THE EMERGENT LONG TAIL BUSINESS MODEL IN THE AIRLINE INDUSTRY. THE CASE OF VOLOTEA

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ABSTRACT

We analysed to what extent the business model of the Spanish airline Volotea can be understood as a distinct business model. We characterized this emergent business model, comparing it to other models applied in the short haul market. We conclude that this business model can be described as a long tail business model in the airline industry. We also point out that this emergent model can support a blue ocean strategy in some mature markets, although this strategy would require opening the business' black box to analyse it at the activity level.

1. INTRODUCTION

Business models are nowadays recognised as useful frameworks to understand how businesses work, and what their underlying economic logic is (Magretta, 2002). They are also used to describe how an interrelated set of decision variables are addressed to create sustainable competitive advantage in specific markets (Morris et al., 2005).

Business models have also been used in the airline industry to describe how airlines compete (Corbo, 2017; Klophaus et al., 2012; Lohmann & Koo, 2013), or to understand how their strategies evolve (Corbo, 2017; Daft & Albers, 2013; Jean & Lohmann, 2016; Mason & Morrison, 2008).

On the other hand, business model innovation, understood as "a process that deliberately changes the core elements of a firm and its business logic" (Bucherer et al., 2012, pg. 184), has the power to create new markets (Dew et al., 2011), reshape entire industries (Johnson et al., 2008) and create new ones (Teece, 2010). In the airline industry, the success of Southwest Airlines and what was its innovative business model at the time has been used as an example of a disruptive change capable of creating a huge blue ocean of new customers (Casadesus-Masanell & Enric Ricart, 2010; Kim & Mauborgne, 2005; Teece, 2010).

Academia has mainly used the concept as a descriptive tool. Going further and using it as a prescriptive tool could generate higher returns. We understand prescriptive to mean an earlier use of the tool, in order to generate new business models (Osterwalder & Pigneur, 2010), or at least to describe and understand the logic of new business models as soon as they emerge. This line of reasoning was used, for example, by Bachwich and Wittman (2017) in order to decide whether the business model introduced by Ultra Low-Cost Carriers (ULCC) can be understood as a distinct business model.

In this study, we shift our attention to what could currently be another emergent business model, i.e. the model implemented by the Spanish airline Volotea. The firm has implemented a differential business model, focusing on thin routes, with a unique definition of its target. This approach realigns the remaining components in its strategy, making it stand out from the other well-known business models.

Through a search of multifaceted literature, and using Volotea as a case study, we identify the features that differentiate this model from other similar ones in the airline industry, describing the logic behind it and cataloguing it as a long tail model (Anderson, 2006).

The article continues as follows. Section 2 reviews the literature that focuses on business models in the airline industry. Section 3 presents our case study. Section 4 presents our methodology. Section 5 presents and discuss the results, placing Volotea's business model in a wider context. Finally, Section 6 offers conclusions and opens up further opportunities for this line of research.

2. THE BUSINESS MODEL FRAMEWORK IN THE AIRLINE INDUSTRY

Most of the research carried out to date on applying the business model framework in air transport has focused on airlines, with few exceptions. One of these exceptions is the application of the framework to maintenance, repair and overhaul companies in the aviation industry conducted by Schneider et al. (2013).

In the airline industry, the business model framework has been applied almost from the emergence of the concept in management literature at the beginning of the century to explain the success of low-cost carriers, firstly in the USA and later in Europe (Casadesus-Masanell & Enric Ricart, 2010; Francis et al., 2006).

Most of the contributions have applied the framework at business level, although some authors have also transferred the framework to corporate level (Whyte & Lohmann, 2015). It could also be useful to apply the framework at a lower level (activity level) for some specific requirements (Schneider et al., 2013), as we will point out later, in Section 5.

An industry-specific parameterisation of business model components is required in order to use the framework. It is also important to distinguish the parameter values of the components that are subject to conscious managerial decisions from those that are outcomes or performance indicators of distinct business model practices such as load factor and profitability, which are not a constituent part of the business model itself (Daft & Albers, 2013).

