

Innovation Management: Value Addition in Growth of Indian Manufacturing Companies

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Abstract

Innovation is a part-and-parcel of every business sector supplementing the growth of Indian economy. Increasing innovation trend has led companies to pay heed to leading-edge practices in organizational set-up. This research paper aspire to identify factors driving innovation in diverse sectors, articulates materiality of innovation management for deep-rooted endurance of companies in the target market and pinpoint different types of innovations catered by Indian Companies in unfamiliar sectors. The paper takes into account case studies of 3 Indian firms-HUL, TCS and Sun pharmaceuticals, who have been in Forbes list of 100 most innovating companies. Major innovative strategies, tools and techniques have been figured out proving them to be in innovative list of companies. HUL targets at open innovation and product innovation, converting science into new products. TCS thrives at innovative forums and co-innovation network. Sun Pharmaceuticals Company flourishes as a leading Indian drug firm through novel drug delivery technologies.

Keywords: Innovation management, Product Innovation, Process innovation, Indian companies.

Introduction

Innovation can create value in many ways. Generically, it is defined as a novel contribution that produces value. This novel contribution can be from top to bottom, bottom to top, inside organization or from outside the organization. Innovation and creativity are interconnected as former deals with doing new things and latter is thinking for new things. Innovative strategies may vary from one business firm to another business organization. India may not be famous for innovation unlike other countries like USA, UK, Canada, and Germany but it is the need of the hour for Indian companies to bring change in manufacturing processes and provide innovative products. The new methods of Manufacturing reduces cycle time of production process. Innovation has become a mandate for the long term survival of companies, which in turn would help in growth of Indian manufacturing companies.

Broadly, there are three drivers of innovation- problems, constraints, opportunities for every company irrespective

of different sectors, which they cater to, for overall growth of economy. Problem driven innovation identify pitfalls in existing practices and provide a solution with improved and peculiar practices e.g. sustainability problem resolved through electronic signatures instead of physical signatures in routine administrative processes. Constraint-driven innovation encompasses managing challenges in pre-defined operative limits for instance macro level factors creating boundaries beyond which organization can't maneuver activities. Opportunity-driven innovation stimulates innovative capabilities of a company. It emerges not out of necessity but as a result of possibility. Indian companies don't innovate due to scarcity of innovative set-ups, cut-throat competition from international market, lack of investment in research and development activities and lack of human capital. The innovative strategy which Steve Jobs (Apple) have used for its different product range might not be suitable for other companies who wish to ignite new products, new processes, new technology.

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Innovation Management

Innovative management is an ongoing process of managing innovation in an organization through innovation cycle stages. The innovation cycle showcases nine stages through which a product, service, process or organization has to withstand for different innovative strategies.

Table I-Innovation Cycle Stages

Stage	Description	Activity
1	Ideas	Identify a market opportunity
2	Resources	Organize people, finance and facilities to match the goals of the organization.
3	Investigate	Research the possibilities
4	Patent	Protect the intellectual property
5	Design	Model and test it for users
6	Develop	Improve the technology
7	Make	Start production
8	Sell	Advertise and inform people
9	Service	Communicate with the customers

Source: Australian Academy of Technology, Sciences and Engineering

Types of Innovation

According to Gary P. Pisano, there can be two parameters of innovation- Technical competence & Business Model with which four types of innovation emerge out. The following matrix include four quadrants.

