

What is the future of the European flag-carrier model?

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European aviation is beginning a process of major restructuring. The competitive landscape of 2005 is likely to look quite different than that of 1995. Serious flaws have developed in the traditional business model followed by the major carriers, and the future viability of that business model and those airlines has been openly questioned.

This article is designed to provide a framework for the better understanding of several questions:

- What drives competition between the major European carriers?
- Why some European hubs have been more profitable than others?
- Why the profitability of these carriers (as a group) collapsed long before September 11?
- What business models might provide a basis for profitable operation in the future?
- What path is industry consolidation/restructuring likely to follow?

Discussions of airline business models, demand segmentation and detailed traffic flows can sometimes seem a bit dry and academic. The data and analysis presented here was originally developed in 2000, in the decidedly non-academic context of two airlines whose survival was highly uncertain.

The challenge facing Swissair and Sabena in 2000

In 1999, Swissair had a minus 4% profit margin while Sabena had a minus 6% margin, a bit below AEA averages, after having earned small profits the previous two years. These declines mirrored downward profit trends among airlines across Europe. Both airlines were financially healthy, in the sense of having strong positive cash flow, easily meeting all current obligations and having much of their networks earning fully-allocated profits. Although no national airline in Western Europe had ever failed before, both carriers were destroyed and liquidated within eighteen months.

SAir Group, the holding company that con-

trolled both carriers, had undertaken a disastrous conglomerate strategy (code-named "Hunter"), withdrawing assets from Swissair and investing them in independent airlines in other countries or in separate service businesses. Swissair, Sabena and Crossair were separate operating companies and were not directly exposed to the losses or liabilities of the other airlines and service companies.

Network Management for Swissair and Sabena (senior management for the two airlines had been combined in 1999 but remained separate from the holding company) knew that both carriers were in a highly vulnerable position, given the industry-wide profit declines and the obvious failure of the outside investments. Airline management also knew that fleet decisions that SAir Group had imposed on the airlines would reduce future profitability by hundreds of millions of dollars. The fleet decisions had been driven by conglomerate objectives (including the development of an aircraft leasing company) and without any real reference to whether the aircraft could be operated profitably within the Swissair or Sabena networks

Assuming (heroically, as it turned out) that the airlines could somehow be reorganised independently of the SAir Group conglomerate investments, Network Management undertook a major internal study in 2000 to address two questions:

- Could either Swissair or Sabena survive long term, given competitive changes across Europe?
- What future business model and short-term changes would give the greatest chance of survival?

This article will outline one view of the competitive and profitability issues facing all of Europe's large airlines, as seen from the perspective of these two struggling mid-sized carriers, based on data available at the time (1999-2000) of the study. It is not intended to provide a complete discussion of the events leading to the

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demise of Swissair or Sabena. While the specific recommendations developed for the two carriers two years ago are of no more than historical interest at this point, the question of what drives hub profitability in Europe, and the viability of competing business models remains highly relevant.

The classic "flag-carrier" business model

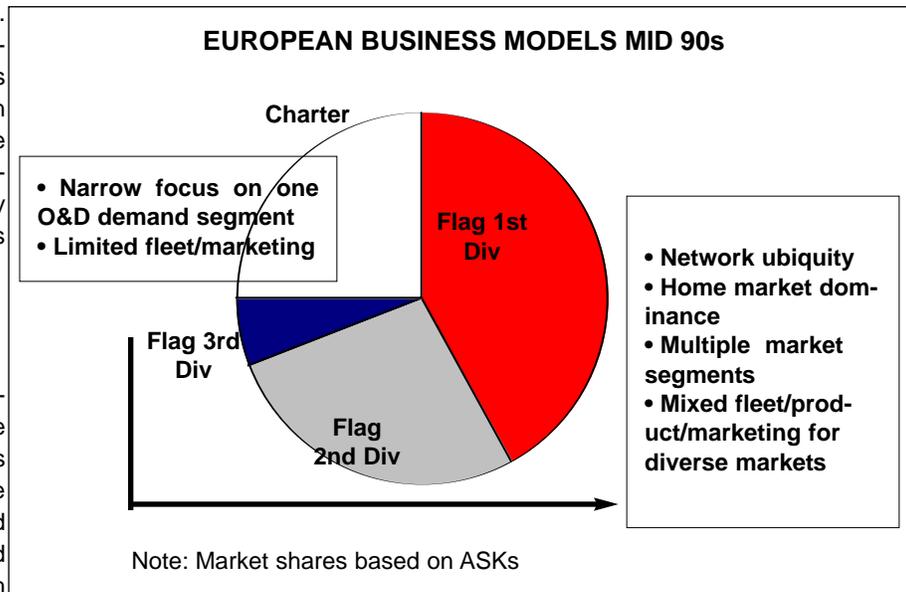
The two classic European airline business models were the "flag-carrier" model, which was designed to operate at a large scale and serve a very broad range of potential customers, and the "Charter-carrier" model, which

was designed to only serve a specific, narrow demand segment. The flag-carrier model, best represented by Lufthansa's Frankfurt hub-based network, was adapted by almost every scheduled airline from Portugal to Finland, and has five key features:

- Domination of travel demand from the carrier's home market;
- Service to multiple, diverse demand segments (business/leisure, domestic/intra-Europe/ inter-continental, home market/sixth freedom) to maximise total travel volumes;
- Large US-style hub operations in order to aggregate demand from dispersed markets;
- A mixture of different aircraft sizes in order to maximise the frequencies offered; and
- Significant marketing infrastructure (such as worldwide sales and distribution) and systems complexity (yield management, airport operations) to efficiently serve the diverse markets.

Charter carriers aggregated demand via specialised pricing, packaging and distribution, and organised operations around larger single-class aircraft with lower unit costs, and only served O&D markets that fit into this approach.

As late as 1995 the central strategy question for European airlines was scheduled versus charter. Once an airline chose the "scheduled" path, it then pursued every logical source of demand in order to maximise traffic volumes and scale. Smaller markets produced smaller airlines, but they all followed the same business model that



Lufthansa followed in Frankfurt.

