

## Book Review

Adapted From

### **WHEN TO LAUNCH A TECHNOLOGY ATTACK**

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## Innovation: The Attackers' Advantage

Richard N. Foster; Summit Books, 1986

### Common Errors Made By Defenders Attacked By New Technologies

1. Assuming that an evolutionary approach to technological progress is good enough.
2. Assuming that they will have ample warning about a discontinuity.
3. Assuming that they will foresee any discontinuities if they understand what the customers want.
4. Defining their market incorrectly.
5. Not knowing which competitors to watch.
6. Assuming that change occurs gradually enough to allow them time to improve their technology.

Technological change forces many of the moves on the corporate chessboard.

But the rate and magnitude of change today exceed those of any other period in industrial history. "It clearly behooves management to rethink its approach to technology," warns Richard N. Foster, a director in the consulting firm of McKinsey & Co. Inc., New York.

Although a source of glamour at times, technology has generally been relegated to a secondary position by American management.

In his book *Innovation: The Attackers' Advantage*, Mr. Foster describes the three most recent eras of research and development; "the lab in the woods" period after World War II when showcase research activity received little corporate guidance; the age of marketing's dominance that put R&D into a reactive mode; and today's strategic management approach to technology aimed at gaining a competitive advantage.

The last of these worked well during continuous or evolving change, but it doesn't in this age of discontinuity. Management has to be fast on its feet to properly defend its current position, attack, or counterattack on the basis of an accurate evaluation of technological strengths -- its own and others'.

Underlying Mr. Foster's strategies for technological warfare is his use of S-curves to reflect the rate of technological progress derived from expenditures of R&D dollars. As the limits of a given technology are approached, new expenditures bring less and less progress and finally hit the limit.

Most companies practice "strategic" management of technology, the author asserts. "They have become very sophisticated at massaging the shape of the curve, making it steeper by developing new products and processes faster than their competitors." But reliance on strategic management of technology is not sufficient, Mr. Foster believes. It focuses on efficiency - the slope of the curve - when management should be concerned with effectiveness; which S-curve it will pursue.

"It is relatively easy to spot new technologies on the horizon and to decide to monitor them or perhaps invest in them. What is much harder, indeed agonizing at times, is to stunt the growth of the older technology by withholding development funds from it even though progress can be made," the author observes.

Managing efficiency is a financial/marketing/administrative challenge. But picking the right S-curve to ride demands knowledge of the technology itself. "It always appears to be more economic to protect the old business than to feed the new one, at least until competitors pursuing the new approach get the upper hand," Mr. Foster writes. "Conventional financial theory has no practical way to take account of the opportunity cost of not investing in the new technology."

There are always new ways of doing things, he says. "Just because you've reached the limit of one technology doesn't mean there isn't another technology that can solve the customer's problem in a superior way. If there is an alternative, and it is economic, then the way the competitors do battle will change."

The book goes well beyond admonitions to management, presenting solid case histories as well as strategies for attacking and counterattacking. A much-needed contribution to this relatively neglected area of management concern, *Attackers' Advantage* finds a niche between the popular management books that convey nice, warm feelings and the weight of a scientific text.

Innovation: The Attackers' Advantage  
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