Key Factors Contributing to Management Strategy Development at Air Cargo Carriers

The air cargo industry can nowadays be judged as a mature industry, where strategy is being drafted far beyond the basic entrepreneurial framework in which an emerging industry tends to operate. This article deals with the key factors contributing to management strategy development at air cargo operators. The objectives of the management of these air cargo operators are being discussed and analyzed. These objectives can be extremely diverse, and have different mixes of priorities over time. The management objectives determine the key drivers for the management strategy development. The management objectives are on their turn strongly influenced by the industrial environment created by the key drivers and trends of the air cargo industry. Part of this article focuses on the influence of the key drivers and trends of the air cargo industry on management strategy development and analyzes the key drivers of the management’s strategic thinking within the air cargo industry. These key drivers are being grouped in three main strategic areas: product strategy, market strategy and network strategy, each with their own driving factors. The final part presents and compares a typology of two extreme (‘low cost’ versus ‘full service’ operator) air cargo operators’ management strategies.

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Introduction

Air cargo is one of the major means by which the globalized world moves its valuable consumption goods and manufacturing components. Through its role in the supply chain, it facilitates worldwide economies and their international trade. It has also proven to be an effective way of connecting mainly Asian labor with Western European and North American consumption markets.

With time-definite international transactions in an increasingly globalized and complex supply chain, enhanced production flexibility and speed characterizing much of the new economy, air cargo will undoubtedly play an increasingly vital role in the global economy. The last decades, global export growth has consistently outpaced production growth, global air freight growth has outpaced GDP growth, despite recessions and other setbacks to air transport (the outbreaks of the Asian and Russian currency crisis, SARS, the events following the 9/11 terrorist attack, the recent monetary crisis and worldwide recession …).

The global air cargo industry represented in 2008 about 87 billion USD in direct revenue (ACMG, 2009) and substantially more in related supply chain services. Therefore, this industry can nowadays be judged as a mature industry, where strategy is being drafted far beyond the basic entrepreneurial framework in which an emerging industry tends to operate.
A distinct feature of the air cargo industry is that its business model differs significantly from the air passenger business model. However, these models are often mixed in one single airline entity as about half of the world’s air cargo is moved in the belly-hold of passenger aircraft. Therefore, the network planning and operations for half the capacity are dictated by demands of the passenger market (Kadar and Larew, 2004, p. 3-9). A look at the top 10 of FTK performed in international and domestic markets (IATA, 2010) shows that number 1 and 2 positions are occupied by integrators (Fed Ex and UPS). The other positions are all but one taken by combination (passenger and cargo) carriers. On position 10 Cargolux as the only full-cargo airline is positioned. This article discusses the key factors contributing to management strategy development at air cargo operators, encompassing both belly-hold and full freighter cargo operators (or a combination of these). The integrators have been excluded of the scope of this article.

In a first part the objectives of the management of these air cargo operators are being discussed and analyzed. As the figure above illustrates, the management’s objectives determine the key drivers for the management strategy development.

These management objectives are on their turn strongly influenced by the industrial environment created by the key drivers and trends of the air cargo industry. The second part of this article deals with these key drivers and trends.

The third part of this article analyzes the key drivers of the current strategic thinking within the air cargo industry. These key drivers are being grouped in three main strategic areas: product strategy, market strategy and network strategy, each with their own driving factors and influencing variables.

A fourth, final part presents and compares a typology of two opposing, theoretical (‘low cost’ versus ‘full service’ operator) air cargo operators’ management strategies.

**Management’s Objectives**

The objectives of the management can be extremely diverse, and have different mixes of priorities over time. A non-exhaustive list of possible management objectives is given below:

- Maximize one or more stake holders’ objectives
- Minimize the share holders’ value
- Minimize one or more stake holders’ objectives
- Maximize the company’s cash-flow/net profit
- Maximize the company’s market share
- Maximize the share holders’ value
- Maintain social peace with the trade unions
- Stimulate the regional economic development
- Enhance the regional employment
- Enhance the manager’s own personal (power) position
- Enhance the manager’s political influence
- Maximize the company’s market share
- Maximize the company’s profit
- Maximize the company’s cash-flow/net profit
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The large number of stake holders involved in an air transport company (share holders, employees, politics, airports, trade unions, forwarders, handlers, environmental groups, competitors, …), each with their own objectives and agenda, is an indication of the complexity involved in establishing the objectives by the company’s management.

