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VOL XL No 5 | MAY, 2024 | ₹100

# DATAQUEST

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THE BUSINESS OF INFOTECH

## GENAI: WALLFLOWERS ARE NOW WALL-FACERS



It's a 4 body problem with GenAI.  
It's so tough to get that syzygy right—  
where data availability, data privacy,  
authenticity and enterprise-readiness  
align to the T and not cause chaos.  
But how tough, exactly?





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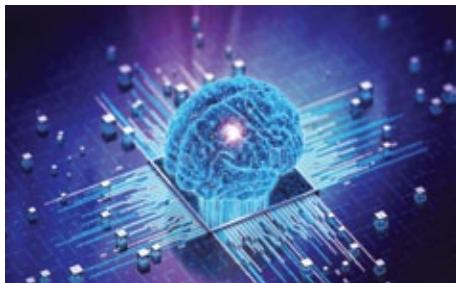
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**Dataquest** (not affiliated with Dataquest Inc., a division of Gartner Group, USA), is printed and published by Pradeep Gupta, on behalf of Cyber Media (India) Ltd, printed at M/s Archna Printers, D-127, Okhla Industrial Area, Phase-1, New Delhi 110020, published at D-74, Panchsheel Enclave, New Delhi 110017, India. Editor Sunil Rajguru. Distributors in India by IBH Books & Magazines Dist. Pvt. Ltd, Mumbai.

**Subscription (Inland): ₹1200 (12 issues)**

(For subscription queries contact : rsedqindia@cybermedia.co.in)

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# “TECH AT THE HEART OF DEMOCRACY”

This month, our focus shifts to an event of monumental importance – the largest elections in one of the world's largest democracies: India.

## TECH'S ROLE IN INDIAN ELECTIONS

In India, a country with over 900 million eligible voters, technology isn't just a supporting player; it's a game-changer. Biometric systems like the Aadhaar card, which uses fingerprint or iris scans for identification, ensure the integrity of voter identities. However, concerns remain around data privacy and potential disenfranchisement for those lacking this technology. Blockchain trials aim for an even more secure future, with immutable voting records. Social media platforms, while under rigorous scrutiny, wield significant influence. They shape political discussions and voter perceptions, but can also be breeding grounds for misinformation. To combat this, India has implemented fact-checking initiatives to promote a more informed electorate. The government's deployment of digital tools further highlights a tech-savvy approach. Voter education apps and real-time results reporting, facilitated by digital platforms, enhance democratic engagement.

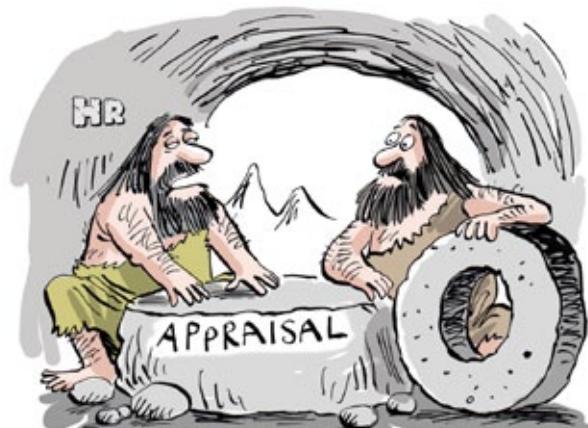
As our tryst with GenAI continues our cover story this month delves into the evolutionary leap of artificial intelligence into Generative Artificial Intelligence. “GenAI: Wallflowers are now Wall-facers” explores how GenAI stands at the threshold of understanding human language in all its complexity – from the layered meanings behind words to contextual nuances. In India, where voice search and speech-based applications like regional language assistants are popular even among the illiterate, GenAI's potential to bridge the digital divide is unprecedented.

However, the path forward is not without challenges. Issues of data privacy remain paramount, especially with the ongoing debate around India's data protection laws. Additionally, ensuring the authenticity of information processed by GenAI is crucial.

Our story explores how, when harnessed responsibly, GenAI could redefine interaction and accessibility across multiple sectors, from education and healthcare to agriculture and customer service.

As we continue to explore these themes, the interaction between technology and society remains at the forefront of our discussions. Technology's role in shaping the future – be it through elections, language understanding, or global market regulations – underscores a broader narrative. A narrative where technology not only supports but actively shapes and defines the pathways of human progress.

Oh! BTW Happy Appraisal.

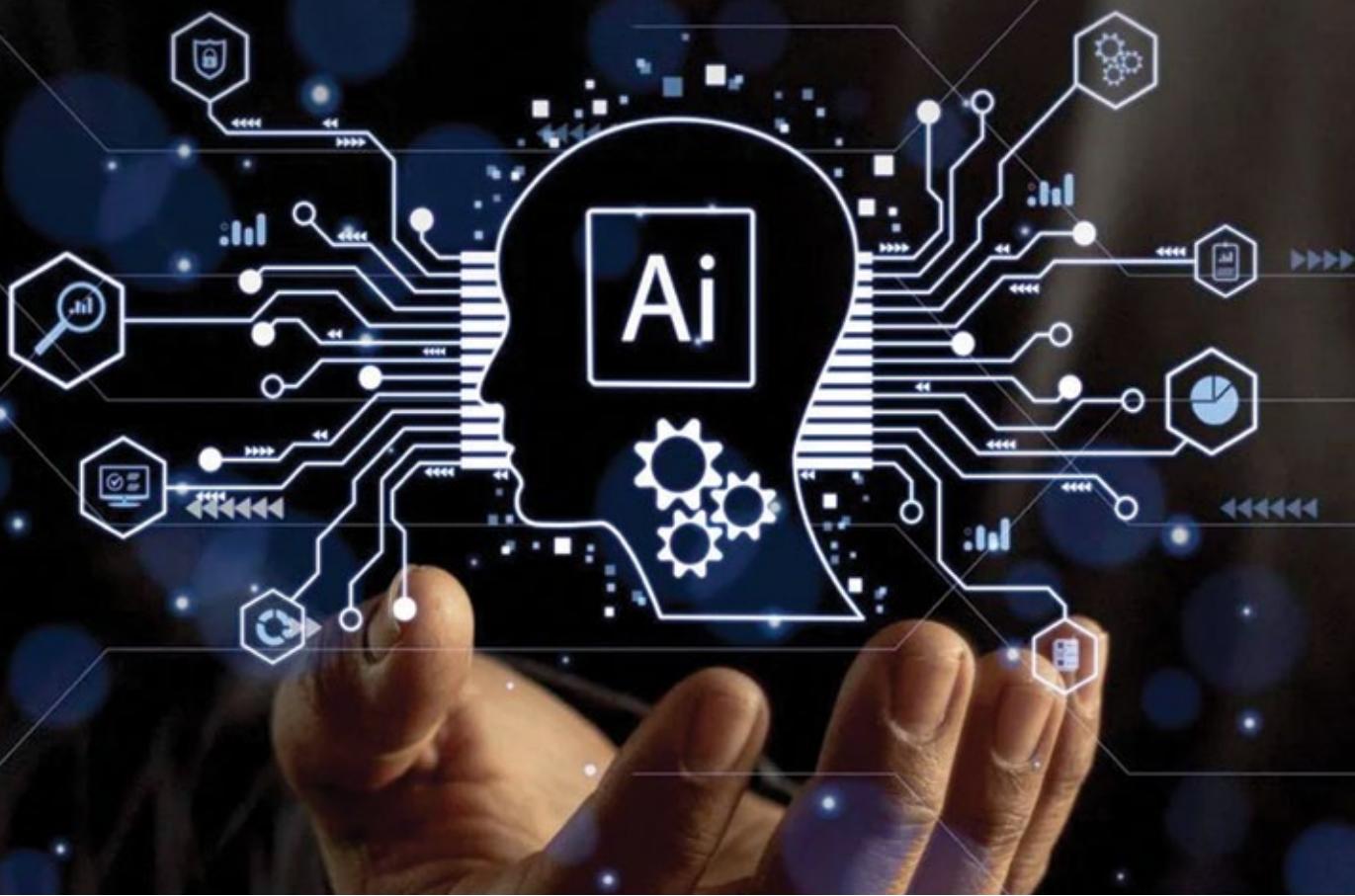


Sunil Agarwal & Ian Baker

# GenAI: Wallflowers are now Wall-facers

It's a 4 body problem with GenAI. It's so tough to get that syzygy right- where data availability, data privacy, authenticity and enterprise-readiness align to the T and not cause chaos. But how tough, exactly?

