

HOW INDIA INNOVATES

The promise of sustainable and
inclusive innovation



Confederation of Indian Industry



CIHTC Centre of Excellence
for Sustainable Development



Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

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How India Innovates: The Promise of Sustainable & Inclusive Innovation

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Foreword

India needs Inclusive Innovation!

India's growth story can only be sustainable in the long run if its decision makers in the business sector and in the policy sphere manage to successfully address the increasing disparities, at the same time respond to the competitive pressures on India's economy in a strategic manner. Beyond increasing competitiveness through innovations, India's sustainable economic development is dependent on innovations that accelerate more inclusion and more sustainable growth. Innovative solutions are necessary that change people's lives with products, services, processes and business models and also tackle the twin challenges of the 21st century: poverty and natural resource strain. This requires a different outlook on innovation itself and demands for a rethink of innovation processes. In order to respond to the sustainable and inclusive imperative innovation process might need to include different stakeholders. The CII-ITC Centre of Excellence for Sustainable Development (CII-ITC CESD) has termed this form of innovation "Sustainable and Inclusive Innovation" or SI2.

In last few years there have been great efforts, both at global level as well as in India, to encourage industries to move towards sustainable business models. Industry bodies, private sector champions, governments and donors have been leading this movement. The focus on sustainability is increasingly becoming a necessity for large companies, start-ups and investors and creates new drivers for innovation. As a result, India is going to see rapid changes in its focus towards creating sustainable business models as the future is unfolding in that direction. With the Prime Minister calling for the "Decade of Innovation" (2010 - 2020) and the efforts of the National Innovation Council the Indian Government takes progressive steps towards shaping a new innovation paradigm, one that goes beyond formal Research and Development but focuses on inclusive innovation processes.

With the emergence of "Base of the Pyramid" as a potential market the interest of business has surged significantly. However, approaching this target segment poses new challenges. Business still find it difficult to showcase models that are viable at the same time inclusive and innovative. There is an increased demand to understand how enterprises innovate, when developing inclusive, sustainable and economically viable solutions. Under the framework of Indo-German bilateral cooperation the Umbrella Programme for the Promotion of Micro, Small and Medium Enterprises (MSME) funded by the German Ministry of Economic Cooperation and Development (BMZ), GIZ India has partnered with CII-ITC-CESD to strengthen sustainable and inclusive innovations and to support the dissemination of knowledge and the scaling up of

successful SI2. The partnership aims to go beyond present research and focuses on the questions of how innovations come about and consequently how they can be fostered. CII-ITC-CESD in partnership with GIZ has made some significant efforts in this direction in India. The partnership has undertaken workshops with large enterprises, MSME and start-ups as well as support institutions like funders, incubators, and industry associations on Sustainable and Inclusive Business Model Innovation both within India and outside.

As part of this partnership GIZ and CII-ITC-CESD have conducted this study with the objective to provide the innovation eco-system with information on how business in India innovates and the promise it sees in Sustainable & Inclusive Innovation.

We hope you enjoy reading this report!

Manfred Haebig

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Acknowledgements

This report is a product of collective effort of CII-ITC Centre of Excellence for Sustainable Development and Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ). Contents of this report are based on the Innovation Study that the Centre conducted as part of its continued effort to foster Sustainable and Inclusive Innovation (SI2) in India. GIZ has always been at the forefront to facilitate the development of the innovation ecosystem in India. We are grateful to their efforts and support for driving such initiatives in India.

We express our gratitude to all representatives of companies for spending their time and sharing valuable information. We are also thankful to all respondents that participated in the study.

Finally, we hope that for companies featured in this report and many others in India, this report offers a validation of their approach and a starting point for more sustainable and inclusive innovations.

Executive Summary

Innovation means new solutions that bring significant value to the innovator as well as the users. In current times, when economic growth rates are racing southwards and global climate temperatures are rising northwards, innovation is nothing short of a necessity. Innovation is a necessity to competitiveness and relevance of business, organisations, governments, and even countries.

There is no doubt that innovation is of utmost importance to India's future as a sustainably developed country. India has declared 2010-2020 as the Decade of Innovation. The Prime Minister's Office set up the National Innovation Council with a mandate to substantially enhance the innovation ecosystem in India.

Innovation has also gained importance in the context of significant ecological and social challenges India along with the rest of the world faces. Efficiency and conservation measures are insufficient to save India from catastrophic consequences of ecological disasters. Creating employment opportunities for 500 million strong workforces in another 30 years, pulling 400 million people out of poverty, providing sanitation facilities to almost a billion people, are just some of the challenges that stare into the face of many Indians. "Sustainable and Inclusive Innovations (SI2)" are needed for transformational shift. India is typically not known for breakthrough solutions, but it may have little choice to develop capabilities in certain areas.

At the Centre of Excellence for Sustainable Development, we have been working with business on the future of innovation, which is "Sustainable and Inclusive Innovation". Our frameworks help companies identify how much value was created through their innovations, which strategies could be applied to make their innovations work, and what would be a business model that would innovate value.

Results of this study indicate that most companies in India are not engaged in "Sustainable and Inclusive Innovations". They did not identify with sustainable development or green growth.

The CESD sustainable innovation framework classifies four types of innovation - reactive, incremental, radical and transformative - based on combined scales of business and sustainable benefits. Most companies in India innovate with incremental or radical solutions.

Interestingly, transformative innovations happen to come from start-ups and social enterprises. That's because they are more flexible, have higher risk taking capabilities and are driven by certain passion. For incumbents it means that competition is likely from enterprises that do not exist yet.

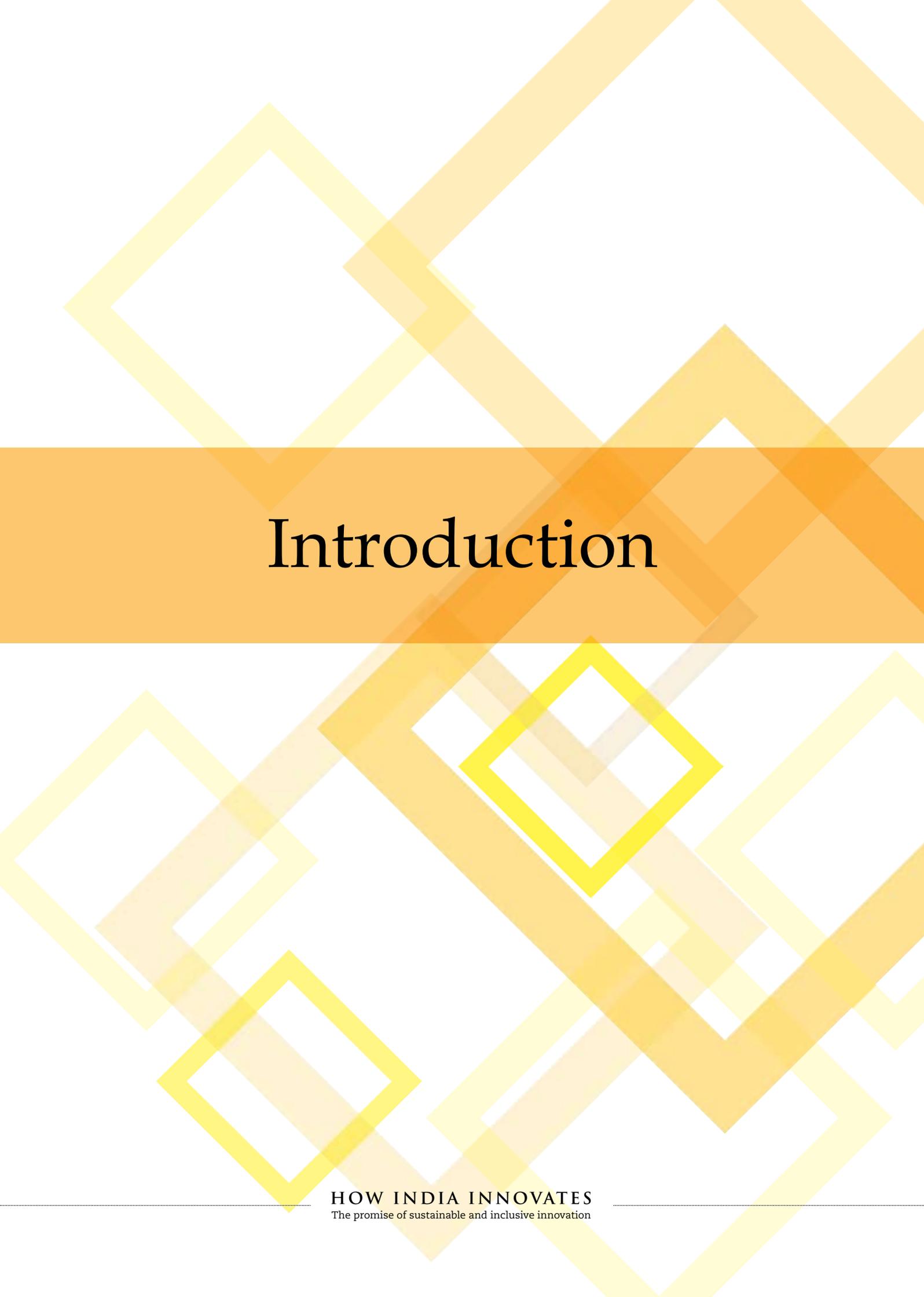
Companies have also identified exploiting green growth opportunities and reducing environmental impacts as other important factors to innovate. However, the bottom-of-pyramid market is still not an important driver for companies to innovate.

