Market trends and observations on Air Cargo in Europe

Trends and future options

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Preface

In the first half of this year we have collected actual experiences, views and expectations from stakeholders about Air Cargo developments in Europe. Our background of more than 25 years in the Air Cargo business has helped us to value the remarks made and we have prepared a briefing based upon these interviews. We are now working as consultants and have successfully executed national and international projects for the international air cargo industry on various levels:

- Strategic: strategy- and policy development, policy evaluations and master planning;
- Tactical: market research, level playing field issues, second opinions and feasibility analysis;
- Operational: interim- , project- program management and process optimization.

For our projects, we build on the following principles:

- Reliable, independent, fact based;
- The story behind the story;
- Perspectives for action;
- Forward looking: insight information on trends and future opportunities;
- Mutual exchange of information and expertise.

Drawing from these principles, we give you this brief with observations on Trends and Future Options on Air Cargo in Europe. We have interviewed more than 30 stakeholders in the air cargo industry, based in Europe, who have given us inside information. We were able to use what has been told to us and - based upon our expertise – come up with trends and future options. This report does not pretend to be an all-out research document, but more as a collection of opinions of the experts we met, laced with our own view on market developments.

We thank everyone who has participated in his study. We have indicated that we would handle their information anonymously, which we have. If you are interested in further information, please do not hesitate to contact us. In relation to our principle of mutual exchange of information and expertise, we are looking forward to your opinion and remarks on our document and further ideas you might have on these subjects as well:

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Management summary

1. Introduction

The air cargo business in Europe went through a turbulent two decades in its development. Cargo carriers came and went, freight forwarders moved from local players to become global players through mergers and acquisitions. Three airports – Frankfurt, Amsterdam Airport Schiphol and Paris Charles De Gaulle developed themselves from local airports serving local and or national markets towards European Gateways. Cargo handling companies went from local players to a few multinational operating companies and air cargo trucking companies are looking to diversify now that the upswing in the eighties and nineties of airline trucking has dried up. At the moment, besides a few exceptions, the turbulence in the European air cargo world seems to have died down. Due to the crisis, just the calm before another storm or a break in the trend? That is the question we asked ourselves. This survey is not a forecast or a fortune teller, but a collection of opinions of stakeholders which we met in the past few months. We analysed all the information gathered and came up with the following conclusions per stakeholder group.

2. Airports in Europe

In Europe, air cargo flows for general cargo concentrate on the following continental hubs: Amsterdam Airport Schiphol, Frankfurt Airport and Paris CDG, and Luxembourg. Regarding these airports the following main observations can be made:

- The expectations of increase of volumes for the coming five years are very moderate. An average growth percentage of between 0-3% is expected; a break in the trend with the past two decades
- The strong position of these airports will remain for the coming five years. Global Freight Forwarders consider the radius of 400 km - within these airports are located - as one market with 4 Gateways (including Luxembourg) at which they distribute their cargo with their contracting carriers on basis of yield management. London Heathrow is considered less as an European Gateway and more focused on the UK market itself. Frankfurt Airport and Paris Charles de Gaulle rely on their relatively strong – industrial - home markets. Amsterdam Airport Schiphol is still strong in the perishable market and as a Gateway for the Western European market.
- However, the speed of handling and cost level at the abovementioned airports are topics regularly mentioned and are a concern of Freight Forwarders and could lead to a reconsideration of routing certain cargo volumes to secondary cargo airports.
- Opinion differs about the impact of increasing belly capacity by e.g. Boeing 777 passenger operators at secondary airports. On the one hand there is a belief that those carriers will attract regional cargo which will affect the volumes of the four Gateways, others think that particularly based on volume/yield ratio's and trucking systems the impact on the European continent will be limited.
- The integrator hubs Leipzig, Paris Charles De Gaulle, Liège Airport and Köln/Bonn Airport will hold or increase their position. Liège Airport and Köln/Bonn airport will set focus on diversification of their cargo product and position itself as competitive general full freighter airport with a competitive edge on costs and fast cargo handling.
- Brussels Airport is working very hard to return to a fitting position in the European air cargo market and has set its focus on regaining Belgium cargo volumes and claim a position as an European Pharma hub. Luxembourg is considered as a strong full freighter airport with (struggling) Cargolux as the driving factor.

3. Cargo Carriers

The topics nowadays concentrate on following three segments:

- The traditional combination(flag) carriers with a combination of passenger and full freighter aircraft;
- Full freighter carriers who operate a dedicated full freighter fleet
- Integrators

Combination carriers

Although not outspoken, and certainly not by the carriers concerned, amongst stakeholders there is a feeling that the traditional flag carriers focus less on cargo by full freighters but will concentrate more on their belly capacity (Air FranceKLM, Lufthansa and Singapore Airlines). On the one hand, belly capacity is increased by the introduction of the likes of the Boeing 777 (Emirates f.i. serve the UK market only with passenger aircraft with high frequencies on various destinations offering a substantial daily cargo capacity), on the other hand the question arises what the contribution is to the financial results of these carriers; the cargo arms of these carriers being responsible for their own P&L and operating a dedicated full freighter fleet. The cargo departments of the traditional flag carriers are under severe pressure and expectations of for future growth are very moderate (1-3% for Europe). This could lead to an exit from the main deck freighter business by some combination carriers. The number of full freighter within the Air France/KLM group for example decreased from 24 towards 14 in the past ten years.

Full Freighter Carriers

Is the (large) Full Freighter over the hill? Opinions differ. Due to the mentioned increase of belly capacity, some experts think the role of the full freighter will become less for the general cargo segment. It will play a support role or will be phased out in the coming years.

Others think the art and nature of a full freighter versus belly capacity will lead towards product differentiation. Belly capacity is cheaper and hence offering a lower service level in terms of handling speed. Full freighters will exist because of their main deck (outsize) capacity and the possibility of dedicated fast handling – in combination with dedicated full freighter airports – making it possible to beat the large passenger hubs in Europe in terms of handling speed and costs.

A few experts question whether the uplift capacity of present freighters like the Boeing 747-800 is too high related to moderate growth scenario's. Mid-sized freighters with a capacity of 60 to 80 tonnes might be easier to operate in terms of profitability and operations (easier to maintain 'published schedules and frequencies'). Even then it will be hard to for these aircraft, like the Airbus 330 freighter – now only available as a new build with converted units yet to fly – to compete with belly-capacity and large-capacity freighters. There are no production narrow-body freighters and passenger to freighter programs are running slow (Boeing 737) or have yet to take-off (Airbus 320/321).

Integrators

The integrators have realized a tremendous growth during the last the two decades. Although their perspective is still positive, a few clouds appear on the horizon. TNT seems to be first apple falling down the (express) tree. On sale for a long time, a refusal from the EU to be taken over by UPS left them out on their own, having to rethink their strategy.

