

MindTree

Our Search for Innovation

Address by Subroto Bagchi at
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Ladies and Gentlemen,

It is an honor to be with so many brilliant thinkers this evening. It is an even greater honor to be chosen to present the subject of innovation to people like you, who probably eat it with breakfast every morning. This fact gives me both trepidation and confidence: trepidation because I am a rank outsider in this elite club of inventors, and confidence because only an outsider has the innocence with which a subject like innovation must always be approached.

As a little boy, I have climbed trees to see how mosquitoes breed their young in water-filled crevices; I have chased a real bear with tribal villagers; I have watched rain drops become a rivulet, and built make-belief dams with sand and mud and created pipelines made of hollow papaya branches. I have smelled the harvest-ready paddy in the autumn sun and listened to the whisper of leaves in the cradle of silence. I have grown up with that innocence; it remains in my heart and I believe it is basic to the act of beautiful living. All acts of creativity begin in a state of that innocence. It is therefore necessary that we always gently hold its tiny hands, because only a child is blessed with the innocence that gives her curiosity and questions. Yet, we sometimes leave innocence behind like a silenced child as we grow up.

When I was a little boy, I did not go to school until the age of eight. I used to scamper off for hours and scrounge around in the neighborhood. What was I looking for? Useful things. Postage stamps. Discarded pieces of paper. A very miraculous find that would make me someone suddenly very important. I never got that last one but I always returned with lots of lesser things that made my universe always very interesting. Among them were the caps of discarded toothpaste tubes. I brought them in my little pockets and, lighting a candle, I used to melt them into an empty inkbottle. You see, I had heard about Marie Curie's attempts at burning cartloads of pitchblende until she found radium. I would hope that something as important would come out by melting the toothpaste caps. The molten red plastic spoiled Mother's floors and occasionally burned my fingers. Nothing ever came out of it that I could take to the world outside. But inside of me, it brought alive a sense that the process of discovery is a joy unto itself, as important and celebratory as the radium and the Nobel Prize waiting at the end. Every time the molten plastic dripped into the ink bottle, I heard the standing ovation of the Nobel Prize Committee in far away Stockholm.

Many things have since changed. As I grew up, life took me to many distant places. Over the years, I woke up fascinated every single morning and I looked in awe at everything around me. The work of nature and of man in far away places captivated my mind. The crushing of ice in the cascade of the Niagara Falls, the sight of the towering mountaintops of the Alps, the hues of the rain forests in the far east and lapping of a solitary lake in the middle of nowhere told me that a higher power is at work, mysteriously continuous and magically omnipresent.

As I wandered, I also became one with the energy of a fishmonger in the side streets of Hong Kong. I felt the amber glow of the setting sun flow into me through the window of a jetliner coasting over the clouds. I watched the Eiffel Tower and marveled at the fact that it all started as a vision in someone's mind. I sat down with autoworkers in Nagoya who tended to their factories as if these were Japanese gardens. I looked at the Brooklyn Bridge and the Golden Gate and the Hoover Dam and, through the distance of time, the clang of the iron-hitters rhymed into my very existence. I stood in the mid-day sun and touched the carved pillars of the Hampi ruins and felt the filigree in stone at the Sun Temple at Konark. In the midst of all these, gently, a few realizations about the creative process started to fall into place. Like everything mystical these gave me some understanding but withheld even more. Today, I stand here to share with you some of that understanding from the vantage point of my fascinated innocence.

Innovation begins with inclusion

The first realization that dawned on me was the fact that all innovation begins with inclusion. It is only when we take an inclusive view of things that the mind leaps forth with ideas that nest neither in the present nor the past. Inclusion is about feelings for people and situations that are twice removed from ourselves. When we can build an idea that makes a difference to people and situations twice removed from where we stand, it is bound to be innovative.