Business model innovation is practiced by most companies. 90 per cent of the respondent claim to have innovated their business model in the last three years.

The use of technology is a key lever for companies to innovate, leading to technology empowerment of the users and beneficiaries. Technology empowerment is one of the key SI2 strategies that companies use. Process-re-engineering, high-asset use and price-modelling are other SI2 strategies most widely used by companies.

Too much focus on existing products is the key internal barrier to innovation. Companies told us that complacency with existing products was the reason for them to not innovate. When companies find their markets threatened by competition then companies scramble to innovate. The other key barrier to innovation is too much focus on short-term financial performance.

"Will the next "Google" be from India?" is an unanswered question. However, the next "Google" of SI2 is most definitely happening in India.



Introduction

This report is a modest output of our endeavour to uncover how business in India innovates. The report covers the big market drivers for companies to innovate, the organization culture to harness innovation, which innovation areas give them the competitive advantage, and how ecology and bottom-of-pyramid were growth opportunities and therefore if they were drivers to innovate.

Innovation never gets out of fashion. It has reinvented itself over and over again ever since what must have been the first innovation of human civilisation. Today, innovation means new solutions that bring significant value to the innovator as well as the users. Solutions might be products, processes or business models, and users might be markets, governments, society or ecology.

The power of innovation is extraordinary. The success of human civilisation rests on innovation. Correction of damages as a result of some of those successes too rests on innovation. Each generation feels that innovation is critical to growth more than ever before. In current times, when economic growth rates are racing southwards and global climate temperatures are

rising northwards, innovation is nothing short of a necessity. Innovation is a necessity to competitiveness and relevance of business, organisations, governments, and even countries.

Speaking of countries, there is no doubt that innovation is of utmost importance to India's future as a sustainably developed country. It is a cliché to say that India is a country of contradictions. That cliché holds true for innovation as well. One tends to wonder how a country that has been known for its mathematical prowess, spirit of entrepreneurship, and some ground breaking innovations, manages to position itself far from the most innovative countries in the world. The Global Innovation Index 2013 from INSEAD-WIPO-Cornell University ranks India at a miserable 66 out of 142 countries.

A lot has been written about deficits in India's innovation capacities and capabilities. India is hardly a competition to any one on innovation. Expectation of the world from India on innovation would be not of a next breakthrough solution, but of putting in place the eco-system necessary for innovation.

Despite such low scores and expectations, there are many

hopes from India on innovation. India is known to have the spirit of innovation and is speculated as one of the key innovation destinations. It is clear that there is a yawning gap between capabilities of enterprises and aggregate capabilities of the country. One may argue that innovation capability of companies is overwhelmed by gaps in the ecosystem. Studies like that of INSEAD and National Innovation Council identify the fault lines in the Indian innovation ecosystem, and there are attempts to fix them.

India has declared 2010-2020 as the Decade of Innovation. The Prime Minister's Office set up the National Innovation Council with a mandate to substantially enhance the innovation ecosystem in India. The Council has developed a roadmap that would, among other things, create State Innovation Councils and innovation clusters. CII is a member of the National Innovation Council and is helping set up innovation clusters in a couple of sectors.

The surge in the government's attention to innovation can be attributed to recommendations of the National Knowledge Commission that preceded the setting up of National Innovation Council. The Commissions'

“Innovation in India” survey 2007, confirms the rising innovation activity and awareness in India as well as the need to continuously and publicly encourage the trend as a key enabler in India’s economic growth and competitiveness. However, there is need for further effort along a range of parameters in order to fully realize India’s innovation potential.

Innovation has also gained importance in the context of significant ecological and social challenges India along with the rest of the world faces. Efficiency and conservation measures are insufficient to save India from catastrophic consequences of ecological disasters. Creating employment opportunities for 500 million strong workforce in another 30 years, pulling 400 million people out of poverty, providing sanitation facilities to almost a billion people, are just some of the challenges that stare into the face of many Indians.

“Sustainable and Inclusive Innovations (SI2)” are needed for transformational shift. India is typically not known for breakthrough solutions, but it may have little choice to develop capabilities in certain areas.

Multinational companies play a significant role in developing

innovation capability. Many MNCs have set up research and development labs in India that work with global teams on developing next generation technologies. In just the last two years, 100 companies across electronics, aviation and social media have opened R&D centres in India. It is said that India might be one country with the largest number of R&D labs of MNCs. These labs not only support global R&D work, but develop new solutions that suit developing countries and also developed countries.

Despite all this information, little is known about how business in India innovates. Questions remain. What drives them to innovate? Where on the priority is “Sustainable and Inclusive Innovation”? What is the innovation culture? What does India innovate more: processes, products, or business models? Which innovation strategies do companies use?

That knowledge gap triggered our discovery to where innovation happens – the companies themselves.

Focusing on companies comes naturally to us; we are the Confederation of Indian Industry (CII). Then there is a stronger

reason. Business is the largest provider of innovative solutions. At the Centre of Excellence for Sustainable Development, we have been working with business on the future of innovation, which is “Sustainable and Inclusive Innovation”. Our frameworks help companies identify how much value was created through their innovations, which strategies could be applied to make their innovations work, and what would be a business model that would innovate value.

For this study, we curiously enquired about how companies innovate, what did they innovate, which were the four types of innovations, what culture did they have and how formal it was. In some way we were trying to establish that India is a potential hub for the next “Google” of “sustainable and inclusive innovations”.

The study involved questionnaire survey technique and interviews with select respondents. The survey was both quantitative and qualitative. In the first step, companies in CII’s network were approached. These included large companies, SMEs and MNCs. SMEs were included because there are a lot of innovations that happen in SMEs but often

get overlooked. MNCs were considered because they get a lot of experience and innovations from their home countries which have potential of replication in India. That is how the survey tried to capture innovation capabilities of companies of different sizes and origins.

The questionnaire had a combination of qualitative and quantitative questions. It comprised six separate sections: innovation activity; product innovation; process innovation; business model innovation; sustainable & inclusive innovation; and innovation culture. Heads of the R&D and innovation departments within companies were the key target audience for the study.

A key part of the study was one-on-one discussion with respondents. That helped in substantiating their responses and supplemented the survey findings through their description

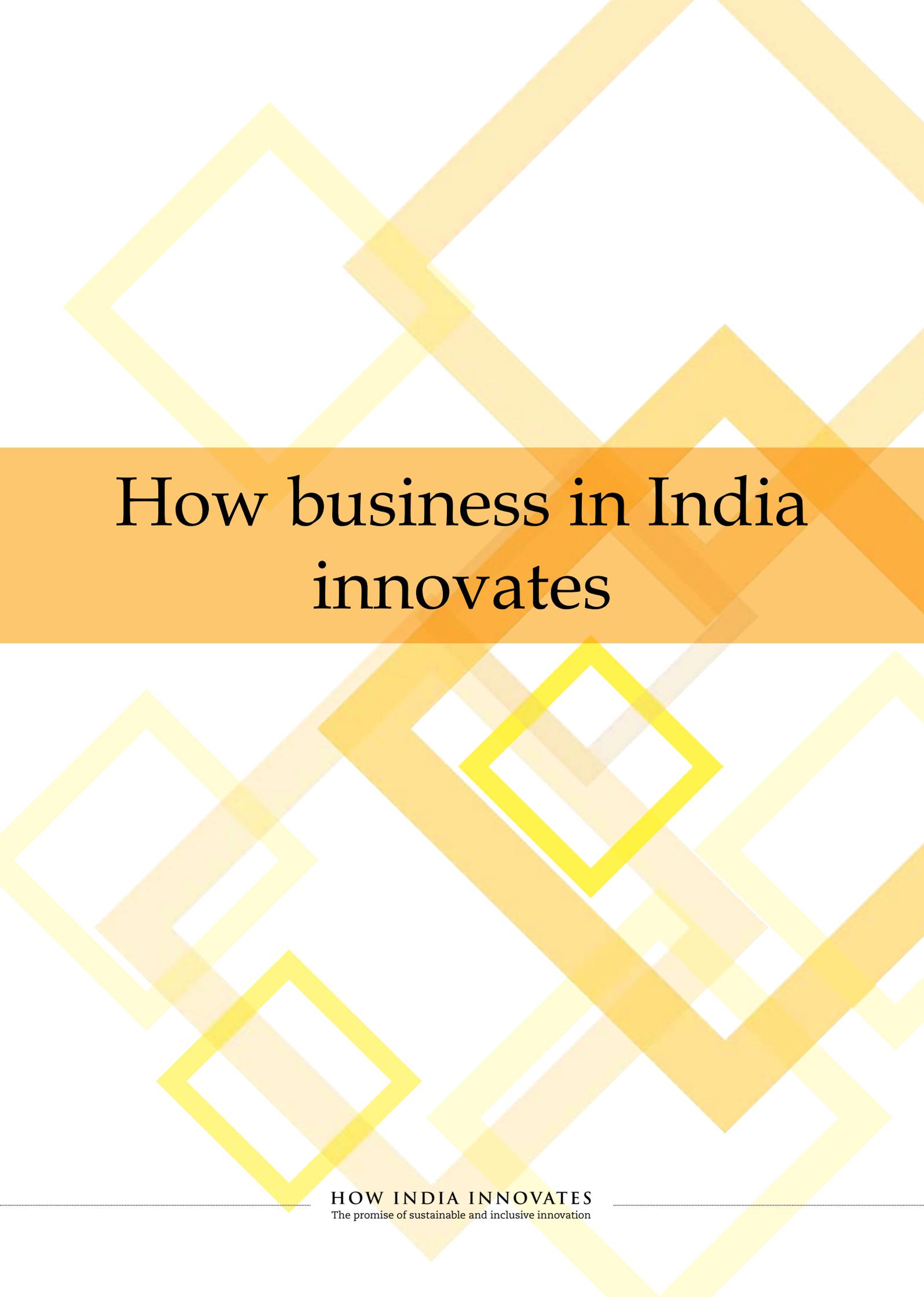
of innovation in India. Interview candidates were selected based on the quality of response, nature of the company, and perceived importance of respondent in innovation ecosystem.