By Pratima H



*"Overly literal translations, far from being faithful, actually distort meaning by obscuring sense."*

— Ken Liu, The Three-Body Problem

"Liars." The super-intelligent and much-advanced-than-humans species from the other world is thrown off by just this one word. In 'The Three-Body

Problem' series, the dark plans of aliens (for lack of a better word) to invade this planet go off the orbit just because they hear a story. They listen to a human as he casually narrates a fairy tale about the Wolf and Red Riding Hood. And they get stuck at the word, the idea, beyond rescue. They just don't understand it. Humans can say one thing

and mean something else. And the other person will actually 'get' it.

That's exactly the power and potential of GenAI. It's the most beautiful, complex and rarefied accomplishment of AI. Because it's about human language. It's about words, thoughts, nuances and context. That takes a whole new weight when we are thinking of a country like India- where vocal search, speech-based apps and mobile phones (in the hands of people unable to read and write) are as rife as rich literature, multiple languages and text waiting to be digitized. GenAI has to 'get' what humans say here. And if it can do that, there's no stopping it from ruling this world.

This is where the classical challenge of data availability in GenAI assumes an entirely new complication. It has to dance well with other factors like data privacy, data authenticity, context and enterprise usability. Not that easy a dance though.

Let's translate them one by one and find out why.

#### **LOCAL PLUS AMPLE - A TRICKY DATA UNIVERSE**

It's a massive white space - waiting for the right trajectories to be formed. From about \$67 billion in 2024, the global GenAI market is slated to grow to an explosive \$967 billion by 2032 (as per Fortune Insights). Other crystal balls don't have such fiery graphs. But still potent enough. Grand View Research pegs this space at around \$109 billion by 2030 and Allied Market Research puts it at about \$191 billion by 2032. If we go by what McKinsey estimated in 2023, generative AI could add the equivalent of \$2.6 trillion to \$4.4 trillion annually across the 63 use cases it analyzed. But there can be many a slip between this cup and the graph- in India.

In the global GenAI landscape, the US and China are leading the way as they are creating their own GenAI models built with informational and contextual safeguards. However, India seems to lag in the fray, as the strength of GenAI, in the context

of local languages, relies on expertise and models trained specifically for Indian data points- points out Sanjoy Paul, Program Director, Tech and Data, Hero Vired. "Thus, unlike Western solutions, which may not be as effective due to cultural and linguistic differences, there's a need for AI models to be trained on Indian datasets."

Large Language Models (LLMs) are sophisticated prediction machines that are good at finding patterns amongst vast and diverse set of data that they are trained on, Lakshminarasimman Raghavan, Group VP Technology, Publicis Sapient gives a quick primer first. "They use this to generate new data/content based on their training. Data is not just limited to text, but these models can also generate images, videos etc. As far as data exchange with LLMs for GenAI use cases goes, two types of data are involved, one, the data that is passed to LLMs as prompts and the data that the LLMs are trained on. There is a third consideration stemming out of this - which is how the data supplied as prompts are used by the LLMs to train their base models."

In any application landscape, data availability is critical, a principle especially resonant in the specialization of GenAI, as Sridhar Mantha, CEO of GenAI Business Unit, Happiest Minds Technologies adds next. The challenges - as he rightly underlines- are two-fold: content and context.

The first one is- How is the data being made available (Content) - Static information in the form of documents ranging from static documents in various formats to multimedia, alongside transactional data accessed through APIs, databases, etc. Each source poses its unique intricacies and demands in terms of integration and interpretation. The second is - What is the data (Context) - How do we understand the context of the data is what presents the crux of the challenge, particularly evident in transactional information. Understanding the context requires a nuanced



**"**

In India, the primary challenge is data regulation. For instance, standards such as DPDP have come into effect only last year and the need of the hour is strict enforcement of these privacy laws.  
**- Lakshminarasimman Raghavan, Group VP Technology, Publicis Sapient**



“

By addressing both content and context with equal emphasis, organizations can harness the full potential of their data assets.

- **Sridhar Mantha**, Happiest Minds Technologies

grasp of the intricacies surrounding each data point—contextual cues, temporal relevance, and relational dependencies. For GenAI applications, this contextual understanding is fundamental for accurate analysis, inference, and decision-making,” Mantha explains.

Indic LLMs will also face data scarcity as a challenge and hence have a reduced amount of data to train their models on, Raghavan contends. “Given this situation, the possibility of ambiguous responses will be a problem for such models as more such ambiguous responses are likely to reduce their authenticity.”

Ramke Ramakrishnan, VP Analyst, KI Leader at Gartner brings in another critical facet here. “The availability of data influences the level of processing applied to the data sets, which could contribute to hallucinations, the accuracy of the results and the effectiveness of security controls. These factors, amongst others, can also impact the overall costs, deployment time and expertise required to deliver a robust GenAI application.”

Maybe one way to counter this availability problem is to create synthetic data.

With the growing adoption of synthetic data across industries and vendors, we see an immense value and increase in the adoption of synthetic data to improve ML performance, fairness and accuracy with more training data sets and fine-tuning models and privacy preservation on sensitive data to deliver better outcomes. Also, it allows organizations to take on new use-cases for which they need more real data.” Shares Ramakrishnan.

As to synthetic data, Ramasubramaniam Srinivasan, Senior VP - Practice Leader - AI/ML, Data and Cloud of Collabera Digital reminds that sourcing of authentic datasets for fine-tuning is going to be crucial to avoid copyright-related concerns. “Also there is a real paucity of local data sets and synthetic data is estimated to be 40-50 percent of the data used for development of AI models. Several start-ups have started offering tools, platforms and services for synthetic data generation.”

Gaurav Kheterpal, founder and CEO of Vanshiv Technologies opines, “While India is a goldmine for data from various sources, I believe synthetic data is also important for LLMs due to factors such as regional dialects, cultural nuances, the strong need for domain-specific content and adoption to societal context.”

Synthetic data is expected to become 100 percent of the data used for AI model development in a few years, Srinivasan ventures to augur. “Synthetic data may reduce the problems regarding personal information sharing and promote data minimization. However, there are also deep-fakes issues which have been recently witnessed in India due to synthetic data generation.”

That's exactly where we move to the next challenge of GenAI in India.

## PRIVACY AND SAFETY - ECLIPSES WORTH WATCHING

Ok, let's say we got the data we need – and in the numbers we want. What next? The Scrabble gets harder from here.



“

With AI algorithms processing amounts of data, verifying the accuracy and reliability of outcomes becomes essential. In industries such as finance and online retail where AI plays a role in decision-making, ensuring the accuracy of data inputs and transparency in algorithm operations is essential.

- **Murale Narayanan**, Dell Technologies



“

Establishing accountability for lapses is crucial, prompting discussions around the necessity of human validation or the use of additional AI systems for validation.

