

Tasting the fruits of effective innovation

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By Ranjay Gulati and Nitin Nohria

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Recessions bring cuts in the size of the labour force, in capital expenditures, in advertising budgets, in travel, even in the loss of coffee and donuts from our meetings. Sadly, investments in research and development and innovation, the seed-corns of our future, are not insulated from these realities either. Over the past four quarters, the total R&D expenditures of S&P 500 companies (based on the approximately 200 companies that report them quarterly) declined 13 per cent – from a total of \$43.1bn in the fourth quarter of 2007 to \$37.4bn in the third quarter of 2008 – with more cuts almost certain in the near future.

Companies wanting to innovate will have to do more with less. But how? The process boils down to three issues: determining the overall magnitude of cuts that need to be made; deciding which projects to cut and which to maintain; and reconsidering the locus of innovation, including whether it can be done outside the traditional boundaries of the company.

The magnitude of cuts

Some reduction in R&D investments might not necessarily hurt an organisation's innovative capacity. During good times, companies tend to become lax in choosing which R&D projects to support. In a study of large multinational corporations, we found that the relationship between innovation success and resources deployed was curvilinear.

Too few resources stymied innovation, but so did too many resources, by breeding a lack of discipline and by diminishing the incentive to bring innovation projects to fruition. As with downsizing, some degree of R&D cuts can actually be productive, but going too far risks permanently shrinking the bottom line.

Where to cut

Managers must be judicious about which innovation projects they support. The example of one big US electronics manufacturer during the 1990-92 recession is instructive. Told to trim his spending by 30 per cent, the head of R&D called a meeting of everyone involved in leading the approximately 300 R&D projects then ongoing in the company. (The exact number took more than a month to pin down.) Over the course of an entire day, he forced the group to go through a series of exercises designed to slash the R&D budget by 50 per cent, well beyond the target. The process was painful, but by the end of the day about 200 projects to be axed had been identified.

He then asked managers to identify which of the 100 projects that remained could most benefit from additional spending. About 30 projects were identified, with some of their budgets increased by as much as 100 per cent. The results were stunning. More new products were brought to market that year than ever before, and the company felt it had finished the year with an even healthier innovation pipeline than it had started with. The moral of the story: do not think just about the innovation projects you can cut. Think also of how you can free up resources to give a boost to the projects with the best pay-off.

We label this the "4-4-2 Approach" – cut four, maintain four and double-up on two – but it comes with a caveat: beware that you do not overuse the approach to privilege what organisational theorist James March calls "exploitation"-oriented innovation – projects that can generate revenues most quickly or have the best short-term pay-off – over "exploration"-oriented innovation with more distant pay-offs that nonetheless might be vital to the company's long-term prospects.

The key lies in the mix. In the example discussed above, the company was careful to continue to invest in both, which is why it was able to strengthen its innovation pipeline while increasing the immediate flow of what came through the pipe into the market.

In cutting R&D budgets and projects, globally distributed companies must also be careful not to privilege ideas championed by the centre – those closest to the company headquarters and the traditional seats of power – at the expense of ideas championed by those who work in the company's international locations.

Projects at the centre are often marquee initiatives that the company can benefit from across the globe, what our colleagues Chris Bartlett and Sumantra Ghoshal have called "global-for-global innovations". But local-for-local

innovations can sometimes grow into local-for-global blockbusters. Consider, for example, the small, rugged portable electrocardiogram monitor that GE Healthcare developed in India to serve local rural markets but which ultimately found markets in many other countries. In a world where the emerging markets of today may become the most important markets of tomorrow, protecting and nurturing such local innovations through the current downturn is essential.

The locus of innovation

The current turbulent R&D environment is also leading many companies to relocate the locus of innovation beyond their own boundaries. Increasingly, companies are discovering the advantages of collaborating with a range of external entities, from suppliers to universities to customers, for novel ideas. In some instances, they rely upon these external entities to autonomously produce innovation and in others they actively collaborate with them. Procter & Gamble, for example, has famously made this strategy an enterprise-wide mantra that it loosely describes as “connect and develop”.

The benefits of externalising innovation are obvious, ranging from cost sharing to leveraging potential economies of scale. Outsourcing innovation can allow companies to both contract and expand their own footprint at the same time. As they move to aggressively reapportion R&D, companies increasingly shrink what they might consider to be “core” activities. At the same time, they also become adept at entering into collaborative ventures in areas that allow them to expand their domain of innovation.