As we made headway in our discovery, we realized how challenging our task was. Many companies were not forthcoming to share information on importance, culture, investments. A bigger challenge though was that most companies were not engaged in “Sustainable and Inclusive Innovations”. They did not identify with sustainable development or green growth. That affected the number of responses we could qualify for analysis. The number included in this study therefore is small, yet representative of the “sustainable and inclusive innovations” taking place in India.

Findings of the study are organised in the following order. First, we present how companies fare on the four types

of innovations, followed by the drivers of innovation. Then, we analyse the kind of innovation companies are engaged in; is it business model, or process or product. Before closing the report with internal and external challenges companies face, we discuss the culture of innovation. Each part is dotted with illustrations of companies. We are grateful to their inputs and to allow us to scratch the surface and know more of how they were innovating.

This study is third in our series of documented work on innovation. Two more are in the pipeline. Manuscript for one is in the works, which is based on ten superlative business models in India and Africa, the other is a follow-up to this report, the design of which is on the drawing board. Our endeavour is to motivate business in India to innovate as many “Google”s and “Apple”s of “sustainable and inclusive innovation” as possible.



How business in India innovates

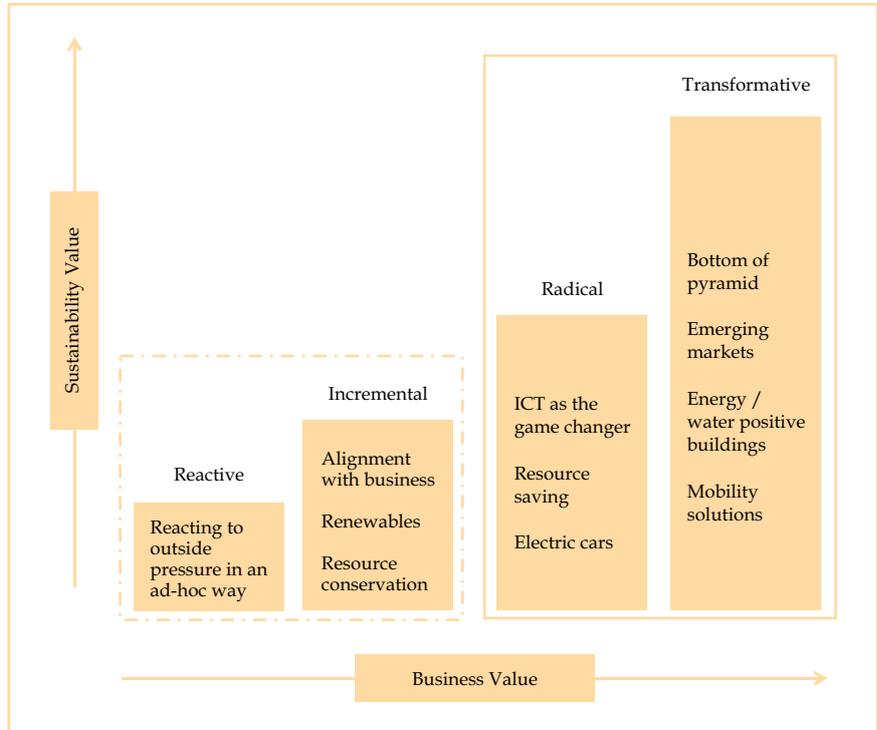
Innovation should create value, both for business and for society. This is particularly important in case of Sustainable and Inclusive Innovation or SI2. Based on the combination of sustainability and economic returns or impacts business might pursue more than one type of innovation.

The CESD sustainable innovation framework classifies four types of innovation - reactive, incremental, radical and transformative - based on combined scales of business and sustainable benefits.

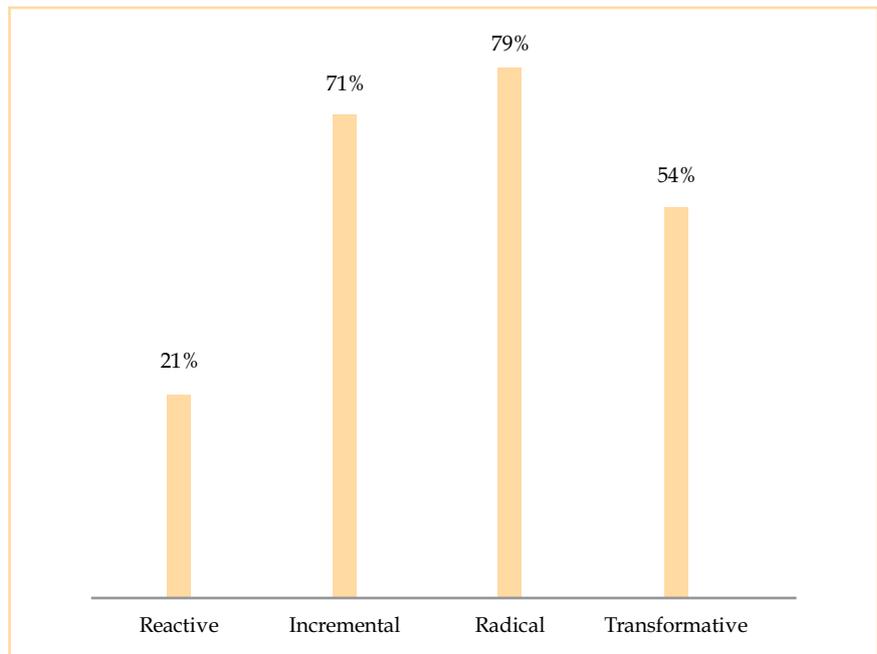
Most companies in India innovate with incremental or radical solutions. In other words, innovations of Indian companies are incremental improvements or changes over existing products or business models that also allow for differentiation.

Characteristics of domestic markets, their needs and demands provide sufficient opportunities to companies to innovate solutions that are radically different from existing offerings. That breaks saturation in certain markets, expands industry attractiveness, induces competition, and increases customer choice.

Four types of sustainable innovation



Most companies conduct radical and incremental innovations



Cummins India is a diesel engine manufacturer located in Pune, western India. Cummins' innovation reflects the four types of innovation from a customer point of view.

1. Current markets or customers or technology: increasing value from current markets and existing technology offerings.
2. New technologies to serve existing customers: New technologies address the next generation needs of the customers. The challenge is to make a shift from environment-driven innovation to customer driven innovation. Their innovation is incremental in nature as it is constantly evolving and developing to address new needs of their existing customers.
3. Existing technology for the new customers: Identifying new customers in new geographies such as the UK and Vietnam.
4. New technology for new customers: This is the most difficult to achieve. Cummins' does that by creating a dialogue between technology creators and marketing or service engineers so they co-own the new initiative. This makes sure that the new innovation caters to customer needs and that customers are involved in product designing and testing.

In a seemingly unrelated area to its popular business, Wipro has invested in radical innovation to create solutions for a market that is unusual for companies in that kind of industry.

Wipro's Assure Health initiative is a platform that integrates medical applications, automated healthcare monitoring with the aim to improve the delivery of healthcare services. Patient monitoring is done through hosted services and mobile apps that integrate medical devices, IT infrastructure and 24/7 customer support. Remote Foetal Monitoring and Cardiac Care are two examples.

Through the foetal monitoring service, recordings of maternal and foetal heart rate and uterine activity from the expectant mother are sent to the mobile device of the concerned physician. This enables urgent and accurate medical care. This service is also used during active labour and delivery.

The other solution is for cardiac patients. Cardiologists can monitor and manage patients with angina, myocardial infarction, post-cardiac procedures like pacemaker and bypass as well as cardiac failures, from anywhere, through their smart mobile devices. It reduces the hassle of continuous follow up visits and helps in proactive management of complications, identifying them and addressing them urgently.

Transformative innovations are increasingly important to Indian companies. Transformative innovations are those that are absolutely new and that have changed the industry or created a new one. There are a reasonable number of companies that produce transformative innovations that are absolutely new and their solutions have changed the industry or created a new one. The Centre believes that conditions in India are characteristic of culture to breed innovation for sustainable development solutions.