In the world of business, we often have problems with such abstraction, so an example is probably in order. Think of it this way: you want to serve your immediate customer or your supplier. These are people who constitute the so-called value chain. Sometimes all you need is to create a linear extension of your offering to serve them better, it is not necessary to create something innovative. Some thing "new and improved", something that is "renovated" is good enough. On the other hand, if you wanted to make a tangible difference to your customer's customer or your supplier's supplier, it would call for innovative thinking. Only such thinking creates competitive advantage by expanding the sphere of influence. To be able to bring people who are twice removed into the fold of your beneficial impact, you have to think inclusively. Inclusion as an act leads to connecting with people, their needs, their thoughts and their desires at an existential level. It is at that level that the quality of human thought is at its creative best. Only that quality of thought leads to products, services and processes that provide new and disproportionate value. What is existential thinking? I learnt the import of that term many years ago from Professor Yves Doz of INSEAD.

Innovation stems from converting knowledge into something valuable. According to Yves Doz, we relate to knowledge at three different levels. At the lowest level, we relate to knowledge in a technical context. At this level, knowledge is about specifications handed out to engineers who need to create something out of it. It is the kind of knowledge required to be capable of seeing something and creating a similar artifact with desired functionality. This constitutes a layer of knowledge, which can be called adaptive. You and I see something and we are able to reverse engineer it.

At the next higher level rests the intermediate layer known as the experiential layer of knowledge. This level is not about technical specifications and functionality — it is about getting into the shoes of the end-user. When Nissan wanted to design a car for the European market, it sent a delegation of auto-designers who rented different makes of cars and drove around thousands of kilometers all over Europe to understand what it meant to be a motorist in Europe. They sought to experience the motoring experience on the French Alps, the Italian country side, the German Autobahn; all vastly different from each other. Then they came back and designed a car that was right for the European market.

Beyond this level is what Doz calls the existential layer, in which knowledge is not about getting into the shoes of the customer but, rather, about the ability to "creep into the minds" of customers. When Sony designed the Walkman, it was operating at this level. Sony is Sony not because it manages 5000 products or because it knows ferrite magnets and DSP chips and Liquid Crystal Displays and optimal supply chains. What makes it Sony is the fact that it understands what goes on inside the head of the kid in the Bronx when he dons his headphones and begins to wriggle in his baggy pants. Sony works backwards from that experience to design innovative products and services. Sony gets it at the existential level.

Each of the three levels is separated by a glass ceiling. You do not automatically go to the next higher level because you are extremely good at the one below. As we see in each layer, value is created from how we relate to a given body of knowledge. Yet, what separates one from the other is the context in which knowledge presents itself. Innovation is possible at each level, but breathtaking, discontinuous and memorable innovation takes place only when we are able to think at the highest level. At that level, it is not about engineering complexity or functional sophistication. It is about feelings and simplicity.

The greatest innovations usually begin with a simple idea

There is a company in Japan named Matsuura. Chances are that you have not heard about them. Matsuura has been designing motorcycles for Yamaha for the last 50 years. How does Matsuura's design team go about designing the next great bike for Yamaha? It studies movements in nature. Designers look at the flow of water, the sprint of a gazelle in flight and the aerodynamic movement of a leopard that changes direction in midair. Despite the advent of complex 3D software that run on high-end computers and can create any model you want, the final design process at Matsuura requires all designers to create a model in clay because they believe there is a transference that happens only through the fingers of the creator that no software can achieve. A simple realization.

The state of nature is about simplicity. The state of human thought has become progressively complex because we seek sophistication over simplicity. The most wonderful things in the world are also the simplest. Simplicity delays confusion. When confusion evaporates, attraction begins. What is complex about a child's toothless smile? It does not lend itself to multiplicity of interpretation. Response to it is not regionally varied or culturally dependent. What is complex and sophisticated about Mahatma Gandhi's theory, which delivered independence to the world's largest democracy? As elements of design, it had two things: non-violence and non-cooperation. They were simple enough to convey the same meaning to an illiterate indigo grower in Bihar and the Eaton-returned Jawaharlal Nehru. Even in terms of his personal manifestation nothing about Gandhi was complex - he never tried to appear sophisticated. As a result, nothing about him required complex interpretation. He stood there in such simplicity that he almost appeared naked. That simplicity gave him the power to liberate us. Had Gandhi donned a Calvin Klein suit, I suspect we would have been a very different nation today. But, speaking of simplicity in design leading to innovation, let us consider the Apple iPod.