The parameter values of business model components, which are managerial choices, also act as shift parameters, thus differentiating between and identifying alternative business models. This is the main use attributed to the framework in the literature. We now present a more detailed list of applications of the framework in the airline industry, organised by their main goal and adding some useful examples:

- Identifying and characterising different business models through their components (Pereira & Caetano, 2015).
- Capturing the emergence of a new business model: ultra low-cost carriers' business model in the case of Bachwich and Wittman (2017).
- Showing differences in the application of the same business model (hybrid model) between different carriers (Corbo, 2017).
- Comparing different options for the same business model: Mason and Morrison (2008) built a robust methodology for comparing the low-cost business model used by different airlines.
- Analysing the convergence of different business models: legacy or full-service carriers and low-cost carriers in the case of Jarach et al. (2009) and Daft and Albers (2013).
- Analysing the evolution of business models (Lohmann & Koo, 2013).

3. THE CASE OF VOLOTEA

Volotea began to operate in 2012. The firm was set up in Barcelona, Spain, by the same experienced team that created Vueling in 2004. Eight years later, in 2020, Volotea has carried over 25 million passengers, offering 346 short-haul routes that connect over 90 cities in 14 countries, with a fleet of 39 aircraft. In 2018, its revenue reached €396.1 million and its EBITDAR grew to €55.6 million. It carried 6.57 million passengers, up 36% over the previous year.

Volotea defines its strategy very simply: "…we connect small and medium-sized European cities with non-stop direct flights at very competitive prices" (taken from https://www.volotea.com/en/about-volotea/ in March 2020). Setting this risky managerial decision as the first element of its business model,

Volotea then redefined the remaining components of the model, thus assuring their required coherence and accomplishing the most important conditions of a good business model. In order to describe this redefinition and to show the implications of this commitment, we tested Volotea's business model against the eight-indicator ex-ante assessment scale drown up by Mateu and March-Chorda (2016):

- *The value creation condition* is guaranteed by "a good service, sensible times, friendly airports and complicity with the local area and simple hospitality" (also taken from Volotea's website).
- *The complete value proposition condition* is accomplished because all the required resources and capabilities are available, including the knowledge gained by the team in past experiences, such as Vueling.
- *The sufficient size of the market condition* is achieved by expanding its operations to a huge part of the European geography (14 countries, at present). Here it is useful to remember that there are 38 cities in Europe with more than one million inhabitants, and 629 cities with between 100,000 and one million inhabitants. The number of possible routes between cities in the second group is ten times greater than the number of routes between cities in the first group and between the first and the second groups.
- Complying with *the access to the potential customer condition* is trivial because it is affordable to publicise the routes on offer in small and medium cities.
- *The predisposition to make efforts by potential customers' condition* is also obvious, given the competitive prices and the short travel times offered by direct flights.
- *The affordable cost condition* is accomplished by prompting mechanisms that can reduce unit costs when income increases. Given that it is difficult to achieve economies of scale in thin routes, density and scope economies must be mobilised by adding several routes and destinations (Caves et al., 1984).
- *The entry barriers existence condition* is granted by the small amount of traffic on these routes, which makes them natural monopolies (Fageda, 2006).
- Finally, *the superiority over competitors' condition* must be built, though this is easy in routes where there is no competition. This is also facilitated by the smaller size of the aircraft, as competitors may not be able to fill their larger planes.

The information presented here also frames Volotea's business model can be framed in a more general paradigm, *the long tail business model* (Anderson, 2006). We will come back to this in Section 6.

4. METHODOLOGY

Once ex-ante evidence of the robustness of Volotea's business model had been demonstrated, we turned our focus towards analysing its main features, and examining how it differs from other short-haul business models. As our perspective was an exploratory one, we used an inductive and qualitative approach using case studies is useful (Yin, 1993).

We identified four different short-haul business models which were used for comparison. They dovetailed with the models implemented by low cost carriers, hybrid carriers, regional carriers and regional feeder carriers. This last case corresponded to carriers that feed the hubs of network carriers (also known as legacy or full-service carriers), usually through an agreement or operating for the network carrier as a subsidiary. On the other hand, although the ultra low-cost carrier business model has been suggested as a distinct business model (Bachwich & Wittman, 2017) we have not included it in this study because there are no airlines applying this business model in Europe.

Our methodology was based on the methods proposed in the literature in Section 2. We looked for specific indicators that showed significant variations between different business model components. When this specific literature did not provide these indicators, we looked for additional indicators in other fields (this is the case of the Degree Centrality indicator, for example). The final list is shown in the first column of **Table 1**. Although most of the indicators are related to several business model components, we included them under one component, in order to simplify the presentation of results in **Table 1**.