Interestingly, transformative innovations happen to come from start-ups and social enterprises. That's because they are more flexible, have higher risk taking capabilities and are driven by certain passion. For incumbents it means that competition is likely from enterprises that do not exist yet.

What drives India to innovate

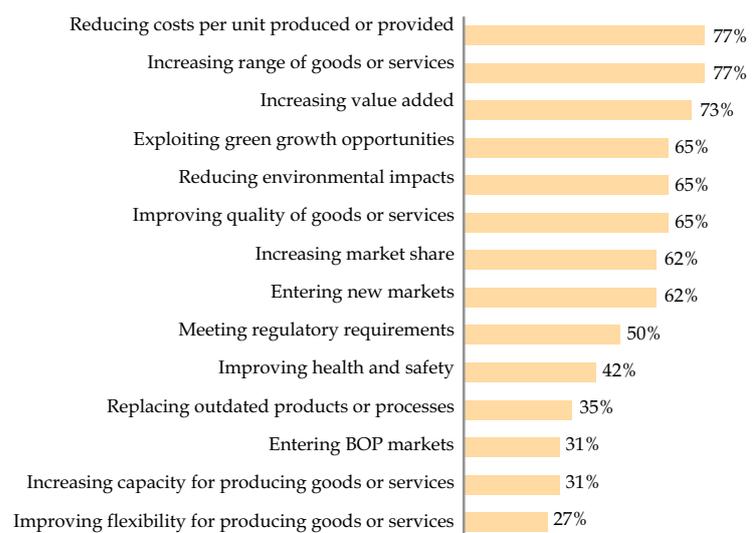
Most important factors to innovate are cost reduction (reducing cost per unit produced or provided), broadening the range of products, and increasing value added. These drivers are not surprising since innovation in a large part is seen as a source for competitiveness to companies.

Many industries in India are only now opening up to new players. Also, as disposable incomes rise and aspirations turn to reality for millions of people, companies find new growth opportunities by broadening the range of products.

Also, more companies in India are moving from trading to processing or exporting finished products, thus increasing value add. Value-add as a driver to innovate will only gain importance as companies in India move up the product value chain.

Companies have also identified exploiting green growth opportunities and reducing environmental impacts as other important factors to innovate. Tightening environmental legislation in India, demand for demonstration of better environmental footprint by international buyers, business risks due to environmental challenges, and creation of new markets for green products, are the four reasons for companies to go green.

Innovation factors that are high on companies' agenda



Wipro’s Eco Energy business is the energy services business division and is independent of the IT outsourcing arm, Wipro Technologies. Eco Energy provides intelligent, sustainable alternatives for energy generation, distribution, consumption and management. Using leading edge analytical tools the company enables its clients to reduce carbon footprint, energy use, recover avoidable energy losses, and replace conventional energy with renewable energy.

There are a gamut of solutions offered for Enterprise Energy Management, utility scale solar plants and green infrastructure. Point solutions like smart grids for energy and utility companies, analytics driven upstream and downstream management of infrastructure for oil and gas companies, optimization solutions for transportation and logistics providers, and use of cloud based shared infrastructure on managed data servers are some of the other IT enablers. The fact being that resource efficiency and dematerialization are core part of nearly all IT projects.

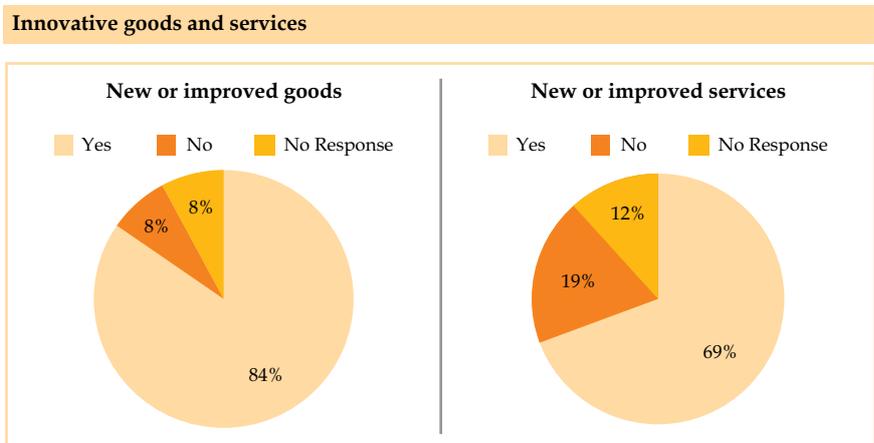
Entering the bottom-of-pyramid markets is still not the most important factor to innovate. This is a surprise because globally India is viewed as one of the largest bottom-of-pyramid markets in the world. Companies mentioned to us three reasons why BOP markets weren’t necessarily important. These are high uncertainty, long gestation period, and lower margins.

How much is process and product innovation

The popular perception is that product innovations are rare in India. It might be true to an extent that India has a long way to go before it gives to the world an entirely new product. But there are other forms of product innovation where India has demonstrated significant success. Product innovation, be it disruptive or incremental, can increase profitability, by either increasing revenues, or by reducing costs.

Tata Motors’ Nano car is perhaps the most visible product innovations from India in the recent years. Identifying a seeming market gap between two-wheelers and then available cheapest car, the company did surprise the world with a safe, fuel efficient, spacious yet compact car.

Most companies have made process innovations, some also have innovated products. Process innovations appear strong with companies in India. One of the biggest reasons for process innovation is resource efficiency and cost reduction.



Tata Group's Computational Research Laboratories (CRL) developed a parallel processing library technology. Thanks to this process innovation, CRL has been able to develop the fourth fastest computer in the world, sustaining a speed of performing 117.9 trillion floating operations per second in 2007.

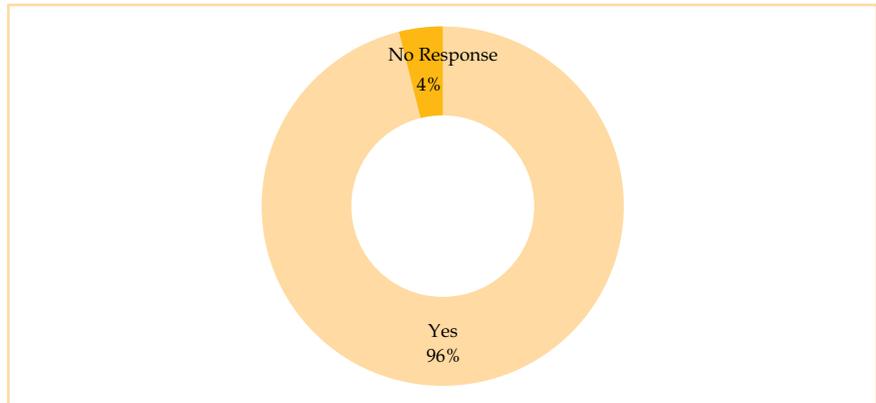
About a third of the respondents claim that their process or product innovations were the first in the world. Though most companies claimed that their product innovations were first in the State or first in India, not as many claimed the same for their process innovations.

Companies usually take at least two years to develop an entirely new product, and between 1-2 years new product variations.

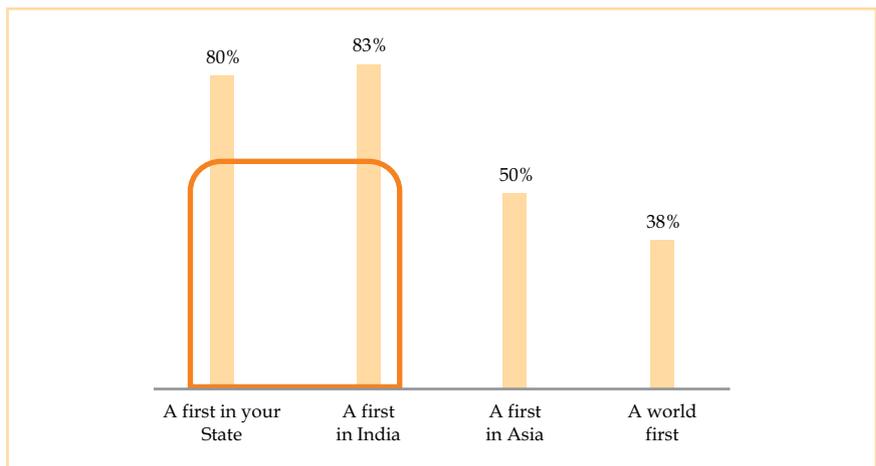
Process innovation will always remain as the most practiced form of innovation. That does not reduce its importance. Companies stand to gain distinct comparative advantage from process innovation and sometimes it can also create new industry standards.

For instance, Henry Ford made an impact on the car industry, not by new technology but by redefining how cars were made. The assembly line was his innovation that changed the future of the car industry forever ever. Similarly Toyota became famous for introducing the ground-breaking "just-in-time" production approach completely changing management philosophy and practices. That came to be known as "Toyota way".

