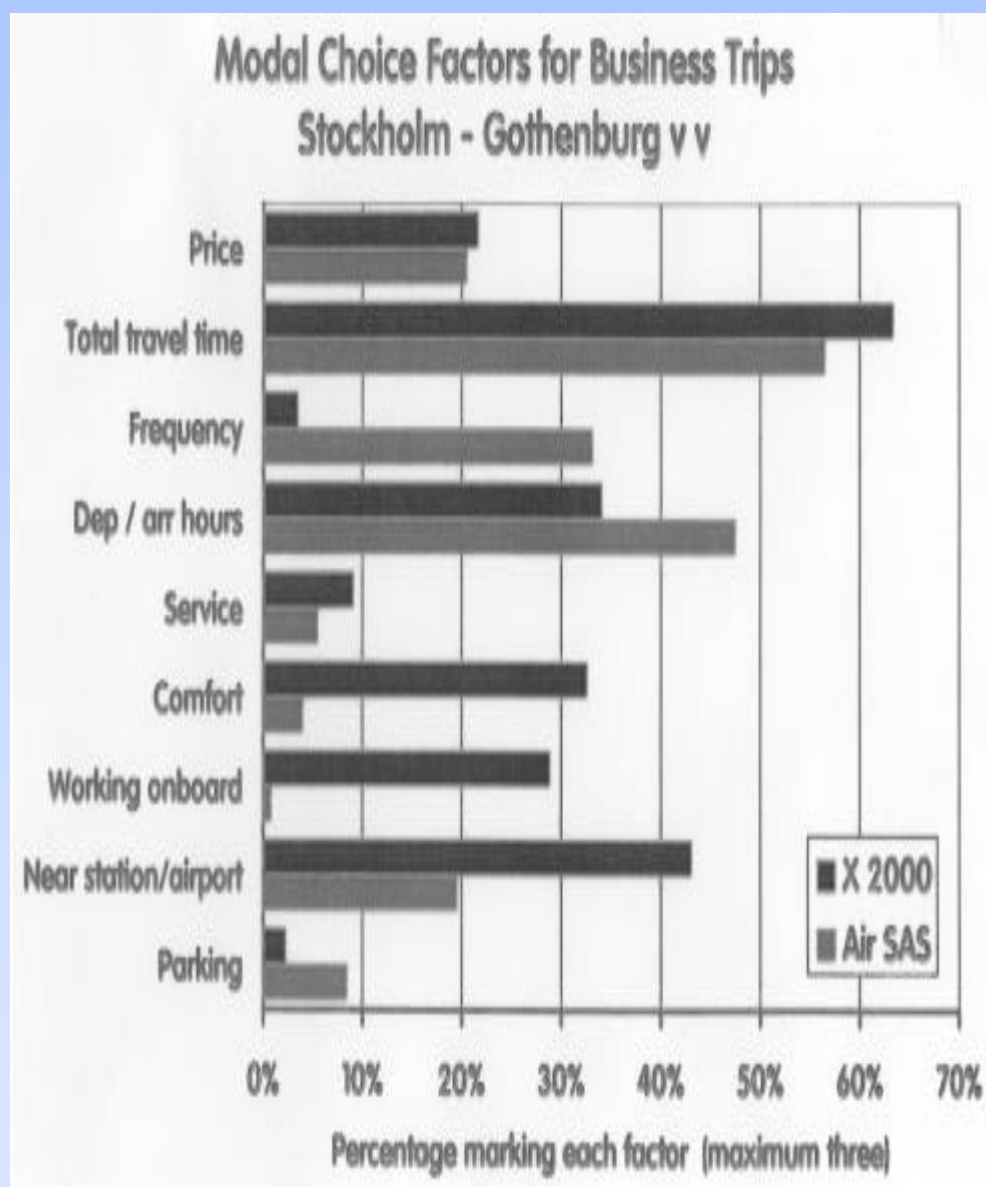


# **The inherent advantages/ constraints of HSR vs. Aircraft**

- **Technique**
- **Safety**
- **Network flexibility**
- **Transport demand/ supply**
- **Environment protection**
- **Traffic congestion**
- **Punctuality**
- **Operating costs**
- **Airport vs. Rail infrastructure costs**
- **Level of service**



