

Chapter 8

When Supply Chain Strategy Does not Match Supply Chain Capabilities:

Lessons that can be Learnt from the Supply Chain of Boeing 787

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EXECUTIVE SUMMARY

During the early 2000s, the Boeing Company was experiencing a market shrink due to a downturn in the aerospace industry after the 9/11 terrorist attacks, as well as severe competition from its rival Airbus. To deal with the situation and salvage its market share, Boeing proposed the design of a new aircraft called Boeing 787 or the Dreamliner. This futuristic aircraft was received very well by the airlines. Very soon, it became the fastest-selling new airplane in the history of commercial aviation. Nevertheless, after the initial successful launch, the company faced many supply-chain-related problems, which resulted in repeated delays and huge extra costs. These delays (now more than two and a half years) could add up to as long as three years. In this research, the authors investigate how the mismatch between the supply-chain capabilities and the Boeing's strategy for developing this airplane led to these delays and extra costs.

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BOEING'S BACKGROUND

The Boeing Company is the world's largest aerospace company and a leading manufacturer of commercial aircrafts. It was founded in 1916 in the Puget Sound Area of Washington State. The company is headquartered in Chicago, IL, and its main business is organized in two units: Boeing Commercial Airplanes and Boeing Defense, Space & Security. In 1997, the company formed a merger with a rival airplane manufacturer, McDonnell Douglas, expanding its commercial business operations. Since the merger with McDonnell Douglas, Boeing has been engaged in a duopoly competition with Airbus (a subsidiary of European Aeronautic Defence and Space Company N.V.) in the commercial aircraft market segment. Boeing's jets comprise approximately 75% of the world commercial fleet. The total sales revenue of the company was \$68 billion in 2009, with approximately 50% of this revenue coming from the commercial airplane division. Boeing's commercial models currently in operation are the B737, B747, B767 and B777 families. The latest in development are the B747-8 and the B787 or the Dreamliner (Source: The Boeing Company).

Boeing intends to expand its capabilities in designing and manufacturing airplane models with composite materials. James McNerney, CEO of Boeing, says: "Composite design and manufacturing remains a fundamental competitive advantage for this company.... As we get through the 787 development, it makes all kinds of sense to figure out how to go down both the design and production learning curve, and this center [Advanced Developmental Composites Facility] is designed to give us advanced capability in both" (Gates, 2010).

Boeing's vision statement (2010) indicates that the company is intending to become a lean organization with systems integration as its core competency; moving away from being mostly a manufacturing company.

THE DREAMLINER

Under the pressure of a weak market and severe competition from Airbus, during the early 2000s, Boeing proposed the design of two new airplane models: Boeing 747X and Sonic Cruiser. B747X was designed as an enhanced version of B747 to carry more passengers and Sonic Cruiser could travel at a speed close to the speed of sound, cutting down travel time. But by 2001, both the models had failed to make it from the design to the manufacturing stage. While the former fell behind in its competition with the rival airplane manufacturer, Airbus' A380, the latter flopped due to the lack of demand for expensive jets with high operating costs, especially in the wake of a slump in air travel due to the 9/11 terrorist attacks.

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