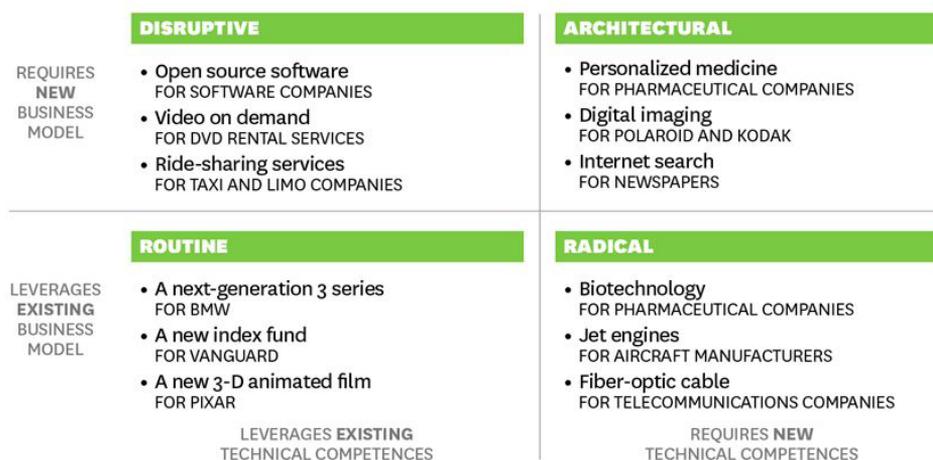


Figure 1 Innovation Matrix

Source: Gary P. Pisano from “You need an innovation strategy” June (2015), Harvard Business Review

In the above matrix, there are four types of innovations:-

- **Disruptive Innovation:-** In the beginning of 1995, Clayton M. Christensen, Harvard Professor, coined and defined this innovation in his book “The Innovator’s Dilemma”. This innovation has proved to be an effective tool for innovation driven companies. It is an innovation which creates a new market and new value network and disrupts the existing market and value network. This type of innovation fabricates huge new market and eliminates existing industry there by providing easy access, more affordability to potential customers. Classic example of disruptive innovation is personal computer revolution.
- **Routine Innovation:-** This type of innovation is applicable to all organizations. Routine innovation is short sighted i.e. myopic in nature. This innovation leverages existing business models by utilizing existing technical competence (Gary P. Pisano, 2015). Few of the organizations such as Microsoft and Intel have implemented this in their products and services.
- **Architectural Innovation:-** As per Anderson and Clark, “the essence of an architectural innovation is the configuration of an established system to link together existing components in a new way”. This innovation is suitable and designed for existing core design concepts in new architecture. The Sony Walkman is a classic example of architectural innovation. Another example includes Apple’s iTunes/ iPhone ecosystem.
- **Radical Innovation:-** Radical innovation is known as incremental innovation. This type of innovation is a process of on-going and gradual improvements. This innovation is technology driven and focuses on leveraging existing business models which requires new technical competencies. Few examples in this category are-Digital photography, Biotechnology for pharmaceutical companies, Jet Engines for Aircraft Manufacturers.
- **Open Innovation:-** According to Henry Chesbrough, “Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation. It encourages companies to acquire outside sources of innovation in order to improve product lines and shorten the time it takes to bring products to market.”
- **Closed Innovation:-** Closed innovation is paradoxical to open innovation. As per Chesbrough (2003) six principles governing open innovation and closed innovation are described below.

Table II - Principles of closed innovation and open innovation

Closed innovation	Open innovation
1. Only Smart people work in organization.	1. Not all the smart people work in organization.
2. R&D profitable through discovering, developing and managing supply ourselves.	2. Value Creation possible through External R&D
3. First-mover advantage in market through discovering first.	3. Value Creation through Internal R &D.
4 To be superior from rivals, organization need to commercialize first.	4. Involvement in basic research essential to get benefit, even though discovery may not be ours.
5. Win-win situation, if we have unique and best ideas in industry.	5. Win-win situation possible through advanced use of external and internal ideas.
6. Strong innovation process does not let our rivals profit from our innovative ideas.	6. Combination of purchase of external innovation and sale of internal innovation can be more economical for optimizing results.