The big three, DHL, UPS and FedEx are better positioned, although the transfer from air cargo towards sea freight had a substantial impact on the first quarter results of FedEx in 2013. After the boom in international express traffic in the nineties, the last decade showed a more modest growth of around 7% annually (Boeing). All in all the average size of international express packages has doubled to 6 kgs in twenty years, showing that the border between express and general cargo is now less clear than in the past. Further growth is foreseen in internet shopping, with integrators and their dense air and land network in a good position to profit from increased deliveries of internet-ordered consumer deliveries.

4. Freight Forwarders

Mergers and acquisitions in the freight forwarder market have led towards the well-known 80/20 parameter. 80% of the general cargo volume is in the hands of about 20 worldwide operating freight forwarders. These forwarders control the cargo chain in terms of being the lead contracting partner with the carrier and shipper. Therefore, routing and control of the air cargo volumes is in their hands. Freight forwarders became the dominant party in the international air cargo chain.

Due to their power and drive towards diversification and innovation they are moving upwards and downwards in the air cargo chain. On the one hand they are slowly entering the air cargo handling market by requesting airside access at airports for directly receiving full ULD's directly into their premises; filling the (perceived?) gap of reliable, on-time processing; the traditional workspace of cargo handling companies. On the other hand by setting up new Gateway concepts on a Yield management basis[1] and own trucking networks, they enter into the market of the Airline road feeder services either by themselves or using established trucking companies. In this respect, forwarders act as Non Aircraft Operating Cargo Carriers (NAOCC).

Most forwarders expectations are in line with that of the airports and carriers and think of a 0-3% growth of their volume.

[1] Using preferred carriers, routes and airports within a 400 km radius covering Amsterdam Schiphol, Paris Charles de Gaulle, Brussels Airport, Liège Airport, Frankfurt Airport and Luxembourg, based on a very responsive Yield Management System and company-controlled linehaul/trucking services between these airports and offering flat rates for the shipper.

Additional growth has to come from their competitors by taking over each other's clients.

5. Air Cargo Handling Companies

Has had the EU- liberalisation of the air cargo handling market in the early 21th century led towards the desired results? What we see is the following: despite EU-regulations aiming for a more liberal ground and cargo handling policy at European Airports, all in all, the number of (independent) companies active in providing ground handling services at multiple airports rose to about ten between 1996 and 2008, only to contract to three major players (Swissport, Menzies and WFS) today. Some names have disappeared or are about to (GlobeGround, Flightcare, CSC and Aviapartner) while new entrants like Çelebi (Turkey) and DNATA (UAE) have yet to prove their ability to compete with the "big three".

Cargo handling companies in general have not adequately reacted to market demands to develop handling products for truckers, forwarders or express companies. Global forwarders and express operators have found their own means of moving forward, but for trucking companies or smaller (local) forwarders, the quality of service of warehouse operators at most European airports has taken a plunge, resulting in increased waiting times, double runs to complete shipments and increased costs of documentation and security fees. Instead of developing process-improving IT-protocols and dedicated products aimed at landside customers, cargo handlers continue to be squeezed by their long-time airside customers, with handling rates sometimes half of those charged ten years ago. It is therefore no surprise that most cargo warehouses of the handling companies are loss-making or are barely making money. Only their ties to the ground handling side of the contract allows them to continue their operations.

6. Trucking Companies

In Europe, the dedicated trucking companies became part of the cargo carriers network extending their markets by sophisticated (airline) trucking networks. Despite the economic downturn, most airlines have been able to hold on to their cargo network, although load factors for cargo have gone down, as have the cargo rates. This has forced trucking companies to increase collaboration on an operational level, to keep their network promises as contracted on the commercial level.

While the global forwarders of 'German' origin have built their network on a solid national ground transportation network, trucking companies are seeing more and more business from the 'other' international forwarders. The latter group relies less and less on their own assets and are combining loads with truckers, who are able to support them on trunk routes, making off-airport deliveries (costs) and offering track-and-trace possibilities. Other sectors which offer reasonable margins are the pharmaceutical (cool chain) and high value (TAPA). Both require investments and careful handling, but all large trucking companies are currently involved in increased production and investments in these sectors.

Mid-size trucking companies are not investing in diversification, either by choice or they simply do not have the (financial) strength to invest. The 'top three' in the Benelux are investing and have been diversifying: warehousing, sea container transport, local distribution, medical logistics, aero-engines, car transports, outsize cargo, etc. We have noticed that – besides air cargo- one asset binds all of the larger players: IT. With their network set-up and trucking assets careful planning, track-and-trace and interlinking with their customers requires a reliable and state-of-the-art IT-system. The top three have their own set-up, the second tiers have to make do with off-the-shelve products of hand me downs from within their corporate group. For them –and their customers- a far from ideal situation, with business risks involved. IT has created more possibilities for direct deliveries, enabling a shorter time to market. This has also reduced the need with many international shippers to operate their (own) large DC's throughout Europe; they rely more and more on their forwarder or 3PL to do this for them.

Finally, we asked the participating companies about the next frontier: they all mentioned Turkey and Russia (Moscow) to a lesser extent. With manufacturing companies starting to reshore their Chinese activities, Turkey seems to benefit most from this trend. Although the likes of Turkish Airlines and MNG are already bringing in flown cargo, the sheer size of the Turkish market offers opportunities for (air cargo) trucking companies as well. Both Turkey (reliability) and Russia (security) still have some hurdles to take for those companies ready to step into these markets

7. Future options

Airports

Airports are slow movers in the chain as they are profoundly asset based and mostly sticking to the landlord model. They have however tried to increase their revenues through international expansion. The takeover wave of the nineties - by airports like ADP, BAA, Schiphol Group, Fraport, Copenhagen Airports of airports in Africa, Mexico, or T4 at JFK and consultancy projects - has now ended. For various reasons they have fallen back to their core business at their home base, with (the former) BAA and Copenhagen Airports being prime examples. Also the privatisation trend –fully or partly– has stopped. In this respect, seaports seem to move faster. The privatisation and internationalisation of ports and terminals (especially container terminals) can be seen as a change in the seaport business model. The question is whether a strategic look at airport business models could lead towards a different view on new business, where it is not the operational and master planning skills of airports that are leading, but the 'Marketplace development capabilities' of airports could be the stepping stone for other activities.

