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Separation or integration? Can network carriers create distinct business streams on one integrated production platform?

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Abstract

The worldwide airline industry is currently facing one of the most severe crises in its history. Particularly affected are the network carriers, which need to develop more distinct products to adapt to the changed market environment. Since structure needs to fit strategy, the question of how the network carriers need to design their organization arises. So far carriers have either used one flight operation (production platform) as a basis for all products offered, or have built separate organizational entities for each business segment. From a corporate strategy point of view this paper compares the efficiency and effectiveness of an integrator versus a separator approach. The analysis indicates that the integrator approach is both less efficient and effective and it is argued that the network carriers should preferably operate with separate entities.

Keywords: Airline industry; Horizontal integration; Corporate strategy

1. Situation in the airline industry

External shocks, such as terrorist attacks, wars in Afghanistan and Iraq, the SARS epidemic and the worldwide economic downturn have hit the aviation industry badly. Many airlines have posted substantial losses, and according to the chairman of Lufthansa's supervisory board, Jürgen Weber, about half of the airlines are de facto bankrupt (Weber, 2003). Thus, most experts agree that the current slump is not a typical downturn and that the external shocks have uncovered much deeper problems in the industry.

The presently dominant network carriers are particularly affected, whereas most low-cost carriers are operating with high profitability. The originally innovative and successful hub-and-spoke system has transformed into a highly complex structure that causes low productivity without delivering adequate value, neither to the vital business customers nor to the different kind of leisure customers. Furthermore, the network carriers' most important customer group, business/frequent flyers, have changed their flying behavior. To reduce travel costs, large companies have negotiated volume discounts and changed travel policies partly restricting business class bookings. Besides, travel substitutes such as video conferencing have gained attractiveness due to security concerns after 9/11. To add to this all, new competitors have entered the market with a completely different business model. The so-called low-cost carriers have successfully designed a focused operation providing them with a significant cost advantage. Experts estimate that they operate with up to 60% lower unit costs than network carriers (Hansson et al., 2003). The fact that most of them were profitable during the crisis, underlines the sustainability of the new business model (Cordle, 2002). These circumstances have led to a downward trend in travel volume and yield.

As a counter measure, network carriers started typical restructuring activities, such as cutting variable cost by grounding aircraft or reducing fixed costs by laying off staff. These measures are definitely necessary, but at the same time insufficient. This paper argues that network carriers need to go one step further and overhaul their business models to cope with the changed environment.

Together with their alliance partners, the major airlines have established worldwide nets consisting of linked hub-and-spoke networks. This has enabled them to offer a wide range of products to all kinds of

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customer needs (e.g. business or leisure customers; continental or intercontinental routes) and at the same time allows them to bundle the traffic flows and thereby increase cost efficiency.

Full service carriers have continually introduced new product features and services to stay ahead of the competition because they operate in a market with a high technical homogeneity of input factors (e.g. aircraft, staff, airports). However, due to the low imitation barriers, any competitive advantage based on product differentiation is most likely to erode in a short time. Today the vital business customers receive an indistinct product that does not satisfy their expectations with regard to travel-time, convenience and price. At the same time, full-service carriers deliver an over-engineered product to leisure customers who are more price and less time, service and convenience sensitive. By trying to cater to everybody, network carriers have ended up with a product that is neither able to satisfy the business customers quality and service demand, nor the price expectation of the leisure customers.

Furthermore the continuous broadening of the scope of operation, service for all possible customer types and wishes through the same organization (production platform) has raised the complexity cost of the operation significantly. In the end, the strategy for maximization of product range and minimization of costs simultaneously seems to lead to a dead end. Nowadays network carriers are neither leaders in costs nor distinguish themselves in product quality—in Porter's words: they are stuck in the middle (Porter, 1980).

2. Emergence of four distinct airline products

In other industries, such as telecommunications, finance and manufacturing, incumbents that faced similar situations in the past separated their organization into distinct business streams. Traditionally these divisions are lined up according to the operational requirements. Airlines distinguish between the flight distance (continental and intercontinental) or traffic type (point-to-point or and hub-and-spoke). In addition, customer groups should be considered, which can be classified by various criteria, such as purpose of travel (e.g. business, leisure, vacation), price and time sensitivity (e.g. budget or VIP travelers), service orientation, and so on. The separation of charter airlines flying only tourists to their holiday destinations is one example for the separation of one business unit to target one specific customer group.

