

## ***Innovation as a Panacea for Sustainable Solutions in a Global Economy***

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### **Abstract**

Good innovation turns good ideas into good business. Turning tacit knowledge into leading innovation requires both visionary leadership and entrepreneurial management. This article lays emphasis on the need for understanding innovation as it is a complex phenomenon with a wide range of perspectives involved it also highlights the problems and challenges of innovation. Despite efforts to innovate, without a sufficient understanding of innovation, organizations risk missing high value opportunities and developing new products and services that end up underperforming in the market or not going to market at all. The end result is an insufficient return on creative and entrepreneurial effort.

Organizations need to make room for exploration and experimentation to grab new opportunities, and also need to be aware of the technological and business challenges associated with the new opportunities. They also need to be well equipped to recognize and manage the organizational issues involved and guide their organizations through the crucial transition from the front end to the back end of innovation.

A new technology is not enough. There must also be a clear business benefit as well as sufficient customer and end user value created. The article also attempts to inspire professionals to innovate and come up with sustainable solutions for the emerging problems and tries to provide a benchmark for innovative performances.

### **Introduction**

Innovation is defined as the process by which an idea or invention is translated into a good or service for which people pay. It involves “the creation and implementation of something new”. Turning tacit knowledge into leading innovation requires both visionary leadership and entrepreneurial management. Performance factors in the front end of innovation are different from those in the later stages of actual product and service development. Established organizations need to make room for exploration and experimentation to grab new opportunities, while continuing to execute well in their current business. Managers need to be aware of the technological and business challenges associated with new opportunities and be able to analyze and address these. They also need to be well equipped to recognize and manage the organizational issues involved and guide their organizations through the crucial transition from the front end to the back end of innovation.

Good innovation turns good ideas into good business. A new technology is not enough. There must also be a clear business benefit as well as sufficient customer and end user value created. The evaluation of ideas and valuation of projects are crucial to innovation success. The difference between a well chosen and well executed approach and one that is just chosen and executed can be significant with respect to business outcomes and the overall return on effort. The objective of this article is to give an overview of present-day thinking, review key concepts and proven practices and highlight problems and challenges of innovation. It lays emphasis on the need for understanding innovation as innovation is a complex phenomenon with a wide range of perspectives involved. Despite efforts to

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innovate, without a sufficient understanding of innovation, organizations risk missing high value opportunities and developing new products and services that end up underperforming in the market or not going to market at all. The end result is an insufficient return on creative and entrepreneurial effort.

The article also attempts to inspire professionals to innovate and come up with sustainable solutions for the emerging problems and tries to provide a benchmark for innovation performance.

Classical age old definition of innovation is very interesting indeed – as innovation is defined as the process by which an idea or invention is translated into a good or service for which people will pay. We are also told that innovation arises out of sheer necessity, survival instincts or economic opportunities. Can we examine the validity of this definition for the current times and more so, its applicability for a highly heterogeneous society like ours with diverse cultures, religions, social strata and income levels?

Do we ascribe innovation only to what is experimented in the labs or are we open to any new idea that has the potential to solve grassroots' problems and improve the living standards of the millions? Some say that the quest ought to be the result of a perennial need to come up with affordable and cheaper options. Some others have come up with models varying from frugal innovation to disruptive thinking.

Innovations today or rather continuous innovations have become as important to modern business organizations as oxygen to the sustenance of human beings. In business, innovation often results from the application of a scientific or technical idea in decreasing the gap between needs or expectations of the customers and the performance of a company's products. When we look around, we see that most innovations in IT have come from start-ups. This is because start-ups work within tight constraints of time, capital, money, people and resources to create innovations at a rapid speed. In a social context, innovation can play a part in devising new collaborative methods such as alliance creation, joint venturing, flexible working hours and in creating buyers' purchasing power.

#### **Upcoming Global Trends in Innovation**

What are the global trends in innovation that we see? Interestingly it has been noticed that the two most frequently used words by US professionals connected to LINKEDIN - An internet platform linking the community of professionals - have been

'INNOVATION' and 'EXTENSIVE EXPERIENCE', while Indian professionals used the word 'DYNAMIC'.

Much of the competitive advantage and wealth of the U.S. is attributed to its mega as well as micro level innovations over the last two centuries. Besides individual initiatives, institutional systems are playing a signal role in continuous innovations. Academia, industry and the government work in close unison to encourage and nurture innovation in different fields. The hunger for innovation is well institutionalized, paying rich dividends to them over the years.

