

INVESTIGATING THE AIRBUS A380: WAS IT A SUCCESS,  
FAILURE, OR A COMBINATION?

by

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A THESIS

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The purpose of this thesis is to examine the Airbus A380 and factors that lead to its success and eventual decline. The Airbus A380 is the world's largest passenger airplane and has been a favorite for years. However, Airbus announced that it will be shutting down production of the airplane in 2021. This project will investigate what led Airbus to make this decision. This project looks in-depth at the business and management strategies associated with all aspects of the A380. Furthermore, the project closely examines the successful business practices of Emirates, the largest airline operator of the A380. Through various research methods, this project explores the combination of success and failures associated with the Airbus A380 as well as recommendations the future of the airline.

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## **Introduction**

Have you ever been stuck on a cramped flight for hours on a tiny plane with the passenger behind you constantly kicking your seat? Have you ever been just begging for a few more inches of leg room and wider seats? I know I have, but in reality, comfort on most airplanes is not possible unless you are a business- or first class passenger. In 2005, the multinational European aerospace corporation Airbus set out to change this with the announcement of the Airbus A380. This superjumbo jet is the world's largest passenger airplane and can hold up to 868 in a one-cabin configuration. This is nearly 35 percent more passengers than its nearest competitor, the Boeing 747. To get a grasp of just how big this airplane is, 17 full size cars could fit side by side on the plane's wings. The plane is nearly as long as an NFL field. As for its height, the full, two-story cabin lets carriers have creative freedom and offers innovative features that cannot be found on any other aircraft. Throughout the years, this airplane has become a passenger favorite due to its increased space and comfort.

This pioneering marvel of engineering was just one of three passenger airplanes to hit the skies that featured four engines. The other two were the Airbus A340 and the Boeing 747, which Airbus was created to directly compete with. The Airbus A380 was the world's first and only full double decker airplane, possessing a complete second floor deck, unlike its rival the Boeing 747 which only has a half second floor deck. At the time it was announced, this plane had cutting edge technology. Despite 15 years having passed since its inception, the A380 still has the quietest engines of any plane on the market, including those just recently released. Some carriers have installed on board

showers, full service bars and lounges, and even apartments with a separate seat and bed.

Despite being a passenger favorite, the A380 did not take off with buyers. Currently only 15 airlines operate this aircraft type--primarily Gulf carriers--and no US-based carriers. There are over 800 commercial airlines in the world, yet only fifteen of them operate this aircraft type. There are currently 239 A380s in service with a majority of them being operated by the Gulf powerhouse carrier, Emirates. This aircraft has a steep list price of \$445.6 million, almost \$100 million more than its rival, Boeing 747. The rise and fall of this aircraft is one very interesting.

## Part One: Product

### Company

Airbus is a multinational conglomerate that started out named Economic Interest Group on December 18, 1970. It was a government initiative between France, UK, and Germany. Talks began in 1965 between France and Germany to work together to build better aircraft. The European consortium was formed to fill a niche market for short- and medium-range airplanes.<sup>1</sup> The first airplane the consortium developed was the A300 which was meant to fill the void that the three countries sought.<sup>2</sup> Airbus has contracts and cooperative agreements with countries all over the world.

Currently Airbus has more than 50,000 employees, and is currently headquartered in Toulouse, France.<sup>3</sup> The company has manufacturing plants in countries around the world including: South Africa, China, India, Japan, Italy, Spain, Romania, and the United States of America. Airbus's direct competitor is the aerospace company Boeing. Airbus makes and sells a variety of aircraft ranging from short- to long-range haul planes. These planes can seat from 107 to 868 passengers, depending on the model and variant.

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<sup>1</sup> Stanley I. Weiss and Amir R. Amir, "Airbus Industrie," Encyclopedia Britannica (Encyclopedia Britannica, inc., February 21, 2019), <https://www.britannica.com/topic/Airbus-Industrie>. Web.

<sup>2</sup> ibid

<sup>3</sup> ibid



## **Timeline**

*Below are some the most important and pivotal event in the consortium's history*

1970: Airbus is Founded

1973: Airbus shows off Airbus A300 on a 6-week sales mission across North and South America

1974: Inaugural commercial flight of A300 for Air France

1982: First flight of the A310

1987: Historic A320, the direct competitor to the Boeing 737, is launched

1991: A340 is developed

1992: First flight of A330

1996: Airbus creates the large aircraft division which would eventually set up the A380

2020: Airbus conducts global market forecast and estimates that demand for large aircraft with more than 400 seats would be over 1,200 within the next two decades

2005: Airbus A380, the world largest passenger plane, is unveiled to the public

2007: Airbus A380 takes inaugural commercial flight with Singapore Airlines from Singapore to Sydney

2019: Airbus announces A380 production facility will be shut down in 2021<sup>4</sup>

\*<sup>5</sup> All from same source

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<sup>4</sup> "Flashback: Flying The Inaugural A380 With Singapore Airlines (2007)," Airways Magazine, February 15, 2019, <https://airwaysmag.com/special-flights/onboard-a380-inaugural-flight-2007/>.

