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AFTER COVID-19 AIR TRANSPORTATION IN EUROPE: TIME FOR DECISION-MAKING

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is a French think tank for European integration and free economy.

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SUMMARY

The Covid-19 crisis will act as an accelerator in the structural changes that have been taking place in air transportation in Europe over the last twenty years on intra-European flights, marked by the rise in power of low-cost players. The latter have significant financial resources at their disposal and will take advantage of the crisis to expand geographically, thus better linking together the European continent. This expansion will be achieved particularly through external growth operations, by taking over the assets of bankrupt or attrition companies. It is also expected that their investment in the business segment will be stepped up through increased frequencies on major routes. Similarly, it is likely that the low-cost carriers will continue their strategy of network densification by developing a strategy of connecting both within and outside Europe. For their part, the major incumbent operators will certainly be rescued by their Member States, but risk being marginalised in the future unless they accelerate the transformation of their business model on medium-haul. There is an opportunity for the historic airlines, and the first announcements by Air France KLM, British Airways and Lufthansa demonstrate their awareness. They will need the support of all stakeholders if they are to achieve the effective implementation of these transformations.

GLOSSARY OF THE MAIN TERMS USED

Point-to-point activity: activity consisting of transporting passengers from point A to point B without any connections.

Base: airport where a company operates and where aircrafts and crews are stationed, allowing, among other things, a flight schedule with early morning departures and late evening returns.

CSKO (unit cost per available seat-kilometre): an indicator that measures the unit cost of a seat for one kilometre by air. This cost decreases with the distance travelled.

Connection: a system that simply allows a passenger to switch from one flight to another at the same airport, without any guarantee of continuity, which is not the case with correspondence.

Corresponding: system that allows a passenger at the same airport to transfer from one flight to another by transferring his or her luggage and guaranteeing continuity of service between the two flights (e.g. in the event of a delay).

Hub: central airport that acts as a hub, connecting flights to each other through connections. A passenger travelling from point A to point C will stop at hub B, which connects flight AB with flight BC.

Long-haul: flights lasting more than 4 hours.

Middle-cost: airline whose CSKO is between 3 and 6 cents per kilometre (excluding fuel).

Medium-haul: flights lasting between 1 and 4 hours.

RASK (unit revenue per available seat-kilometre): indicator that measures the revenue generated by a seat over one kilometre on an aircraft.

Slot: the right to use a take-off slot at an airport for a given schedule.

Ultra low-cost: airline whose CSKO is less than 3 cents per kilometre (excluding fuel).

AFTER COVID-19

AIR TRANSPORTATION IN EUROPE: TIME FOR DECISION-MAKING

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I. LOW-COST GIANTS WILL STRENGTHEN THEIR LEAD IN THE WAKE OF THE CRISIS

At the end of the Covid-19 crisis, it is likely that many companies, low-cost or not, will go bankrupt in Europe or will be in attrition (like Alitalia), leaving the field open to survivors. A trend towards concentration is set to begin, which could even be sped up in case of a "soft" recovery in air traffic and a reduction in capacity: consolidation of market share is not incompatible with an overall contraction in the volume of the air transport market in Europe. We saw in the first part of this study¹ that low-cost airlines have significant financial resources, which would enable them to participate in the consolidation of the European sky. We explain in this second part that they have a strong incentive to do so, especially through geographical growth to better link up the entire European territory. This expansion will be achieved through external growth operations, particularly by taking over the assets of bankrupt companies or through organic development in airports, faced with weakened airlines in attrition. It is also to be expected that their investment in the "business" segment will increase, through the increase in frequencies on major routes, especially for Ryanair. Similarly, it is likely that the low-cost operators will continue their strategy of network densification, developing a strategy of connecting both within and outside Europe.

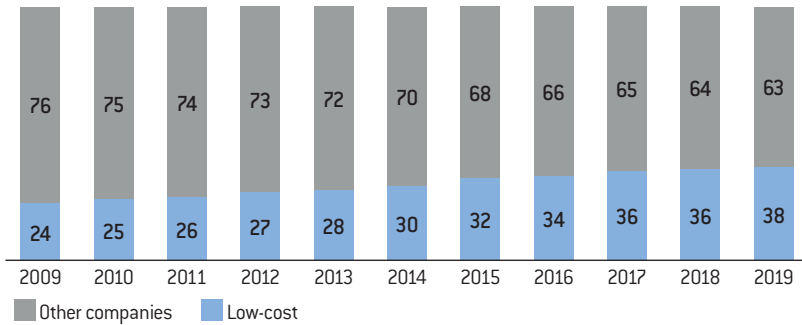
* The authors of this two-volume study would like to thank Alexandre Charpentier, manager at Roland Berger, for his work as editor. The authors remain solely responsible for its content, which is not binding on the institutions and organisations for which they work.

1. Emmanuel Combe, Didier Bréchemier, *Before Covid-19, Air transportation in Europe: An already fragile sector*, Fondation pour l'innovation politique, May 2020.

1. Low-cost is not finished conquering Europe

With a market share of nearly 40% in 2019, it could be considered that low-cost has reached a sort of "threshold" in Europe and that the market will stabilise around a 50/50 balance between low-cost and legacy airlines. Put simply: for low-cost airlines, the tourist, foreign and city-break clientele, the secondary airports with low flight frequencies, a simplistic offer, the point-to-point market; for major airlines, the business clientele, an enriched service offer, consistent frequencies and good slots at major hubs, with connections to long-haul destinations. In short, a sort of market partitioning, each doing its own job, with its own strengths. This vision seems naïve, erroneous and outdated.

Market share of low-cost in Europe (in %)



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Source: Roland Berger, OAG.

No major impediments to their growth

It is sometimes claimed that low-cost airlines, which are now more than 20 years old (and even 30 years old for Ryanair), will see their cost model drift towards high cost. Since incumbent airlines are making efforts to reduce their medium-haul costs, a process of convergence between the two models will take place. This is what has happened in the United States, where major airlines now have a modest 20% CASK gap with low-cost carriers such as Southwest Airlines, which has become "gentrified". However, Europe is not the United States, and for the moment there is no sign of cost drift, especially among ultra-low-cost airlines like Ryanair, as we saw in the first part: not only are unit costs very low, but they remain so.

It is also stated that the low-cost model, particularly in its ultra-low-cost version, will see its development thwarted in Europe, because it is based on a "trick" consisting in infringing the law. It is true that Ryanair has long been in trouble with the European courts, whether in terms of labor law or airport aid.

However, it is unlikely that these obstacles will fundamentally destabilise its model as long as Europe has not harmonised its social and fiscal rules, which is not on the agenda.

On the labor law front, it should be recalled that Ryanair's model is based on the outsourcing of employment contracts, which are moreover concluded under Irish law, which is less protective than other European countries. The situation has undergone a recent evolution, following a decision of the Court of Justice of the European Union in September 2017, which recognises the right of the cabin crew based at Charleroi airport to have Belgian labor law applied to them, which is more protective than Irish law. However, this decision has not yet led to a change in employment contracts based on the staff's usual place of work. Similarly, as regards the right to unionise, the shortage of aircrew in 2018 has led Ryanair, following major strike movements, to recognise them in several European countries and to significantly increase pilots' salaries. However, though Ryanair has indeed had to give up - by agreeing to significant salary increases (up to 20%) - the cost of aircrew technical and commercial staff represents on average 11% of the total cost at Ryanair, far behind fuel (43%). It is therefore unlikely that the shock on labor costs will call into question the sustainability of its model, even if it has contributed to reducing the margin. What is more, Ryanair will quickly adapt its personnel costs to the Covid-19 crisis: the Irish airline announced on 1 May 2020 a plan to reduce its workforce which could result in the loss of 3,000 jobs, the introduction of unpaid leave, salary reductions and the closure of several bases in Europe.