In Fig. 1, the different traffic and customer types are combined within a matrix. On the vertical axis the type of traffic is distinguished by the distance. The horizontal axis distinguishes between customer value ranging from low value customers (e.g. budget travelers) to high value

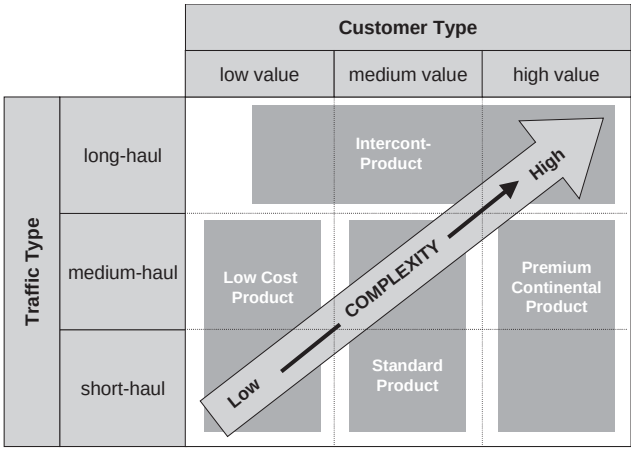

Fig. 1. Segmentation of airline products.

customers (e.g. business/frequent flyers). Parallel to the increase of customer value, the demands of these customers diversify. In the case of the budget travelers, for instance, the price is the factor that matters in particular. In contrast, business travelers are characterized by different demands depending on the flight distance,[1] for example. Furthermore, the diagonal arrow displays the growth of complexity. The least complex business is to fly low value customers point-to-point on the continent and the most complex business is to fly premium customers via a hub-and-spoke network across the oceans. Accordingly, the complexity grows parallel to the increase in flight distance and targeted customer value. As shown in the graph, the airline business can be split into four different products, which could be briefly circumscribed as follows:

- *Intercont-Product*: Carriers and their partners focus on intercontinental travel offering a three class product with differentiated services on the ground and in the air (e.g. for first class customers: special lounges, highest convenience and comfort, priority baggage handling, specially trained staff, in-flight entertainment). The network of global alliances secures worldwide coverage. The local alliance partners handle connecting flights. Most flights are routed through the major international hubs. Non-local traffic is fed by the other business streams.
- *Premium-continental-product*: Offering frequent point-to-point (P2P) services to all major cities on the continent. Product features focused on the needs of the time sensitive business/frequent flyers. Less focus on onboard frills, such as entertainment or top quality food, however special focus on fast and convenient pre- and after-flight services on the

[1] With the increase in flight-time, the on-flight-service gains importance, while on short flights the convenience and rapidness of the pre- and after-flight services are more important (see Sterzenbach, 1999).

ground (e.g. no touch environment, late check-in, quick security check possibly using biometric scanners, no luggage check-in).

- *Standard-continental-product*: Offering domestic and continental direct and connection flights with standard services. Standard frills included, however extra services on the ground (e.g. lounges, ticket changes, oversized luggage) and in the air (e.g. magazines, in-flight entertainment) are either not offered or available at extra cost.
- *Low-cost-product*: Business model purely focused on a superior cost structure. Simplicity of all processes is the key success factor. Serving large markets, mostly from smaller side airports with direct flights. Offering no frills such as flexibility, connection flights, upgrades, different classes, pre-, on- or after-flight services.

The aforementioned categories show one reasonable way of splitting the airline business into four distinct products. In contrast, nowadays the very differing real demands of, for instance, premium customers travelling across the ocean (e.g. mainly convenience and service oriented) or within the continent (e.g. highly time-sensitive and e.g. less on-flight-service oriented) are not considered. Both customer types receive almost the same product and, on top of that, are pooled with discount travelers, spending a fraction of the money for basically the same product.