<sup>5</sup> <https://www.airbus.com/company/history.html#1970s>

## **Airbus A380: The Product**

The Airbus A380 is a superjumbo quad engine passenger airplane, and is the largest plane with some of the longest flights operating in the world today. It can seat up to 868 people. It was the first airplane to feature two floors, each with full cabins.<sup>6</sup> The A380's biggest competitor, the Boeing 747, featured two stories as well, but the upstairs cabin was not a full one. The plane cost a whopping 25 billion dollars to develop, the biggest investment Airbus has spent on an airplane to date. The airplane can fly up to 8,200 nautical miles, and currently flies on some of the longest routes in the world such as Dallas-to-Sydney and Dubai-to-Auckland. An Airbus A380 takes off or lands every seven minutes.

## **Design**

The A380 is a marvel of modern engineering. This behemoth of an airplane is 79 feet tall, equivalent to about 7 and a half stories. The wingspan is 261 feet, or about the length of 70 sedans. It is 238 ft. long, nearly the size of a standard American football field.

In order to build such a massive plane, a great deal of material was needed. Innovative materials were used in order to reduce weight. The main material used was a mixture of aluminum and fiberglass called glare. Glare was essential because of its resistant to fatigue. The aluminum of Glare prevents the propagation of cracks. It is

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<sup>6</sup> "Airbus A380 Superjumbo Airliner," Aerospace Technology, <https://www.aerospace-technology.com/projects/a380/>

substantially lighter than normal materials and represents a weight saving of about half a ton. Thermoplastics that are resistant to impact are used to manufacture the wings.

The aircraft has 16 wing spoilers.<sup>7</sup>

The A380 incorporates two Eaton Corporation hydraulic systems, with increased hydraulic pressure of 5,000 pounds per square inch instead of a standard 3,000 psi.<sup>8</sup>

The 8 LCD and heads up display used in the flight deck are produced by Thales Avionics. The US company Honeywell supplies the innovative flight management system, as well as the satellite communication system.<sup>9</sup> Tire manufacturer Goodrich supplies air data systems. Rolls Royce and Pratt & Whitney provide the 4 Trent 900 engines. The airplane's 22 tires are supplied by Michelin and Goodrich.<sup>10</sup> The Airbus A380 has over 4 million parts that come from 1,500 companies across 30 countries.<sup>11</sup> From this standpoint alone, the Airbus A380 could be considered one of the greatest feats of portfolio, program, and project management ever.<sup>12</sup> (Figure 1)

The double deck layout of the A380 allows for 49% more floor space and an increase of 35% seating capacity. Each a380 has two sets of stairs connecting the two floors. The airplane has ten fuel tanks which can hold up to 131,000 liters of fuel.<sup>13</sup>

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<sup>7</sup> ibid

<sup>8</sup> ibid

<sup>9</sup> ibid

<sup>10</sup> Eric Adams, "Airplane Tires Don't Explode on Landing Because They Are Pumped!," Wired (Conde Nast, June 3, 2017), <https://www.wired.com/2016/08/airplane-tires/>.

<sup>11</sup> Admin, "The A380: The Greatest Feat of Portfolio, Program, & Project Management Coming Together, Anywhere?," PMO Advisory, <https://www.pmoadvisory.com/blog/a380-greatest-feat-portfolio-program-project-management-coming-together-anywhere/>.

<sup>12</sup> ibid

<sup>13</sup> Airbus A380 Superjumbo Airliner," Aerospace Technology, <https://www.aerospace-technology.com/projects/a380/>

## **Luxury**

The Airbus A380 is the epitome of luxury in the sky. Flying in a premium cabin on this plane is about the closest experience you can get to flying privately. Carriers who operate the plane around the world are in a race to come up with the most innovative and premium cabin products. The more luxury that carriers can create on their A380s, the more profits they will generate. The luxurious experience does not start in the air. It starts on the ground, from private check-in to incredible lounges with private rooms and massages and to chauffeur service on the A380 tarmac. Etihad Airways based in Abu Dhabi, was the first carrier to introduce onboard showers on their A380. Emirates, based in Dubai, then followed suit. (See Figure 2) Multiple carriers introduced on-board full-service bars and lounges on their A380s. (See figure 3) The carriers synonymous with luxurious A380 products are: Etihad Airways, Emirates, Singapore Airlines, Thai Airways, Korean Air, and Qatar Airlines. Other airlines may offer premium products, but the airlines listed above offer the cream of the crop.

## **Part Two: Industry**

The aviation industry is one of the toughest industries in which to be successful and to gain a competitive advantage. Boeing and Airbus make up 91% of the global aviation market share. In 2020, Airbus finally surpassed Boeing as the largest commercial aircraft maker.<sup>14</sup> Airlines look to gain a competitive advantage every day and utilize many tools and strategies.

### **Customers**

The Airbus A380 is operated by just 15 carriers around the world; amazing when one considers that there are over 800 commercial airlines in the world. The airlines that operate the Airbus A380 are: Air France, All Nippon Airways, Asiana Airlines, British Airways, China Southern Airlines, Emirates, Etihad Airways, Hi Fly, Korean Air, Lufthansa, Malaysia Airlines, Qantas, Qatar Airways, Singapore Airlines, and Thai Airways.<sup>15</sup> The striking fact about these carriers is that none of them are based in the United States and are primarily based in the Middle East or Asia. The airlines that operate the A380 are cash rich and can generally avoid the high operating costs associated with the plane.

