# A business transformation model for legacy carriers as a response to the rise of low-cost carriers.

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**Abstract.** The aviation travel industry offers today a commodity product that attracts all types of customers. However, many clients are price-sensitive and often look for the cheapest product offering. As legacy airlines' core strengths do not align well with the new customer preferences, this research work investigates the background of the rise of the low-cost carriers and consequently proposes a wholistic transformational model for legacy airlines. This paper presents a business transformation model with five strategic areas. The first two areas, which are Modernization and Environmental Sustainability, advise legacy carriers to focus on digitizing large parts of their business and establish operations within a sustainable business model. The next two areas are the adaptation of products offered with stronger people-centric marketing and communication strategies. The final area is the optimization of portfolio management, where legacy carriers are urged to rethink their investment strategy and possibly divest from low-cost carrier subsidiaries.

**Keywords:** Strategy · Business Strategy · Market Analysis · Business Model · Transformation · Innovation · Sustainability · Society · Process · Aviation · Airline Industry · Low-Cost Carriers · Applied Philosophy · Aristotle · Framework · Golden Mean

## 1 Introduction

The European airline industry is characterized by a highly competitive market environment. Multiple large and established players are fighting over market share, in a market defined by consolidation. There are two groups of players that can generally be divided into legacy carriers (LC) and low-cost carriers (LCC). Both offer distinct products and services to their customers and operate different business models. However, this had not always been the case.

Since the late 1980s, the European airline market has undergone big changes that had a large impact on customer preferences. Today, the aviation travel industry is offering a commodity product that attracts all types of customers which are mostly price-sensitive and often look for the cheapest product offering. As legacy airlines' core strengths do not align well with these new customer preferences, this research work investigates the background of the rise of the low-cost carriers, highlights five strategic areas to focus on, and consequently proposes a wholistic transformational model for legacy airlines. If these players utilize the proposed model and focus on their core strengths while satisfying societal needs, they can defend their business model and secure their position in the European airline market.

## 2 The liberalization impact on the European aviation market

Up to the late 1980s, the European aviation market was fragmented and highly dependent on bilateral air service agreements (ASA) between countries. It was common for each country to have a national airline – 'flag carriers' – as this was the only airline permitted to fly between countries on the basis of the ASAs. These airlines were often only permitted to serve one route, were fully government-owned and received competition-distorting state aid. Although the countries argued that the ASA system was in place to keep prices stable and to favour consumers, the reality closely resembled a monopolistic market environment. On most routes, the flag carriers 'enjoyed 50% of the traffic between countries' and 'the capacity that was offered by each bilateral partner was restricted' [1].

Evidence shows that the ASAs by no means created a fair market environment. The reliance on ASA did not 'generate an efficient air transport system for Europe' as it 'tended to protect inefficient operations', 'acted as a restraint on trade', and 'had associated with it the same undesirable economic implications as tariffs' [1]. From 1988 until 1993, the European Council of Ministers liberalized the European aviation market via three distinct packages which have 'proven a decisive influence in expanding the industry and making its benefits available to more people' [2]. The overall effect of the liberalization packages was the creation of an international aviation market in which any European airline could serve an unlimited number of passengers on any route for any chosen price. New routes between city pairs were opened, new airlines entered the aviation market, and the frequency of services on both existing and new routes was increased.

The effects of the liberalization packages can be divided into three phases. From 1990 until 1993, the first phase, there was low market growth as the average route frequencies remained stable at 16 flights per week, while at the route level, the number of effective carriers did not yet increase [3]. The main reason for this was the economic downturn in Europe and the prevailing market uncertainty. However, the growth rates picked up during the second phase from 1994 until 2000. It can be characterized as the growth period of the legacy carriers (LC, the former flag carriers) as they adopted the hub-and-spoke system. This led to 'rapid growth in the number of flights relative to the increase in the number of routes, resulting in an increasing average weekly frequency per route' which was further boosted by a stable European Economy [3]. Nevertheless, the third phase from 2000 until today is the one where the liberalization packages show their highest impact by initiating the era of the low-cost carriers (LCC). While these carriers tested the market in the second phase, they took the opportunity to enter and penetrate the market and undercut prices of the LC. They set up hubs in multiple European countries, something that LC very rarely did, and they were able to operate point-to-point route networks across the continent. LCC established route density 'by serving an extended catchment area by using a low unit cost base to charge low fares, generating new market demand and serving routes at a lower frequency than the full-service carriers' [3]. This, in combination with the early adoption of direct internet booking platforms, enabled their rapid growth from the end of the 1990s until today.

