MULTI-HUB NETWORKS: AIRPORT CAPACITY, NETWORK STRUCTURES & SCHEDULING ISSUES

Dr Nigel Dennis
Senior Research Fellow
Transport Studies Group
University of Westminster

REASONS FOR DEVELOPING A MULTI-HUB NETWORK WITH HUBS IN CLOSE PROXIMITY

- Insufficient capacity at principal hub
- Keep rivals out of secondary hub
- Different market focus of two hubs
- Restrictions in bilateral ASAs

BRITISH AIRWAYS' DECISION TO DEVELOP GATWICK AS A HUB

HEATHROW
2 RUNWAYS
BA 40% OF SLOTS FULL

MANCHESTER AND BIRMINGHAM
TOO PERIPHERAL IN EUROPE
LITTLE BUSINESS TRAFFIC

GATWICK
1 RUNWAY
BA 25% OF SLOTS IN 1993
BA 50% OF SLOTS IN 2000 FULL

THE BA STRATEGY (1990s) OF DUAL-HUBS AT HEATHROW AND GATWICK

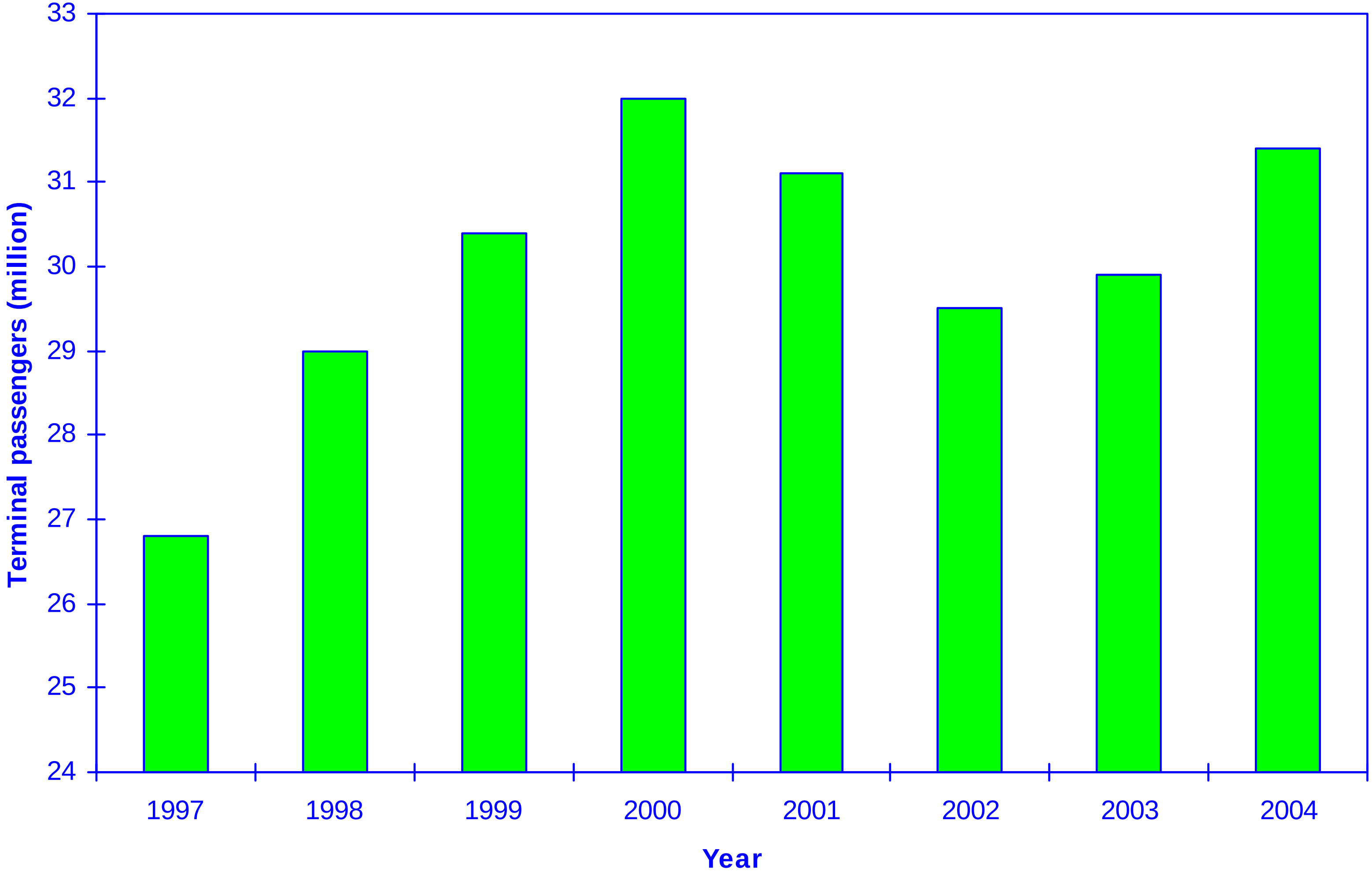
WHY THE DUAL-HUB STRATEGY FAILED

- Two hubs too close together (60 km) so local catchment areas too similar
- Yields lower on local traffic at Gatwick than Heathrow
- Long-haul routes could be made much more profitable by simply moving them to Heathrow (few slots needed)
- Costly to duplicate short-haul network from Gatwick; overnighting aircraft to feed hub did not optimise schedule for local Gatwick market
- Insufficient runway capacity at Gatwick to obtain critical mass of frequencies or network spread

RUN-DOWN OF GATWICK AS A HUB

- Cut-backs started 2000/01
- All long-haul routes moved to Heathrow except Caribbean and US points with bilateral restrictions
- Regional aircraft withdrawn on short-haul routes along with most duplicated Gatwick services (e.g. Frankfurt, Paris, Milan)
