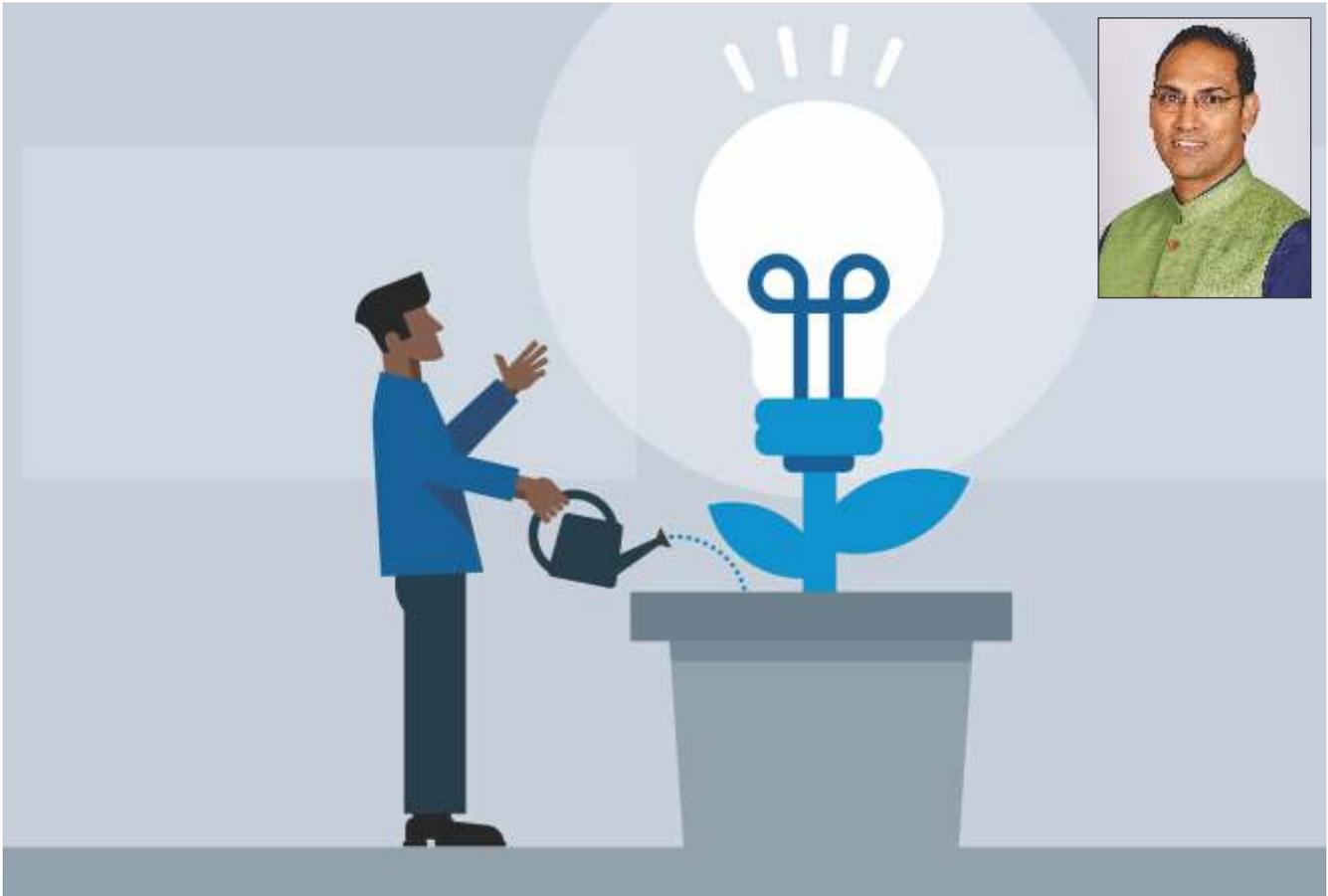# Interaction with Dinanath Kholkar, Vice President and Global Head of Analytics and Insights, TCS Ltd. and Chair IEEE Pune Section

Dinanath Kholkar

Q. Can you take us through the cycle of Innovation in business?

A. At TCS, we believe innovation begins with the customer. Even fresh exploration of ideas is often done jointly with our customers; at other times, we develop our ideas and run these past our closest customers, to get their feedback and to help in tweaking these for the real world. We conduct a number of ideathons and hackathons across our global teams of engineers, to source innovative technology and business ideas for client businesses. Our Research and Innovation labs engage in joint research and incubation with clients to identify opportunities for business advantage, enhanced efficiency and growth. These ideas then go through a period of prototyping andengineering to ensure we have the best architecture for scalability and enterprise integration, after which they are picked up by industry-specific business units. These business units prepare solutions for client deployment and functional enhancement, if necessary.