- **Srinivasulu Nasam**, Bosch Global Software Technologies

We also have to ensure that user privacy and safety are not compromised. And issues like bias, prejudice, offense and misinformation are not allowed to breed in the rush for more and more data. Data privacy is a very delicate, but crucial, challenge in GenAI.

According to the latest Gartner Business Outcomes of Technology by Use Case Survey, senior leadership's main concerns with GenAI are 'Privacy concerns' and 'risk of misuse'. Despite the potential for AI to deliver value, there is a deluge of distrust that needs to be resolved to make it purposeful, Ramakrishnan shines the torch a little closer on this issue. "With AI-related regulations increasing, adopting open-source foundation models is preferred over closed-source due to deployment flexibility, customization options and enabling better control over security and privacy."

Data privacy is a concern, particularly due to the abundance of data generated and handled by AI systems, seconds Murale Narayanan, CTO, Managed Services India (Technology Transformation), Dell Technologies. "Practical examples vividly demonstrate the complexities involved. For example, in healthcare, where AI systems analyze data, it is essential to implement robust measures, for data privacy to protect patient confidentiality. Using encryption protocols, access controls and anonymization techniques can help mitigate risks and maintain privacy standards."

Dinesh Kumar Poobalan, CEO & CTO, Greatify, a venture into digital learning and education, also avers that data privacy and authenticity are

paramount in GenAI models, as they determine the trustworthiness and reliability of the technology. "Data privacy is also important in education because in order for individuals to be willing to engage online, they have to trust that their personal data will be handled with care."

Currently, models are trained using data available on the internet, which may include copyrighted material in various formats, articles, and content produced by individuals, as well as certain personal data protected by relevant data protection guidelines- cites Srinivasulu Nasam, Senior Technical Director - GenAI for Systems and Software Engineering at Bosch Global Software Technologies. "Regulations, usage scenarios, and potentially compensation models need to be defined for the ethical use of such data in model training."

Arun Moral, Managing Director at Primus Partners illustrates how the Indian Government continues to promote GenAI through 'Make AI in India and Make AI work for India' announced in 2023 budget with fiscal grants to COE setup for GenAI. For example, the passport verification process has embraced GenAI techniques for swift validation of an individual's identity. The process leverages the Machine Readable Zone (MRZ) code approach to accelerate and enhance overall operational efficiency. The accuracy of the GenAI tool to recommend or reject the application is directly proportional to the quality and correctness of the base data which is a huge underlining threat.

Moral also reminds of the concerns arising from unsanctioned GenAI tools in enterprises. His



“

Synthetic data is a new class widely used in various aspects, including data anonymization, AI and ML model development, data sharing and monetization. Synthetic data is at the peak of inflated expectations from the most recent Gartner Hype Cycle for Generative AI.

- **Ramke Ramakrishnan**, Gartner



“

“Large Indian organizations have matured significantly in ML implementation as it has been ongoing for a few years. This is expected to continue.”

- **Ramasubramaniam Srinivasan**, Collabera Digital

prescription to the challenge of Shadow IT here is to embrace the magic pill envisaged in ‘Fifth Industry Revolution’s - Human-centred-Architecture’. “This would ensure industry outcome complemented with accelerated shoes of GenAI and controlled by the human brain.”

Rahul Bhattacharya, Technology Consulting and AI leader at EY GDS notes that it is likely that existing LLMs (both proprietary and open source) have been trained on a certain amount of material related to India or produced within. “As the range, quantity, quality, and sources of this data remain unknown, it’s hard to determine the authenticity of this data, or whether it contained private data that was used without permission. Any error in training due to inauthentic or biased data could lead to models that are ineffective or, worse, perpetuate stereotypes and inaccuracies.”

Mantha points out how Enterprise GenAI applications primarily rely on data sourced from within the enterprise itself. “These applications predominantly serve to interpret and visualize this internal information, leveraging GenAI technologies to derive insights and facilitate decision-making processes. To maintain the integrity of this data boundary and uphold privacy standards, numerous technical interventions are deployed. These interventions encompass a spectrum of measures, ranging from robust encryption protocols and access controls to anonymization techniques and data masking strategies.”

Sanjoy Paul, Program Director, Tech and Data, Hero Vired affirms that to meet legal obligations and

defend user rights, preserving the privacy of personal data used to train AI models and produce content is indispensable. The Personal Data Protection Bill, which strongly emphasizes permission, data localization, and severe penalties for non-compliance, presents hurdles for Indian markets. At the same time, preserving authenticity in generated material is essential to stop fraud, disinformation, and manipulation of deep fakes.

There is also the question of the protection of Enterprise IP. Given the computational requirements and the nature of LLMs, it may not be practical to run separate instances for each enterprise, leading to shared usage among multiple entities, Nasam cautions. “Architectural and design considerations should prioritize maintaining data security and privacy within each enterprise, with emerging concepts like RAG and enterprise-specific adaptive layers aiming to address these challenges.”

## ENTERPRISE-READY GENAI - NOT IN THE ORBIT YET

Just making models will not suffice unless there are takers and confidence in the scalability and relevance of such solutions. GenAI in India will have to find an enterprise-fit beyond experimental work.

Ganesh Gopalan, Co-founder, and CEO, Gnani.ai offers some examples. “We collaborate with numerous large banks to automate their customer support functions. Additionally, Gnani.ai assists over 50+ lending customers, such as Buy Now Pay Later companies, NBFCs, and microfinance institutions, in automating customer conversations throughout



“

While the adoption at the enterprise level is increasing, there’s a need for further development in scaling the solutions and addressing local language contexts to ensure comprehensive integration across enterprises.

- **Sanjoy Paul**, Hero Vired



“

Data privacy and authenticity are not just legal and ethical requirements but also critical business imperatives.

- **Rahul Bhattacharya, EY GDS**

the lending life cycle.” Moreover, they partner with automotive companies to facilitate early demand assessment and gather customer feedback through automated conversations with showroom visitors. “Furthermore, in the healthcare sector, we collaborate with global enterprise healthcare companies to automate patient engagement processes across various channels.”

Let's ask someone who packs the knowledge of several pilots and implementations across government processes and banks in India. Ankush Sabharwal, CEO of CoRover, the conversational artificial intelligence (AI) startup behind BharatGPT, India's homegrown GenAI initiative raises an important point—the advantage of less time to go live and true representation of Indian context (how Indians ask and communicate) with enterprise-level solutions made in/for India. “They also take less time in training, for questions, for inferences and are apt for CRM and ERP responses. We have been doing virtual assistants for a long time now with Generative AI based on local LLM, a lot has improved – be it in the area of query resolution or go-live time windows of virtual assistants.” He cites many pilots that are underway across a diverse spectrum – from a lot of banks to Chennai AI police to education solutions and e-government projects of some states like J&K.

“We are building Chatbots/ ML Solutions for use-cases here.” Srinivasan from Collabera Digital, lets on. “We have a significant client base in India. Large Indian organizations have matured significantly in ML - and this is expected to continue. With Generative AI solutions starting from ChatGPT last year, there has been a significant interest in AI models in Small and Medium Organizations as well. With ‘Pay as you go’ models in Generative AI service providers, Indian organizations are currently at the POC stage and we see a lot of interest.”

#### ANSWERS - THEY ARE COMING

To fully leverage AI in India, it's crucial to prioritize building LLMs for local languages using data generated by companies and government bodies, sums up Paul.

Nasam adds how we're already witnessing platforms like ‘Bhashini’ bringing this technology closer to a vast user base by overcoming language barriers. “However, key concerns such as data privacy, copyrights, intellectual property (IP) protection, and quality assurance must be addressed for generative AI to become mainstream.”

The GenAI ecosystem is evolving to include small language models (SLMs), offering more streamlined operations than LLMs, Ramakrishnan offers an alternative. “SLM requires less data and fewer parameters for fine-tuning and training, making them promising to be more efficient and effective for specific domains or targeted applications. This shift improves data privacy control and enhances the user experience by reducing errors and increasing authenticity.”