Recently, someone gifted me one. The moment I brought it home, my wife Susmita, who is not a gadget freak, coveted it. I gave it to her. She went to visit her parents. Her father is seventy two and her mother is sixty five, retired folks both. They live in a place which is anything but tech-savvy. When Susmita placed the thin white earphones on her father's ear and played a devotional song, it instantly connected him to a 1-800 number with God. When her mother listened to it and held the little white thing in her hands, the connect was instant. She did not feel challenged in any which way. She asked Susmita, how much did it cost? That instance, it was gifted to them; they accepted it only after Susmita promised that she would buy one for her self. When I bought her one, my two daughters felt that it was time they also got one each. Next month, they learnt that if they purchased Apple laptops, they could get an iPod free with the computer. So, each daughter spent fifteen hundred dollars and brought home the \$150 device. They promised me to get back some money after selling their existing desktops I know better. What does the iPod give to the teenager that no one else does?

The teenager wants to store all things nice. She wants to horde. She wants to live in the clutter of her cupboard. But she wants to be able to get in and out of her favorite clothes whenever she wants, wherever she wants. If music is like clothes, which it is to teens, she wants to be able to carry her messy cupboard with her and look cool while doing it. The iPod gives her that capability in a suburban train, around the campus, at a party, in her bed and on the couch.

The simple white "thin-to-the-extent-of-not-being-there" design is like Gandhi's own functional specifications. A pair of glasses, a loin-cloth, a stick and a pair of cobbled sandals. A display unit, a plain white exterior, a dial and a pair of white earplugs. Simple.

Innovation's real test: how many adopt it?

The greatest test of innovation is in its adoption — adoption by millions of people, to whom a simple solution for solving an everyday, living problem makes a big difference. That is why the world loves Lycra; that is why every mother wants the teenager to carry a cell phone and is also willing to pay for it; that is also the reason the digital camera has changed our way of thinking about photography. Any innovation that requires sophisticated understanding has elitism built into its social contract, and therefore has limited adoption. The world is always hungry for things it can easily understand, easily touch and feel and smell and hold and carry and throw away.

Just as I learnt so much from Yves Doz and Steve Jobs, I also learnt a lot about innovation from the famous brand designer Shombit Sengupta. Story has it that every European kitchen has, at the least, six things that carry his design. These could be anything from the Dannon yogurt cup to a high-end Remy Martin cognac bottle. From Shombit I learnt that innovation comes from struggle. The first half of the last century saw one of the most difficult times for human beings ever. Between the two world wars, 78 million people died. Under Hitler's fascist regime, 6 million Jews were exterminated in cattle trains and gas chambers. The Atom Bomb singed every living being in Hiroshima and Nagasaki, and damaged living things of future generations as well. It ripped the uniform of war from the mangled body of political patriotism. Periods of great struggle and periods of innovation are sadly, happily intertwined. India, according to Sengupta, has not struggled enough to be innovative enough. I reflect on that one statement and begin to wonder if it can be fully denied.

The last time we built something unique and gave it to the world was...when? After Hampi, Belur-Halebidu in the deep South and the Taj in the North, for hundreds of years, a nation has hibernated. We have not built anything that is architecturally unique. From Lutyen's Delhi to the Mysore Palace to the Bahá'í Temple in New Delhi to the bridge over Howrah, each is only a reminiscence. When a nation flounders in an architectural sense, it also flounders in every other aspect of creativity. Creative fields like art, literature, music, dance, fashion, scientific quest, geographic exploration, spiritualism and architectural design are all interlinked. By looking at the architectural design of a civilization at a given time, one can immediately understand what was going on in the minds of people who lived in it. Architecture externalizes everything else. When India stopped building the temples and the mosques and the courtyards and the walled staircases, India also slid from the existential layer to the adaptive.