Within TCS, we group innovation into time-based horizons, with H1 being immediate-term innovation (or derivative innovation) that is largely driven by industry business units. H2 (platform) innovations tend to be medium-term that are generally led by our Business and Transformation Services unit, that focuses on core technologies of interest to our global customers. H3 (disruptive) innovations are almost exclusively managed by our corporate research and innovation teams, in collaboration with leading academic and other research teams worldwide. For both H1 and H2 innovations, we also extensively involve our co-innovation (COIN) teams that have deep connects with emerging-tech firms. Post incubation and prototyping, depending on the relevance to customers, these innovations get converted to TCS offerings – that could be products or solutions or frameworks – which will directly impact TCS' top-line.

Q. Can you tell us about TCS Innovation journey?

A. TCS invested early in research and development to drive innovation across our client businesses. We set up India's first IT-based research lab – the TRDDC at Pune – in 1981. Several

research programs were initiated and brought to bear on TCS' core tech business in the following years. This effort acquired fresh momentum when the corporate technology office was set up in 2006, under our CTO. The Research and Innovation function became more formalized and outcome-driven over the following years, and we now have innovation labs focused on many of the core disruptive technologies impacting our customers worldwide. Multiple products and solutions have come out of these labs, for example, Mastercraft™ for model driven engineering or ignio™ for AI driven IT Operations.

Over the past year or so, TCS has embarked on a journey to embed research and innovation, in each business unit and customer account. So, we now have a 'two-tier research and innovation' structure, with a corporate team and corresponding unit-level teams; the corporate research teams focus on H3 and some H2 research, while the business units bring in the customer insights and work towards the H1 innovation.

To foster the culture of innovation, TCS has annual TCS Innovista contest, where the best innovations get the opportunity to benchmark them self. Through a series of objective and thorough evaluation, the winners of each category are declared. Some of the key categories include focus on innovation in new products and services, innovations that are yet to be commercialized and best platforms. We also recognize those innovators who have tried but not been successful with our "dare to try" category.

TCS Innovista is designed and run much like Tata Group's namesake event. The best of TCS Innovista's entries often find their entries to Tata Innovista. Over the years, TCS has won multiple awards in the Tata Innovista.

Q. Can you throw some light on the digitisation driven innovation across IT industry

A. Digitization has certainly impacted the IT industry deeply, and TCS has seized the opportunity provided by this new channel to increase the share of our digital revenues over the years. We have now put forth our thought-leading 'Machine First' framework that places digital front-and-center of all our client initiatives. This is an 'Age of Abundance', where we observe that organizations have more data than ever at their disposal today. Organizations are hence looking at formal ways of assessing their maturity on data, embracing analytics and AI, and using them as a key differentiator in driving their growth and transformation journey. Organizations that aspire to design an intelligent, data-focused eco-system triggering real-time insights for decision making are likely to invest in this technology space. Also, the data-driven digital economy will propel organizations to create interesting monetization models that would further fuel these investments.

Digital Re-imagination leverages digital technologies to create game-changing ways of executing business cutting across business models, products/services, customer segments, distribution channels, business processes, and workplaces.

With disruptive and innovative technologies, such as artificial intelligence, internet of things, cloud, block-chain and analytics, which are redefining our world every day, TCS is driving Business 4.0™ for its customers for their growth and transformation journeys to evolve into future-ready organizations. It is essentially about enhancing customer experience through mass personalization, bolstering innovation and growth by connecting collaborative ecosystem, fueling growth strategies by embracing risk, and redefining the business models to create the exponential value.