European aviation will always be highly fragmented

European air travel demand has always been extremely fragmented due to heterogeneous national markets, huge disparities in disposable income levels and market sizes, strong distinction between leisure and business destinations, and wide disparities in transport alternatives. It is unnatural for any one business model to become the overwhelming standard across such a heterogeneous marketplace. The central position of the flag-carrier model was heavily influenced by regulatory and aeropolitical constraints and has already begun to break down. Airlines such as Ryanair are attempting to develop new leisure oriented markets (Stansted to Rimini or Biarritz) outside of the traditional charter model, while easyJet and others are developing more business-oriented O&Ds while avoiding the comprehensive scope and infrastructure intensity of the traditional flag-carrier model. Where demand is highly fragmented, it is normal for companies to experiment with new or modified models, and it should be possible for multiple, overlapping business models to successfully serve different segments.

Airline business models are demand driven, not cost driven

Because of the fragmented demand base, the

most critical strategic issue for any airline is network ubiquity versus a narrow focus-the decision to serve multiple, diverse traffic flows or to concentrate on one specific market segment. Cost structures must be then carefully tailored to the target market, but it is dangerous to segment airlines on the basis of concepts such as "low cost". There is no such thing as a "high cost" business model. Classic charter carriers avoid many of the branding, CRS, and hub airport costs that British Airways and KLM must bear, but as a result they cannot efficiently serve more diverse scheduled markets or scale their operations to a large network size. Ryanair's approach achieves low costs on Stansted-Ireland routes but would be uncompetitive on Heathrow-Austria routes. Airlines under any business model will fail if they add too much capacity relative to their target markets, or cannot keep costs in line with what those markets will pay for.

Three segments within the "flag-carrier" business model

In 2000, the 14 largest hubs accounted for 91% of all capacity operated within the entire scheduled European industry. The industry's "First Division" -the top four hubs (British Airways at Heathrow, Lufthansa at Frankfurt, Air France at Charles DeGaulle and KLM at Schipol) alone accounted for 55% of scheduled industry capacity.

These 14 First and Second Division hubs strictly follow(ed) the classic "flag-carrier" business model, with service to a very broad range of European and intercontinental destinations, and dominant home market network and distribution positions. Many of the 9% of scheduled ASKs in the Third Division are also tied to the flag-carrier model, including smaller national carriers with much more limited networks (Finnair, Aer Lingus, Malev, TAP), and secondary hubs of larger carriers (BA at Manchester, Iberia at Barcelona, Air France at Orly, Crossair at Basel), designed to maximise Home Country coverage. But this Third group also includes new entrants following different models, including domestic-focused hubs (AOM-Air Liberte at Orly, Deutsche BA), and the satellite London operations (easyjet at Luton, Ryanair at Stansted). In 2000, these new entrants were still a tiny percentage of scheduled industry capacity.

The First Division market size advantage

There is a marked difference in the size of the local revenue base between the four First Division hubs and the ten Second Division hubs. The CDG market is three times larger than Zurich, Brussels or Munich, while Heathrow is six times larger, and these gaps would be even larger if one considered total London/Paris demand instead of the airport level demand. This size advantage of the ASK capacity operated by the First Division hubs mirrors the differences in the underlying revenue bases. This is in marked contrast to the US hub environment where origin market size gaps between the top tier hubs (Atlanta, Dallas, Chicago) and second tier hubs (Houston, Denver, Pittsburgh, Philadelphia) are much smaller. This also explains why new entrants using 140-seat aircraft have had success developing networks of large O&D markets ex-London, and much less success at Brussels, Munich or similar cities.

The First Division offers two to three times the level of Intercontinental departures than Second Division hubs, even though levels of intra-Europe service are broadly similar. SAS at Copenhagen had roughly the same number of short-haul flights as British Airways at Heathrow. Second Division carriers would have to quadruple their ASK capacity in order to match the size and operating scale of the First Division.

Flag-carrier hub profitability fell by over \$1bn in 1999

One cannot evaluate competitive performance or strategic issues without reference to relative profitability. The table below includes Swissair estimates of the operating profitability of the 14 hubs in its competitive set. These reflect educated guesswork based on public financial information and should be used with the appropriate grains of salt. European airlines do not have detailed public yield and cost data available and thus cannot easily estimate their competitor's route and hub profitability as US airlines can.

In 1999 the profitability of these 14 hubs fell by over US\$1bn (a 45% decline) from 1997-98 levels, a downward trend that continued in 2000 and 2001. More importantly, there is a structural profit gap between the First and Second division hubs. In the "good years" of 1997-98, the top four hubs operated 61% of the capacity of this group

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FLAG CARRIER HUB PROFITABILITY

		Hub ASK Capacity Rank/ Index (FRA=100)	Estimated 97-98 hub Op Profit	Estimated 97-98 hub Op Margin	Estimated 99 hub Op Profit
First Division hubs 55% ASKs	LHR—BA	1—125	\$750 m	5-7%	\$150m
	FRA—LH	2—100	\$550 m	7-9%	\$500m
	CDG—AF	3—92	\$300 m	3-5%	\$500m
	AMS—KL	4—82	\$400 m	3-5%	\$100m
	Subtotal		\$2.0 bn	~4%	\$1.3 bn
Second Division hubs 36% ASKs	LGW—BA	5—46	\$75 m	2-4%	(\$25m)
	ZRH—SR	6—41	\$75m	2-4%	0
	MAD—IB	7—36	\$100 m	3-5%	\$50m
	MXP—AZ	8—34	\$75 m	2-4%	(\$25m)
	BRU—SN	9—29	\$50 m	0-2%	(\$25m)
	CPH—SK	10—22	\$75 m	3-5%	\$25m
	FCO—AZ	11—18	\$50 m	2-4%	0
	VIE—OS	12—17	\$50 m	2-4%	0
	MUC—LH	13—17	\$50 m	1-3%	\$25m
	ARN - SK	14-14	\$0 m	(1)-1%	0
	Subtotal		\$0.6 bn	~2%	\$0.1 bn

While capacity grew roughly 35% in this period, industry-wide revenues (adjusted for inflation) barely grew at all. While there were isolated cases of profitable growth (Air France's hub development at Charles DeGaulle), in the vast majority of cases this expansion destroyed corporate value.

but earned 77% of the profits, a full two margin points better on average. As overall industry financial performance declined, Second Division profits declined much more rapidly, falling 85% in 1999 versus an estimated 35% decline for the First Division. Size matters. There is no evidence in this time frame of any smaller flag-carrier hub earning more profits than any significantly larger one.