# The inherent advantages/ constraints of HSR vs. Aircraft



# The complementary aspect within the high-speed transport system

- For poor volumes of HSR transport

Short-haul air transport applies

as point-to-point, hub-by-pass link  
as hub-feeder flight

HSR is optional, if high-speed line nearby

- For high volumes of HSR transport and  
HSR travel time of:

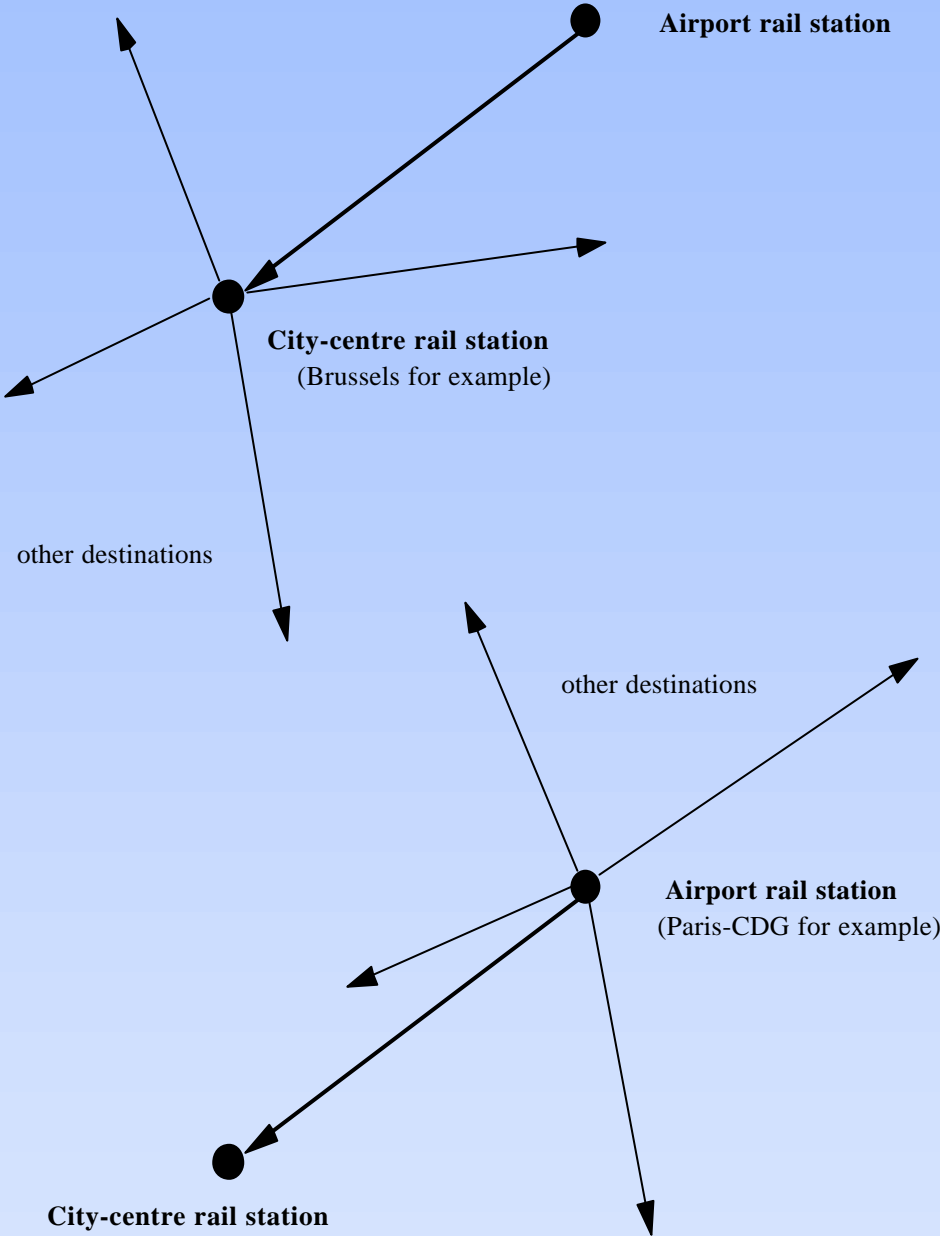
4 hours: air transport keeps the lead

3 hours: fierce competition air/rail is  
taking place

2 hours: air transport has still a role as a  
feeder and point-to-point  
function in a large agglomeration  
with several airports served

