VALUE CREATION THROUGH OPEN INNOVATION

Mahesh Natarajan (Solution Architect)
Ragavendra Prabhakar (Design Analyst)
About the author

Ragavendra Prabhakar (Ragav) is a Design Analyst in Innovation Team within Satyam IES. He has 5+ years of technical experience in the field Innovation, Product Design and Development in varied Engineering Projects. His area of specialization is New Product Development using Design for Six Sigma. He has executed many projects involving product design, simulation, proto-typing and testing. Ragav has experience in Consumer products & Automobile industry. He is a Certified Six Sigma Green Belt Practitioner. He has submitted for 5 Disclosure for patent. Ragav started his career as a design engineer in R&D section of a automotive ancillary manufacturing company and after gaining 2 years of experience he joined with Satyam. He has a Degree in Mechanical Engineering from Madras University.

Mahesh Natarajan has 12+ years of technical & managerial experience encompassing Innovation, Product Design and Development in varied Engineering Projects managing teams across the globe (USA, Mexico & India). His area of specialization is Bench-Marking (LGQ), Value Engineering, New Product Development using Design for Six Sigma and Design for Reliability. He was instrumental in implementing the VE practice within Satyam IES & has executed many projects involving Value Engineering, Product design, Costing, Modeling, simulation, prototyping and testing. Mahesh has experience in Consumer products, Analytical Instruments, industrial accessories and appliance industry. He is a Certified Reliability Practitioner, AVS certified and practicing Black belt. He has 2 granted Patents & 3 applied in USPTO.
Abstract

In a world where change is the only constant thing, companies need to deliver products in a better way, which will change the dynamics of the market. This will help the companies to withstand the competition. The products should be innovative, cost effective, with a shorter lead-time and which should also have a better intellectual property (IP) rights to keep the competition at bay. Is there a secret mantra, which will help the companies to achieve these things? The secret mantra will be open innovation. Open Innovation coined by Chesbrough can be described as: combining internal and external ideas as well as internal and external paths to market to advance the development of new technologies. To implement open innovation, it requires a paradigm shift in the way companies operate. This business model can be extension of the service sector business model, which has been a primary driving force in South Asia’s booming economy. The extent and type of innovation should be determined by current business performance and future expectations and by the organizations tolerance of risk. This paper showcases a successful business strategy, which has helped Satyam computer services limited to grow up in its value chain creation for the customer and to itself by implementing open innovation. It will help in understanding few known theories of open innovation in a better way, it also provide a practical insight of the business model, as well as it answers few of the intriguing questions regarding the IP and tools be used.

Contents
• What is open innovation
• Why open innovation
• A successful Open innovation implementation
• Tools and ecosystem for open innovation
• Benefits
• References
What is open innovation?

Chesbrough, who coined the term Open Innovation describes in his book "Open Innovation: The New Imperative for Creating and Profiting from Technology" as a process of combining internal and external ideas as well as internal and external paths to market to advance the development of new technologies. It emphasis on using the various sources of technology to develop a solution.

The above picture represents the way to address the market by leveraging technology, ideas from various sources. In this internal technology base (companies own R&D) works with other sources of technology, which abets that in developing a solution to the market. With this process the company adopts a more open approach in developing a solution, which gives the company operational advantage like access for vast pool of knowledge, access to technology, reduced time to market at reduced cost. These factors contribute to a increased value of the product. This process integrates various fields of management, computer science and engineering to drive innovation, competition, and quality of life through service systems.
Why open innovation

Innovation was the mantra of the industry to stay ahead of the competition. The fruits of the innovation remained the propelling force behind churning out new products and solutions to keep the core business running. It was a highly insulated model, where they listened only to top management. They failed to listen to the users, who wanted a better value for the product. The value of the product depends on its ability to deliver a better product at a cheaper price. When the companies fail to do that, the value curve for the product starts declining. The repeated failures of the industries to come up with innovative products and solutions for the problem forced them to embrace open innovation. But how did open innovation help in solving the problem?

It helped in improving the areas, like reducing the cost of the product, time to market, and the availability of technology, which resulted in improved value for the product. A good example of this will be a recently launched Tata Nano, the world’s cheapest car.

This was possible for the reason that they were able to connect to the customer needs and affordability. The car developed with an affordable price tag of $2000 was feasible due to its innovation at various levels—from its engineering, marketing, and to its manufacturing. They achieved this by building partnerships with suppliers and putting everyone in the same room to work through problems and make suggestions—that has enormous value addition to the product. They engaged their suppliers in the very early stage of design to co-create low-cost products. One such engagement with a German supplier resulted in developing a very cost-effective ECU.

It’s a small control unit that controls all aspects of engine operation. Even for the simplest engines, they can be expensive due to its complexity. It is required because an engine today must satisfy emissions norms, sound norms, produce an acceptable spread of power, and return an acceptable level of economy and still more. This complexity makes it crucial and in the case of the Nano, expensive. However, Tata worked with Bosch to take the ECU down to an unprecedented price. Among the solutions employed, is the fact that the sensors used by the ECU to govern the engine are down to half the usual number.

In a similar fashion, Tata engaged with different vendors to co-create value for customers.
A successful Open innovation implementation

Satyam views open innovation as a process innovation (i.e. the process of developing a new product or solution), which enables product innovation and thereby creating value for the customer.

![Adaptation of Chesbrough model to represent Open Innovation at Satyam](image)

It has an impressive track record in the field of engineering services, which is evident from the position it achieved itself in the survey conducted by the Black book of outsourcing. Along with engineering services it also offers service in myriad fields ranging from telecom, health and banking.

