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IGNITING CREATIVITY

IN AN

ORGANISATIONAL RAINFOREST

Tata Group's quest for Open Innovation.

- Open Innovation advocates collaborative relationships, emphasising a dual-flow approach that integrates the best ideas within and outside of a firm.

- Tata Group's implementation of the Open Innovation model has created a conducive environment for innovation, enabling cross-boundary idea exchanges and establishing strategic partnerships with diverse stakeholders.

- 'Seekers' and 'ideators' build a community-driven Open Innovation model that sustains a supportive ecosystem and innovation across a decentralised conglomerate like Tata Group.

Innovation has often been considered the lifeblood of human progress, and communities, nations, industries, and organisations have relied on it to adapt, thrive, and overcome challenges in a rapidly changing world. However, innovation often tends to have an inward focus rather than transcending boundaries, thereby limiting its potential to foster widespread influence. These boundaries are multifarious, and so are their motivations. For instance, communities of farmers may conceal their innovative advancements to boost their profits. Also, developed countries invest heavily in solar and wind energy research but often fail to share these advancements with other nations, therefore limiting benefits of this to their domestic markets.

Organisations may even safeguard their innovations with expensive patents to maintain competitiveness.

It is this boundary between internal and external stakeholders that the philosophy of Open Innovation tries to transcend. It states that firms can and should be open to both internal and external ideas, and paths to market as they attempt to advance their innovations.[1] Many organisations have begun benefiting from this approach by making it an integral part of their corporate culture. Think about the ecosystem in the Amazon rainforest: flowering plants rely on pollinators to transfer pollen; predators rely on herbivores as a source of food; herbivores regulate plant populations by consuming vegetation to maintain an ecosystem balance; decomposers, such as insects, fungi, and bacteria break down dead organic matter into nutrients, which are then recycled back into the soil. Open Innovation fosters similar symbiotic relationships, enabling various parties in a business ecosystem to benefit from one another while mirroring the dynamic interdependence observed in natural ecosystems.

REMOVING BOUNDARIES

Popularised by Professor Henry Chesbrough in 2003, the Open Innovation paradigm challenges organisations to embrace a dual-flow approach to idea generation and implementation. It characterises a shift from a traditionally closed and controlled research and innovation environment to an open and flexible model that captures ideas and solutions from within, as well as beyond the organisational boundaries. The focus is on incremental innovations rather than radical change, or in Chesbrough's terms, new processes or products. The understanding is that innovation is better fostered by emphasising the flow of ideas, knowledge, and technologies across organisational boundaries. Unlike traditional closed innovation practices, where ideas and technologies are often developed internally, Open Innovation encourages collaboration with external partners such as customers, suppliers, universities, research institutions, and even competitors.[2]

While the challenges of this approach, which often involve cultural barriers and risks of sharing proprietary information,

are obvious, there are several benefits. The methodology promotes collaboration of various forms, such as joint research projects, licensing agreements, partnerships, and crowdsourcing initiatives. It enables cross-pollination of ideas, and facilitates a broader range of perspectives and expertise. It also encourages organisations to share risks associated with innovation, including research and development (R&D) costs, technological uncertainties, and market risks.

Many conglomerates have successfully leveraged Open Innovation methodologies to unlock untapped potential, spur breakthroughs, and redefine the boundaries of what is possible. Aircraft manufacturing company Boeing, for example, has a programme to tackle complex manufacturing problems like optimising the production process for aircraft components.[3] Siemens, a global leader in industrial automation, has also leveraged Open Innovation to drive advancements in smart manufacturing. Through its Insights Hub network, Siemens collaborates with customers, partners, and developers to co-create digital solutions for the factory of the future. This approach has led the company to develop cutting-edge technologies (like predictive maintenance and digital twins).[4]

TATA GROUP'S INNOVATION APPROACH

However, applying Open Innovation in corporate environments is far from simple.

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At Tata Group (Tata), India's largest conglomerate, whose products and services are available in over 150 countries and whose operations span across 100 countries, Open Innovation is not just a strategic imperative but also a deeply ingrained cultural value, which the company uses to drive excellence across its global footprint. Tata uses a three-pronged strategy to foster Open Innovation: cultivating an environment that promotes idea generation, enhanced communication, and recognition of innovative endeavours; promoting collaboration by facilitating cross-pollination of ideas beyond organisational boundaries; and initiating strategic partnerships with academia to generate groundbreaking research and drive technological advancements.

