The Challenges of Measuring Innovation

Written by Charu Bahri, first printed in IT magazine, India

The age of IT is in many ways an age of innovation. Our ever burgeoning, discerning, global consumer base recognises and rewards newness in product and process. Such prospective demands R&D efforts across the world. But how is innovation measured?

The value of a new product or process depends on its market reception. Correctly

gauged, this can translate into billions of rupees for an organisation. But an incorrect measure of innovation can spell its doom. After all, any R&D process calls for major budgetary outlays. In fact, R&D budgets often appear over-the-top, but cutting these may imply that a company is left with fewer products in the pipeline – a far from healthy situation, especially if the company's bottomline is driven by innovation.

In Innovation and Entrepreneurship, management guru Peter Drucker defined innovation as a "specific instrument of entrepreneurship" and "the act that endows resources with a new capacity to create wealth." In a world where change is rapid, and where a certain technology saturation level is already being spoken about, the quality and maturity of innovation metrics have assumed an important role in business. Innovation has, in many ways, become the central competitive factor in many industries, which must be measured from both – a technological as well as a human perspective.

The importance of the market's maturity

The innovation process undoubtedly needs attention and funds, but this expenditure must be focused towards minimising risk. Besides, technological innovation must be in sync with market expectations or the level of maturity of a market, so as to ensure the easy absorption of new products.

As Gurudev Goud, regional director – global technology alliance and partner relations, and Prakasan Kappoth, manager – systematic innovation, both from MindTree Consulting, say, "Many technology products fail in the market because consumers are not yet ready to accept them, as they are ahead of their time. The Apple Newton is a good example of such a product. If consumer expectation is a measurement criterion, then yes, a failure to gauge the maturity level of a market leads to the failure of an innovation."

Research associate at the MIT Media Lab and a senior adviser to MIT's Security Studies Programme, Michael Schrage emphasises this marketability aspect of innovation by saying, "Innovation is not what innovators innovate; it is what customers actually adopt."

What you spend is not always what you get

It would, however, not be correct to assume that any innovation accepted by the market is good, regardless of its cost. Customer acceptance is a factor external to an organisation. Other internal factors, such as R&D spending, have a bearing on the quality of innovation. Goud and Kappoth highlight the financial constraints of innovation, especially insofar as 'commercial innovation' is concerned. They very practically point out that, "Ideas popping up in one's mind very soon become shadowed by the implementation cost."

In other words, a good idea is not the sole measure of innovation. The idea must translate into a commercially feasible product, implying that both the process of product development and the product pricing must correlate with market expectations and the potential returns from the product. Hence, a case of "Let's spend more, since we'll end up with a better product" might not be financially sustainable.

Goud and Kappoth make another interesting observation about R&D spending and innovation. According to them, "The real innovation happens when one works within constraints, or makes something possible with the constraints."

The influence of management policy

The mindset of an individual is also affected by an organisation's management policies. Employees need an environment conducive to innovation, and once the right ideas emerge, these must be steered in the right direction by a proactive management. According to Goud and Kappoth, "Management nurturing is very important for the success of any innovation. The experimental mindset of an organisation plays a crucial role in encouraging an individual, and creating a motivating and supportive eco-system."

In fact, controls over the innovation process may only be implemented when a sound management policy that's based on innovation best practices is in place. This in turn entails measuring innovation, as putting a value on innovation will help comparison between simultaneous R&D efforts. In a competitive environment, this enables the allocation of limited resources to where they can do a company the most good.

The creative angle

But as Dr Ashok Jhunjhunwala of the Department of Electrical Engineering at the Indian Institute of Technology, Chennai comments, "There can't really be an objective criteria for this [measuring innovation]. This requires knowledge of market, technologies available, the technology being patented, and the price point at which it can be introduced. The value is finally dependent on market success. Only a feel of experienced people, rather than objective criteria can be used."

The crux is that innovation is a creative process – and all creative processes involve an aspect of venturing into the unknown, or doing what has never been done before. An innovation metric must value its creativity as well as its functionality and business prospects. In the case of new technology, a value must be assigned to the entire range of the potential uses of the technology.

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In business parlance, this assumes the nature of a technology diffusion study, which looks into all possible ways a new technology may be applied. A listing of these uses is followed by a market projection for each, thus arriving at the value of the technology.

The valuation process: First ideation

In a sense, the lifecycle of an idea is itself a process of valuation. An idea enters two distinct phases, ideation and incubation, prior to being developed into a product. Ideation is the process wherein the management studies all aspects of the idea to determine if it is in consonance with the organisation's overall business direction, and hence worthy of financial backing.

M Sridhar Chakravarthi, CEO of Sridhar's Quality Academy, explains two processes - the evaluation of the return on investment and the potential impact of an innovation - as the practice of asking why we want to implement an innovative idea. As he says, "There has to be a very objective evaluation. 'To improve client satisfaction' is very vague. 'To reduce billing cost per seat by $1 per hour' is exciting and well appreciated by clients."