Nearer home, many Asian economies like Japan, Korea and Taiwan have made global benchmarks in diverse fields like automobiles, consumer electronics, computer systems etc through relentless pursuit of innovations in product range and setting up chain of service centers around the globe. In countries like Brazil and Kenya, mobile companies have helped deeper penetration of banking and financial services to the vast sections of their populace in their hinterlands through innovative methods and business practices. The sheer aspirations of societies in many developing economies are fuelling this spirit of innovation, like never before.

Coming to India, innovation in our country used to be for long largely about developing products for personal consumption and cheaper no-frills versions of existing devices. Many were developed only to be shipped to global markets. They were hardly targeted at domestic consumers. However, we see a mega reversal of this trend in the last few years.

India has already established itself as a major player in the global market by drawing upon an educated, English-speaking labor force (the largest English-speaking, scientific labor population in the world) that has been available at a low wage. Today, led by the country's technological capabilities and buoyed by the burgeoning middle class, companies across sectors such as white goods, mobile handsets and services like healthcare and telecom are rolling out innovations. The big change is that the products are targeted at the domestic consumers. Tata's Nano and Adarsh tablets are the shining examples of this new trend. Another positive trend is the increasing focus on the rural and underpenetrated segment of rural and semi-urban markets, where healthcare companies are introducing devices ranging from low cost labs and knee implants to screening and ultrasound devices. Many other innovations are spearheaded by business houses. Some of them include:

- Arvind Eyecare's cataract category priced at a low of \$30.
- Narayana Hirudayalaya's heart bypass surgery priced at \$2000.
- Affordable mobile tariff plans like 1p/sec launched by telcos.
- Godrej's Chotukool, a cooling solution at nearly half the cost of an entry-level refrigerator.
- Robocook, an automated food machine developed in rural Bihar.

Many innovations unleashed by India's banking and financial sector in the last two decades in particular include- any time banking through Core Banking, e-banking and a vast network of ATMs, a wide variety of financial products, new delivery models for retail loans, alliances for home loans, extended banking hours. Differentiated products in life and general insurance, vast array of schemes in mutual funds are other innovations. Yet, the stark reality is that as much as half of our households do not still have access to the most basic banking and financial services. What are the innovations that we can think of to usher in financial inclusion on a sustainable basis? Many believe that road to achieving inclusive growth is through financial inclusion.

One style of innovation that really works in a country as large and diverse as ours is grassroot innovation that is quintessentially Indian. The indigenous innovations come from two sources:

- Farmers, illiterates, semi-literates, slum-dwellers who have managed to change things by marrying their own innate genius to their inherent understanding of ground conditions and
- Innovations taken from more traditional sources such as universities and independent engineers.

Some of the examples of indigenous innovations include:

- The innovation by a city dweller from Ahmedabad who has developed a stove that uses both kerosene and electricity. It saves 70 per cent on fuel compared with conventional stoves running on LPG. 'No smell, no smoke and it burns like LPG.'

- A solar water harvester conceived by a city dweller from Chennai uses solar energy to convert non-potable water into potable water.
- A 70-year-old farmer from Belgaum district developed a low-cost drip irrigation system to fight water crisis in his village. He improved upon his innovation and turned it into a mega sprinkler.
- A manual milking device - J S Milker - is another innovation that has found acceptance in the rural areas. J S Milker is a simple vacuum driven portable machine, which can be used to milk cows effortlessly. It is planning to market it in Gujarat, where there are several milk co-operatives.
- A farmer in Gujarat could not afford to buy a tractor, so he created an Enfield diesel motorcycle with a difference: by removing the back wheel and replacing it with a spiked cylinder. His motorcycle now doubles as a tractor.

The grassroots ingenuity has potential beyond imagination.

Today we talk of "Reverse Innovations" an idea propounded by Mr. Govindrajian and Mr. Chris Trimble (2012), which means Innovating products in poor countries and bringing those products to rich countries. After all five billion people live in poor countries. They represent huge customer base.

But, who is making sure that these innovations see the light of the day and help these innovators shed their cloak of obscurity? How are we institutionalising innovation in India? Yeoman work is being done in this direction by the National Innovation Foundation, set up initially under Dr Mashelkar. This foundation is building a national register of grassroots innovation and traditional knowledge. It has set up a micro-venture innovation fund for individuals who have no bank accounts and who cannot produce any balance sheet and yet have innovations that warrant investment of risk capital. NIF has also set up a national innovation competition, for which the winners have included an eighth standard dropout, who developed a complex robot and the farmer who developed a unique cardamom variety.