- Short-haul secondary points and holiday routes concentrated on Gatwick
- Dominant position at Gatwick eroded
- easyJet expands

CHANGE IN TRAFFIC AT GATWICK 1997-2004



Gatwick is the only UK Airport out of the top 30 to handle fewer passengers in 2004 than in 2000
Source: CAA

ALLIANCE NETWORKS IN EUROPE

- In most parts of the world the choice of alliance partner determines the alliance hub

- In Europe there is much more overlap and duplication

- This is partly due to capacity constraints but mainly historical

EUROPEAN NETWORK COVERAGE
Star Alliance - Dec 2002

	FRA	MUC	CPH	ARN	VIE	LHR
Frankfurt (FRA)	9					
Munich (MUC)	44	4				
Copenhagen (CPH)	21	19	12			
Stockholm (ARN)	9	7	18	16		
Vienna (VIE)	26	21	17	8	3	
London (LHR)	15	12	12	7	12	6
TOTAL	65	49	42	35	30	22

TOTAL ACROSS ALL HUBS = 116

Figures are number of European airports with at least 3x per weekday service from each hub/pair of hubs

LONG-HAUL SERVICES BY EUROPEAN HUB

Hub airline and code-share partners – July 2004

European airline and hub airport	Non-stop destinations	Weekly frequencies	% non-operated code-share
Air France (CDG)	65	503	18
Lufthansa (FRA)	43	462	31
British Airways (LHR)	46	445	5
KLM (AMS)	42	321	25
Iberia (MAD)	20	150	14
Alitalia (MXP)	17	115	20
Swiss (ZRH)	18	115	24
Lufthansa (MUC)	18	103	35
TAP (LIS)	14	75	8
Alitalia (FCO)	13	72	42
Austrian (VIE)	14	71	28
SAS (CPH)	8	55	0
British Airways (LGW)	8	51	0