While an obvious point, it is worth noting that 2-4% operating margins in the "good years" of a business cycle usually indicates that an industry has extremely serious structural problems and could not support new capital inflows without major restructuring.

Overcapacity and the industry profit collapse of the late 90s

The tendency of airlines to expand capacity much faster than the growth in revenue base can be observed throughout the industry's history, and was the primary driver of the overall decline in flag-carrier profitability in the late 90s.

The 14 AEA carriers grew capacity roughly 7-8% per year in this period. As seen in the table below, Intercon traffic grew in line with seat growth, while intra-European traffic growth lagged slightly behind. However, Intercon traffic growth was almost exactly offset by 7-8% real yield declines -the added seats were only filled by cutting prices. The real yield declines were almost (but not quite) as bad on the short haul network.

Within the AEA averages, the smaller, weaker carriers were actually growing faster than the larger, more profitable ones. The First Division airlines grew at an overall average of 7%, adding a huge number of new seats to the market, although BA and KLM slammed the brakes on growth in 1999 once they realised how overexpansion was harming their shareholders. However, the Second Division carriers grew 12% and AEA carriers in the Third Division group (such as TAP, Aer Lingus and Finnair but not including Ryanair or easyJet) grew at 13%. It is unclear whether any managers at these carriers actually believed that their core business revenue base was likely to grow at 12-13% type rates. But in their rush to emulate the Frankfurt hub (and to narrow Frankfurt's size and network scope advantages) the flood of new capacity destroyed their corporate earnings.

Flag-carrier revenue and competition is driven by Intercon markets

64% of all revenue originating or terminating in Europe in 2000 was long haul, while only 25%

	1996	1997	1998	1999
European GDP growth	1.5%	2.4%	2.6%	2.0%
<i>AEA INTERCON</i>				
ASK growth	8.7%	10.5%	6.4%	8.0%
RPK growth	8.1%	7.5%	7.6%	8.7%
Real RASK growth	(8.2%)	(5.5%)	(6.7%)	(8.5%)
<i>AEA INTRA-EUROPE</i>				
ASK growth	6.4%	7.7%	10.0%	5.5%
RPK growth	7.3%	5.3%	7.9%	5.8%
Real RASK growth	(6.8%)	(6.8%)	(3.8%)	(4.6%)

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% of total Revenue base by O&D category	All markets	O&Ds with nonstop service	Connect-only O&Ds
Total	100%	65%	35%
Intercontinental	64%	32%	32%
Europe cross-border	25%	21%	3%
Domestic	11%	11%	0%

came from cross-border short-haul markets. The remaining 11% was from domestic, intra-Scandinavia or UK-Ireland markets which the top 14 hubs only serve on a very limited basis.

Competition between the top 14 hubs is dominated by the dynamics of Intercon markets. 32% of the total flag-carrier revenue base comes from Intercon markets that have no nonstop service. Many of these markets (Berlin-Los Angeles, Lyon-Tokyo, Sao Paulo-Copenhagen) have good single carrier one-stop service from five or more competing European hubs plus alliance or inter-line service via non-European carriers. Long haul markets with nonstop service (another 32% of the total revenue base) will still face significant competition from hubs offering connecting service, given the price sensitivity of these markets, and the relatively small elapsed time penalty.

Given the power of hubs, intra-Europe non-stop markets tend towards stable one or two carrier markets. With typical 1hour 30minute narrowbody block-times, connecting alternatives cannot compete without very deep price cutting. Intra-Europe O&Ds that do not have nonstop service, where passengers must connect (Bari-Amsterdam, Stavanger-Rome) tend to be extremely low-demand markets, and are insignificant to the larger competitive picture. In the US, narrowbody must-connect markets account for over a third of the domestic market, while in Europe the thousands of O&Ds in this category only account for 3% of the total revenue base.

Hub profitability depends on a limited mix of low-yield connect traffic

79% of all traffic served by the top 13 hubs originated or terminated in the hub carrier's home market, 68% at the hub city, and 11% on connecting domestic services such as Hamburg-Frankfurt on Lufthansa or Toulouse-Charles DeGaulle on Air France. Average yields on home market connect flows are generally similar to hub nonstop levels, Swissair yields on connecting Geneva/Basel traffic was actually higher than nonstop Zurich yields at comparable stage

lengths. Yield penalties on sixth freedom markets averaged 15-20% for Swissair and 20-30% for Sabena. Hub profitability requires a strong mix of home market traffic relative to lower-yielding sixth freedom traffic.

Excess capacity has a disproportionately greater impact on sixth freedom markets. Carriers can avoid price wars in Home Country business markets such as Paris-Frankfurt, by filling empty seats with Miami-Frankfurt or Paris-Bangkok passengers instead.

Three hubs which had the misfortune of being located in smaller national markets - Amsterdam, Zurich and Brussels - had extremely high percentages of lower-yielding sixth freedom traffic, and are especially exposed to revenue downturns due to industry-wide overcapacity. Other Second Division hubs had lower percentages of sixth freedom traffic but also had weaker Intercontinental networks.

Sixth Freedom Traffic as % of Total Hub Traffic (1999)

LHR—BA	18%
FRA—LH	27%
CDG—AF	20%
AMS—KL	44%
LGW—BA	15%
ZRH—SR	34%
MAD—IB	7%
MXP—AZ	13%
BRU—SN	36%
CPH—SK	9%
FCO—AZ	2%
VIE—OS	24%
MUC—LH	11%
Average of 13 hubs	21%

Second Division hubs cannot compete for Intercon traffic

Second Division hubs with long haul networks face a daunting challenge. Intercontinental widebodies can feed huge volumes of traffic on their existing short haul flights, rapidly increasing the scale economies of their hubs, and significantly improving the scope of their network to the levels business customers demand. But by competing directly with Frankfurt, Paris and Amsterdam for this traffic, they end up with an unsustainable mix of sixth freedom connecting traffic, and the expansion needed to maximise network competitiveness disproportionately trashes their own revenue base. None of the Second Division hubs operating in 2000 could match the market share of the First Division hubs in the Intercon market, and none of the Second Division Intercon opera-

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tions were profitable in the late 90s. Traditional flag-carriers such as Austrian and SAS who had recognised this dilemma and backed away from direct competition with Frankfurt and Paris remained frustrated by the inability to exploit the growth and scale economies of the major wide-body operators.

