

Airbus vs. Boeing

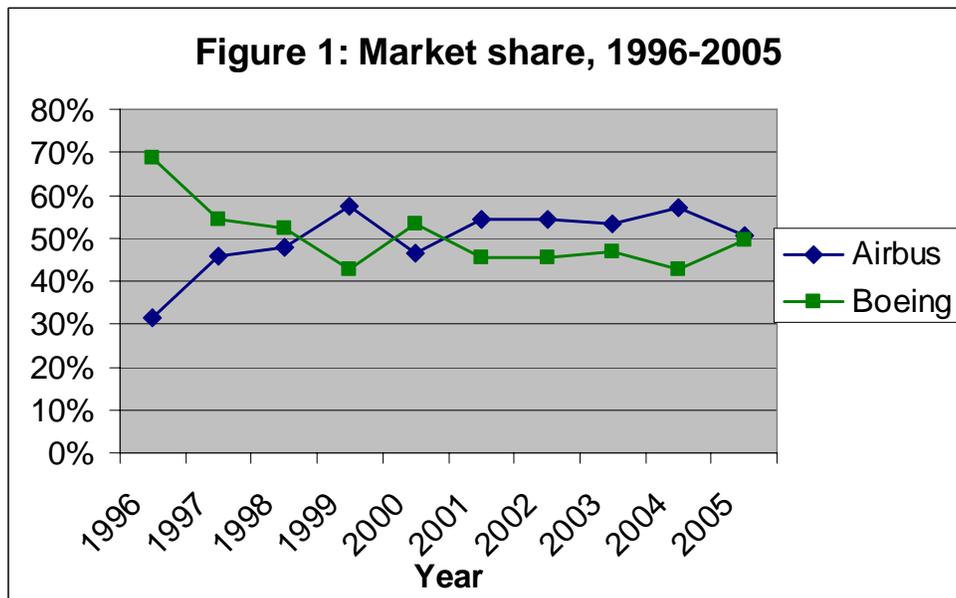
Airbus and Boeing compete in manufacturing large commercial airliners. Airbus' product line includes the A330, A340, and the mammoth A380 which first flew in April 2005. In 2005, Airbus received orders for 1111 aircraft and earned revenue of €22.3 billion. Boeing's product line includes the 737, 777, and 747. In 2005, Boeing received orders for 1031 aircraft and earned revenue of \$22.7 billion from sale of commercial aircraft.

Until 2001, Airbus was a marketing consortium established under French law as a "Groupe d'Intérêt Economique". The four shareholders – Aerospatiale–Matra (37.9%), British Aerospace (20%), Construcciones Aeronauticas (4.2%) and Daimler Aerospace (37.9%) – performed dual roles as owners and industrial contractors.

Most major decisions required unanimous approval of the shareholders. Airbus was obliged to distribute production work among its shareholders according to political as well as economic considerations.

Then, Airbus was re-organized into a single fully integrated limited company. The objective was to streamline operations across national boundaries, reduce costs, and speed production.

The re-organization coincided with a consolidation of Airbus market position. As Figure 1 shows, from 31% in 1996, Airbus had steadily increased its share of the market to 57% in 1999, but then dipped sharply to 47% in 2000. Following the re-organization, Airbus recovered and maintained its share in the mid- to high 50s until 2005.



In April 2004, Boeing launched the new 787 Dreamliner with 50 firm orders from All Nippon Airways of Japan. The deal was worth about \$6 billion at list prices, with deliveries scheduled to begin in 2008. With domestic and international capacity of 70.0 billion and 25.4 billion available seat kilometres respectively, All Nippon Airways is a major Japanese and international carrier.

Boeing had earlier denoted the 787 Dreamliner as the 7E7, and targeted the new plane at the market segment of twin-engine medium to long-range jets with capacity of 200-300 passengers. The 787 is a completely new design with a development cost estimated at \$8-10 billion.