## 3 The Low-Cost Carries Phenomenon

To beat the LC incumbents in the European aviation market, the LCC reinvented the airline business model. Since in aviation, economies of density are more effective than economies of scale, LCC aim to maximize the hours of operation of each of their assets [4]. In 2004, Ryanair's planes flew on average 11 hours per day, while British Airways' planes flew 9.2h per day and SN Brussels Airlines' planes 7.7h per day [5]. The LC tried to catch up to their low-cost competition, but economies of density remain a LCC strength. LCC are also infamous for exercising pressure on their workforce to save costs on human resources. The annual income of a pilot at a low-cost airline was estimated to be 28% lower than that of a legacy pilot despite flying 25% more hours [6]. While the pressure exercised on the workforce is a crucial part of the LCC business model to reduce unit cost, it is also a major weakness to the reliability of the service when staff members revolt [7]. LCC are further aiming for the highest possible load factor. Ryanair is the world's best airline in terms of passenger load factor with a result of 96% in 2019. This is far above the industry average of 80% and the best legacy carrier in the world, KLM, with 88.4% [8].

By filling almost all seats on every flight, LCC effectively lower the costs per passenger and can offer a lower ticket price. They also standardized their entire fleet (plane model and interior design), which results in crews being able to operate on any given plane in the fleet without needing specialist training. Additionally, these aircraft are in a full-economy configuration with as many seats on board as possible to maximize the number of passengers that can be transported in each flight [5]. LCC do not offer complimentary drink or food services on board. They rarely offer connecting flights to minimize the booking and baggage handling complexity per flight, resulting in lower turnover times per plane. Furthermore, they almost exclusively set up their hubs at secondary airports where they incur lower costs per slot and have more negotiating power with the airports who are dependent on the LCC. While these factors alone lower the variable costs per flight, the cumulative cost effect of all factors gives LCCs their competitive advantage.

The feasibility of the LCC business model can be explained by three key reasons. The first one has already been mentioned in section 2 – the establishment of the European international aviation market.

By instating the liberalization packages, the market entry barriers were lowered significantly, and new services and new routes could be offered in, to, and from all member states of the EU [9]. Secondly, the aviation sector is cyclical. In economic downturns, airlines are facing immense fixed costs while generating low revenues. These situations favour LCC over LC as they can lower their variable costs per flight more effectively [10]. Finally, the third reason is that 'the price of air transport often remains a limiting factor for a large portion of the population', but the LCC managed to break the industry stalemate and offered their services at a much lower price, attracting previously non-existing groups of customers [11].

As mentioned in section 2, the LCC experienced significant growth from 2000 until today and managed to gain a large share of the market. Due to their low-cost offering, new customers were gained, and some were won over from the LC. They largely managed to avoid direct competition to the incumbents and focused on perfecting their business model. However, after years of exponential growth until around 2014, LCC experienced a slow-down as LC learned their lessons and the market began to saturate. Therefore, LCC like Ryanair changed their strategy and started to compete with LC directly at their primary hubs in airports like London Heathrow or Frankfurt am Main [12]. This direct competition prompted a price war between LC and LCC as LC aimed to defend their superiority in their hubs and to prevent passengers from switching to the low-cost competition.

## 4 Research Methodology and Results

The research methodology utilizes inductive reasoning as the research approach. Inductive reasoning promised to be most useful for this paper because, contrary to deductive reasoning, does not assume that all predictions hold true but merely assigns a probability to them. The paper also utilizes the principle of triangulation as the strategy of choice. Hence, three types of data were collected: academic primary and secondary research based on an international literature review, a survey with 65 participants and 3 interviews with experienced pilots and executives from a leading airline.

The international literature review explained the reasons for the success of LCC and the feasibility of their business model. The most important point, however, is that they have changed their strategy in recent years and entered into direct competition with the LC. This change in direction forces the legacy carriers to react. The survey allowed for further insights into changing customer preferences. The rise of the LCC attracted more price-sensitive customers that now represent a large customer segment on which both the LCC and the LC are dependent. Therefore, LC need to understand these customer preferences and react accordingly.

The survey revealed that during a flight, customers most value seat comfort, seamless service pre-, during, and post-flight and leg space. These areas used to be the unique selling proposition of LC, but they started lowering their standards to decrease their variable costs. Furthermore, customers stated a preference of flying with LCC on short-haul flights but LC on long-haul flights. This, paired with the fact that customers are most willing to pay more for a complimentary check-in bag as well as food and drinks and a conveniently located airport, indicates the need for a LC strategy that focuses on their core strengths.

Finally, customers indicated that they perceive the value-for-money to be higher when flying with LCC as they are often unable to differentiate legacy carriers from their low-cost carrier competitors, which points to the need for differentiation strategies.

