

High speed air rail intermodality in France

Andrew Sharp

Director General, International Air Rail
Organisation

enquiries@iaro.com

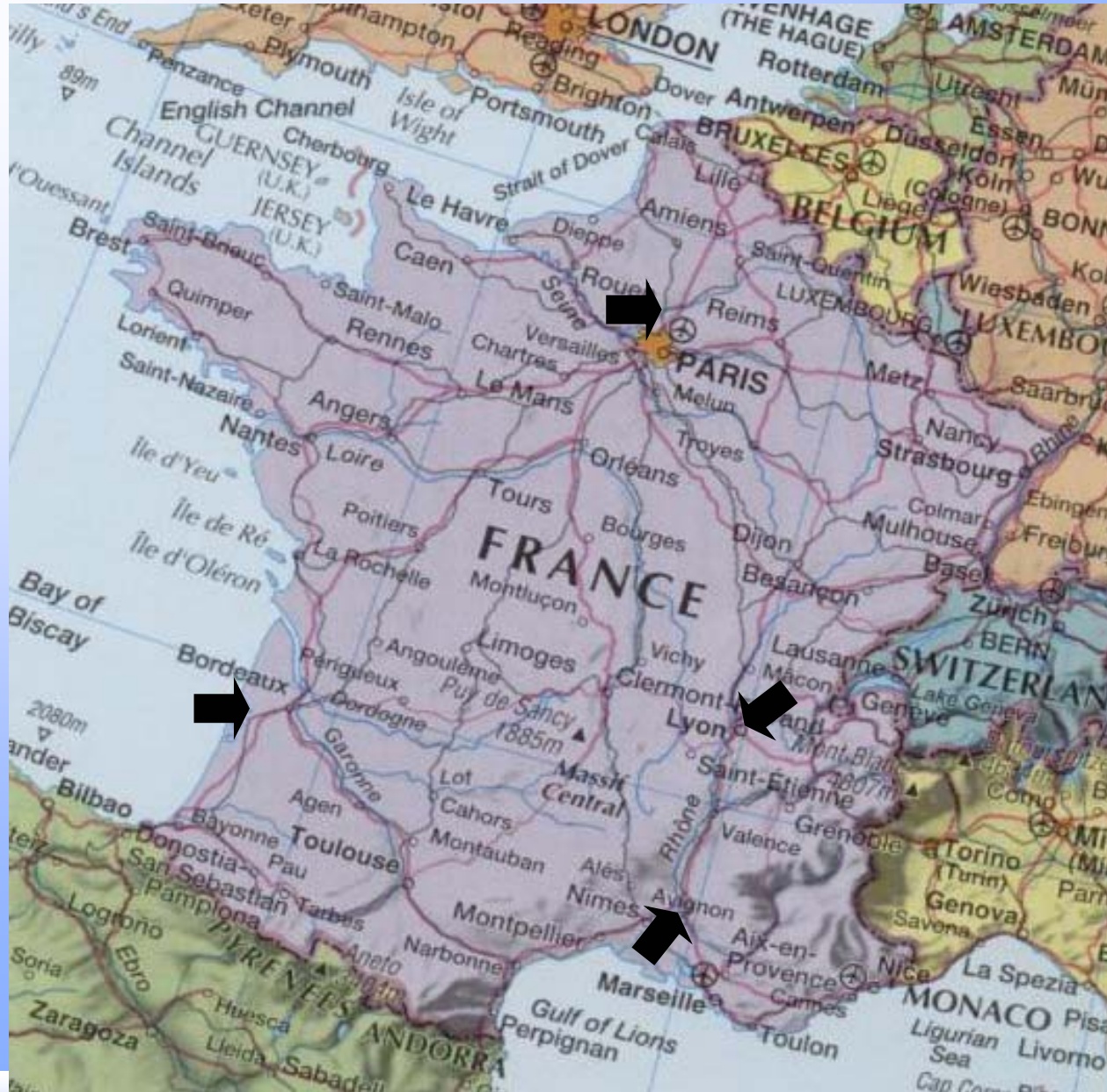
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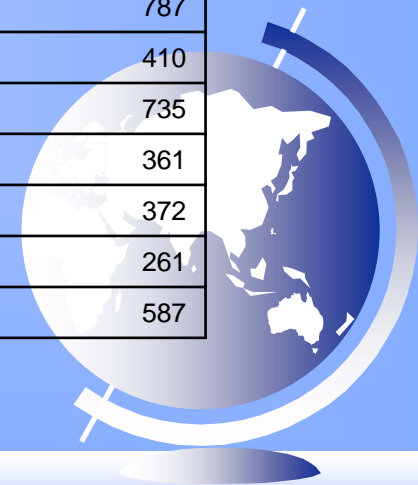