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<sup>14</sup> Trefis Team, "How Airbus Has Grown Over The Years To Dethrone Boeing As The Largest Commercial Aircraft Maker," *Forbes* (Forbes Magazine, January 6, 2020), <https://www.forbes.com/sites/greatspeculations/2020/01/06/how-airbus-has-grown-over-the-years-to-dethrone-boeing-as-the-largest-commercial-aircraft-maker/#39b2e65b3a59>.

<sup>15</sup> "Discover All A380 Airlines," iFlyA380, <https://www.iflya380.com/a380-airlines.html>.

## 2005

In 2005, the global aviation industry was still reeling from the effects of the events of September 11. Many airlines in the United States were on the brink of bankruptcy. Pilots and flight attendants faced the highest unemployment rate in a decade. The introduction of low cost carriers shook the industry, and many big legacy carriers in multiple countries were feeling the effects.<sup>16</sup> Despite these effects, there was still a large demand to transport passengers on high-density long-haul flights. Over 2.1 million people globally boarded a plane this year. This seemed like an odd time for Airbus to introduce the world's largest passenger airplane, with the aviation industry in such a tentative state. However, Airbus acknowledged that it wanted the title of the world's largest airplane and to be a direct competitor to the Boeing 747.

### **Biggest Competitor Boeing**

Boeing is by far Airbus's biggest competitor. This competitive rivalry dates back to 1958. Boeing has been leading Airbus for years, but Airbus recently overtook Boeing as the market share leader. Airbus's spike in market share has now reached over 65% and this is likely due to a reduction in the number of planes Boeing can produce. This rivalry is very intense because if one manufacturer errors, airlines simply switch their order to other manufacturer's plane.<sup>17</sup> An example of this is with the current Boeing 737 Max crisis after the two planes had crashed based on faulty software that

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<sup>16</sup> "Bumpy Ride Expected for Airline Industry in 2005," CNN (Cable News Network), <https://www.cnn.com/2004/TRAVEL/ADVISOR/12/10/airline.forecast/index.html>.

<sup>17</sup> Deutsche Welle, "Airbus Topples Boeing as Biggest Plane Maker: DW: 02.01.2020," DW.COM, <https://www.dw.com/en/airbus-topples-boeing-as-biggest-plane-maker/a-49536539>.

led to the deaths of over 300 people. After this, many airlines cancelled orders with Boeing and decided to order the rival counterpart from Airbus.

Whenever one manufacturer introduces an innovative new plane, the other manufacturer tries to top it. This was exactly the case with the Airbus A380. The Boeing 747 was the first plane to feature two separate floors, but the top floor was not a full cabin. (Figure 4) The 747 also had the title of the world's largest plane. Airbus decided it wanted this title and that it would create a competitive advantage by being more fuel-efficient. This rivalry has existed for decades and will continue well into the future.

### **United States Aviation Market**

The United States has the biggest domestic aviation market of any country. However, in the near future, China is expected to surpass the United States. The US market relies on two systems referred to as the hub and spoke, and the point to point models. The hub and spoke model refers to carriers such as United, Delta, and American. These airlines have hubs (airports) in large cities where smaller planes where smaller planes make connections. (Figure 5) An example of this would be a passenger traveling from Eugene, Oregon to San Diego, California with a stop in San Francisco. San Francisco represents the hub where passengers will connect. Often times, the hub cities have multiple daily flights to these smaller cities, for the convenience of the passengers trying to reach their final destination. The advantage of the point to point model is that it can create economies of scale.<sup>18</sup> The point to point model is where two

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<sup>18</sup> "Point-to-Point versus Hub-and-Spoke Networks," The Geography of Transport Systems, March 11, 2020, [https://transportgeography.org/?page\\_id=653](https://transportgeography.org/?page_id=653).

smaller cities have direct service to each other. Southwest Airlines was one of the earlier pioneers of this model. An example of this is a flight from Reno, Nevada to Albuquerque, New Mexico. Neither of these cities are hubs; they are merely points. However, with this model, service is not offered between the cities as compared to service from a hub to a spoke.<sup>19</sup>

The United States aviation market is not necessarily geared toward Airbus A380, but rather toward transporting a large number of passengers from one large popular destination to another. The US market focuses on connecting many smaller cities that the A380 simply could not support. American Airlines CEO, Vasu Raju stated, “the A380 is too big for the airline’s route network.”<sup>20</sup> It is true that the A380 flies on some high profile routes originating in major US destinations such as Los Angeles and New York to many destinations in the Middle East, Asia, Europe, and Australia. However, none of these flights are operated by US carriers.

### **What Constitutes a Successful Airplane?**

There are many factors regarding what constitutes a successful airplane, among them: the number sold, the cost, its popularity, how well it accommodates passenger preferences, and the product life cycle of the plane.