3. Two basic options for organizational design

Since the discussion about the relation between strategy and structure, e.g. attributable to Chandler (1970), it is clear that structure needs at least to fit strategy (Schewe, 1999). Consequently, network carriers attempting to alter their current business model potentially need to redesign their organizational structure as well. Regardless of how the product segments are split in the end, carriers focusing on more than one product segment have two basic options for organizing the business streams from an organizational point of view: they can either pool the different business streams within one firm or organize them separately in different organizational entities (Fig. 2).[2,3]

In the first ideal type, in the following referred as the *"integrator approach"*, the carrier operates all different business streams with one production platform. This means one flight operation (fleet and staff) under one brand produces the various products (e.g. economy or business flights, continental or intercontinental destinations). In the second case, in the following called the *"separator approach"*, the carrier is split into different

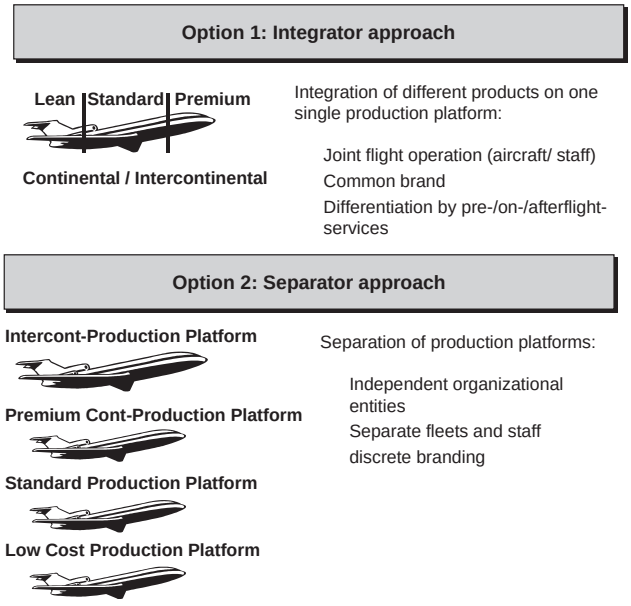

Fig. 2. Illustration of two organizational options.

organizational entities mirroring the various business streams. Each organization operates with a discrete brand, fleet and staff. The various organizational entities could either be independent except for equity stakes or they could be connected through contractual arrangements, such as partnerships and alliances. Technically speaking, the optimal degree of horizontal integration needs to be determined.

4. A framework for the evaluation of the integrator and the separator approach

Corporate integration and disintegration is the topic of various theories. The most popular concept in organizational theory for the evaluation of the boundary of the firms is the transaction cost theory. This approach, created by Coase (1937) and enhanced by Williamson (1971), postulates that all integration or disintegration decisions are driven by the goal to minimize the transaction costs, which are the coordination costs for governing a relation. The transactions cost theory, however, deals with vertical rather than horizontal integration, which is not considered here. While the transaction costs are Williamson's preferred subject, he acknowledges that, in addition, the production costs need to be considered as well (Williamson, 1985). The neoclassical concepts of economies of scale and scope deal with the behavior of production costs (Scherer, 1970; Chandler, 1990). According to this concept, the organizational design should optimize the efficiency of relationships and dependencies and at the same time the efficiency to perform the actual activity.

[2] For carriers focusing on one product segment only, the question of integration and disintegration does not occur.

[3] Illustration based on a working paper of Franke (2003).

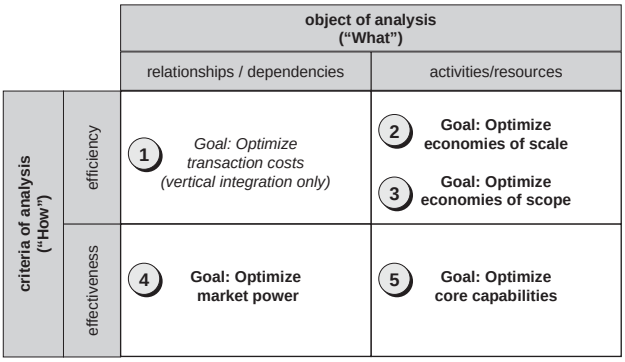

Fig. 3. Integration/disintegration framework.