A part of the ideation phase is a commercial feasibility study as well as a cost-benefit analysis, wherein Chakravarthi says the management understands the efforts and expenses involved in implementing the idea. These could involve re-training expenses, which he cites as usually neglected, or examining current commitments and other delivery pressures to come up with a possible implementation schedule. If the idea is relegated to the future due to lack of time, then the idea may not be worth the effort, as it failed to create the necessary urgency.

While a certain section of people reckon that the valuation of innovation starts at the ideation phase, Goud and Kappoth believe measuring ideation may harm the idea generation capability in an innovation life cycle. They explain that ideation is a very sensitive and delicate process and hence, it should be nurtured rather than measured.

Incubation: getting your priorities right

The incubation phase that follows ideation also plays an important role in the process of measuring innovation. Chakravarthi describes this stage as the implementation of an idea, wherein actual brick and mortar work is done, and the necessary funds and resources are committed. The process needs to be carefully controlled and monitored. As he says, "There is no point in launching multiple teams with many initiatives and not monitoring their progress, as they would end up like our joint parliamentary committees, with hardly any results, if ever." An idea that is deemed a potential success during the incubation stage enters the process of product development.

An interesting observation made by Futurethink, a leading innovation research, tools and services firm, during its 2007 Futurethink Innovation Tracker survey, is that companies that consistently emphasise 'delivering value' over creativity per se, are significantly more effective at innovating. As such, while creativity must be emphasised, innovation may no longer be considered a predominantly creative endeavour.

In the words of Lisa Bodell, CEO of Futurethink, "The free flow of ideas and creativity should not be underestimated. However, they should be viewed as a means to an end, not the end result." The end now translates as delivering value, by launching a new product or process, after formulating an effective business strategy.

Innovation by the takeover route

Innovation can occur anywhere – in a garage or in a corporate R&D lab. But essentially, every idea goes through valuation processes prior to being converted into a saleable product. Some people believe that the real breakthroughs of our century were born in garages! Does that mean their valuation process was better? Not really, but it is true that while companies may be able to generate more ideas, they have more at stake. Their investments are obviously greater than a start-up, which is perhaps why we so often see huge companies purchase the work of smaller companies and launch or re-launch their products.

Such takeovers make the process of valuing the worth of innovation much easier, as the spadework has already been effectively done on a small scale. This indicates the inherent difficulty of measuring innovation, and also points to the fact that innovation is not always born in R&D labs. In fact, innovation that's related to improving the efficiency, effectiveness and productivity of an organisational process, is often arrived at by employees on the job. For instance, one of Dell Computers' greatest innovations was to pioneer a new way of selling – customers specifying build-to-order systems online.

Chakravarthi mentions three aspects of innovation – innovation aimed at solving a problem, an internal initiative aimed at improving business results by refining existing processes (even when they are working well), and thirdly, value addition for clients. He explains the last as, "What we do when we are forced by clients to justify our continued association. We then think out-of-the-box to come up with value additions for our clients!"

The incremental nature of innovation

All said and done, innovation may yield a new product or process, and insofar as products are concerned, it may produce a completely new product, technology or relate to ongoing product or technological development.

In fact, the incremental nature of innovation in the world of information technology has made it easier to file a patent for a product, technology or process. Goud and Kappoth point out that anyone can file for a patent – if they could afford it – by making minor changes to, and thus bypassing, an existing patent. So while the creation of an innovation portfolio may list the number of patents as measurement criteria, the success of an innovation in real terms cannot be related to patent activity.

Besides, patent activity fails to capture process and business model innovations – the former is especially applicable in the case of ongoing product development. Process improvements may be linked to better functionality, cost or size reductions.

However, according to Goud and Kappoth, innovations related to new product developments are more synergetic than ongoing product development. People involved in the process of developing completely new

products tend to be more enthusiastic about researching a technology, markets, etc – which is great because launching a new technology or product requires emphasis on the execution of innovation. It is not enough to have an innovative product. The potential pitfalls are many – manufacturing, reliability, marketing, usability, customer support, costs, etc. Hence, a business needs to focus on business variables alongside R&D metrics.

Goud and Kappoth believe the type of metrics account for the success of a product. For instance, time and effort – a typical metric – may not have any impact on the success of a product, but metrics that explain where in the products' S – Curve a business is, where it needs to go, and how, make more sense and are more relevant.

IBM's EBO framework

In 2003, IBM came up with an emerging business opportunities (EBO) framework in partnership with Product Development Consulting Inc. The two firms put together their experience, available research and a database of innovation best practices to come up with a framework that helps tackle the problem of measuring innovation. This framework provides an objective way to measure many processes, and separates the development of completely new products and technologies from ongoing product improvement.

The model covers 30 aspects of innovation, aiming to help organisations figure out what works and what doesn't. In a sense, the exhaustive coverage of this framework indicates that while there is no single measure of innovation, there is no escaping this process. Our increasingly competitive world requires, even forces, IT companies to innovate, or be left behind.

So if your innovation budgets are significant, you may need to take a long, hard look at your current innovation process to determine how mature your innovation metrics are. It is not an easy task but it definitely has the potential to transform your business.

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