The number of A380s sold is staggering low compared to a very popular plane such as the Boeing 737. Airbus has only received a total of 251 orders for the A380. In

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<sup>19</sup> *ibid*

<sup>20</sup> Benjamin Zhang, “An American Airlines VP Reveals Why the Airbus A380 Doesn't Work for the World's Biggest Airline,” *Business Insider* (Business Insider, April 24, 2019), <https://www.businessinsider.com/american-airlines-exec-reveals-why-company-doesnt-use-airbus-a380-2019-4>.



contrast, over 7,000 Boeing 737s have been sold. However, looking at this in context, the Boeing 737 is a much more flexible plane and can be used on routes that the A380 simply cannot. The A380 is a long-haul airplane and must be compared in context with other long haul planes. The A380's direct competitor, the Boeing 747, sold more than 1,500 planes. Furthermore, the plane began service back in 1968. The 747 has been around four times longer than the A380.

The cost of an airplane is a critical factor in determining success. Airlines face extreme costs and very low profit margins, so when deciding to purchase planes, cost is usually the number one determinant. The Airbus A380 has a list price of 445.6 million dollars before any purchasing discounts.<sup>21</sup> This is a very steep price to pay for a single aircraft. Most carriers that operate the A380 can afford the cost and use the plane on routes where the break-even load factor is high enough to generate a steady profit. The break-even load factor is the number of seats that need to be sold on each flight on which the A380 operates in order to turn a profit.

The popularity of an airplane is a factor in determining its' success. The A380 is a passenger favorite. Passengers absolutely adore the airplane because of its ample space and increased amenities that cannot be found on any other plane. Many carriers which operate the plane, operate it strictly because passengers love to fly on it. Many frequent fliers will even take routes that require a layover, just to fly on the plane. A colleague of mine once was flying from San Francisco to Sydney and instead of taking the direct flight, he chose to take a flight with a layover in Dubai. His trip lasted

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<sup>21</sup> David Slotnick, "The End Is near for the Airbus A380 Superjumbo Jet, Which Made Its First Flight Just 15 Years Ago. Here's How It Went from Airline Status Symbol to Reject in Just 10 Years," Business Insider (Business Insider, April 27, 2020), <https://www.businessinsider.com/airbus-a380-superjumbo-history-boeing-747-emirates-2017-11>.

an additional 20 hours, but they chose to endure this simply to experience flying on an Airbus A380.

Alignment with passenger preferences is key in determining whether an airplane is successful. The A380 is synonymous with luxury. Carriers are able to offer luxurious premium cabin products that generate massive profits for the carriers. On select Emirates A380 flights, they offer three-room, first class apartments for fliers with deep pockets and a taste for the finest in flight experiences. Premium cabins often times generate up to eight times the profit than its economy counterpart. The A380 even aligns well with economy fliers' preferences. The two things economy fliers are looking for are leg room and space. The A380 can offer economy fliers the most leg room while carrying the most passengers due to its sheer size.

The product life cycle is an essential factor that must be considered when examining the success of an airplane. This cycle refers to the time from purchase to retirement with various phases representing repairs, enhancements, and reductions. The average life span of a plane is around 30 years. The life span allows the carrier a lengthy period to recoup their investment of the cost of the airplane. An alarming statistic is that some A380s are being retired before even reaching 10 years into their product life cycle. Most of the A380s in operation today are not projected to reach the typical life cycle for airplanes as they are not financially viable for the carriers operating the A380s. These factors that contributed to the success of the Airbus A380.

## **Part Three: Success**

Despite Airbus announcing the shutdown of the production facilities for the A380 in 2021, the airplane can still be considered a success to some extent. The airplane is a passenger favorite and should continue to soar for many decades to come, even after production ceases. Airbus can attribute some success of the A380 to the airline group Emirates, as it is by the far the largest operator of the airplane type and has based its business model around the airplane. Even though only 251 units were sold, price of one sale could equal 2 to 3 sales of another airplane that Airbus sells, such as the A330. Some of the strategic business and marketing approaches also helped contribute to the success of the A380.

### **Success of the Design**

Being the quietest plane in the sky, passengers often want to fly on this simply to relax.<sup>22</sup> With today's society being ever more cautious about harmful emissions, the A380 has set the standard for reduced CO<sub>2</sub> and NO<sub>x</sub> emissions. With the global aviation market passenger demand expected to double in the next twenty years, the A380 is capable of meeting this growing demand. Many of the most popular mega city routes have limited availability. With only a certain number of landing slots at every airport, the A380 can offer up to 60% more capacity per slot.<sup>23</sup> Many A380 routes show superior yield, meaning these routes attract passengers with higher incomes willing to

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<sup>22</sup> "Benefits to Airlines," Airbus, accessed May 4, 2020, <https://www.airbus.com/aircraft/passenger-aircraft/a380/benefits-to-airlines.html>.

<sup>23</sup> *ibid*

spend more on premium cabins and comfort. These routes usually include routes going between cities that have strong economies, such as Dubai to London.

The size of the A380 allows it to offer passengers a 15% lower cost per seat than other rival long-haul airplanes.<sup>24</sup> The extreme comfort allows airlines to charge higher ticket prices which passengers are more than willing to pay.

### **Airline Revenue Management**

The goal of airline revenue management is meant to help prioritize passengers based on the fares paid and award seats to the highest fare.<sup>25</sup> It is a tactical strategy, but an essential tool in many markets.<sup>26</sup> The A380 increases network productivity by maximizing the efficiency of arrival and departure waves, which allows reduced transfer times, more connections and a fully optimized hub--something that no other airplane can deliver.<sup>27</sup> The extra capacity offered by the A380 on the “strongest” flight of the day, draws more traffic and captures higher yields. A single A380 operation allows the retention of the same number of high-revenue-generating seats in the premium-class cabins while releasing an unused slot for other destinations. Airlines can gain a revenue boost approximately equivalent to a 50% reduction in fuel burn through applying this market-matched cabin segmentation and the latest cabin innovations.

