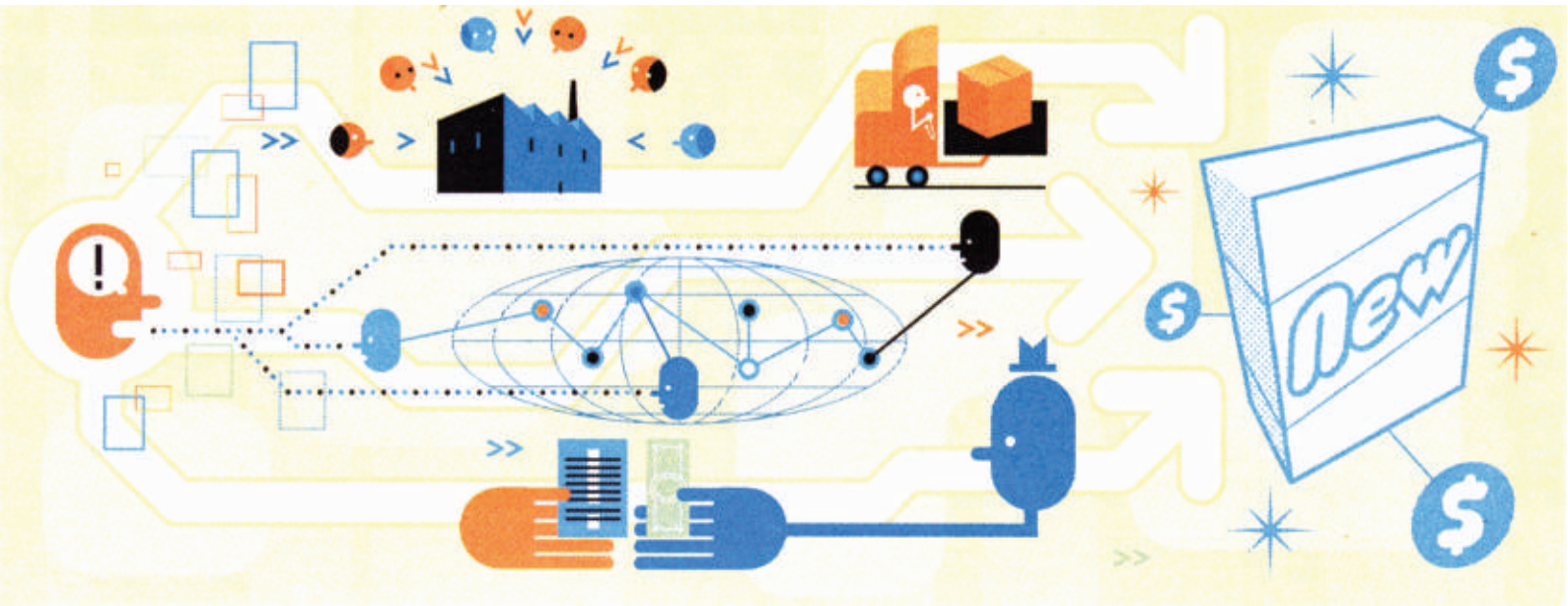
Confederation of Indian Industry

Manufacturing Innovation

A Senior Executive Survey

A report by CII and The Boston Consulting Group



Manufacturing Innovation

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The **Confederation of Indian Industry (CII)** is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded over 110 years ago, it is India's premier business association, with a direct membership of over 5,800 companies from the private as well as public sectors, including small and medium enterprises and multinationals, and indirect membership of over 95,000 organizations from around 325 national and regional sectoral associations.

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1 Foreword

Over the last few years, Indian companies have invested significantly in improving their cost and quality position. However, as these companies go global or compete with global players in India, it will be critical for Indian companies to learn, adapt and innovate faster than their global competitors. Therefore, innovation in products, processes, systems, business models and organization structures will be the key for sustained competitive advantage. Given this context, the Confederation of Indian Industry requested The Boston Consulting Group to conduct a joint survey to understand how senior Indian executives were thinking about innovation in their organizations.

The survey was conducted in November 2005. It attempts to understand the importance of innovation for achieving competitive advantage in the minds of Indian executives. It also probes the focus areas for innovation, the areas of strength in their organizations and the typical challenges senior managements face in creating an innovative culture. The results of the Indian survey are compared to The Boston Consulting Group's Global Survey on Innovation, to help us draw some insights and comparisons with global organizations.

This report, which outlines the findings of the survey, also highlights practical tips for enhancing the effectiveness of innovation. It outlines the key levers that senior management must focus on to improve the innovation process and to create an innovative organization. Finally, it also highlights some learnings from companies that have been renowned for their innovativeness.

Several BCG partners including Arun Maira, Paresh Vaish and Vikram Bhalla, amongst others, have been instrumental in preparing this report. We would like to extend our appreciation to all who have participated in the survey and in shaping the outcome of this report.

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Past President CII &
Chairman & Managing Director
Godrej & Boyce Mfg. Co. Ltd.

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2 Executive Summary

During 2005, The Boston Consulting Group (BCG) and the Confederation of Indian Industry (CII) conducted a survey of senior executives of Indian companies on innovation and the Innovation-to-Cash (ITC) process. The ITC process covers the many interrelated activities involved in turning ideas into economic returns. It goes well beyond new-product development to include such issues as portfolio management, lifecycle management and organization.

This executive summary highlights the key findings from the survey. The body of the report provides more details and explores the implications for the Indian manufacturing industry. It also offers a framework to guide managers as they continue to think about how to turn their ideas into profits. For additional information or analyses, please see the list of contacts at the end of the report.

2.1 Survey respondents: India and Global (2005)

In India, the survey covered 83 senior management executives, representing all major manufacturing industries. We would like to express our deep appreciation to all of them. The findings of this survey have been compared with BCG's 2005 Global Survey on Innovation in which 940 executives representing 68 countries and all major industries participated.

2.2 Key findings

- 70 percent of the executives surveyed said that their companies will increase spending on innovation in 2006, compared with 74 percent in the global survey.
- 82 percent of the executives surveyed said that generating organic growth through innovation has become essential for success in their industry against almost 90 percent in the global survey.

  However, 73 percent of the executives surveyed said that they were satisfied with the financial returns on their investments in innovation while in the global survey less than half the respondents had the same view.
- 71 percent of respondents felt that the lack of collaboration between research institutes and industry was the top hurdle to innovation in India.
- Moving quickly from idea generation to initial sales and balancing risks, timeframes and returns across an entire portfolio of new projects were cited as two of the biggest challenges facing many Indian companies in 2005.

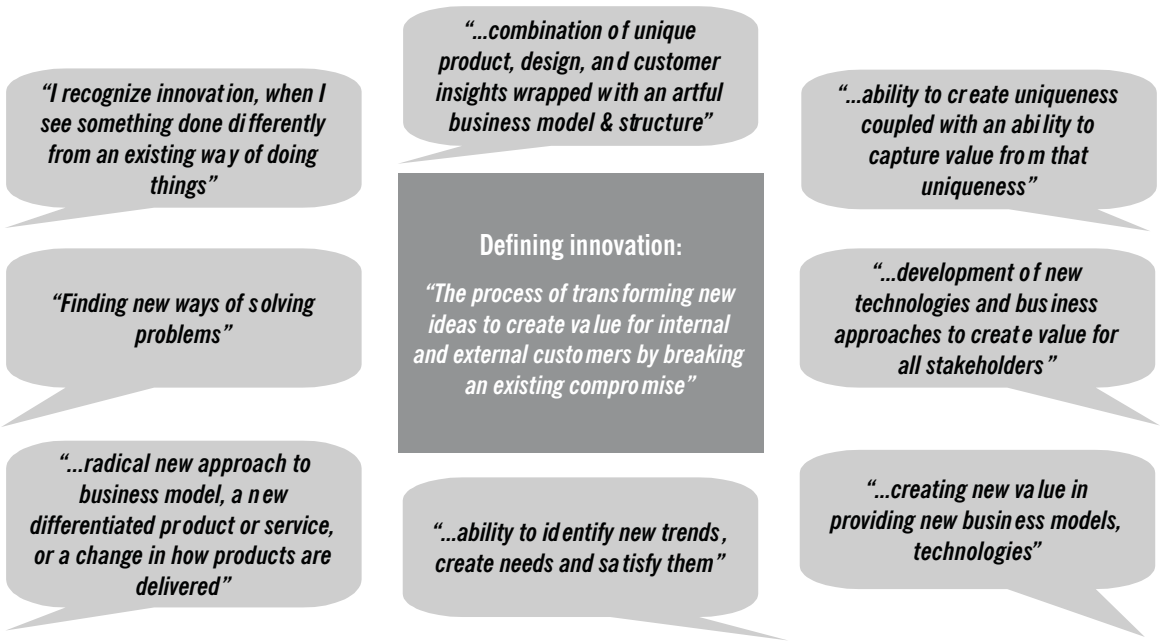
3 Context

3.1 What is innovation?

There are many possible definitions of innovation, some of which are summarized in Exhibit 1.

