

Effect of capacity shortage on hub-and-spoke revenues

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Introduction

- **The issue:** many larger airports face or will face serious capacity problems (physical or environmental)
- **Question: which traffic segments do we want to accommodate?**
 - Hub carrier(s)
 - Other full service carriers
 - Low cost carriers / charters

Impact of different segments

- **Hub carrier(s) (Amsterdam Schiphol: KLM)**
 - (Dutch) consumers have direct access to many (inter)continental destinations
- **Other full service carriers**
 - Compete with KLM on (inter)continental routes -> fares ↓
- **Low cost carriers / Charters**
 - Enable (Dutch) consumers to travel to holiday destinations at low fares

The revenues of the hub-and-spoke system

- **What are the consequences for the SkyTeam hub-and-spoke revenues at Amsterdam Airport Schiphol if one operation (spoke) is removed?**
- **The developed model estimates the total loss of revenues as a result of the removal of a single route**

The model assumptions

- **Assumption 1 (load factor):**
 - Airlines always try to recover the load factor to, at least, a certain minimal level (10% lower than the present load factor)
- **Assumption 2 (instruments to recover load factors):**
 1. fare
 2. frequency
 3. aircraft size

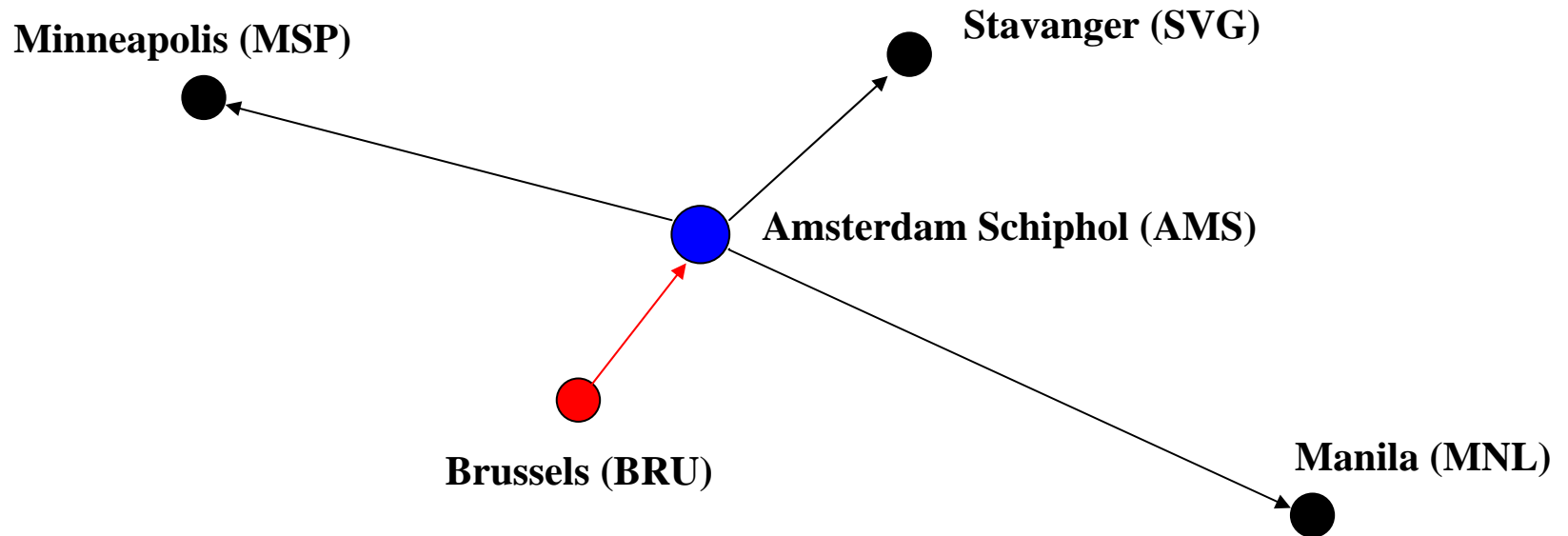
Possible airline actions (1)