Across the Group, Open Innovation practices have sprung up in various units for some time. For example, Tata Consultancy Services (TCS), a software services and consulting company, had launched its Co-Innovation Network (COIN) in 2006 which has become very successful. TCS COIN is an innovation network of start-up partners, venture capitalists, technocrats, academia, and other collaborators. At the Group level, there is another programme called Tata Innoverse, which brings together innovators, scientists, start-ups, academics, small and medium enterprises (SMEs), and individuals from across the globe to solve technical challenges. In the past few years, a few other Tata companies have also started to develop their own Open Innovation programmes.

In 2008, Tata invited Chesbrough to host three Open Innovation workshops for its leadership teams. Ravi Arora, Senior Vice President and Head of Group Innovation at Tata Sons, recalls how the Group thereafter began implementing Open Innovation, starting with eHackathons to promote a collaborative mindset. His role involves facilitating an innovation culture for Tata companies and introducing new processes to foster Open Innovation practices. Despite initial challenges in obtaining opportunities in the form of problem statements from companies, Ravi and his team gradually cultivated a culture of problem-sharing through workshops and InnoClusters (group gatherings to promote an Open Innovation mindset), thus paving the way for collaborative problem-solving. "Our role in Group Innovation is to provide additional support to the companies seeking to enhance their Open Innovation capabilities through training, facilitation, and inspiration. Many of our companies need this kind of support, but a few do not," he explained.

THE CHALLENGES OF APPLYING OPEN INNOVATION

Complexity of large, decentralised conglomerates

The complexity of a large multi-location organisation, as in Tata's case, presents significant challenges for the adoption of Open Innovation. As of March 2024, Tata comprises over 50 companies, 29 of which are publicly-listed, with a combined market capitalisation of INR 31.6 trillion (US$382 billion).[5] Unlike other conglomerates like General Electric (GE), which operates through a centralised model, each of Tata's companies operates independently and thus has the freedom to pursue its own distinct innovation strategies; this autonomy makes it challenging to implement the most common programmes across the Group including Open Innovation.

Operational limitations of manufacturing

In Ravi's view, companies in the Technology and Financial Services industry are better positioned to implement Open Innovation than those in manufacturing as there are lower adoption risks and faster implementations with comparatively fewer resources used for the former. However, they have their own set of challenges, which tend to revolve mostly around technical implementation, scalability, fast-changing technologies, issues like data privacy concerns, and the seamless integration of new technologies. The fundamental difference lies in the nature of experimentation and risk-taking, which companies in manufacturing tend to adopt at a slower rate compared to those operating in digital environments. Open Innovation in manufacturing often requires multiple trials and significant investment thereby incurring far more risks. Additionally, there is a psychological barrier between mid-level to senior managers and domain experts, who hesitate to

seek external solutions as they have traditionally been tasked with solving problems internally.

As the Tata companies have extensive manufacturing operations, particularly in the steel and automotive sectors, the adoption challenges are varied. "We are a large, decentralised conglomerate with standardised and highly specialised processes which are designed and perfected to deliver benchmark levels of output. Innovation and particularly Open Innovation strategies that try to involve external collaborators with their unproven solutions at the shopfloor pose significant challenges, leading to cautious evaluation and slow adoption," shares Ravi.

A classic example of the manufacturing dichotomy would be the challenges faced by aircraft manufacturer Boeing in the development of the 787 'Dreamliner', which was initially hailed as a benchmark of Open Innovation since the company had worked with external suppliers, as well as its internal research team to design the aircraft. Over time, however, the project became plagued with delays and structural flaws, which resulted in time overruns and increased costs, and created a significant risk at the market stage of the innovation.[6]

Supply chain and patent challenges

Supply chain challenges further hinder the adoption of Open Innovation in manufacturing industries. For instance, procurement departments are accustomed to dealing with established vendors who meet strict compliance standards. They are often reluctant to add new ones, and the procurement process typically relies on competition among existing vendors. These practices are at odds with the requirements of Open Innovation, which may necessitate collaborating with a single start-up with opaque cost structures.

Patents are another obstacle, as negotiation regarding intellectual property rights often shifts the focus from problem-solving to overcoming legal hurdles. Balancing the desire for requiring patents with the urgency of solving problems leading to innovation thus becomes a delicate dance.

AN UMBRELLA OF STRATEGIES FOR OPEN INNOVATION

But is Open Innovation really a strategy? While in an organisational context, Open Innovation is more of a cultural characteristic, its practice in reality often requires the use of several strategies. Tata has invested in Innovation Centres, R&D Centres, Innovation Labs, and Centres of Excellence through its various Group companies. It has also used several learning mechanisms like innovation workshops, learning missions, and the dissemination of innovation-related literature, including case studies, to build capability. It has even created a group-wide community of 'innovation evangelists', who advocate for and facilitate fellow Tata employees' innovation efforts.