Concerning the airport subsidies received by Ryanair (which are officially marketing and commercial aid), they have litigation over the last 20 years, but have yet to produce convincing results. For example, Air France filed a complaint with the European Commission in 2009, accusing Ryanair of having received 35 million euros of illegal aid in France - and 600 million euros at the European level. These subsidies allegedly constitute illegal state aid, contrary to Articles 107 and 108 of the TFEU. Yet things do not seem so clear in law: for example, the European Commission can authorise start-up aid for lines, as long as this aid remains proportionate and limited in time. Similarly, when an airline benefits from lower airport charges, the Commission checks whether this advantage contributes to the additional profitability of the airport: for example, the agreements concluded between Ryanair and Frankfurt Hahn airport in 1999, 2002 and 2005 were not considered by the Commission as State aid, insofar as these agreements generated additional profits for the airport when they were concluded. In short, the abundant litigation on subsidies, even if it sometimes leads to reimburse some public aids, does not fundamentally call into question Ryanair's model.

We can even imagine that the Covid-19 crisis will lead to a complete situational reverse of state aid litigation: a company like Ryanair could in turn file a complaint with the European Commission to denounce the aid from which the historic companies have benefited, arguing that they are discriminatory and distort competition in Europe.

It is therefore likely that the major low-cost companies, which are in good financial health, will not stop growing in Europe. They still have half of the point-to-point market to conquer, particularly from French cities. To be convinced of their ambition, we can look at their fleet growth forecasts: for example, Ryanair plans to operate a fleet of 585 aircraft by 2024, with 200 million passengers carried. All these aircraft will have to be put somewhere.

Even assuming that the post-Covid-19 market is shrinking in Europe, the major low-cost companies will be able to leverage their financial strength and pan-European brand to take market share from struggling competitors. Moreover, if the European network goes first, the legacies will suffer on their most profitable network, i.e. the long-haul network, and will have to fight on the European market against ultra-competitive low-cost operators.

4

Beyond "flight shaming", there is no impediment to the growth of the large low-cost airlines in Europe (notably by cannibalising legacies, but also by inducing traffic volume), even though they already account for more than 40% of the market.

The conquest of territories is not over, especially in France

The ambition of the major low-cost companies is to create a very fine mesh of European territory, with the aim of multiplying connections between regions. EasyJet does this through its presence in major airports, which link national and regional capitals: we can truly speak of a "pan-European" company. The challenge for easyJet is therefore to increase its frequencies on routes rather than to open new ones.

Ryanair or Wizz Air, for their part, target rather small regional airports: they therefore still have to complete their network by setting up in larger airports, as Ryanair has done in Madrid and Rome. Vueling and Wizz Air's network remains very geographically focused: Vueling is mainly based in Southern Europe, particularly Spain and Italy, while Wizz Air mainly operates routes with direct links to Eastern Europe. If they want to become global players, these two airlines should move beyond their geographical scope to open bases in other parts of Europe. Although on different models, these two companies could generate commercial synergies by working together.

This geographical growth is made possible because the implementation of low-cost is not uniform from one country to another. Schematically, several cases can be distinguished. First of all, there are countries in which low-cost has conquered a strong market share (over 40%) and where there are few fragile operators today because most of the consolidation has already taken place. This is the case for the United Kingdom and Spain. The room for growth for low-cost operators is therefore limited. In the case of the United Kingdom, although the domestic market is currently a duopoly between easyJet and British Airways following the bankruptcy of Flybe, the market for European destinations is fairly competitive and involves three players, two of which are low-cost: Ryanair is the leader, with a market share of 21%, ahead of easyJet and Ryanair. The Spanish market also sees IAG Vueling's subsidiary Ryanair and easyJet competing against each other.

























Low-cost development potential per country

	Low share of low-cost in the country	High share of low-cost in the country
Strong room for improvement	<ul style="list-style-type: none"> • France departing from the province • Germany departing from the province 	<ul style="list-style-type: none"> • Italy • Norway • Portugal • Eastern Europe
Low room for improvement	<ul style="list-style-type: none"> • France departing from Paris • Germany departing from the hubs 	<ul style="list-style-type: none"> • British market • Spanish market

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Source: Roland Berger.

Then there are countries in which low-cost has conquered a large share of the market, but where a major operator could quickly go bankrupt or suffer heavy attrition. This is the case for Italy, Norway, Portugal, and the Eastern European countries. In this case, low-cost could take advantage of these failures to further strengthen their bases. In the case of Italy, the attrition of Alitalia will allow the acquisition of slots in Milan and Rome. Ryanair, already the leading operator in Italy, could thus strengthen its hold on the Peninsula. In the case of Norway, a bankruptcy of Norwegian would make it possible to acquire market share from Oslo, Stockholm, Copenhagen and London Gatwick. In the case of Portugal, TAP Air's delicate situation may enable easyJet and Ryanair to recover market shares in Lisbon and Porto, and some slots at Paris Orly. Lastly, in the case of the eastern countries, many national operators are in difficulty (Air Baltic, Air Moldova, Air Serbia, LOT and Tarom) and consolidation could benefit low-cost operators such as Wizz Air and Ryanair, which are the two low-cost operators in this area.

Top 3 low-cost companies in Eastern Europe in 2019

Country	1		2		3	
	Company	Capacity share [in %]	Company	Capacity share [in %]	Company	Capacity share [in %]
Bulgaria		24		16		13
Hungary		31		16		7
Latvia		59		13		7
Lithuania		31		24		10
Poland		26		26		20
Romania		36		17		15
Serbia		45		11		5
Ukraine		36		8		8

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Source: Roland Berger, Innovata.

Thirdly, we find countries such as Germany and France, where low-cost represents a still limited market share (less than 30%) but growth opportunities exist. In Germany, the domestic market is "locked in" by the Lufthansa Group, which has a market share of 87%. On the market for flights to Europe, Lufthansa's share is lower, around 37%, but there is no major competitor at present. Ryanair has a market share of 10% and easyJet 6%. There is therefore room for growth for low-cost players in the Germany/Europe segment, particularly given the fact that many small players are still present.

In the case of France, the competitive situation is *prima facie* similar to that in Germany, with a dominant legacy carrier on its domestic market and no low-cost competitors under the national flag. However, unlike Germany, Air France already faces a major competitor, easyJet, which has a market share of 15-20%. The margins for growth in low-cost flights do exist in France, but they vary according to market segment:

- On the Paris/province route, it is unlikely that low-cost airlines will be able to significantly increase their presence from Orly due to the lack of available slots. The Air France group remains dominant, with a market share of 78%, thanks to the control of slots and the implementation of a highly efficient tool, La Navette, which ensures a high frequency of flights on main routes such as Paris/Toulouse. At Roissy, on the other hand, the situation is more open and easyJet can still increase its market share by adding frequency on major routes. In addition, in Paris / Province, the presence of a high-speed rail network is a brake on the growth of air travel, which also limits the market share of low-cost airlines;
- On the province/province route, as the regional airports are not very congested - with the exception of Nice and Lyon - there are no obstacles preventing low-cost airlines from continuing to ramp up tomorrow. In a few years, Air France has also suffered a very sharp decline in its market share: in 10 years, it has fallen from 82% to 52%, i.e. a drop of 40%. Most of this fall has benefited easyJet. Particularly, the entry of Ryanair at the regional airports could accelerate this process;
- On Province/Europe flights, low-costs have a strong presence with nearly 40% of the market for easyJet and Ryanair alone. From Lyon, Marseille, Nantes and Toulouse, Volotea has also succeeded in a few years in creating leisure traffic to regional cities in southern Europe. The additional market shares will be to the detriment of historical players such as Lufthansa (routes with Lyon or Toulouse) or British Airways (routes with Lyon or Nice) but also Air France, which is mainly present in this market with Transavia and Hop!;
- On Paris/Europe flights, Air France is the first player with more than 30% of the market, well ahead of EasyJet, Vueling and Transavia, each accounting for nearly 10%. This is undoubtedly a market targeted by low-cost airlines, even if the low availability of slots in Paris limits their development for the moment.