Boosting capacity on key trunk routes has wide-reaching beneficial network effects by unblocking direct and connecting traffic. Many airlines serve strategic routes

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<sup>24</sup> *ibid*

<sup>25</sup> Tom Bacon, “Airline Revenue Management Strategy 101: It’s All About Alignment,” *accelya*,, <https://w3.accelya.com/blog/airline-revenue-management-strategy-101-its-all-about-alignment>.

<sup>26</sup> *ibid*

<sup>27</sup> “Benefits to Airlines,” Airbus, accessed May 4, 2020, <https://www.airbus.com/aircraft/passenger-aircraft/a380/benefits-to-airlines.html>.

to maintain a presence in key markets.<sup>28</sup> Many of the carriers that operate the A380 employ this strategy by offering daily flights to heavily dense markets. Carriers who operate the A380 were able to find the perfect strategies to pair with airline revenue management to generate a hefty profit and satisfy customers, creating loyalty and lasting frequent fliers.

### **Emirates in Detail**

Emirates is the world's fourth largest airline, and is based in Dubai, United Arab Emirates. It is the world's largest international airline, as it offers service to over 158 cities.<sup>29</sup> The airline operates on a giant hub and spoke model. About 90% of flights connect in Dubai and then resume flights to destinations in over 84 countries across six continents. The airline has racked up countless awards such as "World's Best Airline" according to Skytrax. Emirates is synonymous with luxury and outstanding customer service no matter what cabin you are flying in. Additionally, Emirates operates a sky cargo business that utilizes some of its A380s to its advantage.

Emirates has created a streamlined business model. Unlike many carriers around the world that operate many different types and variants of aircraft, Emirates has a streamlined aircraft fleet of just two planes. The airline operates 270 aircraft with an average aircraft age of 73 months.<sup>30</sup> The two aircraft types are the Airbus A380 and the Boeing 777. Emirates operates 123 A380s, taking delivery of seven of them in 2019

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<sup>28</sup> *ibid*

<sup>29</sup> The Emirates Group, 2018 – 2019 Annual Report, p. 158, [https://cdn.ek.aero/downloads/ek/pdfs/report/annual\\_report\\_2019.pdf](https://cdn.ek.aero/downloads/ek/pdfs/report/annual_report_2019.pdf)

<sup>30</sup> The Emirates Group, 2018 – 2019 Annual Report, p. 193, [https://cdn.ek.aero/downloads/ek/pdfs/report/annual\\_report\\_2019.pdf](https://cdn.ek.aero/downloads/ek/pdfs/report/annual_report_2019.pdf)

alone. This business model has allowed Emirates to turn a substantial profit for 31 consecutive years with exponential growth in each of the past three years.<sup>31</sup>

The A380 is the perfect fit for Emirates since it only operates long haul flights, it is able to do because all of their destinations are international. They offer no domestic service within the United Arab Emirates. Dubai is the perfect location for Emirates to operate their giant hub and spoke business model. Dubai is located within an eight to fourteen hours from practically every point on the globe. It is the growing markets and tourism in Dubai that is set to make Dubai International Airport the largest airport in passenger volume in the world?? within the next ten years. Emirates is able to offer A380 flights? so frequently because, to many of the 158 cities they serve, they offer one daily flight with a focus of trying to get as many passengers on board as possible in order to maximize revenue. Emirates daily seat factor across all A380 flights is 76.8%<sup>32</sup> They maintain a break-even rate of 66.4% Emirates has been able to operate such a high number of A380s because their business models allows for the movement of very large numbers of people on long haul flights.<sup>33</sup>

Emirates is currently utilizing enhanced airline revenue management services to increase A380 flights to destinations with a need for increased capacity such as: Houston, Melbourne, London, and Brisbane.<sup>34</sup> When the Airbus A380 was launched, Emirates placed an initial order of 162 airplanes, but in 2019, they cut the order to 123.

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<sup>31</sup> The Emirates Group, 2018- 2019 Annual Report, <https://www.emirates.com/media-centre/emirates-group-announces-2018-19-results/>

<sup>32</sup> The Emirates Group, 2018 – 2019 Annual Report, p. 9, [https://cdn.ek.aero/downloads/ek/pdfs/report/annual\\_report\\_2019.pdf](https://cdn.ek.aero/downloads/ek/pdfs/report/annual_report_2019.pdf)

<sup>33</sup> Andrea Massey, “How Are Emirates' A380s So Profitable?,” Simple Flying, January 21, 2019, <https://simpleflying.com/how-are-emirates-a380s-so-profitable/>.

<sup>34</sup> The Emirates Group, 2018 – 2019 Annual Report, p. 89, [https://cdn.ek.aero/downloads/ek/pdfs/report/annual\\_report\\_2019.pdf](https://cdn.ek.aero/downloads/ek/pdfs/report/annual_report_2019.pdf)

Using the tools from their airline revenue management system, they have determined that their business model might not be as profitable in the future and have ordered a few more fuel-efficient aircraft to add to their fleet within the next ten years.