Combination carriers, integrators and forwarders

Which approach in how to control the Air Cargo Chain works best? This can be viewed from different angles. Combination flag carriers are more restricted in their network development through legislation and regulations (bilateral agreements are still guided by passenger interests and cargo has not claimed a special status or individual rights) and are point-to-point common carriers. Despite developments of separate cargo departments and their own P&L responsibility, cargo departments have struggled to develop an independent, product orientated and sustainable cargo strategy. Their passenger orientated 'mother' strategy restrained their strategic thinking, while using the airplane as a belly space capacity supplier which has to be filled with tonnes. This 'selling kilos' approach has resulted in a yield per tonne instead of a product based on a yield per product. This is the core strategic difference between combination carriers and integrators: the integrator markets an 'On Time, reliable, trackable, high speed product'. Combination carriers think in volumes and tonnes and therefore their yields are lower as price is determined by the fluctuations in supply and demand. In any business model, a reduced yield should lead to a lower cost effort. However with their large, inert organizations and classic point-to-point approach, cost cutting is no easy job and tough times lie ahead (again). Their 'weight strategy' could be one of the reasons contributing to their bad financial results and -what we heard from the market- continued reduced use of the full freighter by combination carriers.

Integrators have chosen to rely on a dense network structure to and from all points on the world map in which the aircraft is just a link in the chain. From the outside it looks as if they are only operating 'express'- type of operations and flying is their core business. However they have sold their customer a time-sensitive product with no emphasis on 'how do they do it'. While moving large quantities of general cargo combined with express through their network, the actual use of trucks, planes and even ships remains in the background.

Forwarders however have an approach which is in-between: more industry (shipper) related, with less commitment to the carriers network components. Freight forwarders are free to settle and are free in their choice of carriers. They can consolidate cargo across borders and make the best choices in terms of cost, routing and yield. In cases where airlines or their combined networks do not deliver the required capacity, reliability or cost, forwarders are even able to operate their 'own' flights. These elements make them more flexible in the air cargo chain than the airlines and offers them more opportunities to optimize their operations and in general has put and will keep them in the cargo driver's seat.

Air Cargo Handling Companies

As concluded in our analysis, air cargo handling companies are in a squeeze within the boundaries of EU-ground handling and airports concession policies. With airlines pushing down and forwarders moving up the chain. They tried to expand their activities - through mergers and takeovers of more local/regional orientated handling companies – to offer the airlines a network on the main hubs at competitive rates and trying to achieve economies of scale. However, instead of increasing their yields, they were pressured into offering rock bottom rates in order to hold on to their clients, resulting in a worrisome financial position of most handling companies, a situation which looks hard to get out of. Some of the larger multinational handlers have used rigid standardization and spreading their business around the globe as measures to dampen fluctuations in the (European) market. Another way to get out of their position might be to let go of the idea that handling companies' skills are only relevant at airports. Why not look for opportunities in inland depots or warehouse, IT and logistics activities for truckers, integrators or shippers?

Trucking Companies

Trucking companies have enabled fast growth of networks, but are de facto not leading in network development, but more a derived factor. They have now become footloose suppliers and highly dependent on total volume and network development. A few European trucking companies reacted in time to counter this dependency and diversified their product portfolio, which has already resulted in a reduced revenue share of their ‘old’ airline trucking activities. In addition to traditional haulage, trucking companies are in a position to become service suppliers to asset-light forwarders or (off-) airport warehouse handlers at smaller locations for handling companies.

Market trends and observations on Air Cargo in Europe
A Stratagem briefing

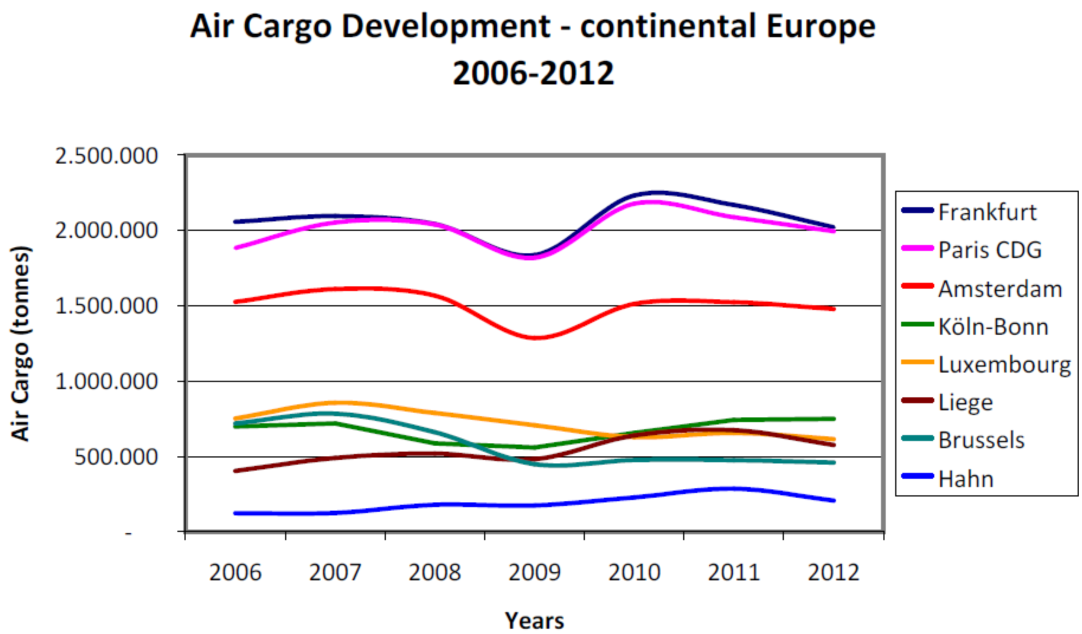
1 Airports

1.1 Airport development

The steady growth of air cargo in the past two decades reached a high in 2007 and has for most airports only touched these levels again in 2012. Some (smaller) airports are still recovering, including top 10 airports Amsterdam and Luxembourg. Liege and Köln/Bonn are the positive exceptions in the all-cargo airport segment.

For air cargo growth, airport planners and industry watchers used to rely on a combination of IATA, OECD, Boeing and Airbus forecasts. A ten year average of 6 to 8% was quite common, but these kind of figures are not to be expected anytime soon. With the U.S. and especially Europe slow to recover from the economic crisis, all eyes are now on Asia. Unfortunately the highest growth figures are intra-Asia and certainly not on Asia-Europe routes. The words 'Europe is a dying continent' have been used in the context of (negative) population growth, but despite their inherited wealth, young Europeans are faced with unemployment, budget cuts and government debts. Reduced spending will have a negative effect on (air) cargo flows. Institutions like IMF and Boeing/Airbus studies show an average of 5% growth of air cargo worldwide for the next two decades. Europe however, will have to do with figures in the region of 3-4%, with a negative for 2013 and slow growth of between 0 and 3% for the next three to five years.