Almost every company introduced new or significantly improved 'processes' for producing or supplying products during last three years



Introduction of innovative 'products'



How important is business model innovation

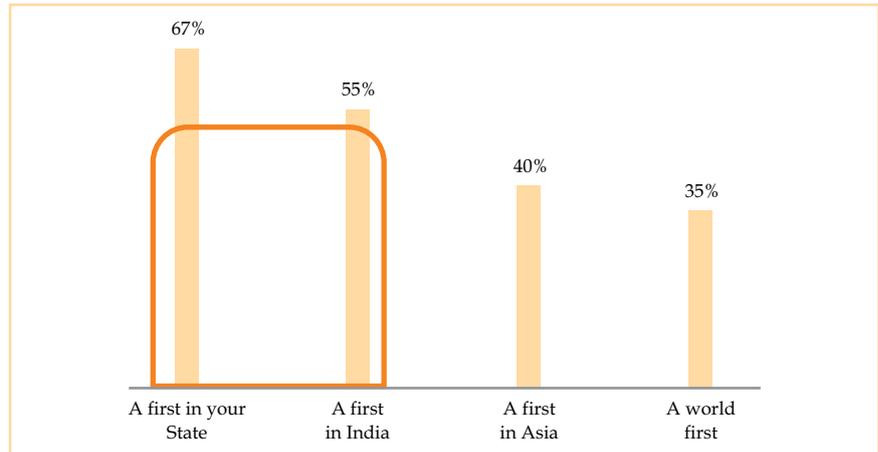
Business model innovation refers to the creation, or reinvention, of a business itself. A business model innovation results in an entirely different type of company that competes not only on the value proposition of its offerings, but aligns its profit formula, resources and processes to enhance that value proposition, capture new market segments and alienate competitors.

Business model innovation looks at disrupting the way things are done and bringing in new approaches that contribute to a business's success.

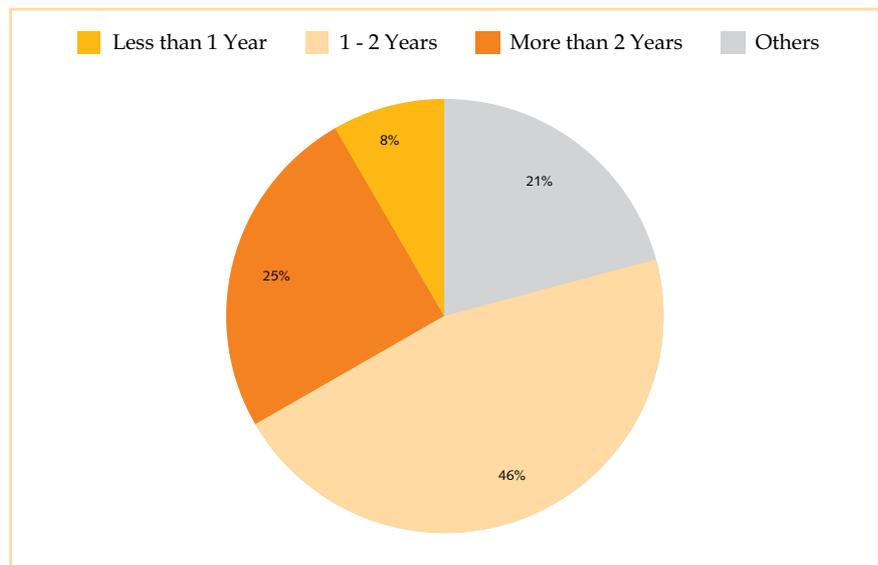
Business model innovation entails relatively lower degrees of difficulty and uncertainty than traditional forms of product innovation and demands neither a new breakthrough technology nor the creation of a brand new market. It delivers existing products based on existing technologies to existing markets. As such it is inherently less risky than product innovation and can be introduced in both small and large companies and in sectors where other types of innovation often fail. It often involves changes that are invisible to the outside world, bringing advantages that are harder to copy and easier to sustain.

Amul is perhaps the first breakthrough innovation in business model in India. Founded in 1946, Amul (Anand Milk-producers Union Limited), the \$1-million brand managed by Gujarat Co-operative Milk Marketing Federation Ltd, is an integrated cooperative structure that processes and markets milk and milk products.

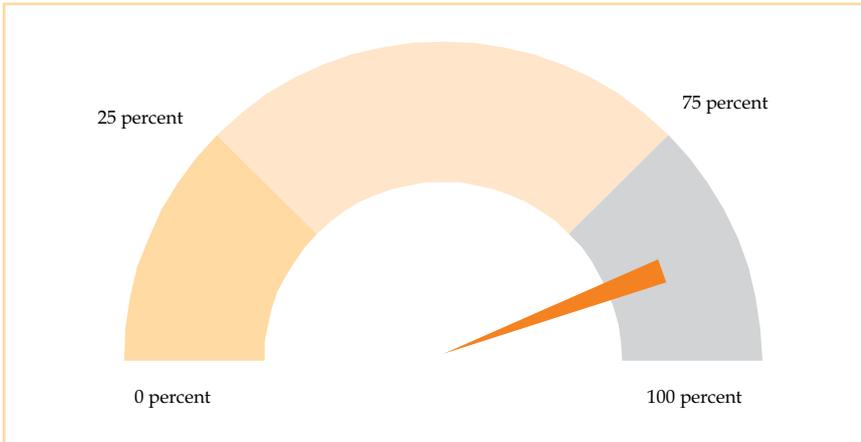
Introduction of innovative 'processes'



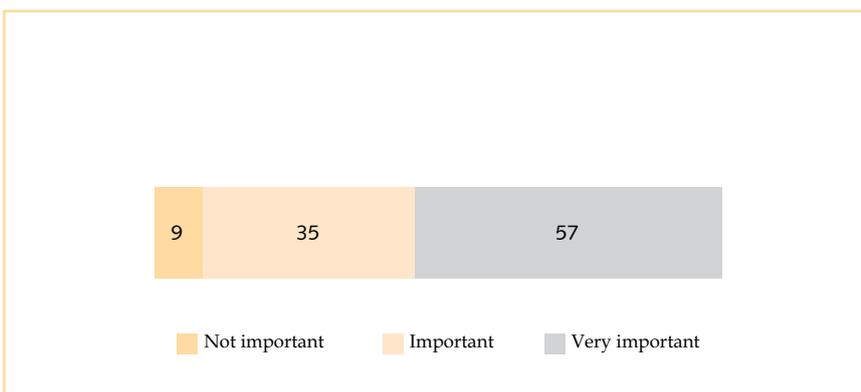
Average time needed to develop a new 'product'



About 90 percent of the respondents have innovated business models



For more than 50 percent respondents, Business Model Innovation (BMI) is 'very important'



Amul is thus jointly owned by more than two million milk producers. This business model innovation has really become unique and efficient model for sustainable rural development, and has made Amul a successful company.

Business model innovation is practiced by most companies. 90 per cent of the respondents claim to have innovated their business model in the last three years.

More than 50 per cent of the respondents consider BMI to be very important to the success of their company, and another 35 per cent consider it to be important.

A popular example of business model innovation is that of ITC's e-choupal. Beginning in 2000, ITC set up a network of ICT kiosks mainly in central India, called e-Choupal (an open meeting place

in a village). The aim was to 'build an intelligent first mile and a low-cost last mile for agricultural products and services'. Every e-Choupal centre is equipped with a computer, Internet connectivity through satellite technology and solar power. It provides access to a web portal with latest agriculture commodity prices at the village level for produce transactions.

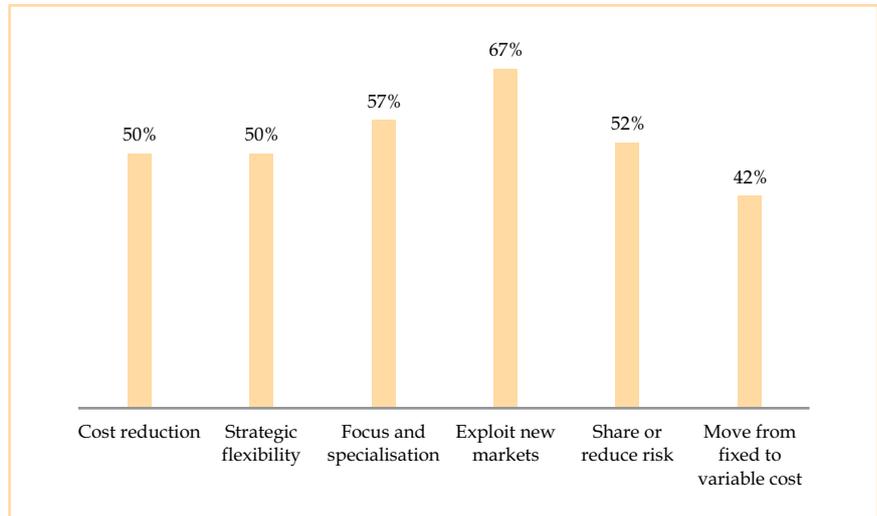
Fast moving consumer goods (FMCGs), banking and insurance services are routed through the ITC channel, while quality retail products are provided at affordable prices with an accent on brand building. Through e-Choupal, procurement hubs and ChoupalSaagars (rural supermarket), information and products are made available in rural areas. The e-Choupal network comprises 24 ChoupalSaagars (rural hypermarkets), which are owned by ITC, and 70 warehousing hubs outsourced through service providers.