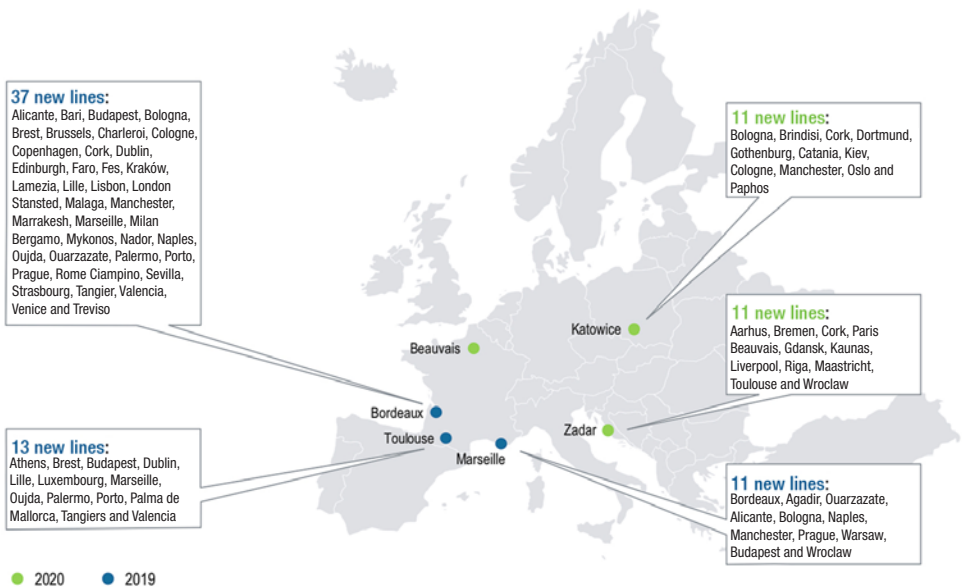
It is therefore likely that the low-cost players will continue to push their pawns in France on the transversal lines, both domestically and towards Europe. In this respect, the opening of a base by Ryanair in France from 2019 marks an important change in the French air transport landscape. Indeed, following a dispute over labor law, Ryanair had closed its only base in Marseille in 2011: since then, flights to France have been operated by aircrafts based in other countries. After Ryanair's decision to apply French labor law on French territory, the Irish company decided in 2019 to return to French soil and opened three bases, in Bordeaux, Marseille and Toulouse. For the time being, the return is taking place in a measured way: only three aircrafts are based at each airport and operate around fifty new routes, mainly to "leisure" destinations or to major regional cities in Europe.

However, Ryanair's competitive impact on the French market could well prove formidable tomorrow. Indeed, Ryanair is starting to operate on several “transversal” domestic routes, such as Bordeaux-Marseille, which will have an impact on competitors, particularly on Air France. Once the route has been “tested”, Ryanair can increase its frequencies, especially to target business customers and to divert customers from the Air France hub at Paris-Charles de Gaulle to other European hubs. Ryanair could also attack regional hubs, such as Lyon, tomorrow, or gain a foothold in Nantes, by competing directly with Transavia, easyJet and Volotea.

Concerning Paris, no Ryanair project is announced for the moment. The low-cost remains centered on Beauvais, which is located more than an hour and a half from Paris. The level of charges and slot constraints are currently dissuading the Irish airline from challenging Air France and easyJet head-on. However, the Beauvais airport model operates with a margin generated by the Paris/Beauvais buses, which finance the aid to the airlines, especially Ryanair. If this model were to change, for example following the development of competition on the bus line Paris/Beauvais, aid could be reduced, and Ryanair might want to go to Paris Charles de Gaulle.

With Ryanair, anything can become possible, in a very short space of time, if a player were to release slots in Paris. The Italians learned the hard way: due to Alitalia's difficulties, Ryanair has become the leading airline on the peninsula.

Lines and bases opened by Ryanair in 2019-2020



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Source: Roland Berger, company data.

Low-cost companies have not yet completed their fine meshing of the European territory, particularly in countries such as Germany or France, where they are less present than elsewhere. On routes out of the province and into Europe, low-cost carriers can still gain market share in these two countries. Nor can we rule out that Ryanair might attack Paris, after having regained a foothold in France since 2019, by opening bases in Bordeaux, Marseille and Toulouse, especially if Paris airport charges were to become more competitive after the crisis.

The geographic expansion of the low-cost segment will be achieved through internal and external growth

This strategy of geographic expansion of low-cost companies in Europe can take two main forms:

- Organic growth, by opening new routes and setting up in new airports, especially to take advantage of the attrition of certain historical players;
- External growth, through mergers and acquisitions or the acquisition of companies after bankruptcy.

While low-cost companies have generally grown through internal development, it cannot be ruled out that they will resort more to external growth after the Covid-19 crisis, for several reasons.

Firstly, the opportunities to buy out companies are increasing, given the decline in their market value. Thus, for companies listed on the stock exchange, they have experienced a drop in their market value between 30 and 60%. For example, Norwegian saw its value fall by 80% in the space of one month.

Secondly, given the uncertainty about the recovery in air traffic, external growth has the advantage of not increasing seat capacity, which would contribute to a reduction in ticket prices. Given the overcapacity in Europe, buying out existing operators is less risky than internal growth.

Thirdly, external growth allows you to benefit from the skills of another airline, whether in terms of knowledge of geographic markets or local reputation (such as Wizz Air in Eastern Europe) or the transfer of a business model (if you buy a low-cost airline, for example).

Fourthly, the extreme fragmentation of the European market, with some companies in a fragile financial situation, may lead to a concentration in order to reduce competition and thus increase the average ticket price.

Last but not least, external growth permits getting a hold of a scarce resource, namely the slot portfolios at major congested airports, which by definition cannot be achieved through internal growth. It should be remembered that to operate a route between point A and B, an airline must first have a "slot", i.e. an authorisation to take off or land within a given time slot (usually 10 minutes) on a given day on the runway of a given airport. The slot, granted free of charge by the public authorities, confers a right of use on the holder but does not as such constitute a right of ownership of the resource. At so-called "secondary" airports, many slots are available throughout the day and the opening of a new route by a low-cost airline therefore is not a problem. On the other hand, from major airports such as Roissy in Paris or Heathrow in London, the number of slots offered by the airport is a scarce resource, in insufficient quantity compared to the number of slots requested by airlines, particularly on the most attractive take-off/landing schedules. At these congested airports, the allocation of take-off and landing slots is governed by rules which in practice favour established airlines. Especially, the "grandfather right" rule states that a carrier that has already operated a slot can claim the same slot for the next season. As a result, at congested airports, the share of historical slots in the total slots is between 80 and 90% and even 99% in the case of London Heathrow.

Access to slots therefore constitutes a real regulatory barrier which allows incumbent carriers to limit the development of their *low-cost* competitors unless the latter buy an airline already established at a congested airport, or purchase, as is already the case at Heathrow, take-off slots on the secondary market. The result is that the true value of an air transport asset is not represented by aircraft but by take-off slots at congested airports. By definition, these slots are unlikely to be acquired through internal growth. Indeed, as their number is limited, it is rare for slots to become available at a major airport. There is therefore no choice for growth other than to buy a company already present at the airport or to participate in the allocation of its slots when it has gone bankrupt. This is exactly what happened at Orly, following the bankruptcy of Aigle Azur. Similarly, when Air Berlin went bankrupt, easyJet benefited from valuable slots on Berlin Tegel, following the takeover of Air Berlin by Lufthansa. As the German market leader found itself in a dominant position at the airport, slots were transferred to easyJet. In the recent past, easyJet has also used the bankruptcy of airlines such as Thomas Cook and Monarch to recover slots.

Of course, this external growth could be hampered by competition authorities. If it leads to a dominant position on certain airports or routes, a merger cannot be accepted without remedies, or even be blocked. In the past, the European Commission has already banned takeovers in the air transport sector, such as Aer Lingus/Ryanair or Aegean/Olympic Airways.