The once predicted emerging new air cargo hubs in former Eastern European countries have failed to materialize (with the exception of Leipzig - thanks to integrator DHL). Nowadays, new ' high growth areas' mentioned are Istanbul and Constanta.



When looking at the figures, it is easy to label the explanation of the overall decline of air cargo volumes in Europe with 'Euro crisis'. It is a natural reaction on past worldwide 'events' like the two Gulf Wars and SARS. However, the question arises whether it is the only reason, or can we find further changes with an impact on air cargo development? We even consider the possibility a structural change is at hand. There are a few reasons which support this line of thought:

- Our interview partners at relevant Airports, Airlines, Freight Forwarders and Truckers are very moderate in their expectations regarding growth for the coming five years. A percentage of 0-3% can be considered a break in the trend of the past two decades, especially since 2013 had bare shown any growth until now;

- Shippers tend to transfer air cargo towards sea freight for various reasons: lower costs, less environmental impact and improved on-time reliability of sea freight;
- The impact of the so-called 'miniaturisation' of consumer goods: consumer devices become lighter and smaller, resulting in declining air cargo volumes;
- Reshoring of manufacturing activities to the US and (eastern) Europe and Turkey reduce transit times and reduce overseas volumes in general;
- Upcoming rail connections between China and Europe are an alternative for air and sea. Some shippers already use this rail road link, which is faster than sea freight and cheaper than air freight.

It is these arguments that make us think we are experiencing a break in the trend, reducing high or double digit growth to a reality of the past.

1.2 Development of the three continental cargo hubs versus secondary passenger and all-cargo airports

A few observations and remarks regarding the expected cargo development of airports in continental Europe:

- It is to be expected that the Top 3 airports Paris Charles de Gaulle, Frankfurt and Amsterdam Airport Schiphol will hold on to their positions as cargo hubs in Europe for the coming five years;
- This does not mean that their position is clear and undisputed. Costs, accessibility and speed of cargo handling are the most mentioned concerns of stakeholders when these hubs are discussed;
- In this respect airports like Luxembourg, Frankfurt Hahn and Liège are mentioned as examples of airports with reasonable costs and unbeatable speed of cargo handling in comparison with the top 3 hubs. Although many people argue the two cannot be compared, in our opinion it does not mean that smaller airports are not able to compete or attract cargo volumes coming from the top three.
- Opinion differs about the impact of increasing belly capacity by Boeing 777 passenger operators at secondary airports. On the one hand there is a believe that those carriers will attract regional cargo which will affect the volumes of the four Gateways, others think that particularly based on volume/yield ratio's and trucking systems the impact on the European continent will be limited.

1.3 Conclusions

1. The stagnation in air cargo volumes on the main European cargo hubs over the past 5 years tends to be structural, with a few exceptions amongst smaller all-cargo airports. Interviewed cargo managers expect an average growth of about zero to three per cent for the coming five years, which can be considered as a break in the trend;
2. Alternative means of transport – intercontinental railway links and containerized sea freight - reduce overall air cargo volumes;
3. The top three continental European cargo hubs will hold their position in the coming five years;
4. However, cargo carriers and freight forwarders are concerned about costs, accessibility and speed of handling at the top airports;
5. These concerns might give smaller, more all-cargo airports like Luxembourg, Liège, Frankfurt Hahn and Köln/Bonn an opportunity to compete with the three main cargo hubs on general air cargo.

2 Cargo Carriers

2.1 Introduction

The term Cargo Carrier needs to be defined. We distinguish in the following types of Cargo Carriers:

- Combination carriers; traditional (flag) carriers with a combination fleet (passenger and full freighter aircraft)
- Full freighter carriers who operate a dedicated full freighter fleet
- Integrators

We will give each of these a run-through and come up with some conclusions related to the future growth of the segment.

2.1.1 Combination carriers

The traditional European combination (flag) carriers set the trend for many years regarding product development of the general air cargo business. Carriers like Lufthansa, KLM and Air France developed their cargo products by extending their market reach with sophisticated trucking networks (even by taking a share in trucking companies, like KLM did with Frans Maas), express services by offering pick/up and delivery services in order to speed up pre transportations and delivery times. At one point they increased their cargo carrying capacity by acquiring full freighters, and the setup of cargo alliances (like WOW of Lufthansa, Singapore Airlines and SAS). Also from an organizational point of view, changes were made by making the cargo departments separate entities, with their own profit and loss.

At the moment, the increase of full freighter capacity by most combination carriers has stopped (Lufthansa, Singapore Airlines) or reduced (Air France/KLM). Partly due to the substantial increase of belly capacity by the Boeing 777 and Airbus 330/340 passenger aircraft, but also due to bad financial performance of these carriers or their cargo arm. Having lost their position as leader in the air cargo logistics chain to the forwarders, they also suffer from an increase of cheap belly capacity and severe competition by newcomers from Asia and the Middle East. The cargo departments of the traditional flag carriers are under severe pressure and expectations for future growth are very moderate (1-3% annually for the coming five years). This could lead to an exit from the main deck freighter business of combination airlines that currently operate freighters. While some pure passenger carriers have outsourced their cargo operation or stopped taking cargo at all, some low-cost operators in the U.S. and Asia are making money on their cargo products all within their fast-turnaround based operations. We have not encountered comparable operations or know of these products in Europe.

2.1.2 Full freighter carriers

Dedicated full freighter carriers are defined as those operating only full freighters. During the eighties and nineties we have seen a range of entrepreneurs acquiring relatively cheap, written off Chapter 2 and early Chapter 3 widebody aircraft, picking up cargo grains all over the world on a regular or charter basis, alongside the carriers flying on a scheduled basis. The rapid phasing out of Chapter 2 and early Chapter 3 aircraft due to environmental noise regulations, followed by the impact of rising fuel prices has led towards a shake-out of dedicated full freighter carriers in the past decade.

Gone are the likes of Affretair, MK Air Cargo, DAS Air, TMA and Heavylift and more recently Cargoitalia, Cargo B, Jade, and - as we speak - Air Cargo Germany. Some cargo trade names have been integrated into larger carriers, such as Air Hong Kong and Martinair. We wonder which full freighter operators are left and wonder what is their survival potential?

There are hardly any scheduled carriers left in the U.S. and what will happen to the financial health of carriers like Kalitta and Polar when their DoD contracts run dry when the U.S.A. withdraws from Afghanistan in 2014. In Europe, Cargolux has been struggling with a new and now former owner and had to be shored up with a loan from a Luxembourg-government led consortium. In Asia, NCA will survive because of their supportive owners. No new all-cargo carriers have emerged in the Middle East or Africa and very few world-wide operating companies are left.

