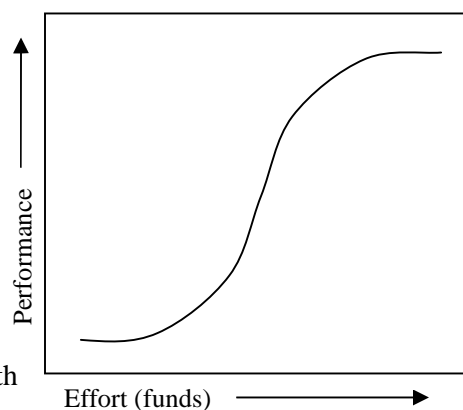


Why review a 25-year-old book? Good question. Let's look inside for an answer. There are many useful points in this text, several concepts that are still relevant, and a few things that have changed since it was published in 1986 by McKinsey & Co., Inc.

The central idea presented in the book is that Attackers try to make money by changing the order of things and Defenders protect their existing cash flows. This principle makes a lot of sense from the examples prevented, and it really resonates now, twenty-plus years later with the attacks we've seen on long-time market leaders, like Apple to IBM, Netflix to Blockbuster, and Southwest Airlines to, well, all the other airlines.

Like any good economist, Foster uses curves to explain his theories. Unlike many economists, his are easy to understand.

Technology limits - "technology" meaning the way that something, anything, is performed, not just information technology - can be drawn in an S-shaped curve. Progress is slow at the beginning, then the technology really takes off and grows quickly, and then the returns diminish as the limit is reached. The important things for an Attacker to do are to 1) recognize that there is a curve and observe the past and future to help evaluate your course of action, and 2) to replace the search for efficiency in your current processes with a quest for competitiveness. The other companies in your industry are looking for a new way to do business already.



The S-curve is presented clearly, and is referred to many times throughout the book. I particularly like the description of common defense methods used in the face of an attack including "adding sails to the S-curve," which means improving efficiency and reducing costs so customers are less inclined to switch, and "jumping to a new S-curve" by adding a new product or a new dimension to current products, such as when EMI moved from a record company to a high tech company by adding CAT scans to its product offering

An interesting prediction made by Foster is the field of molecular engineering. His observation that scientists can move atoms around inside molecules to produce things like airplane wings that will withstand high-fatigue environments was an early view of the currently exploding field of nanotechnology.

The most interesting section of Foster's book may be the chapter on defenders and the hubris they display when they seem to be in control of the market. Errors like believing that a slow evolution in technology is suitable for customers, believing you will have sufficient early warning of an attack, believing your company truly knows exactly what the customers want, and wrongly defining the market have proven costly to many organizations over the years, and Foster offers good examples and insight. Taken seriously by corporate executives, the descriptions of these and other hubristic errors will help to avoid losing a leading position.

Amid Foster's praise of companies like Michelin, Citibank, and Texas Instruments, there is a story in the book that sounded good in 1986 and then turned bad. Foster extols the approach of Gould Electronics as highly innovative and sustainable. In the early 1980s Gould reinvented itself by acquiring new technology and selling off defender products, and the *Wall Street Journal* reported that analysts were bullish on Gould's outlook. A few years after this book was published, Gould was acquired by Nippon Steel and later Nikko Kyodo. Sadly, the new owners did not see the S-curve in copper and other industries. Gould's assets were liquidated in 1993.

This reviewer disagrees with Foster's suggestion that an acquired company should be left alone. His contention is that the executives, who are used to a high level of variable pay from their fast-moving days as a startup, will see a lower rate of compensation based on the new parent company's slower pace and will begin to ask, "What can we do to get this engine running?" I have seen too many times an acquired company that has been left autonomous later refuse or accept with difficulty the culture that the parent company wants to instill. Furthermore, the time that elapses between acquisition and the epiphany described by Foster can be the difference between winning and losing.

What are Foster's takeaways? What course of action does he recommend? First, like anything else, the success or failure of an organization will depend greatly on its leadership. While the CEO need not necessarily be a scientist, it will be critical to be a person who understands how technology and innovation develop. The CEO must also have the courage to put a stop to current technology and processes when there is a need to change direction, even if things are going very well in classic economic terms. And further, the CEO must have a thick skin to endure criticism when new exploration seems to go astray or does not provide results quickly enough for the stakeholders.

The CEO and Chief Technology Officer must have a strong relationship. The CTO does not have to be the best scientist in the lab; what is more important it to be able to translate the CEO's vision into technical terms, research alternatives and their limits, and then assessing those alternatives as sources of sustainable competitive advantage for the firm. In this regard, the CTO is helping to steer the ship, not just buy the right software.

In order to identify the warnings signs of an S-curve that is reaching the top, anyone at any level of the organization, including the C-suite, should be asking these questions about the organization:

- Is senior management uncomfortable about the output of R&D? Ask the question, "Should I get more involved in this?" and don't assume the scientists know what they're doing so we'll be okay.
- Are we spending more to make improvements that we did in the past? This is a representation of the S-curve nearing it's upper reaches.
- Are we doing more process R&D and less product R&D? If that is the case, then we are looking for efficiency and it is time to look for a new competitive advantage.
- Is creativity, in the form of new patents, new products, significant process improvements, and new innovations, decreasing or tapering off?
- Is there disharmony in the labs? As the technology matures, it is more difficult to keep the staff and scientist energized.
- Is market segmentation becoming the key to sales increases? This means that we are now trying to sell the same (old) technology to new customers instead of pursuing innovation.
- Are there wide differences in spending among your competitors with no visible market effects? If so, you may all be at the top of the S-curve together.
- Have there been frequent changes in R&D management with no impact? It's not the leader, it's the technology. If you are looking for a new leader, use the paragraph above to find somebody who will help you pursue a sustainable competitive advantage.
- Are some industry leaders losing to smaller companies? This is a good sign that a new technology may be emerging, especially if the smaller competitor is pursuing a niche market first.
- Are weaker competitors succeeding with radical approaches that everyone else says cannot work? The Attacker looks to change the game, and the Defender doesn't see those opportunities.

The risk of not asking these questions is that you will not know that the technology you are using is reaching its limit and that *you will be passed by a competitor*.

Foster's book strikes a good balance of customer, supplier, employee, and executive participation in making the competitive advantage an organization has sustainable. Perhaps the most clear statement of his principle of Attacker's advantage is the small section entitled Home Economics, wherein he states that the Attacker's whole life and fortune are dependent on making the new product competitive, and that Defenders are often complacent and find their cash flow comforting. The Big Three automakers come to mind. Twenty-five years ago they were only beginning to feel the threat of Asian imports... or were they?

So, why review a 25-year-old book? Because, as the saying goes: the best time to plant a tree is 25 years ago, and the second best time is today. If your organization has not yet put into place the principles and practices captured by Dick Foster in 1986, it is not too late to start.