However, besides merely looking at efficiency, integration and disintegration can be a result of external factors, such as the balance of market power between the market participants (Bain, 1968). Furthermore an acquisition of certain capabilities could be the target of a closer integration as well (Hamel/Prahalad, 1990). Using Drucker's (1963) distinction, who defines efficiency as "doing the things right" and effectiveness as "doing the right things", we can say in other words that efficiency is not the only criteria for boundary decisions, but the effectiveness needs to be considered as well. In conclusion, the degree of horizontal integration is determined by the goal of optimizing the efficiency and effectiveness of relationships and activities. As illustrated in Fig. 3, the two aforementioned decision criteria (efficiency and effectiveness) and observed objects (relationships/dependencies and activities/resources) can be combined within a two by two matrix.

In the following section, the matrix covering key drivers of integration and disintegration will serve as a framework for the systematic analysis of the central question of this paper: Should network carriers choose an integrator or a separator approach, e.g. a high or low degree of horizontal integration?

The first step includes an evaluation of whether an integrated or separated approach is more efficient (Sections 5 and 6). Since the optimum degree of *horizontal* integration is being analyzed, the transaction cost theory, which deals only with questions of vertical integration, will not be taken into consideration.[4]

The effectiveness of the two types of organization will be discussed in the second step. Section 7 includes an evaluation of the architecture in which the carriers maximize their capabilities and Section 8 contains an evaluation of whether market power speaks in favor of the integrator approach.

5. Economies of scale: size does not matter, asset utilization does

In many industries increasing scale of operation correlates with decreasing unit costs, making it impossible for sub-scale players to sustain themselves in the market. Economies of scale particularly occur in industries with high fixed costs and/or steep productivity curves.[5] The oil, energy and telecommunication infrastructure industries are typical examples for scale-driven businesses. In such industries the size of the organization is at least equal to the minimum efficient scale.

In the airline industry the economies of single flights and a complete airline need to be differentiated. Looking at a single flight, only a few costs are load factor driven (Siau and Lindt, 1997). Cockpit crew, starting and landing fees, ground services, interests or leasing rates for the aircraft and maintenance costs are all independent of the actual number of passengers onboard. Similar fuel consumption and number of cabin crew members are almost independent of the load factor. Only minor items, such as cost for ticketing, catering, magazines, and a few ground services depend on how many passengers are actually on the flight. Due to this, average operational costs decrease as the load factor on the flight increases. Consequently, the cost efficiency of individual flights is driven by the seat-load-factor or, in other words, characterized by economies of scale.

Changing the perspective by looking at an airline instead of single flights, most costs turn out to be variable rather than fixed. Due to the nature of the business the number of aircraft, pilots, cabin crew and operative ground staff grows almost parallel to the expansion of the transported passenger volume. Accordingly expanding the organization by adding destinations will not decrease the unit costs automatically. Furthermore, airlines do not need to invest in fixed infrastructures such as airports. In total, fixed costs of a single flight are high, however the overall business is characterized by a high variable cost ratio (Hanlon, 2000). Due to the low share of fixed costs of an airline, economies of scale do not play an important role in the overall business after reaching a certain minimum scale. Hence, a small carrier operating with only some aircraft could theoretically be as efficient as the largest carrier in the world.

It can be concluded that the cost efficiency of airlines is mainly driven by the degree of asset utilization. Therefore not size but asset utilization matter in the airline business (Caves et al., 1984). In other words,

[4] Transaction cost theory is only applied for questions of vertical integration, compare, see e.g. Williamson (1971), Williamson and Maston (1999), Picot and Reichwald (1994).

[5] Prime sources about economies of scale are Stigler (1966) and Scherer (1970). An overview of publications on economies of scale in the airline industry can be found in Höfer (1993).

bigger is not better per se. Instead it can be concluded that the integrator solution is not automatically more cost efficient than the separator approach considering economies of scale.

6. Economies of scope: complexity absorbing the synergies

Since the efficiency of airlines is mainly driven by the degree of asset utilization and less by pure size, network carriers developed the so-called hub-and-spoke network.[6] Flying passengers from spoke cities via a central point to all other destinations accessible in the network enables the network carriers to bundle traffic. Theoretically, hub-and-spoke airlines can use larger aircraft at higher load factors than an airline serving one single city pair (Cordle, 2002). The question arises as to why the hub-and-spoke carriers are incapable of matching the unit costs of niche players (particularly low-cost carriers), which are unable to pool traffic flows.