This simultaneous contraction and expansion can play a key role in enabling both top-line and bottom-line growth, but there are several roadblocks to get round. The first is “core confusion”. Some companies hesitate because they are unwilling or unable to reconceptualise what they consider to be core activities and end up clinging to more than they should under the mistaken assumption that certain domains are of necessity core.

The key distinction here is between “core” and “critical”. Critical tasks are things such as clinical trials which, while vital to the business, do not necessarily provide much advantage in the marketplace. Core tasks, on the other hand, are those that provide companies with a unique advantage in the marketplace. Elements of innovation that are critical but not core can easily be externalised in ways that ensure reliable delivery from an external entity without in any way compromising marketplace advantage.

Apple's shrinking core

Perhaps no company has shrunk its core and expanded its periphery more adeptly and to greater advantage than Apple, and no Apple product better illustrates this than the company's iPhone. In creating its first mobile phone, the company leveraged the engineering capabilities of its partners, thus allowing Apple to design and deliver innovative products in record time and in a much more cost-effective way than it could have done on its own. So, while Apple created its own operating system, it partnered with developers such as Google to preload applications such as Google Maps on to the device.

Similarly, most of the hardware in the iPhone and all of the manufacturing of it have been outsourced. Apple carefully guards information on its supplier partners because it views this as a key source of strategic advantage, but shortly after the device was launched in June 2007, iSuppli, a third party, took the handset apart and found a global representation of third-party companies.

Much of the phone's core communication capability came from German semiconductor supplier Infineon. Balda, another German group, provided the display module. The touch screen itself was provided by multiple sources including Japanese groups Epson Imaging Devices, Sharp and Toshiba Matsushita Display Technology. South Korean company Samsung provided the applications processor and the technology for the phone's memory. iSuppli added up the estimated cost of the entire set of inputs, and calculated that the margins for Apple were likely in excess of 50 per cent.

Apple's partnership with AT&T, the sole carrier compatible with the iPhone in the US, allowed Apple to expand its periphery while also giving its partner a significant upside, including five years of exclusivity, approximately 10 per cent of iPhone sales in AT&T stores, and a small piece of Apple's iTunes revenues. In return, Apple persuaded AT&T to spend considerable time and resources to develop a new feature called “visual voicemail” and to streamline the in-store sign-up process.

Perhaps the most vivid example of Apple's periphery-expanding alliances has been the array of partnerships it has formed to develop applications and peripherals that are sold to customers in the growing numbers of Apple stores or via its online store.

The perils of open innovation

Despite the obvious lure of open innovation, especially in perilous budget times such as these, two issues need to be tackled to fully leverage the potential advantages this has to offer. First, skilful companies recognise that a shift towards open innovation must be balanced with a strong anchor around their customers. It is tempting in an open-innovation model to be a technology-push company where countless ideas emerging from a large partner-base are funnelled through to customers in a dizzying array of offerings.

But companies must understand how to balance this push model with a customer-driven pull model as well. They need to find ways to funnel customer insight to their partner base while at the same time allowing partners to open up new frontiers that might go beyond customer imagination.

Apple has succeeded in finding a balance between what it thinks customers want and what they might need. The company directs its partners on key input requirements while allowing them considerable freedom to develop what they consider to be desirable for customers.

As collaborative innovation moves to centre stage for companies and permeates their core, they also have to recognise the importance of developing expertise in managing their growing array of partnerships. Collaboration does not come naturally to most companies.

However, the pioneers in this movement understand the importance of building a relational capability within the company. They not only embrace a set of routines and processes to become better at identifying partners and negotiating agreements, they also embed a collaborative mindset into their culture. These shifts require concerted and systematic effort.

Conclusion

Reductions in R&D budgets may be inevitable for most companies in the present context. But if made intelligently, these cuts do not have to hurt innovation. By choosing which projects to cut, protect or even expand, companies can do more with less.

Moreover, by becoming more adept at shrinking what they consider core while leveraging partners who can help them innovate in ways that are genuinely customer-centric, companies can embrace a more open approach to innovation that may pay lasting dividends, even when the economy recovers.

Ranjay Gulati is the Jaime and Josefina Chua Tiampo professor of business administration at Harvard Business School and the author of 'From Inside-Out to Outside-In: Reconfiguring Organisational Silos to Build Customer Centric Organisations'

rgulati@hbs.edu

Nitin Nohria is Richard P. Chapman professor of business Administration, senior associate dean and director of faculty development at Harvard Business School

nnohria@hbs.edu

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