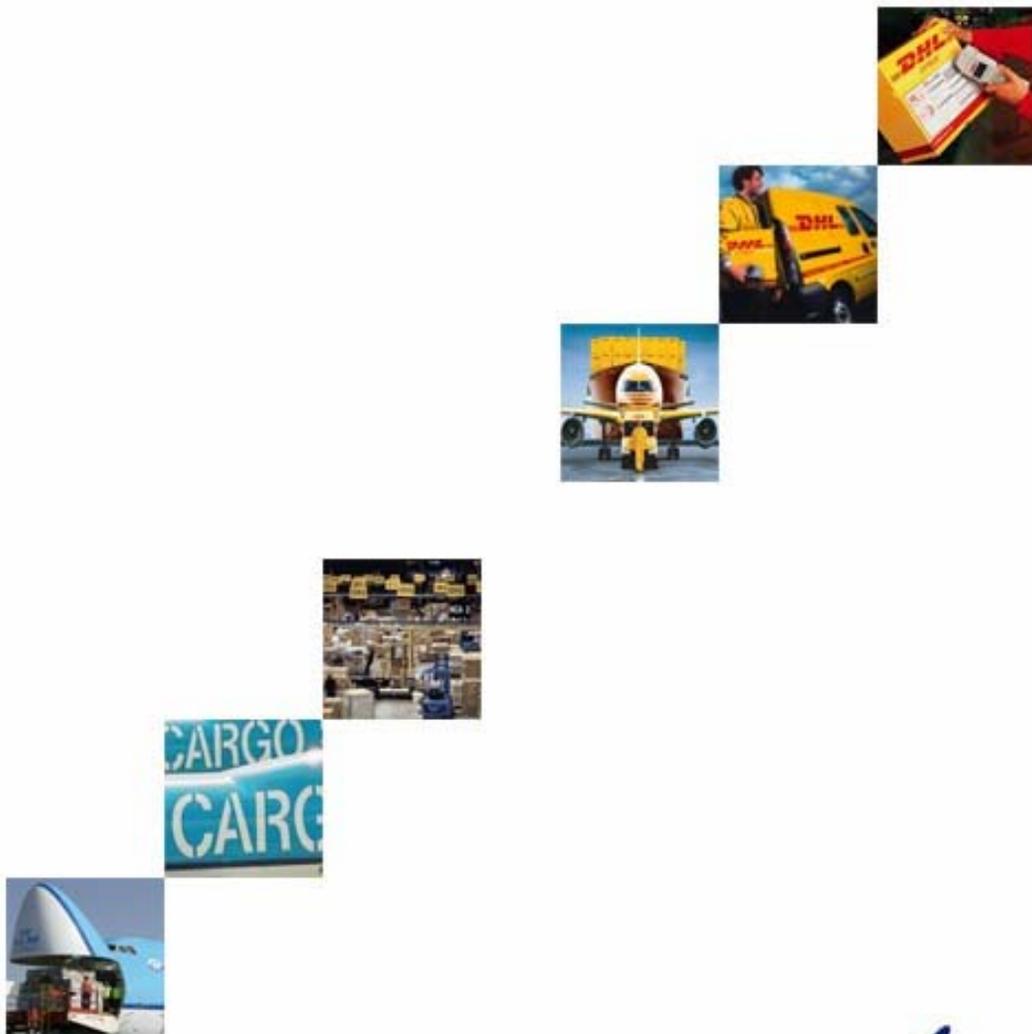


# COMPETING FOR AIR CARGO

*a Qualitative Analysis of Competition in the Air Cargo Industry*



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# Competing for Air Cargo

A Qualitative Analysis of Competitive Rivalry in the Air Cargo Industry

by

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# PREFACE

As my education career path has been somewhat unconventional, to say it euphemistically, this Master thesis concludes a whole decennium of learning and practicing air cargo. But first and foremost, this thesis is the final touch of my studies in 'Business Administration' (*Bedrijfskundige Economie*) at the Free University Amsterdam.

During these studies, I have become familiar with a number of different economic disciplines. Although my field of interest has narrowed over the years to the field of transport economics, I certainly did appreciate lectures on such subject like marketing, management and logistics. Actually, this thesis has been written on the edge of transport economics and marketing strategy with the centre of gravity on the transport economics' viewpoint.

As air cargo is not a field of academic research on its own, but a market domain study, I had to cope with a certain problem of scope. The air cargo industry can be researched from different perspectives, but the boundaries of the transport economics area are not that rigid that it excludes to take into account expertise from other academic disciplines. In this respect, I have thankfully used the knowledge I gained during my studies. Since I believe clarifying complex reality is what scientific research is all about, I hope my attempt to do so will meet the Faculty expectations. In anyway, I have experienced the process of this research project as very exciting and informative!

To conclude, I would like to express my gratitude to my supervisor Henk van Gent for his continuous support and enthusiasm as well as his time and efforts to keep me on track. My deep appreciation is for Boubby Grin, who voluntarily tutored me the past year. His authentic approach of business and management matters in general and his vision on the air cargo industry in particular were inspiring. The many conversations and lectures on air cargo with him were invaluable for me to write a thesis about this subject.

Furthermore, there are a number of industry experts that have shared their vision and experiences with me. The following people were so kind as to allow me an interview or a telephone / email conversation: Dick van den Berg, Pieter Bouw, Gerard ter Bruggen, Ger Engelsman, Oliver Evans, Jim Friedel, Monique Gerrits, Boubby Grin, Floris de Haan, Lutgarde Liezenberg, Paul Parramore, Frank de Reij, Wico Santbulte, Mariëtte Vos-Lambooy, Robert van de Weg, Fred Westdijk, Wim de Wit, Niall van der Wouw and Aris Zwart. I appreciated all your responses very well! To conclude, I would like to thank my beloved family and friends who supported me during the research project.

Amsterdam, January 2006

Willem-Jan Zondag

# EXECUTIVE SUMMARY

This thesis examines competition in the air cargo industry. It is presumed that this industry consists of two sub systems according to supply characteristics: the 'airline cargo market' and the 'integrated express market'. The central hypothesis of this thesis is: *“Based on a Strategic Planning Methodology, is it possible to prove that the Airline Cargo Market is losing the Battle over the Air Cargo Industry from the Integrated Express Market?”*

The 'airline cargo market' is more often referred to as the traditional air cargo chain that consists of several consecutive participants which collectively are responsible for the transportation of goods by air. The attention of this thesis is limited to one chain participant: the airline. The 'integrated express market' exists for some thirty years now and consists of a small number of suppliers that offer fast door-to-door transport of documents and parcels. These suppliers carry-out all chain activities themselves, including air transport.

As part of the formulated hypothesis, the Strategic Planning Methodology is outlined and applied. This Methodology deals with a company's business positioning, the ways it manages its customer relations and its commercial distribution. The most appealing situation for any company is to offer services with a high added value and a high margin, while the company has a strong grip on its target market. Companies, for which these characteristics apply, usually do business close to the customer, while companies that offer less advanced services are more production oriented.

It is concluded that airlines are predominantly variety-based positioned. Due to this positioning, the attention is focused on the delivery of one service in the broader transport chain. Super integrators have broken this tradition by positioning themselves needs-based, taking into account end-customer needs. The airline cargo market is highly dependent on intermediaries when it comes to market development and fare-setting. Commercial distribution via intermediaries does not provide airlines leadership over the air cargo industry. Last but not least, by operating upstream airlines do not realize margins that are feasible in the end-customer hierarchy of the market.

Over the past, airlines have not really clarified what their (desired) cargo business position is. Based on the Business Positioning Ladder, no airline has managed to be more than the Air Network functionality. In this role, airlines primarily focus their attention on their capacity, on their processes and on scale economies. Within this quadrant, the risk/reward profile is stable but low. Due to the unclear positioning of airlines, diffusion on the customer, competitor and marketing channel has occurred. Diffuse is whether the customer belongs to the intermediary hierarchy or the end-customer hierarchy (the forwarder or de shipper). Diffuse is also who the competitor actually is. Are airline only competing with other airlines for their business? Or do they also compete with intermediaries and...integrators?

It seems like that integrators have not really considered themselves as competitors of airlines. Integrators have used the air transport system for the fulfilment of their operations when necessary. Apparently, the airline cargo market was considered as unsuitable among integrators for the execution of their business as they have built a business system that 'duplicates' the airline cargo chain. It is unlikely that integrators have duplicated an entire transport chain 'for fun'. Integrators must have noticed one or more essential shortcomings that urged them to do so. These shortcomings can be considered as the weaknesses and diffusion of the airline cargo market

This thesis has shown that a very important consideration in the analysis of competition in the air cargo industry is the level of abstractness on which the analysis takes place. It has been pointed out that such an analysis can be carried-out on a company level, a hierarchy level or an industry level. On a company level, an individual airline and an integrator may compete on a certain city-pair market for cargo business. However, this not necessarily leads to competition on a higher abstraction level between the airline cargo market and the integrated express market. What especially the case studies have made clear is that airlines are still a functionality in terms of the Strategic Planning Methodology while integrators have expanded into being a complete hierarchy on their own. Therefore, only comparing airlines with integrators is an unbalanced comparison as this is comparing a single company with a complete hierarchy. The 'duplication' of the airline cargo chain and the adjustment of integrators to perceived shortcomings may ultimately result in a reconfiguration of the air cargo industry.

This thesis has concluded that in order to determine whether the airline cargo market in general is losing the battle over the air cargo industry from the integrated express market, not the company level but the industry level is important. As the integrated express market has captured and assured the business in the more attractive end-customer hierarchy and right-up quadrant, it may well be concluded that these companies have more favourable market position than airlines have. Airlines have become 'locked-in' as supplier of cargo carrying capacity to intermediaries and integrators. It may be expected that as long as airlines fly with aircraft that have cargo carrying capacity they will offer this capacity to shipping markets, if necessary marginally priced. But this will never enable them to become a leader in the transportation and (third party) logistics market. By not migrating their business scope, airlines have lost the opportunity to get involved in the more rewarding market for third party logistics.

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# ABBREVIATIONS

3PL	Third Party logistics
ACMI	Aircraft, Crew, Maintenance & Insurance
AEA	Association of European Airlines
AEI	Air Express International
ASA	Air Service Agreement
ATK	Available tonne kilometres: number of tonnes of capacity available for the carriage of revenue (passenger and cargo) multiplied by the distance flown.
BA	British Airways
BCG	Boston Consulting Group
BU	Business Unit
CEO	Chief Executive Officer
CSC	Cargo Service Center
DHL	Dalsey, Hillblom, Lynn, (surnames founders of DHL)
DPWN	Deutsche Post WorldNet
E&M	Engineering & Maintenance
EVA	Economic Value Added
FCL	Full Container Load
FedEx	Federal Express
FTE	Full-Time Equivalent
GDP	Gross Domestic Product
GSA	General Sales Agent
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
JIT	Just-in-Time
KLM	Koninklijke Luchtvaart Maatschappij
LCL	Less than Container Load
NVOCC	Non-Vessel Operating Common Carrier
O&D	Origin & Destination
OECD	Organization for Economic Cooperation and Development
PPO	Public Postal Operator
RTK	Revenue per Ton Kilometre (revenue load in tonnes multiplied by the distance flown)
SCM	Supply Chain Management
TDC	Total Distribution Costs
TNT	Thomas Nationwide Transport, integrator wholly owned by TNT Post Group
UPS	United Parcel Service

# GLOSSARY OF KEY TERMS

<b>Air Cargo</b>	Any property (freight, mail, or express) carried or to be carried in an aircraft, other than the carry-on, checked or excess baggage, or property carried, which is incidental to the carriage of passengers (e.g., in-flight meals) or cargo (e.g., empty containers) (Boeing Freighter Reference Guide, 2003). In this thesis, the term 'air cargo' refers to the transportation of goods by air (at least partially) on a commercial basis.
<b>Air Freight</b>	This is a term often used interchangeable with 'air cargo'. However, the term air freight generally refers to larger / heavy consignments while the term air cargo also covers mail and express.
<b>Air Mail</b>	Documents, letters, or parcels bearing the appropriate postage specifically established for carriage of mail by air (Boeing Freighter Reference Guide, 2003).
<b>Air Express</b>	Shipments for which an air carrier provides a time-defined or guaranteed level of service (Boeing Freighter Reference Guide, 2003).
<b>Business Positioning</b>	A sustainable competitive advantage by preserving what is distinctive about your company. It means performing <i>different</i> activities from rivals, or performing <i>similar</i> activities in different ways' (Porter, 1996).
<b>Commercial Distribution</b>	The upstream or downstream distribution of services directly to end-customers or via intermediaries.
<b>Commodities Market</b>	Market of clearly defined, usually price-driven over-the-counter services.
<b>Consignee</b>	Any person entitled to take delivery of the goods and whose name appears on the transport document as the party to whom the goods are to be delivered by the carrier (Fennes, 1997).
<b>Consignor</b>	A person by whom or in whose name or on whose behalf a contract of carriage has been concluded with a carrier, or any person by whom or in whose name or on whose behalf the goods are actually delivered to the carrier in relation to the contract of carriage (Fennes, 1997).
<b>Consolidator</b>	A company that buys capacity from airlines and sell this on to small and medium-sized forwarders. This enables the latter to buy freight space more economically than they might otherwise do by contracting directly with the airline (DFT, 2000).
<b>Customized Market</b>	A market on which a product portfolio is offered of value-driven tailor-made solutions.
<b>End-Customers</b>	See Shippers. Not to confuse with 'final consumers'.
<b>End-Customer Hierarchy</b>	Downstream commercial distribution to end-customers.
<b>Express</b>	The express industry's core business is to provide value-added, door-to-door transport and delivery of time-sensitive shipments (Jones, 2000).

<b>Final Consumers</b>	Individuals consuming goods that wholly or partly needed air cargo transport to reach the place of consumption.
<b>Forwarders</b>	Providers of services to shippers and importers which originally involved receiving a consignment of freight from a shipper, arranging its routing, transportation handling and documentation to either the final receiver or to a foreign airport (DfT, 2000).
<b>Functionality</b>	A combination of input, throughput and output processes as well as customer relations belonging to a certain business position.
<b>Integrators</b>	Some express companies are called Integrators because their structures are “vertically integrated”. That is, they perform their own pick-up and delivery services, operate their own fleet of aircraft and trucks to support their extensive door-to-door delivery operations and tie it all together with advanced information and communication technologies (Jones, 2000).
<b>Intermediary Hierarchy</b>	Upstream commercial distribution via intermediaries.
<b>Left-down Quadrant</b>	See Intermediary Hierarchy.
<b>Logistics</b>	The process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point-of-origin to point-of-consumption for the purpose of conforming to customer requirements.
<b>Migration</b>	A migration is a development from one business position into another, either right-up or left-down.
<b>Right-up Quadrant</b>	See End-Customer Hierarchy.
<b>Shippers</b>	Person or company that has issued the contract for carriage (called ‘air waybill’ in air cargo) of the goods and in whose name the carriage is performed (Fennes, 1997).
<b>Specialized Market</b>	A market on which services are offered like on the commodities market but enriched with optional features against list prices.
<b>System Leap</b>	A migration from a business position in the intermediary hierarchy into a position in the end-customer hierarchy or the other way round.



## ① RESEARCH APPROACH & METHODOLOGY

*This chapter outlines the background of this research project and provides the problem statement, the research question and sub questions. Furthermore, the study aims as well as the academic and business relevance and expected outcomes will be discussed. The chapter concludes with a preview of what may be expected in the chapters that follow.*

### 1.1 Prologue

In daily life, individual consumers are often not aware about (or simply not interested in) the ways goods have been distributed to the points of sale where they purchase or collect them. Surely, all goods or parts thereof need physical distribution to enable final consumption. The fast transportation of goods from the point of production or assembly to the point of consumption is often facilitated by the air cargo industry.

Over the past decades, quite a fragmented industry has emerged to supply air cargo related transportation services. Conceptually, the global air cargo industry can be divided into two subsystems, the 'airline cargo market' and the 'integrated express market'. It is assumed in this thesis that competitive rivalry<sup>1</sup> exists between participants on one market vis-à-vis participants on the other market. The airline cargo market is used here as a synonym for the traditional air cargo supply chain. The first sub system is labelled 'airline cargo market' to emphasise the role of airlines in the chain that will be the subject of examination in this thesis. However, it is certainly not the intention to trivialize the role of forwarders and other chain participants. The second sub system is the integrated express market that defacto is a duplication of entities and functionalities of the airline cargo market. In this market, a distinction will be made between 'classic integrators' that offer traditional express delivery services and 'super integrators' that offer a broader portfolio of transportation and logistics services. Figure 1.1 shows these two subsystems that collectively make-up the air cargo industry.

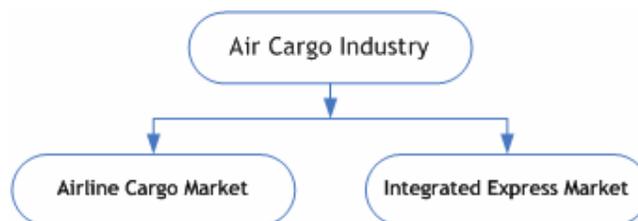


FIGURE 1.1: THE AIR CARGO INDUSTRY

<sup>1</sup> Competitive rivals are 'organizations with similar products and services aimed at the same customer group' (Johnson & Scholes, 2002).

## 1.2 Research Question

Traditionally, air cargo airlines were competing on characteristics like size and weight of parcels. But integrated express firms have introduced other bases of competition, mainly being speed, efficiency and reliability. The problem statement of this research project is therefore to obtain understanding in the competitive rivalry of the air cargo industry.

Question rises how the airline cargo market anticipated to the aggressive growth of integrated express firms. Growth rates of integrated express companies have been faster than the autonomous market growth of the global air cargo industry. Integrated express companies have partly stimulated demand for air cargo services, but they have also captured market share of the airline cargo service providers. Figure 1.2 shows the world's average development in the airline cargo market versus the integrated express market. In 1993, only 5% of the international air cargo traffic was considered as express while this percentage has grown to some 11% in 2003. However, it is important here to stress that there are huge geographic differences. The share of integrated express in especially the US is much more important than on a world average, as figure 1.3 shows.

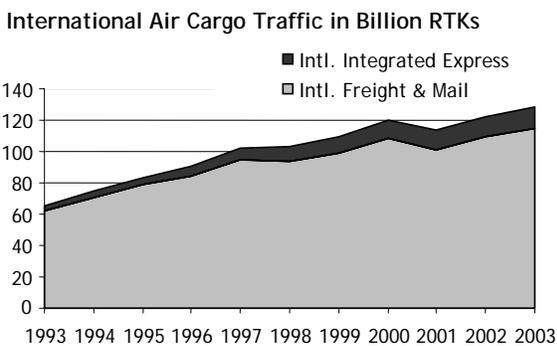


FIGURE 1.2: WORLD AIR CARGO INDUSTRY DEVELOPMENT  
Source: Boeing, 2005

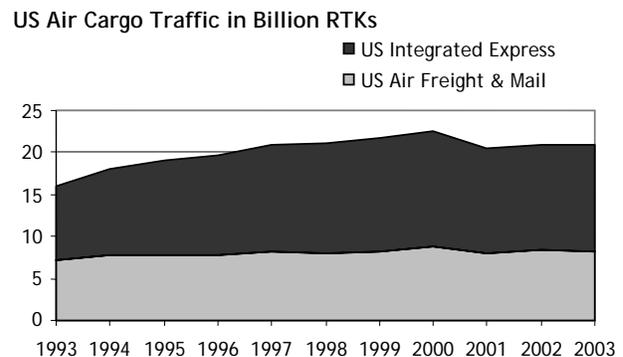


FIGURE 1.3: US AIR CARGO INDUSTRY DEVELOPMENT  
Source: Boeing, 2005

The share of express cargo in Europe is also stronger than the world's average but less as strong as shown for the US. Especially based on the regional developments in Europe and the US, one may even hypothesize that the airline cargo market is losing the battle over the air cargo industry from the integrated express market. This assumption is the central research question of this thesis:

*"Based on a Strategic Planning Methodology, is it possible to prove that the Airline Cargo Market is losing the Battle over the Air Cargo Industry from the Integrated Express Market?"*

The main research question stated above rises a number of additional questions that are to be researched in order to formulate a satisfactory answer to this research question. The first sub question that comes to mind deals with researching antecedents that caused the current market situation. In what historical, political and economical context did both the conventional airline cargo market and the integrated express market develop over the past decades? How is the business environment of the air cargo industry configured? To get an understanding of the air cargo industry in general, the following sub question has been formulated:

*Sub question 1: How is the Air Cargo Industry Configured?*

Secondly, when talking about the air cargo industry, it would be interesting to obtain a better understanding in demand characteristics. What kind of customers choose for air cargo services? What are their decision criteria to choose for air cargo compared to other transport modalities? To what extent differs demand for airline cargo services from demand for integrated express services? To cover these demand-related questions, the following sub question has been formulated:

*Sub question 2: What is the Nature of Demand for Airline Cargo Services versus Integrated Express Services?*

Now that the demand and supply sides of the markets have been clarified in general terms, a more narrow focus on the research topic will be provided. As this thesis is about the proposed competitive rivalry between airline cargo businesses and integrated express companies, an in-depth view about these two suppliers of air cargo related services is necessary. What is interesting to know is the functioning and aims of these different business streams and the way they intend to deliver customer value. The following sub questions will be answered:

*Sub question 3: How does the Airline Cargo Business Model look like?*

*Sub question 4: How does the Integrated Express Business Model look like?*

So far, the sub questions dealt with have set-up a contextual framework to prepare a convincing answer on the intriguing premise that the traditional airline cargo business is losing a battle from integrated express companies. In order to formulate an appropriate answer to this hypothesis, it is necessary to provide conditions on how a possible win-lose situation can be determined. A Strategic Planning Methodology will be used to do so. Therefore, the fifth sub question has been formulated:

*Sub question 5: How can the Strategic Planning Methodology be helpful to determine whether the airline cargo market is losing the battle from the integrated express market or not?*

The managerial approach of the previous sub question finally enables a discussion on the central research question of this thesis. In the end, are airline cargo and integrated express operators really competitors or is this assumption a misconception? The final chapter will discuss the central research question as stated earlier. Apart from the sub questions explicitly formulated here, topics closely related to a sub question may also be discussed during the subsequent chapters.

### 1.3 Study Aims

This research aims at providing insight in developments in the air cargo industry and a reflection on these developments. Based on the preceding research questions, the aim of this study is (1) to provide a short historical, economical and aero political analysis of the air cargo industry, (2) to scope-out the particular position of the airline cargo market and the integrated express market and (3) to provide an analysis that clarifies the state of the industry. This analysis results in an argumentation of business developments in the air cargo industry.

### 1.4 Significance & Delimitations

Attention given in academic periodicals to the air cargo industry in general and market developments in this sector in particular is quite limited. The few articles that can be found in journals dealing with air cargo unfortunately fail to provide insight in the competitive rivalry of the air cargo industry. Academia with an interest in transport economics regrettably on average show little interest to air cargo, which is a little strange given the complexity of the industry, its still growing importance to daily life and the enormous amount of money the industry generates. An explanation of this situation may be that air cargo and air transport economics are applied research areas and no 'rocket science'. Furthermore, there are many different perspectives from which air cargo can be researched: from a transport economics-, marketing-, accounting-, logistics-, technological- and legal viewpoint. This probably explains why documents dealing with all relevant aspects of air cargo are scarce.

Although there have been written numerous reports about air cargo during the past decades, a thorough analysis of the competitive dynamics is still lacking. Such an analysis may certainly be relevant to the airline cargo market as knowledge about antecedents that have caused 'hyper competition' and a constant disequilibrium in the air cargo industry market provide a certain kind of reflection. Furthermore, this may also be helpful to improve the market position of airline cargo businesses and its ways of doing business.

Apart from delimitations and constraints that affect nearly all research projects (e.g. limited time available, lack of money to attend specific conferences or buy certain reports), a number of thesis-specific delimitations can be identified:

- A number of different disciplines have their impact on air cargo. It is definitely impossible to review all logistics developments, legal aspects, economic and operational constraints in detail. Some of these matters will only be dealt with as an introduction to the main research topic;
- Competition in the air cargo industry is researched on an aggregate level since it is impossible to explore all competitive forces on all product markets and geographic markets worldwide in detail;
- The pre-study made clear that statistical information on the air cargo industry (e.g. market shares and market growth) is scarce or at least not easily available, partly because actors consider certain data as confidential and partly because available data is published in very expensive reports. Consequently, facts and figures are available on a very aggregate level only.

## 1.5 Research Methodology

In general terms, this research project will be carried-out in the following way. Before starting at all, a preliminary study has taken place to become familiar with possible research topics and materials that are already published on the air cargo industry. An important source in this respect was Mr. Boubby Grin, a former director of the cargo division of a large European airline. He also suggested using the method of analysis that will be explained later on. This methodology has been used a couple of decades within the airline he has worked for to ground strategic decisions taken within divisions, business units and subsidiaries. The method of analysis is used to structure the case studies carried-out in chapter eight as well as the concluding remarks presented in the final chapter.

### 1.5.1 Literature Review

Three articles on air cargo strategy development form the foundation of this thesis. These articles have all been written by Mr. Boubby Grin. The first article is *'Made to Measure'*, that outlined the Strategic Planning Methodology clearly. The second article *'Mixing with the Right Crowd'* was about the same Methodology but focused its attention on commercial distribution. These were published in the 'Cargovision' periodical in 1995 and 1996 respectively. The third article is *'Developments in Air Cargo'*, a contribution to the Handbook of Airline Marketing, published by the Aviation Week Group in 1998. It is remarkable to notice that contributions by other authors on air cargo strategy development have not been written - at least not as far as it is known with the author.

Nevertheless, an extensive review of relevant literature on air cargo will be presented in this thesis. Many different sources are used for this review, ranging from business magazines, academic journals, thesis written by other students to consultancy reports and

articles published in newspapers as well as information derived from specialised websites and presentations held at conferences and conference papers. The literature review scope in this paper is not limited to one field of academic research (e.g. transport economics); sources that are part of other research areas will also be consulted.

### 1.5.2 Case Studies

An important part of this research project are two case studies, one about a major player in the airline cargo market, KLM Cargo and the other about a major player in the integrated express market, Deutsche Post / DHL. These case studies are helpful to examine a phenomenon in its natural environment. Case studies are often used *'to describe, to marshal, to explore real-life situations, to generate hypotheses, or to illustrate a certain theory'* (Van der Velde, Jansen, Telting, 2000).

In this thesis, the case studies are especially helpful in marking out the scope of the research and to explain the market dynamics in the air cargo industry. The advantage of a case study is that it may provide a deep understanding of processes and interactions within a domain (Van der Velde et. al, 2000). A major disadvantage is that possible outcomes are not statistically generalizeable.

### 1.5.3 Expert Interviews

In order to provide a satisfying answer to the formulated research questions, expert interviews haven been held with (former) air cargo managers to make-up the case study about KLM Cargo. Interviews have been conducted as much as possible in personal meetings and preferably not via telephone interviews. Questions asked during the interviews were based on the method of analysis and were repeatedly asked to different people to collect as much different opinions on the same topic as possible.

## 1.6 Structure of the Thesis

This thesis consists of eight chapters divided into three parts. After this introductory chapter, part one explores the air cargo industry in general. The second part pays special attention to the role of airlines and integrators in the market while the third part provides an analysis on developments in the air cargo industry, an application of this analysis in two case studies and final conclusions.

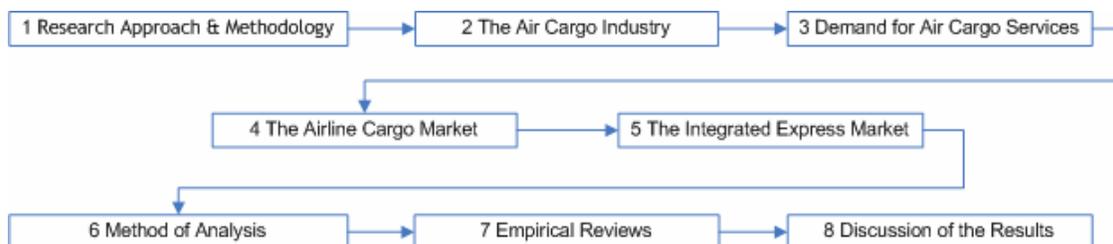


FIGURE 1.4: OUTLINE OF THE THESIS

## ② THE AIR CARGO INDUSTRY

*This chapter aims at providing an introduction into the contextual background of the air cargo industry by formulating an answer to the first sub-question: 'how is the air cargo industry configured'? A number of development milestones are addressed that have had a profound impact on today's global air cargo industry. Furthermore, the macro environment and trends and developments in air cargo are shortly dealt with. The chapter concludes with a short supply-chain analysis of the global air cargo industry.*

### 2.1 Introduction

Today's modern society demands an advanced transportation system to overcome distances, preferably in a fast, safe, comfortable and reliable way (European Commission, 2003). Distances might be a roadblock for people wanting to socialize out of home, enjoy education, doing business and so on. But not only individuals are daily on the road overcoming the distance between the place they are and the place they want to be; also raw materials, spare parts and finished goods are every day on the move from one place to another enabling companies to produce, assemble or sell their goods. These movements are facilitated by companies offering transportation services. As passengers and particularly goods rarely do move for the sake of travelling, transportation services generally have a diverted character because the demand for transport depends on underlying reasons or final activities that makes transport necessary (De Wit, Van Gent, 2001). Furthermore, the transportation industry consists of two subsystems, one for passengers transport and one for cargo transport (De Wit, Van Gent, 2001; Zhang, Zhang, 2002).

