



James A. Euchner

MANAGING IN TURBULENT TIMES

"The best time to plant a tree is twenty years ago. The second best time is now."—Proverb

The dilemmas of managing R&D are difficult in any time, but they really come to the forefront during a recession. How much focus should be on short-term versus long-term programs? What should the size of the R&D organization be? How much should the R&D program focus on future markets as opposed to supporting existing businesses?

In this issue, we will explore managing R&D in turbulent times. The issue includes the annual IRI R&D Trends Forecast as well as perspectives from leading thinkers [and doers] in the management of technological innovation.

The survey results reveal how deep the dilemmas are. Among technology leaders, two priorities remain at the forefront in 2010: "growing the business through innovation" and "accelerating the innovation process." These priorities require continuity of investment, preservation of human capital, and management processes that hold up under the strain of tough times.

Despite these priorities, over 50 percent of surveyed companies anticipate planned reductions in staffing in R&D, while over 60 percent report that their firms have implemented an increased focus of R&D resources on shorter-term initiatives.

For 2010, the "Sea Change index" [a measure of net responses to the survey] shows a marked decline in several categories related to internal investments in R&D including: total company R&D expenditures; capital spending for R&D operations; R&D professional personnel level; hiring of new graduates; and directed basic research [among others]. These actions may be natural

Jim Euchner is editor in chief of Research-Technology Management and a visiting scientist at the Massachusetts Institute of Technology Sloan School of Management. He previously held senior management positions in the leadership of innovation at Pitney Bowes and Bell Atlantic. He holds an M.S. in mechanical and aerospace engineering from Princeton University and M.B.A. from Southern Methodist University. euchner@iriinc.org

responses during a downturn: every function is seeking to be more efficient and to focus on the current threats to the business. Should R&D be any different?

I think so. Managing R&D presents unique challenges. Because of the nature of the investment, the effect of cuts now can be magnified later.

- *Timeliness*: If you defer investments in longer-term initiatives and your competition does not, you can become "dog food," in the words of Craig Barrett, former chairman and CEO of Intel. On the other hand, if you continue them, you need thick skin to weather the shorter-term perspective of Wall Street.

- *Rework*: It takes time to build up the skills that might bring an innovative new technology or concept to market. If a project is interrupted, it often cannot be re-initiated where it was abandoned. According to William Banholzer, CTO of Dow, "constancy of purpose" is the key to success. At the same time, *something* has to give.

- *Rebuilding*: Hiring and assimilating R&D talent takes longer than in many functions [sales, marketing, HR]. The talent is more specialized and the half-life of R&D work is naturally longer. R&D is a function that is hard to make into a variable expense.

- *Portfolio management*: Cost cutting requires a focus on the "vital few." These can often be confused with the "low-risk few" or the "near-term few." Making decisions that preserve investment in projects with an uncertain outcome takes foresight and political will.

The articles in this issue of *RTM* provide perspectives that may cause you to think anew about how to manage these dilemmas. They offer a counterpoint to many of the trends revealed in the survey.

Uma Chowdhry, CTO of DuPont, shares seven strategies DuPont uses to navigate these turbulent waters. A thread that runs through her discussion is an increased emphasis on the value of partnerships, whether with universities, governments or other companies. These partnerships help DuPont to accelerate innovation, create new business models, and launch new ventures.

William Banholzer reveals Dow's strategies during a "perfect storm" of challenges [of which the economic

downturn was only one]. Banholzer returns again and again to a focus on basic principles, whether economic or thermodynamic: "If we cut key profit drivers today, tomorrow's earnings will never appear."

Craig Barrett explains Intel's historically contrarian approach to R&D in downturns. Barrett makes a vigorous argument that R&D should be the last thing cut during recessions, and why. What drives recovery is new demand, he says, and what drives new demand are new, valuable products. They come from R&D, so R&D must help lead the way *out* of the recession.

Finally, Bill Harris, CEO of the Science Foundation of Arizona, talks about what governments can do to create a climate for innovation. The investments that governments make in education and research create the only sustainable competitive advantage for regions and nations.

The perspectives of these senior executives on managing innovation in recessionary times are provocative, pragmatic, bold, common-sensical, and yet not common. They are sure to inspire you as you navigate the treacherous waters ahead. ☺