As Bhattacharya captures. “It is essential for AI solutions to not only be context-aware but also to have robust mechanisms that protect user data and reaffirm the reliability of the information provided.”

Looks like there is a lot to do.

Not exactly light years away, but GenAI is still far from realizing its ultimate potential in a region like India. We have to cross many speed bumps around privacy, context, and scale to get to the future that awaits us. It's a thin line. But it can change the entire axis of this universe.

Spoiler Alert (If you haven't read or watched ‘The 3 Body Problem’). It's as thin as that tiny difference between these two lines. “You are a bug.” And “You are bugs.”

Be it GenAI or the big universe out there - One small alphabet can change so much.

*pratimah@cybermedia.co.in*

## Platform Brief

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<b>Intel® Core™ Ultra 9</b>					
			185H 16 cores 4P + BE + 2L/P/E		
Intel® Core™ Ultra 7	164U 12 cores 2P + BE + 2L/P/E	165U 12 cores 2P + BE + 2L/P/E	165H 16 cores 4P + BE + 2L/P/E	155U 12 cores 2P + BE + 2L/P/E	155H 16 cores 4P + BE + 2L/P/E
Intel® Core™ Ultra 5	134U 12 cores 2P + BE + 2L/P/E	135U 12 cores 2P + BE + 2L/P/E	135H 16 cores 4P + BE + 2L/P/E	125U 12 cores 2P + BE + 2L/P/E	125H 16 cores 4P + BE + 2L/P/E

**Table 1: Intel® Core™ Ultra Processor Family**

Performance may vary based on configuration and usage. Certain Intel technologies may require specific hardware or software activation. While every effort is made to ensure security, no product or component can guarantee absolute security. Costs and results may vary.

- Based on test results comparing processor power consumption with Intel Core Ultra 7 165H processor vs. 13th Gen Intel Core i7-1370P.
- Based on AI inference performance per watt with Intel Core Ultra 7 155H processor vs. 13th Gen Intel Core i7-1370P using UL Procyon AI Inference Benchmark.
- Intel vPro® platform requirements include eligible Intel processor, supported OS, Intel LAN/WLAN silicon, firmware enhancements, and other hardware/software for desired use cases. See [intel.com/performance-vpro](http://intel.com/performance-vpro) for details.
- Feature availability may vary by PC make/model; some features require OS enabling.
- Exclusively available with Intel vPro® Enterprise.

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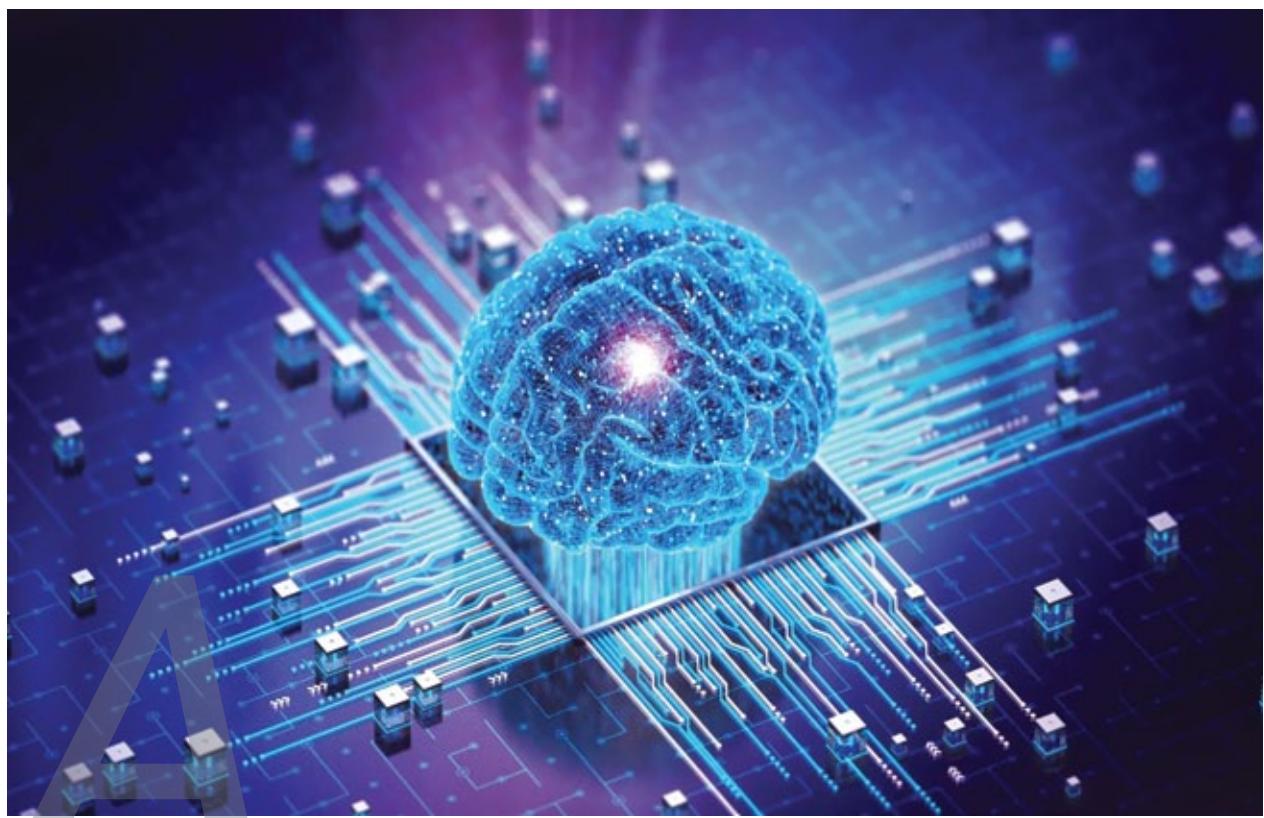


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# The Rise of Generative AI in India

In the burgeoning landscape of Artificial Intelligence, the rise of Generative AI (GenAI) heralds both promise and responsibility, echoing Uncle Ben's timeless wisdom:  
“With great power comes great responsibility.”

By Aanchal Ghatak



As humanity strides into the era of Generative AI (GenAI), the imperative to wield this power responsibly has never been more critical. Just as Peter Parker grappled with his newfound abilities, we too face the monumental task of ensuring our AI creations serve ethically.

## THE GENESIS

The initial wave of Generative Artificial Intelligence surfaced in 2022, driven by advancements in generative AI creativity, particularly exemplified by tools such as Dall-E 2 and Midjourney. However, the

introduction of ChatGPT in November 2022 marked a significant milestone, igniting both excitement and apprehension. This catalyzed a swift adoption of generative AI across enterprises, with many leaders ramping up their AI investments and delving into generative AI within mere months of ChatGPT's debut. The accessibility of AI technology to non-technical users was realized for the first time with the introduction of ChatGPT. Additionally, major software vendors like Salesforce began integrating generative AI into their applications following the advent of ChatGPT.



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Augmenting AI systems' capabilities with measures such as restricting access to data requiring controlled disclosure can mitigate the risk of potential misuse and safeguard sensitive information from unauthorized access or disclosure."

- **Augusto Barros**, VP of Product Marketing at Securonix

## INDIA'S PIONEERING ROLE IN GENERATIVE AI ADOPTION

India emerges as a frontrunner in the global adoption of Generative AI (GenAI) technologies, with a remarkable 81% of organizations already implementing these transformative solutions, as revealed by "The Elastic Generative AI Report: One Year On." Despite this enthusiasm, challenges such as data management, security concerns, and accessibility persist, underscoring the need for strategic partnerships with GenAI providers. Indian businesses foresee significant productivity gains through GenAI-enabled conversational data search capabilities, with potential time savings of two or more days per week per employee. Moreover, the report signals a promising trend of increased budget allocations towards GenAI initiatives in the coming years, highlighting India's readiness to invest in and leverage the potential of GenAI for innovation and competitive advantage in the global market.