- **What can hub carriers do to recover the load factors?**
 - Nothing, accept the lower load factors
 - Reduce the fares to gain market share and recover the load factors
 - Reduce the frequency level to recover the load factors
 - Reduce the aircraft size to recover the load factors

Possible airline actions (2)

- **Reduce the fares**
 - Considerable fare reduction likely at markets with high fares (routes with little competition)
- **Reduce the number of frequencies**
 - Likely if the frequency is higher than a certain minimal frequency
- **Reduce the aircraft size**
 - Likely if the airline has a smaller (and suitable) aircraft type in its fleet

Case: ceasing the KLM Brussels – Amsterdam Schiphol operation (1)

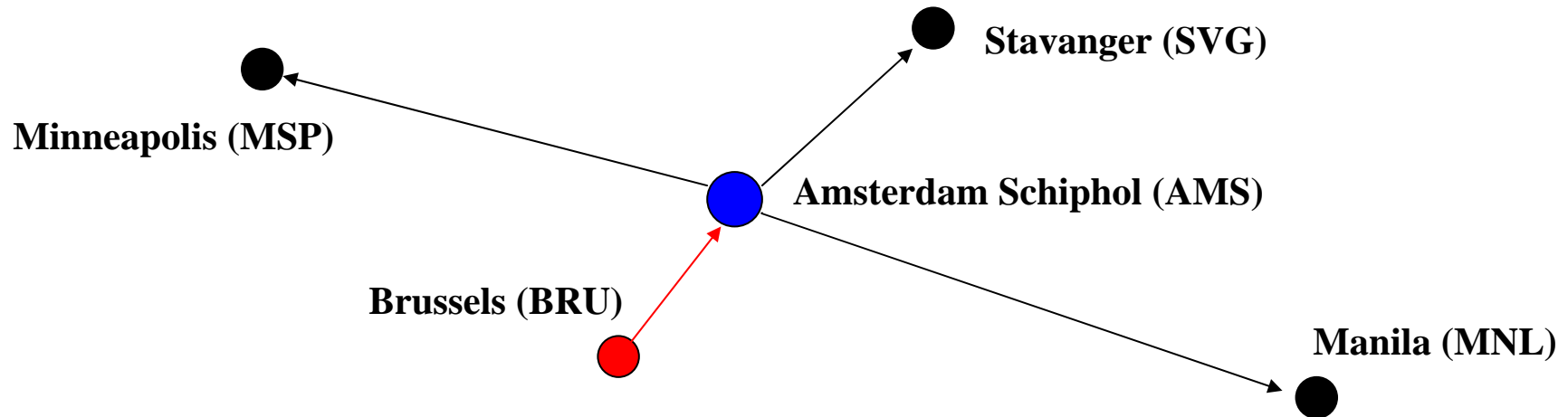


Case: ceasing the KLM Brussels – Amsterdam Schiphol operation (2)

Passengers from / via AMS				
	BRU	SVG	MNL	MSP
Local	160	200	200	2150
Brussels BRU		250	700	800
Stavanger SVG	250		900	1700
Manila MNL	700	900		0
Minneapolis MSP	800	1700	0	
Total volume	1910	3050	1800	4650
Frequency	49	21	7	21
Aircraft size	50	171	327	298
Capacity	2450	3591	2289	6258
Load factor	0,78	0,85	0,79	0,74

- **Consequences:**
 - Less revenues on local market
 - Less revenues on connecting markets (> 90% of total)
 - Decrease in load factors on other routes

Case: ceasing the KLM Brussels – Amsterdam Schiphol operation (3)



- **Ceasing the BRU – AMS operation:**
 - affects, among others, the markets BRU – MNL and BRU – MSP, which possibly leads to
 - reduction of the number of frequencies at the AMS – MNL and AMS – MSP routes, which
 - affects the markets MNL – SVG and MSP – SVG, which possibly leads to....
 - reduction of the number of frequencies at the AMS – SVG route
- **Affects the entire hub and spoke system**