EXHIBIT 1

SEVERAL DEFINITIONS OF INNOVATION, EACH REVEALING IMPORTANT ASPECTS



We define innovation as the process of transforming new ideas to create value for internal and external customers by breaking an existing compromise. This definition covers several elements that are critical to the meaning of innovation:

(i) Innovation builds on new ideas. The generation of new ideas is invention, while innovation is the translation of new ideas into commercial success. Innovation differs from continuous improvement in that it involves bringing something new into use — a practice that is unique to the organization or society.

(ii) Innovation must create value for internal and/or external customers. In the business context, innovation must lead to the creation of economic value for the organization.

(iii) Innovation is not limited to the creation and commercialization of new products and services. It includes all new ways of addressing customer needs through innovative segmentation, finding new uses for existing products, addressing customer compromises and so on. It also includes new ways of production and distribution, new forms of organization and new business models. A new manufacturing process that allows a company to gain a sustainable cost competitive advantage is as much of an innovation as a new product or service. Similarly, a novel distribution network that allows a company to service otherwise unviable territories is an innovation that extends beyond the purview of the product (Exhibit 2).

3.2 Why is innovation important in manufacturing?

According to MIT's *Technology Review* magazine, four of the world's top five spenders on R&D and innovation are not technology companies but major industrial companies, the four of which invested $26 billion in 2003 and still more in 2004.

The capability for successful innovation can be key to achieving competitive advantage. In fact, in many competitive industries like manufacturing, the only sustainable lever of competitive advantage is the ability to learn, change and innovate faster than competitors. Over time, other players copy specific initiatives on cost, quality and products. What is difficult to replicate is the ability for continuous innovation. Research shows that companies that are more innovative systematically achieve superior performance than their peers (Exhibit 3). Some of the best-known global companies, such as Apple, 3M and GE, are also the most innovative ones.

Indeed, the failure to innovate can lead to the demise of a company, even an industry. The floppy disk industry is a case in point of an industry in rapid decline as companies embrace more innovative products with higher storage media. The history of business is littered with several examples of companies that lost their pre-eminent position in their industry because they failed to keep up with innovations around them.

3.3 Why is innovation important in India?

India is already one of the most innovative countries among the emerging economies. It has one of highest number of multinational R&D centers and patent filings (Exhibit 4).

Over the past 15 years, Indian manufacturing has gone through several phases of evolution. The early 1990s were characterized by exuberant growth and investment, while the late 1990s saw the emergence of Sino-phobia. Since then, Indian companies have invested significantly in improving their cost and quality positions to be at par with several global competitors. This has led to a resurgence in confidence in Indian manufacturing, which is borne out by the many examples of Indian companies going global.

EXHIBIT 2

INNOVATION EXTENDS BEYOND NEW PRODUCT DEVELOPMENT

Areas	Select examples
Product	• Tata Indica, Scorpio, the 1 Lakh car
Packaging	• Shampoo sachets, Mac Mini
Pricing	• Pay per use pricing in office equipment, Pre-paid recharges
Distribution	• Eureka Forbes direct-to-home sales force
Service	• GE remote systems monitoring
Process	• Toyota car production
Business model	• Low cost airlines
Marketing model	• BMW films' alternative advertising
Capability	• Cemex' GPS-enabled delivery optimization

Competing in the global marketplace will require Indian companies to learn how to compete with players that are several times larger than them and have an established presence their target markets and segments. To do so, it will not be adequate for Indian companies to simply emulate global players, because such an approach does not change the relative position of companies. Therefore, Indian companies need to learn, innovate and improve faster than their competitors. They will need to better understand their customers, find new ways of delivering value for them by addressing current compromises, develop new products and services, develop new processes and business models and, most importantly, develop new organizational models that allow them to learn and grow faster than their competitors.

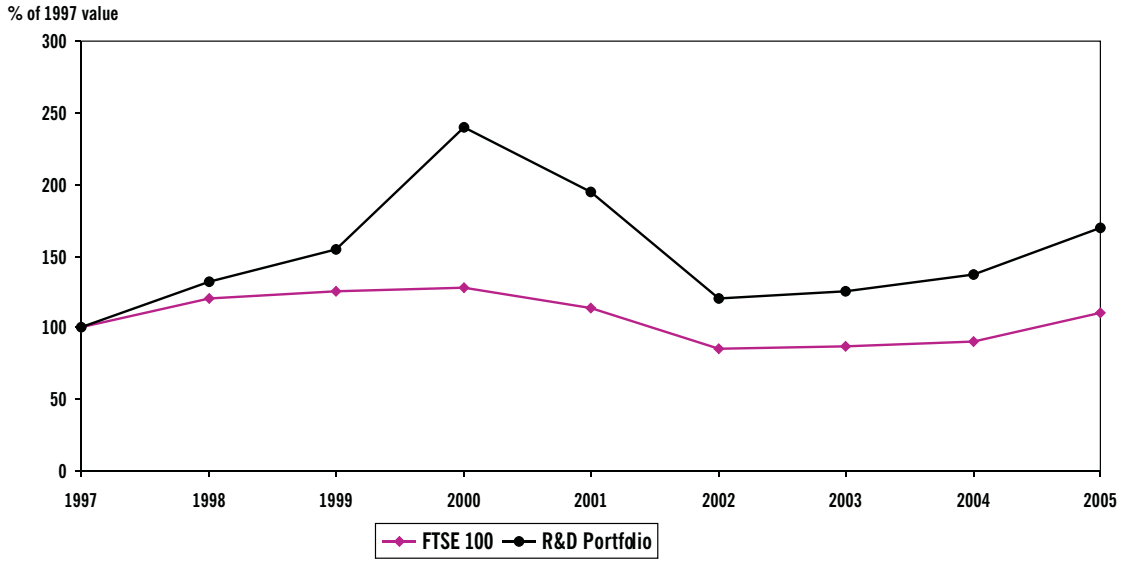
Here are two examples that highlight the fact that innovation is critical for success and survival. In the booming Indian car market, consider the number of car launches, which has increased from three in the 1980s to 18 in the 1990s and 18 already in this decade. It is clear that those who fall behind face a serious threat of being abandoned by their once loyal customers. Or look at the example of several consumer durable segments in India, where multi-national companies have wrested over 30-40 percent percent market share from local players in the last 10 years on the basis of innovations in product, cost structures, branding and distribution. As customers grow more demanding, the only way to capture share and growth is by finding newer ways to deliver customer value.

Given that international companies have the advantage of global scale in their innovation spends, it is vital that India companies not only increase the potency of their ideas but also improve the success ratio to deliver the most value for every rupee spent on innovation to maintain their competitive advantage in this changing environment.

EXHIBIT 3

COMPANIES WITH A HIGH INTENSITY OF R&D PERFORM SIGNIFICANTLY BETTER

Relative share price changes for R&D portfolio of FTSE 100[(1)] stocks vs FTSE 100 index



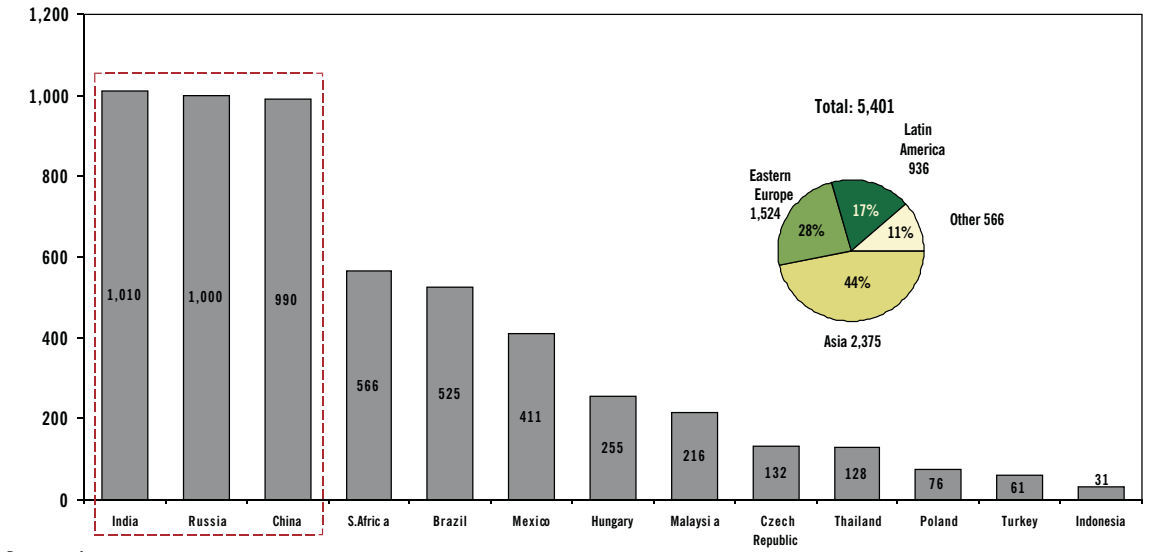
(1) A portfolio of high R&D intensity FTSE 100 companies (R&D spend greater than 4%)