Moreover, management objectives depend in part upon the extent to which management is directly or indirectly subjected to external influences or control. A compromise needs to be sought between the priorities of the various stake holders involved. As the relative strength of the various players changes in the course of time, so too may the objectives of the management. A striking example of this is the establishment of strategic alliances, both horizontally and vertically, in a relatively short space of time. (Suykens and Van de Voorde, 1998, p. 253).

Therefore, keeping this delicate balance in objectives is one of the major challenges for the management of a company. Often salary, bonuses, share options or other performance related pay schemes are dependent on the satisfactory outcome of pre-determined objectives. As these objectives and related pay schemes need to be approved by the share holders of the company, the self steering authority of the management to set their own objectives, as a compromise between the priorities of the different stake holders, is a key factor.

A clear set of management objectives, supported and agreed by the most influential stakeholders, is mandatory before establishing a company’s management strategy. The next parts of this article elaborate further on how such a strategy is being drafted and how this is being influenced by the key drivers and trends of the air cargo industry.

**Air Cargo industry Key Drivers and Trends**

A good understanding of the industry key drivers and trends in the air cargo industry helps to evaluate the impact on management strategy development. A number of these key drivers and trends in the air cargo industry and environment, such as the GDP growth, low fuel prices, the rise of express services and the increasing usage of e-commerce are further being explained below.

A first driver is GDP or trade volume growth. As general freight transport is the result of economic activity, traditionally the world demand for freight transport is related to world GDP. Significant research has been performed on the relation between the growth of air freight and GDP growth. Recent research by Kupfer et al. (Kupfer, Meersman, Ongkema and Van de Voorde, 2008, p. 12) demonstrated that in international traffic where air cargo consists mainly of high value goods, the evolution of world air freight can better be explained by an indicator for world international trade in high value goods. The elasticity of air freight with respect to...
merchandise exports is not significantly different from 1 neither in the long run equilibrium relation, nor in the short run adjustment. So a one percent change in world merchandise exports will result in a one percent change in air freight. The forecast GDP and merchandise volume growth will have an obvious knock-on effect on air cargo volume and on capacity management in the short term, and fleet management in the long term. Moreover, the continued and high projected GDP growth (through export and import of merchandise) of Asian countries will be a main driver for intra-Asia and Asia European/North American trade flows in the present and near future.

Another key driver for the growth of air cargo is the globalization of trade and the subsequent need for increasingly complex supply chains (Air Cargo Management Group, 2006, p. 22). The rise of global and regional trade agreements during the last decade (WTO, NAFTA, Mercosur, ASEAN, … and the signature of ‘open skies agreements’ had a beneficial spin-off effect on cargo operations. Moreover, globally outsourced production has lengthened supply chains and increased their complexity. Concepts as lean manufacturing and JIT production have increased significantly the demand for time-definite services in the international market place.

Low fuel prices tend to be an important key driver for air cargo growth. Periods with low fuel prices (e.g. 1993-97) boost air cargo capacity as it facilitates the entrance of new operators, often using older, cheaper in lease, but less fuel-efficient aircraft. The new entrants provide an additional cheap spot supply of capacity in the market, keeping a downward pressure on market prices. Moreover, during periods of lower fuel prices, older aircraft types (e.g. B747-200F and DC10-30F) remain longer in the fleet of operators, while newly built aircraft are being added in the airlines fleet.

A major trend influencing management strategy development is the growth of the express market. International express traffic continued and high projected GDP growth (through export and import of merchandise) of Asian countries will be a main driver for intra-Asia and Asia European/North American trade flows in the present and near future.