Ravi's team initially focused on these learning mechanisms, and used digital platforms to fuel innovation efforts, and improve the idea generation and selection process. One of their platforms, Tata eHack, serves as the in-house social networking platform with social media-like features and market prediction capabilities to augment the innovation life cycle that starts from idea generation. Another platform is Tata Innoverse, which is used to generate solutions from external entities (start-ups, academia, and SMEs) to accelerate problem-solving and innovation.

eHackathons

The eHackathon (also known as eHack) concept is a virtual adaptation of the traditional hackathon notion, and a key tool Tata used to initiate, embed, and deepen the culture of Open Innovation. Unlike conventional hackathons that rely on teams coming together, eHackathon participants collaborate remotely to solve specific problems that Tata companies are facing. eHacks are flexible and of shorter duration, hence they are more effective in facilitating collaboration among dispersed teams. The primary distinction is their virtual nature.

At Tata, eHacks begin with a few problem statements provided by the company seeking ideas and new pathways. Employees propose ideas to address these challenges. Selected ideas are further developed into detailed concepts, and the top concepts then advance to the prototype stage.

The Open Innovation methodology promotes collaboration of various forms, such as joint research projects, licensing agreements, partnerships, and crowdsourcing initiatives.

However, a key implementation hurdle is scale. Tata has more than 900,000 employees working in companies across diverse industries and geographies. Such complexities make it challenging to create a culture of Open Innovation, which involves sharing problems openly to seek ideas, as well as sharing ideas with other companies. Ravi recalled, "We had to proceed slowly but steadily within the larger group. Therefore, our approach to eHacks was also gradual, and it took almost a decade to reach the stage that external people feel was scaled-up, but we feel it is still in the early stages given the size of our Group."

Community is key

Implementing an Open Innovation culture also requires building an ecosystem of communities that can interact with one another to foster creativity and collaboration. Tata focused on a 'two-character' community approach to build this environment. The two characters were 'seekers' and 'ideators' (also known as 'solvers'). Seekers were those who had problems for which they were looking for solutions, and ideators were those who came up with ideas to solve those problems. Ravi found that seekers were relatively harder to find and difficult to convince, while ideators were easier to come by. Consequently, Ravi and his team spent the first few years motivating and nurturing this community, and in about two years they were able to attract about 1,000 seekers and more than 15,000 passionate ideators. It is crucial to recognise that out of 100 ideas, maybe only two to three are groundbreaking, but there is no way yet to just isolate the few brilliant ideas without also receiving the 100 others.

Tata also assured both groups—ideators and seekers—that they would remain anonymous, which helped them become more comfortable with eHacks over time. However, despite the general appreciation of the significance of anonymity, few companies outside Tata

have implemented it as an innovation strategy. It is a challenging concept to adopt because it goes against the grain of managerial biases.

Implementation of ideas

An obvious question that comes to mind when discussing innovation is whether ideas are more important than outcomes. At Tata, both were observed to be equally significant. The goal is to improve idea quality and increase the number of sources for ideas to better the chances of converting them into winning ones. The next step is to track both the return on investment (RoI) of the ideas and the return on effort (RoE) of the work put in by seekers and ideators, as these are believed to be a more comprehensive metric for measuring the success of such innovation initiatives.

Instead of merely chasing ideas, Tata Group began emphasising the implementation of these ideas. Such a transition was crucial as it ensured that the seekers not only sought ideas, but also invested in resources and capabilities to execute them effectively. However, this process took more time, especially since developing detailed concepts and prototypes could take several months. A couple of years after launching the first few eHacks, Ravi and his team realised that their platform was unable to verify if seekers possessed both the budget and authority to implement the ideas they received. To address this issue, they introduced a concept called 'assured outcome hackathons'. Under this framework, they tried to ensure that only managers with the necessary resources and the intention of implementing the proposed solutions were accepted as seekers. Additionally, they began monitoring and reviewing the progress of the idea implementations, collaborating closely with the senior leadership team of the solutions-seeking company. They also began establishing governance mechanisms to monitor the progress of idea implementation and allocated a small budget to support prototyping efforts. This shift in approach yielded successful implementations, which

were then showcased at events like Tata's annual innovation exhibition.