## EVALUATING THE POSSIBILITIES

Chief Information Officers (CIOs) are at the forefront of evaluating GenAI's potential impact on their organizations. The allure lies in its capacity to drive innovation, automate tasks, personalize experiences, improve efficiency, and secure a competitive advantage. However, alongside these opportunities, there exist complexities and ethical considerations that demand scrutiny.

When we engaged with numerous CIOs, a recurring sentiment emerged: the majority are currently in the process of evaluating GenAI.

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THE REPORT BY ELASTIC "ONE YEAR ON, IDENTIFYING THE IMPACT AND CHALLENGES OF EARLY GENERATIVE AI IMPLEMENTATION WORLDWIDE", REVEALS INDIA APPEARS TO BE THE FURTHEST AHEAD IN ADOPTING GENERATIVE AI (GENAI) TECHNOLOGIES, WITH 81% OF RESPONDENTS IN INDIA ALREADY IMPLEMENTING THE TECHNOLOGY.

Shobhana Lele, CIO at The Bombay Dyeing and Mfg Co Ltd, reminds us of the essence of AI adoption: "The A in AI stands for 'Artificial' - therefore, it's crucial to Assess before Assimilating. The I represents 'Intelligence' - leverage it to Inspire, Innovate, and Implement."

Bali, Balakrishna D. R., Executive Vice President and Global Services Head of AI and Industry Verticals at Infosys, asserts, "Generative AI has been a game-changer for industries, with enterprises evolving from proofs-of-concept to matured production-grade deployments in knowledge management, AI-augmented software development, service management, documentation, and collateral generation etc. Infosys, by embracing "AI first" initiatives early on, is well-prepared and has been helping them in this journey by leveraging rich domain expertise, structured discovery approach, blueprints, and assets to scale rapidly."

The enterprise generative AI landscape is witnessing a tectonic shift due to successive launches of powerful models having multi-modal capabilities, new research in finetuning and augmentation techniques, and powerful platforms and computing. Apart from amplifying existing gains, it is also opening a whole new realm of possibilities by making advanced use cases accessible and viable. But this necessitates an even stronger focus on responsible AI, to address issues like lack of transparency, hallucinations, bias, the scope of human review, security vulnerabilities – right from the inception of these projects." He adds.

GenAI has demonstrated remarkable capabilities in generating content that is indistinguishable from



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The automotive future is being actively reimagined through generative AI's boundless creativity. As this technology democratizes innovation, long-anticipated transportation advances are finally within reach.

- **Rohan Shravan**, Founder and CEO of Tresa Motors.

human-created data, opening up new possibilities for innovation and efficiency in numerous industries.

#### PERSONALIZED APPLICATION JOURNEYS

Generative AI, particularly through GANs Generative Adversarial Network (GAN) and transformer models, has catalyzed transformative applications across diverse fields. In art, it fosters the creation of unique artworks, music compositions, and literature, often in collaboration with human creators. Content creation benefits from AI's ability to generate text, images, and videos, aiding creators in ideation, scalability, and personalization. Virtual try-on experiences and fashion design benefit from GANs' capacity to generate realistic images, facilitating prototyping and trend forecasting. In medicine, generative models assist in generating synthetic medical images, bolstering datasets for training, and augmenting analysis tools for improved diagnosis and treatment planning. These applications underscore the profound impact of generative AI in reshaping creative expression, consumer experiences, and critical domains like healthcare.

#### IN THE AUTOMOTIVE SECTOR

Mr. Rohan Shravan, Founder and CEO of Tresa Motors, sheds light on how generative AI is revolutionizing the automotive sector. By integrating sensors with AI algorithms, Tresa Motors ensures enhanced safety and autonomy in electric vehicles. Generative AI enables detailed 3D mapping,

anomaly detection, and self-driving capabilities, paving the way for safer and more efficient mobility solutions. Looking ahead, Mr. Shravan envisions generative AI predicting driver behavior and seamlessly coordinating fleets of self-driving cars, ushering in an era of sustainable transportation.

#### IN THE EDTECH SECTOR

Shivani Priyaa, Business Head of Oda class, highlights the impact of generative AI in education. From content generation to language-specific learning and automated scoring, generative AI is revolutionizing how students learn and educators teach. Priyaa foresees future applications including enhanced personalization, interactive learning environments through virtual and augmented reality, and lifelong learning support, empowering individuals to acquire new skills throughout their lives.

#### IN THE FINANCIAL SECTOR

Tushar Das, Chief Product and Data Science Officer at kuhoo, discusses the role of generative AI in finance. From customer service to knowledge management, generative AI-powered chatbots are streamlining processes and enhancing customer experiences. Das envisions future applications including personalized application journeys, document search, and summarization, revolutionizing how financial services are delivered and consumed.

#### IN THE CUSTOMER EXPERIENCE SPACE

Chaitanya Chokkareddy, Co-founder and Chief Technology Officer at Ozonetel, emphasizes the



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Generative AI will play a crucial role in supporting lifelong learning initiatives. As individuals seek to acquire new skills and knowledge throughout their lives, AI-powered learning platforms will provide personalized learning paths, microlearning modules, and just-in-time resources to support continuous learning.

- **Shivani Priyaa**, Business Head - Oda class



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Currently, the major use case of utilizing Generative AI in Education Loans and Financing is around customer service and knowledge management. Chatbots trained on data and policies specific to a business are being used to answer customer queries more smartly, with tools like ChatGPT in the background. It is also being used to create the initial draft of policy and process documents.

- **Tushar Das**, Chief Product and Data Science Officer, Kuhoo.

significance of GenAI in enhancing customer experiences. Through Ozonetel's GenAI-powered solutions, businesses extract valuable insights from digital conversations, providing real-time context to agents and facilitating quicker issue resolution for customers. Chokkareddy underscores how GenAI solutions fine-tune sales pitches, adeptly handle objections, and identify root causes of customer dissatisfaction, driving higher conversions and continuous improvement.

#### **ACROSS VARIOUS PHASES OF DIGITAL TRANSFORMATION**

Anand Srinivasan, Chief Strategy Officer at o9 Solutions, provides insights into the strategic implementation of AI throughout digital transformation phases. From engaging stakeholders to translating blueprints into executable code and upskilling teams, AI plays a crucial role in driving successful transformations. Srinivasan emphasizes the importance of AI in continuous data gathering and insights generation for ongoing improvement.

Nishchay Shah, CTO of Cactus Communications, delves into the diverse applications of Generative AI across industries. From medical communications to drug discovery and development, Generative AI is accelerating research and innovation. Shah highlights how Generative AI aids in summarizing scientific literature, generating molecular structures, and even creating code snippets for programmers. Looking ahead, Shah envisions personalized

content creation and the evolution of advanced agents as promising future applications of Generative AI.

#### **DATA PRIVACY AND SECURITY**

Ensuring robust data privacy and security in generative AI (Gen AI) systems is paramount to foster trust and mitigate potential risks. This involves employing techniques such as data anonymization, aggregation, and differential privacy to protect sensitive information during training. Secure development practices, including encryption and access controls, safeguard the integrity of Gen AI models against unauthorized access or tampering. Transparent communication with users regarding data collection and processing, along with obtaining explicit consent, is essential to uphold user rights and build trust. Compliance with relevant regulations like GDPR or CCPA ensures adherence to legal standards, while continuous monitoring and updates help mitigate emerging threats. Ethical considerations, including fairness, accountability, and transparency, guide the development and deployment of Gen AI systems, ensuring they are built responsibly and uphold societal values.