We include here the origin of the data, and the definition of some specific indicators. Most of the data for this work was obtained from the airlines' websites, and was cross-checked with data provided by other specialised services. Specifically, routes and destinations were cross-checked using flightconnections.com, and fleets were crosschecked using airfleets.es and planespotters.net. We accessed these websites during January and February 2020. Flight frequencies were related to the middle week of February 2020, in order to avoid seasonal flights. The distance between airports was taken from dices.net.

Data related to the size of airports, in terms of number of passengers, was limited to Spanish airports, which were taken as a sample. This data referred to the whole of 2019, and was taken from aena.es. Routes departing from or arriving at Spanish airports represented a huge part of the total number of routes offered by Vueling (86.6%), Air Nostrum (100.0%) and Binter (100.0%). On the other hand, they only represented 26.3% of the total number of Volotea routes and 15.2% of Ryanair's.

All in all, we considered this percentage a representative sample for our qualitative analysis.

Degree Centrality aims to define the extent to which a network is centralised around a certain node. To do so, we applied Freeman's work (1978) to the network of an airline. The *Degree of connectivity of a node* explains to what extent that node is connected to other nodes (see **Equation 1**).

$$\mathbf{c(k) = \sum_{i=1}^{n} f(i,k)} \quad (1)$$

Where:

c(k) is the Degree of connectivity of node k

f(i,k) is a function that is equal to 1 if and only if the nodes i and k are connected by an edge (route) and 0 in any other case

n is the total number of nodes in the network

The *Degree Centrality* of the network is calculated using **Equation 2**.

$$\mathbf{DC = \frac{\sum_{i=1}^{n}(Max.c(k) - c(i))}{(n-1)(n-2)}} \quad (2)$$

Where:

DC is the Degree Centrality of the network

Max.c(k) is the degree of connectivity of the node with the highest degree of connectivity of the n nodes in the network

c(i) is the degree of connectivity of node i

(n-1)(n-2) equals the maximum value that the numerator can reach and, once divided, normalises the result, making DC a number between 0 and 1

In order to complete the comparison, we chose a paradigmatic airline for each of the business models. The choice of these examples was based on two conditions. The first was that their affiliation to the business model was not controversial, at least to a reasonable extent. As Lohmann and Koo (2013) established, the passenger airline industry is a continuum of different business models. Nevertheless, Klophaus et al. (2012) developed a robust framework to measure the degree of hybridisation of low-cost carriers, with a scale that included 13 indicators. Ryanair was qualified by these authors in 2012 as a 'pure low-cost carrier'. Although Ryanair has evolved since then to a certain degree of hybridisation, we found that it remains close to this original model.

The case of Vueling is quite different, dovetailing with only 8 of the 13 low-cost indicators established by Klophaus et al.' assessment. Today it is even farther from the pure low-cost model, and using the Klophaus et al. categorisation, it could be classed as a 'hybrid carrier with dominating full service airline characteristics'.

The choice of Air Nostrum as a regional feeder carrier (Fageda & Flores-Fillol, 2012) is similar, though much clearer in this case, because Air Nostrum does not sell tickets for its own flights. Air Nostrum's tickets are all marketed by Iberia, demonstrating the subsidiary role of Air Nostrum in Iberia's network. Binter's strategy is clearly regional, focused on the Canary Islands.

The second condition in the choice of airlines in this comparison was related to the availability of data. The specific situation of airport management in Spain, which is controlled by a semi-public organisation (AENA), facilitated access to data. We used data from Spanish airports as a sample for some indicators, in line with other authors (Fageda, 2013). This led us to choose airlines with a strong presence in the Spanish market.

5. RESULTS

Table 1 shows the results of our research. Further information about key indicators is shown in **Fig. 1** and **Fig. 2**.

As expected, the most distinctive features of the Volotea business model are related to frequencies, but also to its network structure and the aircraft models chosen for its fleet. Volotea's average weekly frequency is just over half of the next airline in this indicator (Ryanair), 2.69 vs. 4.16. Its frequency distribution is also distinctive, as shown in Fig. 2. Volotea's curve decreases sharply from a high figure in the first category (1 to 2 weekly flights). None of the other airlines have this type of pattern. In addition, the Degree Centrality of the Volotea network is also radically different from that of other airlines. Volotea's score in this indicator is 0.32, thus showing that its network is close to a theoretical point-to-point network. The closest Degree Centrality to that of Volotea was obtained by Ryanair, with 0.63. Finally, Volotea's fleet consists of small-size narrow-body aircraft. They are smaller than the planes used by Ryanair and Vueling, though larger than those of Air Nostrum and Binter.