Some other positive developments are also providing a fillip to our quest for innovation. Our academic

institutions have many accomplishments of which we can be rightly proud. Some Academia-Industry alliances have re-written Indian scientific history.

- 50 of our 250-odd universities are active in academia-business liaisons. The interaction between academia and business takes many forms - new start-up companies by academics, consultancies, joint ventures between commercial and academic organizations
- The CSIR has launched 'the largest post-Independence knowledge network,' the Rs 250-crore, five-year New Millennium Indian Technology Leadership Initiative. It aims at bringing together industry and academia to focus on innovation in 14 niche areas, including nanotechnology, climate modeling and fuel cell power. The idea is to make India a world leader in these areas.
- IISC has about 400 collaborations, its partners ranging from Cadila (pharma) to HFCL (telecom).
- IIT-Delhi campus hosts labs for, among others, IBM, Tata Infotech, Motorola.
- Scientists from Guru Nanak University, Amritsar provide quality control consultancy to textile and agro-based units, including food giant Nestle.

But the question arises that have all these made any real difference at the ground level? Let us have a reality check on the functioning of our systems for the larger sections of our people, as we still have a distressingly large percentage of the world's poorest people living here. The gap between urban India and rural India remains wide. Income inequalities continue to rise.

Many issues of governance, justice administration and working of the delivery systems etc continue to haunt our poorer and deprived sections. They are much more impacted at ground level by these issues than the relatively advantaged sections. Their concerns centre mainly around delivery of the most basic services like sanitation and supply of clean drinking water, access to primary health care services, education services at primary and secondary level in particular, assured supply of water to their farms, supply of seeds and fertilizers etc.

Our public service is still saddled with old methods and processes. We have hardly had any worthwhile

innovation by way of improving these processes, which directly impact the day to day lives of the citizens. Even for setting up and running a business, India is not considered conducive enough, as per a global level study. The dire need is to accord value to any innovative ideas at both organizational and individual levels and create a facilitative climate for working on them.

Can we exercise our collective minds to find creative solutions for many of these issues?

Broader question remains: are we an innovation society? Do we really value new ideas, new products, new methods and approaches or are we merely satisfied with some sort of imitation with a few glitches added? How is it that blessed as we are with millions of scientists and engineers, we are yet to be acknowledged let alone be recognized as a global leader in innovation? A well known venture capitalist based in US once said: "Indians by and large lack the innovation and entrepreneurship skills to bolt on to talent and technology to make cutting edge products themselves. No doubt, Indians are hard working but is that enough? The sacrifice and hunger are not there."

To address the potential role of innovations both technological and organizational some questions may need candid exploration:

- What have been the essential ingredients of our success, aside from the two rather obvious ones: i.e., a large pool of educated people with excellent English language skills, plus their availability at salaries that are very low by international standards?
- In what ways will the businesses need to change to move from their present status as suppliers of low-value-added services to suppliers of higher-value-added services?
- What is the best strategy for acquiring the necessary skills for upgrading?
- What, in particular, are the implications for changes in higher education, technical training and research?
- What are the small steps that people like Non-Resident Indians, Indian industrialists and some open-minded politicians can take?
- What really are the bottlenecks? Where are the key gaps in our innovation infrastructure that we need to fill in and how should we go about doing so?

- Where can we best focus our attention to get measurable forms of success in the short term, while relentlessly moving forward towards the long term?
- How do we create an earth-shaking innovation every few years?

In developing economies like India, the focus of innovations has necessarily to be on facilitating the process of inclusive growth. This alone will create larger consumption, bigger markets and eventually spur GDP growth, besides creating an equitable society. India in particular requires innovations in financial sector to reach out to the poorest of the poor and in the field of health care to provide sustainable human development. Large systems require innovative products and also creative processes to impact the system. Therefore, the key to bring innovation into the central nervous system of the organisation is through the process of Human Resource Development. India is credited with its technological prowess and creative use of technology for solving our multipronged problems is our biggest challenge.

What we need is a new attitude, a new mindset towards innovation – anything new, anything different, anything unchartered. Not merely products or services, but new methods, new processes, new systems that can contribute to making a positive difference in the delivery of services to the disadvantaged sections of our society. Probably we need to pay much more attention to planting innovative culture in our children right at the school level.

In aiming for innovation, we have to surround ourselves with those who think differently than us – those who think laterally, think out of the box and who challenge existing assumptions and dare to tread a new path. Doing so will allow us more perspectives than possibly what we are capable of and will lead us to the path of innovation.

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