Although these two subsystems are sometimes interrelated, this thesis excludes the subsystem of passenger transport and focuses on cargo transport, particularly on air cargo. Within the transportation domain, several modes of transport can be identified: road, rail, sea and air being important ones. In many cases a combination of these modes is used to effectively relocate. In air transport for instance, surface transport is needed to reach the airport of origin and after arrival at the destination airport surface transport is needed again to reach the final destination. Therefore, air cargo is much more than just the 'air' component; isolation from other transport modes does not make sense as interdependencies with other modes of transport exists. Air cargo transport has an intermodal nature by definition.

Figure 2.1 shows a more detailed categorization within the air cargo industry. The air mail market has been added here as the carriage of mail by air is as old as the air transport business is. However, as will be discussed later on, mail operators are nowadays also

entering the air express business. The integrated express business originates in the movement of air express and shows tendencies to serve the other categories as well.

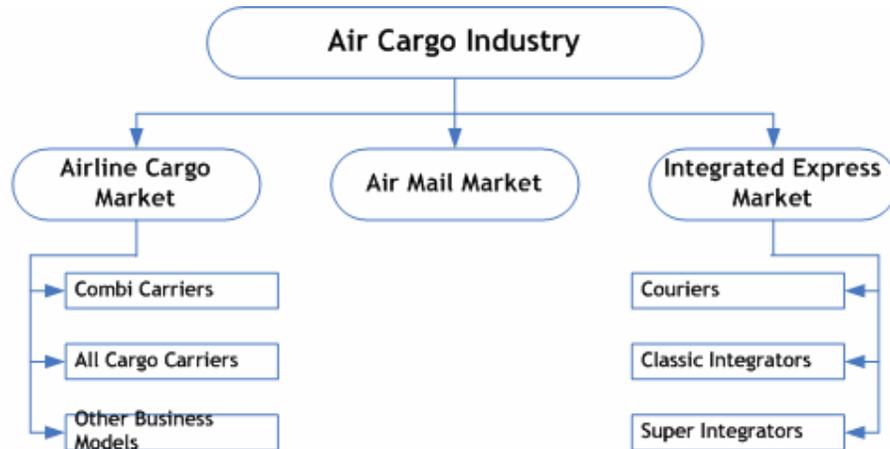


FIGURE 2.1: THREE COMPONENTS OF THE AIR CARGO INDUSTRY

The sub systems of the air cargo industry consists of air cargo service providers that are *'any provider of services related to air cargo transport including, but not limited to, multimodal operations, freight forwarding, express operations, brokerage services et cetera'* (OECD, 2000). This is quite a broad definition which may apply to several kinds of businesses in the air, but also on the ground. As Grin (1998) argued, there is a tendency to consider shipments as air cargo as soon as an airway bill has been issued, regardless of the mode of transportation. So, cargo transported under air way bill by road feeder services substituting air transport is considered as air cargo, even if the cargo will never take-off during the transportation process. But as the above mentioned definition made clear, not only the mode of transport is necessary, also ancillary services are increasingly related to air cargo.

Compared to other transport modalities, air cargo has some overall advantages and disadvantages. As mentioned by Uniconsult (2005), the overall advantages of air cargo are the velocity of air cargo transport on medium and long distances, high standards of safety, high reliability in cargo transport and dense international flight networks. Overall disadvantages defined by these consultants are the expensiveness of air cargo, its lack of applicability on short distances and the difficulty to obtain economies of scale by cost digression due to the restraint capacities of cargo vehicles (Uniconsult, 2005).

## 2.2 Short Historical Perspective

The airline cargo market has been predominantly supply oriented until around the '60s. The available cargo carrying capacity and destinations were most often a function of the air passenger business. However, a shift in the market occurred from being supply oriented to becoming demand oriented as a consequence of the introduction of jet powered aircraft and wide-body aircraft. Technological developments facilitating this progress resulted in

improved network productivity (as aircraft flew faster than before) and a tremendous increase in available ton kilometre capacity (Boncinelli, 2000). Airlines introduced consolidation rates (quantum discounts) for larger shipments. Consolidated shipments became the business of forwarders, which act as middleman in the air cargo distribution system and effectively took over the control of this system of airlines (Bridges, 2000).

Apart from forwarders, another new entrant showed-up in the late '70s in the US as a consequence of the deregulation of the airline market. This deregulation accelerated the establishment of the integrated express market. The term 'integrator' refers to the vertical integration of the different business activities that are operated by separate actors in the airline cargo market (road haulage, forwarding, ground handling, air transport, customs clearance). Over the years, integrators have developed themselves aggressively in terms of scale and scope and are nowadays much more than express carriers alone.

The differences between air express companies and Public Postal Operators (PPOs) in Europe began to fade away in 1989 when a number of PPOs established the International Post Corporation based in Brussels to manage and operate a cross-border network competing directly with private air express companies (Campbell, 2001). However, this multinational company failed to become a serious player in the market and ultimately one of its shareholders (Dutch Post Office) bought out the other partners in 1991 for its own benefit. Some five years later, the Dutch Post Office took over integrator TNT Worldwide Express headquartered in Australia. Several PPOs have since entered the air cargo industry through mergers and acquisitions becoming important players in the field.

### 2.3 Macro Economic Landscape

This paragraph provides a snap-shot view of some macro economic issues that have their impact on the air cargo industry. As airline cargo businesses are part of this industry, their market behaviour can be explained by taking into account the economic environment. The discussion commences with general forces that stimulate or impede growth of the industry. After having outlined these forces, the impact of world trade and globalization will shortly be ticked off.

#### 2.3.1 *Driving Forces & Barriers for Air Cargo Growth*

A number of driving forces can be identified that impact developments in air cargo (Clancy & Hoppin, 1998; Herrmann, Trefzger, Crux, 1998; ATAG, 2000; Uniconsult, 2005). Most driving forces named by these authors are visualized in figure 2.2 published by the Boeing Company in its World Air Cargo Forecast. In the centre of this figure, the ultimate variable is shown: world and regional GDP growth. Other driving forces are also pictured here within the circle. The constraints are shown outside the circle with arrows pointing to the circle. The most important constraints for growth are according to Clancy & Hoppin (1998): economic recession, trade barriers, regulation, modal competition, rising oil prices and a

continuing split between falling yields and rising costs. Furthermore, major events beyond the control of air cargo operators ('external shocks'), such as the Asian Economic Crisis of the late '90s, the wars in Iraq and Afghanistan and the terrorist attacks of 9-11 have hit the air transport industry hard in the recent past.

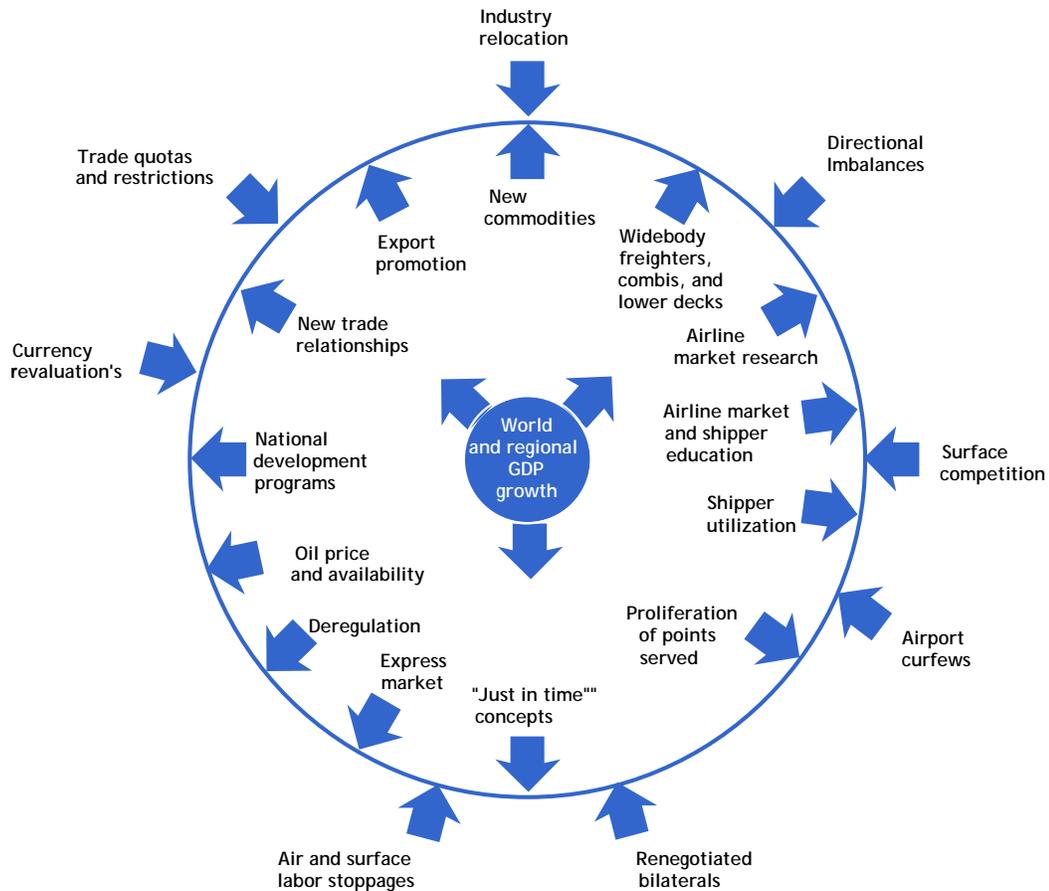


FIGURE 2.2: FORCES AND CONSTRAINTS FOR AIR CARGO GROWTH  
Source: Boeing, 2004

### 2.3.2 Growth in World Trade

The air cargo industry is changing continuously caused by both cyclical factors and structural grounds (Kasarda et. al, 2004). Cyclical changes can have a short-term and a long-term character where short-term cycles may be related to seasons and long-term cycles are related to periods of economic growth, market saturation and decline. Boncinelli (2000) has studied long economic waves in the airline industry on a global scale according to the world's gross domestic product, aircraft orders, revenue and available ton kilometres and airline's cash flow and net operating margin. Based on a longitudinal study of ICAO statistics, this author shows the existence of a correlation between the world's GDP - which measures the international trade volume - and airline's net operating margin. Boncinelli (2000) observed that the length of the business cycles diminishes over time (with an average of around ten years) while the height of the cycles, especially with regard to financial

variables, increases (Boncinelli, 2000). Uniconsult (2005) also concludes that downswings and upswings in economic activity during business cycles are a vitally important indicator for the future development of the air cargo businesses.

According to Zhang and Zhang (2002), air cargo has grown over the years between one and a half and two times as high as global GDP. Kasarda et. al (2004) have also proved a strong correlation between air cargo growth and growth in gross domestic product. It is possible to predict either the world air cargo amount or the world GDP with an approximate 97% accuracy if you know one of these since they are mutual causal, according to Kasarda et. al (2004). Figure 2.3 shows the correlation between the annual change in RTKs and world GDP.

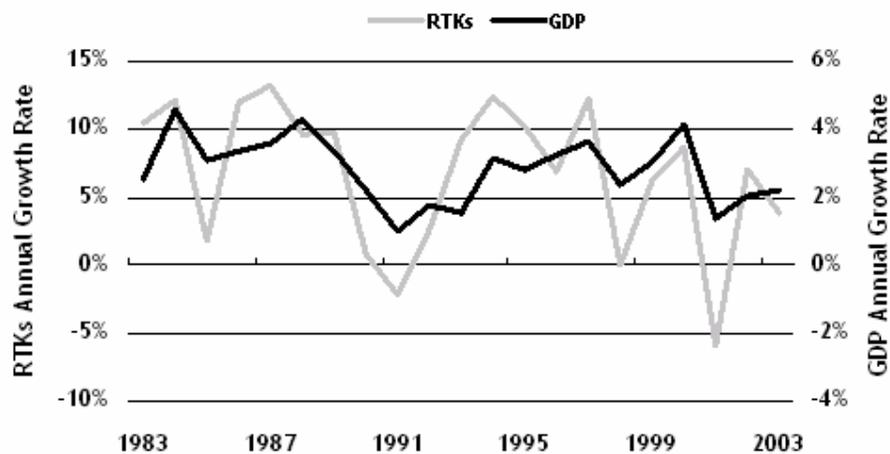


FIGURE 2.3: CORRELATION OF ANNUAL RTKS AND GDP CHANGE  
Source: Boeing, 2004

The global business environment plays an important role in the development of air cargo as the state of the air cargo industry is a reflection of trade balances (Grin, 1998). Markets become increasingly demand driven meaning an increasing market power for end-customers in logistics needs. Air cargo industry watchers believe air cargo to be a subset of world trade that is linked to economic growth (Clancy & Hoppin, 2002). These authors argue that air cargo is highly cyclical. Developments in world trade have consequences for logistics needs of manufacturers and trading companies, which in turn impacts the demand for air cargo services.

### 2.3.3 Globalization

Globalization is a major driving force for air cargo transport<sup>2</sup>. This is about the Integration of world societies through the conjunction of intellectual, political, economic and technological developments. The global business environment is characterized by

<sup>2</sup> See for a comprehensive discussion on the impact of globalization on the air transport industry "Fettered Flight: Globalization and the Airline Industry, Massachusetts Institute of Technology, 2000

tendencies towards a concentration on core activities and outsourcing of perceived non-core activities. Manufacturing companies aim to rationalize their production and distribution activities. For efficiency reasons, they also tend to centralize their plants on a limited number of places in the world requiring more advanced logistics (Verbeke et al., 2004). Global convergence of economic policies, income distribution and the homogenization of consumer requirements may stimulate trade flows of capital equipment, components and finished products possibly boosting air cargo demand (Clancy & Hoppin, 2001).

#### 2.4 The Aeropolitical Environment

It would be desirable for companies active in the air cargo industry to take business decisions freely based on commercial considerations. However, market potential cannot be fully exploited as long as the air transport part of the air cargo industry is regulated in rather every aspect (Taneja, 2004). Supply and demand for air cargo services are subject to regulation which affects the efficiency and competitiveness of the industry (Smith, 1974) as well as airline network structures, management strategies and airline productivities (Oum, Yu, 1998). A milestone in air transport jurisdiction is the US Airline Deregulation Act that became law in 1978 and followed the air cargo deregulation of 1977. This meant a dismantling of a comprehensive system of government control on commercial air transport in the United States (Kahn, 2005) with the aim to lower average fares and to improve the services offering.

Regulation is justified by governments in an attempt to balance economic and social priorities (Butler, Keller, 1998) and to protect the health and safety of its citizens and to charge taxes (Herrmann, Trefzger, Crux, 1998). Deregulation and liberalization efforts have a common goal to create a certain kind of market equilibrium of what is perceived perfect competition. Notwithstanding these efforts to change air transport policies, airline markets in general are still far from contestable (Kleymann, Seristö, 2004). On many individual routes, oligopolies or duopolies can be observed. To conclude, the regulatory air transport environment only applies to asset based companies that use aircraft as their primary production method. Intermediaries such as forwarders remain unaffected by this kind of legislation and are allowed to operate on a global scale where-ever they want.

#### 2.5 The Air Cargo Supply-Chain

Air cargo services are supplied via the traditional airline cargo chain and through the integrated express industry. The traditional or 'hard' airline cargo market consists of different actors. The most important ones are the shipper, the forwarder, the airline and the integrated express provider. Other participants that also have an interest in this market are ground handling agencies, airports, trucking companies, general sales agents, value added logistics service providers and some postal companies that have entered the market as well. Figure 2.4 shows the air cargo supply chain with the most important participants.

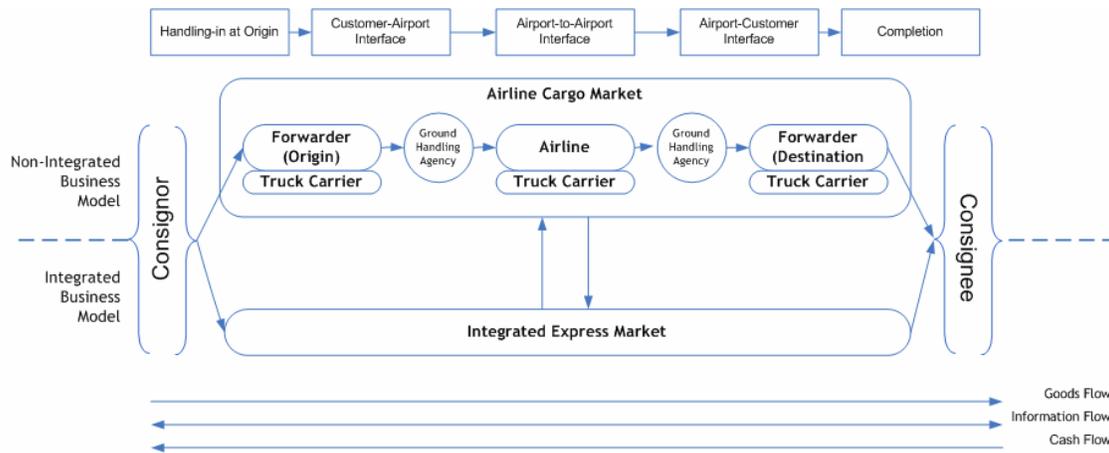


FIGURE 2.4: AIR CARGO INDUSTRY AND BUSINESS MODELS  
 Source: based on Hamoen, 1997 and Hamlin, 2004

The figure as pictured above shows the physical flow of goods from left to right. This makes clear that several actors play their role in the air cargo industry which has at least two implications. First, in order to deliver cargo to the consignee in good condition, close cooperation and coordination between the individual actors is required. This figure assumes that every consecutive actor performs its own specialized function. Second, the consecutive links in the supply chain suggest a supply and demand relationship where each link adds value to the previous link (Roos, 2000).

Within the air cargo supply chain, two business streams can be distinguished. The most advanced business model is those of vertically integrated companies offering different parts of the supply chain. However, most companies in the air cargo industry are non-integrated air cargo service providers concentrating on one activity in the chain offering either retail or wholesale services.

The retail level is the business stream where companies have direct contact with shippers, also called 'downstream operations'. Air cargo retailers are particularly forwarders, integrators, couriers and to a lesser extent, airlines. Grin (1998) argues that the more downstream an air cargo supplier moves, the closer the supplier gets in touch with end-customers and the more added-value the supplier has to deliver. It may even be possible that suppliers consider some services as added-value while end-customers consider these services as basic value. Air cargo wholesalers sell just one part of the air cargo supply chain, for instance some cargo space onboard aircraft. Airlines are the major air cargo wholesalers, but there are also road haulage firms wholesaling pick-up or delivery services.

The boundaries between the traditional airline cargo business and the integrated express businesses are blurring. Those two business streams are characterized by co-evolution,

concentration and convergence tendencies driven by time-space compression, real-time needs, lean production and e-commerce challenges (Taylor, Hallsworth, 2000).

In air cargo, the demand for available space comes particularly from forwarders and large shippers. This market has a rather homogenous character as airlines offer this service generally on an airport-to-airport basis only. Traditionally, this market is seen as a price-elastic and service-inelastic one as the demand is weight-driven and not so much service driven. Consequently, the market is quite sensitive to market price fluctuation (Roos, 2000).

### *2.5.1 The Importance of Forwarding Agencies*

Characteristics of shippers, airlines and integrators will be discussed in the upcoming chapters. This paragraph aims at providing a snap-shot view of the other key participant in the airline cargo market, the forwarder.

Forwarding agencies act as intermediary in the air cargo chain buying air cargo space from airlines as a wholesaler and offering this space with additional services as a retailer to shippers. Forwarders partly make their business by consolidating individual shipments into bulk consignments and offer these consignments to airlines. The principle of consolidation has accelerated the importance of forwarders in the air cargo industry. Shippers have three main reasons to do business with forwarders for their transportation needs, namely cost, organization and know-how (Fennes, 1997).

As forwarders have a so-called multi-product services portfolio, offering much more services than cargo space alone, their market has a heterogeneous character. Forwarders act as an 'architect' in international transport for shippers. Their added value is reflected by their extensive market knowledge, their ability to arrange pick-up in country of origin and delivery in country of destination, their ability to consolidate and de-consolidate shipments, their ability to deal with customs procedures and other administrative and financial tasks and increasingly, their global coverage. Forwarders also advise their customers about the most recommendable transport solution in a particular situation, about required packaging and may intermediate in recommended transport insurances (Miedema, 1996). They negotiate on the terms of the contract of carriage and generally supervise the transportation process (Fennes, 1997). Forwarders also offer value adding services to their customers in order to improve revenues and profitability, such as documents handling, picking and packing, sorting, kitting, labelling, minor product repair, warehousing, storing, inventory control, customs clearance, order processing, ground distribution (Efsthathiou & Anderson, 2000) and taking care of the compliance with foreign regulations on trade and financing instruments (Fennes, 1997).

Traditionally, air cargo forwarding is a locally oriented business and as a result has small business characteristics. This is also related to the low barriers to enter the forwarding market (Jones, 2000). In the past decades, a number of so-called network forwarders have emerged. These network forwarders have often hundreds of offices around the world providing expertise in air cargo, sea cargo and road transport. Their global presence and multi modal expertise enables them to offer shippers a one-stop-shop offering to fulfil their logistics needs. Forwarders are non-asset-based service providers with a more variable cost structure than other air cargo service providers which explains why they are less sensitive to fluctuations in supply and demand (Jones, 2000). Forwarding agencies are flexible as they can easily tailor different transport modes and logistics services like warehouse management and value added logistics to meet customer requirements.

The past years have shown a number of consolidations in the forwarding business, however mainly caused by an increasing search for lead logistics providers by shippers and emerging technological opportunities. The objective of these consolidations is to gain economies of scope, both in a spatial and in a functional way (Bowen & Leinbach, 2004). As the most important shippers are increasingly multinational corporations seeking for one-stop-shop logistics solutions, both global coverage and the possibility to offer forwarding services on different modes of transport are important for forwarders.

### *2.5.2 Market Convergence*

'Miniaturization' is a term referring to a tendency that the value per piece increases over time while the size per piece decreases (KPMG, 1997). Forwarders and airlines witness a reduction in the weight of shipments as shippers may break down large consignments into smaller more frequent shipments to reduce inventory-carrying costs (Clancy and Hoppin, 2002). At the same time, integrated express firms are confronted with a move from 'DOX to BOX' which means a convergence of the traditional airline cargo market with integrated express business (Jones, 2000) as pictured in figure 2.5. Herrmann, Trefzger and Crux (1998) argue that integrators are increasing their market share by expanding their capacity to carry higher weight goods while simultaneously they 'follow, support and use trends to sinking the average shipment size'. Clancy & Hoppin (2001) expect convergence of global markets will lead to a desire among shippers for air cargo standards in terms of price, quality and information that were set by integrated express companies.

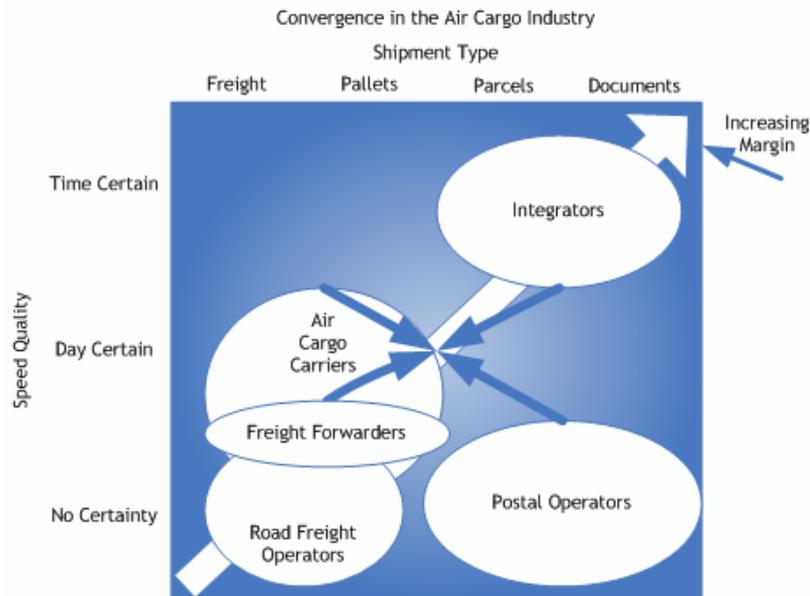


FIGURE 2.5: CONVERGENCE IN THE AIR CARGO INDUSTRY  
Source: Jones, 2000

## 2.6 Concluding Remarks

To sum-up this chapter on the configuration of the air cargo industry, it may be concluded that the air cargo industry is a complex industry consisting of many different actors that in one or another way play their role. This chapter has broadly landscaped the supply side of the market clarifying that there are four important commercial participants nowadays: the shipper, the airline, the forwarder and the integrated express company. Certainly, other market participants like the ground handling companies, airports, general sales agents, and customs and aircraft manufacturers impact the air cargo industry as well but these companies have a more facilitating, supplying or supporting function and have therefore not been discussed here in full detail.

This chapter has shown that the air cargo industry can be divided into two main business streams, the traditional airline cargo market and the classic integrated express market, a distinction consequently made throughout this thesis. However, a clear distinction between these business streams has faded away over the years, a tendency referred to in this chapter as 'market convergence'.

As a contextual introduction to the air cargo industry, a diverse number of related topics were also presented in this chapter, ranging from some historical notes to a clarification of the relationship of air cargo and the world's economic output as well as the regulatory environment and the specific role of forwarding agencies. As a solid analysis of the presumed competitive rivalry between the airline cargo market and the integrated express market lacks, a more in-dept analysis of demand and especially supply will be necessary. This analysis will be presented in the upcoming chapters.

## ③ DEMAND FOR AIR CARGO SERVICES

*In the air cargo industry, airlines are facing primarily demand expressed by intermediaries (that is derived from demand by shippers), while integrators usually deal with end-customer demand. This chapter addresses the second research question about “What is the Nature of Demand for Airline Cargo Services versus Integrated Express Services?”*

### 3.1 Introduction

The air cargo market is very broad and can be segmented into groups of customers with shared characteristics that respond to marketing activities generally in a similar way. Following this definition of market segmentation (Nijssen, Frambach, 2000) a number of groups of air cargo end-customers could be identified. Traditionally however, the transportation industry tends to segment the market according to characteristics of the transport mode (Grin, 1990), shipment size, velocity (Clancy & Hoppin, 2002) or commodity and more recently, speed of delivery required (Doganis, 2002).

### 3.2 Characteristics of Demand for Air Cargo Services

This paragraph discusses the characteristics of demand for air cargo services. These characteristics are based on the physical conditions of the goods under consideration and are: the commodity type, dimensions and weight and volume density. Others have a marketing (geographic coverage and service scope), cost accounting or logistics background (routine non-perishable goods, urgency and value density).

#### 3.2.1 Commodity Type

The commodity type is an important differentiation as there are very specific requirements with regard to handling and skills of personnel dealing with these commodity types. The most important commodity types in air cargo are (1) general cargo, (2) mail and (3) special cargo comprising dangerous goods (DG), perishable goods (PER) with a separation between physical perishability like goods as vegetables, flowers and fruit and economic perishability such as newspapers and goods that have a very short time to market including some clothes and electronic devices (Efsthathiou & Anderson, 2000), live animals (AVI), high valuable shipments such as jewellery (VAL), human remains (HUM) and heavy cargo (HEA). The given abbreviations are commonly used in practice. Not all cargo carriers transport all commodities on all trading lanes (city pairs); some airlines and forwarders specialize in one commodity, others offer all services. Integrators usually exclude special cargo from their service offerings as special cargoes have a heterogeneity character that does not match with the homogeneity of integrated express delivery.

Routine perishables are a traditional reason for shippers to use air cargo services. These goods are either physically or economically perishable and are called routine as a certain forecast in demand is possible (Shaw, 2004). According to O'Connor (2001), the demand for this service is relatively price inelastic as an increase in cargo rates has hardly any impact on the demand for the service.

### 3.2.2 *Routine Non-Perishable or Surface-Divertible Goods*

The majority of air cargo, however, is called routine non-perishable (O'Connor, 2001). For these goods, shippers have to be persuaded to prefer air transport above surface transport modes. Some arguments may be: a reduction in packaging costs needed for air cargo, lower insurance costs as the total transit time for air cargo is much shorter than for surface transport and cash flow advantages. Because of the shorter transit time, the credit period for the consignor reduces as well as the interest charges otherwise incurred (Shaw, 2004).

As air cargo rates per kilogram are seven to ten times higher than ocean rates one may wonder why shippers are willing to pay such a large premium for air cargo transport. This is explained by a focus on minimizing the total distribution costs (TDC) and a maximization of the economic value-added (EVA). TDC explains that total distribution costs *'can be lower when saved inventory financing and insurance charges are taken into account'* (Holloway, 2003). TDC represents costs incurred in the manufacturing, storing and distribution of a product to the end-customer, containing transportation, packaging and warehousing costs. EVA is reflected by the benefits of a well-function distribution system (Clancy and Hoppin, 2002). The focus on TDC has been reinforced by the use of JIT logistics techniques where time-defined<sup>3</sup> or reach-defined<sup>4</sup> air cargo services have gained in popularity over the years.

### 3.2.3 *Geographic Coverage*

Air transport markets are often defined along city-pairs (OECD, 2000; O'Connor, 2001). From this spatial viewpoint, there are thousands of markets since every city-pair (Origin-Destination) is a market on its own, each with unique customer sets, demand profiles and competitive conditions (Clancy & Hoppin, 2004). Competition on city-pair markets differs widely. TSRB (1999) for instance, mentions distance and the traffic volume (density) as variables that influence competitive rivalry on the city-pair concerned. To consider competition in air transport, however, notion of the market concept is necessary. In applied research, it is useless to analyze the 'air transport market' or the 'air cargo market' in general. What is important from an economic standpoint is to determine the relevant market. The relevant market consists of two components, a geographic component and a product component (Baarsma, Theeuwes, 2002).