France



High speed train services from Paris CDG Airport

	Trains /day	Fastest journey time – hours.minutes	Distance miles	Distance km
Aix en Provence TGV	2	3.26	485	783
Angers	4	2.13	198	320
Avignon	6	2.53	442	713
Bordeaux	5	4.02	376	607
Brussels.	8	1.14	176	284
Le Mans	5	1.32	143	231
Lille	19	0.50	122	197
Lyon	11	1.55	302	487
Marseilles	7	3.29	497	801
Montpellier	5	3.55	488	787
Nantes	4	2.53	254	410
Nimes	5	3.25	456	735
Poitiers	5	2.12	224	361
Rennes	4	2.48	231	372
Tours	5	1.37	162	261
Valence TGV	8	2.19	364	587



How does it work?



Atlanta - Marseille

1. DL 50, 7.20 pm ATL – CDG arrives 9.45 am
2. DL 8674, 11.24 am CDG – XRF arrives 2.55 pm

Note that the second flight is to XRF, Marseille rail station, and not MRS, Marseille airport.



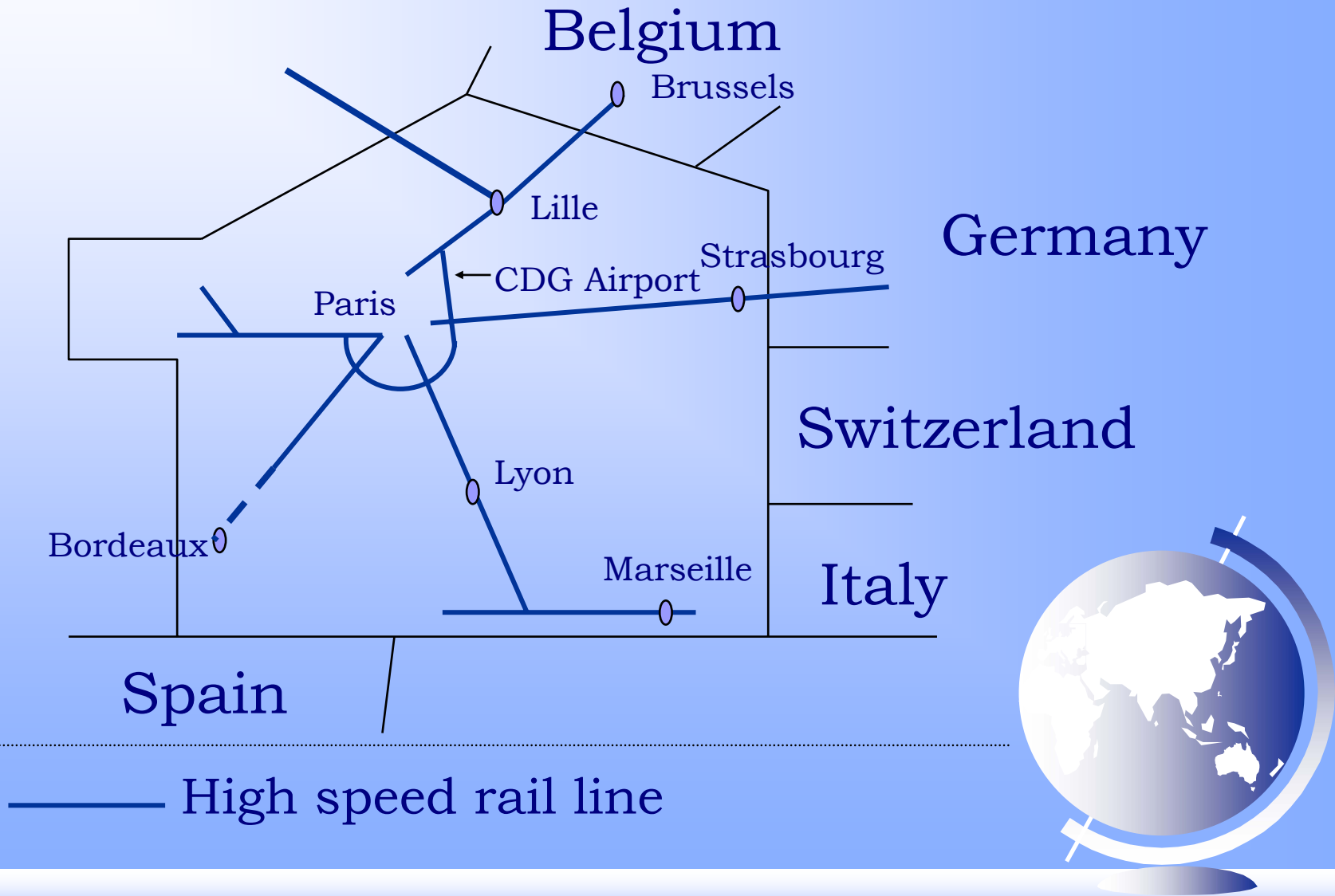
Signage at Paris CDG



On the platform



France – high speed rail network



TGV Duplex (bi-level or double deck)



High speed trains at Paris



Air France passengers from Brussels at Paris Charles de Gaulle airport station



Paris - Brussels code share

- In 2006, rail had 52% of the total market
- Road had nearly all the rest
- Almost no air traffic