On the social front, Tata trusts and TCS have collaborated with our Cancer hospitals and the National Cancer grid to create DiNC – a Digital Never Centre for cancer patients. The Centre would act not only as an information centre, but would also support a patient through the period of investigations and treatment. And there would be enough hand-holding to make sure that doubts are cleared, appointments are facilitated
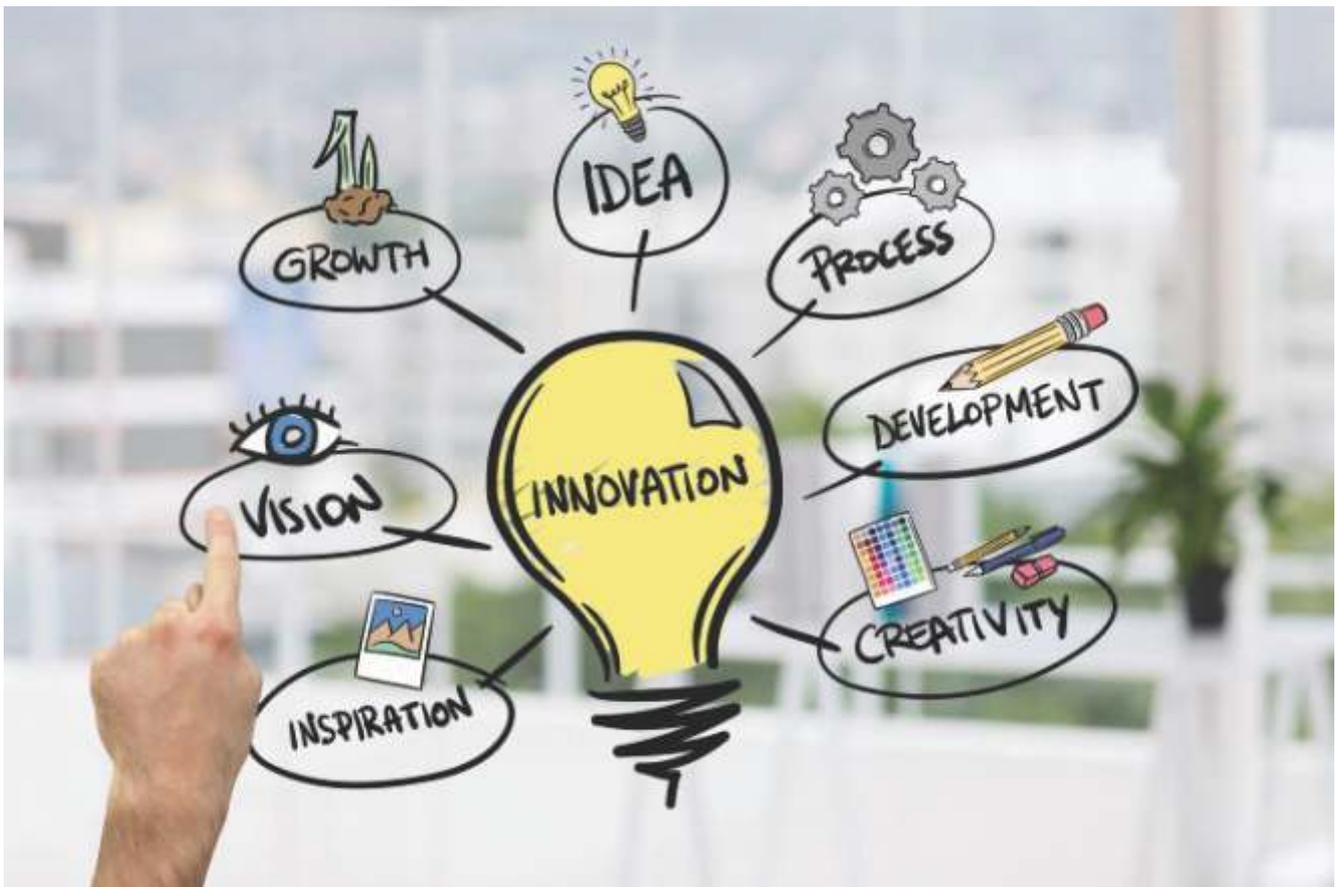
and treatment is completed.

Q. How do you place the interplay between innovation by IT and other services and manufacturing sector?

A. At TCS, we believe, 'Default is Digital'. Our Tata Group Chairman Mr. N Chandrasekaran quotes, 'We need to recognize that business is all about data-centricity right now. As I tell people in my companies, process maturity is no longer your day job. Your day job now is data maturity.' This is brought out by TCS' Business 4.0™ thought leadership framework that was launched by our CEO Mr Rajesh Gopinathan; it highlights how Industry 4.0 is impacting businesses, and how we believe all businesses across sectors must change to adapt to this new world.

In many organizations, the business leaders' current focus is on data foundation, and modernization of their data and analytics estate with a faster than expected adoption of cloud. This paves the way for greater demand and adoption of contextualized, advanced analytics and AI to deliver superior,

data-driven business outcomes.

In an extremely competitive environment, insights can mean the difference between success and failure. Business leaders must explore the art of possible by sponsoring data-centric initiatives, and asking the right questions to glean game-changing insights to eventually help them create new revenue streams and business models, limit risks and losses, maximize profits and customers' wallet share.

Q. What are your thoughts about sustaining or increasing the competitiveness of Indian IT industry using Innovation as a fulcrum?

A. Fostering a culture of innovation will lay the foundation for an organization's success. At TCS, we understand our clients' business priorities; and to drive growth and transformation for them, we develop a strong knowledge base leveraging the contextual knowledge and constantly move up the value chain.