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<sup>3</sup> Overnight, next day service et cetera

<sup>4</sup> Airport to airport versus door-to-door service

Exploring competitive rivalry in detail on all city-pair markets and all product markets of the world is rather difficult as there are not only thousands of city-pair markets but also many product markets per city pair. Furthermore, supply and demand per city-pair and product market also varies widely over time (e.g. per season) which makes it even more difficult to analyze on a micro level unless the analysis is limited to a small number of product markets and geographic markets.

#### 3.2.4 *Dimensions & Weight*

The dimensions and weight of pieces is also an important distinction in air cargo, which is directly related to the limited characteristics of an aircraft, its cabin door size and cabin cross-section as well as the maximum payload of the aircraft and its volumetric capacity. A shipment size is the function of the number of pieces per shipment related to the average weight per piece (Clancy and Hoppin, 2002). Large air cargo shipments are called 'air freight' or 'hard air cargo' while small consignments ('soft air cargo') are traditionally shipped by express delivery services. The boundary between these two kinds of shipments is thus defined by physical commodity characteristics combined with differences in economic order quantity (Clancy, 2002).

#### 3.2.5 *Value Density*

The value density of a good is the monetary value per cubic meter of a packed product (Van Goor, Ploos van Amstel, Ploos van Amstel, 1998). The value density of a product is a very important logistics parameter. It determines the necessary speed of transportation as well as the stock keeping of the product (centrally or locally). The rationale behind the value density concept deals with interest loss. Products with a high value density combined with a relatively long transit time will cause interest loss. Marginal costs of air transport compared to other transportation modalities are acceptable as long as interest losses are minimized (Junne, 1996). Primary examples of such goods are gold, jewellery and art. For shippers of these goods, safety and reliability are important aspect as well as the shortest possible transit time the goods are at risk (De Wit, Van Gent, 2001). Grin (1998) adds to the value discussion that the traditional correlation between the use of air cargo and the intrinsic or production value fades away in favour of the value perceived by customers.

#### 3.2.6 *Volume Density*

The volume density of the product is a combination of volume and weight and relates to the 'stowability' of a product (Junne, 1996). The volume is the smallest possible consignment of a product expressed in cubic meters and weight in the volume density concept is the weight belonging to smallest possible consignment. The volume density ratio is thus calculated as volume divided by weight. In practice, this ratio is often counted by multiplying length x width x height divided by 6.000 cm<sup>3</sup> per kilogram. This often forms the basis for the tariffs airlines charge for their services. The justification for this ratio can be explained by the

simple comparison between one kilo of feather and one kilo of lead. The first one needs much more space than the latter one while the latter one is heavier than the first one.

### 3.2.7 *Operational Urgency / Transit Time*

Shippers may decide to use air cargo for operational urgency reasons (emergency traffic), for instance when a production facility is out of order and the costs associated with the lost production thereof do justify air cargo to ship new parts to get the facility producing again. Shippers may also be confronted with marketing emergency when customer service requirements deserve fast transport in a certain case (Shaw, 2004). Closely related to this demand characteristic is 'relief cargo' (De Vries, 1997), which primarily takes place right after a war, natural disaster or famine.

### 3.2.8 *Service Scope*

The service scope of air cargo refers to service levels, special handling, delivery confirmations, route network, parcel tracking facilities, possible schedules on offer and value added services. Suppliers of air cargo services can develop their service offering from a basic concept into advanced services. The service scope a particular shipper demands is related to the increasing interest by shippers in advanced air cargo services on top of the base commodity service offered by airlines. Bowen and Leinbach (2003) have examined that the demand for advanced air cargo services by shippers is closely related to the firm characteristics: knowledge intensity, size and scope, extend of internationalization and cycle times.

## 3.3 Shippers

In air cargo, the term 'shipper' refers to the company or person that needs to 'ship' something from one point to another. A shipper can either be a sender or receiver, legally also called 'consignor' or 'consignee' respectively. The actual shipper is the person or company that has issued the contract for carriage (called 'air waybill' in air cargo) of the goods and in whose name the carriage is performed (Fennes, 1997).

In practice, the consignor and consignee can be the same corporation, which occurs when for instance a manufacturing firm wants to ship finished goods from one of its factories in Asia to one of its distribution centres in North-America. In this thesis, the term 'shipper' and 'end-customer' are often used interchangeably.

### 3.3.1 *Classification of Shippers*

Shippers are as diverse as the business world is. Grin (1990, 1998) has distinguished three kinds of shippers having air cargo demand. The first group of shippers has knowledge of air cargo services and is able to specify their needs and requirements, to contract suppliers and monitor services offered. The second group of shippers is aware of air cargo services, but not able to specify their logistics needs and requirements and therefore contact a forwarding agency to arrange all air cargo related processes and carry-out necessary

procedures. The third group of shippers is not conscious of air cargo logistics services at all and can also not specify detailed shipping requirements. These companies often use closed-loop, integrated express door-to-door services (Grin, 1998).

### 3.3.2 *The Impact of Business Logistics*

The demand for air cargo services is boosted by developments in business logistics in industrial markets. To better understand the way demand for air cargo services has evolved over time, short attention will be given here to some of these developments.

Markets in general become increasingly demand driven meaning a rising market power for end-customers in logistics needs. Final consumers have become more sophisticated in their purchase of goods leading to dramatically shorter product life cycles (Efstathiou & Anderson, 2000). The shorter the life cycle of a product becomes, the more time pressurized companies are to develop, produce, distribute and sell new goods.

The shorter life cycles of products are caused by increasingly individual customer preferences. This development has a profound effect on the way companies organize their logistics processes. In highly competitive markets, companies have to do their utmost best to meet individual customer requirements while simultaneously lowering costs. This can be achieved by standardization of product components and postpone final assembly to the point in time the actual order is received. This may lower development costs as the same components are used for different items. More importantly, it lowers stockholding costs of retail products and improves customer value as customers get products with features they desire. Air cargo may be needed to get finished goods in time with the end-customer while it also opens-up opportunities for air cargo service providers to conduct value added logistics services for shippers.

To minimize transportation time, companies may use air cargo to get their products on the market as fast as possible. This relatively expensive way to shorten the time to market may be justified by increasing sales or possible advantages of early market entry. Another trend on the demand side has to do with focusing on core business by manufacturers through outsourcing their non-core activities. Manufacturers increasingly deserve value added logistics services which can be offered both by air cargo service providers and by specialized firms (KPMG, 1997).

### 3.4 Demand for Airline Cargo versus Integrated Express Services

Demand for air cargo services ultimately comes from shippers. As there are millions of (potential) shippers, the demand for air cargo services is very heterogeneous. Generally, many shippers concentrate their activities on their own core-business and outsource transportation and logistics services. Nowadays, shippers want fast, reliable, customized and cost-effective solutions (Persson, Virum, 2001). Moreover, these authors argue that

shippers also tend to consolidate the purchase of transportation and logistics services on a small number of suppliers while these suppliers are expected to deliver integrated transportation and logistics solutions (Persson, Virum, 2001).

It may well be observed that companies that previously bought transportation and logistics services on several separated markets (airline cargo market, integrated express market, logistics and supply chain management market, road haulage market et cetera), are nowadays willing to combine their needs in one tender offered to the transportation and logistics industry at large.

Efstathiou & Anderson (2000) provide a number of reasons for shippers to use air cargo service providers as they may (1) reduce the lead time, (2) assist in maintaining a lean supply chain, (3) are helpful to minimize inventories, (4) are helpful to reduce procurement and distribution costs, (5) are helpful on focusing on core competences and (6) even gain new businesses thanks to air cargo.

The use of express delivery services may well benefit the business of shippers. Baum and Hen (2004) have examined that express delivery services may both reduce costs of shippers while they may also enlarge the catchment area of shippers. These service may also facilitate a more optimal use of logistics concepts like just-in-time, mass-customization and built-to-order. They may improve procurement since more suppliers become available and decrease the delivery cycle and delivery time and the possibility to accept smaller orders. Furthermore, express delivery services shrink the transportation time and thus the risk of damage and they also stimulate outsourcing of logistics activities. A key-benefit is also the lowering of stock possible thanks to these services.

Motives for a shipper to choose for a particular classic integrator are a mixture of geographic reach, reliability, latest pick-up time, transit time, shipment trace possibility, price, convenience, brand awareness and corporate image (Otten, 1996).

Bowen and Leinbach (2003) have also developed an 'Index of Advanced Air Cargo Services' usage where they classify shippers' demand for advanced air cargo services according to (1) the degree to which a firm uses express air cargo services ranging from not at all to regular use for all products, (2) whether a firm has hired or contracted with other firms to handle logistics functions beyond simple transportation, (3) whether a firm regards electronic tracking as critical and whether the firm utilizes tracking and (4) whether a firm deals directly with carriers on matters of services offered, performance and rates.

### 3.5 Concluding Remarks

This chapter has outlined the diverted characteristics of demand. The most important characteristics that determine whether goods require air cargo transport or not have been highlighted. These characteristics are commodity type, routine non-perishable or surface divertible, the geographic coverage, dimensions and weight, value density, volume density, the operational urgency / transit time and service scope.

The nature of demand is highly related to developments in business logistics that shippers are confronted with. The most important logistics developments that impact the demand for air cargo services have been discussed. These developments are the shortening of product life cycles, the postponement of final production, the still increasing demand for value added logistics services and the integration of logistics functionalities through the adoption of supply chain management practices.

Special attention was paid in this chapter on the differences in demand for airline cargo services versus integrated express services. It may be concluded that differences in the *"Nature of Demand for Airline Cargo Services versus Integrated Express Services"* depends upon a mixture of demand characteristics and developments in business logistics. Generally speaking, if a certain good has a high value density combined with a low volume density and a high urgency, it is called 'soft cargo' and usually the business of the integrated express market. Larger consignments ('hard cargo') with lower associated transport urgency are traditionally the business of the airline cargo market.

As demand characteristics unfortunately do not offer an acceptable reasoning on the presumed competitive rivalry between the two identified business streams, the next two chapters will focus on the airline cargo market and the integrated express market respectively.

## INTERMEZZO I

Chapters two and three have served as an introduction to the complex business domain of the transportation of goods by air. In these chapters, the first two sub-questions of the thesis were addressed.

The second chapter that was written to outline the configuration of the air cargo industry showed that a melting pot of issues affect developments in the industry. Although the several topics that make-up this chapter have only been dealt with shortly, it must now be clear that the historical, economic and legal environment is diverse and complex. In this chapter, special attention was also given to forwarding agencies that have captures an important position in the industry. However, this introductory chapter on air cargo did not provide insight in a possible answer to the main research hypothesis of this thesis.

After having explored the external environment of the air cargo industry, the attention turned to the most important player in the industry: the customer. Chapter three partly also served as an introduction to air cargo economics. This chapter pointed-out demand characteristics and especially characteristics of goods moved by air. Further attention was given to shippers that have to express demand as well as to developments in business logistics and several differences in demand for airline cargo services and integrated express services.

Chapter three has certainly clarified some rationales behind demand for airline cargo services and integrated express services. Based on demand characteristics, it seems like that both markets partly overlap and partly operate in their own market domain.

The preceding three chapters have prepared a suitable answer to the central research hypothesis. However, a better understanding of the functioning of both markets is necessary to present a constructive argumentation on the presumed competitive rivalry between the airline cargo market and the integrated express market and the dominance of the latter over the former.

Therefore, the next two chapters deal exclusively with the airline cargo market and the integrated express market. It is unlikely that these chapters will contain a plausible response to the central research hypothesis. But since this hypothesis is about the suppliers in the industry, it is very relevant to become familiar with their respective supply characteristics. The two chapters that follow provide a general overview of both markets as it is impossible to discuss every aspect in detail. The goal of chapter four and five is to provide a body of knowledge of both business streams and their respective structure and market characteristics.

## ④ THE AIRLINE CARGO MARKET

*The global airline cargo business consists of some 900 airlines that, to various degrees, offer cargo carrying capacity and related services. The airline cargo market is not really contestable as airline business in general is characterized by relatively high barriers to enter the market caused by hub dominance, the existence of computer reservation systems, infrastructural constraints and remaining legislation as well as high capital investments needed (Kleymann and Seristö, 2004). This chapter focuses on the airline's cargo business by dealing with the fourth sub question: "How does the Airline Cargo Business Model look like?"*

### 4.1 Introduction

In this chapter, the position of the traditional airline cargo market is central specifically focusing on the configuration of the market, the place that cargo holds within an airline as well as airlines' relationship with forwarders. To understand airline cargo businesses, it is useful to understand how airline business models are configured. Doganis (2001) provides three basic airline business model philosophies. Each of these philosophies has as core-business the operation of a flight network. Within the 'traditional airline business model', the airline extends its flight operations with related activities like engineering, cargo, in-flight catering, ground handling et cetera. The second airline business model Doganis presents is the 'virtual airline model'. The term 'virtual' airline does not refer to a web-based airline or something like that, but instead covers a business philosophy that concentrates on operating the airline's core-business (its air network) while it outsources the previously mentioned ancillary services as much as possible. This model was pioneered by British Airways in the early '90s and was later adopted in an improved way by low-fare airlines. The third business philosophy is the 'aviation business model'. This model is closely related to the traditional airline business model as the airline operates ancillary services in-house as well. The main difference is that these services are not regarded as departments that primarily serve the airline's own operations, but are regarded as separate business units / profit centres that also offer their services to other airlines. In this model, the airline's core-business is not limited to air network management; related services also have a profit making responsibility.

The classification of airlines into the business models of Doganis is important to understand the development of airline cargo businesses over time. For an airline's cargo business, the position in a market can be expected to be much stronger when the airline's board considers cargo as one of its core businesses rather than just an ancillary service or even outsource cargo related activities.

In this chapter, it is presumed that the airline cargo market consists of some business models according to supply characteristics as shown in figure 4.1.

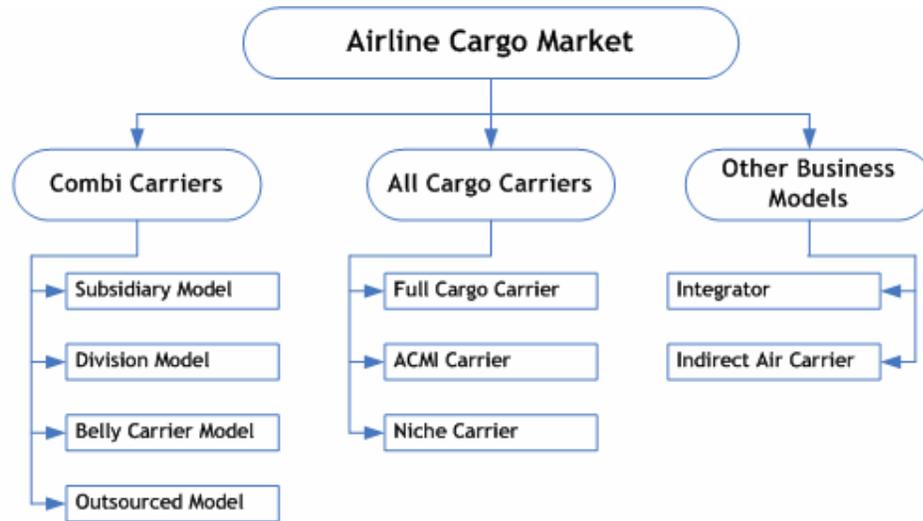


FIGURE 4.1: AIRLINE CARGO MARKET

## 4.2 Combination Carriers

Combination carriers are airlines that fly both passengers and cargo on their planes. Many of these airlines regard cargo as a by-product of their passenger business while the carriage of cargo accounts for approximately 15% of a typical airline (Jones, 2000). Such airlines pay generally little management attention to air cargo (Bjelcic, 2001). However, there are also combination carriers giving more serious attention to air cargo business. These are so-called cargo-focused passenger airlines. Airlines belonging to this category are the most well-known as they operate their cargo business with specific brand names. The largest cargo transporting airlines have such separate cargo divisions or subsidiaries. Apart from exclusively selling the cargo hold capacity, mixed carriers are kinds of combination carriers self-operating freighter aircraft besides the passenger aircraft viewing airport-to-airport services as its core-business and operating freighter to capture market share on its chosen routes. These carriers are more cost aware and market share sensitive than pure belly and belly flex carriers (Clancy, 2002).

### 4.2.1 Air Cargo as a By Product

Despite its complexity, air cargo is traditionally carried by airlines operating also passenger services and considering cargo as a 'by product'. Still, 95% of all airlines consider air cargo as a side business (Conway, 2004). These carriers even offload cargo if additional space is required to carry baggage of passengers since baggage has to accompany passengers and passengers usually have a higher boarding priority than cargo. This practice irritates shippers and forwarders sometimes, but an explanation for it would be that passengers prefer to fly their planned itinerary without being rerouted (Kasilingam, 1996) while rerouting for air cargo is less a problem as long as the shipment arrives on the agreed time

at its destination. As Grin (1998) already pointed out, there are two viewpoints when airlines consider cargo as a 'by product': a by product of the production process, especially the flying of aircraft or a by product of the marketing process. This author argues that the latter means airlines are servicing customers and take the flying of aircraft as a consequence.

Combination carriers usually ship cargo in the belly hold of an airplane. The belly is the space under the cabin (the 'lower deck') where baggage, mail and cargo can be stored. Belly cargo has as advantage that it may be quicker at the point of destination and that aircraft are better utilized. However, bellies also show a number of constraints as the belly utilization is hindered by factors like departure time, aircraft type, uncertainty of passenger baggage amount, congestion at the ramp during the turnaround of the aircraft and a (too) short turnaround time (Acharjee, Lumsden, 1999). According to Clancy & Hoppin (2004), belly capacity accounts for some fifty percent of the total global cargo carrying capacity.

Combination carriers must not be confused with combi aircraft. Combi aircraft are planes where passengers occupy the front section of the airplane while cargo is stowed in the back section of the main upper deck (Zhang, Zhang, 2002). Of course, combi carriers can use combi aircraft for their operations, but this is not necessarily the case. In practice, the number of combi carriers that operate combi aircraft is quite limited.

#### 4.2.2 *Airline Cargo versus Passenger Business*

Air cargo transport has other complexity dimensions than the movement of passengers by air. The airline passenger business is predominantly a consumer market where millions of people make discrete purchase decisions compared to the airline cargo market that is an industrial market with professional decision makers (Hoppin, 2005).

Contrary to passengers, cargo is passive (O'Conner, 2001) and needs to be picked up at the point of origin and to be delivered at the point of destination. Furthermore, cargo needs insurance, packaging, customs clearance and documentation. These tasks are carried out by specialized forwarders which mean that airlines depend on the output of these firms (Doganis, 1998). Partly due to its inanimate nature (except for live animals), air cargo is also more flexible than passengers as cargo does not care about plane changes, indirect routings, aesthetics regarding the cabin or fuselage of an aircraft (O'Conner, 2001) or an attractive airport environment (Zhang, Zhang, 2002). Furthermore, passengers are physically relatively homogenous while air cargo can have many different shapes while the carriage of shipments is also heavily regulated in air cargo (Hermann, Müller, Crux, 1998).

Networks and schedules of most carriers are primarily designed for the passenger business. Furthermore, most airplanes flown by airlines are designed for the passenger business in the

first place. Air passenger business is also more transparent since computer reservation systems and the Internet clearly show available space and tariffs while the air cargo industry lacks such transparency (Hermann, Müller, Crux, 1998).

Also interesting to mention is the seasonal aspect and the consequently peak and off-peak periods associated with air transport that may impact cargo airlines revenue heavily as some of them realize 60% of their annual revenue in four months (Clancy & Hoppin, 2004). A further important characteristic in the airline cargo market is the directional imbalance meaning that flows of goods are not evenly distributed compared to the passenger market where passengers almost always return (Efstathiou & Anderson, 2000). This directional imbalance is caused by import/export imbalances between countries and it leads to cargo tariffs varying by direction (Zhang, Zhang, 2002). This is of particular importance to airlines that generate revenues one-way, but make costs round-trip (Clancy & Hoppin, 2004). Efstathiou & Anderson (2000) also pay attention to a day and night operations aspect as passengers prefer to fly during daytime while especially air express with an overnight service is flown at night.

#### 4.2.3 *Combi Carrier Derivatives*

The carriage of cargo by air has evolved over time. To quote Grin (1998) the movement of air cargo in the early years "just happened". This author analyzed that airline management attention with regard to cargo ranged those days from dedicated to opportunistic. Aircraft used primarily for passenger transportation purposes also had some cargo transporting capabilities and these were used to earn additional revenue. Grin (1990) also defined three conceptually different cargo airlines: (1) cargo carriers by choice, these are airlines for which the carriage of cargo by air is a core business, (2) cargo carriers by accident, defined as cargo transporting airlines that deal with air cargo professionally but prioritize on air passenger business in cases of conflicts of interest and (3) cargo carriers by incident, which are airlines having cargo capacity but not seriously marketing this capacity.

Cargo carriers by choice pursue a high revenue strategy where airlines offer '*a complex range of time- and service-defined products, stress the scope, scale and quality of their networks in order to differentiate themselves*' (Clancy & Hoppin, 2004) compared to the other end of the spectrum where low-cost cargo carriers offer their cargo carrying capacity as a commodity on an airport-to-airport basis only. The high revenue strategy deserves advanced market segmentation, understanding immediate end-customers needs, having information systems and well-trained employees and sufficient bargaining power (Clancy & Hoppin, 2004). Customer loyalty is essential by executing the high revenue strategy, while it is of minor importance for the low-cost cargo carriers.

The way that combination carriers are doing their cargo business comes in several forms. Partly based on Acharjee and Lumsden (1999), a number of business models can be distinguished:

#### **The Subsidiary Model**

The subsidiary model is the wholly or partly owned separate organization within the same brand name. The separate organization tends to be independent from the airline's passenger business. It plans its own operations and utilizes its own equipment. These companies have their own balance sheet and profit and loss account and are relatively autonomous in their strategic and operational decision making. A totally independent strategy is out of question of course, as subsidiaries are part of a parent company and thus have to contribute in one or another way to the benefit of their parent. Two major combi carrier examples of this model are Lufthansa Cargo AG and Singapore Airlines Cargo.

#### **The Division Model**

The divisional model is a separate division within an airline. The separate division pays the parent company for utilizing resources. It is likely that the freedom of financial and management movement of the divisional managers is more limited than is the case in the Subsidiary Model. Examples of such divisions are KLM Cargo and British Airways World Cargo. With regard to airline cargo businesses, Hermann, Trefzger and Crux (1998) have asserted that a business unit structure creates organizational flexibility, while it accelerates decision making, flattens the hierarchal structure and bundles know-how of the cargo's core-businesses.

#### **The Belly Carrier Model**

The belly carrier model is a not separated entity within an airline. Cargo departments within this category do not have much autonomy and air cargo is marginally priced. Cargo within these kinds of airlines is a side-business. Such airlines are often pure belly operators that only have cargo space available in the belly of passenger aircraft. Since these passenger focused airlines marginally price their services, they are often the most aggressive players in the market (Clancy & Hoppin, 2004).

Belly carriers have different characteristics and operating practices. Hence, several sub-models can be observed. The first sub-model is the 'pure belly carrier' which is a business model that refers to passenger airlines lacking main deck cargo capacity that view cargo as a by product of its core (passenger) business operating as a price leader due to the perceived marginal cost of the belly cargo (Clancy, 2002). Another kind of belly carrier is the 'belly flex carrier' that operates with leased-in freighter lift and views freighters as a way to leverage belly network and also operate as a price leader due to the perceived

marginal cost of the belly cargo and a lack of experience with freighter operations (Clancy, 2002).

#### **The Outsourced Model**

An interesting recent development in the airline cargo business is the complete outsourcing of airlines' cargo activities to specialized cargo management firms. 'Cargo Counts', a subsidiary of Lufthansa Cargo established late 2003 currently manages the cargo business of several European carriers. The rationale for airlines to outsource cargo business to a specialized agency has to do with increasing competition from low-fare airlines in the passenger side of the business and a desire to focus managerial attention to the air passenger business along with other benefits as improved quality and revenue (Conway, 2004). Irish flag carrier Aer Lingus for instance, has already outsourced all cargo activities to concentrate on the passenger business.

### **4.3 Alternative Business Models**

Throughout the past centuries, a number of alternative airline cargo business models have emerged that will be discussed here.

#### **4.3.1 All Cargo Carrier Derivatives**

A number of airlines have decided not to do business with passengers at all, but to focus on cargo only. Micco and Serebrisky (2004) argue that dedicated all cargo carriers have more flexibility than passenger airlines as they have more competing airports to choose from since they do not have to operate from airports that are convenient for passengers and they have the possibility to choose airports that are not yet slot constraint and have the possibility to depart during off-peak hours.

##### **Full All Cargo Carrier**

These carriers fly with self-operated freighter aircraft only on the airport-to-airport market. All cargo carriers are highly cost aware as they are not confronted with cost allocation confusion with passenger business. However, since most of these carriers are financially weak, cash-flow based pricing is common practice (Clancy, 2002).

##### **ACMI Operator**

A specific form of all cargo airlines are the so-called ACMI operators. ACMI means Aircraft, Crew, Maintenance and Insurance. The risk/reward profile of an ACMI operator is relatively low because an ACMI airline wet-leases its aircraft to other airlines against a fixed hourly price while an ACMI contract usually involves a minimum number of block hours per month.

ACMI operators offer a 'bare-bones' product with hardly any marketing efforts thus being dependent upon key customers. Airlines operating this business model see air cargo as a commodity. Simply having low costs however, does not guarantee survival in today's air

cargo business. It is important to focus on profit maximization, not just on per unit revenues or costs. In this business model, it is also important to keep an eye on the minimum competitive scale that is '*the fleet size below which unit revenue will not exceed unit cost over the long term*' (Hamlin, 2004). The best well-known ACMI operator at the moment is Atlas Air from the US.

#### **Niche Carriers**

Niche carriers have specialized in the movement by air of cargo needing specialized equipment. These kinds of players have specific expertise in flying outsized cargo or flying cargo to poor developed locations with inferior runways and handling equipment (Button, Stough, 2000). These are often small companies.

### *4.3.2 Specific Cargo Carrier Derivatives*

#### **Integrated Carrier / Hybrid Model**

Integrated express companies are sometimes considered as an airline cargo business model. This kind of business is perceived as a separate (competing) business in this thesis and will extensively be discussed in the next chapter.

#### **Indirect Air Carriers**

Indirect air carriers can come in different forms. In the United States for instance, a couple of so-called '*integrated freight forwarders*' have emerged that operate their own aircraft and linehaul operations (Reynolds-Feighan, 2001). Notable examples are Emery Worldwide and Airborne Express. A European-based example is Swiss forwarding agency Panalpina. This company is an 'indirect cargo airline' as it does not own aircraft itself, but has a close cooperation with all cargo carrier Cargolux that operate some aircraft dedicated for Panalpina. Companies acting like Panalpina are the air transport version of the Non-Vessel Operating Common Carrier (NVOCC) operating in the ocean transport market. An NVOCC is a firm that offers the same services as an air carrier, but which does not own or operate an airplane. NVOCCs usually act as consolidators, accepting small shipments (Less than Container Load) and consolidating them into full container loads (inboundlogistics.com). The NVOCC issues bills of lading, publishes tariffs and otherwise conducts itself as an ocean common carrier, except that it will not provide the actual ocean or inter-modal service (mergeglobal.com).

### **4.4 Business Relationship with Forwarders**

Developments in air cargo have caused a power shift in the air cargo chain, particularly in the relationship between forwarding agencies and airlines. Forwarding agencies have positioned themselves in between the airlines and the shippers gaining a direct customer link and thus a key business position (Forster, Regan, 2001). As the majority of cargo traffic comes from forwarders, airlines have more or less become a subset of the forwarders' business (Clancy & Hoppin, 2000).

The buying power of forwarders is high (Herrmann, Trefzger, Crux, 1998), which may appear strange given the enormous number of forwarding agencies compared to the limited number of airlines. Meincke (2005) argues that some forwarders do business with up to 200 airlines, while some airlines on the other hand may do business with up to 600 forwarders. The buying power of forwarders is especially high towards airlines that see cargo as incremental revenue only (Forster, Regan, 2001). Notwithstanding the existence of thousands of forwarders, the top 17 largest forwarders account for some 45% of the global airline cargo revenues (Conway, 2003). Apart from this figure, there is also a tendency among forwarders to corporate consolidation (the big forwarders become even bigger) and to concentrate their business on a smaller number of airlines (called the core carrier policy).

Interesting question would be whether forwarders nowadays act as sales agent on behalf of cargo airlines or as a purchase agent on behalf of shippers (Lobo, Zairi, 1999). In practice, some forwarders probably do both, but since airlines and shippers do not necessarily have the same interests, this may be a diffusing market position. It is likely that most forwarders nowadays act as a purchase agent on behalf of shippers while general sales agents have become the sales agent on behalf of airlines. Grin (1995) already concluded that too, *'the problem of the air cargo industry is that forwarders can be the customers of the airline, or the intermediary, or the competitor, or all three'*.

#### 4.5 The failing Airline Cargo Business Model?

Now that several airline cargo business models and derivatives thereof have been highlighted, it is time to take a next step coming closer to the central research question of this thesis. Several authors have already shed their light on the presumed competitive rivalry in the air cargo industry between airlines and integrators. The attention of this paragraph focuses on the considerations of some industry watchers.