Maheswaran S, Country Manager South Asia at Varonis Systems, sheds light on the imperative of prioritizing responsible AI practices. Amidst the proliferation of data-driven technologies, prioritizing data privacy and security is paramount when working with Generative AI. Maheswaran highlights the risks associated with AI Copilots, which can potentially expose sensitive data to



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Generative AI can be a real game-changer for programmers and full-stack app developers. It can help them generate code snippets or starter code files based on their specific needs, saving them time and effort. Plus, it can also generate test cases to make sure the code is solid and free of errors, can act as a pair programmer to help review and understand code better. And it can even create realistic data for testing and development.

- **Nishchay Shah**, CTO of Cactus Communications



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Infosys, by embracing “AI first” initiatives early on, is well-prepared and has been helping them in this journey by leveraging rich domain expertise, structured discovery approach, blueprints, and assets to scale rapidly.

- **Bali, Balakrishna D. R.**, Executive Vice President and Global Services Head of AI and Industry Verticals at Infosys.

malicious actors. However, he emphasizes that with proper safeguards in place, AI Copilots can be introduced and used safely.

A data-centric security strategy is crucial in the age of AI, ensuring that access to sensitive information is restricted to those with legitimate needs. Implementing a least privilege model and robust data encryption measures are recommended to mitigate the risk of data breaches and safeguard sensitive information from potential misuse.

Augusto Barros, VP of Product Marketing at Securonix and Cyber Security Evangelist at Securonix provides insights into the multifaceted landscape of Generative AI (Gen AI), “Protecting data privacy and security is paramount when working with Generative AI. Given the risks associated with AI systems accessing sensitive information, strict guardrails must be in place to control data access privileges.”

“Augmenting AI systems’ capabilities with measures such as restricting access to data requiring controlled disclosure can mitigate the risk of potential misuse and safeguard sensitive information from unauthorized access or disclosure.”

## REGULATORY LANDSCAPE

The rapid advancement of artificial intelligence, particularly Generative AI, presents both opportunities and challenges for policymakers and regulatory bodies worldwide. As this technology continues to evolve at a staggering pace, it often outstrips the development of regulatory frameworks designed to govern its ethical use and mitigate potential risks. Joseph Sudheer Reddy Thumma, CEO of Magellanic Cloud, emphasizes the crucial need for flexible and adaptive regulations in the burgeoning field of Generative AI. He stresses, “In the rapidly evolving landscape of Generative AI, regulatory frameworks must remain agile and adaptable to keep pace with technological advancements. We must foster collaboration among stakeholders from diverse backgrounds, including technologists, ethicists, and the public, to ensure that regulatory decisions reflect a

broad spectrum of perspectives and uphold ethical standards.” Thumma’s remarks highlight the critical importance of flexible regulations and inclusive dialogue in navigating the ethical complexities of AI development and deployment.

Balakrishna D. R. emphasizes the significance of rapidly evolving regulatory frameworks, particularly with the enactment of various provisions of the EU AI Act this year. “The regulatory landscape is transforming rapidly, and different provisions of the EU AI Act are coming into effect this year, further catalyzing the growth of regulations around the world.” Infosys is addressing this via a three-pronged approach. We have instituted and streamlined AI governance via our Responsible AI Office, which has centralized accountability to ensure the safe use of AI complying with laws and regulations by conducting reviews, assessments, and audits, continuously monitoring and developing and enforcing our AI policies. Secondly, we are building process guardrails to ensure Responsible AI by design, embedding ethical consideration throughout the AI lifecycle, from data preparation and training to inferencing. Thirdly, we are building automated technical guardrails, that intelligently detect and mitigate these threats in the input and generated output, with mechanisms to explain the rationale behind it. Consequently, Infosys is among the first companies globally to be certified in ISO 420001:2023 for AI management systems.” He adds.

## CONCLUSION

As India embraces the transformative potential of Generative AI, the journey ahead demands a delicate balance between innovation and responsibility. By fostering a culture of ethical AI adoption and prioritizing data privacy and security, India can harness the full potential of GenAI to drive innovation, empower industries, and shape a brighter future for all.

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# AI for All: A Future as Accessible as UPI in India

Imagine a future where AI tools are as common and accessible as UPI in India—this is the vision **Jaspreet Bindra** and **Dr. Shalini Lal** explore as they discuss transforming AI from a niche technology into a mass tool, paving the way for an era where every individual can harness the power of AI to enhance their daily lives

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By Minu Sirsalewala

The essence of any organization's culture hinges on its approach to problem-solving. While some opt to observe and react, the frontrunners in AI innovation plunge into experimentation. As the champions of this movement, organizations that embrace a proactive stance are setting the pace in the utilization of AI and generative AI—technologies poised to redefine our work paradigms, albeit still in an exploratory phase.



**JASPREET BINDRA**

Managing Director & Founder, Tech Whisperer Limited, UK

As we explore further, we engage with Jaspreet Bindra, Managing Director & Founder of Tech Whisperer Limited, UK, and Dr. Shalini Lal, Founder of Unqbe. The result is a compelling dialogue filled with unique and thoughtful insights, making for a riveting discussion.

Both leaders champion the notion that today's AI-driven culture must thrive on rapid adaptation and continuous learning to keep up with daily



**DR. SHALINI LAL**

Founder, Unqbe

**“ WE NEED TO DELIVER GENAI AND GENAI TOOLS TO THE MASSES IN THE SAME WAY WE DELIVERED UPI AND AADHAR TO MAKE DIGITAL PUBLIC INFRASTRUCTURE (DPI) A DIGITAL PUBLIC GOOD (DPG). WE GAVE THAT ALL FREE AND WE CAN SEE THAT OUR COUNTRY HAS BEEN DIGITALLY TRANSFORMED. I BELIEVE THAT WE SHOULD DO THE SAME WITH GENAI IN INDIA. I CALL IT ‘JANAI’.**

technological advancements. Dr. Lal stresses the importance of AI literacy, noting, “Effective AI integration extends beyond adoption; it necessitates cultivating extensive AI literacy across all organizational levels, though many still adhere to a more cautious, watchful approach.”

The transformative power of collaboration between AI specialists and business units also emerges as a central theme. This synergy is pivotal for tackling the pressing and potential future challenges that businesses face. Bindra takes this conversation a step further by outlining a visionary approach for India, drawing parallels with how UPI and UID (Aadhaar) were leveraged to revolutionize accessibility to digital services. He advocates for a similar strategy with GenAI, aiming to massively enhance productivity and digital engagement across the nation.

Moreover, the global AI landscape is marked by fierce competition and strategic positioning, with major players like Google, OpenAI-Microsoft, and contenders such as Anthropic and Meta shaping the future. This introduction sets the stage for a profound exploration of how AI is reshaping industries, enhancing productivity, and potentially redefining the competitive dynamics on a global scale.

#### **What concrete steps can organizations take to build an “AI Culture” that fosters innovation and responsible implementation?**

**Shalini Lal:** The first step in building an AI culture is building widespread AI literacy. This does two important things. First, it sends a wide signal about the importance of this technology in our future. Second, so much of building an AI culture is around the ‘discovery’ of AI’s potential to solve problems.

Given how widespread the applications of AI to business are likely to be, a wide-spread approach to AI literacy matters.

And this is true at the very top of the organization as well. Research shows that when an organization’s board has more people who are AI literate, the

organization does better in both value discovery and implementation success. So this is an important first step.

Next, we need at least one small team of technology specialists who love using their imagination to create ‘what can be’. These are people who are quick to learn. Who are quick to build. And can infuse the rest of the organization with a sense of promise.