From our discussions we have heard growth expectations of no more than 0 to 3%. With current low demand scenarios it is likely that we will experience more bankruptcies or liquidation of more all-cargo carriers.

A few experts question whether the uplift capacity of present freighters like the Boeing 747-800 is too high related to moderate growth scenario's. Mid-sized freighters with a capacity of 60 to 80 tonnes might be easier to operate in terms of profitability and operations (easier to maintain 'published schedules'). Even then it will be hard to compete for these aircraft, like the Airbus 330 freighter – now only available as a new build with converted units yet to fly – to compete with belly-capacity and large-capacity freighters. There are no production narrow-body freighters and passenger to freighter programs are running slow (Boeing 737) or have yet to take-off (Airbus 320/321).

2.1.3 Integrators

The integrators have realized a tremendous growth during the last the two decades. Although their perspective is still positive, a few clouds appear on the horizon. TNT seems to be first apple falling down the (express) tree. On sale for a long time, a refusal from the EU to be taken over by UPS left them out on their own, having to rethink their strategy. Heavy losses made them withdraw from the growth markets of China and South America and they have turned their focus on Europe. However, the big question remains whether they are large enough to survive on their own; at least the EU competition commissioner thinks they can.

The big three, DHL, UPS and FedEx are better positioned, although the transfer from air cargo towards sea freight had a substantial impact on the first quarter results of FedEx in 2013. After the boom in international express traffic in the nineties, the last decade showed a more modest growth of around 7% annually (Boeing). All in all the average size of international express packages has doubled to 6 kgs in twenty years, showing that the border between express and general cargo is now less clear than in the past. Further growth is foreseen in internet shopping, with integrators with their dense air and land network in a good position to profit from increased deliveries of internet-ordered consumer deliveries.

An average (and sustainable) growth of approx. 8% is forecasted, resulting in an express market share of around 20% of the world air cargo transported by 2030.

2.2 Conclusions

1. Traditional combination (flag) carriers tend to decrease their full freighter capacity and become more and more belly capacity suppliers, flying cargo from A to B and leaving the logistics control of air cargo to the freight forwarder;
2. Full freighter carriers trying to distinguish themselves from the traditional flag carriers with main deck capacity and fast cargo handling, sometimes in combination with the use of a dedicated, relatively small cargo airport;
3. The integrator market is still the fastest growing segment of the air cargo market. However even in this segment changes are visible: reliable sea freight, deferred delivery and cheap land transportation networks reduce margins and could change the market size,
4. There might be room for a mid-sized full freighter with an uplift capacity of 60–80 tonnes on certain intercontinental cargo routes making it easier to maintain the schedule and remain profitable.

3 Freight Forwarders

3.1 Impact of mergers and acquisitions

The impact of the mergers and acquisitions in the Freight Forwarders market of the last 15 years has lead towards a concentration within the Air Cargo Chain. About 15 worldwide operating forwarding companies have an estimated market share of about 80%. They are able to control vast amounts of cargo within certain traffic lanes, organizing and integrating their systems and contracting out services. While integrators contract in all of their processes, most global forwarders, especially those living up to the 'asset-light' principles, are in a position to act – in terms of volume and size - as a non-aircraft operating cargo carriers (NAOCC).

3.2 Future growth

Freight forwarding companies are very moderate in their growth expectations for the coming five years:

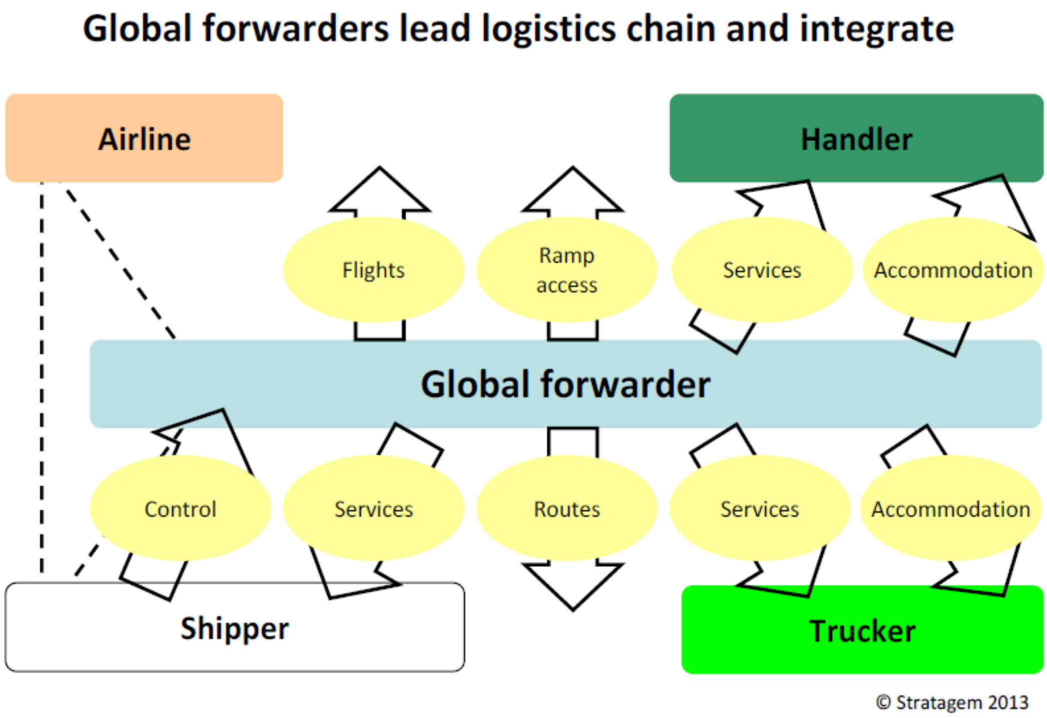
- Most forwarders expectations are in line with that of the airports and carriers and think of a 0-3% growth of their volume;
- Additional growth has mainly to come from their competitors by taking over each other's clients.

3.3 Air Cargo chain leadership

The concentration of freight forwarders has resulted into the establishment of the dominant key player in the air cargo chain: the Top 15 global freight forwarding companies. This dominant position is affirmed by following observations:

- These companies are lead contracting partner towards airlines and shippers as well;
- Mergers and acquisitions have led to a concentration of volumes enabling strong buying and selling power respectively towards airlines and shippers;
- Concentration of volumes enables forwarders to dictate routing of (new) freighter capacity, some operate their own equipment on their pipe-line routes.
- Concentration of volumes have enabled freight forwarders to develop new concepts such as the 'Gateway' concept. Using preferred carriers, routes and airports within a 400 km radius covering Amsterdam Schiphol, Paris Charles de Gaulle, Brussels Airport, Liège Airport, Frankfurt Airport and Luxembourg, based on a very responsive Yield Management system and company-controlled linehaul/trucking services between these airports and offering flat rates for the shipper. We cannot fail to notice that this concept looks a lot like the traditional combination carriers' strategy of the eighties and nineties.