##### 4.5.1 *The Vision of Doganis*

Are airline cargo carriers able to meet the long-term treat of integrated carriers? It is exactly this question that Doganis (2002) asks in his popular textbook *'Flying Off Course'* on air transport economics. This respected author suggests two courses of action that airlines should pursue to overcome or avoid the treat of integrated express carriers - Doganis implicitly presumes that it is not yet too late. His suggestions are:

At first, airlines should meet the standards on track and trace of shipments along the supply chain, be able to offer high-technology warehousing, automatic customer-focused reporting systems as well as time-guaranteed collection and delivery by investing in information technology and its distribution network.

Secondly, Doganis suggests airlines to be able to offer a global delivery services as shippers increasingly demand a global scope and coverage from their transportation and logistics

service providers. From the point of view of Doganis, airlines are only able to survive the threat from integrated express carriers if they create a global distribution network. He mentions cargo alliances among airlines combining air networks and adopting a common product portfolio in this respect. It seems like that in the airline cargo industry, a certain common understanding on these suggestions is there. Airline cargo alliances exist and airlines are cooperating to protect their business from the shared 'enemy' (the integrators), for instance through the cargo 2000 project.

Basic literature on air transport economics (Doganis, 2001) suggests that flight operations must be considered as the core business of any airline. This assumption may be a possible explanation why legacy airlines have failed over the past decade to really meet end-customer demand in the air cargo industry and instead focus on meeting demand from intermediaries. Naming the optimization of flight operations as the most important corporate goal seems like an inside-out approach of the business. Would putting customer demands first have unfavourable consequences for an airline's flight operations?

#### 4.5.2 *The Vision of Shields*

Shields (1998) argued that the industry leadership of the integrated express market especially is in continuously raising the bar in service quality thus setting new service standards for the air cargo industry at large. The service orientation of the integrated express markets has resulted in shortening transit times, guaranteed deliveries and transparency along the transport process enabling shippers to trace their shipment. The integrated express market offers shippers the quality of services they demand leaving the airline cargo market with a huge opportunity to at least meet the same standards. Shields suggested a number of actions. First, he recommended understanding customers clearly. Secondly, he recommends understanding the competition well. Furthermore, he also urges airlines to have a realistic view of their market position and value proposition. Quite weak in his essay is the lack of meaning of the terms he used. He even does not provide suggestions on what airlines should consider as their customer or competitor, something that is of utmost importance.

#### 4.5.3 *The Vision of Kadar and Larew*

Kadar and Larew (2003) have pointed out eight factors why the traditional airline cargo business model is failing nowadays from their perspective. At first, they talk about the persistent overcapacity since 48 percent of the global air cargo capacity in 2001 consisted of belly capacity of passenger airplanes meaning that almost 50 percent of the air cargo capacity worldwide is driven by demand patterns of an unrelated market (air passenger business). The second major trouble spot is the directional imbalance that makes it often quite difficult to operate routes profitably. The third one is what these authors call '*an incremental mindset*' of cargo managers who sacrifice revenue quality business for incremental business opportunities. A fourth major problem at cargo airlines is a lack of an

effective and sophisticated revenue management system as are in use by passenger divisions of most airlines. The absence of such a system can be explained by the greater difficulty to develop a revenue management system for cargo business than for passenger businesses. It may also be explained by the fact that revenues generated by passenger businesses at combination airlines is over six times higher than the air freight revenues (ICAO, 2004).

A lack of differentiation is named as fifth problem by Kadar and Larew for cargo airlines, also because the end-customer relationship is most often not with airlines but with intermediaries like forwarders. Furthermore, the airline cargo business is highly fragmented. Although air cargo is a global business by nature, the presence of truly global players is limited which in the airline business can be explained by restrictions on cross-border ownership and control as well as designation of traffic rights by governments. A good illustration of the fragmentation is the fact that there are some 900 airlines, just four truly global integrators but there are approximately 4,500 IATA-accredited forwarding agencies and several thousands non-accredited forwarders (Doganis, 2002). But forwarders are not affected by restrictions that count for airlines. What is also not really an advantage for (combination) carriers are the airline's cost structure which is partly determined by passenger business but has a considerable influence on the cargo activities. A final argument by these authors is the growing modal competition of ground transportation alternatives within a 1,000 miles distance.

#### 4.6 Concluding Remarks

To round-up this chapter that dealt with the fourth sub question: *"How does the Airline Cargo Business Model look like?"*, a number of conclusions can be made.

At first, the classification of Doganis (2001) of possible airline business models is important to review. It is likely that airline managers that have opt for the traditional airline business model or even the virtual airline model will not give top priority to cargo. In order for an airline's cargo business to be able to adequately compete with integrated express services, an extended adoption of the aviation business model seems like necessary. However, combi carriers that are confronted with low-cost competition in their passenger markets are expected to respond by lowering their cost base as well. Some of the combi carriers feel forced to adopt the virtual model in order to survive (Aer Lingus for example). Such developments do not stimulate airline managers to complicate their business by adopting the aviation business model applied to their cargo business.

This chapter has provided an overview of airline cargo business models and derivatives thereof that participate in the airline cargo market. The most popular business model is the combination carrier that carries both passengers and cargo. This model comes in different forms: the subsidiary model, the divisional model, the belly carrier and the outsourced

model. The first two of these models are primarily adopted by large combi carriers; the belly carrier model is most common among small and medium sized airlines while the outsourced model is new and especially adopted by low cost carriers or airlines that have adopted the virtual airline model.

The second business model is the All Cargo Carrier. Three basic derivatives can be observed here. The first one is the full all cargo carrier. These carriers focus on 'hard' air cargo markets and offer their services on a global scale. The second derivative is the niche carrier. Carriers belonging to this category focus on specific geographic markets or certain product markets (e.g. oversized cargo). An interesting example of the niche derivative is the ACMI model as exploited by Atlas Air that offers its equipment and personnel against a fixed hourly rate. The commercial role of the operator in this model is very limited. The third category is about some remaining special derivatives. To this category belong the integrator, NVOCC and the indirect air carrier.

Differences in airline (cargo) business models have unfortunately not by-passed problems that the airline cargo market is facing. Doganis acknowledges the existence of competitive rivalry between the airline cargo market and the integrated express market. He recommends airlines to adopt certain characteristics of integrated express carriers like standards on track and trace, time-guaranteed collection and global delivery services to cope with this kind of service. However, in another publication, the same author also argues that the core business of any airline is its flight operations. If this inside-out approach is really the strategic foundation of today's cargo transporting airlines, one may wonder whether cargo transporting airlines will ever be able to compete with the integrated express market. As will be made more clear in the next chapter, the 'core-business' of the integrated express market is to meet customer expectations, in any way and by any means. It is doubtful whether airlines are able to effectively compete with companies that have such a wide scope while limiting their own perspective to the exploitation of their network.

Kadar and Larew have already concluded that the airline cargo business model has failed, although slightly based on other grounds. Their primary arguments are the persistent overcapacity in the industry, the directional imbalance, an incremental mindset, the lack of a sophisticated revenue management system, a lack of differentiation, the fragmented industry configuration, the airline's cost structure based on the passenger business and the growing model competition. To cope with some of these problems, Shields has suggested that airlines have to understand their customers and competitors clearly and have a realistic view of their market position and value proposition. Unfortunately, Shields recommendations remain on a very abstract level.

## ⑤ THE INTEGRATED EXPRESS MARKET

*“UPS’s mission is to connect the globe; to connect countries, cultures, people, yet even to synchronize global commerce”, Mike Eskew, Chairman & CEO United Parcel Service, 2002*

*In this chapter, the focus of the thesis shifts away from a narrow air transport view into a broader transportation and logistics perspective as the business portfolio of integrated express companies comprises much more than air transport alone. Even more important, the business portfolio of integrated express firms has also extended over the past years with profound implications for the transportation, distribution and logistics markets. Therefore, this chapter addresses the fifth sub question “how does the Integrated Express Business Model look like?”*

### 5.1 Introduction

Essentially, there are just four globally operating express delivery companies: FedEx and UPS from the USA and DHL and TNT from Europe all four targeting the business of millions of (potential) customers. UPS, for instance, claims to have some 7,9 million customers each day (of which 1,8 million for pick-up and 6,1 million for delivery). Compared to the approximately 900 airlines and thousands of forwarders operating worldwide, the integrated express business is the strongest consolidated market within the air cargo industry. Competition differs widely in between geographic markets. However, the number of classic integrators with a global scope is still limited to some four. The reason for this oligopoly is the enormous capital investments needed to establish a classic integrator with global coverage (van Riet, Ruijgrok, 1996) leading to high barriers to enter the market. Other reasons are the know-how and time needed to start-up an efficient, high-quality network (Sage, 2001).

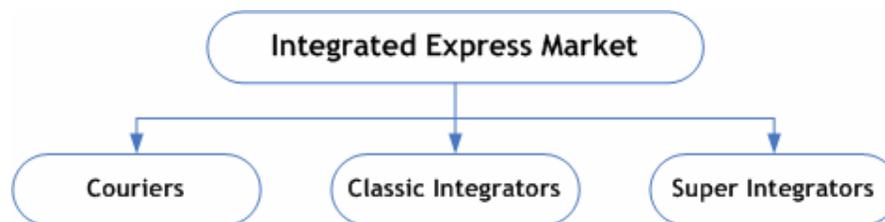


FIGURE 5.1: INTEGRATED EXPRESS MARKET

As shown in figure 5.1, the integrated express industry consists of three sub systems: the courier business, the classic integrated express business and super integrators. The distinction between ‘classic integrators’ and ‘super integrators’ is an artificial difference. In fact, the classic integrators that have emerged over the past decades have all transformed into super integrators. The classic integrated express service offerings are nowadays part of

the super integrators. The difference is made here to clarify developments in the market. It is quite hard to define what the integrated express market exactly is about as the nature of the services varies by country and by operator (Sage, 2001). Nevertheless, Express delivery services comprise three important sub-services (Sage, 2001; Baum, Hen, 2004):

Courier services; the predecessors of integrators were air courier companies originating in the late 1960s. Couriers shipped urgent legal, financial or engineering documents as passenger baggage onboard planes of scheduled airlines. The distinction between couriers and integrators disappeared in the 1980s (Campbell, 2001) when some courier companies commenced operating their own aircraft and integrators started to offer their own courier services.

Express delivery services in the narrow sense defined by Tanner Okun et al. (2004) as '*the expedited collection, transport and delivery of documents, printed matter, parcels and/or other goods, while tracking the location of, and maintaining control over, such items throughout the supply of services and services provided in connection therewith, such as customs facilitation and logistics services*'. This is the domain of the classic integrators.

Parcel delivery services that are offered by both integrators and specialized parcel delivery companies for the transportation of standardized goods with a maximum of around 31,5 kilogram (Sage, 2001). According to this author, parcel services are the most standardized and automated ones within the courier, express and parcel delivery domain as they combine fast delivery times with low prices. The combination of express delivery and parcel delivery is the domain of super integrators.

## 5.2 Classic Integrators

The classic integrated express market is characterized by the movement of small parcels on a high frequency, planned lead times, service qualities based on the parcel value, worldwide door-to-door transport, tailor made solutions, value-added services, use of transportation networks, assurance of spatial and timely availability of services of fast, reliable and flexible services (Baum, Hen, 2004). Classic Integrators differentiate themselves also from traditional cargo transporting airlines by directly doing business with shippers. Integrated express companies have simplified the transportation of goods for shippers as they offer one-stop shopping including pick-up and delivery, handling, customs clearance as well as a proof of delivery if required. What makes integrated express operators also unique is their control over operations as they preferably use their own resources for pick-up and delivery, sorting and distribution to regional sorting centres and hubs and owned dedicated planes for air transportation. A drawback in this respect is the major capital investments needed compared to forwarders (Clancy and Hoppin, 2002).

### 5.2.1 *Service Portfolio*

As opposed to regular transportation service providers, classic integrated express services offer time-defined services compared to deferred services that are standard in the regular transport market. Furthermore, classic integrators focus on shipments with a limited weight and size, in particular documents and small parcels while regular transport solutions concentrate on the movement of pallets. The spatial attention of classic integrators has primarily an international nature contrary to regular service providers that limited geographic scope. The air transport mode facilitates the fast movement of integrated express delivery while deferred services primarily use surface modes. To conclude, classic integrators have a more value-added business offering opposed to relatively 'basic' deferred services (Jones, 2000).

### 5.2.2 *Speed*

Speed is an important service characteristic; most integrated express firms offer overnight or next-day services to their customers often meaning delivery before 0900, 1200 or 1700 the next business day. Same day deliveries are only offered against a premium price and do normally belong to the service portfolio of courier businesses. There seem to be a strong correlation between the speed of delivery and the retail price paid by the customer as the sooner a shipment has to be delivered, the higher the price the customer has to pay. Special service offerings are for instance 'innight' (delivery about 6 a.m.), 'sunrise' (delivery between 6-9 a.m.) or 'overnoon' (pick-up early morning and delivery in the afternoon). These specialized services are offered to some kinds of shippers urgently needing parts. Apart from speed, the reliability of the promised delivery time becomes more important which is not necessarily the soonest available option. Shippers may for instance require the goods to be delivered on the second or third business day after pick-up or even later. These services are so-called 'deferred deliveries'.

### 5.2.3 *Track & Trace*

The 'track and trace' feature was first introduced by FedEx in the early 1980s using barcode technology, hand-held scanners and on-board computers. This innovation led to a major improvement in customer satisfaction and is nowadays used by all classic integrators. These technological advances have enabled classic integrators to assure their customers certainty of delivery, which has become a competitive edge of the integrated express business (Taylor, Hallsworth, 2000).

Accurate availability of status information on shipments in transit has enabled manufacturing firms to use modern business techniques like just-in-time (JIT) and supply chain management as well as reducing time to market and inventory costs and saving warehouse space. Integrated express firms are thus enablers of major business improvements. By offering guaranteed, on-time money-back services, classic integrators have enabled shippers to externalize business risks associated with JIT services (Bowen and

Leinbach, 2003). Simultaneously, the implementation of JIT manufacturing techniques has accelerated the growth of the express delivery market as shippers increasingly demand for smaller and more frequent shipments of raw materials and finished products (Tanner Okun, 2004).

#### 5.2.4 Hub & Spoke Distribution System

Another characteristic is the use of a so called hub and spoke distribution system, also pioneered by FedEx. For this system, the choice of hub airports is vital as it plays a central role in the operation of integrated express companies. Hub airports are used to process smaller air cargo flows that can not be economically flown directly. For classic integrators to operate their hub successfully, the hub needs a sufficient large Origin and Destination (O&D) market in terms of size and scope or easy surface access to it (Zhang, Zhang, 2002). To meet customer demands, classic integrators use night-time operations at hubs to sort and redistribute parcels. This night-time characteristic has very special implications for the aircraft operated. These aircraft have to be quiet and their utilization is very limited, sometimes to just a couple of hours per day (Reynolds-Feighan, 2001). Demand zones, satellite depots, pick-up, delivery and service centres reflect the spokes of the hub and spoke distribution network that characterizes every classic integrator's operations.

#### 5.2.5 Time Schedule

Integrated express companies use a fixed time schedule. The rigid time schedule and standardized service make integrated express services rather inflexible as the service schedule can hardly be customized. An example of the time-pressurized nature of a shipment cycle is provided in the figure below.

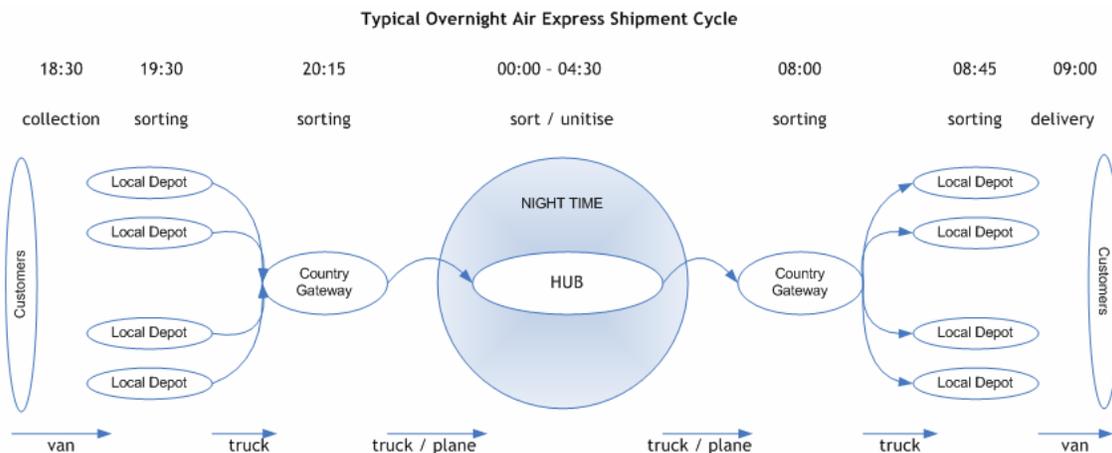


FIGURE 5.2: TYPICAL OVERNIGHT AIR EXPRESS SHIPMENT CYCLE  
Based on Mulders, 2004

### 5.2.6 Value Added Service

Classic Integrators have grown fast thanks to their innovative behaviour. Classic integrators have positioned themselves successfully as quality suppliers' thus achieving loyalty (Pai, Trefzger, 1998). They have added features to their business that were highly appreciated by shippers, like track and trace facilities, guaranteed delivery times and so forth. The service quality initiatives undertaken by classic integrators have affected traditional airline cargo providers as these quality improvements have made shippers more demanding. Classic integrators are champions in continuously offering advanced integrated express services that are services which are 'more knowledge-intensive and information-laden than conventional airport-to-airport airline cargo services' (Bowen and Leinbach, 2003).

### 5.3 Business Portfolio Migration

Classic integrators have diversified their business over the past decade. By migrating their business portfolio, classic integrators have evolved into super integrators.

#### 5.3.1 Competitive Position

Classic integrators are not the only companies offering air express services, but they notoriously dominate the market. There are some airlines and postal offices challenging the integrated express business as well. This migration will be outlined in this paragraph. Although forwarders compete with classic integrators on a retail level, they also support the classic integrator's international network buying excess capacity from classic integrators air services (Clancy and Hoppin, 2002). According to Clancy (2002), the primary battleground between forwarders and classic integrators is on multi-piece shipments as shown in the figure below:

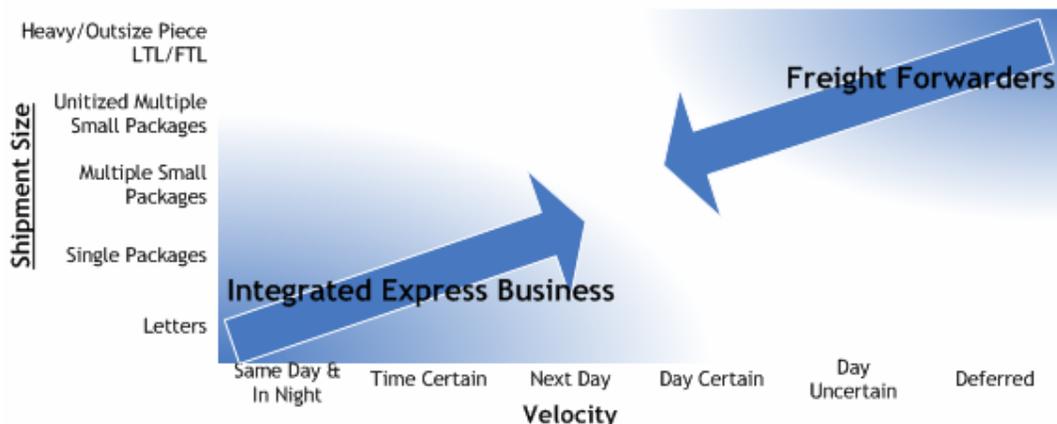


FIGURE 5.3: COMPETITIVE RIVALRY BETWEEN CLASSIC INTEGRATORS AND FORWARDERS  
Source: derived from Clancy, 2002 and TPG, 2004

Compared to integrated express companies, forwarders have a very flexible services portfolio. Integrated express firms have a standardized service offering while forwarders may virtually ship every cargo type on different modes of transport and on different

carriers. Forwarders also have more flexible opportunities to meet desired delivery terms by shippers. Forwarders can meet delivery terms like ex-works, door-to-airport, airport-to-airport and door-to-door alike, which is a competitive advantage over classic integrators that offer always a door-to-door service, (Efstathiou & Anderson, 2000). A competitive disadvantage compared to classic integrators, however, is a relatively low degree of corporate consolidation (Bowen & Leinbach, 2004). According to Bowen & Leinbach (2004), these agencies are on average mainly small local firms relying on personal relationships to be successful. Air forwarding service providers have been stand-alone firms for many decades (Bowen and Leinbach, 2003). Given the large number of forwarding agencies, it is no surprise that the barriers to entry are low, which is also a big difference with the integrated express business where the barriers to entry are very high due to necessary capital investments in equipment and information technology.

### 5.3.2 *The Emergence of Super Integrators*

Classic Integrators have really benefited from the rise of electronic communication and information exchange means. However, some technologies have become both a threat and an opportunity (Taylor, Hallsworth, 2000). It has become a threat as e-mail and attachments to e-mail have declined the demand for time defined transportation of letters as they can now be transmitted instantly. However, sales of tangible products via web shops ('e-tailing') to consumers has caused demand by e-commerce businesses for transportation and logistics fulfilment services.

The nature of the time-defined shipments has evolved over time. Nevertheless, classic integrators have also captured markets of industrial shipments going in direct competition with forwarders and airlines (Forster, Regan, 2001). This shift has pressured forwarders and airlines to improve on-time performance and responsiveness to customer needs (Forster, Regan, 2001). Classic integrators have increased their weight limits over the years to better utilize their network capacity (van Riet, Ruijgrok, 1996) and have adopted airline cargo characteristics while 'conventional' transportation services have also added some air express services (van Riet, Ruijgrok, 1996). A clear separation between the two business streams is therefore not easy to make anymore. According to Baum and Hen (2004), the air cargo industry grows based on the application of contemporary logistics concepts and the outsourcing of logistics activities by shipping companies.

All four classic integrators can be regarded as Third Party Logistics provider. The past fifteen years have shown an evolutionary change among the European 3PL industry (Carbone, Stone, 2005). These authors argued that the strategic behaviour of such companies shows substantial convergence, reflected by horizontal integration, business diversification and mergers & acquisitions. The largest 3PLs have become '*multi-specialists*' in transportation and logistics offerings. Rationales behind this kind of business development

are expected higher margins and better meeting customer needs (Carbone, Stone, 2005). Despite the tendency towards the integration of businesses through mergers & acquisitions, joint ventures and alliances, the (European) 3PL industry is still highly fragmented. According to Carbone & Stone (2005), only a few companies (DPWN & TPG) pursue a strategy of being present in all markets on a global scale. These companies can better be defined as full service transportation and logistics companies or 'super integrators'.

During the past decennium, all classic integrators have diversified away from the basic express service offering into large transportation and logistics enterprises offering much more than integrated express services alone. For two of the world's largest integrators, this move has been initiated and facilitated by postal companies.

#### 5.4 *Super Integrators*

The migration among integrators from purely integrated express companies into integrated full logistics and supply chain management firms as discussed in the previous paragraph will be continued here with a closer look at the business of super integrators. This paragraph kicks-off with a short review on the special role that postal companies play in the migration process.

##### 5.4.1 *Postal Companies*

Developments in the integrated express market have always been affected by issues of postal regulation (Taylor, Hallsworth, 2000), and integrated express providers face increasingly competition from postal firms as these companies have commenced offering express delivery service in addition to their traditional letter mail services (Tanner Okun et al., 2004). This has become possible due to an international relaxation of the regulatory framework that governs postal services provision. Governments liberalize their postal market in response to alternative forms of competition, especially new media and integrated express delivery firms.

Countries increasingly adopt neo-liberal economic policies and view their state-owned enterprises as commercial opportunities rather than nationalized companies operating reserved services (Taylor, Hallsworth, 2000). Some governments have liberalized their postal markets and others have even privatized their postal companies, most notable examples being the German Deutsche Post WorldNet and the Dutch TNT Post Group. Both enterprises are stock listed and have acquired a major integrated express company, DHL and TNT respectively. Apart from these eye-catching take-overs, other postal companies have acquired controlling stakes in logistics and distribution companies over the last years as well.

So, PPOs increasingly diversify their business portfolio from the carriage of basic letters into services like parcels movement, fulfilment services, e-business, logistics and financial

services (Universal Postal Union, 2002). The rationale for a move to the cross-border mail and express market is to recapture profit opportunities; to expand geographical presence and service offering (Jones, 2000); and to become less dependent on postal services (Strikwerda, Rijnders, 2004). By doing so, they have entered markets that are highly competitive. This move has widened the scope of PPOs. Currently the market domain for PPOs can be defined as the delivery of mail, parcel, freight, express and deferred services, on a domestic and international scale for both private and business customers (De Bijl, Van Damme, Larouce, 2005). The scope of public postal operators is not limited to mail letter delivery anymore, but includes increasingly the domain of the integrated express market thus becoming multi-product, multi-market companies.

#### 5.4.2 *The Business Portfolio of Super Integrators*

In fact, the term 'super integrator' has only been introduced to stress the extended business portfolio of those companies that used to offer classic integrated express delivery services. But also some other third party logistics providers can be named as super integrators, although they most often do not carry-out transportation services in-house.

Classic integrators have migrated aggressively and impressively into 'total' corporations in-house offering transportation, distribution and logistics services. By doing so, super integrators nowadays cover all functionalities of the business positioning ladder. In this respect, they have captured the market leadership in the air cargo industry.

Just surfing to the websites of the worlds' four largest super integrators already makes clear that these companies aim to be much more than the classic express delivery companies of the past. Their focus on logistics and supply chain management services becomes cleared-cut when visiting their websites. Some quotes illustrate the recent developments in the integrated express market:

*DHL is the global market leader in international express, air and ocean freight, overland transport and logistics (dhl.com).*

*FedEx is a global provider of transportation, e-commerce & supply chain management services (fedex.com).*

*TNT is a global provider of mail, express and logistics services (tnt.com).*

*[UPS has] become the world's largest package delivery company and a leading global provider of specialized transportation and logistics services (ups.com).*

Generally, the most important services offered by super integrators can be classified as follows. All information is derived from the above mentioned websites.

### **Classic integrated express delivery services**

The classic integrated express delivery services contain courier or special services for urgent goods that can not be transported through the express network service offering and standard integrated express delivery services which are time-defined. The standard service can be extended with added value services like customs clearance and sometimes in transit insurance (to a limited amount per consignment). This service can also include a money back guarantee if the agreed delivery time is exceeded. Other options are priority handling, delivery confirmation and online track and trace. Depending on the supplier, these services are included in the standard service offering or offered against a premium price.

### **Advanced classic transportation services**

Classic integrators have expanded their portfolio by offering forwarding services for ground-, sea- and air-transport services worldwide. In most cases, this expansion has been realized by acquiring existing players in the field. The service offering may include ocean freight and marine logistics (door-to-deck, LCL, FCL and non-containerized load) as well as standard air freight services that normally are transported in the airline cargo market, such as perishables and dangerous goods. Some integrators also offer multimodal transport services like sea-air.

### **Logistics & supply-chain management services**

Classic integrators have primarily expanded by migrating their business portfolio into logistics & supply-chain management services on the third party logistics market. In line with the door-to-door delivery services, super integrators nowadays offer also end-to-end logistics solutions for shippers. Some integrators even offer event logistics.

On top of the classic integrated express and transportation services, super integrators offer their customers specific logistics value-added services like warehousing, picking and packing, flow-monitoring, process management, retail-kitting, print-on-demand services, vendor management, order management, quality control, consolidation and pre-assembly of material flows, merchandising, several e-business services and insurance and customs clearance. Super integrators may act as a lead logistics provider, operator of a distribution centre, offer logistics and distribution consultancy services, project management, call centre management, billing services on behalf of clients, the implementation of logistics projects and performance management of existing businesses. Apart from these services the two Europe-based integrators even offer a wide range of mail services complementary to the express and logistics services while DPWN even has its own in-house large bank.

## **5.5 *Concluding Remarks***

This chapter has explored the integrated express market. To understand developments in the market, three sub systems were identified: couriers, the classic integrators and the

super integrators. Of these three sub systems, especially the classic integrators and super integrators were dealt with. The number of integrated express delivery suppliers is limited to four global players that collectively have millions of customers.

It has been outlined that classic integrators offer a service portfolio that puts central the urgency of delivery on a time-defined, door-to-door basis. Other important characteristics of classic integrators are the limited size and weight of parcels that are accepted, the geographic scope, the multimodal nature and the service scope. Other typical characteristics of classic integrated express services are the tracking and tracing functionality of shipments, the use of a hub and spoke distribution system and the rigid time schedule.

An important development in the integrated express market of the recent past is that all global players have diversified their business portfolio towards the third party logistics market thus becoming super integrators. The traditional classic integrated express business portfolio has been extended with a lot of logistics services. By doing so, super integrators have integrated the already integrated supply chain with services of the third party logistics market.

The emergence of super integrators in Europe has been boosted by an aggressive business portfolio repositioning of public postal companies that has become possible thanks to liberalization of the postal markets within Europe. In an attempt to recapture profit opportunities; to expand geographical presence and expand service offerings, postal companies have entered the third party logistics market, thus competing head-on with incumbents in that market and relatively new entrants like super integrators. To get an attractive business positioning, two of Europe's postal companies have even acquired a classic integrator. So, the business portfolio of super integrators comprises the integrated express delivery businesses extended with transportation and intermediation services usually offered on the road haulage, ocean freight and airline cargo market.