According to ITC, it has started to monetise its e-Choupal network, which has 20 million rural consumers according to company estimates (the market-led model reaches four million farmers, each of whom on an average is part of a five-member household). The company is leveraging this captive

base by offering the platform to 160 companies who want to tap rural markets; it is also offering newer services like private healthcare and rural headhunting.

E-Choupal enables ITC to source commodities at a much lower cost than competitors. This is because it buys directly from farmers, which eliminates intermediates and multiple handling, thereby reducing transaction costs. Direct sourcing from farmers has enabled

Most companies (67 percent) engage in BMI to exploit new markets



ITC to preserve the Identity of the commodity. This has allowed ITC to create differentiated premium products like Aashirvaad multi-grain flour. Such benefits give the company room to manage product pricing; and this has enabled it to gain market share.

The main reason for companies to innovate their business models is to exploit new markets. Focus and specialization of business, and strategic flexibility are other reasons for companies to innovate business models.

Perhaps the first business model innovation in solar energy space anywhere in the world can be attributed to Selco India. Selco’s business model is two-pronged. One is to provide customised-to-need solar lighting systems, and two to assist buyers with access to tailored loan and credit packages to purchase solar lighting solution.

Selco is known for redesigning off-the-shelf solar electric components to suit the particular needs of the urban and rural poor. The Selco design process begins with an extensive needs assessment of a particular segment or activity. Whether designing for street vendors, midwives, or rural farmers, Selco creates solutions for the particular needs of its target market. Sometimes this meant redesigning the solar equipment and sometimes this meant restructuring activities so that solar energy could power a client’s needs.

But the success of Selco is not only from being receptive to customer needs. Designing creative financing solutions for its customers is the other key success factor. Capital expense of purchasing solar panels and batteries makes solar technology unaffordable to both the rich and the poor. Selco spent time raising awareness and building capacity of India’s rural banks and microfinance organizations to develop solar lighting financing portfolio. Over time, the company formed partnerships with these institutions to craft financial instruments that allowed entrepreneurs and families to repay the capital expenses associated with installing solar equipment.

In eighteen years of its operations, the value that Selco’s innovations have created goes much beyond the 200,000 households it has illuminated. The benefit is in financial inclusion of these people and the larger policy impact Selco has had in bringing decentralised energy within the energy policy of the Indian government and reaching out to the poor as part of the financial inclusion policy of the RBI.

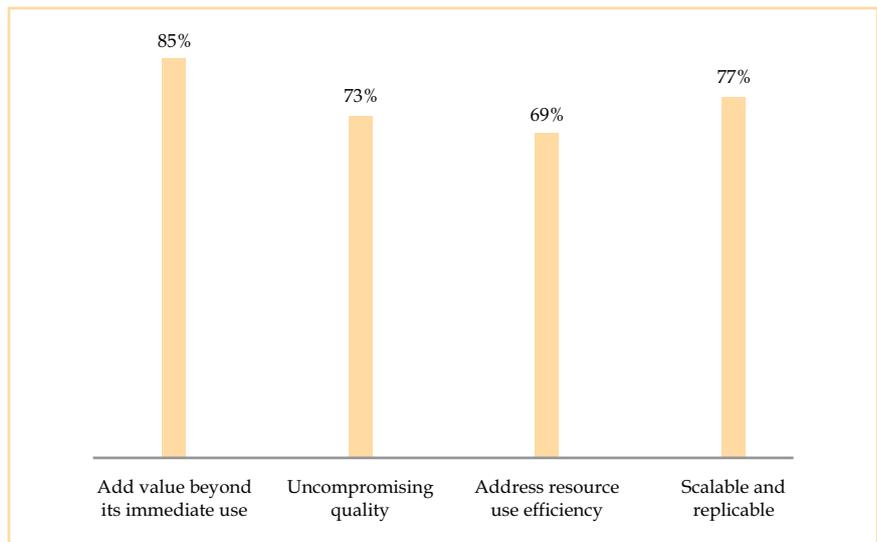
How India SI2s

Sustainable and Inclusive Innovations or SI2 is defined by CESD as innovations in products, process or business models that address economic, social and ecological challenges of the 21st century. In order for an innovation to be SI2, it should have at least one of the four below mentioned characteristics:

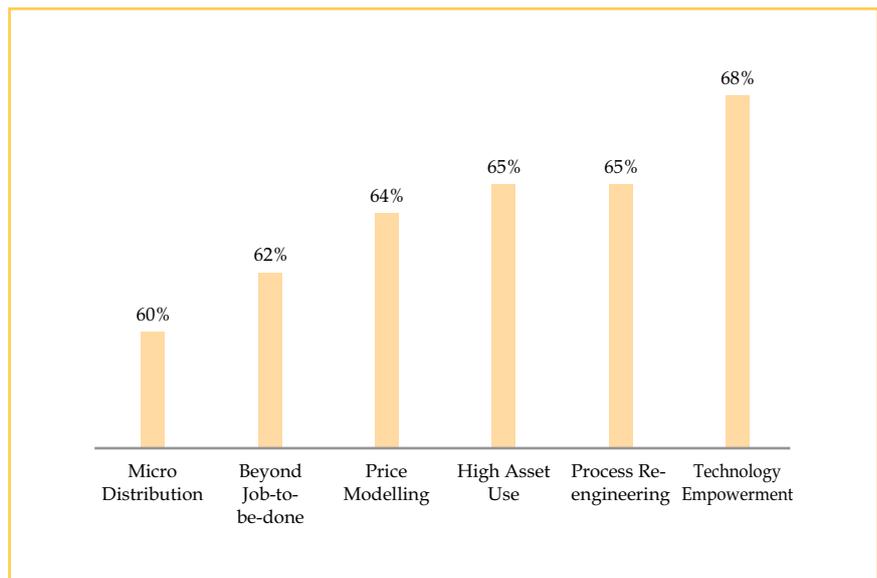
- Add value to the life of people much beyond the immediate use of the product or service
- Create a product or service of an uncompromising quality at a price that is affordable
- Address the challenge of resource use efficiency to manage drastically low cost structures
- Scalable and replicable to suit requirements of local circumstances and complexities

Some 83 per cent of the respondents claim to have innovated goods and services that ‘add value to the life of people much beyond the immediate use of the product’. A comparable number – 75 per cent - claimed that their solutions were both scalable and replicable.

Most of the companies use all the four characteristics of SI2



About 60 per cent of the respondents already utilize the below mentioned SI2 strategies to innovate



Companies utilize the following strategies to innovate as per SI2:

- High Asset Use: High asset use or high throughput is achieved through standardisation in processes, enabling huge cost reduction, uniform quality output and sufficiency to scale and replicate
- Process Re-engineering: Process re-engineering breaks a process into highly efficient sub-parts and creates specialists for each sub-part, thus opening up areas for cost reduction
- Technology Empowerment: One of the best ways of adding value to customer proposition and reducing costs while identifying suitable revenue streams is putting technology into the hands of the user
- Price Modelling: Rethinking price points and breaking these into affordable units can radically increase affordability of a product or service
- Micro Distribution: Engaging community people in the distribution channel increases credibility, accessibility and offers a captive consumer base
- Beyond Job-to-be-done: Providing a product or service acquisition package rather than just the product or service

The use of technology is a key lever for companies to innovate, leading to technology empowerment of the users and beneficiaries. Technology empowerment is one of the key SI2 strategies that companies use. Process-reengineering, high-asset use and price-modelling are other SI2 strategies most widely used by companies.



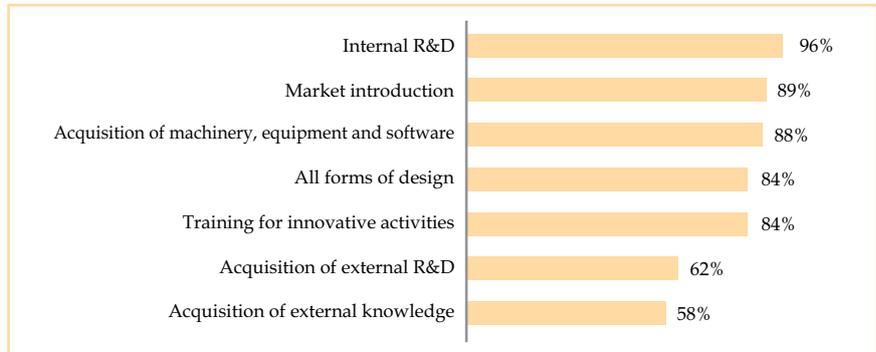
Culture that breeds innovation

Companies are beginning to breed innovation within their organisations. Company-wide innovation campaigns supported by internal marketing efforts, and training and development initiatives are becoming popular.

Innovation is mainly an internal affair for companies in India. Most companies rely on internal R&D. Creative work is undertaken within their business that increases knowledge for developing new and improved goods or services and processes. Just about 50 per cent companies have made acquisition of external R&D.