Increased deregulation and networking tools is driving open innovation with fresh rigor generating new wave of revenues. To make the most of new opportunity, Satyam evolved itself in pursing innovation, which gives the customer a better value for their product, which resulted with partner Innovation award in 2008.

How value is created

Innovation is hardwired in the way business is performed at satyam. While other organization is creating external innovation network. Satyam innovates from within. As Venky Rao (senior vice president of innovation and leadership) explains the way it is achieved “Cultivating an innovative network from inside out, starting with employees and marrying
innovation management training with leadership development”. This innovation strategy followed in Satyam helps in unleashing and harnessing grassroots creative energy.

Innovation at Satyam is driven by the i$^3$ framework, which is inspired from the IDEO innovation framework. The power of i$^3$ approach - information-based, integrative and iterative

The execution of i$^3$ framework can be simplified into four different stages:

**Ideation**
- Challenges
- Leveraging the Deep Dive methodology in the I$^3$ approach

**Project Selection**
- Three types of Innovation investment approaches
- Using the cash curve approach to monitoring investments

**Development**
- Satyam’s unique incubation model – FUTURUS

**Commercialization**
- Choosing the optimal Innovation business model
- Additional key metrics
- Satyam’s RTLC Metrics Tool - StarTrac
Tools and ecosystem for open innovation

In order to harness the grass-root innovation, there is a requirement for ecosystem to be in place. This ecosystem should act as enablers of innovation help in capturing the thoughts & ideas of the people involved and also transform the same into intellectual assets. This will act as the tools for open innovation. The four programs, which Satyam operates to foster innovation serves as tools for the ideation phase

- i-DNA, “Create a environment for creativity and innovation”. This is achieved by having customized innovation workshop and surveys to understand innovation climate, which results in formation of the thinking clubs. This acts a process for seeding the innovation culture into the system and abet the next level in the process of innovation
- Deep dive. “It is a 3-5 day long event in which a cross functional team (CFT) participates. This CFT is not restricted to only engineers with different background. This CFT consists of people who develop the product, who manufacture the product, who use the product and who service the product. This CFT brainstorm on the given focus area, develop new concept and prototypes the same. This helps in developing a product that is co-created with users.
- Idea Junction, "a crowd sourcing site invites ideas from anyone in the company on a variety of topics, ranging from HR policies to new business models."
- Intellectual assets, "the enablement team converting an idea into a valuable intellectual asset for Satyam and clients."

In the project selection phase, the business priorities act as the driving force. The business priorities can be classified into three major types

- Differentiate, ”Rule changing innovations”. This kind of product will result in creating a new market for itself. It acts as a game changer for the company
- Compete, “ Competitive advantage investment”. This is mainly adopted when the focus is on reducing cost and improving the existing services or products
- Sustain, “Scale investment”. This is followed when there is a requirement to ensure the quality and service level

The Cash curve analysis is used to monitor the innovation investment and to understand the payback of the same

Enablers of innovation

The enablers of innovation are the people, information and the infrastructure. It is achieved by having the right mix of people and a environment that will stimulate people to think innovatively. It should also contain a mechanism to address the failure of such a team.
The following few can be requirements of such a team

- People with exposure to various domains
- Subscription to technology journals and websites
- Tie up with technical institutions and societies
- Training and access to innovation tools
- Developing a culture for innovation

Thinking innovatively also requires a conducive atmosphere. It should facilitate an easy way to visualize concepts, mock up and test them. Satyam has such multiple innovation labs that aid in performing such activities. One such lab has a virtual vehicle development platform, which helps in design and testing of components in virtual space. The FUTURUS and Global Innovation hub act as enablers of business intelligence solutions. The BI & PM practice has been assisting customers by developing proof-of-concepts and conducting customer demonstrations based on real-time business scenarios and challenges faced today. These things act as the tools in the development phase.

Schematics for Satyam's virtual car

The commercialization of the product is based on different key parameters like the following

- Consumer profiling and segmentation
- Competitive response and timing
- Marketing and investment plan

Few of the key additional metrics for the commercialization stage are 1) Product development efficiency 2) Portfolio effectiveness 3) Status of key projects 4) Ratio of learning over investment in innovation projects.

All these programs abet in fostering innovation, which is driven by the innovation framework in Satyam. All these tools can be used either a NPD cycle or EPD cycle.
Power of partnership

Satyam partners with its clients, suppliers and academic institution to achieve business transformation through open innovation. This helps in adding value to the product with much lesser time to market.

Benefits

The most common issues that are plaguing the companies is the inability to deliver products with a better value. The value of the product depends on the ability to deliver a better product with lesser price with reduced time to market. The benefits of Open innovation are enormous in terms of value delivered to its stakeholders.

A particular division within the Engineering services serving a leading North American Appliance manufacturer has engagement with the client’s product development team for more than 8 yrs.

The business expectation of that team was
1) Engineering Design support for Systems, NPI, Value engineering and using DFSS methodologies
2) Globalized Engineering workforce
3) Synergy amongst various entities and creation of Center of excellence across Global Technology centers.

But the realized benefits exceeds the expectation by a large scale
1) 20+ NPI launches
2) 100+ patent for disclosure
3) Annual Cost savings 30-40 %,
4) Productivity savings to the tune of $ 80 Mn in the last 4 years
5) Developed Centers of excellence for few strategic areas from India on Reliability, Harness, Appearance Parts and Predictive engineering

All these things help in adding value to the product
References:-

3. Articles on Tata Nano from Business week magazine
4. INSIGHTS, White paper on Innovation Networks: Harnessing the Power of Ecosystems to Transform Organizations by Venky Rao
5. Embracing Open Innovation: A new approach to creating sustainable value by British telecom
6. Innovation Networks by Navi Radjou