To conclude on the fifth sub question "*How does the Integrated Express Business Model look like?*", it must be clear that the integrated express business is an innovative but orderly transportation service. Although the time-defined, door-to-door distribution of documents and small parcels is still the core business of the classic integrated business, all major integrators have diversified their portfolio towards the third party logistics market. Service delivery on this market is less clear as it covers a wide range of logistics and business services. Today's integrators operate on many different markets in the field of transportation, distribution and logistics.

## INTERMEZZO II

The two preceding chapters have framed and categorized the complex business reality of the air cargo industry according to characteristics of suppliers. Chapter four structured the airline cargo market while chapter five outlined the integrator express market. Structuring both markets is important in order to understand their respective functioning and aims. This in turn may provide insight in the presumed existence of competitive rivalry between both markets.

Chapter four has presented the airline cargo market as a collection of business models and derivatives thereof. This chapter especially outlined the combination carrier business model extensively as this model is dominant in today's global air transport business. Chapter four was concluded with a presentation of some visions by industry watchers on the state of the airline cargo market. Kadar and Larew argue that the airline cargo business model is failing while Doganis explicitly pays attention to what he calls the 'long term threat of integrators'. It seems like that the airline cargo business model has some inherent weaknesses that may not prevent customers to opt for a substitute - the integrated express market.

The fifth chapter highlighted the characteristics of the integrated express business model. Three subsystems were identified while the emergence of super integrators, the rise of public postal operators and shift of these actors towards the third party logistics market may be perceived as most worrying to the airline cargo market.

Despite the clarification of both markets, the existence of competitive rivalry between both markets has not been demonstrated so far. It may well be that a cargo airline is competing for business with an integrator on a certain market, but such an occasion does not prove that the airline cargo market is losing the battle over the air cargo industry from the integrated market.

As part of the central research question and to undertake a sound qualitative analysis of competition in the air cargo industry that enables an adequate response to the main research hypothesis, the Strategic Planning Methodology will be outlined in the next chapter. This methodology has a highly marketing-management nature and is applied in the upcoming chapters to clarify developments in a specific transportation market. The method is outlined in the next chapter (six) while it is applied on two case studies in chapter seven.

## ⑥ METHOD OF ANALYSIS

*“Macho Bullshit”, Kevin Hatton, former Managing Director British Airways World Cargo, somewhere in the ‘90s (cited in Conway, 2005)*

*The strategy of British Airways (BA) during the ‘90s was to pursue the ‘virtual airline model’ of Doganis. Attempts by competing combi carriers to change their business models or even just paint cargo aircraft in their own livery where once during the ‘90s derided by BA’s cargo chief Mr. Hatton as ‘macho bullshit’ (cited in Conway, 2005). Is seriously thinking and analysing your market and acting upon it a kind of ‘macho bullshit’? It is probably better to leave the answer to Mr. Hatton; in this thesis it is presumed that this perception is doubtful and therefore the fifth sub question is examined: “How can the Strategic Planning Methodology be helpful to determine whether the airline cargo market is losing the battle from the integrated express market?”*

### 6.1 Introduction

The way of thinking as will be explained in this chapter in detail has been used for almost a decade at a large Europe-based combination carrier to formulate all of its business strategies for all divisions, departments and other parts of the KLM Group of companies. As it was at that time a proprietary planning tool used strictly for internal discussions, it is therefore not widely used throughout the industry. The methodology discussed here does not cover a way of thinking consciously practiced in air cargo board rooms around the world. However, the methodology is still very useful in clarifying developments not only at individual companies, but even in the air cargo industry at large. It is also for this reason that more commonly known strategy concepts like the BCG Matrix, Porter’s Five Forces Framework and the growth matrix of Igor Ansoff are not used as a frame of reference here. These methods are useful to analyse a present state of a company, but useless when the aim is to analyse developments over time.

The validity of the methodology explained hereafter is taken for granted. A thorough academic discussion and deep reaching analysis of the strengths and weaknesses of the following methodology are considered as beyond the scope of this thesis. The purpose of reviewing the methodology in the context of this thesis is to clarify developments in competitive rivalry in the air cargo industry over the past decade.

The Business Positioning Ladder, Market Focusing Model and Market Positioning Pie as explained here is part of a strategic planning methodology. Notwithstanding its air transport roots, this methodology is ‘value-less’ and universally applicable to other industries (Grin, 1995). This has been demonstrated at many other companies during the last decennium.

However, to reduce the level of abstractness, the methodology is presented here in its application to an air cargo business.

These three models are interrelated as choices made in this methodology on the desired business position impact customer relations that in turn affect the services offering. Furthermore, the methodology consists of three layers. The first layer is about business positioning decisions and the consequences of these decisions on market segmentation and portfolios. However, decisions taken in the first layer also impact a second, organizational layer that in turn impacts the third political layer. The organizational layer deals with the configuration of the organization, its structure, governance and competencies. The third layer takes into account the relevant stakeholder and shareholder conventions as well as other (industry) political considerations and/or conventions relevant to the positioning, functioning and governing of the business.

Although the methodology may certainly be helpful to structure brainstorm sessions on future directions of a company, it is no 'question and answer machine'. Since this methodology is only an instrument in clarifying developments in air cargo, the methodology will only be discussed to a limited extent here. Not all issues related to a solid application of the methodology in practice are discussed in detail. The next paragraphs discuss the three sub models of the Strategic Planning Methodology (see figure 6.1) on a company level applied to air cargo.



FIGURE 6.1: THREE SUB MODELS OF THE STRATEGIC PLANNING METHODOLOGY

## 6.2 Business Positioning Ladder

Every company faces questions on its business positioning<sup>5</sup>. By successfully positioning its business, a company can establish and maintain a distinctive place in the relevant market. Business positions can be based on three distinct sources (Porter, 1996). The first business position that Porter distinguishes is variety based positioning. This is based on the choice of service varieties rather than on customer segments. A company that positions itself based hereof concentrates on producing a subset of an industry's services. The second form of positioning is needs-based positioning. According to Porter, this is close to target segments of customers. Differences in needs only translate into a meaningful position if the set of

<sup>5</sup> 'The strategic position attempts to achieve sustainable competitive advantage by preserving what is distinctive about your company. It means performing *different* activities from rivals, or performing *similar* activities in different ways' (Porter, 1996).

activities also differs. The third form also focuses on customer segmentation, but these customers are accessible in different ways, for instance geographically. This is called access-based positioning. Persson and Virum (2001) conclude that transportation and logistics providers essentially are variety-based positioned while serving customer segments deserves a needs-based approach which in turn leads to the necessity of a high degree of coordination and integration in the industry.

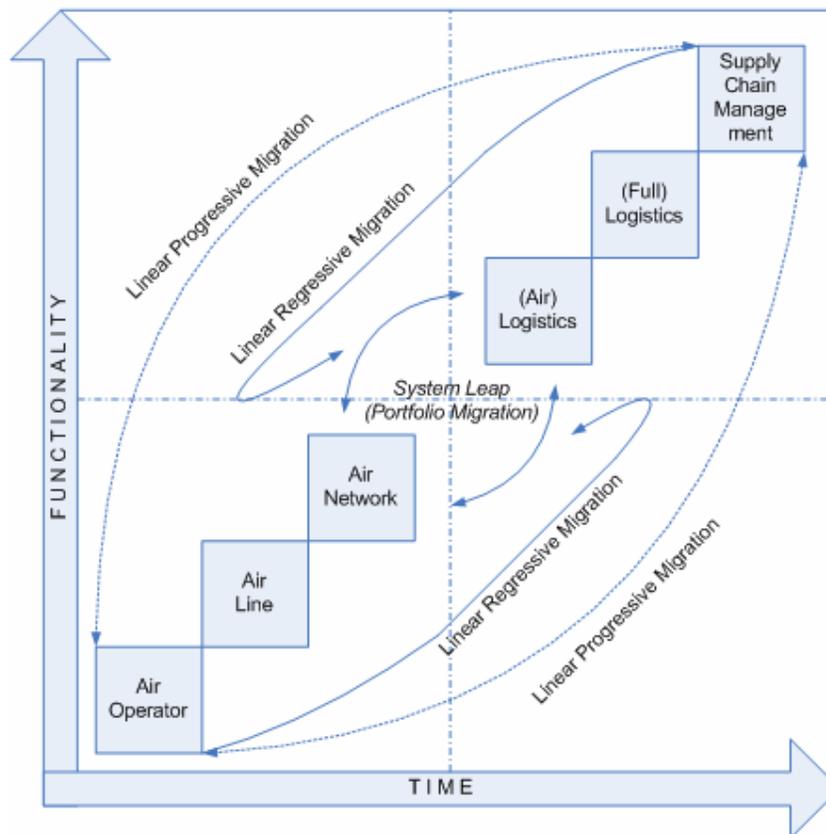


FIGURE 6.2: BUSINESS POSITIONING LADDER  
Source: Grin (1995)

The business positioning ladder as shown in figure 6.2 visualizes strategic expansion paths with a gradual increase of added-value in two dimensions. The ladder provided here consists of six stages of increased functionality over time (Grin, 1995). The x-axis shows the 'organizational time' that reflects a corporate development over time. The direction and speed of organizational development is determined by the organizational structure and governance. The y-axis is about the resources needed especially the knowledge, competencies and capital. In this figure, the added-value of airline cargo services is defined as the increase in perceived usefulness and comfort of these products or services to customers.

Every square in this figure is a functionality, which in itself represents all input, throughput and output processes needed to offer the airline cargo services under review as well as the customer relations. A detailed discussion of functionality dynamics will be based on the Market Focusing Model presented hereafter. The more a product or service is positioned to a square in the right-up direction, the more added-value it has.

Each value migration from one square to another (either right-up or left-down) is a paradigm shift. This paradigm shift involves a migration from an old business concept (e.g. Air Operator) to a new one (e.g. Air Line). If such a paradigm shift occurs, the company has to redefine its (1) customer definition, (2) competencies and capabilities, (3) configuration and culture, (4) capital flows and (5) channel conflict and convergence. It has to be clear that the successful exploitation of a functionality is determined by these so-called '5 Cs'. A sound understanding of the implications these '5 Cs' have on the business is therefore necessary.

Three kinds of migration are possible in the Business Positioning Ladder: (1) linear progressive (from left-down to right-up and vice versa), (2) linear regressive (from left-down to right-up and vice versa but until the 'system leap') and (3) portfolio migration, which will be outlined in the next paragraph. The evolution of one functionality to another in this figure essentially is related diversification which is defined by Johnson & Scholes (2002) as a *'strategy development beyond current products and markets, but within the value system or industry in which the company operates'*. The system leap represents unrelated diversification that the same authors define as *'an organization moving beyond its current value system or industry'*.

This figure also makes clear when a 'system leap' occurs. A system leap happens when a product or service migrates from a square in the left-down quadrant to a square in the upper-right quadrant of the figure (or vice-versa). A system leap can happen on several levels, for instance on business unit level, divisional level or company level. A system leap opens-up the possibility to switch from an asset to a non-asset based business. The Business Positioning Ladder may also provide an historical perspective as businesses might evolve over time starting left-bottom and ending right-up (or the other way round). Grin (1995) argues that migration from one business position to another can take place naturally (from Air Line to Air Network for instance), but that other migrations must be orchestrated. This author also provides four migration parameters: (1) the service profile; (2) the production profile; (3) the distribution profile and (4) the margin profile. The desirability of every business position should be judged according to these four parameters in order to determine whether a migration is consistent with the internal and external environment of the organization. Implications must be understood thoroughly as a system leap impacts not only prices, quality, volume and customer relations, but basically the entire modus operandi.

One may conclude that the more a company moves right-up, the more advanced its service offering becomes, the more grip it has on the end-customer market and the higher the expected margins of its business may be. This will be discussed in more detail in the next paragraph.

### 6.2.1 *Left-down Quadrant*

Applied to the airline cargo business, a position in the left down-quadrant of the Business Positioning Ladder involves quite high capital investments (e.g. aircraft). Most airlines operating in this quadrant prefer to do business with intermediaries. The level of efficiency largely depends on achieving economies of scale while the risk / profit scheme is generally stable but low. The following functionalities can be identified in this quadrant:

1. **Air Operator.** An air operator is a carrier offering unscheduled air cargo capacity only. The primary goal of an air operator is to operate aircraft in its possession as economical as possible. In this concept, the risk of utilisation of assets is transferred to the market. Demand for this kind of service has a highly substituting character. ACMI carrier Atlas Air is a prime example of an Air Operator.
  
2. **Air Line.** The most visible difference between an Air Operator and an Air Line is that an Air Line offers airside-to-airside services based on a flight schedule. An inherent disadvantage of a scheduled operation is that aircraft are sometimes operated with a low load-factor. Compared to an Air Operator, an Air Line has a higher risk/reward profile as the operator now bears the utilisation risks of operating routes. Cargo space that airlines have on offer is in itself a perishable product too as this space can not be stored for future sale (O'Connor, 2001). The non-durable nature means that once an airplane is airborne, available cargo space is either sold or lost forever (Button, Stough, 2000).
  
3. **Air Network.** The basic airside-to-airside service offering can be supplemented with value adding service elements like transit handling, build-up and break-down of cargo, status information on shipment level, notification of arrival, air waybill issuance, labelling et cetera. The basic characteristic of a network operator is the operation of a network of services benefiting from multiplier advantages provided by one or more hub airports that connects local stations. An Air Network is a collection of entry and exit points together with hubs and sub-hubs that are connected through scheduled air transport or air cargo replacing truck services. The risk/reward profile of an Air Network functionality ranges from needs-based to variety-based. Major additional expenses of an Air Network are the costs of the exploitation of a hub. This makes the operating expenses heavier without having the opportunity to generate a proportionately higher revenue quality.

To conclude, the left-down quadrant is primarily asset-oriented, process oriented and organized, sensitive to scale economics and companies offering services here may sometimes even be regarded as an 'unbranded or anonymous supplier'. The risk/reward profile of the Air Operator is low since the commercial responsibility - the perishable character of the air cargo 'product' - is left to the market (like the ACMI airline). As the responsibility of selling air cargo space and related services belongs to the business risk of an Air Line, the risk/reward profile of this functionality is higher. Even higher is the risk/reward profile of an Air Network that extends the commercial risk of an Air Line with exploiting airline operations via a hub and spoke system that causes additional costs.

### *6.2.2 Right-up Quadrant*

On average, it is experienced and can not therefore be expected as in similar non-asset versus asset based strategies that companies operating in the right-up quadrant achieve higher returns on sales. Therefore, these companies are necessitated further migration to other functionalities over shorter cycles of time. These companies are more often focused on end-customer markets while scope is believed to be more important than scale. The following functionalities play a role in this quadrant:

**4. Air Logistics.** Within the left-down quadrant, the Air Network functionality comprises all previous ones. Within the right-up quadrant, the Supply Chain Manager functionality also comprises the previous ones, beginning with Air Logistics. Gradually, the left-down quadrant dilutes from a needs-based to a variety-based position. Adding Air Logistics is also variety based and needs to be refocused to needs-based (supply-chain). However, in refocusing the customer definition, all other 'Cs' also need attention. The Air Logistics functionality is non-asset based or 'asset-light' due to subcontracting activities. The risk-reward profile is high but short.

**5. Full Logistics.** In this model, a full logistics provider offers transportation services to shippers using different kinds of modalities including air transport. The importance of air transport has declined here; the full logistics company concerned only uses air transport if this is in the best interest of the shipper. This functionality also involves typical logistics activities like stockholding and warehousing.

**6. Supply Chain Management.** The most advanced position in the Ladder comprises of logistics services, probably including air transport. The business of a supply chain manager can be partly or fully integrated with the business of shippers resulting in closed ties between the buyer and supplier of these services. However, the concept of supply chain management will not further be discussed here.

To conclude, functionalities positioned in the right-up quadrant can be regarded as solutions oriented and organized, focused on market share, penetration and the end-customer, sensitive to economies of scope, while companies operating in this functionality are champions in brand management and non-asset or 'light-asset' based companies.

### 6.3 Market Focusing Model

Choices made regarding the business positioning have consequences for the customer relations of an airline's cargo business. In fact, the Market Focusing Model shown here is an enlargement of the functionality square of the Business Positioning Ladder.

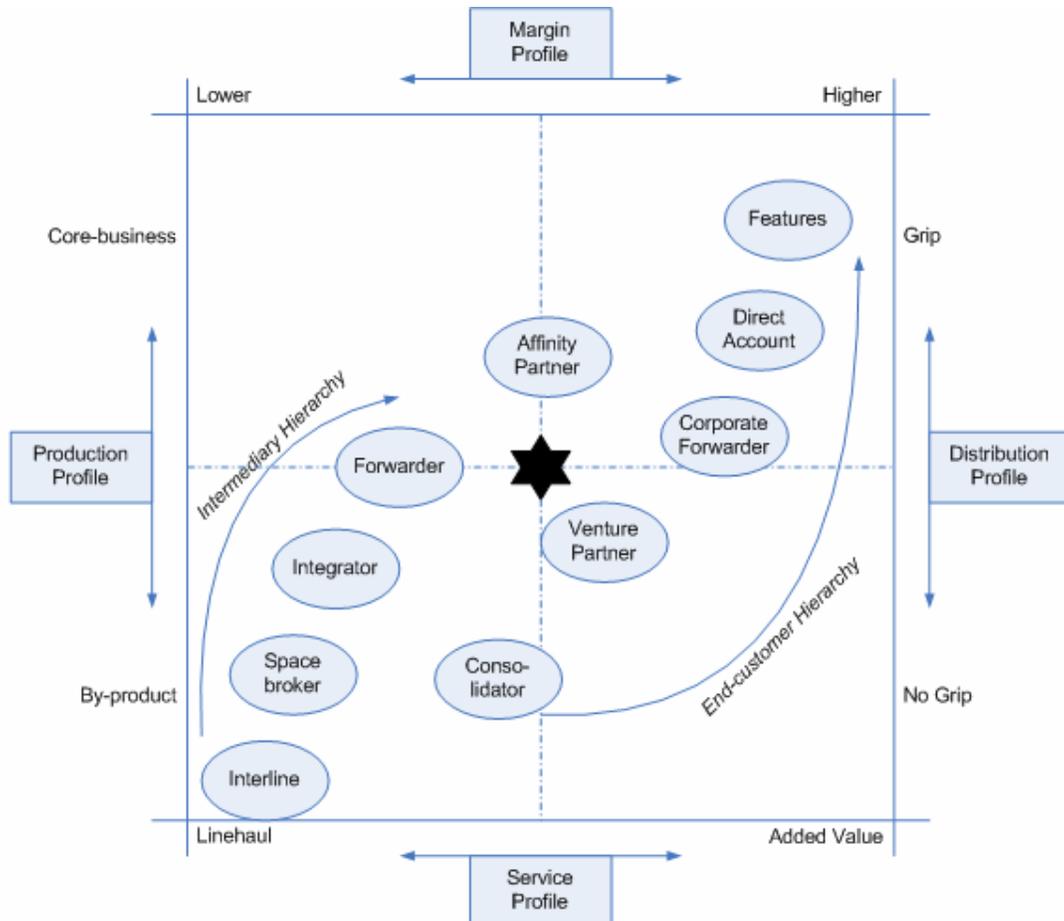


FIGURE 6.3: MARKET FOCUSING MODEL  
Source: Grin (1995)

The more linear progressive a company migrates, the more complex a discussion on Market Focusing becomes. On a division or business unit level, the model overlaps two adjacent functionalities. On a company level, the model overlaps two groups of adjacent functionalities (left-down and right-up). On an industry level, the model may even overlap two non-adjacent groups of functionalities. The Market Focusing Model can be applied on the particular situation of a single company (or a part thereof) in relationship with other companies. On a more aggregate level, it can also be applied on an industry or on several

industries in relationship with macro economic conditions which means that the level of abstractness is important in this model. The application of the methodology on a company, hierarchy or industry level makes the methodology extremely useful as it will enable a better understanding of the central research question of this thesis. This will be outlined in the upcoming chapters.

This model shows two hierarchies of customer relationship patterns; the intermediary hierarchy that runs from Interline to Forwarder and the end-customer hierarchy running from Consolidator to Features. The two ones shown in the middle of the figure (Affinity Partner and Venture Partner) are optional and only become a relationship pattern if they are deliberately created (Grin, 1995). The relationship patterns are situated in between the previously mentioned migration parameters (see page 60). The Market Focusing Model as pictured here has been drawn from the perspective of an cargo transporting airline. This Model is therefore about the customer relationship of an airline's cargo business with other parties in the air cargo supply chain. Should an airline's cargo business (decide to) evolve its business positioning, for instance from an Air Operator into an Air Line, then its relationships with intermediaries are subject to change. Role pattern of market participants in a supply chain are not fixed (Grin, 2001). The most dramatic change shall take place after a successful system leap as the customer relationship migrates from the intermediary to the end-customer hierarchy. It is a way of doing business where the customers of a company's customer are approached directly. Theoretically, a successful direct approach can make an intermediary redundant in a supply chain. The more immediate changes to the economics are the change from stable but low returns on sales (left-down quadrant) to higher but fluctuating margin peaks (right-up quadrant).

### 6.3.1 *Intermediary Hierarchy*

Airlines operating in the left-down quadrant of figure 6.3 (Air Operator, Air Line, Air Network) do regard air cargo more or less as a by-product which is designated on the left-hand axis as the 'production profile' in this figure. Also, these airlines have hardly any grip (right-hand axis) on the end-customer market (the shippers) making them suppliers of air cargo carrying capacity with some additional services to their customers mentioned in the left-down quadrant (the space broker, consolidator or forwarder). So, airlines that are operating their cargo business in the left-down quadrant of the Market Focusing Model generally deliver not that much added value on top of linehaul flights as their basic service offering. This assumption is questionable and depends on what buyer and supplier define as basic value and added value. Unquestionable however, is that the offering of value added logistics services is beyond the scope of airline operators that can be positioned in the left-down quadrant. Most airlines in this quadrant also do regard air cargo as a side-business. There are some exceptions, mainly being all cargo operators, but these still do operate basic linehaul services.

The more left-down an air cargo carrier operates in this figure (as an Air Operator), the more it is expected to concentrate on airport-to-airport transport only (bottom axis) and the lower its expected margin profile (top axis) shall be.

### 6.3.2 *End-customer Hierarchy*

Following this line of thought, it would be recommendable for air cargo carriers to develop themselves towards the upper right corner of the Business Positioning Ladder or Market Focusing Model. Once positioned there, the company regards air cargo as its core-business, offering value-added services to end-customer markets taking full advantage of a higher margin profile. Reaching a position with a high grip on the end-customer market offering services with a high margin (the supply chain manager in the Business Positioning Ladder) is the ultimate achievement in this methodology. Companies that are able to obtain a position in the upper-right quadrant can be regarded as market leaders while companies that remain in the left-down quadrant of the figures are considered as market laggards (although a company can still be a leader among the laggards...). It may be no wonder that this is a controversial statement, especially in the eyes of managers working at companies positioned lower in the left-down quadrant. However, market power higher in the left-down quadrant is important as a system leap as paradigm shift includes the 'window' *'to alter prices, quality and volume of products offered independent of the demand'* (cited in Lindstädt and Fauser, 2004).

Airline cargo operators that approach end-customers directly are very scarce. Airline cargo operators may approach shippers directly, but actual transport agreements are almost always signed in cooperation with an intermediary. In fact, the direct approach is only practiced by integrators both on a business-to-business as well as on a business-to-consumer basis.

### 6.3.3 *Aliasing and Blackholing*

The most important facets of the Market Focusing Model are the terms "Aliasing" and "Blackholing". Aliasing refers to diffuse purchase behaviour of customers. As the procurement process consists of several phases (orientation, negotiating conditions, ordering, receiving and usage), customers that practice aliasing behave different in each phase. Applied to air cargo, a company can present itself in the orientation phase as a forwarder while in the next phase they pose as a consolidator demanding a quantum discount. If a supplier is unable to defend itself against such practices, a so-called blackhole situation occurs. In a blackhole situation, the distinct procurement phases are fading leading to confusion about who the customer actually is and what he wants. This in turn may result in delivering customized value against commodity prices, customer-channel-competition confusion and ultimately a value lock-in.

## 6.4 Market Positioning Pie

The market focusing of a company largely determines its market positioning. Market positioning makes clear in what markets a company operates or may operate. The Market Positioning Pie visualizes the number and nature of sub markets and hybrid forms as well as the portfolios per market. The product offering should be robust as such that it prevents a supplying company from becoming the 'black hole' in the middle (of the Market Focusing Model). The distribution portfolio must be configured as to prevent the company from aliasing while the channel portfolio has to prevent the company from a value lock-in.

Like the Business Positioning Ladder, the Pie as shown below is applied to the air cargo industry. The Pie identifies three different air cargo related markets and shows the product, distribution and channel per market. The left-hand side of the Pie has a predominantly variety-based nature as intermediaries are needed for commercial distribution. Contrary, the right-hand side of the figure is largely needs-based positioned as the business is delivered directly to end-customers. The centre part of the pie is vulnerable to tensions in supply and demand as customers on the commodities market for instance deserve a product that is actually offered on the specialized market while they are not willing to pay a price premium.

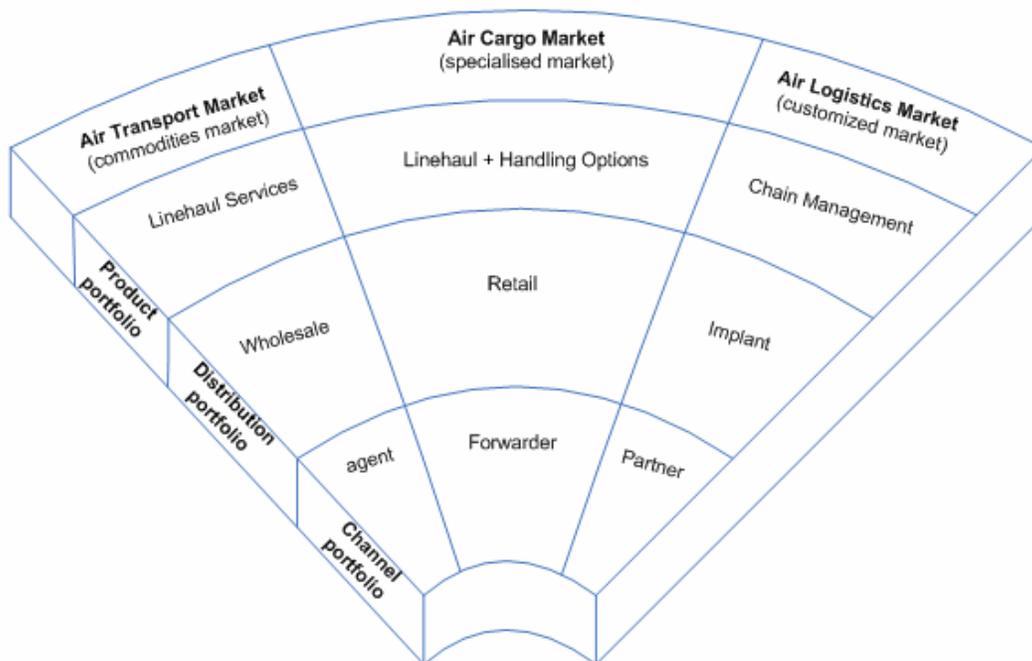


FIGURE 6.4: MARKET POSITIONING PIE  
Source: Grin (1995)

### 6.4.1 Product Portfolio

The product portfolio in the commodities market primarily consists of price-driven over-the-counter products which is also the basis for the specialized market. However, the product portfolio in the specialized market is usually enriched with optional features against list

prices. The customized market has a product portfolio that offers value-driven tailor-made solutions.

Over the years, traditional cargo transporting airlines have differentiated their product portfolio with premium service offerings like time-defined and special handling services. As integrators have expanded their business portfolio over time to accommodate general cargo and persuade shippers to upgrade their cargoes to more air express services (Zhang, Zhang, 2002), airlines were forced to increasingly compete head-on with integrators. According to Hermann, Trefzger, Crux (1998), a way to cope with this kind of competition is to modularise the service portfolio delivering value-added services on top of a standard service, for instance a time-defined airport to airport service.

These upgrades initiated by airlines presume however, a positioning and market focus whereby the upgrades enhance the perceived value for end-customers. If the positioning and focus does not stretch beyond the intermediary hierarchy, the upgrades merely add to the black hole effect of throwing more at it and see less come back of it. This danger indeed raises the question how individual service features are being valued by customers and what the optimal price premium may be (Heusener and Von Wichert, 2001). Furthermore, the value of a service feature perceived by a customer may vary over time (e.g. seasonal). To optimise price premiums for different service levels and to sustain profitability, cargo yield management plays an important role. According to these authors, attention should also be given to discount policies as discounts are often negotiated on an individual basis which may have a profound impact on margins.

#### *6.4.2 Commercial Distribution*

In one or another way, goods and services have to be delivered to customers. However, before a 'physical' delivery takes place the good or service must be distributed commercially. Commercial distribution is about channel management; it is about the customer interface. Applied to air cargo service suppliers, it is reflected by their upstream or downstream orientation within the air cargo chain. In marketing their air cargo services, airlines may offer their services on a commodities market, specialized or customized market. According to Grin (1998), the commodities market consists of clearly defined services. The specialties air cargo market is a hybrid market between the commodities market and customized market. The customized market consists of a combination of competencies needed to deliver a particular customer value.

