

---

APS1012 Management of Innovation – Final Team Projects, Spring 2013 (online class)**How Radical Innovation Kills a Product**

The project serves as the wrap up of the learning outcomes of APS1012, the Management of Innovation in Engineering.

Our research stems from an interesting but confusing phenomenon. During the lecture, we find that innovation has already been regarded as a truth in enterprise development. We all focus on how to guarantee a successful innovation but never question whether an innovation can result in a failure. In our report, we centre on the Boeing 787 “Dreamliner”, once labeled as the most innovative aircraft of all time but caused more than ten accidents since its first commercial flight.

We choose this product simply because the discussion on it can cover every aspects of innovation. For one thing, these innovations create many inimitable selling points, which make the profit of Boeing rocket; while for the other, the market gradually loses faith on Boeing 787 due to its frequent accidents. To support our discussion, we select three extra examples, the Airbus A380, the Volkswagen Golf GTI and the iPhone. Logically, we aim to answer the following questions:

- What is innovation?
- What is a successful innovation?
- What is the difficulty to achieve such success, especially in engineering field?
- Is Boeing 787 a successful innovation, considering so many accidents but huge revenues on the other hand?
- What can we learn from the comparison between Boeing and Airbus/Volkswagen/Apple?

To answer how radical innovation kills a product is equal to answer how an innovation can be successful. We never take Boeing 787 as a failure and we also never regard the other three products as counterexamples of B787. Precisely because we are uncertain to judge the performance of B787, we believe that discussing Boeing alone may shadow some crucial elements that cause the failure of a radical innovation.

We get the conclusions. First, innovation should only be assessed by the total profits that the product brings to the company from its birth to retirement. The difficulty lies in the measurement of profits as the traditional methods of measuring profits cannot predict the sudden loss caused by the uncontrollable risk of innovation and also we cannot use to recent profits to predict its profits in its whole life. A solution of it is to measure the profit by customer value. To succeed in innovation, a company must first understand what the most important customer value is and then put it at paramount place. For airplane, safety should be the paramount value while Boeing 787 focuses mainly on improving the flying experience, which results in its accidents. In the end, we distill the ingredients of a successful innovation in engineering into “the ability to control the risk of innovation” and “the ability to evaluate the customer value in their market”.

To make the article more logical, we tweak the article from two perspectives during the phase of integration. First, we reorganize each one’s part based on a group discussion. Furthermore, we removed all the irrelevant table, figures and contents regardless of the minimum word requirement. Such data may make the report more academic but we all prefer to outline the specific topic in the most straight-forward and easiest-understood way.

**Conclusion**

A successful innovation should depend on how much profit the product can get from birth to retirement and the ability the company can control the risk during innovation. For the former, it is hard to measure the profit over such a long term. An alternative solution is to evaluate the customer value. As long as a company put the most important customer value at first place, we can foresee its success without waiting

until its retirement. For the latter, the uncontrollable innovation may help reduce cost in short-term but may suddenly cause an unpredictable accident, and to recover it, it always takes an exceedingly high investment. The best way to guarantee innovation is to tightly control such risk in advance.