From a services-centric business model, we need to evolve platforms and

products that address client's business challenges. These need considerable amount of investments and high risk appetite. As we move into the digital economy, we have to drive a considerable innovation on our services and prudently leverage new-age cutting edge technology to beat the competition and stay ahead of the curve.

Q. A perspective on TCS's mentorship role in fostering Innovation at the grass root level

A. For several communities, technology is helping create more career opportunities not just for today's workforce, but also for future generations. With better pay parity and greater access to jobs, the tech sector is enabling a higher degree of inclusion and economic sustainability. Initiatives such as the GoIT program, which was launched in North America in 2009, aim to demystify computer science and help students gain the skills and confidence required to pursue science, technology, engineering and mathematics (STEM) careers. TCS IT Wiz is another such initiative, where we conduct an

information technologyquiz-based competition for students in class 8-12 across India. Some of our COIN partners are small startups who are directly working with our Industry business units on for example, IoT in Agriculture or Education, which will lead to new solutions in the industry and new job opportunities.

To accelerate research, TCS launched its first research lab in 1981 in Pune. Currently, we have more than 500 Researchers across 30+ Innovation Labs. In FY18 alone, we have invested over INR 1500 crores towards investment in Research and Innovation, and published over 250 thought leadership articles across major journals, magazines, and print media. As a proof of pudding, we have filed close to 4000 patents, and have been granted over 650 patents so far. TCS' Co-Innovation Network provides an environment for sophisticated research in leading-edge technologies across a variety of domains. The network

ecosystem consists of TCS Innovation Labs, Academia, TCS Clients, Alliance Partners, Industry bodies, Startups, VC, and so on. The objective of the program is to build a culture of innovation through Innovation Forums, Ideathons and Hackathons, Innovation Days, Custom COIN (Co-Innovation), and Innovation Champion.

TCS has invested in setting up Digital Impact Square (DiSQ) at Nashik to mentor and groom students with a view to evolve them as entrepreneurs.

Q. Your thoughts on innovation, job creation and reshaping current workforce
A. There is an abundance of young minds in India and they are looking for new opportunities. When empowered with the right skills and jobs, they can propel India. Every year approximately 12 million young Indians join the workforce. How nations develop their human capital can be a more important determinant of their long-term success.

The economic prosperity of the country can be enhanced, and the disconnect between unemployment and GDP growth can be reduced by syndicated efforts by industry players, government and regulatory bodies.

TCS for example has played a key role in re-defining the workforce skills landscape by reskilling our associates from legacy technologies (most of that work is now being driven by automation or becoming obsolete) to Digital technologies. This has not only transformed TCS workforce, but actually influenced the Indian IT industry at large, enabling Industry 4.0 initiatives.

To forge and strengthen relationships with academia, TCS initiated Academic Interface Program. In the last financial year, TCS Academic Interface Program benefited over 700 institutions with close to 350 Faculty Development Programs covering over 12000 faculties, and conducted 881

workshops reaching almost 1.4 lac students across the country.

Aligned to the changes in the industry, TCS proposed a new under grad BE curriculum on Computer Science and Business systems that is being piloted in three colleges, BVP COE at Pune being one of them. AICTE has approved this new curriculum for use.

In addition to that, TCS has an Innovator Program, where the organization ties up with premier technical education centers such as IITs, and NITs to draw top talent for Research and Innovation roles across all major industry domains.

Q. Your perspective on Innovation and Intellectual Property Rights

A. A strong IP rights environment is crucial to encouraging innovation. Inventors and innovators need to be incentivized by allowing them protection

and rewarding them for their efforts. In India, we often have a tension between IP and the social objective to make products available at affordable prices. The objective of TCS IP management is to provide a trustworthy and agile ecosystem for TCS IP from ideation to impact. This helps enable TCS to protect its intellectual property and reinforce right access and right use of intellectual property and confidential information of TCS, clients, partners, vendors and other third-parties in its global business.

Q. Your views about encouraging innovation culture at student level and channelizing them to the logical conclusion

A. As part of my volunteering for IEEE Pune section, I,along with some of my colleagues have conducted workshops on creativity and innovation for engineering students.

The objective was to ensure that we

nurture the creativity of students by giving them ample opportunities to experiment, provisioning a platform to learn from their failures, and compete with the best in the world. This would play a critical role in shaping up the students into innovators.

Also, IEEE Pune Section has set up a special interest group on affordable agriculture, where we are creating a collaborative eco-system for engineering students to solve the technology challenges faced by the farmers, through frugal and practical innovative solutions.

Dinanath Kholkar can be reached over email : dina.kholkar@tcs.com
(keeping with changing times, MCCIA and TCS team took the help of technology to facilitate this interaction over email).