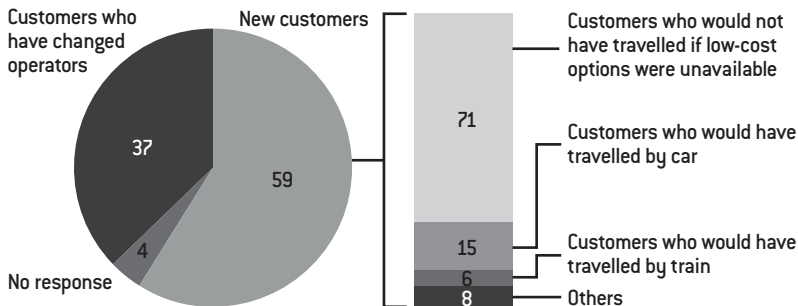
It is likely that major low-cost airlines will continue to grow both internally and externally, especially by buying up the assets of struggling airlines to acquire slots at major airports. The main obstacle to this external growth strategy will be mostly regulatory, with merger control, which can block a merger that undermines competition in the market.

2. An ever-widening customer base

The limits of a strategy oriented towards leisure customers

The low-cost model was born 20 years ago on the idea of "making those who don't fly fly", i.e. essentially a leisure, foreign, youth or "visiting friends and family" (the "city breaks") clientele. Low-cost has therefore flourished on the phenomenon of traffic induction, linked to a very low average ticket price. According to the 2004 European Low Fares Airline Association (ELFAA) study, 59% of low-cost air travel customers were new customers. Of these, 71% said they would not have travelled in the absence of low-cost airlines.

Origin of low-cost air transport customers (in %)



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Source: ELFAA 2004.

Though this induction effect has stimulated air traffic in Europe by encouraging people to travel, this volume strategy presents two risks.

In the first place, it is highly dependent on the ability to sustain low prices over the long term. This type of clientele is highly price-elastic: a price increase of 10% can lead to a very sharp drop in demand, of around 15% according to certain estimates. Moreover, there is a "psychological price" above which customers no longer travel by air and prefer other means of transport or give up travelling. Since the low-cost model is profitable thanks to high load factors,

a drift in prices upwards may endanger the viability of the model. It will be objected that it is sufficient for the low-cost model to remain very efficient on its cost base to avoid such a drift. However, an exogenous shock can lead to an increase in ticket prices: consider, for example, a sustained rise in oil prices, even if this scenario seems unlikely in the coming years. Given that kerosene accounts for more than 40% of the variable costs of an airline like Ryanair, a sustained increase in its price can only lead to a rise in the ticket price in the long-term once the hedging instruments have been exhausted.

Secondly, in a "flight shaming" context, one cannot exclude a structural change in the behaviour of the younger generations, which will lead them to travel less "for pleasure". While it is difficult to quantify this threat to date, it is nonetheless potential.

From this perspective, a reorientation of traffic towards a "business" clientele, which travels by obligation, can limit this risk. According to various studies, the price elasticity of demand for business travel on medium-haul routes is only -0.7². Similarly, the price elasticity of VFR ("visiting friends and family") customers is lower than that of pure leisure customers, since the flights are recurrent and to the same destination.

Low-cost has already made its way into a business customer base

In fact, low-cost operators - and especially middle-cost operators such as easyJet or Vueling - have long since developed a mixed customer portfolio, including a proportion of business customers. Moreover, in terms of products offered to customers, there is a convergence between the offerings of legacy airlines, which are becoming more optional, and those of the low-cost airlines, based on the sale of high value-added options.

For example, in the case of easyJet, business customers would account for more than 25% of its total passengers. This figure is hardly surprising, given that easyJet operates mainly from large airports with high operating costs, given the weight of airport charges. It is therefore necessary to attract a high-contribution customer base. The main challenge for easyJet is therefore less to open new routes than to develop frequencies on a route, to enable business travellers to leave at any time and make a round-trip in a day.

This business orientation is reflected in the wide range of services offered by easyJet: choice of seat, tickets that can be changed free of charge, Flight Club loyalty card, speedy boarding, waiting lounge, etc. In the same way, easyJet is also present in the booking process at Global Distribution Services (GDSs) which allow for simpler and more automated booking management.

2. However, it may be objected that the price elasticity of business passengers is likely to change after Covid-19 with greater sensitivity to price, given the more widespread use of videoconferencing. No one is able to precisely predict this impact today.

Also, contrary to popular belief, Ryanair already has a solid business customer base, mainly made up of small and medium-sized enterprises located in regional cities. Like easyJet, Ryanair claims 25% of business customers. In fact, the Irish company has launched a Business Plus offer as early as 2014, with a fast track, flexible ticket and Premium seats. Ryanair is also present in GDSs. The Ryanair market should therefore not be reduced to leisure, foreign and city break customers. Rather, the novelty for Ryanair consists in winning over business customers on large platforms, which impose higher operational costs. It should be noted, for example, that Ryanair increases the number of frequencies when it enters into large airports, such as in Rome, where it operates daily flights on main routes.

One can imagine that tomorrow low-cost operators will form partnerships with other transport operators, with the aim of increasing their frequency, and thus better meet the expectations of business customers. Notably in Europe, where rail transport will liberalise on national markets starting in 2021, we can envisage new entrants or incumbent rail operators forging alliances with airlines, in order to increase the number of frequencies on a given destination (e.g. Marseille/Paris) or to benefit from the commercial power of the airline partner (contracts with companies, brand awareness, distribution costs on a platform such as easyJet Worldwide or the sites of the incumbent airlines or all the players in online distribution).

3. The new frontier of the great low-cost: connecting

The large low-cost companies will not only continue to expand by opening new routes in Europe and diversifying their customer base into the business market. They will also densify their territorial coverage by developing connecting flights, in Europe and outside Europe, through partnerships with other airlines. This new offensive will further weaken the incumbent airlines by attacking the heart of their network, based on a hub with connecting flights.

Connection is not correspondance

To fully understand the novelty introduced by the low-cost companies with the "connecting", it is necessary to return to the model of the big historical companies, based on the control of a "hub".

A hub is a large airport platform linking different flights together: feeder flights come to feed major routes with very high traffic. The hub enables, for example, to offer passengers located in Pau a stopover at Paris Roissy to go to New York. In this way, passengers living in Pau are offered a wide portfolio of destinations around the world, which cannot be offered directly from Pau. Some hubs,

such as the Air France hub at Roissy or the Lufthansa hub at Frankfurt, made the junction between short/medium-haul and long-haul flights. Other hubs, such as the Orly or Lyon Saint Exupéry hubs for Air France, connect domestic flights to each other or to Europe. There are also hubs between long-haul flights, such as Emirates in Dubai or Turkish in Istanbul.

However, whatever its configuration, the hub is built on the principle of full connecting, which guarantees passengers:

- A single ticket booking process;
- An assistance in case of disruption of one of the flights (cancellation, delay, etc.);
- A minimised waiting time between flights;
- An easy transit, with automatic luggage transfer.

This connecting model is very costly and complex to manage for an airline, since logistics and flights have to be coordinated with each other: for example, in the event of a delay, passengers have to be offered an alternative solution, such as postponement to a later flight. All these costs are ultimately reflected in the ticket price. The hub model with organised connections is perfectly suited to a "business" clientele, which wants to minimise wait times between two flights, even if it means paying more for the ticket.

Connecting: new destinations without the constraints

The large low-cost airlines have recently developed a system for organising their network that is much less restrictive than the full connecting system. A company with a large number of flights at a single airport - let's consider Vueling in Barcelona – can simply offer passengers the possibility of taking a second flight, but limits coordination to the strict minimum. The connection is based on a fairly simple intuition: if there is enough traffic at an airport and a wide range of destinations, the connections will make themselves, without really needing to be organised. Connecting must be self-organised by the customer, without the airline committing itself to guarantee a service between two flights.

On the customer's side, who travels for "leisure" reasons or who has a strong budgetary constraints, connecting is interesting as soon as the disadvantages of a self-correspondence (especially wait times) are compensated by a more attractive ticket price.

For low-cost operators, connecting allows them to attract additional customers and thus increase their load factor, without un-optimising their flight plan. There is no question of waiting for customers from the previous

flight, by postponing the take-off of a flight. In short, connecting allows for benefitting from the critical size of an airport, without the constraints, costs and responsibilities inherent in a full connecting system. Easyjet, Vueling and Ryanair have now reached sufficient critical size to offer passengers connections to numerous destinations. For example, the Worldwide by easyJet programme offers connecting flights to no less than 170 airports in Europe.