Costs of complexity (diseconomies of scope) are one answer to the question. With the extension of the network, the widening of the product portfolio, the complexity of the business model grows disproportionally. This effect can be split into product and process complexity.

First of all, the fact that airlines operate with a technically almost homogeneous production platform causes the erosion of any competitive advantages in a short time.[7] As previously mentioned, full-service carriers felt compelled to continually introduce new product features and services to stay ahead of the competition. Increasing the number of destinations, introducing new frills (e.g. specialty meals, own terminals, in-flight entertainment, lounges), offering high flexibility (e.g. last minute ticket changes, seat reassignments or upgrades) and serving an increasingly diverse customer base led the full-service carriers into a complexity trap (Hansson et al., 2003). Because expanding the breadth and depth of a firm's product offering theoretically allows for the better leveraging of the existing resources, mingling too diverse customer groups on one single production platform (aircraft), however, increases costs and lowers each service standard parallely. Nowadays full-service carriers offer indistinct services to business travelers at a premium price, and at the same time, over-engineered service to budget travelers.

Secondly, the hub-and-spoke system, innovative in its origins, led to a disproportional increase in process complexity. This is partly attributable to the so called wave system, which maximizes passenger connectivity by concentrating arrivals and departures in peak periods, and bears significant disadvantages (Hansson et al., 2002). Ensuring that any passengers and baggage are able to make the connection leads to traffic congestion, long aircraft downtime and slow turnarounds. The widespread paradigm in network management, designing the hub-and-spoke system with the objective of maximizing connectivity, leads to low labor and aircraft utilization. Furthermore, the carriers have established processes that are able to handle most, if not all, possible scenarios, enabling them to offer the highest possible flexibility to their customers. Handling all customers, no matter if they just want to fly at short distance, through these complex systems adds unnecessary costs and makes it difficult to automate processes. In addition, lack of routines, low standardization, plenty of re-work and last minute changes increase labor and process costs.

In the end, full-service carriers offering a wide range of routes through their hub-and-spoke network end up with higher unit costs than niche players operating point-to-point traffic between selected city pairs. It seems that the complexity cost generated by the widening of the full service carriers' product portfolios outweigh the economies of scope. Although the empirical and quantitative proof for this statement must remain subject to further research, our argument is that network carriers should be able to operate more efficiently by separating the organization into distinct business streams. Separating the business streams generally enables companies to reduce product variety and the number of procedures. Furthermore it allows employing adequately trained staff and the introduction of routines and standardization.[8]

Consequently, it seems that network carriers will be able to reduce the product and process complexity by separating the organization into distinct business streams.

[6] Numerous studies analyzed the economies of the hub-and-spoke system, e.g. Brueckner and Spiller (1994), Siau and Lindt (1997), Höfer (1993).

[7] The similarity of the input factors (airport, aircraft, crew) lead to the homogeneity of the core product offered by airlines making it almost impossible to sustain an unique selling proposition based on actual product differentiation (see O'Connor, 1978; Sterzenbach, 1999; Maurer, 2001; Doganis, 2001).

[8] Airline experts also discuss other promising ways out of the complexity trap that are more focused on finding an operational solution. "Dehubbing" is one concept currently tested by some airlines, which aims to reduce complexity by running connecting flights into a hub continuously instead of in tightly scheduled periodic banks. "Continuous hubbing" (alternatively called rolling, random or pinwheel hubbing), is subject to various studies (see Hansson et al., 2003; Wojahn, 2001), for a more detailed discussion). It is, however, still unclear whether such operational improvements would reduce complexity costs sufficiently to "save" the reasoning in favor of an integrated organizational structure.

7. Effectiveness of activities: focusing on core capabilities

According to the resource based view, organizational design is not just driven by efficiency, but rather by the goal of creating the most effective organization by focusing on core capabilities (Hamel and Prahalad, 1990). Resources which are neither directly nor indirectly linked to the core capabilities should be outsourced. Thus, the higher the affinity of one resource to the core capabilities the stronger it should be integrated (and vice versa). In other words, structure should follow core capabilities.