SOURCE: 2005 R&D scoreboard published by the Department of Trade & Industry - United Kingdom available at http://www.innovation.gov.uk/rd_scoreboard/

EXHIBIT 4

AMONG MAJOR RAPIDLY DEVELOPING ECONOMIES (RDEs), INDIAN COMPANIES ARE THE MOST ACTIVE INNOVATORS

Number of US Patents Filed by RDE Country (1999-2003)



Percentage of RDE patents	18.7	18.5	18.3	11.0	9.7	7.6	4.7	4.0	2.5	2.4	1.4	1.1	0.6

SOURCE: US Patent and Trademark Office report, Dec 31, 2003 -utility patents only

4 Outlook 2006 and Priorities

4.1 Innovation is a strategic priority

The findings of our survey suggest that most Indian companies have recognized the significance of innovation and the importance of creating an environment that fosters innovation. Innovation is not only a strategic focus for most companies but is top-of-mind for most top management. This is borne out by the fact that 37 percent of top management ranked innovation as the top priority in their organization (Exhibit 5) and 83 percent of companies consider innovation among their top three strategic priorities. Globally, only 66 percent of executives selected innovation as one of their top three priorities, indicating that in India, innovation is recognized as a key competitive lever.

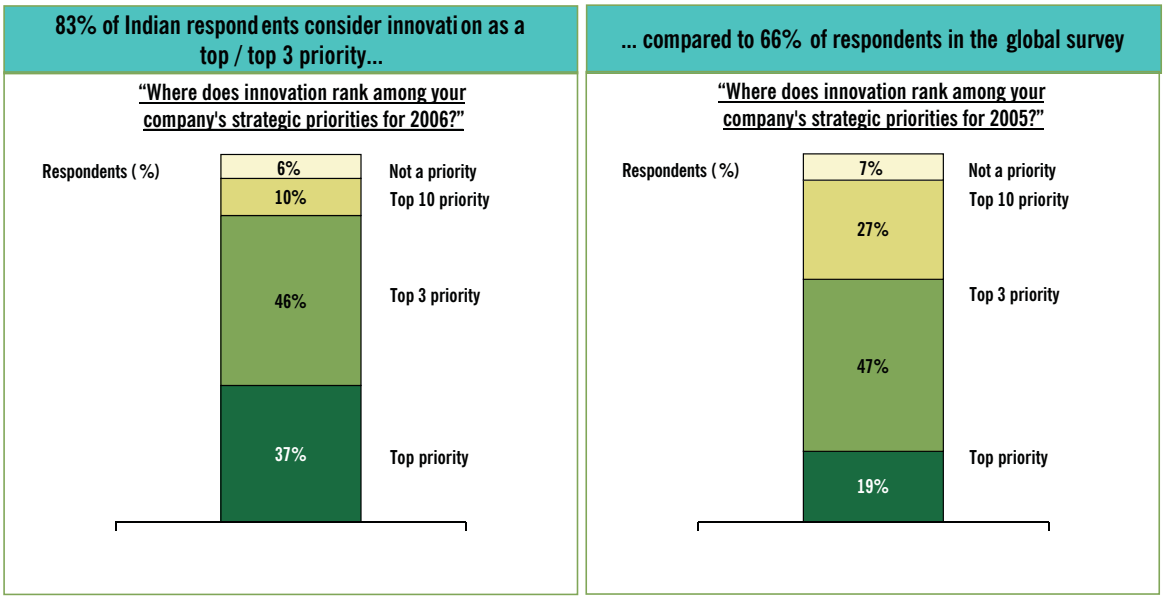
In fact, so high is the strategic priority, that we see innovation in India is primarily driven from the top with 83 percent of the respondents (Exhibit 6) indicating that the biggest force driving innovation in their companies is either the Chairman or the CEO.

4.2 Innovation spending will increase

With companies citing innovation as a key priority and therefore warranting strong management attention, it is expected that innovation spend will increase in the near future. This is borne out by the finding that 70 percent of the respondents have stated that the amount spent on innovation will increase in the next year (Exhibit 7). In fact, just one percent of respondents stated that their innovation spends will be reduced in 2006. Comparing the 70 percent response to the global survey where 74 percent of the respondents said they would increase spending on innovation this year, India seems to be in line with the global scenario.

EXHIBIT 5

INNOVATION IS A STRATEGIC PRIORITY IN INDIA



SOURCE: BCG 2006 India Innovation survey conducted with CII, BCG 2005 Global Innovation Survey

4.3 What is driving the increase in innovation investments?

Our survey has highlighted several reasons why Indian companies have identified innovation as such a key priority. These are reflected in Exhibit 8.

(i) Capturing growth: The Indian economy is among the fastest growing large economies in the world. Several product markets in India are growing at tremendous rates. While this augurs well for Indian companies, it also makes these markets very attractive to global competitors. Indian companies have recognized that they are under attack from global companies that are also seeking to tap this growth. In fact, 76 percent of Indian senior management believe that globalization is having an impact on how their companies pursue innovation.

Therefore, as indicated in Exhibit 8, Indian business leaders believe that innovation is critical for organic growth and to capture their fair share of growth in these markets.

(ii) Gaining competitive advantage: The survey brings out the fact that 72 percent of the respondents agree that creating, commercializing and protecting intellectual property is a source of competitive advantage that Indian companies will have to learn and master in order to compete in the global landscape. What is interesting, however, is that while companies agree that innovation is a source of competitive advantage, their resource allocation seems fragmented.

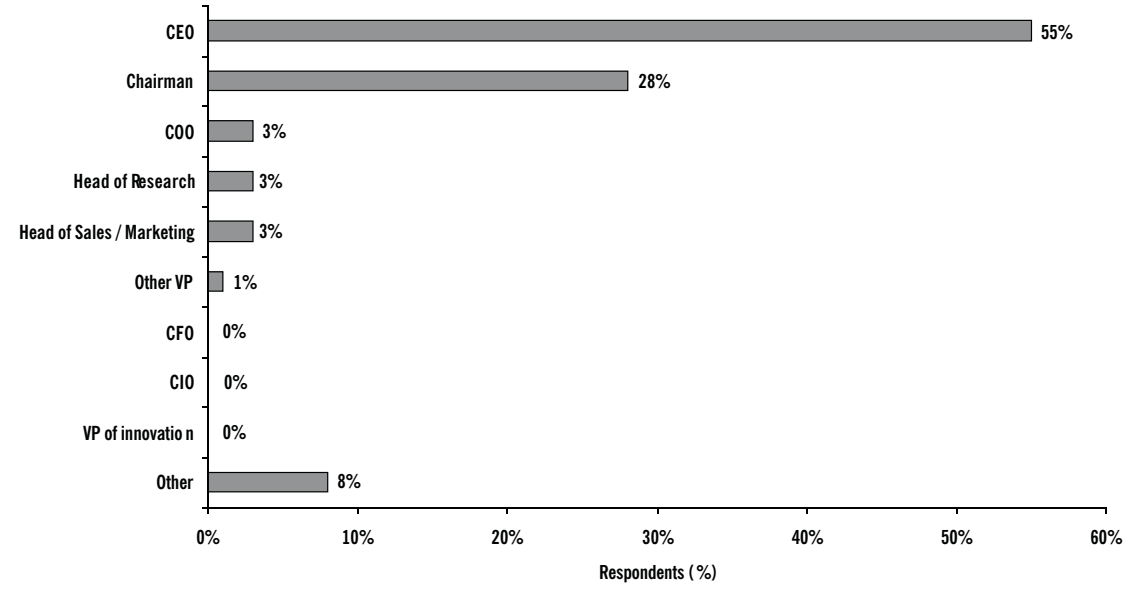
For example, it is recognized that different industries require innovation across different dimensions. Industries that have reached a growth plateau need to focus on developing new products for new customers to revitalize their business or find new ways to achieve cost advantage. Creating sustainable advantage, therefore, requires companies to focus on the one or two dimensions that are important to their industry and put the required resources behind them.

In India, however, we do not see this focus reflected in the innovation priorities of senior management. As we see in Exhibit 9, companies seem to be targeting several innovation objectives and spreading their resources across

EXHIBIT 6

IN INDIA, INNOVATION IS MAINLY TOP DRIVEN

"Who is the biggest force driving innovation in your company?"



SOURCE: BCG 2006 India Innovation survey conducted with CII

multiple priorities. This pattern probably stems from the desire to hedge their risks by trying to innovate across all dimensions. One must question whether companies of the scale of those in India can afford to spread themselves so thinly across multiple priorities.