According to this author, the specialties market has emerged from a failure at airlines to distinguish between defined service options and competencies necessary to provide these services as well as improperly defined market segments in terms of the '5Cs' as previously mentioned with regard to migrating functionalities. This phenomenon is more visible with

higher functionalities in the left-down quadrant when a (paradigm) shift occurs from needs-based to variety-based. This failure results in a customer-channel-competition confusion which could again lead to a value lock-in and a blackhole situation.

The customer-channel-competition confusion would for instance not disappear by migrating to the Air Logistics position in the right-up quadrant as that functionality is in essence still variety based. Higher up in the right-up quadrant, the resulting value lock-in could be remedied by turning back again to a needs-based position.

## 6.5 Concluding Remarks

This chapter started with the 'macho bullshit' phrase of former BA's cargo director Hatton. Probably, this derisive remark was an ultimate expression of underestimating or even misunderstanding the dramatically changing competitive air cargo landscape. In general, denying the necessity of a separated strategic approach for airline cargo businesses is the most worse an airline cargo manager can do. Airline cargo managers should be aware of the strategic position of their company and development options it has. 'Being aware of a strategic position' is nice, but in order to make awareness more tangible for airline cargo managers, this chapter has outlined a strategic planning methodology.

As the methodology itself is neutral with regard to the level chosen, it has been applied here equally to the inherent (part of) companies as well as to the industry they are a subset of. In this way, this thesis aims to understand differences in business positioning, market focusing and market positioning between (parts of and/or types of) companies as well as understand better what drives the competitive differences between industry subsets and subsystems.

Essentially, the methodology presented here is just a way of framing and thus simplifying a competitive landscape. Keeping in mind that reality is always more complex than graphics suggest, the methodology may be helpful to understand businesses and discuss and prepare strategic actions upon this understanding.

This chapter is rounded-off with probably the most confusing picture of all. Figure 6.5 shows the Strategic Planning Methodology comprising the previously discussed sub-models: the Business Positioning Ladder, the Market Focusing Model and the Market Positioning Pie all in one model. What is shown here is a model consisting of four quadrants of which the left-down quadrant and the right-up quadrant are the most important ones. The two quadrants each consist of three functionalities. A single functionality can be analyzed with the Market Focusing Model and with the Market Positioning Pie. As an example, functionality one and two (F1 and F2) are visualized as a 'mini' Market Focusing Model and F3 as a 'mini' Market Positioning Pie.

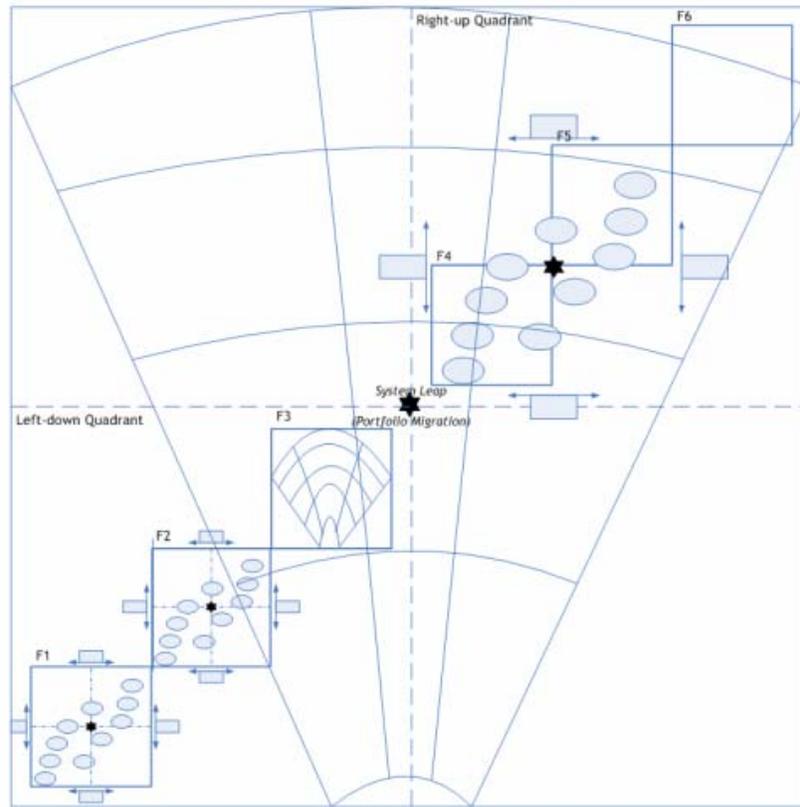


FIGURE 6.5: STRATEGIC PLANNING METHODOLOGY (COMBINED FIGURES)

However, since the Strategic Planning Methodology can be applied to several levels of abstractness (a company level, a hierarchy level or an industry level), the Market Focusing Model and Market Positioning Pie can also be applied on more than one functionality. As an example, this is shown in F4 and F5 of figure 6.5 where one Market Focusing Model covers two functionalities. Despite this example, it is also possible to apply it on F3 and F4, so including the system leap. In general, a Market Focusing Model or Market Positioning Pie can be applied to one functionality at a time or to two adjacent functionalities at a time. However, they can even be applied to three adjacent functionalities. In that case, they usually cover a whole quadrant or hierarchy. Ultimately, they can cover the two quadrants at the same time, as the enlarged Market Positioning Pie shows.

The more functionalities are covered within the Strategic Planning Methodology, the more aggregate the analysis will be. It is important to stress that the outcome of an analysis depends on the focus as this can be very detailed or very aggregate. The most important outcome of this chapter is that competition can take place on a company-to-company level, a hierarchy level or an industry (subset) level. With regard to the research subject of this thesis, one may wonder whether comparing an airline with an integrator is a kind of comparing apples to oranges as defacto F3 is compared to the right-up quadrant and not to another single functionality. This will be discussed further on in chapter eight.

## ⑦ EMPIRICAL REVIEWS

*The preceding chapters on the air cargo industry had a more theoretical nature culminating in a discussion on air cargo strategy development in the previous chapter. This chapter addresses two case studies to illustrate developments in the air cargo industry. It will be analyzed how air cargo actors responded to external developments and how they adapted their business to it. Findings of these case studies will be used as a frame of reference to determine whether the airline cargo market has lost the battle from the integrated express market or not.*

### 7.1 Introduction

The actual application of the Strategic Planning Methodology may be somewhat difficult. In the first place, the Methodology has a highly qualitative nature. Assumptions, choices and conclusions based on the Methodology may be interpreted as arbitrary since an objective quantitative measure lacks. However, the same inherent weakness is also true for the more commonly known marketing management models like the BCG Matrix, Porter's Five Forces Framework or Ansoff's Growth matrix. In all these models, is it the quality of elucidation that counts. The case studies that follow are based on the methodology explained in the previous chapter as well as on publicly available information and on expert interviews.

### 7.2 Case study 1: KLM Cargo

Reasons to choose for KLM Cargo as research subject have both conceptual and practical backgrounds. At first, the Strategic Planning Methodology has been designed at KLM Cargo and has also been applied throughout the KLM Group of companies. In the second place, the management team of KLM Cargo had been worrying about developments in the external environment for a long period of time and anticipated upon it. This anticipation was adequately enough in its research by means of the Strategic Planning Methodology, and in the execution of everyday operations. Last, but certainly not least, as there are a host of 'harder' and 'softer' factors impacting the translation of theory into planning, a number of former managers of KLM Cargo, including the designer of the Strategic Planning Methodology Mr. Boubby Grin were so kind as to share their experiences at KLM Cargo. These interviews were necessary not to pass judgement on the direction that KLM Cargo took, nor on the validity of the strategic planning process. Rather, these interviews served to identify the nuances of a very complex and stressful undertaking with wider implications for the industry it formed part of.

#### 7.2.1 A Short History of KLM Cargo

KLM Royal Dutch Airlines was founded in 1919 by a group of Dutch investors to operate air routes from an airfield near the Dutch capital Amsterdam. Already in its early years, the

airline flew both passengers and cargo, especially air mail. During the 20<sup>th</sup> century, the company became one of the largest European flag carriers.

Up to the '80s, KLM was organizationally structured around a sales organization with separate cargo and passenger sales representatives in different geographic regions of the world; a ground handling organization responsible for ground operations at the homebase Schiphol airport and a flight handling services organization responsible for logistics coordination. These separate departments were all headed by one Company General Manager who had to report to the Board of Managing Directors of KLM.

During the presidency of Mr. Jan de Soet (1987-1991), the Board of Managing Directors took the major organizational decision to create three divisions within KLM: Passenger Business, KLM Cargo and Operations. In the run-up to the new configuration, much cargo related departments and activities were carried-out dispersed throughout the KLM organization. The merging of these departments and activities into one accountable organisation was already set in motion from 1985, well ahead of the division structure, which took shape between 1990 and 1993.

In the final configuration of the division structure it was decided to split the division Operations into a Flight Operations Group and an Engineering & Maintenance business. From that time on KLM's divisions reflected its core-businesses passenger and cargo transport and E&M. The divisions are headed by an Executive Vice-President who directly reports to the Board of Managing Directors. Divisions got autonomy on areas such as strategy making, finance and human resources.

Before turning the attention to KLM Cargo's proposed new business development direction of the '90s, the following charts provide some basic data that serves as background information for this case study. Figure 7.1 compares of KLM's revenue ton-kilometres with three biggest cargo transporting combi carriers of that time plus US-based integrators FedEx and UPS. Available ton-kilometres (ATK) and revenue ton-kilometres (RTK) are commonly known parameters in airline business. These parameters indicate the transport of one ton of goods on a distance of one kilometer. ATK indicates the 'production' or capacity offered and RTK the sales. Figure 7.1 serves as an indication of the market on the era that this case study focuses on. Integrators DHL and TNT are not included as they predominantly use cargo carrying capacity of regular airlines as well as some other sub contractors and franchisees. Based on published data in the annual reports of KLM, figure 7.2 shows the development of available freight ton-kilometres and revenue freight ton-kilometres at KLM for the last fifteen years. The trend line also shows the load factor of each year. The third figure shows the share of cargo revenues at KLM compared to the total revenues that the KLM Group has generated between 90/91 and 03/04.

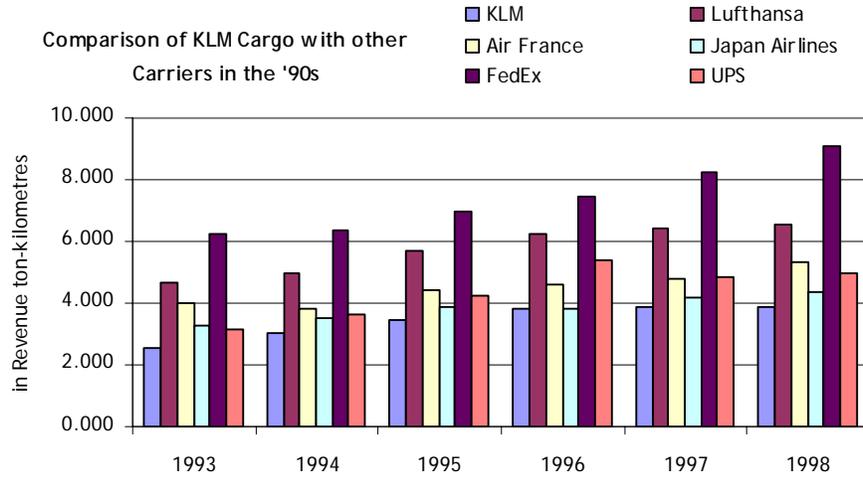


FIGURE 7.1: COMPARISON OF KLM'S CARGO PERFORMANCE WITH OTHER CARRIERS 93-98  
 Source: *Airline Business World Airline Top 100 '93-'98*

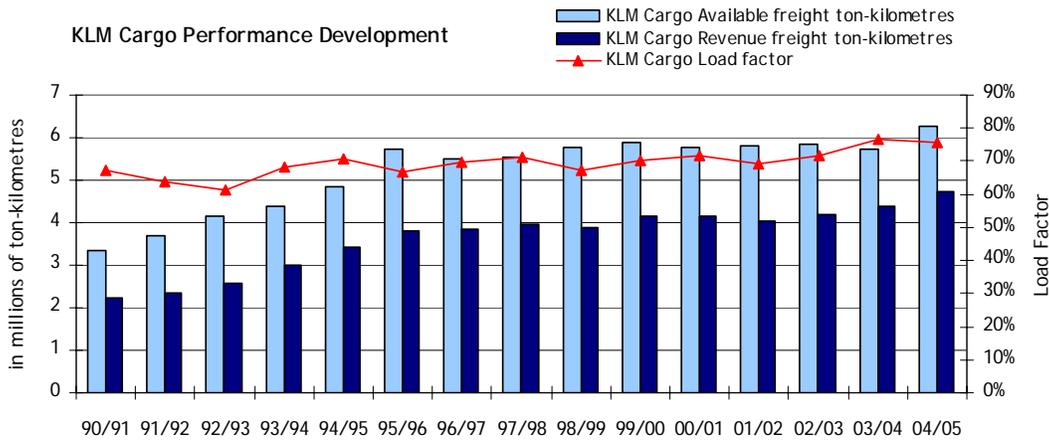


FIGURE 7.2: KLM CARGO'S PERFORMANCE 1990-2005  
 Source: *Annual Reports KLM Royal Dutch Airlines 90/91 until 04/05*

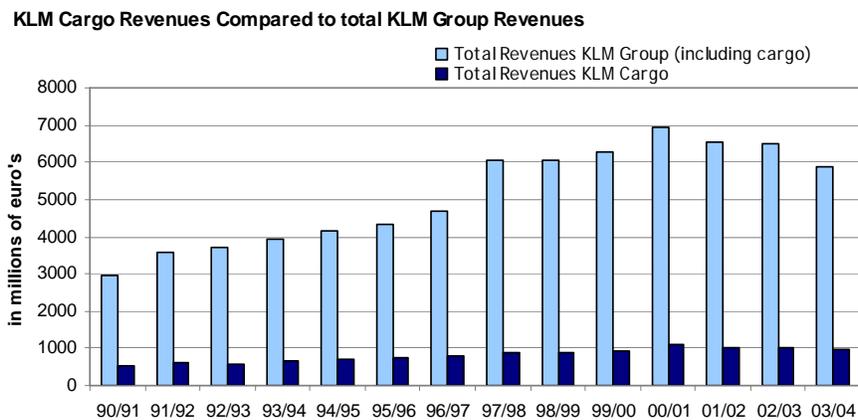


FIGURE 7.3: KLM CARGO'S REVENUE DEVELOPMENT  
 Source: *Annual Reports KLM Royal Dutch Airlines 90/91 until 04/05*

### 7.2.2 *Heading for a New Business Positioning*

The management team of the Cargo division took the newly gathered autonomy as an opportunity to adapt the division to a changing marketplace. The executive management team cargo was continuously anxious about the impact of developments in the broader air cargo industry on full service carriers, and on KLM Cargo in particular. The most important considerations about the attempt to leave the consolidation segment (or intermediary hierarchy) of the airline cargo market and to reach the higher-ends of the market (see the Business Positioning Ladder) were the rising power of integrated express companies, the consolidation among major international forwarders, ongoing globalization and developments in business logistics and, above all, the perception that margins in the high-end of the market were far higher than traditional airline cargo businesses were able to realize. KLM had redefined its cargo strategy in the course of adapting to its new structure in the early '90s. According to Mr. Pieter Bouw, the then CEO of KLM the mission of KLM Cargo was *'to rank among the top three customer-driven suppliers of high quality transport, distribution and information services'* (Bouw, 1997).

In the second half of the '90s, KLM Cargo rounded off the substantial reorganization program that took more than five years. KLM Cargo transformed itself into a focused organization comprising of business units serving specific markets and services. Two strategic goals were formulated, first to exploit KLM Cargo's position in the traditional air line and air network markets and second to obtain a solid position in the emerging air logistics and full logistics market. Although the strengthening of its linehaul operations and traditional distribution channels was still an explicit goal, the company also aimed at obtaining a position in the high ends of the markets actively seeking for direct or alternative distribution channels.

### 7.2.3 *Customer Relationship Management*

As KLM Cargo made attempts to move up the Business Positioning Ladder, its customer relationship was also subject to change. Due to the linear progressive nature of a migration, KLM Cargo had to deal with several different Market Focusing Models. The Model can not only be applied - as explained earlier in chapter six - to the division or aggregated company level, it also applies to individual business units or subsets thereof. To illustrate this situation, the managers of the BU Air Logistics were authorized to trade directly with end-customers; in fact this business unit was positioned in the right-up quadrant of the Market Focusing Model. At the same time however, other managers at KLM Cargo were responsible for maintaining its Air Network or Air Line with their own customer relationship patterns. The tensions with intermediaries that occurred in the era of KLM Cargo's direct approach strategy can partly be explained by the different customer relationship patterns that came into being at KLM Cargo while its customers remained the same. The rationale behind the direct approach was that KLM Cargo did not want to leave its marketing of end-customer markets to intermediaries. The company wanted to be in charge when it came to fare-setting and development of certain product market combinations. Although KLM Cargo

wanted to keep serving the larger forwarders, for instance in their diversification as 'consolidator', it wanted to by-pass smaller forwarding agencies.

So, before the new strategy was implemented, KLM Cargo primarily operated in the left-down quadrant of the Model dealing with the intermediary hierarchy. The service profile of the division did not involve many value added services while the distribution profile involved a low level of grip on end-customer markets. Although KLM regarded cargo as one of its core-businesses, focus and positioning were relatively incompatible with projections and margins were relatively low.

#### 7.2.4 *Commercial Distribution*

As argued earlier this chapter, KLM Cargo was positioned in the left-down quadrant of the Business Positioning Ladder and the Market Focusing Model in the early '90s. A position in this quadrant is comparable to operating in the commodities market (or air transport market) of the Market Positioning Pie. The company primarily offered linehaul services through its Air Network business. These services were sold in wholesale to intermediaries. Of course, the business portfolio of KLM Cargo was not as simple as suggested here. Some specialized and customized services were also offered, for instance temperature-controlled handling and transport, secure logistics and live animals. Up to the '90s, KLM Cargo at least offered services on the air transport market and the air cargo market as shown in the Market Positioning Pie. An assumption of the Market Positioning Pie is that margins on the commodities market are lower than on the specialized market and that margins on the customized market are even higher than achievable on the specialized market. Hence, the company also aspired to obtain a position on the customized market (or air logistics market).

#### 7.2.5 *Organizational Structure: Business Units*

KLM Cargo believed greater specialization will generate better margins and increases total returns for the company. Grin (1998) argued that value-added services are best be delivered in a business unit configuration as this author is convinced that business units are *'better equipped to focus on the effectiveness of service delivery and they are also much better suited for discovering new opportunities for providing added-value services'*.

After the corporate restructuring at KLM Cargo was finalized, the company consisted of two anchoring business units, BU Air Cargo and BU Logistics that were responsible for capacity and chain management respectively. There were three value-adding BU's formed that were responsible for specific market segments, BU Airmail Services, BU Special Cargo and BU Air Logistics. The two remaining BU's (BU Information Technology and BU Cargo Service Centre) had a service providing responsibility. All BU's were responsible individually for their respective customer relations. These responsibilities had to do with transporting, caring or packing of goods. Notwithstanding the customer relationship responsibility of the BU's, KLM

Cargo also incorporated a Customer Service Organization that served all BU's. The BU structure was governed through a so-called '*Factory-shopfrontmodel*' that was formalized in a Management Charter involving Trading Rules. Trading Rules governed the relations between the different entities within the Cargo division, such as internal trade flows, transfer prices et cetera. The Management Charter made clear what the freedom of movement of each BU actually was. Finally, the BU structure also included a top management unit involving the Executive Management Team Cargo and five divisional staff departments.

#### 7.2.6 *Business Developments at KLM Cargo*

During the '90s, KLM Cargo acquired stakes in several transportation and logistics companies. In the early '90s, a stake in US air cargo carrier Flying Tigers was considered but this airline was absorbed by integrator FedEx. A letter of intent to acquire the US forwarding giant Air Express International was signed in '99, but AEI was ultimately bought by Deutsche Post. A 'European Feeder & Distribution Network' was created as a joint venture with Dutch road haulage company Frans Maas in '92. KLM owned 60% in this joint venture, but due to unsatisfactory results, this stake was sold late '90s and replaced by a cooperation agreement with another Dutch road haulage company: Jan de Rijk. A stake in courier company XP was also sold during '90s to Dutch postal company TPG along with Cargo Service Centre (CSC) that acted as KLM Cargo's global ground handling agency but was sold late 2000. It was part of a wider corporate restructuring that coincided with the Baseline program of parent company KLM. The sale of CSC illustrated the new cargo course for the company. The endeavours of the previous management team cargo to reach the supply chain management functionality of the business positioning ladder came to a hold.

Notwithstanding the fact that KLM has been a forerunner in creating alliances in the airline business, especially one alliance effort has to a certain extent troubled a smooth execution of the cargo strategy. The short but turbulent 'romance' with Alitalia during the late '90s (where the Italians were designated to head the cargo department as part of the deal) had a strong negative impact on a successful accomplishment of the cargo strategy. One respondent referred to KLM Cargo's corporate history as a 'pre-Alitalia period' and a 'post-Alitalia period'. The alliance with Alitalia was initiated by the Board of Managing Directors of KLM and criss-crossed the feasibility of the realization of the proposed strategy of the Cargo division. The tie-up with Alitalia soon appeared to be a miscalculation as it crashed in cultural and political troubles and was dissolved late April 2000.

The management changes at the start of the new millennium combined with the fact that KLM has been sold to Air France defacto means that the cargo strategy of the '90s has been abandoned. The new direction for KLM Cargo was clearly announced in KLM's annual report 2000/01: '*cargo takes the view that competition between carrier and forwarder for the*

*shippers' favour is not productive. The carrier and forwarder together offer the product required by the shipper. Cargo is accordingly encouraging connectivity among its fellow players in the logistics chain. This concept highlights the importance of co-operation between the organizations involved and also the links between the underlying systems'.*

This view reflects a change in mindset at KLM because a couple of years earlier the previous KLM Cargo Executive Vice-President openly admitted that the airline would sell directly to shippers, something that worried the air cargo forwarding business. Also, the clash model with forwarders was a controversial approach not only among forwarders, but also within KLM.

Last but not least, it seems like that the Board of Managing Directors of KLM not fully supported the proposed strategy, at least not at the end of the '90s. Most probably, the Board understood the strategy, but in order to reach the desired new state of KLM Cargo, much more funds and management attention would have been necessary. Furthermore, the Board also had its own agenda that consumed energy, attention, money and focus. This agenda was highly related to the passenger business; to adapt the company to a freer European marketplace; to cope with the rise of low fare airlines and to become part of leading global airline alliance.

KLM Cargo nowadays has a strong focus on operational excellence and financial performance. The new buzzword at KLM Cargo is 'connectivity' which is defined in KLM's annual report as *'the ability to connect to and participate in the processes of the other players in any way necessary'*. However, Clancy & Hoppin (2004) define connectivity as 'the opportunity for the carrier to participate in smaller but lucrative connecting traffic flows not available to a point-to-point carrier'. The strategy is currently dominated by expanding the scale instead of the scope. The core-business is the exploitation of the air network. In this functionality, the company wants to be a 'smart mover'.

#### *7.2.7 Interview Reflections upon KLM Cargo's Strategy Development*

The interviews held with former managers of KLM Cargo do not provide a clear picture of the functionality on the Business Positioning Ladder the company ultimately had reached. Some respondents argue that the company has never been able to successfully migrate its portfolio (from the left-down quadrant to the right-up quadrant); others say that the company has at least reached the Air Logistics functionality as one of the BU's was named 'Air Logistics'. A few interviewees believed the company operated in the Full Logistics functionality and none have said the company operated in a supply chain management capacity. These differences in opinion make clear that it is difficult to agree on a common understanding among managers of a company's business positioning for instance due to different frames of reference or a poor definition of what a particular functionality actually

is. Notwithstanding possible internal confusion about what the company is, it is clear that the company has made serious attempts to enter the high-end of the market. The BU Air Logistics was at least a visible reflection of this attempt.

Despite the existence of a Management Charter, some interviewees have complained about internal conflicts of interest between BU's that were named time and energy consuming.

One interviewee suggests a weak internal commercial organization of KLM Cargo as one of the causes of the strategy failure. Another interviewee focused on the perceived lack of competent employees. This interviewee said some managers were clever and talented but had a lack of experience which made them incapable for their positions. Others paid attention to the timing of the cargo strategy which one interviewee said was executed too early (because of a lack of resources and competencies) while another interviewee said it was executed too late.

KLM Cargo's history as being part of a former state-owned enterprise was sometimes also named as a hindering factor in the realization of the cargo strategy. One interviewee paid special attention to the difficult implication this background had for change management issues. During reorganization for instance, forced lay-offs were avoided by gathering superfluous employees in a workforce pool to get them back to work somewhere else throughout the company. This was mentioned as *'nice for the people but still bad for the bottom line'*.

It seems like that not only the Alitalia crash has been a ground for a change. Some interviewees referred to KLM Cargo's excellence on strategy matters but weak in profit matters. Some respondents complained that although the revenues were growing, the costs grew even harder and that returns were only theoretical.

Several interviewees analysed that vertical integration aimed with the strategy would have never been reached autonomously. As a consequence, appropriate take-overs and/or alliances were necessary to reach the desired state of the company. Since mergers and acquisitions were not that successful, the company mainly impeded the business of intermediaries during those days. However, through its business unit Air Cargo, KLM Cargo still depended on intermediaries for its revenue generation. It seems like that intermediaries did not (want to) understand the strategy of KLM Cargo and became furious as they feared to lose their comfortable market position. In this respect, some interviewees referred to a bad corporate communication of KLM Cargo towards the intermediaries, despite the fact that KLM Cargo explained its strategic intent in detail in their award-winning corporate magazine 'Cargovision' during the '90s.

### 7.2.8 *Concluding Remarks on Case Study KLM Cargo*

During the '90s, the executive management team of KLM Cargo has made serious attempts to adapt the company to changing market circumstances and to stay ahead of competition. Of all global combination carriers that regarded cargo as their core business, KLM Cargo was one of the few if not the only airline that innovatively made attempts to change its business model.

Essentially, the strategic vision was to confront the 'air cargo market' in a way compatible with the fragmentation this market confronted the airlines and their main service suppliers. There was not a plan to leave the functionality of Air Network as such a decision was beyond KLM Cargo's divisional mandate. There was also not essentially a plan to stay in the functionality of Air Network carrier as that functionality did not generate enough return to be sustainable on the longer run. Underlying, there must therefore have been a plan to do a 'portfolio migration', i.e. choose positions in the left-down as well as in the right-up quadrant of the business positioning ladder and next try to correlate and coordinate their existences. This is for instance very visible in the management charter, where two anchoring business units appear to support between them in terms of resources positioning the value adding business units.

From the perspective of today's realities, it could be argued that the strategic vision with projected futures as becoming an integrated supply chain manager has not materialized. This could lead to the conclusion that either the strategy has failed, or that one part of the (portfolio) strategy has not materialized. It would be interesting to listen to the tone of voice of those that were involved to determine whether this means the strategy has not succeeded or has failed.

After all, this thesis does not seek to pass judgement on individual company strategies, but rather use their experiences as guidance for the more important question: are airlines losing the air cargo battle to integrators?

KLM Cargo is one of the few combination carriers that have seriously reconsidered its cargo strategy in the past decades. Mapping its position in the marketplace, the KLM Cargo management realized that the position the company held was unfavourable.

The case study has shown that the company struggled to leave the intermediary hierarchy of the air cargo market by expanding its business portfolio towards the high-end of the market. Until the mid '90s, KLM Cargo was one of the airlines that were fighting with integrated express companies over grip on end-customer markets. Although, KLM Cargo has done a courageous attempt to obtain such a position it was ultimately forced to retreat and go back doing business in the intermediary hierarchy of the airline cargo market.

Despite its attempts to break-out, the main outcome of the first case study is that KLM Cargo still operates in the left-down quadrant of the business positioning ladder. As was extensively explained in the previous chapter, a position on the business positioning ladder has consequences for a company's customer relationship management as visualized in the market focusing model. Operating in the left-down quadrant means being part of the intermediary hierarchy; having lower grip on end-customer markets; having not the highest possible margin profile and offering less advanced value-added services.

This situation not only applies to KLM Cargo, it applies to (nearly) all combination carriers active in the airline cargo market. These airlines are nowadays primarily suppliers of space / capacity to intermediaries, added with some related value added services. It is not likely that airlines will ever autonomously obtain a favourable position in the right-up quadrant enabling them to compete head-on with integrators and intermediaries that currently dominate the third party logistics market. Airlines should either adopt a business model that avoids competition with the integrated express market (as a niche airline for instance) or accept that their role has been marginalized.

### 7.3 Case study 2: Deutsche Post / WorldNet (DPWN) / DHL

The second case of this thesis focuses on Deutsche Post / WorldNet. This is a very interesting company to analyse as it has entered the air cargo industry rapidly over the past decennia and has grown to the largest logistics and transportation firm in the world. For reasons of simplicity, the case study is limited to the DPWN operating companies that trade under the DHL brand name, because the DHL division is more closely related to (air) cargo transport than the traditional Deutsche Post and Postbank divisions.