Source:- Based on Chesbrough (2003)

Companies have to check feasibility whether to improve the existing business model with new technical competencies or introduce a new business model with technical competencies keeping into account types of innovation. Lundvall (1992) embraces categories of innovation as product innovation, process innovation, organizational and market innovation. The product innovation may be in the form of innovative good, innovative service (service delivery through one quick click on mobile applications) and innovative idea. The process innovation deals with innovation in technology and infrastructure e.g. six-sigma implementation for quality improvement. Organization innovation includes changes in marketing, purchases, sales, administration, management and personnel policies. Market innovation encompasses developing new geographical areas and entering new market segments. To summarize, innovation has many dimensions and forms with respect to varied companies falling into Telecom sector, Banking and Insurance sector, FMCG sector, IT sector, manufacturing sector.

According to Forbes' list of 100 most innovative companies, three Indian companies have made to this list-Hindustan Unilever (HUL) is at 41st position, which is one of the most reputed fast moving consumer goods company, Tata Consultancy Services (TCS) at 64th spot, which is the largest Information Technology Company & Sun Pharmaceutical Industry Ltd. at 71st position, which is the largest drug company of India. To be among the list of Forbes, a company needs to have seven years of financial data and \$10 billion market. Only those firms are included in the list that are known to invest in innovation. These companies have marked their growth in innovation in all the aspects.

Company Profiles

Hindustan Unilever Company Ltd:- HUL is a subsidiary of Unilever, UK based company - world's leading suppliers of fast moving consumer goods industry which accounts for 67.25% share holding in HUL.

Tata Consultancy Services Ltd:- TCS is one of the most prominent and global leader in IT services, providing digital and business solutions and partners with its clients to simplify, strengthen and transform their businesses. TCS provide solutions in diversified areas such as- Assurance services, Business Process services, Eco-sustainability services, Enterprise security and risk management, IT infrastructure services, Supply Chain Management, Engineering and Industrial Services, Consulting and Digital enterprise.

Sun Pharmaceutical Company's Profile:- Sun Pharmaceutical Industries is India's top most pharmaceutical

company and world's fifth largest specialty generic pharmaceutical company. The company is into manufacturing Active pharmaceutical ingredients (API) and deals with manufacturing of product in various therapy areas such as-cardiology, Diabetes and Metabolic disorders, Oncology, Gastroenterology, Ophthalmology, Gynecological, Allergy, Asthma and Inflammation, CNS (Central Nervous System) orders.

Literature Review

Various conceptual, exploratory and empirical studies focused on contra distinct areas of innovation management in different types of innovation across many countries globally. Sanghoon (2002) reviewed various studies creating a link between competition, innovation and productivity in the long run. This paper attempted to focus on competition and efficiency in diverse sectors like e-commerce, education and health care, analyzed interactions between product and factor market competition and helped in measuring gains from product innovations. Baines et.al (2009) focused on establishing a framework of operations principles, structures and processes that guide the manufacturing firms to configure their production process in the delivery of product centric servitized offering. This paper captured various key features of operation process comparing the purely product organizations (production operations) and purely service organizations (services operations). Baldwin and Hippel (2009) assessed the economic viability of innovation by producers with paradigm shift in innovation research, policy-making and practice. It concluded that both innovation by individual users and collaborative innovation has displaced producer innovation. Bergfors and Larsson (2009) established new development in product and process innovation in the process industry. This paper puts forward the link between strategic innovation determinants and the organizational configuration of Research and Development. Rayna and Striukova (2009) emphasized and investigated relationship between radical innovation, incremental innovation and market dominance by taking into account four products of Apple Company, out of which two referred to radical innovation and other two supported incremental innovation. The paper examined critical determinants for companies who are first-movers and face a disadvantage as compared to followers. Camison and Lopez (2010) analyzed the mediating role of innovation by establishing relationship of manufacturing flexibility and firm performance. This paper stimulated the effect on organizational performance by establishing a flexible manufacturing system with the help of incorporating product, process and organizational innovation in business firms. West and Bogers (2013) emphasized on how external innovation

creates value rather than how firms capture value from those innovations. This paper has taken into account the elements of inbound open innovation process model.