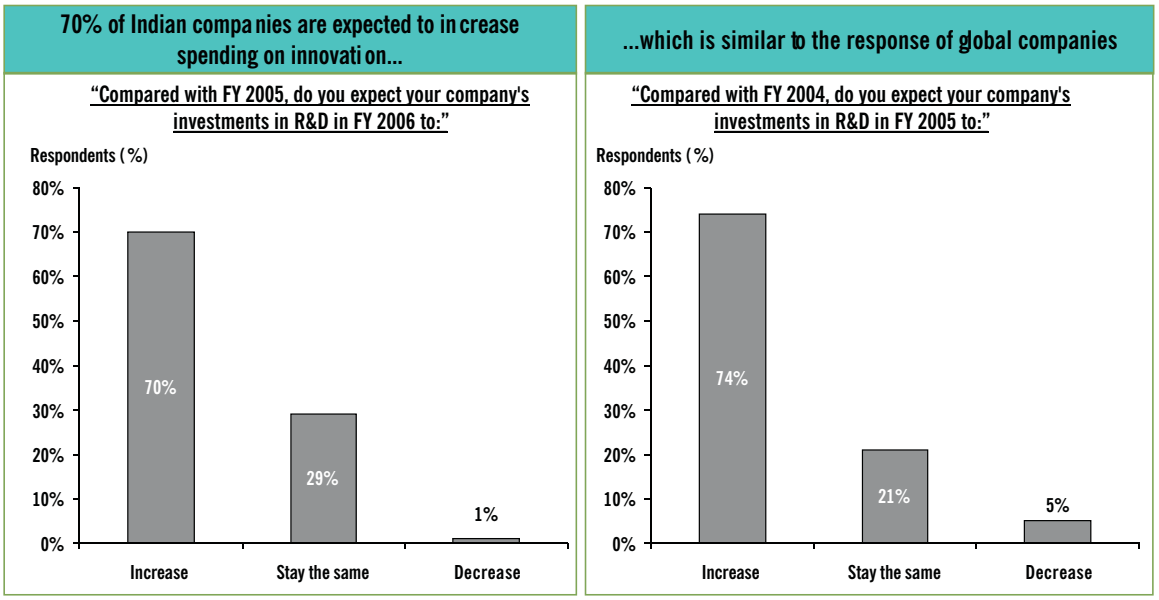
4.4 Where will organizations allocate this increase in innovation investments?

With India being one of the lowest cost centers for innovation talent, it would be expected that a large amount of innovation spend would remain in India to leverage this advantage. An overwhelming 73 percent of respondents said they were going to invest in innovation in India (Exhibit 10); the next highest investment location is Europe with a mere 15 percent of Indian executives stating they would invest there.

Given that both India and China (with 11 percent of respondents planning to invest there) are low-cost locations, it is possible to identify a trend of Indian companies leveraging low-cost locations for innovation. Some companies are looking to North America (12 percent) but the primary driver for doing so is to access innovation talent that is unavailable in India and to be closer to potential customers.

EXHIBIT 7

INNOVATION SPENDING BY INDIAN COMPANIES WILL INCREASE IN 2006, IN LINE WITH GLOBAL EXPECTATIONS

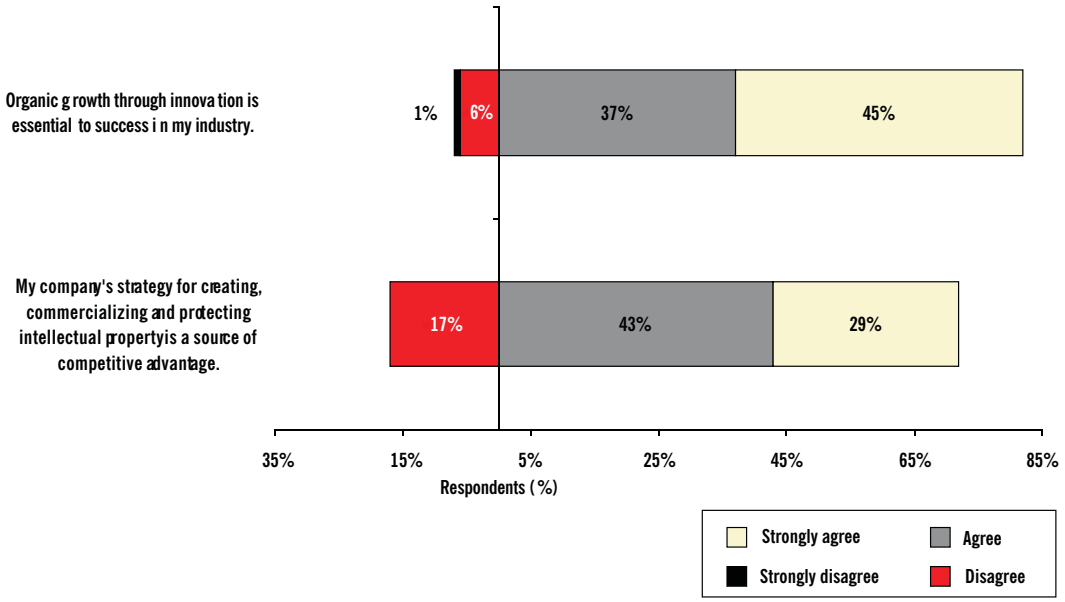


SOURCE: BCG 2006 India Innovation survey conducted with CII, BCG 2005 Global Innovation Survey

EXHIBIT 8

INDIAN COMPANIES AGREE THAT INNOVATION WILL BE KEY TO ACHIEVING SUSTAINABLE ADVANTAGE

"Please indicate your response to the following statements"



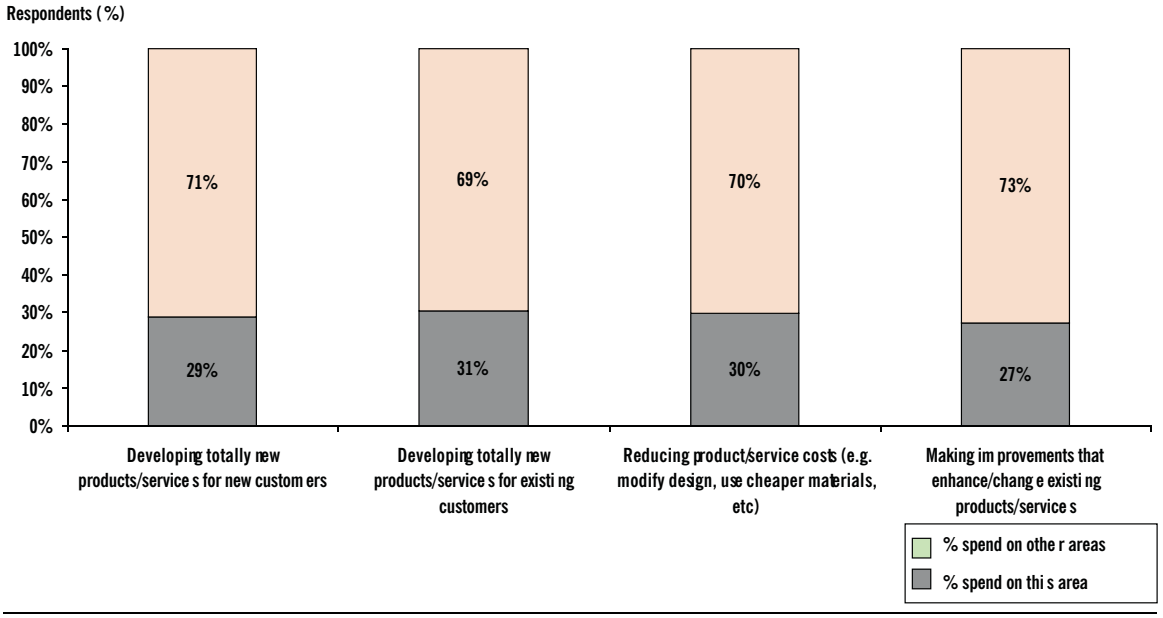
SOURCE: BCG 2006 India Innovation survey conducted with CII

EXHIBIT 9

FRAGMENTATION OF RESOURCES ACROSS FOUR DIMENSIONS OF INNOVATION

"What shares of your innovation-related resources are devoted to the following activities?"

