

Guidelines for Successful Exploitation of Emerging Technologies

By Alan S. Gutterman

While identifying and commercializing emerging technologies is a difficult and challenging task the rewards for the company can be substantial and failure to embrace new technologies and integrate them into the company's business model can have significant adverse consequences. It is important, therefore, for all companies, from start up businesses to established global enterprises, to understand and apply the following basic guidelines for successfully exploiting emerging technologies:

- Companies must steadfastly embrace wide-ranging scanning of the technological landscape and should invest in the resources needed to identify potential emerging technologies at the earliest stage possible. It is also important to develop procedures for assessing such technologies and monitoring their development. Even if a new technology does not appear to have immediate use the company should keep an eye on it since technical or scientific breakthroughs and/or changes in customer requirements may open up new product development and marketing opportunities.
- Senior management should encourage employees to pursue their curiosity about new ideas and technologies and develop an organizational culture in which the pursuit of knowledge is valued and risk taking to achieve innovation is tolerated and celebrated. Company personnel should be encouraged to experiment and challenge current assumptions regarding the direction of the business and its underlying technology.
- Investment decisions in the technology area should be made with an eye toward continuously expanding the range of future options available to the business, as opposed to unduly narrowing the focus of the company.
- Senior management must be willing to balance the desire for predictable long-term planning with the ability to embrace flexible organizational forms that may be needed to pursue opportunities created by emerging technologies. Organizational flexibility is essential for companies to be able to change course quickly to exploit emerging technologies or, in some cases, pull back when it eventually becomes clear that the path will not lead to the desired result.

Companies must be creative when following the guidelines established above. For example, identification of potential emerging technologies typically requires attention to a number of fairly subtle signs and indicators such as an increase in the number of researchers and new businesses focusing on a particular problem or technical or scientific area. Breakthrough insights on customer desires can be obtained from primitive solutions that fail when there is evidence that a large number of customers were willing to try a new technology or product that ultimately failed because the bugs associated with the first versions could not be overcome. A good example of this phenomenon was the buzz created by the frenzied download of MP3 files by college students using technology created by Napster and similar upstart firms. While few of the first generation companies survived the information obtained about these customers eventually led to more sophisticated solutions that have revolutionized the music industry. With regard to aligning the organizational structure to active pursuit of emerging technologies, senior

managers must become comfortable with using different organizational units, with unique procedures and cultural values, to focus on and nurture entrepreneurial businesses based on the emerging technologies.

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