"We are now trying to bring some accountability to the eHack programme. We're implementing a system where we inform the seekers and the implementation team every month about the progress and bottlenecks," says Ravi. This information serves two purposes. First, if an idea is not making progress, the information helps to highlight and escalate the issue, which ensures that attention is drawn to any obstacles or delays, allowing the necessary actions to be taken to address and resolve these problems. Second, for those actively working on implementing ideas, the information acknowledges and recognises their efforts. This recognition serves as a source of motivation and rewards those who are dedicated to the process of turning ideas into reality.

Tata is in the process of completing over 200 projects, which are currently at various stages of development, through its eHack and Tata Innoverse programmes over the last five years. One example is a problem posted by one of the companies specialising in the construction of flyovers and bridges. It faced safety challenges transporting large beams for construction, especially during the night when visibility is low. The idea proposed by an employee of another Tata company involved attaching bright red lights to the beams to increase visibility for other road users. Another example relates to the trucking industry, where drivers knowingly or unknowingly use counterfeit diesel

exhaust fluid (DEF), resulting in vehicle breakdowns. Several ideas from Tata employees of various companies were implemented to address this issue, including educational campaigns, and improved DEF delivery and authentication methods. In yet another instance of successful implementation, Tata Motors established container workshops in remote mining areas to serve customers on-site.

Internal focus cannot be undermined

While Open Innovation shifts attention from internal innovation to including both internal and external parties, the internal focus often becomes diluted in the process because of the propensity of companies to seek external help. To avoid this imbalance, Tata tries, through its eHacks, to get more participation from its own employees to provide solutions.

This helps in two ways—it galvanises internal staff to resolve critical challenges actively, and develops a genuine appreciation for external partners who bring with them cutting-edge technologies and solutions, thereby nurturing a learning organisation.

Rewards feed creativity

Problem-solvers or ideators, as Tata calls them, often seek recognition and rewards as a form of motivation. Ravi's team uses cash rewards as incentives; winning ideators are given cash rewards, and top management in their companies are also informed of their accomplishment. Selecting ideas

is resource-intensive, but the team has managed to scale this process considerably. Between 2020 and 2022, for example, it declared over 150 ideas as winners. The shortlisted ideators were required to go through a process like a 'Shark Tank' to get their ideas selected. Tata prefers calling it 'Shark Dolphin' tanks or 'kind sharks', that is, seekers are not only potential investors in the idea, but they are also helping to build a culture of Open Innovation.

Assured outcome eHacks also became a major strategy to motivate seekers to become highly supportive and eager to participate in more eHacks. There is sometimes a struggle to meet the demand, as the eHacks are held only once a month on every third Monday. To address this issue, the team also introduced technical problem-solving eHacks on every fourth Monday of the month.

Ravi opines that most firms always have a pool of creative problem-solvers. If such ideators are presented with the right set of problems, and their ideas are dealt with agility and impartiality, they can contribute significantly to a firm's innovation goals. Bias is a major issue in firms—people often feel that their ideas might not be selected because of factors like designation, gender, proximity, and nationality, so considerable effort has been put in to address these biases. For instance, all idea submissions for eHacks remain anonymous, right up to point of selecting the winning ideators from the Shark Dolphin tanks. This anonymity offers a sense of psychological safety so that

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contributors can freely express themselves, knowing very well that not all their ideas will be accepted.

COLLABORATIVE RAINFOREST

While Tata's ecosystem is a challenge for Open Innovation, it also provides ample opportunities for cross-industry collaboration and knowledge sharing. Notably, the conglomerate has companies in sectors like energy, chemicals, technology, consumer products manufacturing, engineering, tea, and software services. Tata actively engages in strategic partnerships and collaborations with external stakeholders, including start-ups, academic institutions, and research organisations.

These partnerships bring fresh perspectives, cutting-edge technologies, and complementary capabilities to the table. Tata also has a few innovation platforms–some of which have been highlighted in this article– which provide effective channels for scouting, evaluating, and partnering with start-ups and innovators to co-create new solutions and technologies. Additionally, its leadership actively champions and promotes Open Innovation initiatives, providing guidance, resources, and strategic direction to enable the successful implementation of Open Innovation practices.

While Tata's experience shows that Open Innovation is a viable option in the realm of manufacturing, issues like intellectual property concerns and differences amongst diverse stakeholders are likely to continue presenting formidable challenges. eHacks emerge as a dynamic solution in this sphere, utilising digital platforms to bridge geographical barriers and cultivate a culture of innovation.

Open Innovation is, however, not just about new technologies, platforms, events, and problem-solving. It is a collaborative, cultural rainforest where multiple stakeholders come together to ignite creativity, and it enables organisations to address business challenges and effectively drive meaningful change. AMI

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