Respondents who selected "Extremely Important" for mentioned areas of innovation

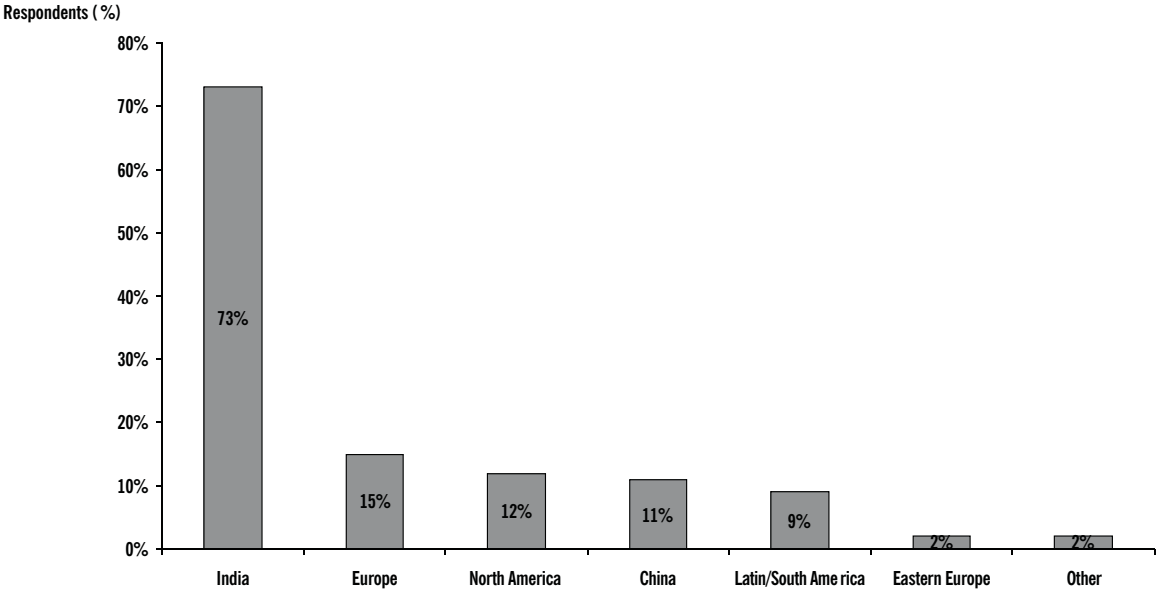


SOURCE: BCG 2006 India Innovation survey conducted with CII

EXHIBIT 10

INNOVATION SPEND IN INDIA RESTRICTED TO WITHIN THE COUNTRY

"In 2006, is your company planning to increase the amount of R&D it conducts in:"



SOURCE: BCG 2006 India Innovation survey conducted with CII

5 Areas for Improvement and Implications

Clearly, the biggest challenge in innovation remains execution. It is about getting the entire innovation process right, not just segments of it. Successful innovation is profitable innovation, which depends not just on initial creativity but also on excellent commercialization.

Successfully managing the innovation process is far from easy, which probably explains one of the most troubling findings of the global survey. When executives were asked whether they were satisfied with the financial returns on their innovation investments, one out of every two respondents answered no. More than 40 percent of global executives said that their company was not as good as its competitors at turning ideas into profits.

However, in India, more than 70 percent of the respondents answered that they were satisfied with the returns on innovation investments (Exhibit 11). This has to be seen in the context of the fact that Indian companies have not invested much in innovation so far and have focused more on incremental changes as well as innovations in process and business models rather than breakthrough products.

Executives also highlighted recent developments that have made commercialization even more challenging. These developments include:

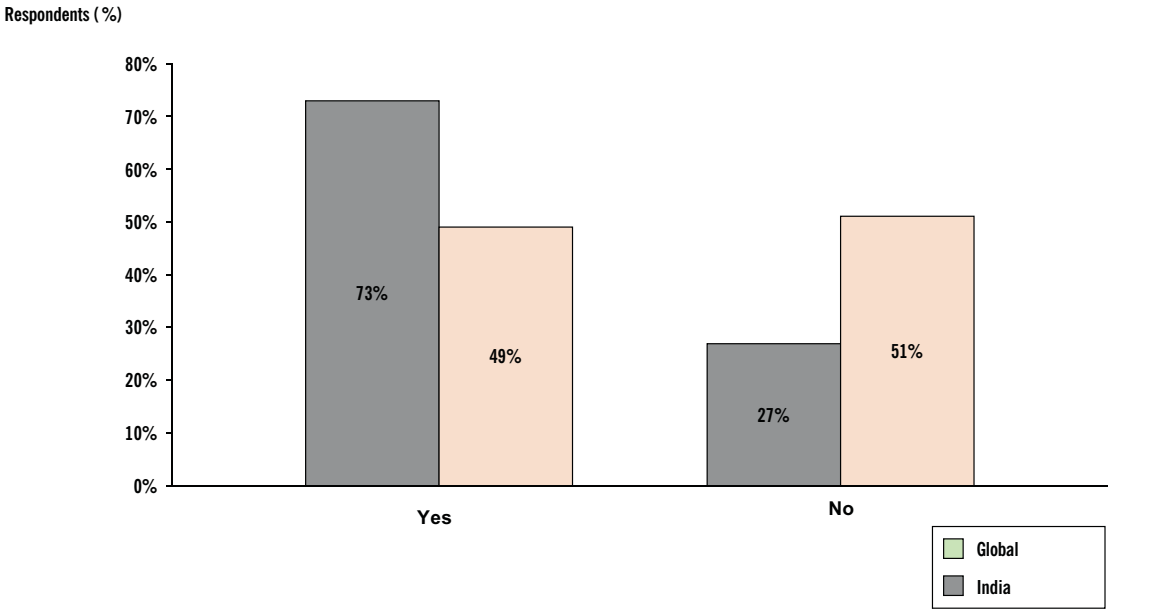
- New competition
- Intense, and increasing, price and cost pressures
- Ever-shrinking product lifecycles
- Increasing integration of the world's economies
- Major technology shifts

These are not easy issues to tackle — many of them are complex and interrelated. Taken together, they suggest that companies will need to address fundamental issues if they want to close the gap between what they want and need out of innovation and what they currently achieve.

EXHIBIT 11

INDIAN RESPONDENTS MORE SATISFIED WITH INNOVATION RETURNS THAN GLOBAL RESPONDENTS

"Are you satisfied with the financial return on your investments in R&D?"



SOURCE: BCG 2006 India Innovation survey conducted with CII, BCG 2005 Global Innovation Survey

5.1 The key challenges

The survey has highlighted several challenges that Indian companies face in the innovation process. These include:

(i) Inadequate measurement: While the survey clearly indicates the importance of innovation, it also highlights that few companies actually track their innovation performance systematically. Less than half the executives in our survey said their company tracked the financial returns on innovation at all. Few companies believe that they have the right metrics to track innovation. Most settle for broad indicators such as customer satisfaction, number of new products launched, revenues from new innovations and so on. The pattern was similar across the global and Indian surveys.

(ii) Time to market: While companies felt that they were good at generating ideas, the real challenge faced was in the time it took to move from ideas to revenues. In our global survey, 50 percent of the respondents reported that the key challenge in managing innovation was moving quickly from idea generation to initial sales. It was the second most important factor. In the Indian survey, we see a similar pattern. Fifty nine percent of the participants in the survey (Exhibit 12) felt that it takes too long for projects to move from the idea stage to market launch.

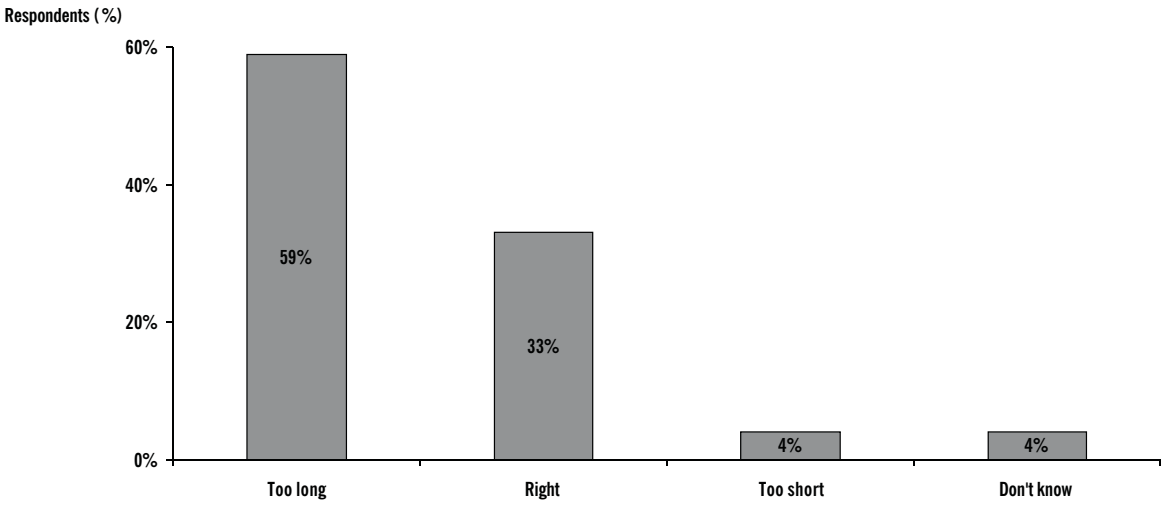
This arises from three issues. One, the misalignment of focus and resources. In such cases, projects will take a long time to complete because resources are spread too thin across a broad spectrum of good and not-so-good ideas. Two, a lack of rigorous project management. This means managing the progress of projects including freezing specs early. Three, a lack of sophisticated measurement tools that provide an accurate picture of projects and their profitability. Monitoring tools that track all aspects of the product lifecycle and feed back into the profitability assessment of the project will ensure rigorous management of the innovation process.