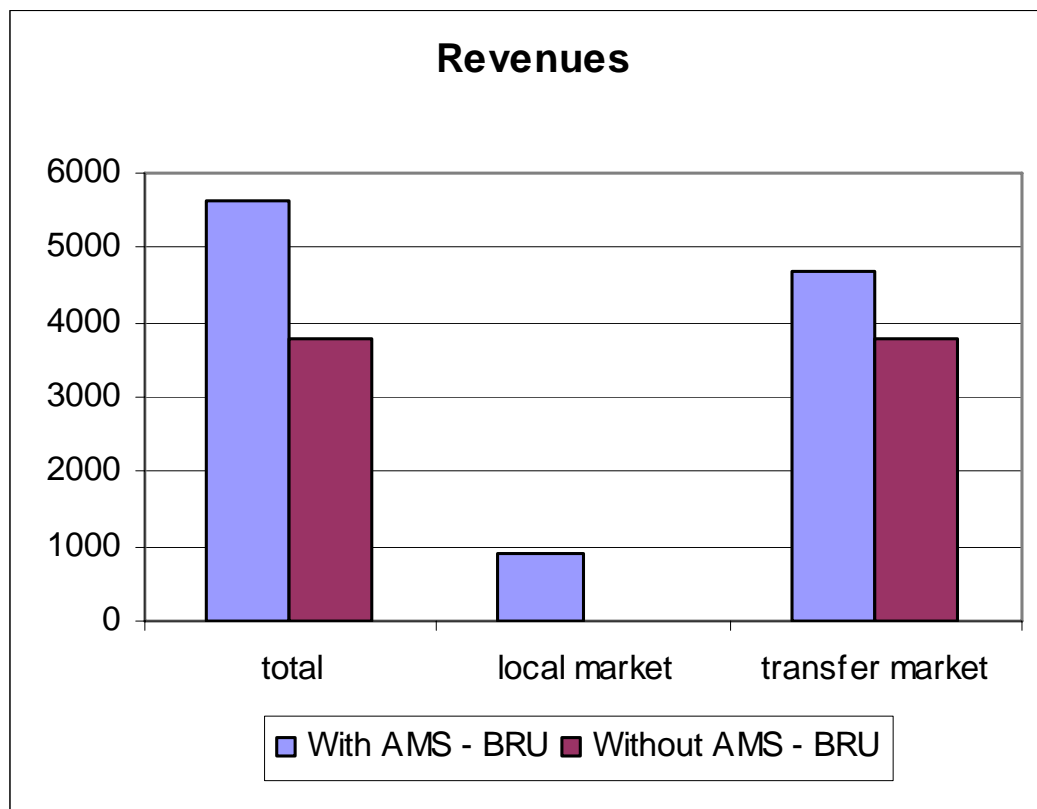
Case: ceasing the KLM Brussels – Amsterdam Schiphol operation (4)

Passengers from / via AMS				
	BRU	SVG	MNL	MSP
Local	0	200	200	2150
Brussels BRU		0	0	0
Stavanger SVG	0		900	1700
Manila MNL	0	900		0
Minneapolis MSP	0	1700	0	
Total volume	0	2800	1100	3850
Frequency	0	21	7	21
Aircraft size	50	171	327	298
Capacity	0	3591	2289	6258
Load factor	--	0,78	0,48	0,62

Case: ceasing the KLM Brussels – Amsterdam Schiphol operation (5)

Passengers from / via AMS				
	BRU	SVG	MNL	MSP
Local	0	218	296	2597
Brussels BRU		0	0	0
Stavanger SVG	0		1473	2053
Manila MNL	0	980		0
Minneapolis MSP	0	1852	0	
Total volume	0	3050	1769	4650
Frequency	0	21	7	21
Aircraft size	50	171	327	298
Capacity	0	3591	2289	6258
Load factor	--	0,85	0,77	0,74

Case: ceasing the KLM Brussels – Amsterdam Schiphol operation (6)



Conclusions

- **The hub-and-spoke system can handle a removal of a single route (no other route has to be ceased as a result of that)**
- **Reduction in fares, which results in a (small) loss of revenues for the hub operation, are in most cases sufficient to maintain the present frequencies and aircraft sizes and to keep the operation profitable**
- **If more than one operations are ceased than a ‘domino effect’ can occur if other routes are not viable anymore as well (after reducing the fares, frequencies and aircraft sizes to certain minimal levels)**