A final trend currently featured in the cargo industry is the rapid rise of alliances, both horizontally and vertically. Following the horizontal alliances (Sky Team, One World, Star Alliance) initially created to exploit synergies on the passenger side of the business, these alliances increasingly stretch on the cargo side. Especially the Sky Team Cargo alliance is building and integrating their networks around their major hubs.

Key Drivers Behind Management Strategy Development

Once the management objectives are set and agreed upon, a product, market and network strategy are being established, constituting the overall management strategy of an air cargo operator. Figure 2 provides an overview of the influencing variables for each part of the management strategy. Management choices and decisions on the set of influencing variables define the features of the respective strategy parts of the product, market and network strategy.

A set of influencing variables determines the product strategy of an air cargo operator: product differentiation, yield management, route network, customer relation management, environment and alliances. The impact on management strategy development of each of these variables is explained further below. Product differentiation is a very important variable in this area. Air cargo was traditionally seen as a by-product of passenger transport. Pricing was based on marginal cost, and no separate cargo division took responsibility for sales and operations. The last decade this has changed considerably as air cargo is increasingly seen as a mature product, often differentiated through innovative marketing. Therefore, new marketing concepts for time-definite products, high value goods, cool chain products and livestock are being implemented.

Closely related to product differentiation is yield management. Product differentiation is used as a means to increase revenue per ATK. A close monitoring of available and booked capacity on each route on each direction on a specific period can increase revenues per ATK significantly. Moreover, the emergence of web-based cargo portals, similar to the introduction of CRS (e.g. Amadeus) in the 1980s and web-based booking engines in the 1990s (e.g. www.travelocity.com), is a trend that reinforces the downward pressure on yields, on its turn making air cargo more accessible for its customers. These portals create a higher transparency on price and capacity, both for suppliers and customers.
The most important web-based cargo portals are Global Freight Exchange (GF-X), Cargo Portal Services (CPS) and Ezycargo.

Route network development is also closely related to yield management. Adding a route on the network not only increases revenues on this particular route, but also creates additional connections for other routes, hence increasing the total revenue and yield potential of the entire network.

A performing Customer Relation Management creates short term customer satisfaction and a long term commitment from the customer. A strong CRM, where personal attention for the customer is provided, and the build-up of an extensive sales force are costly structures to set up and maintain. However, a long term relationship with the customer, often contractually agreed for a longer term, is beneficial for both yield and capacity management planning. Therefore, the larger air cargo operators such as Lufthansa Cargo, Emirates Sky Cargo, AF-KLM Cargo, BA Cargo have separate and dedicated sales teams to sell their cargo products and fill up capacity. Some customers are attracted to creating an environmentally friendly image and business attitude and require an environmentally friendly cargo product. CO2 off-set programs and environmentally friendly aircraft are used to differentiate the cargo from others. As it is the case with the CRM programs as discussed above, the larger cargo operators tend to be more involved with this kind of product differentiation.

Another set of influencing variables determines the development of a market strategy for an air cargo operator: capacity management, competitive market behavior, hub choice, route network, relationship with integrators, the usage of E-portals and alliances. A crucial part in the market strategy is a performing and outstanding capacity management. Adjusting capacity to the demand on a certain route enhances revenues and yield. Additional capacity at the right price can also attract demand. However air cargo operators can do little in the aggregate sense to influence demand for their services, mainly because the demand for air cargo transportation is a derived demand from external factors. The mix between short term spot capacity availability and long term capacity contracts with customers is another crucial factor. Therefore, capacity and yield management go hand in hand and are both crucial decision parameters on which a strategy is to be developed.

A tool to protect and defend yield and capacity management on a certain route or network is the competitive behavior versus direct competitors. This can be done by adapting the price, enlarging the capacity on a route or enhancing the product for the customer. Predatory pricing can be used to undermine profitability on routes where and when a new entrant starts selling capacity. Route network development and the location choice of hubs are other major elements in a coherent market strategy.