(iii) Portfolio management: Portfolio management includes systematic screening and prioritization of projects, alignment of resources against potential wins, ensuring project hurdle rates and gates as well as balancing the risk and timeframes across the entire portfolio of initiatives. In our experience, creating innovations and taking risks means knowing that some of the key ideas will fail. Those "bolder" ideas that succeed, however, have the potential to successfully alter the competitive landscape.

EXHIBIT 12

TIME TO MARKET EMERGES AS A DIFFICULT AREA FOR INDIAN COMPANIES TODAY

"What is your feeling about the time it takes your company to develop a product from idea to market launch?"



SOURCE: BCG 2006 India Innovation survey conducted with CII

Innovation also comes hand-in-hand with failure. The key is to recognize failure early enough and stop the project when a bold idea proves to be a bad one.

In the global survey, 43 percent of all respondents identified balancing risks, timeframes and returns across the portfolio and strictly enforcing project success hurdles as a key issue affecting innovation effectiveness. In the India survey as well, most Indian executives (60 percent of the respondents) felt that enough ideas are being generated but almost half of them (44 percent of the respondents) said that less than 5 percent of projects were stopped at the appropriate stage.

This is typically reflective of the fact that few organizations have complete visibility of all the various innovation initiatives that they are undertaking. Combine that with the fact that the economic assessment of initiatives at an early stage remains difficult and emotional attachment to ideas is a reality, it is understandable why companies find it difficult to take objective decisions on their portfolio. As one executive put it, "We are pursuing too many initiatives simultaneously and our organization cannot successfully commercialize all of them. Yet at the same time there are numerous market opportunities with a limited window of competition, and we don't want to miss the next big thing."

(iv) Commercialization and launch: The three additional weaknesses that Indian companies reported were: product launch coordination across the organization (18 percent weak or very weak); defining responsibilities for product launches/project transitions (17 percent weak or very weak) and defining a business plan that reflects realistic assumptions about pricing, market share, industry growth, penetration and related variables (23 percent weak or very weak).

All three problems reflect an organizational issue — cross-functional co-ordination. Most companies now have cross-functional teams involved in the process of innovation. However, making such teams really effective is a different challenge altogether. What is required is to ensure that everyone in these teams is able to play two-hat roles of representing their function on one hand and contributing to the success of the overall initiative on the other.

In summary, most companies continue to struggle with commercialization. Consider some of the issues highlighted in this survey. Despite all the time and money companies have spent on improving innovation over the past 10 or even 20 years, hundreds of executives across all industries said their organizations still are:

- Not as fast as they need to be
- Not successful as often as they need to be
- Too fragmented across too many different projects
- Not well-aligned across the whole organization (functions, geographies, etc.)

5.2 The Innovation-to-Cash tool

Based on several years of research into the process of innovation, BCG has developed the Innovation-to-Cash (ITC) tool (Exhibit 13) which brings to bear a whole set of portfolio management, lifecycle management and organization tools to manage the innovation process optimally. These tools help address many of the issues highlighted in the survey.

There are eight areas in the ITC process that focus on each aspect of innovation, creating "levers" to ensure the idea portfolio in an organization is managed efficiently to maximize returns.

The management of the entire process of innovation is a complex task that requires the alignment of several key stakeholders. As we have seen, getting all the levers in the innovation process to work is difficult. However, simple lessons go a long way in improving the management of the process. There are three lessons that can be drawn from this report.

(i) Focus innovation efforts: Recognize the importance of the type of innovation that is relevant to your industry and then put the resources behind it. Indian companies seem to be hedging their bets and spreading themselves across all dimensions, often too thinly, which simply does not yield the right results.

(ii) Strengthen portfolio management: Invest in tools for portfolio management of innovations. Put in place processes to evaluate and screen ideas at the right stage to be able to focus

resources against key areas. Enhance the visibility of the entire portfolio of projects to ensure appropriate decision-making on the overall risk, return, timing and nature of innovation being pursued.

(iii) Introduce metrics: Strong metrics should be used to make decisions on innovation, to measure the effectiveness of the innovation process and to incentivise innovation in the organization. Portfolio decisions should be built on quantitative estimates of cash flows and time and the projects should be measured against these. The innovation process itself should be measured on metrics for each of the 8 levers, which can then be used to ensure improvements in the process of innovation itself. Finally, appropriate metrics are required that allow for increased innovation and risk-taking in the organization.

Once these lessons are implemented Indian companies can look forward to increased satisfaction with their innovation spends with tightly managed innovation pipelines and stronger innovation capabilities.

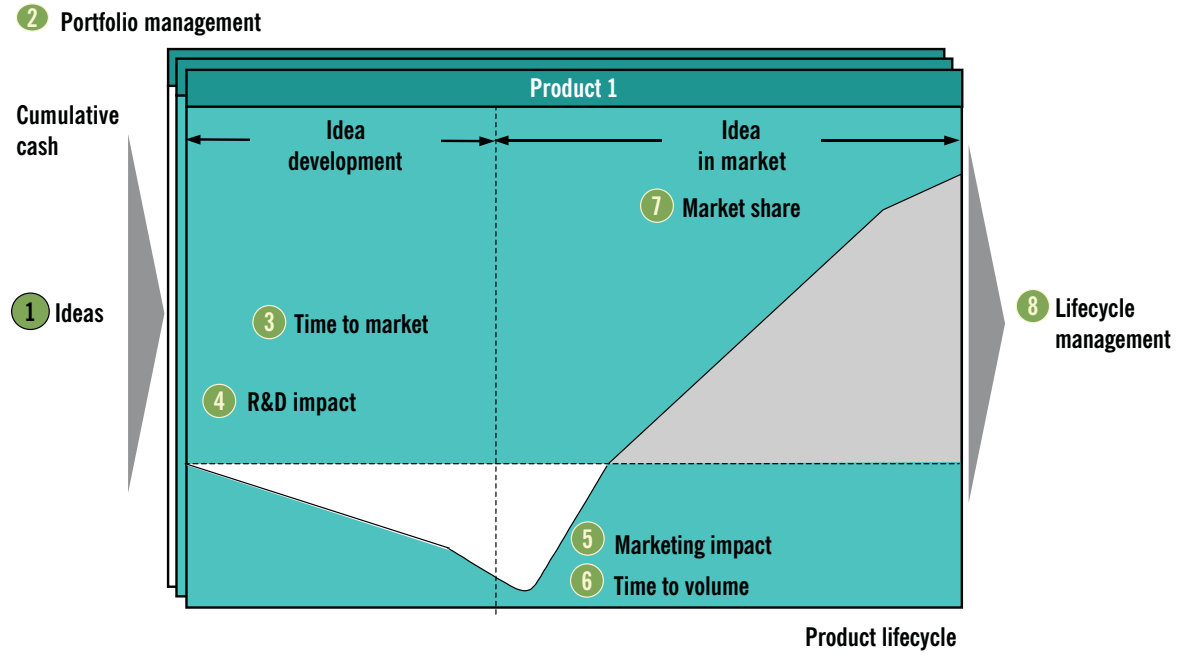
5.3 Creating an organization geared for innovation

Internal or organizational issues about innovation remain a key concern for executives, regardless of geography. For most of them, the key issue is alignment, that is, having the entire organization on the same page concerning objectives, tactics, and, ultimately, commitment. Like any other business activity, the entire Innovation-to-Cash process needs to be systematically managed with focus, rigor and attention. Failing to do so essentially leaves the return on innovation to chance. But this simple objective is elusive. In this year's survey, for instance, more than half the respondents said they either were "not sure" or plainly disagreed with the statement that their companies had the right organizational structures in place to foster innovation. In addition, just under half the respondents either did not know or disagreed with the statement that their senior management team shared a common perspective on how to manage innovation and assess its success.