The connection can be made between flights of the same company (Vueling/Vueling for example to Barcelona), with another company of the group (Vueling/Level to Barcelona), or with another low-cost company. Connections can also be observed between medium-haul flights but also between a medium-haul company and a long-haul company.

For example, the "Worldwide by easyJet" program offers customers at several airports connections to long-haul flights operated by partners such as Corsair, Norwegian, Virgin Atlantic, or Westjet to several key North American destinations. This positioning as a distributor with Worldwide by easyJet is also at the heart of easyJet's commercial strategy of "platforming". In the future, it will be able to compete with the large OTA (Online Travel Agency) internet distributors by positioning its offer and then that of smaller competitors/partners.

Connecting, a threat to legacy carriers

Connectivity is a real threat for major legacy airlines, reducing the attractiveness of their hub. Indeed, the multiplication of connecting flights increases competition between hubs to attract transit passenger traffic: competition is no longer only between the major hubs of Frankfurt, Heathrow or Paris-CDG; it also concerns more "secondary" airports (in terms of traffic) such as Barcelona or Milan. Although connecting does not primarily target business customers, it will contribute to weaken the load factors in economy class, especially on long-haul flights.

What's more, low-cost airlines no longer hesitate to connect to major airports and long-haul flights in direct competition with the incumbent carriers' connections.

In April 2020, what is the situation of major low-costs on connecting? Vueling has developed a wide range of connecting flights at its natural hubs of Barcelona and Rome for several years now, both between its own flights and those of the IAG group (especially Iberia) and also with third party long-haul carriers. At Barcelona airport, no fewer than 140 destinations are offered; 55 from Rome, via direct or indirect flights. Thus, under a partnership with American Airlines, passengers of the American airline can continue their journey in Europe by taking a Vueling flight to Barcelona.

Yet it is undoubtedly easyJet which today has the largest intra-European connecting network and is also positioned, with partners, on long-distance lines. For example, easyJet offers connections at Orly with La Compagnie in New York and with Corsair to the Caribbean. Similarly, from London Gatwick, easyJet offers numerous flights to North America, thanks to partnerships with WestJet, Virgin Atlantic and Norwegian.

For the time being, Ryanair offers only self-connection within its network, with a maximum waiting time of 6 hours between flights. However, its programme is less attractive than that of easyJet because the Ryanair model is based on the multiplication of bases in Europe - there are no less than 87 - and does not really have a large natural hub with a sufficient number of daily flights to offer a portfolio of attractive connections. It should be noted, however, that at certain airports such as London Stansted or Madrid, Ryanair has a sufficiently dense network of routes to develop a truly attractive connecting network, without too long wait times and with a wide portfolio of destinations. The more Ryanair goes to large airports or develops flight frequencies at the same airport, the more connecting will become a growth driver for it.

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It is likely that low-cost airlines will continue to develop their strategy of targeting business customers and going to major airports in head-on competition with legacy companies. They will also pursue their connecting strategy, consisting in developing indirect flights, without, however, bearing the constraints of a hub model. Even beyond Europe, low-cost carriers are beginning to form partnerships with long-haul airlines, which poses a direct threat to the hubs of incumbent carriers.

II. BEYOND THEIR SURVIVAL, THE MAJOR LEGACY AIRLINES WILL HAVE TO FACE STRUCTURAL CHALLENGES ON MEDIUM-HAUL ROUTES

In the short/medium-haul segment in Europe, for the past 20 years the three major legacy carriers (Air France-KLM, IAG and Lufthansa) have been facing fierce competition from low-cost carriers which have captured almost half of the point-to-point market. Faced with this threat, the three operators have reacted over the past 10 years by launching a low-cost activity themselves through a dedicated subsidiary. This strategy has taken the form of "duplication": part of the activity has been transferred to a low-cost subsidiary - most often point-to-point flights on the medium-haul market - while the rest

of the activity - and especially long-haul and hub feeder flights - is performed on the classical basis of a classical model, operated by the parent company.

Low-cost subsidiaries of the three legacy carriers

Historical Company	Medium-haul low-cost subsidiary	Features	Fleet Size
		Small part of the medium-haul (from Orly, Nantes, Lyon, Montpellier to France)	83 aircrafts
		All medium-haul, including to the Heathrow hub (in addition to British Airways)	123 aircrafts
		All medium-haul flights, excluding the two hubs in Frankfurt and Munich	160 aircrafts

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Source: Roland Berger.

However, we show that it is particularly difficult for a legacy carrier to successfully enter the low-cost business.

Secondly, the size of activity transferred to the low-cost subsidiary is not the same between airlines: while the IAG and Lufthansa groups have transferred their entire point-to-point activity, the same cannot be said for Air France-KLM group. We also raise the question of the scope of the low-cost subsidiary: should it not eventually absorb the entire short and medium-haul business of a legacy carrier?

Lastly, we are analysing the growth levers of the low-cost subsidiary, which primarily involves projecting outside of the domestic territory, with the opening of bases abroad, as the IAG and Lufthansa groups have already begun to do.

1. The difficult path of low-cost

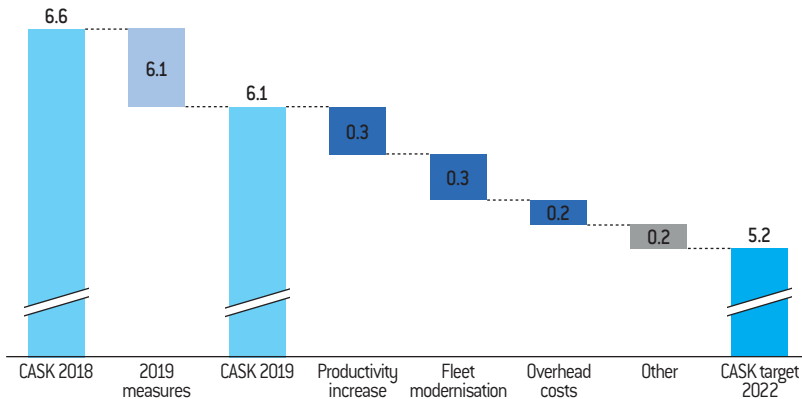
At the turn of the 2010's, the development of a low-cost activity within the legacy carriers became a necessity, given the extent of the unit cost gap (CSKO) with low-cost competitors. Indeed, over a distance of 1,200 km, the unit CSKO of an incumbent in 2012 was at least 12 cents (including fuel), i.e. 50% more than a middle cost operator and 75% more than an ultra low-cost operator. The legacies therefore had no choice at the time but to launch themselves into low-cost.

The three major airlines today all have a low-cost activity presenting several characteristics:

- It is developed within a subsidiary, which has a certain degree of autonomy from the parent company;
- It does not cover all of their short/medium-haul activities: the powering of a hub is always entrusted to the parent company, on the grounds of better coordination with the long-haul activity and a certain continuity in the customer experience;
- It takes the form of a "middle-cost" model and not an "ultra low-cost" model. This results from the fact that airlines operate at main airports, with higher airport charges; likewise, for reasons of social cohesion within the group, it is not possible to develop an ultra low-cost activity, which would be in direct contradiction with the best social statement that prevails in large companies.

However, the low-cost subsidiaries of the three operators do not perform equally well. While Vueling has a cost structure that is in line with that of a middle-cost and is profitable over the long-term, the same cannot be said of Eurowings, the Lufthansa subsidiary. Eurowings had a CASK (excluding fuel oil) of 6.6 cents in 2018, which was higher than the level of easyJet with fuel oil (5.8 cents). On the other hand, revenue per seat kilometre does not cover the CASK, which explains Eurowings' losses in 2018 (231 million for a turnover of 4.2 billion euros). Lufthansa's objective is to return to profitability in medium-haul by 2022, with a 20% reduction in CASK. This ambition requires several levers, including fleet renewal and productivity gains. The difference with Vueling can be explained especially by the fact that it has great autonomy within the IAG group and, above all, that it was "born" low-cost: in 2013, IAG took control of a "pure player" Spanish low-cost airline.