The relationship with integrators has always been a difficult balance between competing them with an up-market door-to-door product (through vertical alliances), similar to the product offered by integrators, and caring for them as important customers. ‘Beat them or join them?’ can be a major decisive factor in the market strategy development for many air cargo operators. According to the Air Cargo Management Group, a major task for airlines, forwarders and integrators in the coming years will be to define their desired participation (either through partnership, alliance or M&A) in the various logistics areas (Air Cargo Management Group, 2006, p. 5).

The usage of E-portals creates transparency for the customers, and facilitates booking capacity. Moreover, it provides a fast and transparent way to sell excess spot capacity for the operator. Therefore, the connection to an E-portal, and the adequate usage of it for capacity management should be taken into account while determining the market strategy.

A final set of influencing variables that determines the development of a network strategy are the following: unit cost, fleet management, airport choice, hub choice, route network, frequencies and alliances.

Unit cost structure is a major variable in developing a network strategy. The set-up and build-up of a network, with its determining variables, is a major driver for the cost structure of an air cargo carrier. Fleet choice, and especially the introduction of freighter operations, has a significant impact on capacity and unit cost for air cargo operations. Important decisions for the management strategy development are where to locate a hub, which markets to serve at which frequency, and which airports to operate within these markets. Gardiner et al. (2005), elaborates further on the factors influencing cargo airlines’ choice of airport. A
survey confirmed that a number of factors such as night curfews, the presence of freight forwarders, the reputation and experience of the airport for handling freighter flights and airport charges are found to be influential.

Alliances are a common theme in management strategy development and are omnipresent in the product, market and network strategy. A number of drivers for cargo alliances can be identified. Firstly, customer value is a main driver due to the availability of an increased and denser network, with a similar observed level of service and enhanced simplicity throughout the network. Secondly, cargo alliances create revenue and cost synergies due to the alignment of capacity in a combined network and fill-up of unused capacity. Cost synergies are relatively easily grasped by cost sharing in staff, offices, marketing, joint IT systems and handling. Moreover, increasing pressure on the market due to marginal pricing of substantial volumes of air cargo capacity, and the power and harsh competition of the integrators are reasons for all cargo carriers to solidify its market position by establishing vertical alliances.

Management strategy can further decide on the required level of economies of scale, scope and density. These factors can play a crucial role in management decision-making and the cost structure of not only the company, but also the industry as a whole (Vasigh, 2008, p. 89). In a strive for further efficiency and cost improvements air cargo operators can look for economies of scale, scope or density. Both vertical and horizontal alliances can play a major role in the achievement of these economies. Because of the redistribution of some fixed costs among the alliance partners (joint sales distribution channel, joint marketing efforts, cost reduction through joint purchasing programmes, …) economies of scale are achieved. Alliances can also bring economies of scope, as air cargo carriers often operate cargo handling, warehousing, distribution facilities. These can be shared among alliance partners, hence improving the cost bases of the respective alliance partners. Alliances also improve the cost structure of the individual partners through economies of density. Code sharing with freighters between the partners’ hubs, and distributing further from these hubs on a partner’s network reduce the costs of all participating alliance partners.

A typology of Two Extreme Air Cargo Carrier Management Strategies
To conclude a typology of two opposing, extreme air cargo operator management strategies has been drafted below, based on empirical deduction. The first operator type is a low cost air cargo operator who considers air cargo as a basic commodity, i.e. a standard but no homogeneous good. The opposing second operator type is a full service operator. These full service operators use as basic philosophy the idea that air cargo is a product that can be differentiated. These two air cargo operator types differ in most aspects of the above described product, market and network strategy. The table below summarizes the strategy and its components for each of the air cargo operators.