In terms of airports served, **Fig. 1** shows Volotea's preference for medium-sized airports. 86% of Volotea's passengers fly to or from airports hosting between two and 30 million passengers. Its curve is similar to that of Binter, thus showing that Volotea avoids the largest airports, which only accounted for 7.1% of its flights in this indicator.

Conversely, Volotea serves an extensive geographical area, similar to that of Ryanair and closer to that of Vueling, as the distance between the furthest nodes reveals. Additionally,

Volotea serves 14 countries, more than double regional airlines like Air Nostrum and Binter. Volotea does not come close to Ryanair and Vueling in this category, but this is probably due to it being a young airline.

Business model components • Indicator	VOLOTEA	RYANAIR	VUELING	AIR NOSTRUM	BINTER
Customer segments • Main target segments • Number of destinations • Airport size • Area served (furthest nodes) • Countries	All 83 (See Fig. 1) 4291 km. 14	Leisure & VFR, less attention to business 267 (See Fig. 1) 4932 km. 33	Leisure & VFR, more attention to business 151 (See Fig. 1) 6099 km. 25	All, mainly business 54 (See Fig. 1) 3237 km. 6	All 27 (See Fig. 1) 3563 km. 6
Value proposition • Number of routes • Average weekly frequency	319 2.69 (See Fig. 2)	1365 4.16 (See Fig. 2)	327 7.91 (See Fig. 2)	119 14.5 (See Fig. 2)	31 21.96 (See Fig. 2)
Key resources and activities • Fleet: o models o ranges (km.) o capacities (pax) • Network structure o Degree Centrality o Connecting flights	36 small-size narrow-body aircraft B717 / A319 3815-6950 125-156 0.32 No	273 medium-size narrow-body aircraft B737 5765 189 0.63 Sporadically	122 medium-size narrow-body aircraft A319 / A320 /A321 5600-6950 144-220 0.85 Yes	43 regional jets & turboprops ATR72 / CRJ200-1000 1665-3100 50-100 0.68 Yes	28 regional jets & turboprops ATR72/E195/CRJ1000 1665-4537 72-132 0.87 Yes
Cost structure • Routes/aircraft • Routes/airport • Airports/aircraft • Flights/aircraft	8.86 3.74 0.42 23.84	5.00 5.11 1.02 20.80	2.68 2.17 0.81 21.20	2.77 2.20 0.79 40.13	1.11 1.14 1.03 24.31