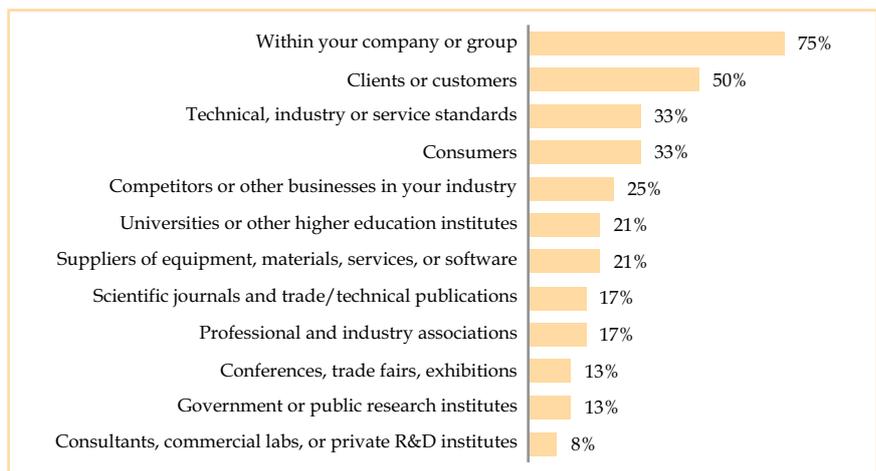
Information for innovation comes from within companies, and clients and customers. Companies prefer to work within businesses within their company or group or clients and customers, over any other stakeholder. There is also a high degree of engagement with government or public research institutions and academia. Suppliers and private research institutions are still not the most preferred partners to innovate with.

Engagement of companies in innovation related activities

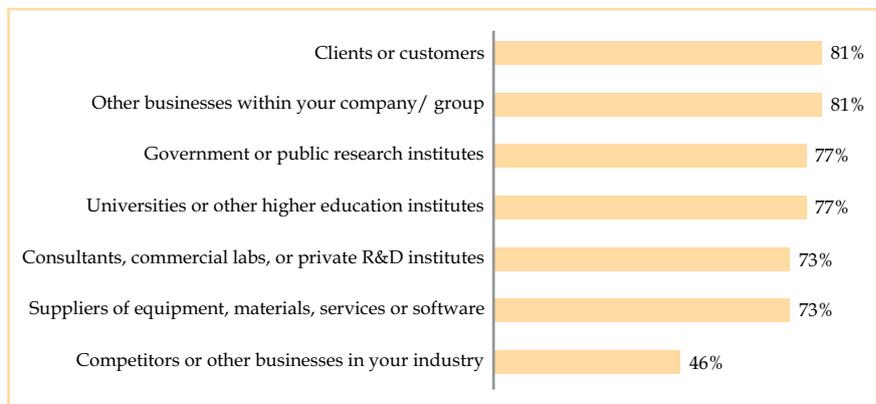


Importance of various factors to companies for innovation

Most of the companies value in-company engagement for innovation related activities than various other options/ alternatives

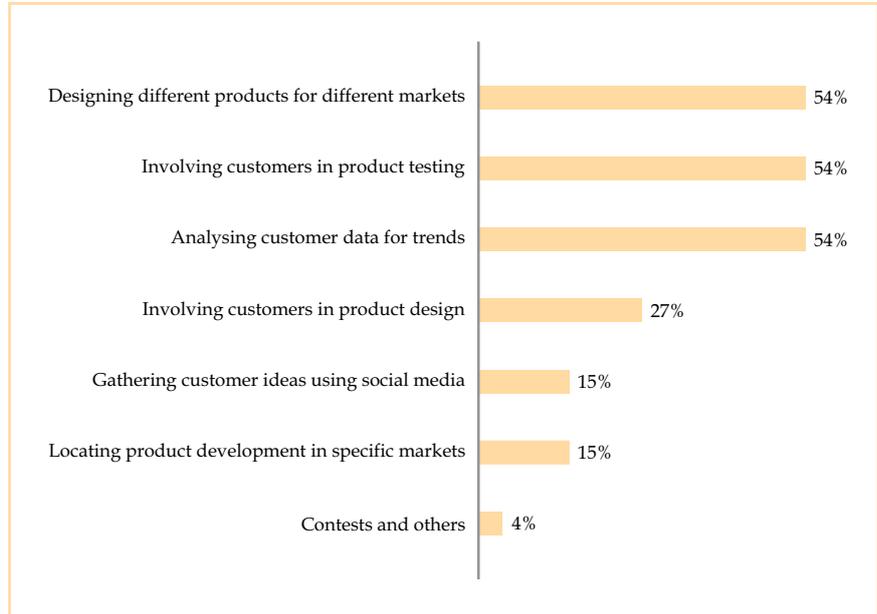


Cooperation of companies with various stakeholders/institutions/ businesses in India



When working with customers on innovation, companies mostly engage with customers to collect feedback via surveys or interviews. Analysing customer data for trends and involving customers in product testing, and designing different products for different markets are other methods of customer-oriented innovation. Working with customers in product design and using social media to gather customer ideas on products are gradually emerging as new methods of engagement.

Measures taken by companies to focus their innovation efforts on the customer



For their jewellery business, Titan Industries developed software which enables customers to make their own design. The customer will key in their preferences and budget, based on which the system recommends several designs. The customer can then customise the jewellery. There is also an option to freeze the design, thus making that particular design unavailable for anybody else.

Tanishq's karatmeter offers an opportunity for the customers to check the purity of their gold jewellery in a non-contact and non-destructive manner. This was one of Titan's first innovations, introduced in 1998. The measurement is fast and accurate. These results are operator independent and different users will get the same result for the same sample jewellery.

Titan Eye Plus introduced an online vision test facility called vision check. The vision test is free of cost and can be availed by customers wherever they are. It includes a general screening test and accurately measures the eyesight power.

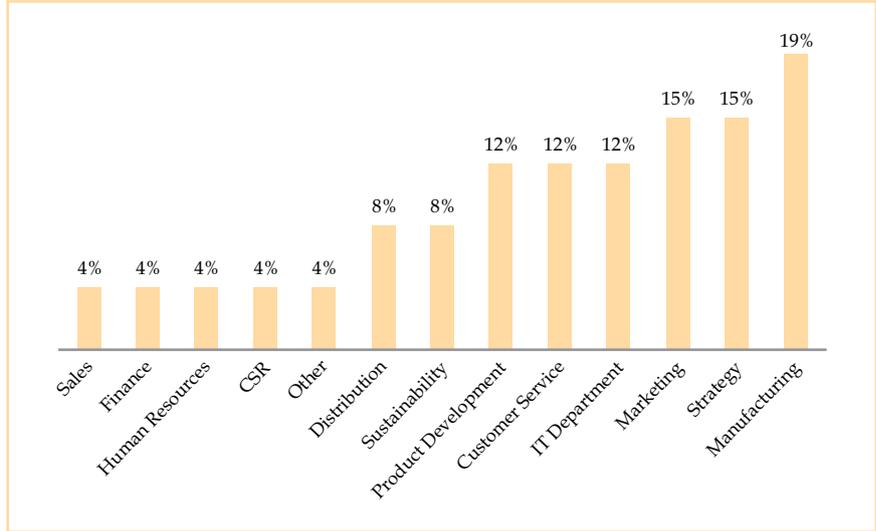
Titan introduced the concept of "Tanishq on Wheels" to break the myth that branded jewellery market does not exist in smaller towns. 65 per cent of its profit was from semi-urban India where the artisans themselves promote the products across towns, where there are no high streets or shopping malls.

R&D, manufacturing, strategy and marketing are the top four business units in a company that are involved in bringing innovative ideas to the market.

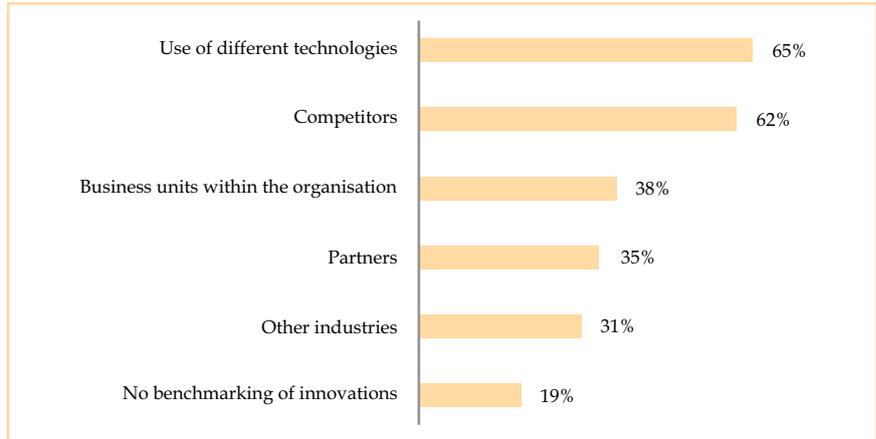
Most companies benchmark their innovation programmes against ‘use of different technologies’, or ‘competitors’.

The crux of Titan’s Innovation strategy is to cross-pollinate and learn from others, both internally and externally. Titan does not believe that there are any bad ideas and no idea is discouraged. Titan Innovation Council is a 15 member council of varying seniority and experience, whose members are from different departments. The purpose of the Council is to enable innovation and seed a culture of innovation at Titan in a systematic way. The Council also helps bring a cross functional view into innovation challenges. Titan Innovation Council has members across all businesses and areas.

Functions in companies that are involved in bringing innovative ideas to market



Benchmarking innovative programmes



Titan has set up an “Innovation School of Management” in its jewellery manufacturing division to train shop-floor employees to spot opportunities for innovation and then make it happen.