A bundle of resources is called core capability, if it creates a sustainable competitive advantage (Rasche, 1994). Resources could either be tangible (e.g., physical technology such as a firm's plant and equipment, its geographic location or access to raw materials) or intangible assets (e.g., know-how of human resources, relationships or reputation). These core capabilities should be of value to the customer in the first place. Furthermore, a competitive advantage derived from a unique set of resources is only sustainable if the current and potential competitors are not able to imitate or substitute the capability.[9] In total, a bundle of resources qualifies as a core capability, the higher its value to the customers and the more difficult its imitation and substitution.

What then are core capabilities of airlines? In the early stages of the aviation industry, flight operations themselves used to be such a unique capability. Nowadays, however, due to the technical homogeneity of the core product, carriers try to distinguish themselves through secondary services, such as offering special comfort (e.g., convenient seats or extra space), specialty food and drinks, in-flight-entertainment (e.g., TV, video games, telephone) or soft factors (e.g. friendliness of the staff). These possibilities of differentiating the product are not only limited, but also easy to imitate in the medium-term. This is one reason why customers can hardly tell the difference between the product and one offered by the major network carriers. So it seems that the ability to integrate does not qualify as a core capability.

Specialization on distinct business streams is one possibility of developing unique and sustainable selling propositions. Low-cost carriers have shown how the dedication of the whole organization to one specific factor (cost leadership) gives them a competitive advantage that network carriers cannot match with their current business model. In a similar fashion, specialized premium carriers such as Virgin Atlantic successfully entered the market by offering an unmatched service on the ground and in the air to business customers on selected routes. In conclusion, the basic product offered by airlines (transport from A to B) can be almost characterized as a commodity. Since achieving a sustainable competitive advantage is only possible by focusing on specific capabilities, the resource based view clearly argues in favor of separation.

8. Effectiveness of relationships: scope does not drive market power

In addition to the aforementioned factors, the introduced framework shows that integration can also be driven by the goal of increasing the market power of an organization. Market power is defined as the ability to alter prices, quality and volume of products offered independent of the demand (Müller, 1987). Demand elasticity is therefore the central factor for measuring market power (Höfer, 1993). Typical natural monopolies in the aviation industry are airports or air traffic control. They are the only provider in a certain region and their customers (airlines and travelers) have, more or less, to accept their fees, quality of service and volume offered or switch to a substitute (e.g. nearby airport) if available. Since the national flag carriers linked via the global alliances clearly dominate the world market, it would seem that they posses some kind of market power.[10] However, the significant price decrease in recent years indicate that the large players do not posses any power to skim disproportional rates of return. Thus, they are not able to translate their size and position into actual economic benefits.

The basic cause of this coherence could be low market entrance barriers. The lack of such barriers increases the chances of potential competition that limits, according to the theory of contestable markets, the market power players with high market share (even monopolists) in a way similar to actual competition (Baumol et al., 1982).

However, in the 1990s some indications of a principal existence of both legal and economic entry barriers in the aviation industry became evident: Important legal barriers are especially constricted international flight rights, for example slots that are assured to the established players through grandfather-rules and subsidies granted by governments. For economic barriers, the US GAO (2001) in a recent study declared the following factors as barriers that constrain market entry into dominated airline markets:[11] First of all the already mentioned access to airport facilities, secondly frequent

[9] Barney identified three reasons: unique historical conditions, causally ambiguity, and socially complexity. Substitutability can take at least two forms: substitution by a completely different resource that fulfills the same customer needs and secondly, competitors can build similar resources that enables them to implement the same strategies, Barney (1999).

[10] The members of the five major alliances cover approximately 70% of the international scheduled flights, Wieske-Hartz (2001).

[11] US General Accounting Office (2001), Höfer (1993).

flyer programs, thirdly sales incentives such as travel agent commission overrides (TACOs) and fourthly the product portfolio (e.g., size, breadth, frequency).[12]

Although the existence of the barriers seems to favor market power of integrators, we and others argue that these barriers protect network carriers only from market entrants that plan to imitate their principal business model. Innovative market entrances, such as low-cost carriers, showed how to bypass congested airports, biased travel agents and compete without an established brand or frequent flyer programs.[13] In addition, factors as airport access or marketing incentives are to a large extent independent of the degree of horizontal diversification of an incumbent. Furthermore aircraft are called "capital on wings" (Hanlon, 2000), because they are highly flexible assets that can be used almost anywhere on the planet and also be sold if necessary because a sound second-hand market exists. Consequently, (potential) market exit costs are limited as well.