As the table below indicates, the ability to attract sixth freedom Intercon traffic is a direct function of the number of Intercon departures offered. The only hub to capture a disproportionate share of this traffic is Amsterdam, which has long been the industry leader in this segment, and developed the first strong alliance network to serve interior US points and the first and strongest network to feed regional UK traffic through a large hub. No one in the Second Division has been unusually successful in attracting connecting flows to their hub.

Aircraft economics are also key since unit costs climb as total seats decrease. Carriers with smaller home markets must rely on smaller 767/A330 type aircraft, and thus lack both the capacity to serve a larger share of sixth freedom, and the low costs needed to serve lower-yield passengers profitably. If a 200-seat long range aircraft with 747 unit costs existed, Second Division hubs would be much stronger competitors.

How many Intercon hubs can Europe support?

The Swissair/Sabena study argued that all 14 hubs were viable and sustainable, but not if they followed the traditional flag-carrier business model and developed networks directly competitive with Frankfurt and Paris. One could operate long haul from a European hub with a level of departures competitive with Frankfurt and Paris, or maintain a very limited service strictly supported by the local market similar to Austrian at Vienna or Alitalia at Rome, but there was no viable "in-between" strategy.

The number of viable flag-carrier model Intercon hubs was limited by the total pool of traffic from cities without non-stop service and the number of strong, immunised alliance with domestic US carriers. The North Atlantic accounts for 54% of the total long haul market ex-Europe, and 20% of the US market can only be served in conjunction with an alliance partner. British Airways at Heathrow could clearly com-

	Share of Intercon Departures (Winter 99-00)	Share of Intercon Sixth Freedom Connect Traffic (MIDT 99)
LHR—BA	18%	17%
FRA—LH	15%	18%
CDG—AF	17%	14%
AMS—KL	14%	23%
LGW—BA	7%	6%
ZRH—SR	8%	7%
MAD—IB	4%	3%
MPX—AZ	4%	2%
BRU—SN	5%	5%
CPH—SK	3%	1%
FCO—AZ	2%	2%
VIE—OS	2%	1%
MUC—LH	1%	0%

pete without an alliance partner (albeit at a slight disadvantage) as the larger UK-US market can support more direct service, but no continental hub could remain in the First Division without an immunised US partner. While many observers at the time were expressing doubts, the study argued that there was no question about the long-term viability of KLM's Amsterdam position. Its smaller home market would always limit its potential profitability (relative to Paris or Frankfurt), but its decades of experience with hub and alliance management and other factors provided offsetting strengths, and it would clearly benefit from the inevitable shakeout of sixth freedom capacity.

A BA-KLM merger would have had a huge impact on European hub competition by allowing one company over 45% of the sixth freedom Intercon market, more than double the share of Paris or Frankfurt.

Observed (2000) long haul sixth freedom connect traffic had been inflated by unsustainable discounting, but there was at least the possibility that the market could support a fifth flag-carrier type hub, although this was by no means certain and would depend heavily on the availability of a strong US alliance partner and exact path of industry restructuring. 27% of the observed sixth freedom traffic already used Second Division hubs; a viable fifth flag-carrier hub would need to achieve a 10-15% share with the same (or better) yields achieved by the First Division hubs.

Swissair as Europe's fifth Intercon hub?

It was readily accepted that Sabena had no

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business expanding its Intercon network, and the decision to double Sabena's long-haul fleet from 10 to 20 aircraft (imposed by SAir Group in 1997 when effective control was acquired) needed to be totally reversed. None of the aircraft added had operated profitably. It was argued that Sabena could profitably support perhaps 8 to 12 long-haul aircraft, (the pre-SAir Group level) limited to large destinations such as New York and Boston, American Airlines hubs, and traditional markets in Francophone Africa. As will be discussed below Sabena had a clear opportunity to abandon the flag-carrier model, and to restructure along a "City Network" business model approach.

Swissair's dilemma was much more difficult, as both growth and contraction seemed highly unattractive. The size of the Swiss market and the limitations of Zurich airport precluded any expansion towards the size of the First Division networks, but all evidence suggested that competitiveness would decline rapidly if Intercon service were cut back to a smaller scale. But 55% of all Swissair revenue came from Intercon traffic (versus 30% for Sabena) and Intercon was a huge percentage of Swissair's asset and marketing base. Swissair operated 36 long haul aircraft and only seven of these aircraft were operating unprofitably in 2000 and all but one was clearly cash positive. Swissair had a reputation for service quality that allowed it to compete successfully for higher-yield sixth freedom traffic against carriers with larger networks. In fact, the value of Swissair's brand almost exclusively came from its ability to shift revenue share in competitive markets outside Europe. Swissair was respected within Europe, but (adjusted for stage length) its short haul yields were exactly comparable to those of Sabena or Crossair, somewhat less famous brands.

The study concluded that there was no logical basis for arguing that Swissair could survive long-term and earn reasonable returns, even if all of the conglomerate financial problems external to the airline could somehow be solved. If one was starting from a clean sheet of paper, one would never invest in a global hub based in Switzerland.

The recommended approach, however, was to maintain Swissair's 1999 level of Intercon operation and continue to try to compete directly with the First Division hubs, making maximum use of Swissair's brand equity and service reputation.

Given the current profit squeeze and industry overcapacity, any expansion not clearly profitable would be cancelled, including the A340-600 aircraft on order which were much too large for Swissair's markets. Profit recovery would depend on a rapid shakeout of other unprofitable Second Division Intercon capacity-not only a downsizing at Brussels, but also Gatwick and Malpensa, gauge reduction at Heathrow, and no new expansion at Copenhagen or Munich. It would also require strengthening the alliance with American Airlines to the level achieved with the previous alliance with Delta. SAir Group had allowed the Delta alliance to collapse as alliances and acquisitions with Third Division European carriers were deemed more important. Any BA-KLM merger, or US-UK open skies leading to a fully immunised BA-AA alliance would have destroyed the prospects for this approach.