The expert interviews indicated similar findings. They all stated that LC should focus on digitalization to differentiate themselves from the low-cost competition. Sustainability, while not as important to customers as expected, will continue playing a major role in the future of aviation. The experts disagreed, however, on the strategy that should be deployed by LC to fight off the LCC. One expert advised a continuation of the current strategy to operate both a hub-and-spoke system with the core airline and a point-to-point system with the low-cost subsidiary. On the other hand, the other two experts recommended that LC should focus more on their core capabilities and regain their status of delivering quality, punctuality, and safety.

The survey showed that customers currently do not believe that LC are offering these benefits and therefore LC need to improve their marketing and communications in parallel with reworking their product offering.

In summary, the research indicated that the current strategy deployed by legacy carriers is unlikely to successfully fulfil customer demands.

## 5 Key Strategic Areas for Legacy Carrier Business Transformation

Based on the research results the paper recommends LC to focus on five key strategic areas. These are digitization, sustainability, product offering, marketing and communications, and portfolio management (Fig. 1).

The first area, digitization, serves as a crucial differentiation lever while improving LC's profitability. This can be done by lowering costs on process steps such as check-in or baggage handling and increasing revenues mainly through simplifying the customer journey, vertical integration in the aviation industry, and data-driven product offerings. However, it is crucial to renew and simplify the IT systems as, for many players, these are quite outdated.

For the second area, sustainability, LC should leverage their position as the middleman between customers and aircraft manufacturers by only purchasing the most efficient and sustainable airplanes. This forces manufacturers to supply more fuel-efficient airplanes while the LC send the right signals to customers and the capital markets. Other sustainability measures such as reusable cutlery and cups as well as packaging should also be pursued to help stop the effects from flight-shaming.

The third area is product offering. The research showed that customer preferences have changed and that a large share of clients is very price sensitive. However, to compete with LCC, the legacy carriers have lowered their standards significantly, which lowered their differentiation. Today, flights with LC are still more expensive than those of LCC while not offering any significant advantages. Survey respondents indicated that they would be willing to pay extra for additional amenities. LC already have many amenities included in their product offering but continue cutting this product offering.

Instead of trying to lower their quality standards to save costs and directly compete with the LCC, legacy airlines should differentiate themselves by focusing on their strengths and offering a high-quality, medium-cost, and overall solid product.

This ties to the fourth area – marketing and communications. Effective marketing that showcases the benefits of the legacy airlines over the LCC will help attract and maintain customers. Instead of further engaging in price wars, legacy airlines should appeal to customers with their advantages in terms of convenience and services. Only if customers are aware of the benefits that LC offer over low-cost carriers will they be willing to pay the additional fee.

Finally, legacy carriers that are part of an airline group and have a low-cost subsidiary in their portfolio should re-evaluate whether this is the right strategic move. The strategic reasoning behind operating one airline with a hub-and-spoke and another with a point-to-point system is clear – the goal is to be a dominant player in both markets. However, the feasibility of this strategy is not given. Many legacy carriers struggle with integrating the LCC into their operations, the synergies promised to capital markets are minimal and oftentimes both the LC and the LCC in the portfolio are weighed down by the partnership. Furthermore, the incumbent LCC have more flexible systems, a more standardized fleet, their workforce is less unionized, and they overall have better capabilities to offer low-cost products. Therefore, it might be beneficial to drop this portfolio strategy entirely and only focus on the four strategic areas mentioned above.

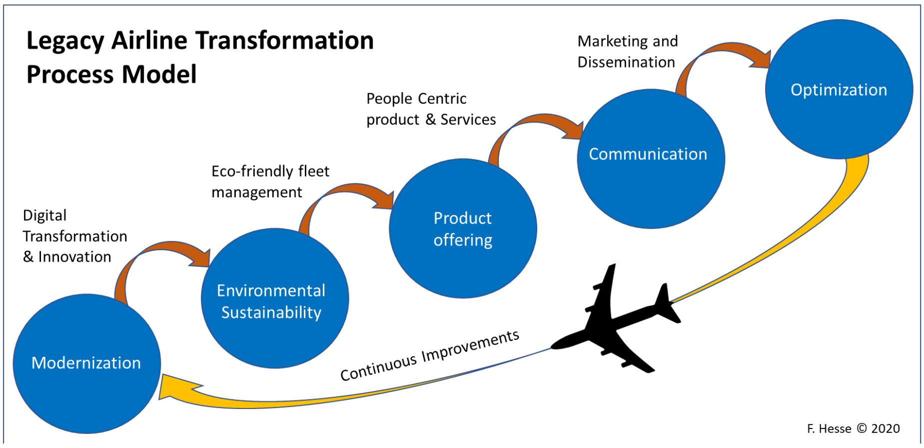


**Fig. 1.** Relationships between key recommendations for legacy airlines.

## 6 Legacy Airline Holistic Business Transformation Strategy

The five strategic areas can be executed through a holistic approach driven by a staged innovation transformation. The innovation needed for the modernization of the first area can move the LC from the red ocean, they are in today, to blue oceans they seek to find and enter. Extending the innovation from profit-driven to sustainable-driven, LC can extend their operations from the blue ocean to the green ocean.