- Concentration of volumes has set forwarders in a strong position towards cargo handling companies by up streaming in the cargo chain. Forwarders tend to enter the cargo handling market by claiming in house positions with cargo handling companies or compelling airports into apron access in order to despatch or to receive full ULD's directly into their premises.



3.4 Conclusions

Forwarders have repositioned themselves in the air cargo chain:

1. Large global freight forwarders have become the dominant players in the the air cargo logistics chain. They are the lead contracting partner both with airline and shipper. Shippers tend – within the limit of agreed rates and on-time delivery - to hand over full control and decisions regarding routing to the forwarders about their shipments. In this respect, forwarders act as Non Aircraft Operating Cargo Carriers (NAOCC);
2. Furthermore, they are slowly entering the air cargo handling market by requesting airside access and are directly receiving full ULD's directly into their premises, filling the gap of reliable, on-time processing the traditional workspace of cargo handling companies;
3. And last, but not least, by setting up their own trucking networks they enter into the market of the Airline road feeder services either by themselves or using established trucking companies.

4 Air Cargo Handling Companies

4.1 Handling competition at last

Providing handling services at (European) airports was very much a closed shop until the last decade. Airlines were usually self-handlers, some airports were also active as handling companies (some continue this practice today) and at a limited number of airports the choice of one "independent" handling company was available. Competition on price and quality was not an issue and alternatives were not available. New entrants found themselves knocking on airport operators' doors to no avail. In the nineties, new companies entered the business a.o. in London (WFS and CSC) and Schiphol (Ogden). Also, Lufthansa and KLM created new quality focused handling companies, called GlobeGround (LH) and CSC (KL), providing third party handling services as an independent brand. As a result of airline deregulation, new companies and new standards were introduced and airlines started to become vocal about the lack of choice in handling companies at major European airports, with Paris, Frankfurt, Rome and Madrid mentioned as prime examples.

This was taken up by the EU and led to the famous Directive 96/67/EC “On access to the groundhandling market at Community airports”. The aim of the Directive was to introduce competition between handling companies to reduce costs to airlines and improve the quality of services. However, Member States were given the ability to limit competition to minimum of two suppliers. As a result, quite a few airports still have their own groundhandling activity, mainly in Germany and Portugal, but also in Austria and France. It is no surprise that those countries (and also in Belgium) have opted to limit competition to a minimum of two suppliers, while the UK, the Nordic countries, the Netherlands and Poland have open competition in the key restricted services.

All in all, the number of (independent) companies active in providing ground handling services at multiple airports has risen to about ten between 1996 and 2008, only to contract to three major players (Swissport, Menzies and WFS) today. Some names have disappeared or are about to (GlobeGround, Flightcare, CSC and Aviapartner) while new entrants like Çelebi (Turkey) and DNATA (UAE) have yet to prove their ability to compete with the “big three”. On the other hand, fast-growing markets such as Russia and Turkey are interesting for the big three, but local complexities (Russia) and lack of access (Turkey) are difficult obstacles to overcome, let alone making a decent return. New Asian and U.S. handling companies might eventually step into the European market to improve their coverage, but not in the immediate future.

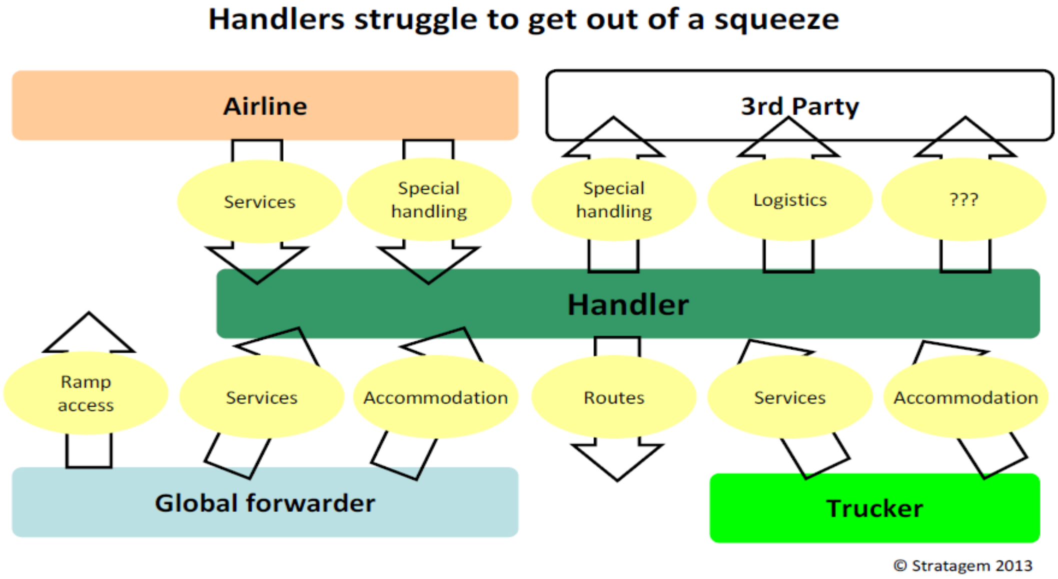
In the EU-15 airports, the contestable market (total free market excluding the self-handling part) is estimated to be stable at around 40-45%. The actual market available to competing handlers therefore is in many cases too small to accommodate – let’s say - four or five handlers. With limited growth, less players and a stable contestable market share it is no surprise that “price” has been mentioned as the single most important selection criterion in tenders. This forces the handlers to cut throughout their workforce, outsource, share equipment on an operational level and cut cost wherever they can. Cutting out the fat built up in decades has nevertheless improved the competitiveness of the handling industry.

4.2 Further market pressure

During the last decade, it was expected that special handling units were to provide the topping on the cake; higher margins and satisfied customers. Within the air cargo business this meant investments in perishable centres, live animal facilities and high-end handling (TAPA and valuables). Lower rates available from their customers and competition from other handlers with likewise facilities have taken care of margins; units are underutilized and many are unprofitable. On top of this, global forwarders have been trying to get their cargo sooner and cheaper out of rampside cargo warehouses.

With their increased buying power, special arrangements between airlines-handlers-forwarders have come to the table. In some cases, rampside access has been allowed. As an example, at Schiphol a deal with several global forwarders has given them front row, with access to the ramp comparable to general cargo handlers but without the requirements or obligations of a third party handling company. Other European airport operators are less thrilled about these “hole in the fence” solutions. It remains to be seen whether these Gateway operations will survive in the current economic climate.