The alternative most in line with the changing competitive situation was to downsize to an almost exclusively short-haul network following the Sabena approach. This would have required the elimination of over 25 widebodies and replacing at least 20 of Swissair's A320s with smaller aircraft as the loss of long haul feed would require a complete downsizing of the short haul fleet. It would have eliminated 80% of the jobs under the current Swissair pilot contract. The risks of such radical downsizing were huge and no airline in history had ever gone through a restructuring remotely similar. All current operations were cash positive yet any restructuring would have immediately drained cash and required massive new investment.

While survival as the smallest of Europe's First Division global hubs was highly uncertain, and many critical requirements were outside Swissair's control, this was the shareholders' least risky near-term option. Of course the viability of this approach would need to be regularly revisited as the actual industry shakeout, and SAir Group's financial restructuring proceeded.

The new SWISS Intercon strategy (2002)

Of course, SAir Group refused to restructure any of its failed conglomerate investments and collapsed in 2001. SWISS became the successor company to Swissair, using the Crossair corporate structure, and acquired all of Swissair's route authorities and other network operating assets.

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As SWISS obtained these assets without any requirement to compensate the previous owners (the SAir Group creditors) they had the unusual freedom to establish whatever fleet or network mix they wanted.

The new owners of SWISS invested US\$2.5bn of new capital in a business plan whose centrepiece was an "in-between" size Intercon strategy. Zurich Intercon capacity was cut roughly 25 percent (to a level similar to what Alitalia operated at Malpensa in 2000), and the historic Swissair brand name was abandoned. While they had the option of using their lower cost structure as the basis for strengthening Intercon service, pursuing a predominately short haul network based on regional aircraft, or a lower cost approach based on a narrower set of target markets, they chose instead to invest in a 26 aircraft long haul strategy.

Thus the new owners of SWISS rejected all three of the major findings of the 2000 Swissair/Sabena study-that a short haul regional aircraft based strategy was the best "clean sheet of paper" approach, that the largest feasible network and the strongest brand would be critical if one chose to continue to battle First Division hubs for a strong Intercon position, and that an "in-between" Intercon network was the worst of all worlds, and was the least likely to achieve sustainable profits. Whether this alternative strategic approach can earn returns for the new investors is currently being tested in the marketplace.

A new City Network strategy for Brussels

The plan developed for Brussels abandoned key elements of the flag-carrier model, including the emphasis on rapid Intercon traffic growth and sixth freedom connecting traffic. Brussels is a large O&D market, similar in size to Rome, Milan, Munich, Zurich and a bit larger than Copenhagen and Vienna. The study argued that Brussels (and the other Second Division cities) were fully capable of supporting large levels of airline service, just not global hubs.

Of the 70 European cities Sabena and DAT served in 2001, 50 had fewer than 50 local Brussels passengers per day each way, and only six markets had more than 100 local passengers. Thus an airline pursuing a Southwest or Ryanair type strategy of serving markets that can fill 140-

Number of destinations with local Brussels demand (passengers per day, each way, MIDT)

>150	100-149	75-99	50-74	35-49	20-34	<20
1	5	6	8	14	16	20

seat aircraft would have difficulty developing a large network. The high cost of short-haul flights at Brussels-National Airport would make it difficult to profitably sustain the low fares that would be required to significantly stimulate new demand, and Brussels' appeal as a purely leisure destination is limited. Virgin Express has been unable to make money with its small route network. Ryanair's limited network is based at Charleroi (where its airport costs are essentially zero) and has not focused on traditional business destinations.

The recommended "City Network" business model, builds a high frequency network for these business destinations with a mixed, largely regional jet fleet, targeting a very small average gauge (75-90 seats) that reduces total ASKs. Under 2000-01 market conditions, the study argued that Brussels could have supported 240-280 flights, depending on the exact competitive situation. Seat capacity serving sixth freedom would be drastically reduced, along with the marketing and sales infrastructure serving these diverse but low-yield markets. Longhaul and mainline narrowbody aircraft would be limited to markets that can be profitably operated with strong reliance on local traffic (London, Malaga, New York, francophone Africa). Global connectivity would have been provided in conjunction with alliance partners (Swissair and American). Revenue would still be optimised with a hub schedule, but depeaking the existing Intercon-oriented Sabena schedule would have provided utilisation gains enough to fund six or seven additional aircraft worth of flying.

Sabena - no chance to change direction

While Sabena management accepted the "City Network" recommendations, and worked actively to cut back long haul flying and to significantly expand regional jet flying, it was unable to implement the change in strategy. Sabena had grown at an annual rate of 22% between 1997 and 2000 - three times faster than the ruinous AEA 7% average rate that had destroyed billions in corporate value across Europe. SAir Group strategy for Sabena was to focus on intra-Europe

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connect traffic, even though this was only 3% of industry revenue, and this traffic had no particular reason to choose Brussels over other, larger hubs. SAir Group's 1997 decisions to recklessly over-expand, and to simultaneously replace Sabena's entire fleet with aircraft much too large for its markets created impossible financial burdens and the company collapsed by the end of 2001.

In addition to doubling the long haul fleet, SAir Group disposed of Sabena's fleet of 32 737s, (most of which were less than ten years old) replacing them with larger A320s. This would have increased the average gauge of Sabena's overall narrowbody operation from 98 to 116 seats per departure, comparable to the level Air France operates in a local market three times the size of Brussels, where it also has 50 long haul widebodies a day feeding connecting traffic onto those seats. The A320 is obviously a fine aircraft, it was just totally inappropriate for Sabena's markets. They would have increased annual costs by over US\$100 million (since they are newer and larger aircraft) and would have been totally dependent on incremental sixth freedom traffic (on top of an already bloated base) to cover those costs. Because Airbus could not deliver this added capacity fast enough, SAir Group added wetlease capacity from Virgin Express and CityBird at rates over US\$35m per year higher than Sabena's own costs, under unbreakable multi-year contracts, which accelerated the cash drain and subsidised otherwise unsustainable competitors.

It would have been relatively simple to shift from Sabena's 1998 fleet and network position to a "City Network" type strategy, but there was no way to quickly reverse the financial burdens of the SAir Group changes (fleet and wetlease obligations, massive pilot retaining, overcapacity and yield declines, etc.). Press comment at the time Sabena shut down tended to focus on longstanding issues such as brand image, or Belgian social costs and industrial relations, but these factors had almost nothing to do with the actual failure of

the company.