Following this transformation process, the third strategic area can further move them from the green to pink oceans by adjusting their product offerings to social needs. The fourth area can be interpreted as the dissemination strategy legacy airlines shall follow to communicate their blue, green, and pink innovations and achievements to the market and the society. Lastly applied philosophical thinking is needed in the fifth area to achieve continuous improvements based on the golden mean principle of Aristotle to avoid exaggerations, but also the continuous thinking of Plato to follow the needs of the people and the society, escaping from the governmental protection cave. Figure 2 presents this holistic transformation strategy in an innovation-driven process map.

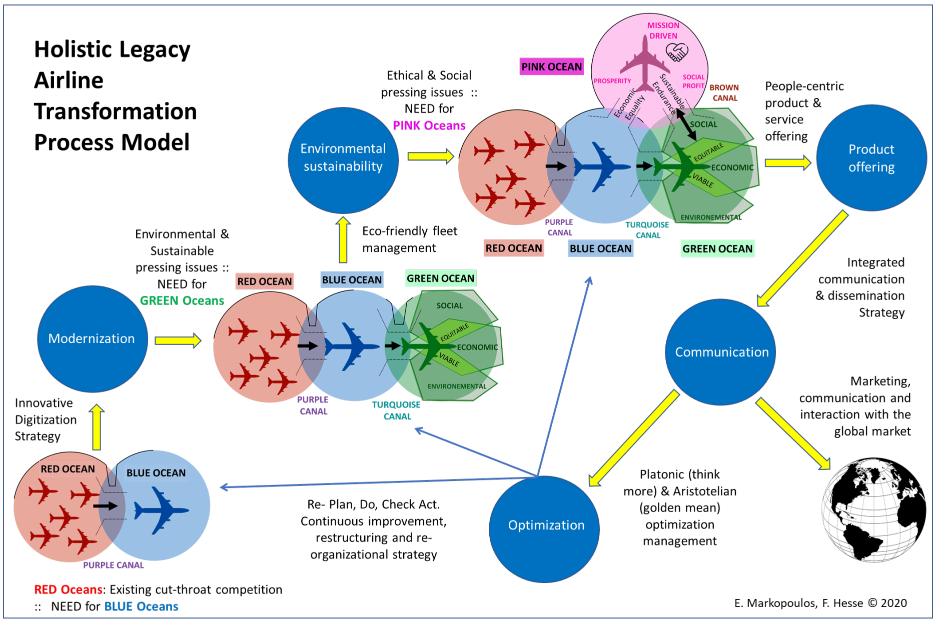


**Fig. 2.** Ocean-driven holistic legacy airline transformation model.

The process begins with the current state of the LC that operate withing a red ocean, an existing market space, struggling to beat the competition and exploit the existing demand by making value-cost trade-offs and attempts to align their activities with a strategic choice of differentiation or low cost [13]. This cut-throat competition shall be managed with the adaptation of an innovation-driven strategy. In the airline industry innovation in aircraft technology is a long, time consuming and very expensive process. Therefore, other forms of innovations shall be explored such as the utilization of the existing state of the art technology (Internet of Things, Artificial intelligence, Virtual Reality, etc) that can make the difference and lead LC into blue oceans, characterized by uncontested markets where competition is irrelevant, and new demand can be created and captured by breaking the value-cost tradeoff and aligning the organization’s activities in pursuit of differentiation and low cost [13].

However, blue oceans become red sooner or later. Therefore, LC can utilize the financial and reputational benefits blue oceans provide to invest in their journey towards the exploration of green oceans. Green oceans capture social market spaces, target shared value competitiveness, shift the value-cost tradeoff and align the firm's activities with its human intellectual capital for differentiation or low cost [14].

In the airline industry, meaningful sustainability strategies must include replacement and upgrades of the aircraft fleet to meet the airline environmental regulations and standards. Therefore, sustainability is a current global trend and need which requires significant investments for both the organizations and the customers to demonstrate their environmental awareness and commitment [15].