Nevertheless, cargo handling companies in general have not adequately reacted to market demands to develop handling products for truckers, forwarders of express companies. Global forwarders and express operators have found their own means of moving forward, but for trucking companies or smaller (local) forwarders, the quality of service of warehouse operators at most European airports has taken a plunge, resulting in increased waiting times, double runs to complete shipments and increased costs of documentation and security fees. Instead of developing process-improving IT-protocols and dedicated products aimed at landside customers, cargo handlers continue to be squeezed by their long-time airside customers, with handling rates sometimes half of those charged ten years ago. It is therefore no surprise that most cargo warehouses of the handling companies are loss-making or are barely making money. Only their ties to the ground handling side of the contract allows them to continue their operations.



To withstand market pressures and increased competition, handling companies are bound to look for more business opportunities and increase cost control. Providing IT, warehouse and handling services for forwarders could generate more revenue, while outsourcing of personnel could reduce payroll and complexity of the organization in certain business areas. While staff is the single largest budget area, they are also the single most important USP for a handler. A knowledgeable and safe working staff will keep the customer satisfied

4.3 Conclusions

1. The new EU policy on Ground Handling has created competition in several countries and brought down rates. However, quality has suffered at some airports;
2. Local players have disappeared and the number of newcomers are limited. We have not seen any real changes towards a competitive environment at the 'restricted' airports (e.g. Paris and Frankfurt). At those airports, the airport companies still play a leading role;
3. Airlines and airports benefit from increased competition, some handlers - especially those not allowed to perform ramp handling services- are in a difficult financial position;
4. Some handling companies have been taken over by investment funds. Their policy to buy low and sell at a high has not played out; funds are reconsidering their position and are waiting for better times. Investments are low;
5. Lack of product development has not created a second stream of income for handlers. Their P&L is under pressure. Some have to resize both in warehouse size and staff levels;
6. In general: there is no easy way out for medium sized handlers. They have to reconsider their strategy on how to stay in business in a very competitive environment. The top handlers are investing in standardization and are investing in quality awareness and performance monitoring.

5 Trucking Companies

5.1 Network development

In Europe, air cargo trucking has become an integral part of air cargo operations. Trucking companies operate trunk routes on a daily basis on behalf of airline customers. Truckers have become extensions of the airlines' network, serving destinations not in the flight plans. In the eighties and nineties this was a very profitable business, however at the turn of the century it became a game more companies could play and also the market changed. Margins eroded and the times a single truck could carry a single ULD from Paris to Amsterdam and make a profit were gone forever. This coincided with increasing market power of the global forwarders, lower margins for airlines and rationalization of networks. Co-loading, per kilo rates and cooperation on an operational level are now common practice.

The new reality also hits hard with truckers; they are under pressure to reduce rates, get greener, increase load factors, have to pay much higher diesel prices, adhere to new (2006) EU Regulations on driving times, crew breaks and rests, maintain a high reliability, etc. Although the art of trucking in essence remains a simple trade, the additional demands as mentioned above makes it hard for new entrants to actually carve a piece of business for themselves. In the current climate, competition is fierce and market share instead of volume growth is key. However it is noted that in the transport of general cargo competition is even worse because of lower entry barriers. In both markets capacity is hardly ever taken off the market after bankruptcies. Even in the current climate, many banks are continuing to finance faltering trucking companies and refuse to take their losses. Eastern-European drivers are commonly found in all major trucking companies, but we see no East European companies making an entry into air cargo trucking. Some companies gearing towards “asset-light” are insourcing trucks and drivers, but we see no actual take-over of control by – let’s say – a Polish or Bulgarian companies.

Despite the economic downturn, most airlines have been able to hold on to their cargo network, although load factors for cargo have gone down, as have the cargo rates. This has forced trucking companies to increase collaboration on an operational level, to keep their network promises as contracted on the commercial level. While this might not look good in the eyes of the customer (“I have contracted company A to truck my cargo and it comes with company B, the one I just left” as one airline manager put it) but it might even have a positive impact on load factors. As one in four trucks drives empty and laden trucks only have a 60% load factor on average, there is a world of efficiency to win. However it remains hard to combine general cargo with external Community transit (T1) goods, both in planning and operations. The use of rollerbeds and the T1 status of the goods does keeps general cargo carriers out of the game for now.

5.2 Market development

While the global forwarders of ’German’ origin have built their network on a solid national ground transportation network, trucking companies are seeing more and more business from the ‘other’ international forwarders. The latter group relies less and less on their own assets and are combining loads with truckers, who are able to support them on trunk routes, making off-airport deliveries (costs) and offering track-and-trace possibilities. Other sectors which offer reasonable margins are the pharmaceutical (cool chain) and high value (TAPA). Both require investments and careful handling, but all large trucking companies are currently involved in increased production and investments in these sectors. Because of Europe’s demography, pharma is a volume growth industry. While current patented high-margin drugs are flown it remains to be seen whether generic drug manufacturers (production in India is about to take off in a big way) will also invest in transportation by air.

Mid-size trucking companies are not investing in diversification, either by choice or they simply do not have the (financial) strength to invest. The ‘top three’ in the Benelux are investing and have been diversifying: warehousing, sea container transport, local distribution, medical logistics, aero-engines, car transports, outsize cargo, etc. We have noticed that – besides air cargo- one asset binds all of the larger players: IT. With their network set-up and trucking assets careful planning, track-and-trace and interlinking with their customers requires a reliable and state-of-the-art IT-system. The top three have their own set-up, the second tiers have to make do with off-the-shelve products or hand me downs from within their corporate group. For them –and their customers- a far from ideal situation, with business risks involved. IT has created more possibilities for direct deliveries, enabling a shorter time to market. This has also reduced the need with many international shippers to operate (own) large DC’s throughout Europe; they rely more and more on their forwarder or 3PL to do this for them.

Finally, we asked the participating companies about the next frontier: they all mentioned Turkey and Russia (Moscow) to a lesser extent. With manufacturing companies starting to reshore their Chinese activities, Turkey seems to benefit most from this trend. Although the likes of Turkish Airlines and MNG are already bringing in flown cargo, the sheer size of the Turkish market offers opportunities for (air cargo) trucking companies as well. Both Turkey (reliability) and Russia (security) still have some hurdles to take for those companies ready to step into these markets.

5.3 Conclusions

1. Airline truckers’ margins have gone down considerably; for long-term survival companies try to achieve economies of scale or operate ‘asset-light’;
2. There are no dominant players, but there are three major players (Jan de Rijk Logistics, H. Essers and Wallenborn) active in the Benelux and a large number of second tier operators

3. Diversification is key to the large players; it gives them better leverage and they are also able to serve new clients in new markets or existing clients in other business areas;
4. The major players rely on their own IT-system and their extensive network; another example of advantages of economies of scale, which are not attainable by smaller players;
5. Overall growth is negative or negligible, they can only grow through increased market share;
6. New destinations for truckers lie in Russia and Turkey.