While Sabena's short-term profit outlook in 2000 was much worse than Swissair's, this was largely a function of the fleet and wetlease problems. SAir Group had made disastrous aircraft investments at both airlines, but they hit the Sabena P&L two years sooner. If one assumed these obligations could be restructured, and one looked out to the European airline environment of 2005 or 2010, the study suggested that it was more likely that one could operate a profitable City Network airline in Brussels than to make money in Zurich as the number five global hub in Europe.

While the 2000 Swissair/Sabena study argued that the Brussels market could support a large local-service airline, investors have been highly reluctant to step forward, and SN Brussels, the successor carrier remains under-capitalised. As Sabena imploded, and was not reorganised in an orderly manner, a significant chunk of its previous revenue base was lost to foreign airlines, and perhaps that may have fatally undermined the potential opportunity. Or perhaps investors simply do not believe that any European airlines except the First Division global hubs and UK-based new entrants can justify new private investment.

Five viable European airline business models for 2005

The central strategic question for European airlines in 2005 is whether to pursue all possible sources of demand (global, domestic, short-haul European, mixed business and leisure) in order to maximise traffic volumes. If one does, one must incur much higher marketing infrastructure and operating complexity costs. These costs can only be offset by the scale economies of 747s and Frankfurt-type hubs, which can only be realised by carriers with large, sustainable Intercon networks. The limited base of higher-yielding home market Intercon traffic suggests that only Heathrow, Charles de Gaulle, Frankfurt and Amsterdam can survive as global hubs, and so only British Airways, Air France, Lufthansa and KLM have the possibility of pursuing a multiple demand segment strategy.

Limited long haul service outside these hubs will survive only when the local market can fill at least half of the seats and local business travelers contribute a strong share of total revenue.

	AF-CDG	120
Average	BRU after Airbus plan	116
seats per	SR-ZRH	113
intra-Europe	BA-LGW	110
departure	OS-VIE	101
under hub	BRU 1998 actual	98
carrier's code	KL-AMS	93
(summer 00)	LH-MUC	87
	BRU City Network plan	85

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Any European network that cannot enjoy scale economies must target a narrower market segment, eliminate all costs not directly serving that target market, and achieve short haul operating costs much lower than current BA or KLM levels. The "City Network" approach outlined earlier targets local intra-European business demand and drastically reduces capacity and operating costs by downsizing into smaller gauge, largely regional fleets. The "Big O&D" model uses a standardised fleet of larger (737/A320 type) single class aircraft and then targets one of three categories of markets potentially large enough to fill these aircraft (traditional business, tour package leisure, or scheduled leisure O&Ds).

These Business Models cannot be combined

It is important to emphasise that any sustainable airline business model must have lower costs than the traditional flag-carriers. No airline can survive with bloated overheads, above-market input costs or an unfocused all-things-to-all-people management mentality. But low cost is one of the keys to sustainable profits, not an end in itself. Cost efficiency is driven by totally different factors under each model, and in each case certain costs must be higher in order to generate critical revenue streams.

Because different costs play different strategic roles in each case, airlines cannot follow more than one model, or mix-and-match elements of different models. The discipline and skills needed to ruthlessly eliminate complexity and infrastructure costs in a City Network or Big O&D approach cannot also serve the diverse customer requirements of a sixth freedom hub.

The focus on scale economies and complex automated tools that are key to Global Hubs cannot be readily applied to narrow local markets. Managers at

Global Hub and City Network must carefully limit discretionary low-yield traffic to off-peak "fill-up" capacity, while managers at Big O&D carriers must build their marketing and capacity plans around these markets.

No successful airline has ever operated divisions following totally different business models. The management approach of one model always undermines the unique cost discipline or market focus needed to succeed with the second model. US carriers have repeatedly failed in attempts to either graft isolated pieces of the Southwest Airlines business model onto the traditional "Big Hub" model, or to create an "airline-within-an-airline" following the unique Southwest model.

"City Networks" target existing traffic but have limited growth potential

The "City Network" model is designed to serve already existing demand for (relatively high priced) air service at (relatively high cost) major airports. This minimises market development costs but means that this model offers very limited traffic growth potential. Natural growth of the higher-yielding business revenue base is probably less than 2% per year, with no growth potential until the overcapacity of the late 90s is worked off.

Only large markets, such as the Second Division hub cities, can support the large, multiple-frequency networks needed to make this approach work. City Networks at smaller cities (Geneva, Hamburg, Nice) are easily overwhelmed by large jet capacity from competitor hubs, and it is much more difficult to build the customer loyalty and competitive presence needed to maximise revenue performance.

	Driver of Low Costs	Costs needed to generate higher revenue
Global Hub	<ul style="list-style-type: none">• Very low costs per ASK (widebodies, mainline jets, long stage lengths)• Scale economies from very large home market revenue base and large Intercon traffic flows	<ul style="list-style-type: none">• Intercon sixth freedom revenue must cover higher airport, marketing and distribution costs• Costs of added services, premium products must be covered by higher fares
City Network	<ul style="list-style-type: none">• Very low aircraft costs per departure (regional aircraft)• Reduced complexity and infrastructure costs (hubs, marketing and distribution) relative to flag-carrier levels	<ul style="list-style-type: none">• Local customers must pay for quality schedule at expensive airport—must have large local revenue base and must achieve local market RASK premium
Big O&D	<ul style="list-style-type: none">• Low aircraft costs per ASK (standardised fleet of all-coach mainline jets at high utilisation)• Extreme minimisation of complexity and infrastructure costs• Very low airport costs	<ul style="list-style-type: none">• Must develop new, discretionary revenue via combination of clever marketing and lower pricing• Each city pair must be large enough to fill larger gauge aircraft

This approach offers none of the glamour of a rapidly growing long haul flag-carrier network, but that is not one of the options in a market like Brussels, Vienna or Rome. The "City Network" model offers an opportunity to make money the boring, old fashioned way - by keeping costs in line with a more limited and stable revenue base, and maximising the satisfaction of local business travelers with a strong, reliable schedule.