Emirates makes the majority of its revenue on A380 flights from its premium cabin products. Its highly touted three-bedroom apartments cost over \$25,000 per one-way flight. Some of these flights are as short as six hours.

Emirates and President Sir Tim Clarke over the years had various meetings with Airbus about the production of a smaller and more fuel-efficient A380 model being released. The airline's business model would not necessarily support an A380 on some of the routes they flew. Although, the A380 is fuel efficient, new airplanes came along that were up to 33% more fuel efficient which could further save Emirates money.<sup>35</sup>

### **Positive Performance Drivers**

The need for an aircraft that could transport a higher average number of passengers to many destinations contributed to the success of the A380. Airlines primarily value being able to offer one daily with the A380 versus offering multiple flights with a smaller aircraft such as the Boeing 787 or the Airbus A330. The A380 made its mark on marque high traffic routes where it could sell off its premium seats and the majority of economy seats. Utilizing the A380 on an ultra-long haul flights, (longer than four hours) was another advantage. An A380 on ultra-long haul flights allowed passengers more comfort and allowed airlines to charge slightly higher ticket prices.

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<sup>35</sup> Tim Hepher and Reuters, "Why the Airbus A380 Will Fly No More," World Economic Forum, <https://www.weforum.org/agenda/2019/02/airbus-a380-from-european-dream-to-white-elephant>.

Another positive driver for the Airbus A380 is the marketing. Amazingly, the airplane has managed to market itself within the global aviation community. Airbus utilized a website titled iflya380.com which has really been successful at directly marketing to passengers. This B2C marketing website allows consumers to see every route the A380 flies as well as photos and videos from flyers' past trips on the airplane.<sup>36</sup> This website receives high visitor traffic, from travelers who go to the site when they are trying to make sure they can fly on an A380. This website marketing also benefits the carriers who operate the A380, as the iflya380 website allows consumers to book flights directly. (Figure 6)

Even though the production facility will be shutting its doors in 2021 and many people will be out of jobs, there is a positive aspect to the situation. Some of the jobs will be salvaged as Airbus is contractually obligated to continue to support the plane and create spare parts for repairs, which still generates some revenue for the company. Since the aircraft will be flying for a few more decades, Airbus will have a modest revenue stream from parts and supplies.

Premium cabins have been another success factor for the Airbus A380. Some of the Middle Eastern carriers that operate the A380 can meet the break-even load factor by just selling their premium cabin seats. Carriers who operate the A380 upgrade their business- and first-class cabins much more frequently than on other aircraft types because the return on investment is so high. Premium cabins can single-handedly make the same amount of revenue as all of the economy class seats sold on certain flights. It

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<sup>36</sup> Ben and Ford, "Brilliant: Airbus Marketing The A380 Directly To Consumers," One Mile at a Time, May 11, 2018, <https://onemileatatime.com/iflya380-website/>.



has long been known that the first- and business-class seats generate the most revenue, and with so much space, the airlines that operate the A380 recognize this. Some carriers have over 100 seats in premium cabins and really take advantage of the generous floor space the A380 offers.

## **Part Four: Failures**

Despite the success of the Airbus A380, it has a long list of failures. Some can be attributed to Airbus and some can be attributed to a shift of trends and the aviation market. Airbus determined that it can no longer recoup its 25-billion-dollar investment and must cease production. The A380 does not offer a unique value proposition to airlines.<sup>37</sup> Emirates' cancellation of some of their A380s on order was the main driving factor that led to the shutdown of production, according to Airbus CEO, Tom Enders.

The negative aspect about shutting down production of this plane is that about 3,000 people will be out of work. Airbus could have salvaged this project if they were not stubborn and had instead listened to their biggest customer. Airbus may see this as a huge hit to company pride, but a factor that must be considered is that quad engine jets, no matter the manufacturer, are being replaced by more fuel-efficient twin-engine planes. We are witnessing the Boeing 747 on the last leg of its product life cycle as well as Airbus's other quad engine airplane, the A340.

### **Failing to Adhere to Customer Demands**

Despite only fifteen carriers operating the Airbus A380, top executives at airlines around the globe have expressed interest in operating the airplane type. Emirates asked that Airbus create an updated version of the A380 that would be smaller and more fuel efficient. Airbus executives considered the idea, but ultimately decided

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<sup>37</sup> Ben and Tiffany, "Airbus A380 Production Could End, And Why Emirates Is Pissed," One Mile at a Time, May 22, 2019, <https://onemileatatime.com/airbus-a380-production-end-emirates-pissed/>.

that the cost of creating a new, updated version of the A380 was not feasible. This was a critical and costly mistake that ultimately led to the demise of the aircraft. Other airlines also voiced concerns about a smaller version of A380. Trying to fill an aircraft that seats an average of over 500 people on some flights which occur three to four times daily, is a daunting task. Most airlines avoid purchasing the A380 because they do not think they can fill that many seats on a daily basis.

### **Logistics**

Despite the promising success of the A380, it is a logistical nightmare. The massive size of the airplane is one of the key contributors to its logistical problems. The size of the A380 required airports to add new infrastructure which included: longer and wider runways, longer and wider taxiways, extra gate space, and dual boarding bridges.