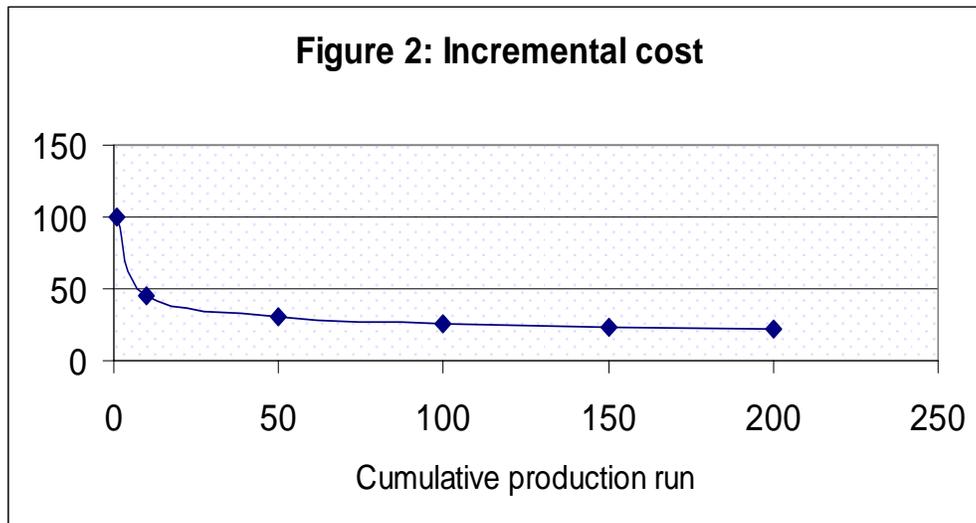
In December 2004, following considerable speculation, Airbus announced that it would develop the A350 to compete with Boeing's 787. The A350 was planned to be a derivative of the existing A330, enhanced with a new wing, more fuel-efficient engines, and other new technologies. The development cost was estimated to be just €4 billion (equivalent to \$5.3 billion).

At that time, Boeing had secured just 52 firm orders, far below its target of 200 orders by the end of 2004. Richard Aboulafia of industry consultants Teal Group remarked that Airbus had succeeded in its goal of "disrupt[ing] the business case for the 7E7".¹ Airbus Chief Commercial Officer John Leahy predicted that the A350 would attract a substantial number of Boeing customers and "put a hole in Boeing's Christmas stocking".²

Besides the cost of development, aircraft manufacturers also incur substantial costs to manufacture the aircraft. The manufacturing cost is driven by an "experience curve". As engineers and workers gain experience in production, they gain proficiency and devise ways to reduce cost, including new procedures and new tools. Figure 2 illustrates an experience curve in aircraft manufacturing, and shows that the curve flattens out once cumulative production exceeds a hundred units.

¹ "Airbus pushes ahead with rival to 7E7," *Seattle Post-Intelligencer*, December 11, 2004.

² "A350: Airbus's counter-attack", *Flight International*, January 25, 2005.



Airbus and Boeing must set prices for aircraft based on projections of unit costs. Owing to the experience curve, these projections depend critically on forecast sales. If the sales fall short of target, unit costs will be higher than planned, and the manufacturer may incur a substantial loss on the plane.

Contrary to Mr Leahy's prediction, orders for the Boeing 787 gathered momentum in 2005. One of the new customers was Northwest Airlines, which placed a firm order for 18 Boeing 787s and secured options for 50 additional planes. The deal was worth about \$2.2 billion at list prices. The planes were to be delivered between 2008 and 2010.

Northwest Airlines and Northwest Airlink operate a total of 1,200 flights daily from hubs in Detroit, Minneapolis/St. Paul, Memphis, Tokyo and Amsterdam. With capacity of 91.4 million available seat-miles and operating revenue of \$12.3 billion in 2005, Northwest Airlines is one of the world's largest carriers.

Yet, in recent years, Northwest has consistently incurred losses. In 2005, Northwest's operating loss was \$919 million, while its net loss was \$1.376 billion. Northwest's losses have been aggravated by a sharp and sustained increase in oil prices. Despite continuing losses, Northwest purchased new planes.