Need and objectives of study

Many researchers conducted studies focusing on innovative methods, practices, tools and techniques with reference to Multinational Corporations (MNCs) having origin in different countries across the globe. Relatively few Indian companies have been scrutinized for engaging in innovation management. The key objectives of this research paper are as follows-

- ❖ To discover various factors which drives innovations in Indian companies in diverse sectors.
- ❖ To emphasize importance of innovative ideas, processes, products, services, technology, market for long-term survival of Indian companies.
- ❖ To identify types of innovation adopted by different Indian Manufacturing Companies.

Data Sources and Methodology

The methodology adopted in this research paper is case study based. This paper takes into account profiles of three Indian firms falling in three different sectors -FMCG Industry, IT Sector and Pharmaceutical Industry. Various innovative strategies adopted by these companies have been figured out. The data of 3 companies-Hindustan Unilever (HUL), Tata Consultancy Services (TCS) and Sun Pharmaceutical Ltd, collected through various secondary resources such as company sites, newspaper articles, blogs and renowned online research papers.

Results and discussion

Open Innovation at HUL:-

HUL came up with many innovative ideas like-better fills at retail outlets, use of analytic in the selling process, bringing new outlets under coverage, communication of a trade help line number, changing case configurations of a hygroscopic product. Hindustan Unilever focuses on product innovation which translates science into products. Various examples under this category are-Skin Lotion (Delivering moisture), Surf Excel Quick wash (clean clothes, less water), healthier Ice-cream (by using new ingredient-ice structuring protein), Rexona Active reserve (new antiperspirant).

The Chairman of HUL, Harish Manwani has contributed to innovative rural marketing at the bottom of pyramid (BOP). Under this contribution, the company has initiated many innovative programs such as Shakti Entrepreneurship Program, under which selected women not only distributed HUL products, in addition to it, provided education to residents of their villages on various hygiene issues and promoted the usage of soaps, detergents and toothpaste. Another prominent initiative-the Kan Khajura Tesan (KKT) through which company has reached to the rural customers who have less access to traditional media like TV. Under this program, the company has collaborated radio with cell phone to create on-demand entertainment channel. This initiative was recognized at the top media innovation globally at the Cannes International Festival of Creativity in 2014.

Innovation Strategies at Tata Consultancy Services (TCS):-

The main innovation engine of the company is its Innovation Labs, which provide valuable outcomes on different projects. The TCS labs enables to analyze and understand customers, market with help of big data, analytics innovation. These vouch for digitalization through social media and digital strategy innovations. The labs optimize and build up business performance with innovation towards business cloud models and business transformation. TCS de-risks and protects the enterprises with innovation towards corporate governance, better risk management and security compliance. These labs works on varying technology areas such as Virtual Reality Programs, Big Data Technologies, Internet-of-thing (IoT), Green Engineering, Software engineering and Machine Learning. TCS goes down the line for innovating through following various channels:-

1. **Innovation Forums:-** These forums provide unique opportunity to interact with Innovative and Technology experts from diverse academia.
2. **Client Innovation Days:-** These days are full day workshops which involves interaction with customer clients with respect to their specific innovative needs.
3. **Custom (COIN) Co-Innovation Network:-** This network has been recognized globally which works on collaborative innovation.

COIN Alliances:-It nurtures bonds and collaborates with diversified academic institutions, Start-ups, venture capitalists, Strategic alliances, Government Agencies, Multilateral Organizations, Tata group companies and Industry Trade Bodies. Apart from focusing on traditional green initiatives,

TCS has established Green Desktop Infrastructure which is an approach to reduce Carbon footprint. The green desktop solution has led to optimize natural resource utilization and has addressed growing concerns of maximum energy efficiency and reducing e-waste generation.