Only select airports around the globe are equipped to handle the enormous size of the A380. Many huge international airports had to build new infrastructure to be able to accommodate the A380. Prior to the launch of the A380 in 2004, London Heathrow Airport went through a multi-million-dollar renovation in order to accommodate the A380. New York's JFK airport spent over 179 million dollars to be able to accommodate the A380s. These high fees to be able to accommodate the plane are just not worth it in too many cities. Additionally, the airlines that operate the A380 have to contribute to added costs needed to operate the A380. Emirates and the Dubai International Airport spent over 1 billion at their hub in Dubai to make new runways and add more A380 gates, as this model requires multiple gates due to its double decker layout. There needs to be a gate that can reach the upper deck of the plane and gates for

the lower levels of the plane. Often times, A380s use four gates, two on each deck, in order to make the boarding process faster for the average 500-plus passengers on board each flight. These additional gates, come with significant cost.

Due to the logistical challenges of the A380, it cannot fly to many airports. Numerous airports across the globe, such as Seattle- Tacoma International and McCarran Las Vegas International airport, have looked into the feasibility of having the A380 fly into their airport, but ultimately, the costs outweighed the reward.

### **Negative Performance**

In 2000, Airbus conducted a global market forecast and felt that demand for extra-large aircraft would be over 1,200 within the next two decades. Unfortunately, the demand has quickly dried up over the course of these two decades with the introduction of more fuel efficient aircraft, such as the Airbus A350 and Boeing 787. This demand has dried up so quickly that some airlines have even retired the A380 and scrapped them for parts. Airbus overlooked some of the technical challenges with the aircraft. Three challenges they failed to understand was the necessary logistical challenge, the changing aviation market demand, and poor operating efficiency. The logistical challenges could be overcome, but not without extreme costs. The changing market demand was something that Airbus had predicted correctly, but they could never be certain about spikes and dips in demand.

## **Recommendations**

Airbus should have heeded some obvious red flags. Boeing researched a joint venture about creating an extra-large plane but, eventually decided against it. Airbus should have followed Boeing's lead and not spent so much money on developing the plane. The reason Airbus continued was likely European pride and bragging rights to the title of the world's largest plane.

Airbus should continue to support the A380 and manufacture parts in order to support and service the model for the current carriers. This will generate goodwill, and when airlines seek to purchase new planes in the future, they will more likely consider Airbus before Boeing.

Once the Covid-19 situations is resolved, Airbus should consider reintroducing the Airbus A380 with a reduced capacity and only twin engines. If they can keep the double decker layout, that would be a huge factor that would convince more carriers to buy this updated version of the A380. One of the most popular long-haul planes is the Boeing 787 and it is used in all kinds of markets, including on longer domestic routes in the United States such as JFK to LAX and international routes around the world.

Airbus should also consider creating a freighter version of their aircraft. With the ever-increasing demand and costs for air cargo, the A380's size could be a competitive advantage. The cargo market is one industry where the size of the A380 would not be considered a problem. Currently, with the Covid-19 situation, cargo airlines are looking to add extra storage space on their planes, but most of these planes are already full. The A380 would give these carriers much more room and they could, in turn, generate more profit with the rising air cargo costs.