#### 7.3.1 A Short History of DPWN / DHL

The modern Deutsche Post was designated as a successor of the Deutsche Reichspost in 1950. Up to 1989, the Deutsche Bundespost remained a state-owned enterprise. The German '*Law concerning the Structure of Posts and Telecommunications*' of 1990 kicked-off a major reform of the German Bundespostdienst. The reform of the early '90s aimed at privatising the company stepwise in the future. During the mid '90s, Deutsche Post formulated a new strategy to become the number one in worldwide logistics services through acquisitions, investments and partnering agreements. Deutsche Post had signalled a tendency at shippers of a growing demand for one-stop-shopping for a wide range of shipping activities (DPWN Factbook, 2005). Deutsche Post wanted to serve these needs in a move that the company called 'market-orientation'.

DHL was founded in 1969 in San Francisco, USA by three men that thought it would make sense to bring customs documents by plane to enable customs clearance of a ship's cargo before the actual arrival of the ship thus dramatically reducing waiting time in the harbour

(dhl.com). This concept of document delivery by air became a tremendous success and the DHL scope of services and geographical coverage was rapidly extended.

### 7.3.2 *Strategy Development*

Over the years, DHL expanded to one of the most global corporations with establishments in rather every country and territory of the world. Through the 70s, 80s and 90s, DHL became a brand name that was used by two independent, but interrelated companies (in terms of shareholding): DHL Aviation, headquartered in Cincinnati, USA and DHL International, headquartered in Brussels, Belgium. The latter one was responsible for the execution of the global integrated express operations and DHL was therefore sometimes considered as a 'European' company.

In an attempt to become the market leader in parcel and express transportation, DPWN commenced operations in 1998 of a pan-European ground distribution network called 'EuroExpress'. The success of the EuroExpress business did not restrain DPWN to expand the scope and reach of its service portfolio by obtaining a 25% stake in the classic integrator DHL Worldwide Express in 1998. This company was fully acquired late 2002. In the mean time, DPWN continued its take-overs by acquiring Swiss logistics giant Danzas and, among others, US-based airfreight forwarder Air Express International (AEI) as well as US-based express delivery firm Airborne. To really offer business customers a one-stop-shop offering, DPWN bought the shares in Deutsche Postbank AG from the federal German government in 1999 to not only facilitate goods flow, but also the related cash flows. In a quite short period of time, DPWN acquired over 100 companies worldwide. All these subsidiaries have to make strategic sense for the DPWN portfolio by strengthening its product line, regional coverage or market position and all subsidiaries have to generate a minimum return on investment of 12% within three years (DPWN Factbook, 2005).

Germany's government objective to privatise Deutsche Post was finally completed in 2000 when the company became stock-listed. To reflect its international scope, Deutsche Post rebranded its corporate name into 'Deutsche Post World Net' consisting of four divisions: Mail, Express, Logistics and Financial Services with three major brands: Deutsche Post, DHL and Postbank. DPWN aims at becoming a global leader offering a complete range of transportation and logistics services, ranging from letter mail and document delivery to complete supply chain management solutions (source: DPWN Factbook, 2005). An expansionistic strategy like this is not cheap at all; Cohen (2004) expects DPWN to have spent some € 10 billion on acquisitions in the period 1996-2003 alone.

### 7.3.3 *Business Positioning*

Applied to the Business Positioning Ladder as already discussed in this thesis, the former DHL Classic organization was primarily situated in the right-up quadrant of the Business Positioning Ladder. Contrary to KLM Cargo, DHL has commenced its business right-up serving

end-customers with a strong brand in an asset-light way. DHL was founded as a courier service having no assets at all.

Soon after DHL was founded, the service portfolio was extended with air express services which were later on transported through an air express network. Interestingly, integrators like DHL have developed their business position from right-up to left-down adding assets (like warehouses, trucks and aircraft) as well as obtaining economies of scale to increase the efficiency and effectiveness of daily operations. The right-up quadrant of the Ladder represents the functionalities of classic integrators while the combination of the right-up and left-down quadrant is the domain of the current super integrators.

Since there are thousands of local courier companies, but just a small number of super integrators, the migration from a courier company via a classic integrator into a super integrator is a very difficult step as well. Although the current four super integrators managed to transform themselves into an integrated express company, it must be clear that migrating from right-up to left-down is not at all easier than the other way round.

One may wonder whether the take-over of DHL by DPWN in 2002 can be considered as a forced system leap for DHL or not. Although DHL traditionally outsourced the actual flying of aircraft (except for the US operations) to sub contractors or cargo airlines performing in the 'Air Operator' functionality, the company had a quite impressive portfolio of assets including thousands of vans and buildings. Before the acquisition of DPWN of DHL, the integrator already operated in all functionalities, but DPWN has strengthened the market position of these functionalities in terms of scale. Nevertheless, the scope of operations was also extended to the intermediary business. DHL is primarily needs-based but has added variety-based businesses to support the fulfilment of needs-based operations.

#### *7.3.4 Market Focusing & Customer Relationship*

Due to the migration of DHL on the Business Positioning Ladder towards a super integrator, the role patterns of DHL with other market participants are subject to change. As the number of functionalities that DHL serves has increased, so has the customer relationship or market focusing per functionality. The number and nature of customers that DHL as a super integrator serves differs from those days that DHL was a classic integrator only. Although, the classic integrator offers an end-to-end transportation services offering, its activities in advanced logistics and supply chain management were of minor importance. However, DHL covers both hierarchies, with regard to the level of abstraction associated with the Market Focusing Model. This means that DHL offers services in the left-down and the right-up quadrant.

DHL may be vulnerable to more or less the same aliasing and black hole tensions that occurred during the days that KLM Cargo practiced its direct approach strategy. These tensions may occur if for instance shippers are approached by different sales representatives (e.g. one from DHL Classic and one from DHL Logistics) or if the quality of services of the formerly independent organizations varies too widely. DHL has also fuelled the aliasing effect in the airline cargo market as it nowadays operates in numerous capacities as a consolidator, a forwarder, an integrator and much more. Airlines have to be aware of the black hole risk that DHL has created in the airline cargo business.

7.3.5 Market Positioning & Commercial Distribution

DHL Classic used to do its commercial distribution in-house. The recent migration from a classic integrator towards a super integrator has consequences for the market positioning of the company. The most important development that can be observed is that super integrators have commenced to carry-out commercial distribution in-house in markets that were previously the domain of intermediaries. DHL keeps its commercial distribution of classic integrated express services in-house while it has extended its business portfolio to the specialized and customized markets of the Market Positioning Pie.

Among others, the portfolio of this business comprises supply chain management, warehousing, distribution and outsourcing. An overview of current service offerings is shown in the figure below:

Product portfolio DHL										
DHL EXPRESS			DHL FREIGHT		DHL AIRCARGO & LOGISTICS			DHL SOLUTIONS		
SameDay	TimeDefinite	DayDefinite	Freight	Air Freight	Ocean Freight	Industrial Projects	Customer Program Management	Customized Logistics Solutions	Industry Solutions	Outsourcing & Transformation Partner (OTP)
<ul style="list-style-type: none"> <li>DHL Same Day</li> </ul>	<ul style="list-style-type: none"> <li>StartDay Express</li> <li>MidDay Express</li> <li>Worldwide Document Express</li> <li>Worldwide Parcel Express</li> <li>European Community Express</li> </ul>	<ul style="list-style-type: none"> <li>Import Express</li> <li>DHL Europack</li> <li>DHL Europlus*</li> </ul> <p><small>* Eurapid, a predecessor product of Europlus, will continue to be available until completion of customer migration, and only for customer specific needs.</small></p>	<ul style="list-style-type: none"> <li>Euroconnect</li> <li>Euroline</li> <li>Euronet</li> <li>Eurorail</li> <li>Specialties</li> <li>Trade Fairs &amp; Events</li> <li>Customs Services</li> </ul>	<ul style="list-style-type: none"> <li>Air First</li> <li>Air Premier</li> <li>Air Value</li> <li>Part &amp; Full Charter</li> <li>Sea/Air</li> <li>European Plus Service</li> </ul>	<ul style="list-style-type: none"> <li>Less than Container Load</li> <li>Full Container Load</li> <li>Non-Containerised Load</li> </ul>	<ul style="list-style-type: none"> <li>Transport &amp; Logistics Design</li> <li>Project Logistics Management</li> <li>Project Cargo</li> <li>Logistics Monitoring</li> <li>Heavy Load Installations</li> </ul>	<ul style="list-style-type: none"> <li>Interactive</li> <li>Transportation Plus</li> <li>Ocean Cargo Management</li> <li>Logistics Management Services</li> </ul>	<ul style="list-style-type: none"> <li>Supply Chain Management</li> <li>Warehousing</li> <li>Value Added Services</li> <li>Distribution</li> <li>Outsourcing</li> </ul>	<ul style="list-style-type: none"> <li>Fast Moving Consumer Goods (FMCG)</li> <li>Electronics/Telecom</li> <li>Automotive</li> <li>Pharma/Healthcare</li> <li>Textiles/Fashion</li> </ul>	<ul style="list-style-type: none"> <li>Transfer of Staff</li> <li>Infrastructure</li> <li>Financing</li> <li>Business Optimization</li> <li>Supply Chain Integration.</li> </ul>

FIGURE 7.4: PRODUCT PORTFOLIO DHL  
Source: DPWN Factbook 2005

The previous figure on the product portfolio provides an excellent overview of the product range of DHL, starting on the left with its traditional courier business (SameDay) and moving to advanced value added services on the right. It is beyond the scope of this case study to discuss all service offerings in detail. But what the figure hopefully makes clear is that the scope of DHL before its take-over by DPWN was concentrated on the left side of the figure

while the merged activities of the former DHL Worldwide Express organization with Danzas / Air Express International (the service offerings shown on the right side of the above figure) make-up the current DHL.

### 7.3.6 *Organizational Structure DPWN / DHL*

On an aggregate level, the organizational structure of DPWN is quite simple. DPWN consists of four entities, Mail, Express, Logistics and Finance. Of these four entities, DHL comprises two key businesses; Express and Logistics. According to its own website, the company is the largest air freight carrier, the second-largest sea freight carrier and the sixth-largest provider of contract logistics solutions - worldwide (dpwn.de). In 2004, DHL employed 172.000 people worldwide (measured in FTEs) in four sub-businesses: DHL Express, DHL Freight, DHL Danzas Air & Ocean and DHL Solutions. The company shipped over one billion of shipments worldwide in 2004. It transported 2.2 million tons of cargo by air; 1.1 million of TEU by ocean freight and 33.7 million of tons by road haulage (DPWN Investor's Factbook, 2005).

The DHL Express division is the former DHL Worldwide Express company that was acquired in 2002. DHL Freight offers national and international LCL and FCL shipment services by road, rail or intermodal transportation modalities. DHL Danzas Air & Ocean is the forwarding pillar of DHL combining the former Danzas and AEI organizations. According to its website, this sub-business of DHL offers *'customized worldwide logistics solutions for air and sea freight, regardless of size and weight. [DHL] also provide specialist services such as integrated turnkey project forwarding for industry segments and cargo management services such as Customer Program Management'* (dhl.com). DHL Solutions is the logistics value-added service provider of DHL offering supply-chain solutions for end-customers.

### 7.3.7 *Concluding Remarks on Case Study DPWN*

It may be no wonder that the aggressive growth of DPWN has caught attention of regulatory bodies in the EU and US. Cohen (2004) has concluded that the DPWN case interestingly stretches the limits of the (transportation) trade and competition environment. This author concludes that DPWN *appears* to use its monopoly power in reserved services to cross-subsidize its development in other businesses like express delivery services. To stress this presumption, Cohen (2004) states that the mail division of DPWN is responsible for 28% of the company's revenues while it accounts for 72% of the profits in 2001. Simultaneously, 68% of postal revenues come from operations in reserved business areas. In 2001, the EU Competition Directorate concluded an antitrust investigation by deciding that DPWN had to separate its competitive parcel services from its letter monopoly as DPWN had misused its market position through predatory pricing practices in the market for business parcel services (europa.eu.int, IP/00/919).

Unfair market dominance does not simply fade away by liberalization. NERA (cited in Cohen, 2004) has concluded that DPWN most probably will continue to dominate reserved markets after liberalization due to its widespread presence and advanced infrastructure. Matching operational capabilities of DPWN deserves tremendous capital investments that commercial competitors are not likely to be able to take on short notice. Regulatory issues on cross-subsidization and monopoly abuse are not further dealt with here, but it is worth to be aware of their existence as a possible partly explanation of the success of DPWN.

The case study of DPWN in the first place makes clear is that air transport is not seen as a core business of the company. Contrary to airline cargo businesses, usage of transportation modalities is just a means of reaching higher-level (fulfilling needs-based positioning) goals for super integrators. Nowadays, DHL not only offers an integrated air express supply chain to its customers, but is also able to offer a totally integrated transportation, distribution, logistics and financial services portfolio. By having acquired over a hundred companies, DPWN / DHL has positioned itself in the whole spectrum of the business positioning ladder dominating the integrated express and third party logistics market.

What remains an open question is whether this is or will become a success from a financial point of view. Before its attempts to acquire so many companies in the logistics market, DPWN was already named a 'lumbering giant' and becoming even bigger is no guarantee for sustainable business success.

DPWN/DHL has recorded by far the most impressive growth over the past years. This has resulted in a company that is active in many product and geographic markets. Along with DHL, the other formerly classic integrators have also diversified away to cover the complete business positioning ladder. Operating in the right-up quadrant of the business positioning ladder, however, is fundamentally different from offering air express services that is the core-business in the left-down quadrant. These differences are reflected by changing customer relations and commercial distribution. Becoming successful this way deserves an appropriate internal organization with employees that have sufficient knowledge and skills on the new market dynamics while it is necessary that the surrounding economic and regulatory environment does not impede ambitions in this field.

#### 7.4 Concluding Remarks

The Strategic Planning Methodology has been applied in this chapter to a company operating in the airline cargo market and a company active in the integrated express market. In the first case, many expert interviews were held to make-up the case study. In the second case, no interviews were held at all.

It has been shown that both KLM Cargo and DPWN/DHL have made attempts to reposition their business in the last fifteen years. Although KLM Cargo's management team of the '90s was aware of the growing importance of being present in the third party logistics business, the repositioning efforts of KLM Cargo were neutralized around the year 2000 turning the company back to their asset-based business only. An unlearned observer may conclude that nothing has changed at KLM Cargo as the business portfolio of the company has almost remained the same as it was some ten years ago. Business development at KLM Cargo has been 'limited' to the introduction of a time-defined service portfolio and the extension of scale by merging with Air France Cargo. This merger makes the company one of the largest combi carriers, but the scale of operations is not that impressive compared to the leading super integrators. As KLM Cargo sees intermediaries as its most important customers, it consciously operates as a supplier of revenue ton-kilometres to intermediaries and leaves the market leadership to these companies.

DPWN/DHL has become a transportation, distribution and logistics powerhouse. By acquiring numerous logistics companies and merging them with DHL, DPWN has forced the classic integrator to become a super integrator covering both hierarchies / quadrants nowadays being the global market leader in a wide range of transportation and logistics services.

By acquiring other players in the market, DPWN/DHL has migrated its portfolio from predominantly needs-based business to also variety-based business. Some of the absorbed companies usually need intermediaries for their commercial distribution. However, DPWN/DHL has also acquired these intermediaries becoming a subset itself. DHL has become that large that has duplicated the airline cargo market and offers almost all services this market offers in-house. This observation fuels the idea that a comparison between an airline and a super integrator is like comparing a single functionality of the Business Positioning Ladder with a complete subset (the right-up quadrant).

What is asserted here is that KLM Cargo has lost the opportunity to become a market leader in the third party logistics market and that DHL has developed its business so aggressively that it is nowadays the market leader.

## ⑧ DISCUSSION OF THE RESULTS

*After having discussed the state of the air cargo industry in the previous chapters, it is time to focus the attention of this thesis to the central research question: “Based on a Strategic Planning Methodology, is it possible to prove that the Airline Cargo Market is losing the Battle over the Air Cargo Industry from the Integrated Express Market?”*

### 8.1 Epilogue

The previous chapters have unmasked a quite complex competitive air cargo landscape. This paragraph provides a short recap on the sub-questions that have been treated before turning to the main research hypothesis.

The first sub-question was asked to obtain an understanding of the air cargo industry and its business environment. This sub-question was dealt-with in chapter two. As this chapter had an introductory nature, no single conclusion was made except for the general remark that the industry is very diverse and complex. Chapter three outlined the second sub-question on the ‘nature of demand for airline cargo services versus integrated express services’. This chapter clarified some rationales behind demand for these services. Based on demand characteristics, it was concluded that both markets partly overlap and partly operate in their own market domain.

As both chapters two and chapter three did not provide a suitable answer to the main research hypothesis, the first intermezzo concluded that a closer look after the supply characteristics of the airline cargo market and the integrated express market is needed. Determining the existence of competitive rivalry between these markets deserves a body of knowledge of both business streams and their respective structure and market characteristics.

Chapter four and five framed and categorized the complex business reality of the air cargo industry according to characteristics of suppliers. Chapter four structured the airline cargo market while chapter five outlined the integrator express market. The fourth Chapter presented the airline cargo market as a collection of business models and derivatives thereof. The chapter concluded with a presentation of some visions by industry watchers on the state of the airline cargo market. Kadar and Larew argue that the airline cargo business model is failing while Doganis explicitly pays attention to what he calls the ‘long term threat of integrators’. It seems like that the airline cargo business model has some inherent weaknesses that may not prevent customers to opt for a substitute - the integrated express market. The fifth chapter highlighted the characteristics of this ‘substitute’ that itself consists of three subsystems: the courier, classic integrator and super integrator.

Although both markets have been discussed in chapter four and five, the second intermezzo concluded that these discussions were insufficient to demonstrate the existence of competitive rivalry between both markets. This intermezzo concluded that it is necessary to introduce a Strategic Planning Methodology in order to enable a sound qualitative analysis of competition in the air cargo industry which in turn facilitates an adequate response to the main research hypothesis.

The Methodology was introduced in chapter six. It was outlined that this methodology is helpful to frame the complex business reality. The methodology consists of three important sub models, the Business Positioning Ladder, the Market Focusing Model and the Market Positioning Pie. The Ladder maps the direction and scope of strategy development over time. Among others, key terms associated with this Ladder are the functionality, the 5Cs, portfolio migration / system leap and needs-based versus variety-based positioning and some specific characteristics of the two identified quadrants.

The Market Focusing Model maps customer relationship patterns that vary per functionality as this model is an enlargement of a single functionality or group of functionalities in the Ladder. Three important aspects of this model are the intermediary hierarchy and the end-customer hierarchy, the four profiles on each axis and the black hole in the middle. The third model is the Market Positioning Pie. This Pie visualizes the sub-markets a company may operate in, according to their respective product-, distribution- and channel-portfolio's per market. Key terms here are the commodities market, specialized market and customized market.

This methodology is helpful to determine competitive rivalry between markets as it can be applied on different levels of abstraction; not only on a business level, but also on a hierarchy and industry level. The method was applied in chapter seven on two companies that operate in the airline cargo market (KLM Cargo) and the integrated express market (DHL) respectively. A discussion on these case studies follows in paragraph 8.3

### *8.1.1 Airline Cargo Market*

The bare fact that aircraft can carry goods has once unleashed a market for the carriage of goods by air. In the airline cargo market, a number of airline cargo business models have been determined, according to supply characteristics. These are the combi carriers, the all cargo carriers and some special derivatives. These business models can further be divided into sub-models. All these models reflect the degree of services offering in the airline cargo market. In most cases, the business of these airlines is limited to airport-to-airport transport only, except for some road feeder services. Over the past two decennia, airlines have not that clearly positioned their cargo business since in many cases cargo was not considered as

a core business deserving a separate strategic approach. This has ultimately caused a customer-channel-competition confusion as it has not always been clear what services were offered to which customers and what parties can be considered as competitor.

In the airline cargo market, it is likely that managers at cargo transporting airlines consider other airlines as their most important competitor. Such a vision ignores integrators. Interviews for the KLM Cargo case study revealed that a common understanding on the market domain limit lacks. Interviewees differed in opinion on the question whether integrators, intermediaries and airlines operate on the same market or on different markets. Most probably, the battle over the air cargo industry has shifted away from integrators versus airlines to integrators versus intermediaries, especially forwarders. The presumption made here regarding the shift on the competitive battleground is debatable. It is likely that current airline cargo managers do not regret this shift at all or probably even do not agree on the presumption that this shift has taken place.

### *8.1.2 Integrated Express Market*

The rise of global express delivery services has resulted in a second sub-system in the air cargo industry. This market has been divided into three sub-systems: couriers, the classic integrators and the super integrators. This distinction has been made to reflect the change of the companies' business positioning over the past decennium from pure express delivery players into large transportation, distribution and logistics conglomerates, including express delivery services.

By expanding their business scope, integrated express firms have become preferred suppliers of transportation, distribution and logistics services in many markets. By migrating their business portfolio, super integrators have strengthened their already comfortable and leading market position.

The closed-loop, door-to-door business system of integrated express companies essentially is a duplication of functionalities that were already available in the airline cargo supply chain. Apparently, the airline cargo market must have a number of shortcomings that urged integrated express companies to 'duplicate' the airline cargo supply chain. Furthermore, these companies decided to manage and develop the consecutive functionalities in-house.

Integrated Express companies have also developed their business positioning, although their orientation at first was much more solutions oriented and organized, their attention was focused on market share, market penetration, the interest of end-customers and brand management while initially, integrated express companies had not so much assets.

From a marketing point of view, integrators deviate from airlines as integrators are predominantly needs-based or market oriented while airlines are predominantly variety-based or capacity oriented. Partly based on this statement, it may also be suggested that integrators primarily compete with forwarders and not with airlines and that integrators have grown by creating their own market rather than growing on the account of the airline cargo market.

## 8.2 Research Findings

So, the big question remains: is the airline cargo market losing the battle over the air cargo industry from the integrated express market? And if so, what parts are losing more than others? Unfortunately, it is impossible to accept or reject the main hypothesis right away. In line with the complexity of the business, the answer is nuanced and will be outlined in the upcoming sub-paragraphs.

### 8.2.1 *Business Positioning*

It has been shortly pointed out that players in the airline cargo market position their business variety-based, which means they concentrate on delivering a certain service in a broader value chain. Super integrators have broken this tradition and tend to adopt a needs-based approach taking into account the needs of end-customers. Such an approach needs either massive acquisitions or a high degree of coordination and integration among individual market participants. Pursuing a needs-based positioning by acquiring other companies deserves deep pockets like DPWN that spent over a € 10 billion in a relatively short period of time.

Due to the linear progressive nature of a migration, the more right-up a company is positioned on the Business Positioning Ladder, the wider the scope of a company becomes. Nowadays, only super integrators cover all functionalities of this ladder. However, this is relatively new and it is to be seen whether this will give super integrators a sustainable competitive advantage.

It is not necessarily bad to position an airline in the left-down quadrant of the Business Positioning Ladder and to outperform on the chosen functionality. If simply carrying cargo from airport to airport is the core-business of an airline and shareholders are satisfied with the financial performance, airlines seem like having lost nothing at all. It is not necessarily bad to concentrate a business position on one functionality and to excel in that functionality. This research has not demonstrated that Big is Beautiful and that smaller players will irrevocable go bankrupt. Vertical integration is not a recipe for success at any price.

Based on the Business Positioning Ladder, one may conclude that airlines prefer to expand their scale (by mergers and alliances) rather than their scope. It must be stressed here that

super integrators have done both. If airlines consider the exploitation of their air network as their core-business, it would also not really make sense to expand the scope of operations. Partly based on the KLM Cargo case study, one may also wonder whether airlines have the right competences to make a successful value migration and to develop themselves towards value added logistics companies. However, did super integrators have the right competencies to migrate from the right-up towards the left-down quadrant of the Ladder? If these companies are able to successfully migrate, why aren't airlines? Is it more difficult to migrate from the intermediary hierarchy to the end-customer hierarchy than the opposite direction?

### *8.2.2 Customer Relationship Management*

What is important in almost all businesses is the perception of who the customer actually is. It seems like that airline cargo managers are nowadays convinced that intermediaries are their primary customers and that it is not worth the effort (anymore) to approach shippers directly. For integrated express companies, it is part of their daily business to deal with end-customers which might be an advantage for them to directly approach shippers on markets that are usually intermediaries oriented. Doing business with intermediaries troubles airlines' initiatives to respond directly to changing circumstances in the end-customer markets (e.g. changes in business logistics) in an adequate and proactive manner.

An important aspect herein is the level of abstractness. The Market Focusing Model has made clear that competitive rivalry can be analysed on different levels, the operational level, the hierarchical level and the industry level. These different levels may result in different perceptions of the same reality.

On the operational (daily business) level, a certain airline may well be confronted with the competitive power of an integrated express player on certain markets. Although it may take different forms, such a real-life competition between individual actors not necessarily means that 'competition' on a higher level of abstractness (between the intermediary hierarchy and the end-customer hierarchy) has the same intensity or outcome. It may well be observed that companies operating in either hierarchies (or quadrants!) have (made attempts to) develop(ed) themselves right-up or left-down. Up until the present, it seems like that no airline has succeeded in adopting the end-customer hierarchy while companies that traditionally commenced their business in this hierarchy (the integrators) are indeed able to manage operations in the intermediary hierarchy, at least for their own benefit. The ability of integrators to cover two hierarchies provides them with an advantage over the airline cargo market, although integrators are also vulnerable to aliasing and the black hole in the market as well. An analysis of competition on the third (industry) level may culminate in the presumption that the air cargo industry in general has adapted to shortcomings of the

previously dominant business model (the airline cargo market). This adjustment may result in a reconfiguration of the air cargo industry at large.

### 8.2.3 *Commercial Distribution*

Although many airline cargo managers seem like to prefer to believe otherwise, a variety-based positioning is not that pretty from several perspectives. Due to this position, airlines are highly dependent on intermediaries on areas as end-customer development, fare setting and adapting businesses to developments among shippers. Even more, commercially distributing your service via intermediaries does not provide a market leadership position in the broader air transport market as grip is lacking. Also, due to the asset-based nature of variety-based positioning, airlines have lower margins than intermediaries and the integrated express market.

Nevertheless, it seems like that airline cargo managers prefer commercial distribution to happen via intermediaries. It is likely that disintermediation as once pioneered by KLM Cargo will not happen anymore as long as the current market configuration remains. As airlines primarily operate upstream in the air cargo chain, they will be left with a knowledge gap about end-customer needs. Airlines have thus no other choice but to cooperate with intermediaries as best as they can. Even more, it is also likely that many airline cargo businesses are managed with the assumption that they better be the preferred supplier for intermediaries than for shippers.

## 8.3 Case Studies

Two case studies have illustrated business developments in the air cargo industry. As has extensively pointed-out, KLM Cargo has seriously considered repositioning its business in the higher segments of the market. KLM Cargo failed to migrate its portfolio in a sustainable way and nowadays operates in the intermediary hierarchy where it was already positioned some fifteen years ago.

From the perspective of scope, KLM Cargo has only marginally developed its business the past decades. Regrettably, KLM Cargo is not an exception in the airline cargo market. It is unknown to what extent the world's airline cargo managers have earnestly reconsidered their business position - let alone if this consideration has resulted into courses of action. But given the current airline market circumstances, it may be expected that the number of airlines that have really made attempts to reposition their cargo business is small, or all attempts have failed. It is fascinating to notice that other transportation companies like integrated express firms, postal companies, road hauliers, shipping lines and forwarders are able to extend their business portfolio in terms of scope but that most airlines even do not think about it.

Operating in the intermediary hierarchy of the Market Focusing Model, KLM Cargo still depends for its commercial distribution on intermediaries. As most other airlines in the airline cargo market, KLM Cargo's business is characterized by a margin profile that is relatively low; a production profile that tends to be a by-product (of the core business of exploiting the air network); a distribution profile that has hardly any grip on end-customer markets and a service profile with relatively few added value, from a shipper's point of view. Besides these characteristics of the Market Focusing Model, the company also is primarily asset-oriented, process oriented and organized and sensitive to scale economies. The last characteristic is currently a top priority as KLM Cargo has merged its activities with Air France Cargo. This merger primarily aims to become a stronger market player in the left-down quadrant of the Business Positioning Ladder. With regard to the Market Positioning Pie, it is likely that KLM Cargo will concentrate its efforts on the commodities market and the specialized market while trade on the customized market belongs to the end-customer hierarchy or right-up quadrant.

Based on this case study, it would be nonsense to argue that KLM Cargo is losing any kind of battle from an integrator or from the integrated express market in general. It seems like that KLM Cargo was more fighting against itself than against an opponent in a battle. However, this thesis has made clear that the most attractive business is situated in the end-customer hierarchy and since KLM Cargo does not operate in this hierarchy, the better business is left to the integrated express market (and other third party logistics companies) that are able to generate better revenues than feasible in the intermediary hierarchy.

DPWN/DHL has become a transportation, distribution and logistics powerhouse. By acquiring numerous logistics companies and merging them with DHL, DPWN has forced the classic integrator to become a super integrator covering both hierarchies / quadrants nowadays being the global market leader in a wide range of transportation and logistics services. Contrary to KLM Cargo, however, DHL has a needs-based positioning focusing on fulfilling end-customer needs. What also makes a difference is the perception of the core-business which is the exploitation of the air network at airlines, while this is of minor importance at integrated express companies.

It has been outlined in the case study that DHL has made value migrations (from right-up to left-down) nowadays covering all functionalities of the Business Positioning Ladder. Although DHL is active in both hierarchies of the Market Focusing Model and all three markets of the Market Positioning Pie, the company is still vulnerable to aliasing and the black hole in the market.