The "Big O&D" model generates new demand but has difficult limitations

"Big O&D" carriers face the marketing challenge of creating new demand that does not need to travel by air (or travel at all) and was not well served by the traditional flag-carriers, and do so at volumes large enough to fill large aircraft. Exploiting any of the three potential target markets requires solving a difficult tradeoff.

"Big O&D-business" carriers focusing on more traditional O&Ds (easyJet in Geneva-Amsterdam, Ryanair in Dublin-regional UK markets), have the opportunity to exploit existing demand, which (as in the Ireland-regional UK case) may never be profitable or strategic for incumbent flag-carriers. However, they must stimulate much greater traffic volumes than the flag-carriers ever experienced, and overcome the strong brand/distribution position of the incumbents. They need to establish a very strong price and cost advantage to deter retaliation, but must either serve higher cost airports or train the market to use less familiar alternative airports.

Pure leisure demand to warm weather destinations will ensure a market for "Big O&D-tour package leisure" carriers, including the historic charter-carriers. However its share of the holiday-maker market will likely fall as markets mature and the airline component of this business has always been financially challenging. Ryanair has aggressively begun to expand into the "Big O&D-individual-leisure" segment with low-cost unpackaged alternatives to southern European airports with little or no charter service. Under either the "Leisure-Individual" or "Leisure-Tour Package" approaches, carriers must achieve rock-bottom costs while absorbing either the packaging and agency distribution requirements or the challenge of developing totally new airports and travel patterns, plus the normal seasonality and volatility of leisure-dominated markets.

A fourth "Big O&D" target, high-demand

domestic markets, has been attempted repeatedly without any success whatsoever. Every Continental country with sizeable domestic O&Ds - France, Italy, Germany, Greece, Sweden, Norway, and Spain - is littered with downsized or failed startups. In each case the small number of O&Ds, high airport costs, and other factors prevented the new airlines from achieving large, sustainable price and cost advantages. Go and easyJet achieved better results in the UK where domestic routes were a small piece of a broader network, and with a much larger and more easily segmentable capital city market. AOM, Air Europa, Deutsche BA and Air One had credible operations but the same costs at the same airports as the incumbent flag-carrier. Air Europe actually had higher domestic operating costs than Alitalia.

The biggest challenge facing "Big O&D" carriers is simply finding enough Big O&D markets that can fill large, growing fleets of 140-seat aircraft. There are certainly large markets out there, but outside of London, they appear to be widely dispersed, slow to develop, and not always situated near low-cost airports. Given this scarcity of cross-border "Big O&D" markets, domestic opportunities remain tempting. Ryanair and easyJet are planning an attack on domestic Germany, while easyJet and Buzz are considering options within France.

Will "Big O&D" carriers overwhelm the Second Division flag-carriers?

Although there are some superficial similarities, the European "Big O&D" model is NOT the classic Southwest model. Southwest pursues mainstream domestic business markets, with typical domestic aircraft on frequent schedules, so long as those markets are not at 300-plus flights per day hubs where the incumbent hub carrier would have overwhelming advantages. European start-ups must develop totally new markets (Luton, Charleroi, Treviso, etc) with much larger gauge narrowbodies than the flag-carriers use. The US has many hundreds of non-hub local markets with existing local demand that can support multiple 737 frequencies. With the exception of London (and possibly Paris) no European city appears able to support more than a handful of high-demand non-hub routes. Southwest serves the large traditional airports business travellers favour (San Diego, Detroit, St. Louis), while costs

at the comparable European airports (Vienna, Zurich, Brussels) preclude Southwest-type low costs. Investors looking for "Big O&D" new entrants to replicate Southwest's financial record - 25 years of double digit growth at industry leading margins - will probably be disappointed.

The "Big O&D" model seems ill suited to capture much of the Second Division flag-carrier traffic, should these carriers continue to lose money and decline competitively. Big O&D carriers have failed to make major inroads to date in markets such as Brussels or Munich, and there is less reason to think they could succeed in cities such as Milan, Copenhagen or Vienna. While easyJet had clearly reduced the profits Swissair and BA had previously enjoyed on the London-Switzerland route, both incumbents remained profitable, and easyJet posed no threat to Swissair's core Zurich hub or Swiss home market position. The total collapse of Sabena and Swissair has not led to major "Big O&D" expansion in Belgium or Switzerland.

The continued erosion of Second Division hubs will more likely benefit the four Global Hub airlines, not new entrants. They will not only win hugely profitable share shifts on their main hub routes (Brussels-Frankfurt or Zurich-Paris) but their regional subsidiaries will be able to expand into a handful of secondary O&Ds (Brussels-Hamburg or Zurich-Lyon).

Second Division major restructuring

There is little evidence that the Second Division profit collapse that began in 1998 will be reversed, yet no carrier in the second tier has really abandoned the flag-carrier thinking of the last twenty years. Each carrier has made positive moves, but none has coherently unified fleet, capacity growth, market focus, infrastructure cost and productivity improvements into a credible strategy for making money in a restructured European industry.

Austrian long ago abandoned any global pretensions but still operates at a very high average gauge for the Vienna market (101 in 2000) and has been unable to shift from a 150-seat mainline jet to a Tyrolean regional jet based focus. SAS has reformed its capital structure and significantly strengthened its Scandinavian home market position but has also spent heavily on increasing its already excessive narrowbody gauge and restoring Intercon capacity that it had previously

decided was uncompetitive. Alitalia has come to grips with the inability of Italian airports to compete as Global Hubs, but has yet to realign its fleet or operating costs with a new strategy.

The only European hub currently following a "City Network" type approach is Lufthansa at Munich, where it operates only four long haul flights, a heavy mix of regional aircraft, and achieves a European (cross-border) average 82 seats per aircraft, in line with the size of the local market (average seats on domestic German routes are slightly higher). 89% of the traffic Lufthansa carried at Munich in 1999 was German home market traffic. While the Munich hub may have been originally conceived with son-of-Frankfurt global ambitions, Lufthansa has sensibly avoided network shifts that would reduce the competitiveness of its major hub, while keeping Munich focused on profits, not glamorous routes and big aircraft.

While all of the second tier carriers face daunting political and industrial obstacles to serious restructuring, none have demonstrated the type of willingness British Airways and KLM have shown to take major action to address obvious problems of cost and overcapacity. The core, irreplaceable asset of each Second Division carrier is its historical domination of home market service, distribution and airport operations. The longer these carriers wait to bring capacity and infrastructure costs in line with the revenue potential of that core business, the greater the danger that the value of that core will be irreparably damaged.