The world of AI is iterative. And it’s a world that is changing each day. You are looking for that special blend of action and imagination where new projects come up and are completed in weeks.

And of course, none of this is likely to happen without the organizations’ leadership believing in the importance of making an early start. You need believers at the very top.

#### **2. How will the rise of Generative AI like GPT-4.5 and Microsoft Copilot fundamentally transform different work areas (e.g., design, coding, research)?**

**Jaspreet Bindra:** I believe that Generative AI (GenAI) will transform most of all what we do, is how we work. It will completely change it – the same way that Microsoft Word or Excel, PowerPoint, computers, the Internet, or browsers or search changed the way we work decades back. There was a recent Microsoft Worklab Survey that said that only 40 percent of our time was spent doing creative things. 60 percent of our time was spent in communication, meetings, reformatting, presenting, etc., and this 60 percent could be either entirely taken away by Generative AI or reduced considerably because GenAI would help us do that. Microsoft CoPilot, for example, helps you gather data in your computer through prompts, create a sales pitch on Word and then you can prompt it to convert it into PowerPoint and it will do that immediately.

GitHub CoPilot does something similar for software engineers. For tens of millions of software

“ GENAI IS A DEMOCRATIC TECHNOLOGY – IT IS NOT ONLY AN IT DEPARTMENT THING. THIS IS A TECHNOLOGY THAT EVERY SINGLE EMPLOYEE OF A COMPANY CAN LEARN VERY QUICKLY AND THEN FIGURE OUT WAYS IN WHICH HE/ SHE COULD BE MORE PRODUCTIVE.

engineers worldwide, it has considerably improved productivity by a factor of 1.5x to 2x. Going further it might go even further.

If you think about work – work is really composed of multiple tasks. Many of these tasks can be automated using GenAI, and I believe that all cognitive work like design, journalism, marketing and all creative work – whether it be visual design or writing or document editing, or summarisation of documents or creating reports or degenerating multiple copies and pitches and messages, etc. this would become faster, easier and better using GenAI. And, so, we are going to see a massive transformation of work.

This is very important because when you are doing this, what you are actually doing is increasing productivity by several percentage points and, productivity – if you go back into economic history – directly impacts prosperity. All major technologies were productivity enhancers – be it the Gutenberg Press, the Internet, Search, etc., and this productivity directly increases prosperity, leading to an increase in GDP and an increase in revenues, leading to better salaries and a better standard of living. There is a very profound effect that will happen on work through GPT4 and CoPilot.

Finally, GenAI is not just a trend or a tech it is a fundamental difference in the way humans work with their machines. And, therefore, you are talking to it in your natural language. Instead of talking to the machine in its language, the machine now needs to learn the human language – which are being referred to as prompts – and the way we work with machines will change considerably.

#### How can we make AI tools and resources more accessible to smaller businesses and individuals?

**Jaspreet Bindra:** Right now, it is only the beginning, so most models are in their freemium models. If you take ChatGPT, it is free. Only if you want GPT 4, you need to pay US \$ 20 a month. As more and more tools come in and more open-source tools come in, the pricing is not going to be an issue – many

of these tools will be free, inexpensive or almost free. Startups that will build on top of this will also find that these are very affordable or give huge ROI for small businesses, which small businesses may not mind paying. Even today, if one can afford it, spending US\$20 a month on GPT4 is one of the best investments you can make as an individual and as an office worker – even if your company is not paying for it.

The problem, however, is going to be with the hundreds of millions of people who cannot afford this. And, that is where, especially in India, we will need to deliver GenAI and GenAI tools to the masses in the same way we delivered UPI and Aadhar to make Digital Public Infrastructure (DPI) a Digital Public Good (DPG). We gave that all free and we can see that our country has been digitally transformed. I believe that we should do the same with GenAI in India. I call it JanAI – Jan is a play on Gen as well as on ‘Janta’ (Hindi word for people). Basically, what I am saying is that we need to build GenAI, Large Language Model (LLM) stacks, hopefully, Indian LLMs and Bharat LLMs, as a part of the India Stack and deliver it the same way in a simple manner over smartphones – as UPI and Aadhar are delivered. This would mean that every Indian who owns a phone or a computing device – and more than a billion do – would have access to GenAI tools. We will create a country of over 100 million creators and we could use these to simplify so many things. People could use their natural language, so they don’t need to be very literate. This could have massive use cases in healthcare, education – every child could have a personal tutor. I think we need to bring that vision of DPI to GenAI. This JanAI could bridge this digital divide and make it available to smaller businesses and individuals.

#### Is the Chief AI Officer (CAIO) role truly essential for organizational success in the AI era, or is it just a passing trend?

**Jaspreet Bindra:** When the digital revolution happened, most companies realized that they needed

**“ THERE WILL BE THREE LEADERS – OPENAI-MICROSOFT, GOOGLE AND THE THIRD SPOT IS QUITE WIDE OPEN. ANTHROPIC IS A PRETENDER TO THE THRONE, SO IS META, AND SO IS MISTRAL. IT COULD BE ANY OF THESE WHO TAKE THE THIRD SPOT.**

one single individual who they could turn to for the digital transformation of the company, and so, the CDO – or the Chief Digital Officer – was born. I was the CDO at the Mahindra Group and what I realized was that more than 50 percent of the work I needed to do was cultural – how to bring about a culture change and create a digital change and a digital mindset. And, that in itself would foster digital transformation. This was not really about technology, it was more about culture, mindset, and business models. The same things are now necessary for AI. Whatever the person is called – it could be the CAIO or the CEO or the Chief Transformation Officer or the Chief Strategy Officer. Whatever it is, I think we do need a new kind of culture in organisations – an AI culture, that makes everyone become a GENAI expert,

GenAI is a democratic technology – it is not only an IT department thing, or some interns working on it, or the CEO and C-Suite getting passionate about and looking for ways to make business better. This is a technology that every single employee of a company can learn very quickly and then figure out ways in which he/ she could be more productive. And how we can look at the hundreds of tools out there that could make their jobs easier and make them more productive, leading to the better performance of a company.

To make that happen, the job of senior management is to foster an AI culture that allows this within the right guardrails and security boundaries. Making sure that every employee becomes a 10x employee by using GenAI is going to be the biggest job of the Chief AI Officer (irrespective of the designation). So, I do believe that the role of the CAIO is necessary – whoever takes the role, or if it is created, which fosters an AI culture, a culture of curiosity and experimentation and change of work and jobs.

Therefore, this role and AI culture is necessary. But the CAIO/ CDO should be collapsed into one. We already have too many like the CTO, the CIO, etc., Some people have a CISO. We don't need so many roles. I believe that all these should be one role.

**Shalini Lal:** What makes AI/ Gen AI programs different from other technology implementations is that there is potential for every part of the business to be impacted. Some problems to be solved are about developing efficiency. Others are about developing higher levels of accuracy. Still others are about discovering new ways to serve your customers.

And this is true not just of one function. But of frankly, all functions. So the potential at this time is very vast. This also means that you need someone senior to help prioritize AI implementation programs.

Add to that the reality that responsible AI implementation is also about being conscious of data ethics. And conscious of the regulation that is emerging around data.

So it does seem very helpful to have a senior leader build and lead a team of AI specialists, and give direction to the organizations' AI programs.

Yet, there is a counterview to having a CAIO that comes from the fear that the AI program might get too centralized and miss opportunities. There is merit here as well. If enough senior business leaders do not have sufficient AI literacy, they will be unable to 'discover its potential' to solve problems within their function.

In my view, a CAIO is helpful. Yet the responsibility for a successful AI program is a shared responsibility between the many businesses and the role. So both will be important. Having a good leader and having a shared responsibility across business.