The Eurowings CASK reduction plan (in euro cents)



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 Source: Roland Berger; data from the company.

In reality, Eurowings' issues show how difficult it is to develop a genuine low-cost model when you are a high-cost operator:

- it is socially difficult for two very different models to coexist within the same group. The personnel of the incumbent *subsidiary* consider the *low-cost subsidiary* as a threat to their status and advantages. For the low-cost subsidiary to prosper and be in line with the DNA and agility of the low-cost model, it is necessary to set up an entity that is sufficiently watertight and autonomous from the parent company;
- legacy carriers, even when they split up, find themselves in an asymmetrical situation with *low-cost* operators. The latter are "*pure players*", born with the *low-cost* model itself. They therefore do not have to learn the workings of the model and manage the transition costs between two models; they do not have to worry about the risks of cannibalisation and tariff and organisational consistency between a low-cost and a *high cost offer*.

In order for the low-cost subsidiary to become profitable, several conditions must be met:

- A great autonomy of decision with respect to the parent company to benefit from organisational agility. The strength of low-cost lies in its ability to regularly launch new lines in "test and learn" mode, to adjust capacities and destinations very quickly according to changes in demand and, if necessary, to very quickly withdraw from lines whose results prove disappointing. Their management, based on a short decision chain and reduced administrative costs, must allow them to be highly responsive, both to launch new products on the market, to adapt to changes in their environment and to counter the initiatives of *low-cost* competitors;

- The network is oriented towards leisure but also business customers, given the cost structure, which brings the subsidiaries closer to a "middle-cost" model. In this respect, one may question the relevance of the Transavia France network, which mainly operates leisure lines. Given the fact that Transavia France operates from major airports such as Paris Orly, it is appropriate to develop Transavia on mixed leisure/business routes;
- The main characteristic of low-cost models that perform is that they focus on medium-haul only, to the exclusion of any long-haul activity. This is a classic management principle, consisting of specialising in a single business line, in order to avoid any complexity resulting from the management of two economic models with different levers. At a time when Air France has ended the Joon experiment, it is desirable for Transavia to continue to focus solely on the medium-haul market, which does not rule out connecting to long-haul routes operated by Air France from Orly (such as the West Indies or New York).

Moreover, the operations of the low-cost subsidiary cannot be completely isolated from the overall organisation of the group, which often has to manage activities that are not at the very heart of the airline business. This is the case especially for ground check-in and boarding services, in-flight food services, aircraft maintenance and stopovers. Legacy carriers cannot therefore benefit from the economies of scale and flexibility provided by outsourcing these tasks³. As a knock-on effect, their low-cost subsidiaries are negatively impacted. The same is true of employment contracts, which have a certain degree of uniformity between the parent company and the low-cost subsidiary. Especially, it is socially delicate to create different salary paths for new staff. A so-called "B scale" system, for example, is impossible under French social law, even though it has allowed many airlines around the world to change their employment contracts.

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Although the major incumbent companies have turned to low-cost on medium-haul, the results have not yet met their expectations, except for the IAG group. "You're born low-cost, you don't become low-cost". The difficulty in developing a low-cost model is partly explained by the lack of agility, the fear of cannibalisation of activity and the coexistence within the same group of two entities with different logics and cultures.

3. However, recent developments can be noted. Lufthansa is in the process of selling LSG Skychief, the airline catering business in continental Europe, while Air France has partially sold Servair. Similarly, some airlines have sold the management structure of their loyalty programme.

2. What's the perimeter for low-cost?

Once the choice of a low-cost subsidiary had been made, the incumbent companies had to ask themselves the question of the scope of its intervention. In this respect, IAG and Lufthansa resolutely chose to entrust their entire point-to-point activity to a "middle-cost" subsidiary. This is not the case for Air France-KLM. Indeed, Transavia France operates from Lyon, Montpellier, Nantes, and Orly but is not present on:

- domestic radial lines, and especially the Shuttle, whether at Orly or Roissy;
- domestic cross lines;
- routes to Europe which are already operated by Air France, especially from former bases in France;
- from airports outside France to serve cities in France or abroad;

In 2014, the subject of pan-European development generated one of the biggest strikes in the company's history.

Transavia's growth will eventually require Air France-KLM to gradually shift its short and medium-haul services from point-to-point to its subsidiary Transavia. This transfer of route could be done gradually in the following stages:




- transfer of cross-domestic lines, including to the Lyon regional hub;
- transfer of European routes operated by Air France;
- transfer of the radial lines, especially the Shuttle;
- and to develop bases in Europe. This will raise the question of a possible acquisition to rapidly ensure this development outside France.

Beyond the case of Air France, we can question the opportunity for the three historical players to go further in the ramp-up of their low-cost subsidiary, by entrusting the feeding of their hub to their low-cost subsidiary. For the time being, neither Air France-KLM⁴, IAG nor Lufthansa are considering this possibility, on the grounds that supplying the long-haul hub justifies continuity in the customer experience and that the specific constraints of the hub are difficult to reconcile with a low-cost model.

Lastly, it is questionable what critical size the low-cost subsidiary should have, if it operated all short and medium-haul flights, whether point-to-point or hub-directed. It appears that the growth margin is very high, ranging according to the airline between 180% and 375%.

4. With the exception of Transavia NL which operates flights from Amsterdam to Europe and connections to KLM.

Size of low-cost subsidiaries of European incumbent companies

	Current size of the low-cost subsidiary (millions of passengers)	Total number of passengers carried by the group on medium-haul (millions)	Margin of progression from current size (%)
 AIRFRANCEKLM GROUP	16 (Transavia)	76	+ 375
 IAG INTERNATIONAL AIRLINES GROUP	32 (Vueling)	90	+ 180
 Lufthansa	38 (Eurowings)	116	+ 205

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Source: Roland Berger.

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Major airlines have so far opted to confine their low-cost subsidiary to point-to-point flights, excluding flights to their hubs (with the exception of KLM). If they want to face the low-cost giants on equal terms in the future, they should transfer their entire medium-haul business to their low-cost subsidiary.







3. Becoming a pan-European low-cost airlines

Beyond the transfer of lines within the group, the three main airlines can also use their low-cost subsidiary as an instrument to regain market share in Europe, even in a context of global market attrition.

This strategy will necessarily involve setting up their low-cost subsidiary outside their domestic market by opening bases abroad. As we have seen, one of the strengths of low-cost airlines - and especially Ryanair and easyJet - lies in their ability to cover European territory by multiplying the number of local bases.

On the other hand, the subsidiaries of the three operators were initially conceived as defensive instruments, operating mainly from their country of origin. This characteristic is less true for Vueling, which immediately projected itself into southern Europe with important bases in Barcelona, Madrid or Rome. This not the case for Transavia, which has no bases outside its local ones in France and the Netherlands. Transavia's only base in Europe outside of its country of origin was in Munich but it closed in 2017. To become a truly pan-European player, it is necessary to be present across the continent, through local bases, to stimulate export and import traffic.






Number of low-cost company bases

	Number of bases in the country of origin	Number of bases in Europe (outside the country of origin)
	9 (United Kingdom)	21
 (Lufthansa's low-cost subsidiary)	8 (Germany)	4
	4 (Ireland)	83
 (low-cost subsidiary of Air France-KLM)	4 (France) 3 (Netherlands)	0
 (low-cost subsidiary IAG)	12 (Spain)	5
	2 (Hungary)	23

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Source: Roland Berger.