Achieving the second key strategic area through Green Oceans, LC must create a closer relationship with their clients who form not only the market but society as well. An extension of the sustainable innovation strategy is the social innovation strategy. Being 'green' indicates care for the environment but being 'pink' indicates care for the people. It is up to the LC to decide which strategy they shall follow after securing the financial sustainability from the blue ocean's disruptive innovations.

The Pink Ocean strategy, driven by social innovation, is an alternative path to the Green Ocean strategy, which is driven by sustainable innovation, but both are needed in the proposed LC transformation strategy. The Pink Ocean strategy satisfies the third strategic area with people-centric products and services, but also generates knowledge, democratizes innovation, and creates geo-entrepreneurial opportunities when people are globally heard [16]. Pink Oceans shape a compassionate market space, coincide with the competition, create and shift the demand, share the value-cost tradeoff and align the firm's activities in pursuit of care, love and support to achieve and sustain human dignity above all costs [17].

LC who successfully crossed the oceans from the Red to the Blue, to the Green and the Pink must communicate this achievement towards all directions related to each strategy. Strategic partners and financial investors, in particular, seek the financial stability Blue Oceans offer but also seek organizations with sustainable and social goals and achievements. Such organizational performance is measured with the ESG index (Environmental, Social, Governance) and impacts investor's decisions tremendously. In 2018, the sustainable, responsible and impact (SRI) investment assets reached the 12 trillion dollars from which the 11.6 trillion (8.1 trillion in 2016) is handled by asset managers that consider the ESG criteria [18]. ESG goals and metrics can be achieved through the Green and the Pink Ocean strategies on sustainable development, social impact, and ethical management [19].

The communication strategy shall also address societal needs which directly impacted the results of sustainable and social achievements. The effectiveness of such communication strategies is related to the innovation efficiency achieved in each strategy; therefore, the fifth key strategic area is the continuous optimization of the efforts done and the achievements accomplished. This continuity is quite challenging as it does not depend on the experiences learned so far, on tangible technologies or measurable management practices but on the philosophy of the organization to operate by following the Aristotelian principle of the golden mean and the Platonic idea of thinking more. Sustaining success is not a management or leadership skill but applied philosophy mastered only with self-awareness at individual or organizational level.

LC faced, and keep on facing tremendous problems not because they were not able to solve them, but because they were not able to identify them in the first place. Losing balance on what is called common sense is easy when problems and success levels are below or above expectations. Therefore, the fifth key strategic area which is based on the works of Socrates, Plato, and Aristotle through the Delphic maxims of 'know yourself', 'metron ariston (being just)' and 'miden aga (no exaggeration)' is the most challenging as common sense is not that common, after all.

## 7 Limitations and Areas of Further Research

The research conducted for this paper was merely the basis of work required to deliver a detailed strategy for legacy airlines. While the high-level strategic aspects were investigated in a detailed manner, extended research would lead to a more refined and specific solution overall. This further research could encompass more detailed strategic initiatives as part of each strategic area defined in this work. Furthermore, and since many issues have already been identified, it is very likely that more issues that threaten the business model of the legacy airlines to be discovered.

While the survey already reflected the preferences from a large part of an airline's customer base it would be very useful to also conduct further interviews with business customers which is an important customer segment for legacy carriers. Also, interviews from experts working with low-cost carriers would be a good way to deepen the research. Furthermore, interviews with employees, experts on the aviation value chain, and regulators of this industry would have delivered additional insights. Lastly, it would be a good initiative to further expand on secondary research and conduct a more detailed cause-effect analysis of the current market situation and the identified trends.

## 8 Conclusions

This research provides detailed insights into the reasons why the liberalization of the European airline market helped the rise of the low-cost carriers and proposes a business transformation model where legacy carriers can adopt to regain competitiveness. The research indicated that the liberalized market environment led to a change in consumer behaviour towards price sensitivity. This goes against the business model of legacy carriers, which should therefore make a strategic change. legacy carriers could either try to continue their current strategy of competing directly with low-cost carriers, or they can reverse back to their former high-quality medium-price product. The research results suggest that the legacy carriers should decide on the latter strategy and deliver a holistic transformational model to enable a differentiation strategy.

By utilizing a variety of widely known business as well as leadership concepts, the proposed holistic transformational model provides the top-management of legacy carriers with a hands-on guide on making the changes within the five strategic actions. They can therefore accelerate digitalization, focus on sustainability, shift their product offering, market this offering more effectively, and rethink their portfolio strategy.

Responsible managers at legacy carriers can utilize the proposed model by focusing on the airline's core strengths while satisfying societal needs. This can help legacy airlines defend their business operations, regain market share, and secure their position in the European, and global airline market.

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