## List of Figures

Figure 1: Map showing origin of A380 parts

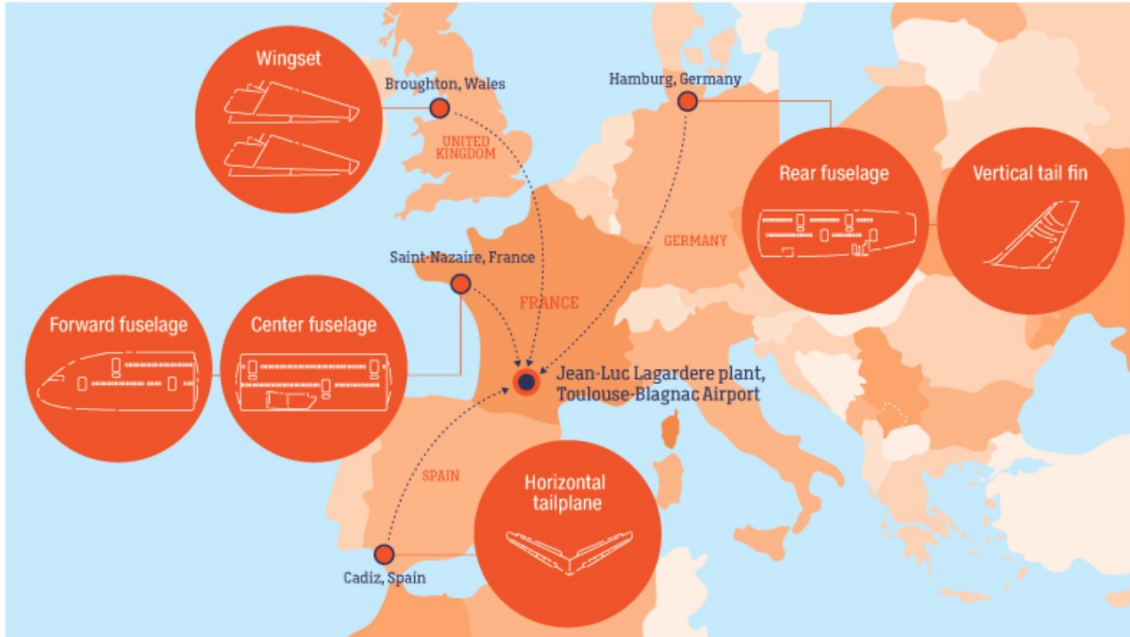


Figure 2: Shower suite on Emirates A380



Figure 3: Full service bar on Qatar A380



 alamy stock photo

EAJ5XR  
www.alamy.com

Figure 4: Airbus A380 vs. Boeing 747 comparison chart





Figure 5: Chart displaying point-to-point and hub-and-spoke model

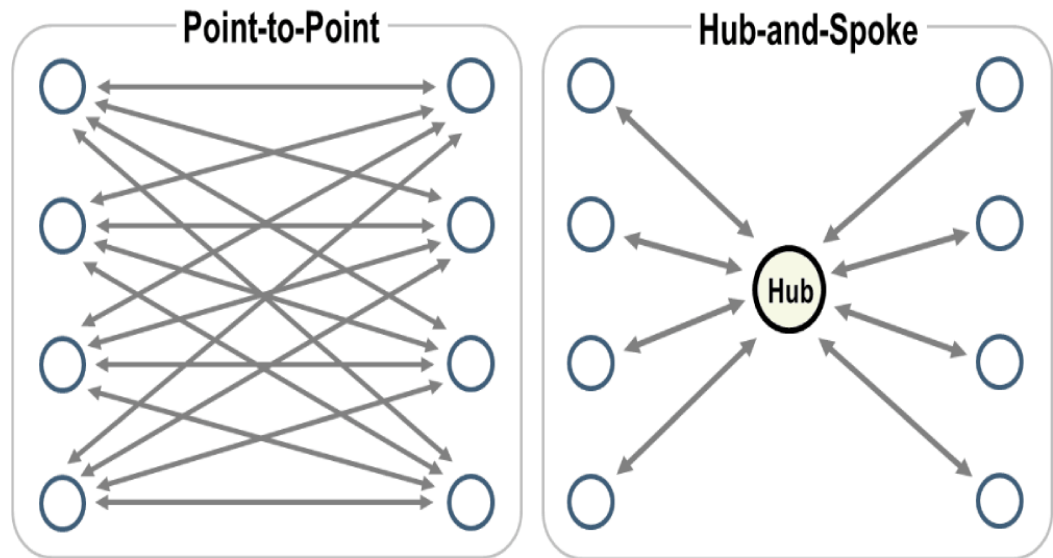
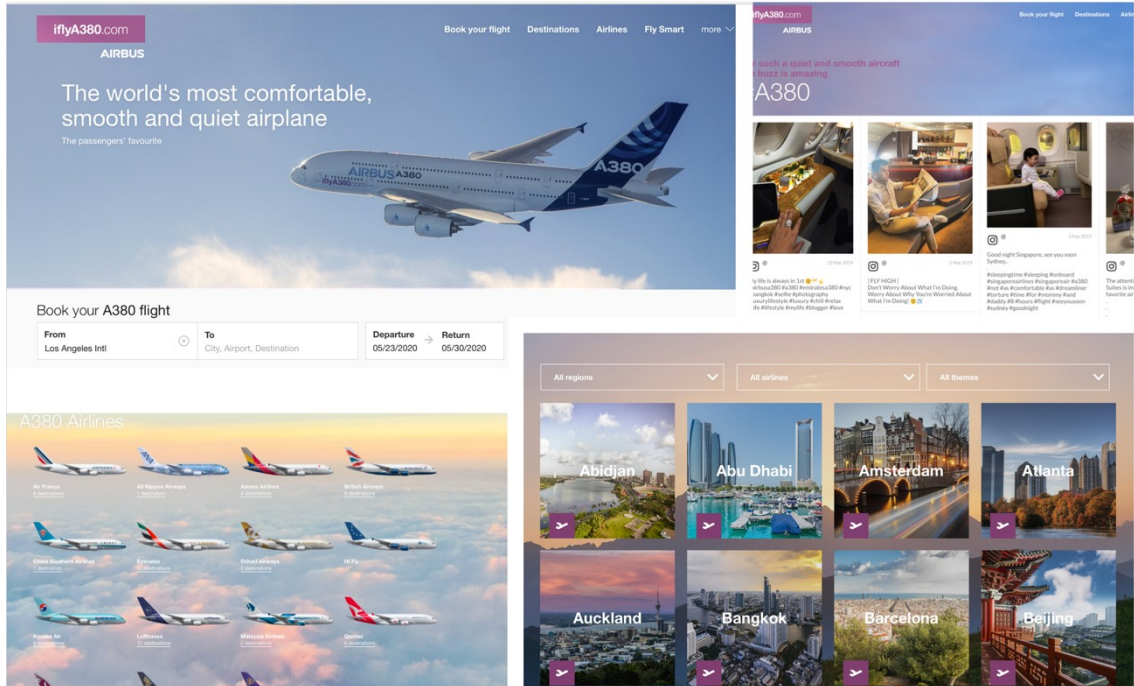


Figure 6: Screenshots of iflya380.com website



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