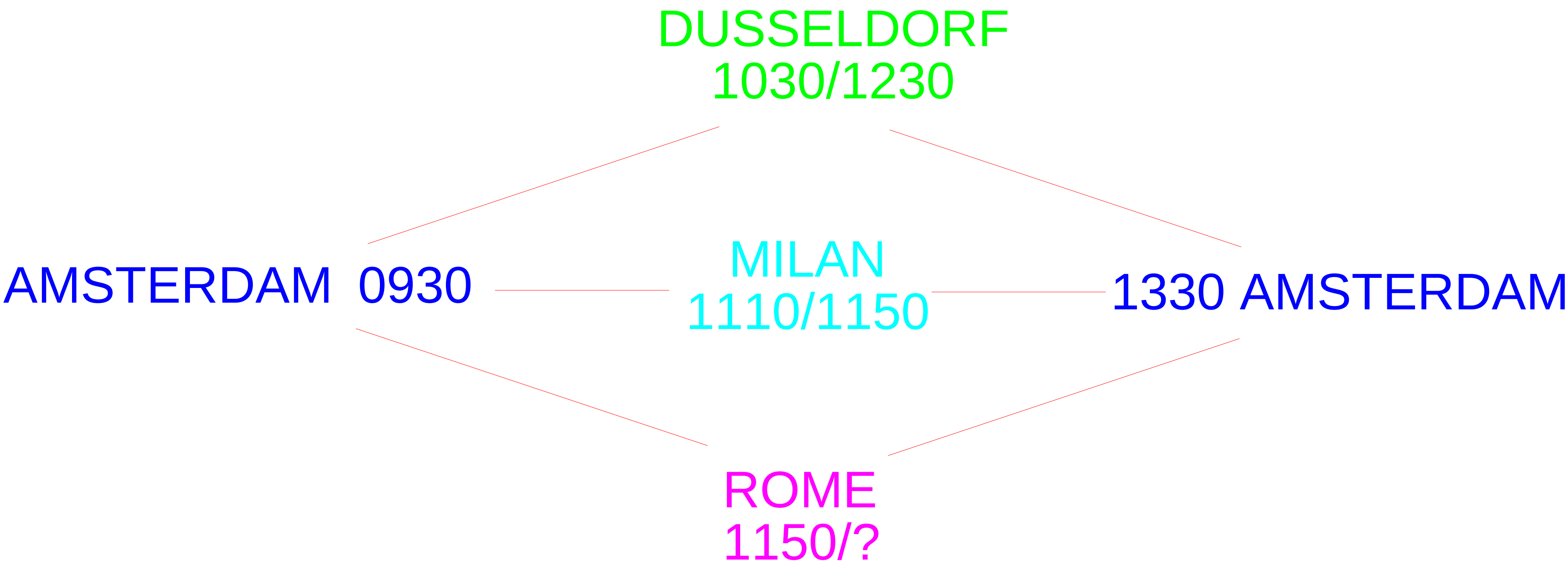
Source: Compiled from OAG data

COMPETITION ON SHORT-HAUL ROUTES FROM PARIS AND AMSTERDAM

Paris CDG Air France (75 routes)	%	Amsterdam KLM (60 routes)	%
AF Only*	40	KL Only*	52
+ Foreign Flag	27	+Foreign Flag	22
+ Low-cost	15	+Low-cost	17
+ Foreign Flag + Low-cost	19	+Foreign Flag +Low-Cost	10

* includes code-shares
Fifth freedom services and sub-daily operations excluded
Competing services may be from other airports classified under that city pair
Source: Compiled from OAG data October 2005

HUB REPEAT CYCLES AND AIRCRAFT UTILISATION



Multiple hubs improve this by enabling aircraft to return to a different hub

Often used in US – Lufthansa are only major example in Europe

SOME THOUGHTS ON AIR FRANCE-KLM

- No examples in US of major hubs of the same airline at less than 500 km: Detroit-Minneapolis would be closest at 900 km
- Paris has the stronger O+D demand but is a more difficult market to dominate
- International differences within Europe -> historic trading and ethnic links mean Amsterdam has strength to different parts of Europe and the World from Paris
- The collapse of Brussels and Gatwick as significant hubs (and weak position of Copenhagen for long-haul) could be potentially good news for Amsterdam – insufficient hub capacity in Northern Europe without it!
- Overall market share of AF/KL will be stronger with two hubs than one
- However there remains the risk that if demand dips or Amsterdam's short-haul network becomes ravaged by low-cost airlines then the quickest way to improve viability will be to move most long-haul services to Paris and withdraw from many Amsterdam markets