Air France check-in, Brussels Midi Station



Los Angeles – San Diego

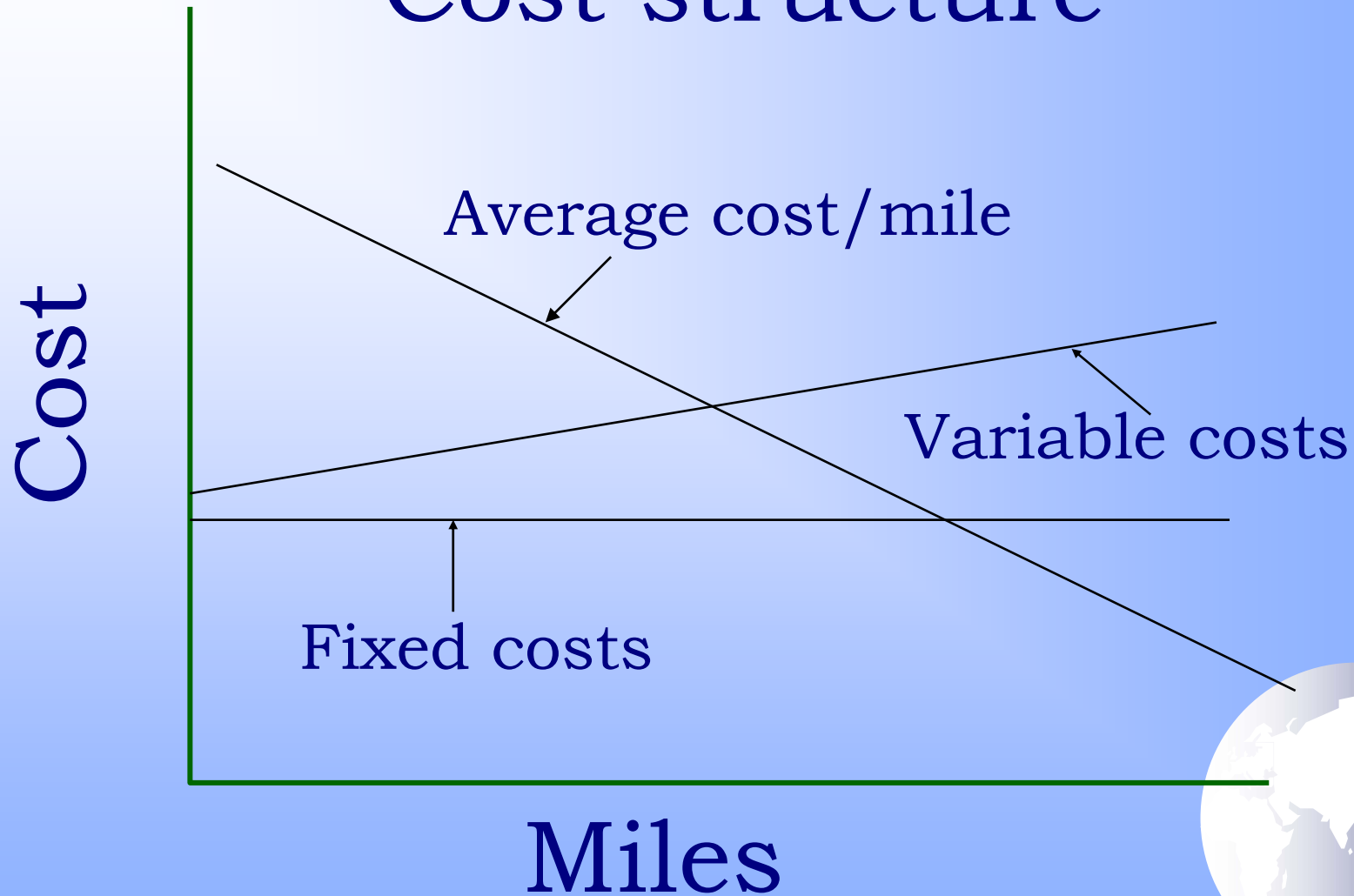


Los Angeles – San Diego: 110 miles

	Air	Rail now	High speed rail
	Minutes		
City to terminal	30	0	0
Check-in	60	0	0
Travel	24	165	70
Terminal to city	60	0	0
Total	≈180	165	70
	Miles/hour		
Average speed	37	40	94