But I think this is about to undergo a change. I believe that we are in the cusp of a millennial shift in which India will once again innovate. I see the first signs of spring after the civilizational hibernation that afflicted an entire people for the last few centuries.

I see that unmistakable step of Spring in the fiction of Vikram Seth and Jhumpa Lahiri and Arundhati Roy, who are telling the world that people with difficult-to-pronounce names can also write for a global audience. I see the signs when people across the world curl up on their living room sofa to scream or smile at the will of Manoj Night Shyamalan and Mira Nair and Gurinder Chadha . I see a nation of silkworm-breeders and cotton-weavers begin to drape the world's catwalks with the sensuousness of a creation by Ritu Beri or Tarun Tahiliani. All this is extending to the spheres of sports and hospitality, healthcare and drug research. It therefore does not surprise me that your India Center today accounts for 63% of worldwide inventions submitted for filing patents at Symantec.

The sudden splurge of creativity in the high technology sector in India is being seen with understandable nervousness in some quarters. To me that nervousness is largely misplaced because the future is not the delta of the past and the present nor is it the sigma of the two. While it is difficult to predict what the future will be, I am more certain than ever before that innovation will be far more broad-based and inherently symbiotic. People, and not nations, will determine the flow of needs, desires and wants. The human effort to create new value will increasingly emerge through porous national borders. The Internet will intertwine the creative powers of people separated by time, space and coloration, more than ever before. The Silicon Valley will be a state of mind. There will be democratization of ideas and the ideation process because the population shift of the world will place new economic power in the hands of that third of the planet that, until recently, went unnoticed. In all this, a new cooperative model will emerge.

Yes, in saying all this, I risk crossing over from being the voice of reason to the voice of hope — but that is a risk I am willing to take.

Innovation: aspirational or state of being?

Just as I have learnt so much from people like Doz and Sengupta, I have also learnt immensely from an architect friend named Prem Chandavarkar. It was Prem who first opened my mind to something I was only faintly aware of. Is innovation an aspirational state? Or, is it a being? That in itself is such a wonderful thought; powerful in its ability to split us the same way the theory of dualism has people fervently taking positions in arguing each side.

In his quest for the truth, Prem looks around for research by people like Donald Schon, who wrote "The Reflective Practitioner," and Russian philosopher Viktor Shklovsky. It was Donald Schon who rejected the idea of contemplation and action as different and made us aware of work as contemplative action. Like that concept, we need to consider whether innovation is a higher state. Prem believes that sustained innovation requires stepping out of the thought that it is a higher state. It requires us to embrace the notion of "living innovation" as against aspiring for it. He shifts from Schon to Shklovsky and introduces us to the concept of "making strange". Shklovsky defines the central purpose of art as "making strange" and goes on to say that art is like a Knight's move on a board of chess; it is one move straight and one move crooked. The presence of the crooked move is what renews us. It is our connection to a reality that is greater than ourselves. Without it, we get trapped within the limited, blinkered, linear logic of habit. This is why we must live innovation and not merely aspire to it.

Modern management, a child of modern science, sees too much causality in the state of things. As a result, it tells us things like:

"I must innovate in order to survive."

"I must innovate in order to improve profitability."

"I must innovate in order to gain market share."

"I must innovate in order to achieve business success".

All of the above, says Prem, are true but not sufficient. To stop at that level is to place innovation outside our hearts. This would cause innovation to eventually dissipate and become stale. Long-term sustainability can come only from inner passion and a foundational belief that "I must innovate because I am like that only" (Good old Indian English).