#### 8.4 Final Concluding Remarks

After all, it is concluded here that although the hypothesis that the *“Based on a Strategic Planning Methodology, is it possible to prove that the Airline Cargo Market is losing the Battle over the Air Cargo Industry from the Integrated Express Market?”* is a thrilling one, it is also a too simplistic assumption to accept it right away.

Along with KLM Cargo, almost all airlines of the airline cargo market operate in the left-down quadrant of the Business Positioning Ladder or the intermediary hierarchy of the Market Focusing Model. Given the characteristics of the variety based position in this quadrant and hierarchy, airlines are confronted with a number of limits to their business.

Airlines have over the past not really clarified what their (desired) cargo business position is. Based on the Business Positioning Ladder, no airline has managed to be more than the Air Network functionality. In this functionality, airlines primarily focus their attention on their capacity, on their processes and on scale economies. Within this quadrant, the risk/reward profile varies. Due to the unclear positioning of airlines, a diffusion on the customer, competitor and marketing channel has occurred. Diffuse is whether the customer belongs to the intermediary hierarchy or the end-customer hierarchy (the forwarder or the shipper). Diffuse is also who the competitor actually is. Are airlines only competing with other airlines for their business? Or do they also compete with intermediaries and...integrators?

It seems like that integrators have not really considered themselves as competitors of airlines. Integrators have used the air transport system for the fulfilment of their operations when necessary. Apparently, the airline cargo market was considered as unsuitable among integrators for the execution of their business as they have built a business system that ‘duplicates’ the airline cargo chain. It is unlikely that integrators have duplicated an entire transport chain ‘for fun’. Integrators must have noticed one or more essential shortcomings that urged them to do so. These shortcomings are probably the weaknesses and diffusion of the airline cargo market as described earlier.

The ‘duplication’ of the airline cargo chain and the adjustment of integrators to perceived shortcomings may ultimately result in a reconfiguration of the air cargo industry. On a company level, an airline and an integrator may compete on a certain market for cargo business. But since no airline bankruptcies are attributed to the existence of the integrated express market, this kind of competition is not that aggressive. Furthermore, as long as aircraft have cargo carrying capacity, it may be expected that airlines will offer this capacity to shipping markets, if necessary marginally priced. The regulatory framework governing air transport impedes direct competition between airlines (especially those labelled ‘flag’ carriers) and integrators.

But after all, this thesis is not about competition on a company level, but on industry level. As the integrated express market has captured and assured the business in the more attractive end-customer hierarchy and right-up quadrant, it may well be concluded that these companies have more favourable market position than airlines have. Airlines have become 'locked-in' as supplier of cargo carrying capacity to intermediaries and integrators. This will never enable them to become a leader in the transportation and (third party) logistics market. By not migrating their business scope, airlines have lost the opportunity to get involved in the more rewarding market for third party logistics.

## 8.5 Reflections & Implications

After having conducted this research project, a number of reflections come to mind:

One may complain that this thesis does not elaborate on existing streams of academic research. This may be perceived as a weakness. However, the availability of useful research in the field of transport economics on competition and strategy issues is somewhat scarce. An alternative would have been to ground the thesis on strategy and competition research with an application to air cargo. That approach would certainly have affected the transport economics nature of the thesis. By intentionally consulting other areas of research has avoided a too narrow focus.

An inherent weakness in the Strategic Planning Methodology is the certain degree of subjectivity when applying the method. This negatively impacts the replication criterion that every academic paper actually should meet. However, subjectivity is also the case in more popular management models used by students and researchers alike to map the competitive dynamics of a certain market.

A related weakness of this methodology is that an application guideline lacks. This became apparent during the empirical process of writing the case studies. One of the case studies was based on interviews while the second one was only based on publicly available materials. This difference in approach between both case-studies may probably negatively affect the results. However, it was nearly impossible to interview key decision makers at DPWN (as they primarily live abroad) while sufficient documents were available on the business development of DPWN. Contrary, documents on the development of KLM Cargo were relatively scarce while key people were much easier available.

The outcomes of this research project may be debatable. That is not necessarily bad. The Strategic Planning Methodology is 'just' a way of framing business reality and it may well be that others use different frames resulting in different perceptions of complex business reality.

When it comes to theoretical implications, this thesis has shown that examining air cargo transport markets from a strategic marketing perspective of an individual market participant may certainly make sense. General developments in markets are highly related to the way buyers and suppliers evolve. This thesis has made clear that developments in demand primarily spring from advancements in business logistics while developments at the supply side are dependent on the vision and ambitions of managers to develop their business as such that it still meets demand of customers.

## 8.6 Suggestions for Further Research

What the business portfolio of super integrators has made clear, is that these companies have migrated into a broader transportation, distribution and logistics market. It would be interesting to examine how this market is configured and what the competitive dynamics are as not only super integrators have entered this market, but also many other companies like public postal operators, forwarders and some large road hauliers.

Another suggestion is to examine the expected impact of the changing aero political climate in the airline business. Does the regulatory framework governing civil aviation impede a fair and equal competition between airlines and integrators? Should a further dismantled regulatory environment have positive effects on the competitive power of the airline cargo market? And what may be the impact of more strict operational security procedures that might be promulgated by the US government in response to their 'war on terror'?

Furthermore, it would be interesting to find out whether expanding the business in terms of scale (through horizontal alliances) really makes more economic sense than business development by expanding the scope. Would it make sense to vertically integrate with other chain participants to cope with the competitive rivalry of the integrated express market?

A quantitative analysis on the competitive battle between the airline cargo market and the integrated express market would be another suggestion for further research. A deep-reaching analysis of air cargo transportation and financial statistics may uncover actual competitive strengths and weaknesses of both markets if it is carried-out on a city-pair level.

To conclude, the Strategic Planning Methodology deserves a stronger academic backing. In this thesis, this methodology has only been used as a tool to better understand developments in the air cargo industry. Although the methodology has a strong empirical origin, a scientific validation lacks. A thorough analysis by an academic expert on the field of strategic marketing management on the strengths and weaknesses of the methodology would make sense.

# BIBLIOGRAPHY

## Articles, Papers & Reports

- ACHARJEE, P., K. LUMSDEN, (1999), Airfreight from a Process Concept, *paper presented at the annual conference of the Air Transport Research Society*, Hong Kong, 1999
- AIRLINE BUSINESS, (1993-1998), World Airline Top 100, [www.rati.com](http://www.rati.com)
- AIR TRANSPORT ACTION GROUP, (2000), The Economic Benefits of Air Transport, Geneva, Switzerland
- BAARSMA, B., J. THEEUWES, (2002), De afbakening van de Relevante Markt, *Stichting voor Economisch Onderzoek der Universiteit van Amsterdam*, Amsterdam, the Netherlands
- BAUM, H., A. HENN, (2004), Produktivitäts- und Wachstumseffekte der Kurier-, Express- und Paketdienste für die arbeitsteilige Wirtschaft, *Institut für Verkehrswissenschaft, Universität zu Köln*, Germany
- BJELICIC, B., (2001), The Global Air Cargo Industry, *Deutsche VerkehrsBank AG (DVB Group)*
- BOEING COMPANY, (2003), Freighter Reference Guide, Seattle, USA
- BOEING COMPANY, (2004), World Air Cargo Forecast, Seattle, USA
- BOUW, P., (1997), Completing the Picture, Cargovision, *KLM Cargo*, Schiphol, Netherlands
- BOWEN, J.T., T.R. LEINBACH, (2003), Air Cargo Services in Asian Industrialising Economies: Electronics Manufacturers and the Strategic use of Advanced Producer Services, *Papers in Regional Science*
- BOWEN, J.T., T.R. LEINBACH, (2004), Market Concentration in the Air Freight Forwarding Industry, *Tijdschrift voor Economische en Sociale Geografie*, Volume 95, Number 2, April 2004, pp. 174-188(15)
- BRIDGES, G., (2000), Air Cargo in the 21<sup>st</sup> Century, [tiaca.org](http://tiaca.org)
- BUTLER, G.F., M.R. KELLER, (1998), Adapting to the Rigors and Challenges of Regulatory Change, *in: Handbook of Airline Marketing, McGraw-Hill*, New-York, USA
- BUTTON, K., R. STOUGH, (2000), Air Transport Networks: Theory and Policy Implications, *Edward Elgar*, Cheltenham, United Kingdom
- CAMPBELL, J.I., (2001), The Rise of Global Delivery Services, *JCampbell Press*, Washington, USA
- CARBONE, V., M.A. STONE, (2005), Growth and Relational Strategies used by the European Logistics Service Providers: Rationale and Outcomes, *Transportation Research Part E*, E41, 495-510
- CLANCY, B. AND D. HOPPIN, (1998), World Air Cargo Forecast, *Air Cargo World*
- CLANCY, B. AND D. HOPPIN, (2000), Post-Crisis Management, World Air Cargo Forecast, *Air Cargo World*
- CLANCY, B. AND D. HOPPIN, (2001), Converging on Air Freight, World Air Cargo Forecast, *Air Cargo World*
- CLANCY, B. AND D. HOPPIN, (2002), Dawn of Recovery? World Air Cargo Forecast, *Air Cargo World*, May 2002, p. 22-56
- Clancy, B. and D. Hoppin, (2004), After the Storm, World Air Cargo Forecast, *Air Cargo World*
- COHEN, R.B., (2004), Trade and Competition Issues Raised by the Liberalization of State-Owned Monopolies, *Economic Strategy Institute*, Washington, DC, USA

- CONWAY, P., (2003), Selective Customers, *Airlines Business*, March 2003
- CONWAY, P., (2004), Diverging Paths, *Airline Business*, November 2004
- CONWAY, P., (2005), How British Airways got serious about cargo, *Payload Asia*, September 2005
- DE BIJL, P., E. VAN DAMME, P. LAROUCHE, (2005), Light is Right - Competition and Access Regulation in an Open Postal Sector, *Tilburg Law and Economic Centre*, University of Tilburg, Netherlands
- DfT Department for Transport, (2000), UK Air Freight Study Report, UK
- DPWN, (2005), Investor's Factbook - Deutsche Post World Net's Guide for Institutional Investors and Financial Analysts, Bonn, Germany
- EUROPEAN COMMISSION, (2003), Europa op de tweesprong: de behoefte aan duurzaam vervoer, *Bureau voor officiële publicaties der Europese Gemeenschappen*, Luxemburg
- FORSTER, P.W., A.C. REGAN, (2001), Electronic Integration in the Air Cargo Industry: an Information Processing Model of On-Time Performance, *Transportation Journal*, 40, 4
- GRIN, B., (1990), Ontwikkelingen in de Luchtvracht, *Tijdschrift voor Vervoerswetenschap*, 26/3 294-308, Rijswijk, Netherlands
- GRIN, B., (1995) Made to Measure, *Cargovision*, KLM Cargo, Schiphol, Netherlands
- GRIN, B., (1998), Developments in Air Cargo, in: *Handbook of Airline Marketing*, McGraw-Hill, New-York, USA
- HERRMANN, N., M. MÜLLER, A. CRUX, (1998), Pricing and Revenue Management Can Reshape Your Competitive Position in Today's Air Cargo Business, in: *Handbook of Airline Marketing*, Aviation Week Group, USA
- HERRMANN, N., D. TREFZGER, A. CRUX, (1998), Challenges for Tomorrow's Successful Air Freight Providers: Nothing is as Permanent as Change, in: *Handbook of Airline Marketing*, Aviation Week Group, USA
- HEUSENER, K., G. VON WICHERT, (2001), Profit Pressure in the Cargo Industry, [simon-kucher.com](http://simon-kucher.com)
- Hoppin, D., (2005), The Techniques that Airports need to Employ to Attract Cargo Service are very Different to Those Used to Woo Passenger Carriers, *Airline Business*, September 2005
- ICAO INTERNATIONAL CIVIL AVIATION ORGANISATION, (2004), Key trends Highlight Enduring Success of the World Air Transport Industry, *ICAO Journal*, Volume 59, No. 8, Montréal, Canada
- JONES, R., (2000), Competitive Environment Review, *DHL*, Brussels, Belgium
- JUNNE, G., (1996), Dan Liever de Lucht in? Toekomstperspectieven van luchttransport voor vier Nederlandse Sectoren, Universiteit van Amsterdam, Netherlands
- KADAR, M., J. LAREW, (2003), Securing the Future of Air Cargo, Mercer on Travel and Transport
- KAHN, A.E., (2005), Airline Deregulation, *The Concise Encyclopaedia of Economics*, [econlib.org/library/Enc/AirlineDeregulation.html](http://econlib.org/library/Enc/AirlineDeregulation.html)
- KASARDA, J.D., J. GREEN, D. SULLIVAN, Y. SU, (2004), Air Cargo: Engine of Economic Development, *Centre for Air Commerce*, The University of North Carolina at Chapel Hill, USA
- KASILINGAM, R.G., (1996), Air Cargo Revenue Management: Characteristics and Complexities, *European Journal of Operational Research*, 36-44
- KLM ROYAL DUTCH AIRLINES, (1990/1991 UNTIL 2004/2005), Annual Reports, Amstelveen, Netherlands
- KPMG, (1997), Manifest Lucht voor Vracht, Schiphol, Netherlands

- LEUNG, L.C., W. CHEUNG, (2000), An Integrated Decision Methodology for Designing and Operating an Air Express Courier's Distribution Network, *Decision Sciences*, Winter 2000, 31, 1
- LINDSTADT, H., B. FAUSER, (2004), Separation or integration? Can Network Carriers Create Distinct Business Streams on One Integrated Production Platform?, *Journal of Air Transport Management*, 10, 23-31
- LOBO, I., M. ZAIRI, (1999), Competitive Benchmarking in the Air Cargo Industry, *Benchmarking*, vol. 6, issue 2
- MEINCKE, P.A., (2005), Approach to Different Air Cargo Market Analyses in Europe, *Paper Presented at the 9<sup>th</sup> Annual World Conference of the Air Transport Research Society*, Rio de Janeiro, Brazil
- MICCO A., T. SEREBRISKY, (2004), Infrastructure, Competition Regimes, and Air Transport Costs: Cross-Country Evidence, No 3355, *Policy Research Working Paper Series*, Worldbank, Washington, USA
- OECD ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, (2000), Workshop on Principles of the Liberalisation of Air Cargo Transportation, Paris, France
- OECD ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, (2002), Liberalisation of Air Cargo Transport, Paris, France
- PAI, S-W, D. TREFZGER, (1998), Service Recovery in the Air Cargo Business: Action instead of Reaction, *in: Handbook of Airline Marketing*, Aviation Week Group, USA
- PERSSON, G., H. VIRUM, (2001), Growth Strategies for Logistics Service Providers: a Case Study, *International Journal of Logistics Management*, Volume 12, no 1
- PORTER, M.E., (1996), What is Strategy? *Harvard Business Review*, Volume 74, No. 6
- REYNOLDS-FEIGHAN, A.J., (2001), Air-freight Logistics, *in: Handbook of Logistics and Supply-Chain Management*, Elsevier Science, Oxford, UK
- RIET, J. VAN, C.J. RUIJGROK, (1996), Expressevervoer in Europa: Lessen voor Nederland, *Tijdschrift Vervoerswetenschap 3/96*, 249-263, Rijswijk, Netherlands
- ROOS, H.B., (2000) The concept of the Customer Order Commercial Decoupling (COCDP) in Logistics Management; a case study approach, Erasmus Universiteit Rotterdam, Netherlands
- SAGE, D., (2001) Express Delivery, *in: Handbook of Logistics and Supply-Chain Management*, Elsevier Science, Oxford, UK
- SHIELDS, M., (1998), The Changing Cargo Business, *in: Handbook of Airline Marketing*, Aviation Week Group, USA
- STRIKWERDA, J., D. RIJNDERS, (2004), Machiavelli in the European Postal Market - the Effects of Asymmetric Liberalization, *Nolan Norton Institute*, de Meern, Netherlands
- TANNER OKUN, D., J.A. HILLMAN, M.E. MILLER, S. KOPLAN, C.R. LANE, D.R. PEARSON, (2004), Express Delivery Services: Competitive Conditions Facing U.S.-based Firms in Foreign Markets, Investigation No. 332-456, *United States International Trade Commission*

- TAYLOR, M., A. HALLSWORTH, (2000), Power Relations and Market Transformation in the Transport Sector: the Example of the Courier Services Industry, *Journal of Transport Geography*, 8, 237-247
- TSRB TRANSPORTATION RESEARCH BOARD, (1999), Entry and Competition in the U.S. Airline Industry: Issues and Opportunities, *National Academy of Sciences*, Washington D.C., USA
- UNICONSULT UNIVERSAL TRANSPORT CONSULTING GMBH, (2005), Study on National Air Cargo Market Forecast, Hamburg Germany
- UNIVERSAL POSTAL UNION, (2002), Acquisitions, Mergers and Strategic Alliances - Current Trends and Directions in the Parcel, Courier and Postal Industries, Berne, Switzerland
- VERBEKE, A., C. MACHARIS, R. S'JEGERS, M. DOOMS, (2004), Economische Impactstudie van de Uitbreiding van de Hubactiviteiten van het Koeriersbedrijf DHL op de Luchthaven van Zaventem, *Vrije Universiteit Brussel*, Belgium
- YERGIN, D., R.H.K. VIETOR, P.C. EVANS, (2000), Fettered Flight: Globalization and the Airline Industry, *Massachusetts Institute of Technology*, Massachusetts, USA
- ZHANG, A., Y. ZHANG, (2002), Issues on Liberalization of Air Cargo Services in International Aviation, *Journal of Air Transport Management*, 8, 275-287
- ZHANG, A., Y. ZHANG, (2002), A Model of Air Cargo Liberalization: Passenger versus All-Cargo Carriers, *Transportation Research Part E*, 38, 175-191

## Books

- DOGANIS, R., (1998), Flying Off Course - Economics of International Airlines, *Routledge*, London, UK
- DOGANIS, R., (2001), The Airline Business in the 21<sup>st</sup> Century, *Routledge*, London, UK
- DOGANIS, R., (2002), Flying Off Course - Economics of International Airlines, *Routledge*, London, UK
- GOOR, A.R. VAN, M.J. PLOOS VAN AMSTEL, W. PLOOS VAN AMSTEL, (1998), Fysieke Distributie: Denken in Toegevoegde Waarde, *Educatieve Partners Nederland*, Houten, Netherlands
- HOLLOWAY, S., (2003), Straight and Level: Practical Airline Economics, *Ashgate*, Aldershot, UK
- JOHNSON, G., K. SCHOLLES, (2002), Exploring Corporate Strategy, Prentice Hall, Harlow, England
- KLEYMANN, B., H. SERISTO, (2004), Managing Strategic Airline Alliances, Ashgate, Aldershot, UK
- NIJSSEN, E.J., R.T. FRAMBACH, (2000), Creating Customer Value through Strategic Marketing Planning - a Management Approach, *Kluwer Academic Publishers*, Amsterdam, Netherlands
- O'CONNOR, W.E., (2001), An Introduction to Airline Economics, *Praeger*, Westport, USA
- OUM, T.H., C. YU, (1998), Winning Airlines - Productivity and Cost Competitiveness of the World's Major Airlines, *Kluwer Academic Publishers*, Norwell, USA
- SHAW, S., (2004), Airline Marketing and Management - fifth edition, *Ashgate*, Aldershot, UK
- SMITH, P.S., (1974), Air Freight: Operations, Marketing and Economics, *Faber and Faber Limited*, London, UK
- TANEJA, N.K., (2004), Simpli-Flying, *Ashgate*, Aldershot, UK
- VELDE, M.E.G. VAN DER, P.G.W. JANSEN, I.A. TELTING, (2000), Bedrijfswetenschappelijk onderzoek, van probleemstelling tot presentatie, Baarn, Netherlands
- WIT, J.G., H.A. VAN GENT, (2001), Economie en Transport, *Uitgeverij Lemma*, Utrecht, Netherlands

## Presentations

- BERG, D. VAN DEN, (2005), European Air Cargo Perspectives, *Presentation held at the 30<sup>th</sup> Annual FAA Aviation Forecast Conference*, Washington D.C., USA
- ESKEW, M., (2002), [transcript of a speech], *International Aviation Club*, Washington DC, USA
- HAMLIN, G., (2004), We Have Finally Turned the Corner, *MergeGlobal Presentation at TIACA Annual General Meeting*, Johannesburg, South Africa
- MULDERS, J., (2004), What is Putting the Express Industry at Risk? *Presentation of the European Express Association*, Brussels, Belgium

## Theses

- BONCINELLI, S., (2000), Cyclical patterns in the Airline Industry An analysis of long-waves and business cycles' behavior from 1950 until present time, *Doctoraalscriptie Universiteit van Amsterdam*, Netherlands
- EFSTATHIOU, E., N. ANDERSON, (2000), The Swedish Air Freight Industry - a Complete Description of the Air Freight Industry with Specific Relevance to Sweden and Recommendation supporting a Process that will Assist the Re-engineering of the Traditional Air Cargo Segment of the Industry, *Master Thesis Logistics and Transport Management*, Göteborg University Graduate Business School, Sweden.
- FENNES, R.J., (1997), International Air Cargo Transport Services: Economic Regulation and Policy, *dissertation*, Leyden University, Netherlands
- HAMOEN, F.A.M., (1997), Combination Carriers and a Dedicated Air Cargo Hub and Spoke Network, *tiaca.org*
- MIEDEMA, L.J., (1996), De Positie van de Luchtvrachtexpediteur: Bedreiging van Directe Onderhandeling tussen Luchtvaartmaatschappij en Verlader, *Doctoraalscriptie, Universiteit van Amsterdam*, Netherlands
- OTTEN, H., (1996), International Air Express: een Concurrentie Analyse, *Doctoraalscriptie, Universiteit van Amsterdam*, Netherlands
- VRIES, J.W.M. DE, (1997), De Slag om het Middensegment van de Luchtvracht, *Doctoraalscriptie Universiteit van Amsterdam*, Netherlands

## Websites

(all websites accessed in 2005)

[www.aircargoworld.com](http://www.aircargoworld.com)

<http://europa.eu.int>

[www.europeanshippers.com](http://www.europeanshippers.com)

[www.econlib.org/library/Enc/AirlineDeregulation.html](http://www.econlib.org/library/Enc/AirlineDeregulation.html)

[www.fedex.com](http://www.fedex.com)

[www.inboundlogistics.com/](http://www.inboundlogistics.com/)

[www.dhl.com](http://www.dhl.com)

[www.dpwn.de](http://www.dpwn.de)

[www.klmcargo.com](http://www.klmcargo.com)

[www.mergeglobal.com/](http://www.mergeglobal.com/)

[www.shareholder.com/ups/downloads/factsheet.pdf](http://www.shareholder.com/ups/downloads/factsheet.pdf)

[www.simon-kucher.com](http://www.simon-kucher.com)

[www.tiaca.org](http://www.tiaca.org)

[www.tnt.com](http://www.tnt.com)

[www.ups.com](http://www.ups.com)

[www.wikipedia.org](http://www.wikipedia.org)

## NEDERLANDSE SAMENVATTING (SUMMARY IN DUTCH)

Deze doctoraalscriptie onderzoekt concurrentie in de luchtvracht industrie. Op basis van aanbod karakteristieken wordt verondersteld wordt dat deze industrie bestaat uit twee sub-systemen, namelijk de luchtvracht markt en de markt voor express diensten. De centrale onderzoeksvraag van deze scriptie luidt: "is het mogelijk om - met behulp van een strategische planning methodologie - aan te tonen dat de luchtvracht markt de slag om de luchtvracht industrie aan het verliezen is van de markt voor express diensten?"

De luchtvracht markt wordt vaak aangeduid als de traditionele luchtvracht keten. Deze keten bestaat uit opeenvolgende partijen die gezamenlijk verantwoordelijk zijn voor het vervoer van goederen door de lucht. Deze scriptie concentreert zich op één van deze ketenpartijen, namelijk de luchtvaartmaatschappij. De markt voor express diensten bestaat ongeveer dertig jaar en bestaat uit een klein aantal aanbieders die snelle deur-naar-deur vervoersdiensten aanbieden van documenten en goederen. Deze dienstverleners bieden alle ketenactiviteiten zelf aan, inclusief het luchtvervoer.

Als onderdeel van de geformuleerde onderzoeksvraag is de strategische planning methodologie toegelicht en toegepast. Deze methodologie behandelt de marktpositie van een bedrijf alsmede de wijze waarop de organisatie haar klantrelatie en commerciële distributie vormgeeft. Volgens deze methodologie worden in de meest aantrekkelijke marktpositie diensten aangeboden met een toegevoegde waarde en een hoge marge. In deze positie heeft het bedrijf een sterke grip heeft op de doelmarkt. Bedrijven voor wie deze karakteristieken gelden doen doorgaans zaken met de eindklant terwijl bedrijven die minder geavanceerde diensten aanbieden vaak meer productie georiënteerd zijn.

Geconcludeerd wordt dat luchtvaartmaatschappijen overwegend 'variety-based' gepositioneerd zijn. Door deze positionering is de aandacht van deze bedrijven gericht op het aanbieden van een enkele dienst in de luchtvrachtketen. De expresse markt heeft met deze traditie gebroken door zich 'needs-based' te positioneren, rekening houdend met wensen van de eind-klant. De luchtvracht markt is afhankelijk van intermediairs op het gebied van markt ontwikkeling en het vaststellen van prijzen. Commerciële distributie die verloopt via tussenpersonen geeft luchtvaartmaatschappijen geen leiderschap in de luchtvracht industrie. Tot slot wordt aangetoond dat luchtvaartmaatschappijen die 'upstream' in de markt actief zijn niet de marges kunnen behalen die haalbaar zijn in de eindklant hiërarchie van de markt.

In het verleden hebben luchtvaartmaatschappijen niet echt duidelijk gemaakt wat hun (gewenste) markt positie is voor wat betreft de vrachtactiviteiten. Gebaseerd op de Business Positioning Ladder kan worden gesteld dat geen luchtvaartmaatschappij een hogere functionaliteit heeft kunnen

bereiken dan die van een 'Air Network'. In deze functionaliteit richten luchtvaartmaatschappijen zich vooral op hun capaciteit, processen en het behalen van schaal voordelen. In deze markt is het risico / opbrengsten profiel stabiel maar laag. Door de onduidelijke positionering is tevens onduidelijkheid ontstaan over wie de klant en de concurrent van luchtvaartmaatschappij is. Onduidelijk voor luchtvaartmaatschappijen kan zijn of de klant behoort tot de intermediaire hiërarchie of the eindklant hiërarchie (de expediteur respectievelijk de verlader). Onduidelijkheid kan dus ook betrekking hebben op de concurrentie. Wordt alleen geconcurrereerd met andere luchtvaartmaatschappijen of ook met intermediairs of zelfs met...integrators?

Het is waarschijnlijk dat integrators zichzelf niet beschouwen als concurrenten van luchtvaartmaatschappijen. Integrators gebruiken de luchtvracht markt voor de uitvoering van hun eigen operaties waar dat nodig is. De luchtvracht markt is echter blijkbaar ongeschikt voor integrators om hun gehele business uit te voeren aangezien integrators de luchtvracht keten feitelijk hebben nagebootst. Aangezien het aannemelijk is dat dit niet redeloos gebeurt is, zullen integrators hebben opgemerkt dat de luchtvracht markt een aantal tekortkomingen kent. Deze tekortkomingen hebben betrekking op de zwakten en onduidelijkheid van de luchtvracht markt.

In deze scriptie is betoogd dat een belangrijk aspect van concurrentie analyse het abstractieniveau is. Een concurrentie analyse kan worden gedaan op bedrijfsniveau, hiërarchie niveau en industriële niveau. Op bedrijfsniveau kan een individuele luchtvaartmaatschappij op een bepaalde route met een integrator concurreren om lading. Een dergelijke situatie leidt echter niet noodzakelijkerwijs ook tot concurrentie op een hoger abstractieniveau. Met name de case studies hebben laten zien dat - in termen van de Strategische Planning Methodologie - luchtvaartmaatschappijen nog steeds kunnen worden beschouwd als een enkele functionaliteit terwijl integrators tegenwoordig een complete hiërarchie bestrijken. Het vergelijken van een luchtvaartmaatschappij met een integrator is dus enigszins scheef omdat hiermee feitelijk een individueel bedrijf met een complete hiërarchie wordt vergeleken. De 'duplicering' van de luchtvracht keten door integrators en de aanpassing van integrators aan opgemerkte tekortkomingen kan uiteindelijk leiden tot een reconfiguratie van de luchtvracht industrie.

Aangezien de markt voor express diensten een marktpositie heeft ingenomen in de attractieve eindklant hiërarchie en het rechter-boven kwadrant kan worden geconcludeerd dat bedrijven in deze markt een aantrekkelijkere marktpositie hebben dan luchtvaartmaatschappijen. De laatst genoemde bedrijven zitten 'vast' als leverancier van capaciteit aan intermediairs en integrators. Zolang vliegtuigen vrachtcapaciteit hebben mag worden verwacht dat luchtvaartmaatschappijen deze capaciteit ook zullen aanbieden, desnoods tegen marginale opbrengsten. Dit zal luchtvaartmaatschappijen echter niet in staat stellen om een leidinggevende positie te bemachtigen in de markt voor transport en logistieke diensten. Door hun scope niet te verruimen hebben luchtvaartmaatschappijen de kans verloren om actief te worden in deze aantrekkelijkere markt.

# CURRICULUM VITAE

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## Computer skills:

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President of the Board: October 2002 - April 2004  
Editor-in-Chief Airlines Magazine as of April 2002 → [www.aerlines.nl](http://www.aerlines.nl)

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