Table 1 - Business model components and indicators for the analysed airlines

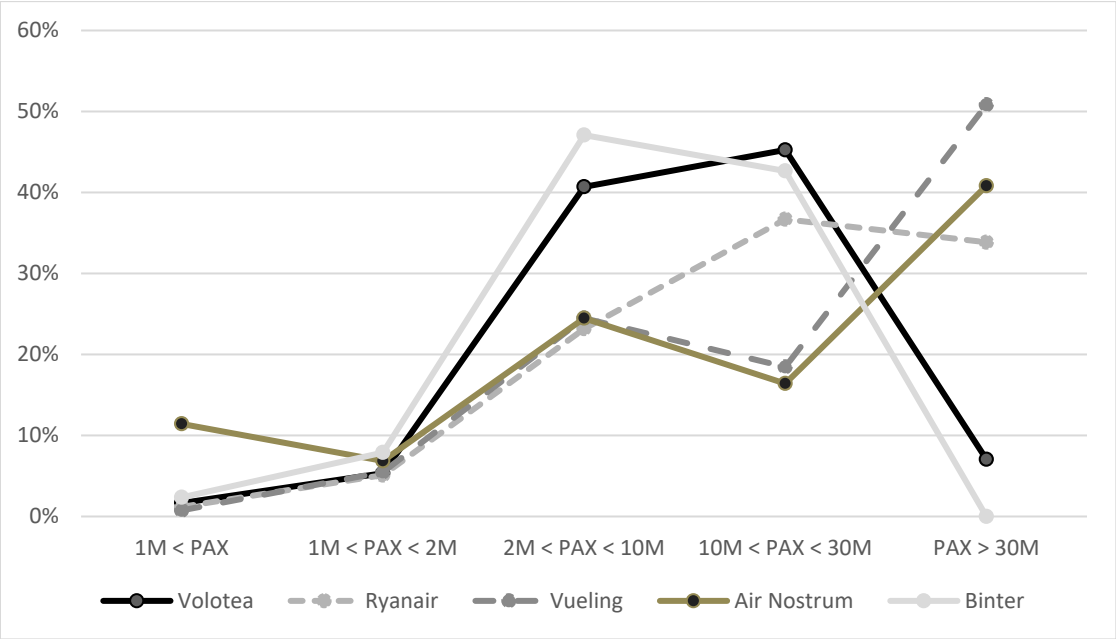

Fig. 1 - Distribution of passengers by airport size

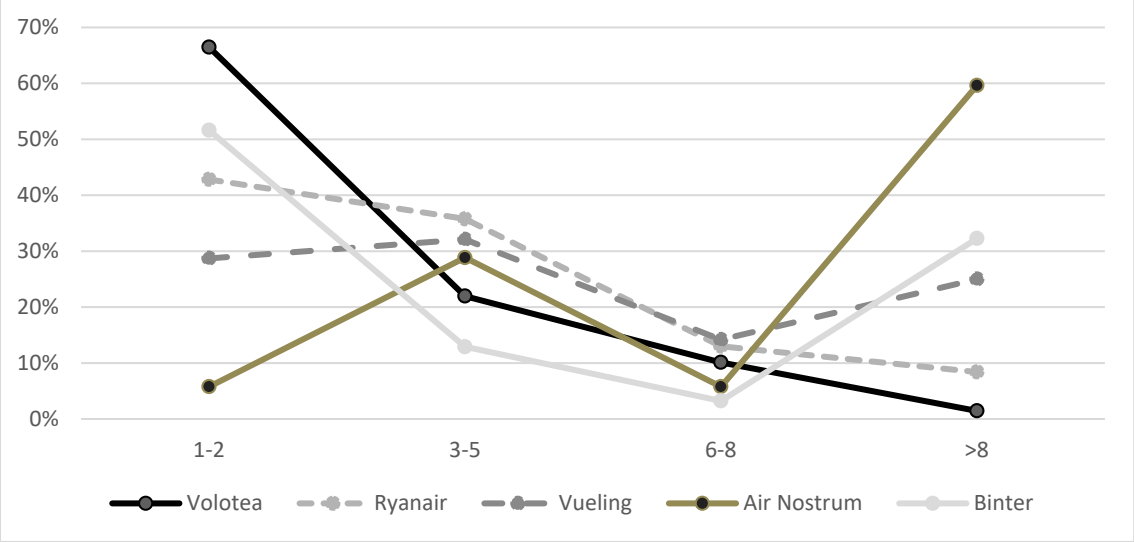

Fig. 2 - Weekly frequencies

We conducted a broader exploration of business model literature to search for a more generic business model that could dovetail with Volotea's model (Gassmann et al., 2014), and found that it could be framed as a *long tail business model* in the airline industry. The initial interest and subsequent definition and characterisation of the long tail business model was related to digital business. This is the kind of business which initially takes advantage of targeting a manifold of niche markets (Anderson, 2006). Well-known examples include the distribution of music, books and software.

The idea behind the long tail business model is that there are very few bestsellers, but a long list of items that only sell a few copies. Nevertheless, the store can sell a high number of units by joining all these less sold titles together. This a good business in this case for the distribution channel, probably not for the producers. This means that a business level analysis is not sufficient in this scenario and a useful analysis needs to be carried out at the activity level (Jarillo, 2003). In any case, the idea of serving a large number of low traffic routes conceptually matches the logic behind the long tail business model.

Economies of scale have been proposed as one of the key mechanisms of the low-cost business model. They bring significant cost reductions in key activities like buying aircraft, aircraft maintenance, handling, distribution and selling. Long-tail effects can bring this kind of cost reductions in a large part of the same activities (Sansonetti, 2010) although, in this case, we are talking about scope or density economies (Caves et al., 1984). Although these economies are less powerful, they can achieve sufficient savings to set attractive prices.

6. CONCLUSION

Volotea's business model brings together enough differential characteristics to be catalogued as a distinctive business model. It has distinguishing features from regional business carriers, and others that make it stand out from low-cost carriers and hybridised carriers. In addition, it has other characteristics that make it different from all other carriers.

The identification and characterisation of this business model reveals a large number of future developments that could be explored. An in-depth analysis could show the minimum threshold for thin routes to add value to the airline business, as well as other required conditions to make the effort rewarding. Our research also suggests the need to open the business' black box to analyse it at the activity level. Breaking down airline costs by activities would probably show how to increase the profitability of this business model, pointing to the activities that could act as leverage. Finally, a third line of research that we find promising and useful for practitioners would be to define and quantify the size of the market for this business model in Europe and other parts of the world.

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