Innovation thrives in diversity

To flourish, innovation requires a certain fertility condition on the ground. Without it, a creative act is like a good seed that falls on hard, unreceptive soil. It is not without reason therefore that trees grow strong and tall in rainforests. The rain forests provide a very unique eco-system that leads to spectacular life, myriad hues and a certain vibrancy that you see nowhere else. Behind the great eco-system of the rainforest is the diversity of nature. The power of diversity in the flora and fauna lead to the possibility of highest growth for any life form in the jungles of Brazil or the Western Ghats of India or under the watchful volcano in Indonesia.

Cut to New York City.

You get into a PATH train or an MTA bus and you look around at your co-passengers. In peak hours, chances are that among them, you are bound to notice people of at least six other national origins not counting yourself. You step out of the subway or the bus, into the busy streets, and again you look around. In the same block where you stand, you will find food from six different ethnic origins. That diversity is the competitive advantage of New York City. It makes New York the undisputed capital of human civilization today. The ethnic diversity of New York gives it a certain edge in innovation that no other city can take away. Like the rainforest that is the city of New York, when organizations learn to live with and celebrate diversity, they surge ahead in innovation. It is not without reason that innovation seldom comes from monochromatic societies. The more like a rainforest a society is, the more likely it is to innovate.

Innovation is about building value for others beyond personal gratification

The night is young, ladies and gentlemen. In proposing the fascinating subject of innovation, you can see how the horizon has kept shifting. Over the crest of the wave, this blue truly is infinite. I know you are waiting for me to end so that the award ceremony can commence and the gala dinner can follow. Only after that will you get the opportunity to hold hands with your loved ones and feel the foamy waters over your naked feet as you walk on the beach tonight. So I must hasten. But before I let you go, I want to leave behind one final thought. How much do reward and recognition spur innovation? How much is it guided by personal gain and human greed? I started this conversation by looking at nature and then at the work of man. I would once again like to go back to these two. First, we look at nature, and then at man.

As a little boy, lost in the golden paddy fields, I used to watch insects with fascination. I used to look at the bees that went from flower to flower, collecting just enough for the day and, in the process, serving the bigger purpose of pollinating the trees. "What would happen," my young mind would ask, "if for one season all the insects decided that they would go on vacation?" It was a dreadful thought because it would make the whole world starve. In the act of the millions of little insects, human beings and other animals sustain themselves. These little insects do not come by asking for a percentage of sales or seek to be covered under a stock option plan. Just the same way, the Earth does not charge the cow for the grass it grows and the cow does not ask us for a cut for the milk our children grow up on. Neither does the sea ever come by to get paid for the fish that we net every day.

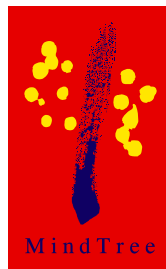
Okay, so we are not God here. We are not going to be swayed by this evangelical message of altruism. Give us some real stuff. Hold on for a moment.

The young Mozart died a pauper and his spirit benefits no more from music rights bought and sold than Michelangelo benefits from the five palaces he owned while alive. Marie Curie was killed by cancer, caused by the same radioactive agent that she brought to all of us, so we could fight the disease. The man who invented penicillin, the man who invented the polio drop, the man who created Braille and the one who made a strand of light travel through a fiber-optic cable for the first time: all of them were consumed by only one thing above all else - to bring out something that would be useful to others in a vastly beneficial manner. Sometimes the commerce followed. But in an overwhelming way, we find that the greater the footprint of any innovation, the more pervasive has been the altruistic motivation behind it.

I know that the lawyers and the bean counters in the audience do not like my ending on that note, but who says I am ending here?

Good luck with all you do, I am delighted to be with you this evening.

(Subroto Bagchi is co-founder and Chief Operating Officer of MindTree Ltd. Grateful acknowledgments: Yves Doz, Shombit Sengupta, Prem Chadavarkar and other referenced individuals. This and Subroto's other writings can be accessed at www.mindtree.com .)



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