In our work on innovation, the most common question we are asked by senior executives is, "How do I create an innovative culture?" This question is fundamentally one about aligning the organization

EXHIBIT 13

THE INNOVATION-TO-CASH PROCESS



SOURCE: BCG

to turn inventions and ideas into cash that end up on the bottom line. The answer, however, is decidedly not organizational structure. There are very innovative companies (excelling at both invention and commercialization) that use virtually every organizational structure one can imagine. So the question here remains: what can company leaders do? Managers can start by looking hard at three key areas. While focusing on these areas won't necessarily change things overnight — there are other things that matter — it can start to move things ahead rapidly. Moreover, these things are largely in a leader's direct control:

- The people you have. Alignment requires people who both understand the value of working together and have the skills and temperament to do so. Not everyone can or does. Managers who don't are poisonous to the rest of the organization. If you really want alignment, identify those people who are hindering your goals. Understand why. Give them clear and direct feedback. Take appropriate action. The time for silos of any type — functional, process, geographic, or others is long since past. Don't let yours remain.
- The environment you create. Ask yourself how much time you spent on innovation in your last operations review. The loudest message you can send is how you spend your time. Money and capital are cheap in comparison. Your organization knows this, perhaps even better than you do. If you are interested in innovation and show it, many barriers will start to fall away quickly.
- The measures and rewards you use. What matters in your organization? Hitting your numbers, of course. But what else? What else, if anything, gets measured regularly? What drives

EXHIBIT 14

Boosting innovation productivity

Any plan designed to boost innovation output must include both clearly delineated processes and targeted investment allocations. Our experience suggests that the following six actions can contribute significantly to accelerating innovation- led growth:

- Implement a proprietary innovation process, aligned with your innovation strategy and structured with standardized milestones and go/no-go criteria, to provide oversight of the innovation portfolio.
- Ensure that your innovation strategy includes clear priorities among the projects in your portfolio and that you are disciplined about allocating resources according to those priorities.
- Assign full-time teams from across functions to new-category product launches, and systematically track the time invested in each project.
- Create a multi-year launch-support model to encourage early adoption and continuing purchases.
- Align compensation and rewards with project goals. Also, be sure to include initiative and creativity in your evaluation system, and use innovation awards to motivate people.
- Seek outside alliances to achieve world-class capability across disciplines.

To improve your success rates significantly, you will need to pay special attention to project evaluation criteria. Naturally, the specific criteria in your company's innovation-screening methodology will have to be tailored to your business.

Moreover, the need for precise data will increase as a project proceeds. But a robust methodology will allow you to dismiss an inadequate idea partway through the process without having to assess it against all possible criteria. And an effective screen will provide the confidence you need to redirect your investments to fewer, bigger, better and more successful ideas. Following the right process will also help your organization avoid several of the traps we have observed in our work.

compensation and captures attention? Merely hitting your numbers is, for most companies, no longer enough.

Other items (such as building a pipeline and skill base for the future) also need to be measured, otherwise in many organizations they won't be given enough, or any, attention. More important than finding exactly the "right measures" is beginning to use measures that are merely not too "wrong". Pick a few. Get started tracking. Look at them over time and you will soon see who and what is being successful. Reward them appropriately.

The steps above may sound simple, perhaps even simplistic. But alignment is conceptually simple — it is just difficult to execute in practice. So, test yourself. Why isn't your organization aligned? There are always "good" reasons, but truly aligning the organization is for many companies the single most powerful lever they have to increase their return on innovation.

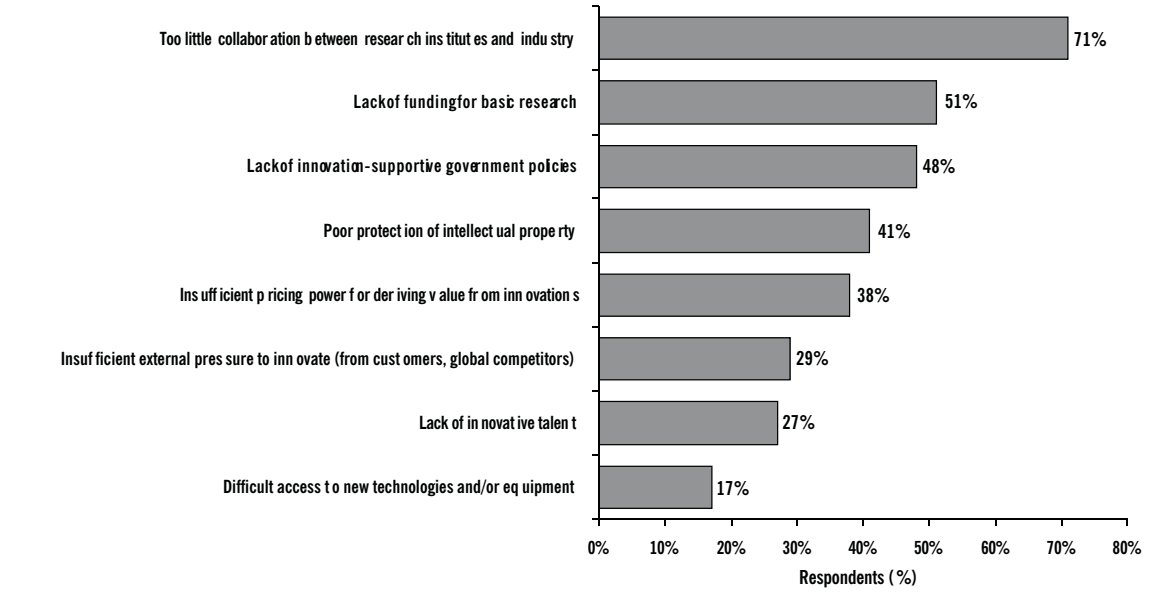
5.4 The role of the external environment — emerging suggestions

While companies need to get the internal processes right, the external environment in India will also play a role in fostering innovation. Basic issues like protecting Intellectual Property Rights need to be in place to create an environment in which competitive advantage gained through innovation is protected. The top three reported hurdles to creating an innovative Indian business environment are (Exhibit 15): inadequate collaboration between research institutes and industry (71 percent), lack of funding for basic research (51 percent), and lack of innovation-supportive government policies (48 percent). Removing these hurdles will help foster a creative and innovative Indian industry and should be top priority for anybody thinking about innovation.

EXHIBIT 15

HURDLES TO INNOVATION IN INDIA: RESEARCH FUNDING AND COLLABORATION WITH INDUSTRY CITED AS TOP ISSUES IN INDIA

"Overall, what do you see as the top hurdles to innovation in India?"



SOURCE: BCG 2006 India Innovation survey conducted with CII

6 Top Performers

In the global survey (Exhibit 16) the two most innovative companies that emerged were Apple and 3M. In India, too, most companies identified Apple and 3M. In fact, all of the companies in the global top 10 were mentioned several times as the most innovative by Indian senior management. However, a clear Indian example did not emerge. This shows the absence of a perceived strong innovator in the minds of senior managers in India. However, companies such as Apple and 3M enjoy this mind-share.

6.1 Apple

Apple is in the middle of a remarkable turnaround today. Sales from 2002-04 have increased 20 percent from $5.7 billion to $8.3 billion, while operating profit grew 175 percent per annum from $46 million to $315 million. The overall mix of revenues has shifted to more profitable product lines with hardware representing only 59 percent of Apple's sales versus 79 percent in 2002. This tremendous turnaround story is scripted primarily by increased iPod sales that grew from $147 million in 2002 to $1.6 billion in 2004, generating operating profits of $160 million in 2004.

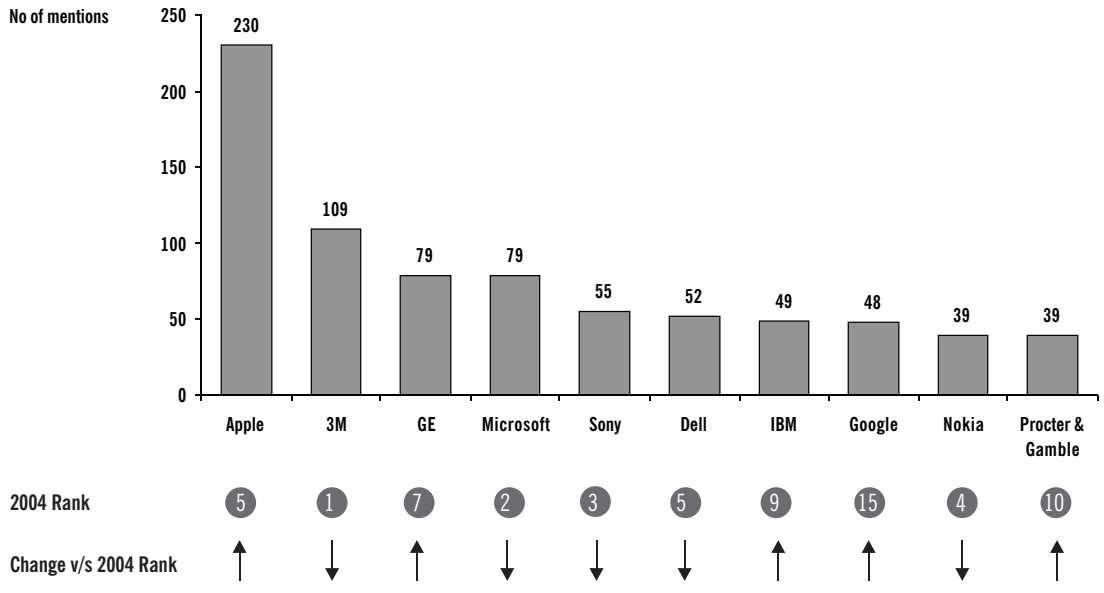
Executives in our latest global survey said they admired Apple's understanding of its market ("Apple knows consumers like no one else") and its ability to serve that market with innovative new products ("Apple creates new products that meet consumer demands before the consumer is even aware of them"). The iPod, of course, was the product most frequently mentioned. One respondent noted how Apple had "turned a product line that was quickly becoming a commodity into a high-status icon".