In effect, market entry and exit barriers do not sufficiently protect the integrated incumbents from the competition that is created by (potential) new entrants using a low-cost strategy or the separator approach and market power is not mainly caused by the degree of horizontal integration. In conclusion, market power does, perhaps counter-intuitively, not favor the integrator approach.

9. Outcome of the analysis

Sections 5–8 compared the integrator versus the separator approach in terms of efficiency and effectiveness. The analysis of the behavior of economies of scale firstly shows that size does not automatically lead to cost advantages. Furthermore, an outline showed that the network carriers, who were supposed to achieve a cost advantage by bundling different traffic and customer types through their hub-and-spoke system, have suffered from the diseconomies of scope. There is some evidence that these costs of complexity outweigh the positive economies of scope, leading to the intuitively surprising situation that network carriers nowadays operate with higher unit costs than niche players who are unable to bundle traffic. Separation of a full-service carrier into distinct business streams is, besides more operationally targeted measures, one promising option to reduce these complexity costs.

There is an additional negative connection between size of incumbents and their cost efficiency: In particular, labor costs increase disproportionally to size. The reason is that most major organizations suffer from highly unionized labor, which is in general more costly compared to staff of smaller and younger competitors, in particular. Although these differences will decrease with the growth and aging of smaller competitors, it can be asserted that smaller, younger attackers tend to have a labor cost advantage. Therefore, splitting the full-service carriers could weaken the power of the unions and consequently reduce labor costs. This effect strengthens the efficiency advantage of the separator approach.

Apart from efficiency alone, separation is also favored by effectiveness. According to the resource-based view, separation of the entities enables each business stream to develop capabilities that are valuable and simultaneously difficult to imitate or substitute. In addition, the analysis of market power in the airline industry displays that integrated full-service carriers with dominant market share, such as the major carriers and their global alliances, do not possess market power that could effectively protect them from innovative market entrants—the existing barriers mainly impact potential new entrants who are using the traditional integrator model. Furthermore these entry barriers are to a large extent independent of the degree of horizontal diversification of an airline.

Our conclusion is that separation of the business streams seems to be both more efficient and effective than the integrator approach (see Fig. 4). Integrators neither enjoy a cost advantage nor do they possess market power that allows them to skim abnormal rents or capabilities that give them a sustainable competitive advantage.

Similar to other industries, the business model of incumbents functions well, as long as the competitors use the same business model. However, as success factors change and new companies with a very different, in most cases simpler and more focused business model enter the market, the situation changes dramatically.

Drivers of integration and disintegration	Results
Economies of scale	• Size does not automatically lead to cost advantages. • Integrators do not possess an efficiency advantage compared to separators.
Economies of scope	• The widening of the scope of operations leads to complexity costs that seem to outweigh the synergies. • Separation of the organization reduces complexity / diseconomies of scope.
Core capabilities	• Full-service carriers are unable to develop unique capabilities leading to a sustainable competitive advantage. • Specialization enables carriers to develop distinct capabilities.
Market power	• Market barriers do not protect incumbents from innovative entrants and are not driven by the scope of operation. • Market power does not favor the integrator approach.

Fig. 4. Summary of results.

[12] Since aircraft can be leased, the capital requirements to purchase an aircraft do not constitute an entry barrier.

[13] Hüschelrath (2003) also distinguishes entry barriers depending on the type of potential entrant, and Knorr and Arndt (2003) discuss similar issues for the Southwest Case.

