

# 7 Investor *Center*

## Boeing's Dreamliner Delays: Outsourcing Goes Too Far

by [Peter Cohan](#) Jan 21st 2011 8:00AM

Earlier this week, Boeing ([BA](#)) announced yet another - now the seventh -- delay in the delivery schedule for its first 787 Dreamliner, pushing its initial delivery back at least three years later than originally planned. These delays raise important questions for a management practice that has been around for decades: outsourcing.

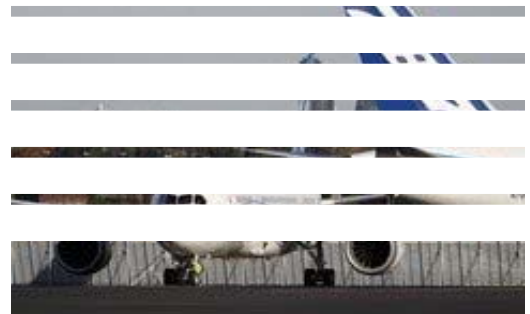
Specifically, did Boeing outsource too much of the Dreamliner's components to other companies in other countries? Will the 787's outsourcing problems persist? And what might this mean for airlines, passengers and investors in Boeing stock? The short answers are: yes, probably, and it's too early to tell.

The latest announced delay came as no surprise after a 787 test flight in Laredo, Texas, suffered an [electrical fire in November 2010](#). Boeing now plans to [deliver its first aircraft](#) in the third quarter of 2011 -- six months later than the previous expected date. The airline that's supposed to get that first 787, Japan's ANA, [says it's glad to learn of the new schedule](#) and is adjusting by keeping its old aircraft going longer than planned.

### **Both Design and Manufacturing Left Boeing**

Boeing claims that the latest delay won't have any financial implications for the [865-order, \\$139 billion](#) backlog for the 250- to 330-seat aircraft. However, it's worth pointing out that at \$12 billion, the cost of developing the 787 is now 120% higher than Boeing's original budget.

The causes of many of the delays (one was due to a strike) can be traced back to two



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problems I described in my 2008 book, *You Can't Order Change*. The first is that Boeing decided to outsource both the design and the manufacturing of the 787 to shift the economic risk onto those suppliers. With its previous aircraft, Boeing had outsourced only the manufacturing and maintained tight control over the design -- providing those suppliers with extremely detailed specifications of what each aircraft component should do. But by outsourcing both the design and the manufacturing, Boeing lost control of the development process.

The second problem Boeing encountered with the 787 was that it had never before built an aircraft with composite materials. It had previously used aluminum -- whose behavior in the real world is much better understood. Unfortunately, due to a lack of experience with composite materials, the software that engineers used to predict how the aircraft would behave did a poor job. And this contributed to problems like *skin wrinkling* on the aircraft's surface.

### **It "Outran Our Ability to Manage"**

Boeing has been struggling with these problems for years, but to its credit it has finally acknowledged them. An in-depth Jan. 20 report from *Reuters* quotes a Boeing statement: "We made too many changes at the same time -- new technology, new design tools and a change in the supply chain -- and thus outran our ability to manage it effectively for a period of time."

Boeing claims that it has learned tremendously from its errors, but it will continue outsourcing in the future. One step it has already taken, in 2009, was to "in-source" some of the work that it had previously shifted to a supplier that made big chunks of the 787 airframe. In July 2009, *Boeing acquired two plants* that make those parts from supplier Vought Aircraft Industries.

But after so many delays and promises, it's amazing that investors continue to derive any sense of comfort from Boeing's new deadlines (the stock rose nearly \$2, to \$72.47, on Jan. 18 after Boeing announced the latest delay). I just hope the Federal Aviation Administration, which must certify the 787 for flight and *remains concerned* about Boeing's ability to resolve the problems with the 787, will make sure it applies very strict tests before it lets passengers fly aboard a Dreamliner.

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