Through initiatives like Innovation Bazaar, Titan provides opportunities to inculcate and showcase innovations of the year. These ideas are judged by an eminent Jury. The Bazaar is an opportunity for Titanians to innovate, compete, push the boundaries and learn from one another.

Titan Interweave is another opportunity for Titanians to present their best ideas, but without the pressure of being judged. The sole intention of Interweave is to help separate divisions and departments to interact and pick up new ideas and learning from each other.

In 2008, Titan launched the 'Simplify and automate' initiative to create better and smarter processes. The diamond-bagging automation is a result of this initiative. It does the work of 80 labourers. This automated diamond-bagging system for Tanishq won the Tata InnoVista 2011 award for 'Promising Innovation'. It was developed by precision engineering division. They found that everyone across the globe was doing it manually. With the understanding of how many diamonds are consumed, they created an automatic bagging machine that eliminates manual intervention. This innovation has brought the error margin down to zero, and also created a huge business opportunity for their machine building division.

In 2005, an initiative called Future Shock was undertaken. It encouraged 300 managers in Titan to come out with new ideas and thoughts. These ideas were converted into a plan, and employees could vote for the best ideas along with an external jury. Gold Plus and Eye Plus are a result of this initiative.

Through Tata Innometer, Titan measures its innovation success. It is a tool that is used across the Tata Group to nurture innovation, and ultimately build a culture that encourages new idea generation and implementation

Wipro Innovation Group is the central body that drives innovations across Wipro. They have a team of nearly 500 professionals working on a portfolio of innovation projects in the areas of process improvements, execution excellence, new service lines, business solutions and R&D.

Wipro Eco-Energy Initiative provides greener and cleaner alternatives for energy generation and distribution that helps in managing the carbon footprint. Wipro also provides Energy Management Service with partners in UK and USA. The clients of these energy management services can save energy to a great extent.

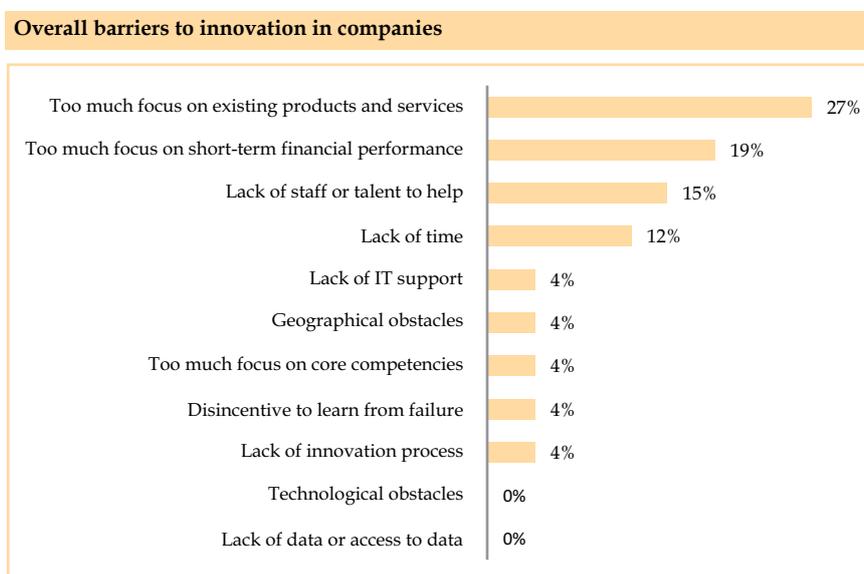
They have a mechanism for internal engagement to capture fresh ideas and solutions. This helps in identifying key issues/areas where innovation is needed. After undergoing a process of analysis, these ideas get filtered and internal R&D work takes place. The kind of approach being undertaken is both top down and bottom up. They believe that creation of an innovation framework and identifying the themes to be worked on is the first step. Generating ideas from employees and validation of those ideas by the customer is next. To encourage employees to come up with innovative ideas, Wipro framed a detailed rewards policy called Pragati. In the last five years, 4000 to 13000 ideas were generated. Each is an idea for incremental innovation.



What ails Indian innovation

Too much focus on existing products is the key internal barrier to innovation. Companies told us that complacency with existing products was the reason for them to not innovate. When companies find their markets threatened by competition then companies scramble to innovate. The other key barrier to innovation is too much focus on short-term financial performance.

High failure rates characterise the process of innovation. That requires risk taking capability of employees and companies. Many companies told us that people act as barriers as there were no or weak mechanisms to address or improve ideas that fail. Also, lack of a systematic approach to innovation makes it difficult to take the ideas to logical conclusion.



The greatest barrier to innovation in Indian companies is the governance culture that does not encourage innovation. Senior executives tend to be judgmental and do not encourage new ideas. Indian organizations are still hierarchical and paternalistic, much more than those in other cultures...change does not have the positive connotation that it should...innovation is still not pervasive.

Innovation in India continues to be plagued by quality shortfall in human capital, investments and infrastructure in research and development.

According to the respondents, there is a missing link between the government, industry, and academia. There has to be collaboration between them for business in India to become more innovative. Most of the ideas in academia are not taken to markets for lack of support, mainly venture funding.

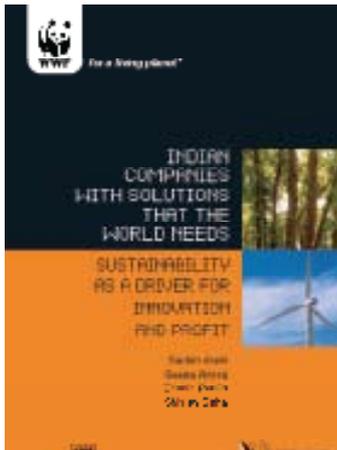
If India does not get its act together on the innovation front, the country could lose the opportunity to make this a century of Indian innovation, tapping into the brilliant technical minds of the region.

Annex

Respondents (in alphabetical order)

1. ABPS Infrastructure Advisory Private Limited
2. Ashok Leyland Limited
3. Bharat Heavy Electricals Limited
4. Bhoruka Power Corporation Limited
5. Biodiversity Conservation of India Limited
6. Britannia Industries Limited
7. Catalyst Management Services (P) Limited
8. Cummins India
9. HCC Limited
10. Himachal Wire Industries (P) Limited
11. ITC Limited
12. Lafarge India (P) Limited
13. Larsen & Toubro Limited
14. Minda Industries Limited
15. Motilal Dulichand (P) Limited
16. Nucleonix Systems (P) Limited
17. Om Industries (P) Limited
18. Ossian Agro Automation Private Limited
19. Paharpur Business Centre
20. Selco Solar Light (P) Limited
21. Tata Chemicals Limited
22. Tata Power Company Limited
23. Thermax Limited
24. Titan Industries Limited
25. Wipro Limited
26. Yes Bank

Recommended Readings



Indian Companies with Solutions that the World Needs, 2008

This report is an attempt to explore how companies can use sustainability as a driver for profit and innovation. It is the fruit of a global conservation organization, WWF, working together with one of India's leading industry associations, CII, to seek solutions to one of the most important challenges of our time. This report provides examples from Indian companies that can be used both by industry and governments to make strategic decisions from an economic, social and environmental perspective.



Sustainable & Inclusive Innovation, 2010

This report provides insight into how innovations in products, services and processes are creating new businesses and industry structures. It provides a framework of strategies required to make these innovations work. The report is based on extensive research into many sustainable and inclusive innovations around the world, with a particular focus on India, which is the global hub of approaches and an especially fertile source of lessons about performance.



Excellence in Sustainable Business, 2010

This report, based on the winners of CII-ITC Sustainability Awards, discusses how embedding principles of sustainability can strengthen the connection between corporate responsibility and competitiveness. The Sustainable Business Excellence Model developed by the CII-ITC Centre of Excellence for Sustainable Development has helped companies assess their sustainability performance and disseminate best practices among future-minded corporations. As more companies go through the rigours of the Awards assessment process, both internal learning and external credibility have become a source of competitive parity.



Confederation of Indian Industry



CII-ITC Centre of Excellence
for Sustainable Development

CII-ITC Centre of Excellence for Sustainable Development

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, 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 118 years ago, India's premier business association has over 7100 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 90,000 enterprises from around 257 national and regional sectoral industry bodies.

A pioneering effort by CII, the CII-ITC Centre of Excellence for Sustainable Development is an institution that creates a conducive, enabling climate for Indian businesses to pursue sustainability goals. It creates awareness, promotes thought leadership, and builds capacity to achieve sustainability across a broad spectrum of issues. The Centre is the fountainhead of ideas and practices to promote sustainability. It enables Indian businesses become sustainable, and channels the potential of Indian industry to power India's agenda for inclusive growth and sustainable development.

www.sustainabledevelopment.in



Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)

Working efficiently, effectively and in a spirit of partnership, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH supports people and societies in developing, transition and industrialised countries in shaping their own futures and improving living conditions. Established on 1 January 2011, it brings together under one roof the longstanding expertise of the Deutscher Entwicklungsdienst (DED) gGmbH (German Development Service), the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH and InWent – Capacity Building International, Germany. As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development. In India, GIZ works in the field of Sustainable Economic Development, Energy and Environment.

www.giz.de/en