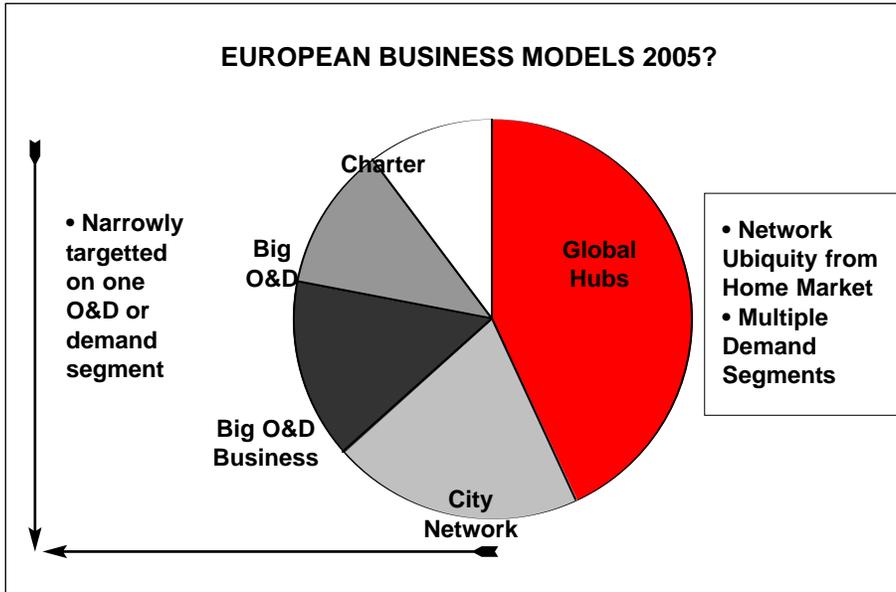
Alliances are not a panacea

While alliance membership may offer useful benefits to Second Division carriers, there is no evidence as yet that it addresses their strategic and financial problems in any meaningful way. Under certain conditions, alliances can strengthen an already secure network base, but they do not work in all markets, and they cannot turn a weak, marginal network into a profitable one.

The only alliances that have been big wins for both sets of shareholders are the immunised North Atlantic pairings, where two airlines with strong, sustainable "home continent" networks linked their hubs to capture competitive traffic flows they could not otherwise serve. There are no meaningful intra-European flows that two hubs would not be able to serve unless they joined in an alliance with codesharing. Incremental traffic

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acceptable.

Lessons from the SAir debacle

At one level the destruction of Swissair and Sabena would seem to be an aberration, and one certainly expects that this level of financial mismanagement and willful disregard for the basic economics of European airline competition will never be seen again. But as one considers the magnitude of the industry restructuring still needed, several lessons may be worth considering:

- If a European airline has a serious competitive/financial problem and fails to do anything about it, it can fail.
- The fastest way to cripple an airline is a major fleet investment inappropriate for the airline's markets. It is extremely difficult to restructure obligations of this magnitude.

captured by the Swissair-Sabena alliance was negligible. Alliances might serve to discourage competition for traffic between the two home markets, but the competition authorities might not accept this as a major benefit.

Full intra-European alliances (including joint sales and frequent flyer programs) can shift long haul traffic but this tends to be in one direction only, with the Global Hub operator gaining share from the junior partner's home market. It is completely sensible for SAS and Alitalia to abandon any Intercon capacity not largely serving local Scandinavian or Italian demand. But it is extremely difficult to design a pooling mechanism that will ensure that the benefits of diverting local revenue to Frankfurt or Paris will be shared equally by both the junior and senior partners. Air France can connect every large Italian airport to CDG without Alitalia's help. While it makes sense for Air France to compensate Alitalia for incentivising its customers to fly via Paris instead of Frankfurt or Amsterdam, it is unclear how such payments could be large enough to cover the major restructuring costs Alitalia faces and drive a major financial turnaround.

Cost and management synergies could be significant but require common ownership and control (as between Swissair and Sabena) and cannot be seriously exploited under an arms-length alliance. The consolidation of systems and functions that would drive meaningful savings requires loss of direct control and other risks that independent management groups rarely find

difficult to restructure obligations of this magnitude. Yet these investments tend to receive very little outside scrutiny, and many assume that "fleet renewal" is always a profitable thing to do.

- Most of the real value of any airline is intangible-brand equity, home market distribution strength, managements' ability to manage complex networks, etc. At the point an airline shuts down that value is destroyed forever, and it may be impossible (or incredibly expensive) for a new company to recreate that value. Thus it is in every stakeholders' interest to protect the "going concern value" through any reforms or financial restructuring that might take place.
- Private ownership of airlines has many advantages, but is not sufficient by itself to ensure an efficient industry. A private majority owner of Sabena destroyed all of the value held by Belgian taxpayers, creditors, suppliers and employees, but those stakeholders were powerless to protect their interests.
- If badly run airlines go bust, the service will not necessarily be replaced by other better run carriers. Aeropolitical constraints would have blocked any foreign company from attempting to take over the failing Swissair or Sabena positions. Slot control mechanisms make it impossible to establish a hub network position without acquiring all of the liabilities of the failing company. There is considerable risk that the local market will simply receive much less service than it would with an efficient market that did not have these artificial constraints.

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- Letting badly run airlines go bust can serve the public interest in the US because the bankruptcy laws there ensures that airlines with viable core networks are not prematurely destroyed, and provides an imperfect but largely workable mechanism for reallocating assets to more productive uses while protecting creditor rights and encouraging new investment. European bankruptcy laws are highly similar to US law on paper, but appear totally ineffective in the case of large airlines. The restructuring needed at many Second Division carriers may be impossible without an

effective US style Chapter 11-type process.

- One can achieve meaningful savings by consolidating management and key systems, but only with common ownership and control. These decisions could be taken at Swissair and Sabena once there was truly one common bottom line.
- Given local marketing, industrial and airpolitical constraints, fully merging major cross-border airline brands would probably be counterproductive, however, big savings may still be possible even when two airlines continue to have separate crew rosters and brands.

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