6 Future options

After we collected and categorized all the information gathered from our interviews, one question remains: where are we heading for with Air Cargo in Europe? The experts we met are all part of the logistic air cargo chain and act in the daily world of P&L, operations, customers, applying corporate strategy, etc. We now try to look over the fence and like to share with you possible near-future options on the basis of the following aspects:

- Network technology and development
- Air Cargo Chain Development

6.1 Network technology and development

Almost all (European) combination (flag) carriers have evolved from their passenger point–to–point network strategy. Despite developments of separate cargo departments and their own P&L responsibility, cargo departments of these combination carriers have struggled to develop an independent, product orientated and sustainable cargo strategy. Combination carriers have tried to set up their own trucking networks and their own cargo handling companies. Trucking networks in order to expand their market reach (connecting regions) and cargo handling to get more control in the air cargo chain. However in recent years combination carriers have had to relinquish their shares in trucking and handling companies, resulting once again in less control. Or in other words: their passenger orientated 'mother' strategy restrained their strategic thinking and actions; stuck in point–to–point passenger networks and using the airplane as a belly space capacity supplier which had to be filled with tonnes instead of dedicated cargo 'products' based on speed compared to sea and road transport. A 'selling kilos' approach results in a yield per tonne, a product based approach on the other hand results in a yield per product. This is the core strategic difference between combination carriers and integrators: the integrator markets an 'On Time, reliable, trackable, high speed product'. Customers recognise the product and are willing to pay for what has been promised, and at an all-in rate. Combination carriers think in volumes and tonnes and therefore their yields are lower as price is determined by the fluctuations in supply (belly capacity) and demand (tonnes) on trunk routes. In any business model, a reduced yield should lead to a lower cost effort. However with their large, inert organizations and classic point-to-point approach some flag carriers have resorted to a cost plus type of cargo selling, barely able to afford a dedicated cargo unit and outsourcing on thinner routes. This does not mean that there will be no room at all for combination carriers, however their 'weight strategy' could be one of the reasons contributing to their bad financial results and -what we heard from the market- continued reduced use of the full freighter by combination carriers.

6.2 Air Cargo Chain Developments

6.2.1 Airports

Airports are slow movers in the chain as they are profoundly asset based and mostly sticking to the landlord model. Although they have tried to increase their revenues through international expansion. The takeover wave of the nineties - by airports like ADP, BAA, Schiphol Group, Fraport, Copenhagen Airports of airports in Africa, Mexico, or T4 at JFK and consultancy projects - has ended. For various reasons they have now fallen back to their core business at their home base, with (the former) BAA and Copenhagen Airports being prime examples. Also the privatisation trend –fully or partly– has stopped. In this respect, seaports seem to move faster. The privatisation and internationalisation of ports and terminals (especially container terminals) can be seen as a change in the seaport business model. The question is whether a strategic look at airport business models could lead towards a different view on new business, where it is not the operational and master planning skills of airports that are leading, but the 'Marketplace development capabilities' of airports could be the stepping stone for other activities.

6.2.2 Combination carriers, integrators and forwarders

Which approach in how to control the Air Cargo Chain works best? This can be viewed from different angles. Integrators have chosen to rely on a dense network structure to and from all points on the world map in which the aircraft is just a link in the chain. From the outside it looks as if they are only operating 'express'- type of operations and flying is their core business. However they have sold their customer a time-sensitive product with no emphasis on 'how do they do it'. While moving large quantities of general cargo combined with express through their network, the actual use of trucks, planes and even ships remains in the background. Combination flag carriers are more restricted in their network development through legislation and regulations (bilateral agreements are still guided by passenger interests and cargo has not claimed a special status or individual rights) and are point-to-point common carriers. Forwarders however have an approach which is in-between: more industry (shipper) related, with less commitment to the carriers network components. Freight forwarders are free to settle and are free in their choice of carriers. They can consolidate cargo across borders and make the best choices in terms of cost, routing and yield. In cases where airlines or their combined networks do not deliver the required capacity, reliability or cost, forwarders are even able to operate their 'own' flights. These elements make them more flexible in the air cargo chain than the airlines and offers them more opportunities to optimize their operations and in general has put and will keep them in the cargo driver's seat.

6.2.3 Air Cargo Handling Companies

As concluded in our analysis, air cargo handling companies are in a squeeze within the boundaries of EU-ground handling and airports concession policy. With airlines pushing down and forwarders moving up the chain. They tried to expand their activities - through mergers and takeovers of more local/regional orientated handling companies – to offer the airlines a network on the main hubs at competitive rates and trying to achieve economies of scale. However, instead of increasing their yields, they were pressured into offering rock bottom rates in order to hold on to their clients, resulting in a worrisome financial position of most handling companies, a situation which looks hard to get out of. Some of the larger multinational handlers have used rigid standardization and spreading their business around the globe as measures to dampen fluctuations in the (European) market. Another way to get out of their position might be to let go of the idea that handling companies' skills are only relevant at airports. Why not look for opportunities in inland depots or warehouse, IT and logistics activities for truckers, integrators or shippers?

6.2.4 Trucking Companies

Trucking companies have enabled fast growth of networks, but are de facto not leading in network development, but more a derived factor. They have now become footloose suppliers and highly dependent on total volume and network development. A few European trucking companies reacted in time to counter this dependency and diversified their product portfolio, which has already resulted in a reduced revenue share of their 'old' airline trucking activities. In addition to traditional haulage, trucking companies are in a position to become service suppliers to asset-light forwarders or (off-) airport warehouse handlers at smaller locations for handling companies.

6.3 Summary of findings

The developments in the air cargo industry basically reflect the changes in international trade patterns. The industry is repositioning itself in the air cargo chain and they are looking for new technologies in order to make their operations more efficient and profitable. The changes in fact are due to the fading away of 'old' borders, changes of roles of key players and integration of logistic processes. IT has enabled reduction of stocks, technology improvements has made equipment smaller, the crisis has reduced volumes. Those who are not able to migrate with these changes are not likely to survive, or reassigned to another role in the chain. This does not mean that there will be no role for those players, but a different, smaller or less profitable one. Also new players will enter the market. Even shippers may – in some capacity - act and contribute to their own air logistics chains, which in fact has been a practice all along.

As in many other industries, once enough of these changes happen, among old and new players, it indicates that the industry is moving into a next level of maturity. It will craft new technologies, open new markets, find new opportunities, forge new combinations and cooperation, as long as it retains a clear vision on its ultimate user: the shipper.