In addition to opening bases in Europe, legacy carriers should develop "connecting" flights at their bases, either between the flights of the low-cost subsidiary or with flights from the parent company. This is already the case with Vueling in Barcelona and Rome, where it offers a Vueling/Vueling connection or to subsidiaries of the IAG group. Regarding Transavia, while it operates connecting flights on Amsterdam Schiphol with the KLM network, the same is not true in France: Transavia France has not set up a connecting system. Given the scale of Air France's positions at Orly (and even at Lyon, a genuine regional hub), it might be relevant to develop a "smart connecting" system, allowing customers to book connecting flights to Orly and Lyon on all Air France sites, provided that connection times are reasonable. For example, a customer travelling from Brest to Faro could book a connecting flight via Orly on the Transavia website: the first leg would be operated by Air France, with a waiting time of around 2 hours at Orly, before taking a Transavia flight to Faro. The connection would improve the aircraft load factor without imposing additional operational constraints. In short, faced with the growing threat of connecting proposed by the low-costs, the best response for legacy carriers is to also launch connecting.

Connecting among low-cost (pure players and group subsidiaries)

Low-cost operator	Airports and type of connection
	<ul style="list-style-type: none"> • 27 easyJet/easyJet self-connecting airports • Long-distance connections with partners
 (Lufthansa's low-cost subsidiary)	<ul style="list-style-type: none"> • Connecting at German airports (Dusseldorf, Hamburg, Cologne, Stuttgart, Berlin) • Connecting with partners TUIfly and Luftfahrtgesellschaft Walter
	<ul style="list-style-type: none"> • Milan, Rome, Brussels, • Dublin • Gatwick for long haul with partners
 (a low-cost subsidiary of Air France-KLM)	<ul style="list-style-type: none"> • Transavia Holland to Amsterdam: connection with KLM • Nothing about Paris
 (low-cost subsidiary of IAG)	<ul style="list-style-type: none"> • Vueling/vueling: Barcelona • Rome Fiumicino • Long-distance connection with Iberia, BA

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 Source: Roland Berger.

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Major airlines have conceived their low-cost subsidiaries as primarily defensive instruments, without projecting themselves outside their home countries, by opening bases in Europe. If they intend to compete with the low-cost leaders in the future, legacy airlines will have a strong incentive to become pan-European players and further develop connections.

GENERAL CONCLUSION

The Covid-19 crisis is likely to play an accelerating role in the structural changes that have been taking place in air transport in Europe over the last 20 years, with the rise in power of low-cost players and the weakening of the major incumbent airlines.

The question then arises as to who will emerge the winner from this crisis of exceptional magnitude; our thesis is that while the major legacies will be saved by their States, they risk being marginalised tomorrow due to a lack of sufficient financial resources and also if they do not accelerate the reform of their economic model, notably regarding their medium-haul activities.

Indeed, if the legacies want to compete on a level playing field with the low-cost carriers on medium-haul routes in the future, it is imperative that they continue to change their model as the IAG Group did for example. In this respect, the Covid-19 crisis could be an opportunity to speed up the transformations already underway among them, especially given that they will benefit from massive public aid. For example, a clear and sequenced reform plan - aimed at positioning low-cost activities within their group, speeding up the return to profitability on the point-to-point network - could be discussed with the historical companies, and with the close involvement of social partners. This subject is high on the agenda of certain legacy airlines such as Air France KLM according to recent announcements.

The main risk for historic companies is that public aid will be used mainly to allow companies to survive rather than to bring about the necessary structural change. The crisis will then not have been used to rethink their model. Under these conditions, as the crisis emerges, it is possible that the consolidation movement, in the form of bankruptcies or attrition of many companies, mostly benefits the large low-cost companies. They could strengthen their positions in Europe, to the detriment of the legacies, by continuing to fine-mesh the territory, increase their customer base of "business" passengers, and develop connections. The example of Italy, with a legacy that is now only a shadow of its former self and the low-cost operators that have taken over the market, is a textbook case in this respect. In the case of France, which is still a land of conquest for low-cost operators, we can assume the possibility of strong growth from low-cost airlines if the national company does not transform fast enough, particularly on behalf of Ryanair, which has been returning to this territory since 2019.

Accelerating the digital transformation

In addition to the subjects of offering and positioning, all airlines will also have to grasp the subject of digital transformation tomorrow, which affects all sectors of the economy. Major progress has already been made over the last 10 years, but much remains to be done in three key areas:

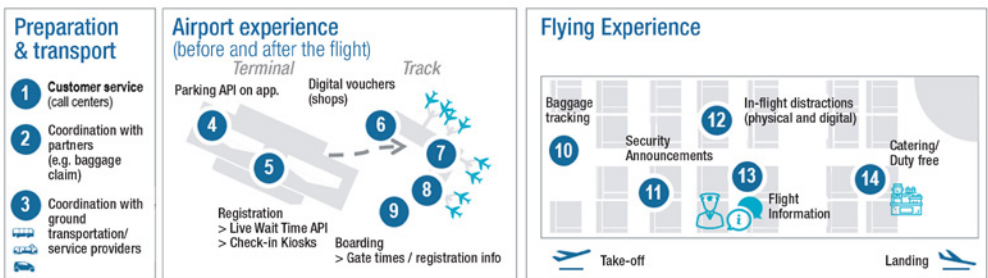
- Digitalisation of distribution
- Digitalisation of the entire customer relationship
- The use of optimisation tools geared towards network and operations

First of all, in regards to distribution, it will become even more digitalised, which will allow both greater simplicity and increased speed of transactions, as in traditional e-commerce, a takeover of the customer relationship by airlines and a reduction in distribution costs, as airlines will have less recourse to sales by third parties, particularly GDSs. The low-cost giants are already ahead of the game on these issues: since their launch, they have favoured direct distribution to limit distribution costs.

Then, the customer relationship will be greatly improved, both in its digital and physical aspects (both in airports and airplanes):

- by better integration of the numerous customer information that is not yet sufficiently used by airlines. Indeed, this data can be used to predict the needs of customers or "tribes" of customers, to better communicate with the passenger (time/current events, baggage location, health issues - which we will develop further), to make "dynamic pricing" or even personalised pricing⁵, to enhance the fine knowledge of customers with their direct partners, such as airports, airport shops or other modes of transport.
- by a "seamless", frictionless ground management from arrival at the airport to boarding and deplaning . This requires intensive use of "self" systems: self-checking, self-boarding, etc. Today, with biometrics and video recognition systems, the whole process could be simplified. Security control processes must now be adapted in many countries in order to allow the efficient implementation of these new digitised processes. With little doubts, Covid-19 will speed up these digitisations in order to reduce the number of contacts with agents in airports, in order to eliminate processes generating queues that facilitate proximity and limit distancing.

Overview of a Digital Customer Experience - Passenger Perspective



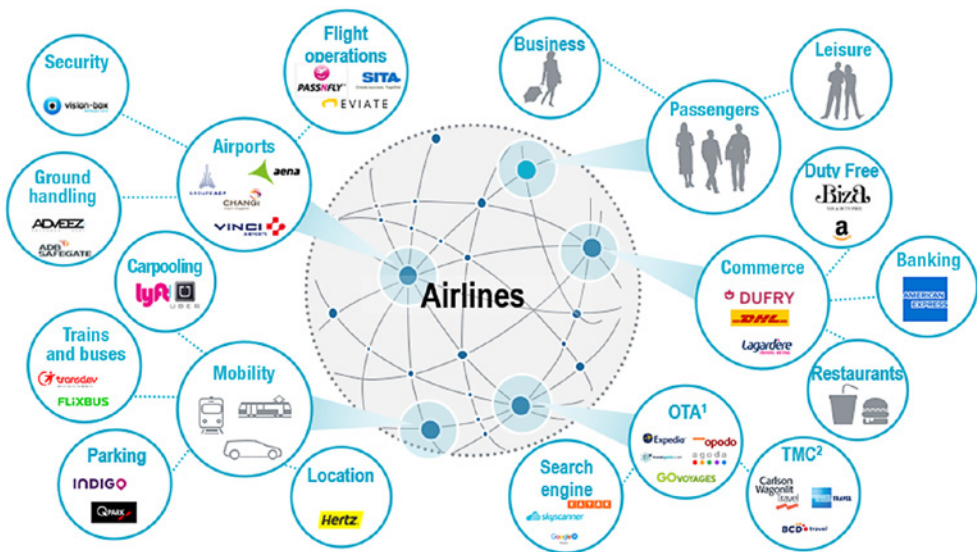
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 Source: Roland Berger.