Cost structure

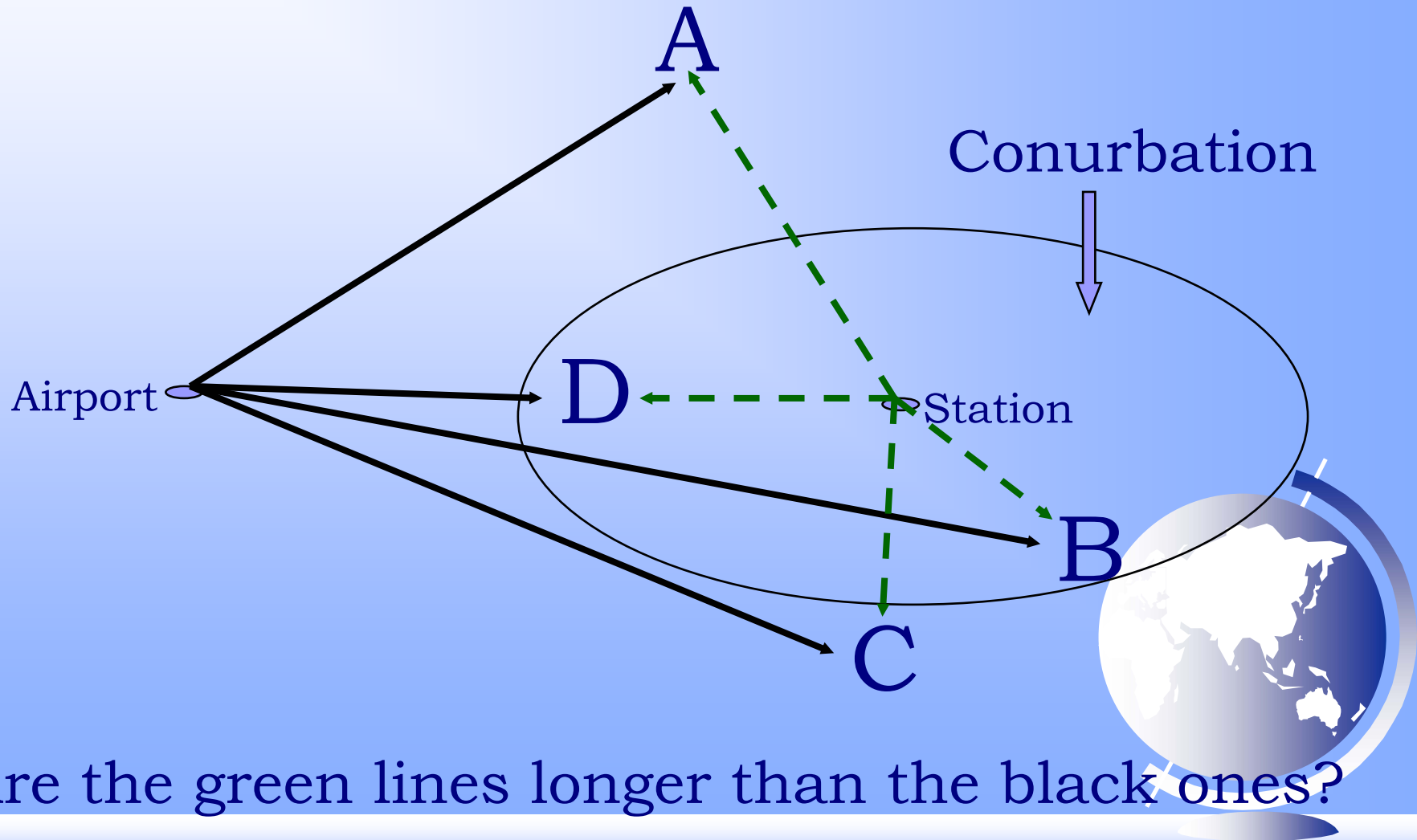


Market segments

	Business	Leisure
Resident	Mix of downtown and dispersed origins and destinations	Mainly dispersed origins and destinations
Non-resident	Predominantly downtown origins and destinations	



Airport or train station closer?



High speed rail tomorrow?



Maglev – incompatible with conventional rail



Platform screen doors



Mai Foo station, on KCR's West Rail, Hong Kong



The tipping point - Japan

Tokyo to		Osaka	Oka- yama	Hiroshima	Fukuoka
Distance	Miles	320	420	510	660
Travel time	Train	2h30	3h16	3h51	4h53
	Plane	2h38	2h55	3h18	3h02
% share	Train	84	80	52	10
	Plane	16	20	48	90

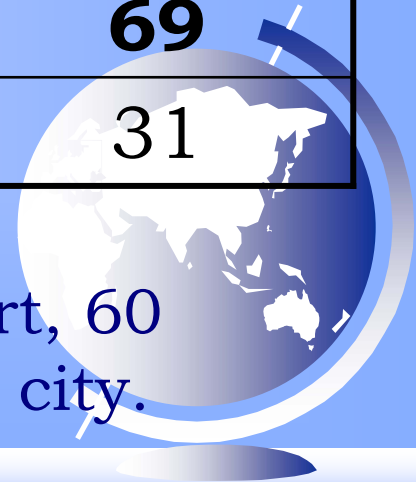


After Givoni, 2005

The tipping point - France

Paris to		Perpignan	Toulon	Marseille
Distance	Miles	424	438	480
Travel time	Train	5h00	4h00	3h00
	Plane	3h20	3h25	3h15
% share	Train	51	68	69
	Plane	49	32	31

Plane time assumes 30 minutes to airport, 60 minutes check-in, 30 minutes airport to city.



Leapfrog a generation - in

- Technology
- Customer service
- Marketing
- Ticketing
- Infrastructure
- In-town check-in



Benefits

- Local energy
- Lower congestion
- Less pollution
- Less noise
- Less accidents
- Less hassle – no check-in
- Better punctuality (Eurostar 2006 – 91.5% of trains were on time)
- Keeps US moving as oil gets scarce



Where I put this presentation together



Train v plane
or
Plane v planet?