1+half hour: air transport has no chance  
(even for transfer)

# Inter-modality at airports



Rail link to airports: illustration of the extremes

# Inter-modality at airports

Item	BUR	ORY	SIR	CAZ	HFA	CDG
<b>Apt</b>						
Mixed			X	X		
Month	X	X			X	X
Hbr	SN	AF			S	RIH
<b>Type of infrastructure</b>						
City centre	X			(X)		
Non-central suburban		X				
Suburban			X		X	X
Inter-city	(X)			X	X	X
Hyper-city					(X)	X
<b>Effective density</b>						
(X) development wished						

# Inter-modality at airports

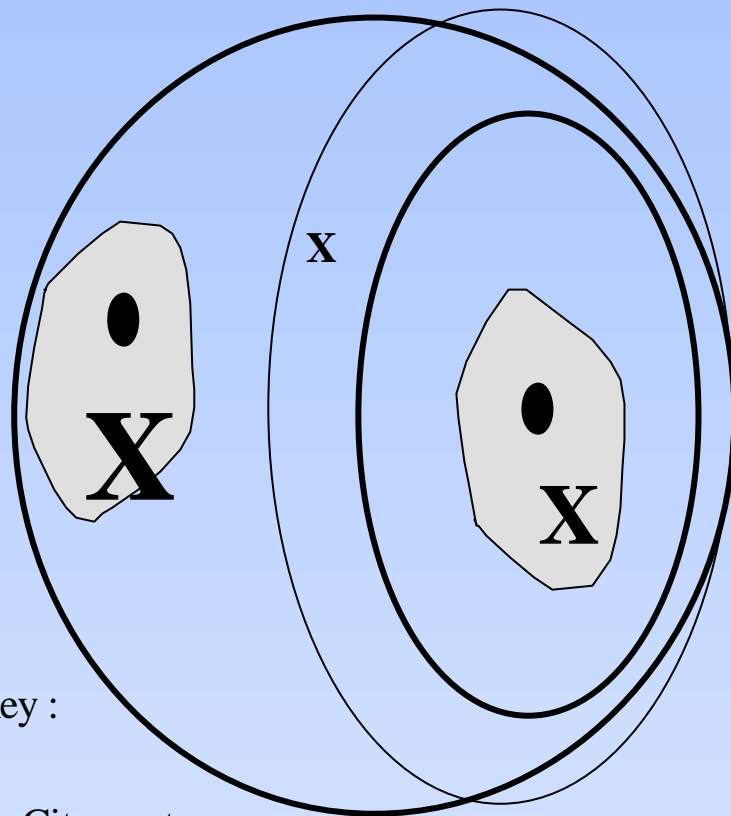
Item	BUR	ØY	SR	CA	ZH	FAR	ØØ
Intermodal	-	-	-	-	-	-	-
Efficient	-	+	+	+	+	+	+
Efficient airport	-	-	-	+	+	∓	+
Secure airport	+	-	-	-	-	-	-
Efficient airport	-	-	-	-	-	-	-
User friendly	+	-	+	+	+	+	+
Airline	+	+	+	+	+	+	+
<i>Td</i>	-	-	-	∓	+	+	+

+: positive result

-: negative result

∓: unclear result

# The role of medium-sized airports



Key :

● City-centre

**X**<sub>Hub</sub> **X** Medium-sized **X** Regional airport

○ Catchment area of t  
medium-sized airpc  
improving rail acce



# Conclusions

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