First of all, given its basic philosophy, the low cost operator does not differentiate its air cargo product and sells it on the market at a low, often negotiable rate. However, the full service operator provides a full range of air cargo products, from basic to express service, and offers a solution for cool chain, livestock or valuable goods, and hence optimizes the yield of the available capacity. As this latter way of working is considerably more labor intensive, full service operators often employ large sales teams to sell the range of air cargo products in the market and therefore invest heavily in Customer Relation Management. This is contrary to the way of working of low cost operators who try to fill up the available capacity at the market price of a given moment. Environmental policies are not part of the product offered on the market by the low cost operator, while on the other extreme, the full service carrier makes a sound and proven environmental policy part of the company culture, by using fuel efficient aircraft, draft a waste and recycling policy, etc. Given the significant advantages on the strategic approach of the product, market and network positioning, a full service carrier is, contrary to a low cost operator, very keen on joining a horizontal or vertical alliance. Joining an alliance creates economies of scale, scope and density. As far as the market strategy is concerned, a fully fledged capacity management is one of the major drivers to improve the yield for a full service carrier. Once more, this is contrary to the approach of a low cost operator who tries to fill up the available capacity.
air cargo capacity at the prevailing market price at that very moment. The market strategy of a full service carrier is very focused on maintaining yield and market share on its network. Therefore, competitive behavior such as predatory pricing to push out new entrants, and strategic investments in route and network expansion are part of the market strategy. A low cost operator hardly pays attention to this strategic behavior versus main competitors. When a route is not profitable any more, cancellation of that route is often the chosen option. Integrators are often both main competitors and customers for full service carriers, especially on the express and specialized products, while low cost carriers are only used ad-hoc by integrators, often on a charter basis.

When observing the network strategy of both types of operators, a number of distinct differences are uncovered. First of all, the actual unit cost per ATK is significantly lower for a low cost operator as they focus on being the absolute low cost provider as its main Unique Selling Proposition. The product differentiation strategy and efforts invested in improving the yield are increasing the cost base of the full service operator. The route network of a low cost operator is rather small, and in fact often ‘cherry picked’, while the network of a typical full service operator is large, with a prime focus on on-time performance, frequencies and quality. Low cost providers don’t need a hub for inter-connectivity reasons in their network, and typically fly to low cost airports (such as Ostend, Frankfurt Hahn, …) where while few or no forwarders are present, cheap fuel and low landing and handling fees are available. As these operators often fly with older aircraft types, another advantage is that these airports are often less noise restricted. Full service operators, however, do need the presence of forwarders, and often other belly space providers for inter-connectivity reasons. These can only be found at major airports, and even more at hubs. Full service operators typically operate within a network with one or more major hubs, interconnected with large freighters.

Although theoretically drafted, both strategy models are consistent with what can be empirically observed in the market. The low cost air cargo operator could be an operator such as Kalitta Air\(^1\). The full service operator could be for instance a company as Cargolux\(^2\).

**Conclusion**

This article dealt with the key factors contributing to management strategy development at air cargo operators. The objectives of the management of these air cargo operators have been discussed and analyzed. The management's objectives can indeed be extremely diverse, and have different mixes of priorities over time. In addition, these objectives are on their turn strongly influenced by the industrial environment. Most striking eye catchers in this matter are its consistent impressive past and future projected growth path, the ongoing innovations and the level of consolidation and integration, which demonstrates the stage of maturity and the level of professionalism the air cargo industry has reached. The management’s objectives determine the key drivers for the management strategy development, which can be grouped into a product, market and network part of the overall strategy.

A dual typology of air cargo carriers has been drafted, based on empirical evidence. The business strategy of air cargo carriers is linked to the typology of the carrier. Further research could be done on fine-tuning the typology of these management strategies, beyond the two basic extreme air cargo operator strategy models. In addition, further research on how the key factors of a management strategy can be measured for a sample of air cargo operators.

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**Footnotes**

\(^1\) Kalitta Air is owned by Conrad Kalitta and began service in November 2000 with three B747. The fleet has grown to a present total of 18 747-100F and 747-200F. The company provides scheduled and on-demand charter services and positions itself to provide their customers the most cost effective air cargo solution in the industry. Kalitta Air flies mainly general cargo with older type 747’s in a relatively small point-to-point network.

\(^2\) Cargolux, owned half by Luxair, is one of the leading cargo airlines worldwide, operating scheduled and charter services on a network covering all continents. Cargolux is an integrated transportation company, operating exclusively for freight forwarders. They use a fleet of 14 B747-400 freighter aircraft and 20 trucking contractors to move valuable and time-sensitive commodities a our worldwide network, covering over 90 destinations.

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