5. Emmanuel Combe, *Towards personalised pricing in the digital era?*, Fondation pour l'innovation politique, December 2019, (www.fondapol.org/en/etudes-en/towards-personalised-pricing-in-the-digital-era/).

Finally, operational optimisation is also a key issue in order to optimise aircraft utilisation and maintenance as well as the management of flight and ground personnel schedules. This includes the complete digitalisation of the operations control center (CCO), which must make customer satisfaction essential to its mission. The Covid-19 crisis with numerous flight cancellations and rescheduling is a perfect example of such a need.

For all three areas, there are programmes already launched that could be accelerated. Airlines are fortunate to possess (with their ecosystem) a wealth of information about their customers, their characteristics and their behaviours, which facilitates the effective implementation of digital tools and especially artificial intelligence.

Customer data sources for airlines



1. OTA: Online Travel Agencies.
2. TMC: Travel Management Companies.

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Source: Roland Berger.

Fully integrate environmental and health issues

Beyond the digital transformation, and the positioning of "low-cost", the third major challenge for post-Covid-19 airlines is to be part of a responsible approach to the environment and passenger health. First of all, it is necessary to integrate the risk of "flight shaming". To this end, airlines are investing

to offset their CO₂ emissions, but they have also been working for a long time to reduce fuel consumption. This reduction in consumption requires the involvement of all the players in the value chain:

- The research and development work of the manufacturers, led by Airbus and Boeing and engine manufacturers, has particularly focused on the production of aircrafts that pollute less;
- Optimisation of air routes to enable aircrafts to consume as little fuel as possible (notably depending on weather conditions);
- The use of "cleaner" fuels such as biofuels or eventually hybrid aircrafts with e.g. electric systems or fuel/hydrogen engines.

Public policies could encourage, through tax incentives, investment in new aircrafts that consume less fuel and are therefore cleaner; or allow airframe manufacturers (such as Airbus or Boeing) and engine manufacturers (Safran, PW, GE) to accelerate innovation programmes on aircraft engines.

Beyond the environmental aspects, the Covid-19 crisis has also greatly changed the perception of transport from a health point of view. Being locked up in a confined area with small distances between travelers like on an airplane can be frightening for the health of passengers. Similarly, going to airports, areas of high traffic may be perceived as anxiety-provoking for some people. Therefore, in the post-Covid-19 world, air carriers and all players will have to reassure both customers and employees on their ability to guarantee "sanitised" transport: distance on the plane, reinforced cleaning of airports and cabins, air conditioning to destroy viruses during flights⁶, ultra-rapid testing of passengers during boarding / disembarking, etc. The digitalised customer journey mentioned above is an initial response, but the stakes remain high and airlines will have to take concrete action to meet this health challenge.

At the time of this crisis, there is a historic window for traditional companies to reinvent themselves and take on new subjects. They find themselves today, as the English say, in a situation of a "burning platform", which justifies like never before the acceleration of profound changes in their production model on the medium-haul market.

6. Without disregarding the importance of the issue of the risks of sanitary contamination, particularly in restaurants [see Kenneth Chang's article in *The New York Times*, *How Coronavirus Infected Some, but Not All, in a Restaurant*, 20 April 2020 www.nytimes.com/2020/04/20/health/airflow-coronavirus-restaurants.html], this topic would be minor for air travel. According to Jean-Brice Dumont, Executive Director of Airbus engineering, the risks of spreading a virus in an aircraft are almost null: "30% of the air in the cabin will be expelled and replaced with air from outside; the remaining 70% will be recycled from a high-performance filtration system." [also see Sylvie Andreau's article on this subject in *Le Journal du Dimanche*, *Le système d'aération des avions, une arme redoutable contre le virus* [Aircraft ventilation system, a formidable weapon against the virus], 26 April 2020 [www.lejdd.fr/Societe/le-systeme-daeration-des-avions-une-arme-redoutable-contre-le-virus-3964429].

ANALYSES AND RECOMMENDATIONS IN TEN POINTS

1

Air transport appears to be less concentrated in Europe than in the United States and is less profitable. This situation is due both to the lower market share of the four leaders in the sector, but also to the existence of a very large number of small players. In such a market context, the Covid-19 crisis will set off a restructuring movement in Europe, whether by the attrition of certain players, bankruptcy or takeover.

2

Some historic European airlines, namely Air France-KLM and Lufthansa, will not be able to get through the Covid-19 crisis without massive public aid. While this public intervention is justified by the urgency and the liquidity crisis that these companies are experiencing, it may also distort competition, in particular for players that do not benefit from public aid. This public aid should be conditional on the pursuit of structural reforms, even though these historic companies suffer from a lack of competitiveness on short and medium-haul routes. A review of public policies on air taxation is also part of the solution, particularly in order to reduce the differences in competition between European countries.

3

Some large low-cost airlines have strong profitability that will enable them to overcome the liquidity crisis. This is particularly true for the "ultra low-cost" model, embodied by Ryanair and Wizz Air, which have a large cash position and a great organisational flexibility. To a lesser extent, a "middle cost" operator like easyJet will manage to survive the crisis. It is likely that these low-cost airlines will play a major role in the consolidation of the post-Covid European market.

4

Beyond "flight shaming", there is no impediment to the growth of the large low-cost airlines in Europe (notably by cannibalising legacies, but also by inducing traffic volume), even though they already account for more than 40% of the market.

5

Low-cost companies have not yet completed their fine meshing of the European territory, particularly in countries such as Germany or France, where they are less present than elsewhere. On routes out of the province and into Europe, low-cost carriers can still gain market share in these two countries. Nor can we rule out that Ryanair might attack Paris, after having regained a foothold in France since 2019, by opening bases in Bordeaux, Marseille and Toulouse, especially if Paris airport charges were to become more competitive after the crisis.

6

It is likely that major low-cost airlines will continue to grow both internally and externally, especially by buying up the assets of struggling airlines to acquire slots at major airports. The main obstacle to this external growth strategy will be mostly regulatory, with merger control, which can block a merger that undermines competition in the market.

7

It is likely that low-cost airlines will continue to develop their strategy of targeting business customers and going to major airports in head-on competition with legacy companies. They will also pursue their connecting strategy, consisting in developing indirect flights, without, however, bearing the constraints of a hub model. Even beyond Europe, low-cost carriers are beginning to form partnerships with long-haul airlines, which poses a direct threat to the hubs of incumbent carriers.

8

Although the major incumbent companies have turned to low-cost on medium-haul, the results have not yet met their expectations, except for the IAG group. "You're born low-cost, you don't become low-cost," as the saying goes. The difficulty in developing a low-cost model is partly explained by the lack of agility, the fear of "cannibalisation" of activity and the coexistence within the same group of two entities with different logics and cultures.

9

Major airlines have so far opted to confine their low-cost subsidiary to point-to-point flights, excluding flights to their hubs (with the exception of KLM). If they want to face the low-cost giants on equal terms in the future, they should transfer their entire medium-haul business to their low-cost subsidiary.

10

Major airlines have conceived their low-cost subsidiaries as primarily defensive instruments, without projecting themselves outside their home countries, by opening bases in Europe. If they intend to compete with the low-cost leaders in the future, legacy airlines will have a strong incentive to become pan-European players and further develop connections.

Emmanuel COMBE
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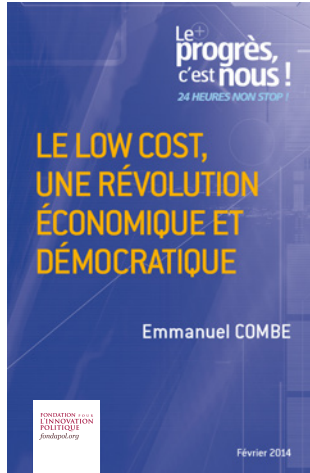
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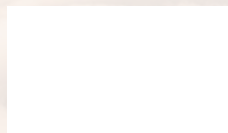
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