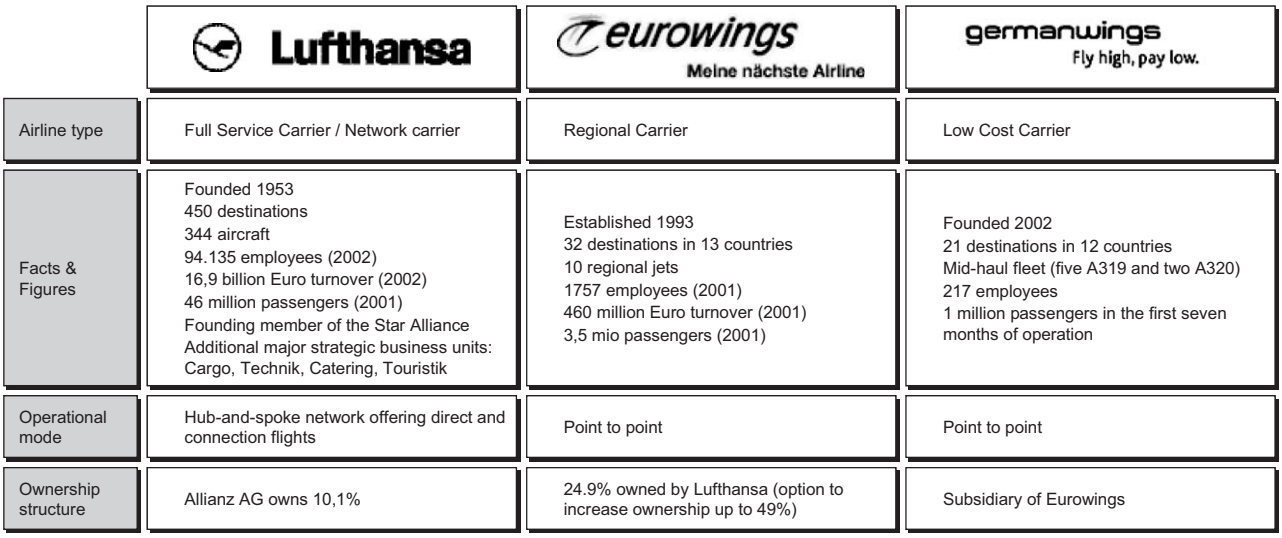

Fig. 5. The Lufthansa portfolio.

This is the current situation in the airline industry. The hub-and-spokes network structure—designed to seamlessly take anyone from anywhere to everywhere—used to be a great innovation. However, in the new business environment evolving at the moment, this model is not longer sustainable. Initiatives taken by airline managers, such as cost reduction or productivity improvement programs are necessary, but they do not address the system's intrinsic problems. The incumbents need to tackle the fundamental problems of their current operation model by completely redesigning their business model. They need to build distinct business streams that are organized separately.

10. A practical example for the implementation of the necessary changes

Separation of one company into different organizational entities is easier said than done. The strategic options of incumbents are heavily influenced by the status quo. These so-called path dependencies are one of the biggest challenges for large network carriers (Rasche, 1994). They have accumulated many fixed assets over the years, such as diverse fleets, large and highly unionized labor pools and infrastructure bound to long term contracts. At least in the medium-term these resources can be considered as fixed, limiting the carriers' possibilities to adapt the organizational design adequately. In the end, the structural conditions could force the incumbents to adapt their business strategy to the organizational constraints. As Rummelt (1974) puts it, structure can sometimes determine strategy.

Lufthansa is facing precisely this problem and is currently pursuing a double tracked approach. The German flag carrier keeps to the traditional hub-and-spoke concept on one hand, offering various products to a wide selection of customer types. On the other hand, it is remarkable that the carrier is actively building separate companies that have a much more focused business model (see Fig. 5).

First of all, Lufthansa owns a minority stake in Eurowings, which is a regional carrier serving smaller destinations on the continent. In addition, Germanwings, which is a subsidiary of Eurowings, is a typical low-cost carrier founded in 2002. All in all, Lufthansa owns equity stakes in two clearly focused carriers, operating with separate brands, staff, fleets and management two independent point-to-point networks.

This example shows one option for incumbents that considers the path dependencies and at the same time enables the network carrier to indirectly compete in focused segments with dedicated firms. Both niche carriers are clearly focused and operate with the adequate operation and cost structure. The incumbent on the other hand does not need to sell discount tickets, which are unprofitable and damaging to the premium brand, to stop the low-cost competitors from gaining market share. In contrary, they can transfer aircraft that is currently not utilized to the subsidiaries.[14] In the long run, network carriers can slowly refocus their core business on the more complex and high value segment and use their subsidiaries to take-over the low value business streams. Time will tell if this approach is radical enough to cope with the changes.

[14] For example, United Airlines announced the transfer of 40 narrow body aircraft to its new low-fare subsidiary, see Flight International, p. 12, 2003.

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