This success is driven by Apple's digital media strategy which is focused on tailoring product offerings for each customer segment, creating multiple revenue streams per segment and integrat-

EXHIBIT 16

THE "MOST INNOVATIVE" COMPANIES

What Company, In Any Industry, Do You Consider Most Innovative?



SOURCE: BCG 2005 Global Innovation Survey

ing its offerings tightly across product lines. Apple has also got the organization piece of the innovation puzzle right by ensuring early involvement of marketing teams in product development to create the right buzz and hype around product launches.

6.2 3M

3M has consistently been rated as one of the most innovative companies in the world. This success has been achieved by aligning the organization around innovation. Many executives cited the company's innovation-centric culture. "Innovation is formally encouraged and rewarded," noted one respondent. "The company has institutionalized creativity." Several executives specifically cited the freedom 3M gives its researchers: "Its scientists can spend up to 15 percent of their time on pet projects of their own choosing. With such motivation and resource backing, how can a company not be innovative?"

3M fosters innovation by lauding "celebrity" scientists for their contribution to innovation. There are several awards that are published organization-wide leading to instant recognition of great ideas and celebrity status for those who come up with them. There also exists an openness to well-intentioned failures, reducing the risk and creating a safety net for employees to innovate.

Respondents also highlighted 3M's ability to execute. As one said, "3M has established proven processes, not just for creating ideas, but for taking them to market." Indeed, 3M has set up some hard rules to monitor its innovation effectiveness. For example, it insists that 30 percent of sales must come from products introduced within the last 4 years. This ensures that people in the organization have innovation at the top of their minds and therefore brings sufficient focus on innovation from within.

Finally, several cited the company's consistency: its ability to "produce a constant stream of useful new consumer products over a 30- to 40-year period". Said one executive, "It scans the terrain for new products extensively and on a regular basis, and has the proven ability to transfer new ideas into reality."

Therefore, in 3M we see that organization processes have created a culture of innovation, where innovation is formally encouraged and rewarded. The company has institutionalized creativity within its organizational DNA and is widely recognized for it.

6.3 Select Indian examples*

While no individual Indian company stood out as a clear leader in innovation, we found some examples of companies that manage the innovation process well. The selected case studies are good examples of how companies organize for innovation in order to manage the levers for improvement.

Tata Steel — Organizing for innovation

Some years ago, when the market for steel was deregulated, Tata Steel felt the need for a structure to accelerate the pace of change. To achieve this, the company launched an integrated improvement program called ASPIRE, an acronym for Aspiration Initiatives to Retain Excellence.

The objective of ASPIRE is to create an aspiration, rather than just the capability, to pursue excellence. The big idea is to accelerate the pace of improvement by harnessing the intellectual and emotional energy of all employees and create a culture of innovation.

ASPIRE involves creating change agents throughout the organization, to encourage innovation from the bottom up. Every departmental head in the organization is designated a Champion and is responsible for creating and approving ASPIRE teams. Each team has trained Facilitators, called Black Belts, Green Belts and TPM Coordinators.

All employees, irrespective of where they belong, are eligible for Green Belts. To get certified, they select a project, are trained and then implement it.

* Cases referred here have been drawn from the entries submitted for the Indian Innovation Awards 2005, pioneered by EMPI B-School. The awards were but a process for identifying India's most innovative organizations spanning Corporates, Non-Profits and Government Organizations. With almost 600 participants, sector specialists and a high-level jury finally judged India's top 7 innovative organizations who were then commended by the President of India, Dr. A.P.J. Abdul Kalam.

Continued success will take an employee to the Black Belt level. All required competencies are developed in-house with extensive training and people development programs.

This overarching program structure allows the company to undertake initiatives across the entire organization. It has created an atmosphere and organizational structure that encourage the innovation process. It also empowers employees to pursue innovation themselves and be rewarded for it, tapping into the innovative ideas that exist in each individual within the company.

Under its ASPIRE initiatives in 2002, Tata Steel is estimated to have saved around Rs 150 crore. It just goes to show how tapping into the latent ideas in the minds of employees can generate strong bottom line value if managed well.

Gujarat Co-operative Milk Marketing Federation Ltd — Managing and monitoring innovation

Hoshin Kanri is a forum used by the Gujarat Co-Operative Milk Marketing Federation (GCMMF) to evaluate the previous year's efforts in managing and monitoring innovation and develop objectives for the year ahead. Twice a year, key employees meet in a forum known as the corporate *Hoshin Kanri* meeting. All heads of sales offices, functional areas, product officers, accounts in-charges and even representatives from the advertising agencies attend it.

This meeting discusses the overall business of the organization in terms of both products and processes. Detailed activity plans are chalked out and framed in terms of "Hoshins" that are precise and measurable. The agenda includes evaluating goals and sharing new product ideas and process improvements. The departments concerned, such as Marketing, Quality Assurance, Purchase and Legal are assigned specific responsibilities. The packaging and market communication and advertising issues are shared and worked out with the advertising agency.

A review meeting is held after six months to evaluate progress and make mid-term course corrections. This is also a knowledge-sharing forum where best practices are shared across sales offices.

These meetings achieve two broad objectives. One, they ensure buy-in across all stakeholders for product development and, two, they facilitate the development of action plans in agreement with all participants, allowing for seamless execution later. Today, GCMMF is India's largest food products marketing organization, with 56 products being marketed across 14 categories. Managing such a product portfolio with 2.41 million stakeholders (producer members) would not be possible without a strong management and monitoring process that ensured efficient innovation management.

7 Conclusions

In conclusion, we have seen that innovation is becoming more important, and companies are looking at it as a source of competitive advantage as well as a driver for capturing growth. Innovation is a top priority in the minds of senior executives, many of whom plan to increase spending on innovation.

Some of the key challenges faced by companies include the measurement of innovation returns, time to market, portfolio management and commercialization and launch. These challenges could be mitigated by an application of focus in innovation efforts, effective portfolio management tools and strong measurement metrics. A broader challenge of creating an innovative organization requires taking some simple to describe but difficult to implement steps.

The government also has a role to play in fostering innovation. Indeed, the key hurdle to innovation in India was a lack of collaboration between research institutes and industry.

Getting it all right is not easy. It requires taking a hard, honest look at where the organization stands and then implementing best-in-class tools to manage the ITC process. That is why our clients turn to us to help them enhance their innovation productivity.

Once organizations implement the 8 levers of the Innovation-to-Cash tool and create an environment to foster innovation, they can soon start looking forward to generating significant returns from their investments in innovation.

For More Information

This survey is part of BCG's extensive work and research on innovation and the Innovation-to-Cash process. A sample of related publications includes:

- "Innovating for Cash," Harvard Business Review
- "Boosting Innovation Productivity," BCG Opportunities for Action
- "Making Innovation Pay," BCG Perspectives
- "Innovating for Cash: Orchestrating in the Consumer Industry," BCG Opportunities for Action
- "Innovating for Cash: Lessons From the Handset Wars," BCG Opportunities for Action
- "Raising the Return on Innovation: Innovation-to-Cash Survey 2003," BCG Report

For copies of any of the above publications, please send an email to: BCG-info@bcg.com.

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Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the growth of industry in India, partnering industry and government alike through advisory and consultative processes.

CII is a non-government, not-for-profit, industry led and industry managed organisation, playing a proactive role in India's development process. Founded over 110 years ago, it is India's premier business association, with a direct membership of over 5800 companies from the private as well as public sectors, including SMEs and MNCs and indirect membership of over 95,000 organisations from around 325 national and regional sectoral associations.

A facilitator, CII catalyses change by working closely with government on policy issues, enhancing efficiency, competitiveness and expanding business opportunities for industry through a range of specialised services and global linkages. It also provides a platform for sectoral consensus building and networking. Major emphasis is laid on projecting a positive image of business, assisting industry identify and execute corporate citizenship programmes.

With 44 offices in India, 8 overseas in Australia, Austria, China, France, Japan, Singapore, UK, USA and institutional partnerships with 239 counterpart organisations in 101 countries, CII serves as a reference point for Indian industry and the international business community.

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