Product Innovation at Sun Pharmaceutical Ltd.:-

Sun Pharma emerged to be front runners of innovation in India. A pure innovative company deals with active research projects, expert scientists and world class labs. The company looks beyond generics by attempting to invest in basket of innovative products which add new revenue streams. It is the first Indian flagship drug company to deal with experimental psoriasis drug in joint venture with US-based Merck Sharp& Dohme (MSD) Company. This innovation strategy involves in licensing experimental drugs for commercialization at a late trial stage. The company deals with Novel Drug Delivery technologies that offer safer and more effective drug delivery including Gastro Retentive System for Controlled Release (Baclofen GRS), Wrap Matrix Controlled Release Systems (Metaprolol XL and other products), Nanoparticle Technology platform (Paclitaxel injection for Nano dispersion) , Dry Powder Inhalation Technology (Fluticasone + Salmeterol DPI), Gel free reservoir technology (GFR) (Latanoprost, Timolol).

Gastro Retentive System is an ideal once-a-day delivery system for drugs that are otherwise absorbed only from the stomach or intestine. However, most drugs would transit the stomach rather quickly as it is difficult to make these into long acting or controlled release formulations. Longer retention in stomach improves drug absorption. The tablet can be designed to offer a combination of instant and sustained drug release profiles, and since it is once-a-day, it improves patient compliance. Based on GRID, Baclofen GRS, a once-a-day capsule to treat muscle spasticity, has been launched in India.

Dry Powder Inhalation (DPI) technology caters to Asthma Patients. DPI device offers a pre-metered 60 dose device that is activated by inhalation. SPARC’s DPI contains Salmeterol and fluticasone. The device is small, convenient and easy to carry. It is easy to use across pediatric, geriatric, and adult patient populations. The device delivers uniform dose independent of breathing flow rate.

GFR technology uses a unique polymer ratio that does not decrease visual clarity and has desired flow property. The physical properties of our product are similar to natural tears. The product has the characteristics of an ideal eye drop- clear colorless solution, bio-adhesive yet non sticky.

Table III- Summary Chart

	Hindustan Unilever	Tata Consultancy Services	Sun Pharmaceutical Ltd
Sector	Fast Moving Consumer Goods	Information Technology	Pharmaceutical
Headquarters	Mumbai, Maharashtra	Mumbai, Maharashtra (Subsidiary of Tata Group)	Mumbai, Maharashtra
CEO & MD	Sanjiv Mehta	Natarajan Chandrasekaran	Dilip Shanghvi
Type of Innovation	Open Innovation	Disruptive Innovation and Derivative or Sustaining Innovation	Product and Technology Innovation
Strategic Initiatives	Winning in many India (WiMi)	Co-innovation Network(COIN)	Experimental Drugs
Awards & Recognition	<ul style="list-style-type: none"> • India Manufacturing Excellence Awards 2013 • Client of Year at Effies 2015 • ET Company of the Year Award 2015 	<ul style="list-style-type: none"> • Big 4 Global IT service Brand • No.1 in customer Satisfaction (European IT Customer Satisfaction Survey 2016) 	<ul style="list-style-type: none"> • Thomson Reuters’ India Innovation Awards 2014

Conclusion

There are multitude of factors influencing the innovation movement in modern global economy. It is clear from the analysis of three Indian firms that strong innovation is bagged by strong R & D, in turn strength of R & D is measured through adequate amount of funds invested for conducting researches to explore changed and unique innovative practices in an organization. The major limitation for Indian companies for innovating is to depend upon foreign companies who have strong base of innovative practices. The Indian companies collaborate through strategic alliances, joint-ventures with MNCs. The innovative practice of a company depends upon the strong innovative system. The success of product and process innovation is reflected through innovative output in form of new design, new usage, and additional value to final customer. The improvement efforts of an organization carve out in dividing R&D into autonomous teams, enfolded open innovation, seizing crowd sourcing and institute rapid prototyping.

Implications of Paper:-

These case studies help in realizing Indian companies do innovate but number of innovating Indian companies is increasing at snail's pace. Innovation is dormant through extensive research by strong intellectual minds, requisite support of investment in R&D work from Government of India and other aiding financial institutions, can foster progress in development of Indian companies.

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