**Will the AI race truly be dominated by a Microsoft-OpenAI alliance, or can Google reclaim its lead with advancements like Gemini Ultra?**

**Jaspreet Bindra:** I still think that the company which, despite everything, is still the clear leader is Google. Despite the missteps they made in GenAI.

AI is not only about GenAI – there is massive stuff in AI. And what Google DeepMind has done in AI with protein folding, material detection, huge amounts of enterprise AI research, with products that predict the weather, etc., is just leap years ahead of what any other company has done so far. So, I believe that Google

**“THE BIG5 OF AI – I DON’T SEE APPLE AND AMAZON WITHIN THEM. THOUGH THEY WILL USE AI EXTENSIVELY FOR THEIR PRODUCTS, THEY ARE NOT LIKELY TO BE ‘AI COMPANIES’ LIKE THE OTHERS.**

is super-strong. I know they have made missteps in GenAI with Gemini and Bard, and those are well-known. Those, in my opinion, are teething problems and have far more to do with the culture and leadership of the company rather than the technical prowess and the inherent strengths that Google has. I believe that Google will come back very strongly.

There will be three leaders – OpenAI-Microsoft, Google and the third spot is quite wide open. Anthropic is a pretender to the throne, so is Meta, and so is Mistral. It could be any of these who take the third spot.

The Big5 of AI – I don’t see Apple and Amazon within them. Though they will use AI extensively for their products, they are not likely to be ‘AI companies’ like the others.

#### **What are some longer-term trends and potential disruptions we can expect as AI technologies continue to evolve?**

**Jaspreet Bindra:** There are many long-term trends and disruptions – too many to enumerate. I think the one I believe is that we will soon see the emergence of AI Agents – they will be apps that can do things with minimal human guidance. As a human creating an itinerary and trying to book flights, hotels, etc., an intelligent agent, having been fed your data, knowing your preferences and past behavior will be able to do this much faster.

Another big thing that will happen is that AI will move to the edge. A lot of AI today sits on the cloud. We have already started seeing smaller LLMs sitting on our everyday devices like phones, PCs, televisions, etc. This makes them faster, cheaper, and easier to use.

The other thing that will happen is that as programming becomes natural language-based, all of us will become programmers. There is great change coming and that is why I keep repeating that what we need in organizations to thrive on this change is an organizational culture shift, which is very necessary.

#### **With the rise of generative AI, how can we ensure originality and creativity are not stifled in fields like design and content creation?**

**Shalini Lal:** This is a question that so many artists around the world are very concerned with. And rightly so.

Given that AI/ Gen AI is here to stay, the question each creative person will need to ask is how they can make the best use of these tools to make what they are doing—even better.

And there are so many possibilities. Perhaps AI can help them brainstorm creative ideas better. Or, the tools can allow them to build creatives that earlier would have either been impossible or far too expensive. Or, the tools can allow them to make sure that their creative output finds the right audience.

It is a question of discovering possibilities. Just like in other fields.

#### **Do you see a future where collaboration becomes more prominent than competition in the AI landscape?**

**Jaspreet Bindra:** Tech companies, by their very nature, compete and collaborate at the same time. That is why the term frenemy – friend and enemy – is often used for tech companies. They cannot collaborate. If you think about it Microsoft’s Cloud has OpenAI, Mistral, Meta – I would not be surprised if it even has Gemini. Apple’s search has Google. Amazon uses Microsoft’s productivity software. There is going to be both competition and collaboration. They would be fierce competitors, but at the right places where collaboration is required, they could come together. One can already see lots of collaboration taking place – maybe not so much among Big-Tech, but between Big-Tech and the Unicorns (the big start-ups) – they work in tandem. Anthropic has both Google and Microsoft as investors, who compete against each other. Collaboration and competition – this frenemy thing – is the name of the game. 

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# Grievance Resolve(d). Adding the 'd' with Gen AI

Here's how a governance area can be re-imagined and transformed from 'painfully and helplessly slow' to 'staggeringly fast and delightful' by rewiring it with a new mindset- and some AI.

By Pratima H



Take a moment. Reflect on the irony of living in 2024. You can order a cab, a burger, even a Biryani, and a masseuse within minutes. But if you file a grievance for a pot-hole or an electricity pole, just logging in and following up on it can take ages. We have all been through it. No one likes it. Especially people like Abhishek Sharma, District Development Commissioner, Samba, J&K who wants to delete all the Red Tape that frustrates both sides of any citizen service process - the person who suffers from an issue as well as the official who wants to fix it soon. This gap matters a lot. Especially in an age where everything is happening with instant results on new-age apps. If we can send Good Morning smileys, share jokes, pass on family updates, curate documents and exchange pictures on WhatsApp - why not file grievances too?

Sharma got his answer with the arrival of Gen AI. Discussing this area one day with Ankush Sabharwal from BharatGPT led to this epiphany - let's try and

use Gen AI with WhatsApp for the entire grievance process. Let's see what happens.

And so began eSevak, an AI-based WhatsApp chatbot in collaboration with CoRover.ai

## CHANGING THE BLUE TAPE

"The government has a basic question to address in administration- no matter where we are and who we are serving. It's called 'Grievance'. Most platforms leave the issue hopping from one place to the next - like from one department to nodal officer to the next person and so on. A lot of time is spent in this endless movement of a grievance that keeps traveling from one desk to another for long. And- The citizen does not know the status of the action." Plus, a lot of intermediaries come into the picture - like Community Service Centre, E-Sahayata Kendra or Jana Sahayata Kendra. The citizen making the complaint gets lost in this maze - full of many dependencies. Sharma also highlights the adjacent issue of fake grievances and complaints that

are made just to harass some officers. "Also, people with limited literacy or people who are senior citizens may find the online process hard." True- Online is a great leap from paper-monsters but it does not serve its purpose if it's clunky and friction-laden. He hit the pain nerve very well.

"That's why when we started discovering about GenAI with Bharat GPT, we decided to explore its speed and intelligence for upending these problems. If AI can help us filter fake complaints from genuine ones, direct them to the right department/official and allow the citizen (filing a grievance) to get real-time updates- what else do we need!" Sharma explains as he sketches the first mark of how this pilot started.

His words remind us how, for long, public had no access to real governance machinery - like a police blue tape marking the outer cordon - keeping general public from entering an area. But governance, instead, could be, and should be, 'the blue tape walkthrough' used in construction. The mark of a new project coming to life.

That's exactly what ensued.

#### **NO ROOM FOR BEIGE TAPE THOUGH**

The aim was really simple- any citizen wishing to bring a real issue to government attention should be able to do so easily, without online layers as speed-bumps, and without being in the dark about governance-response. The beauty, as always, lied in the execution.

Sharma spells out how the idea for using WhatsApp came in here. "It's a prevalent mode of communication today. It does not take time, or paperwork or patience. And so many Indians are using it without any formal training. So we went ahead with the Gen AI pilot with WhatsApp as the front-end. We set up a system where the grievance can be put through a simple WhatsApp number. It is immediately routed to multiple people and is categorized as per relevance. The concerned department springs into action in a much more accelerated way because everything is on a chat-app."

Every next move- whether the grievance is being forwarded to someone or being responded to or any comments are being made by any official- is converted to an instant alert for the citizen concerned. The process lands right on the spot of a field-level officer instead of wasting the bandwidth of higher government authorities. Easy dashboards, analytics and simple visualization- add to the elegance of this solution.

But the real beauty lies in the results. Just two months old, and the pilot is already proving how fast a complaint can be addressed when it reaches the

grass-root level person - and without getting caught in bureaucracy and other delays. "You can yourself check how quickly a response pops if you want to try to file any complaint." Sharma quips. The team is also gathering feedback and sharpening any rough edge it spots - across all areas like filing grievances to alerts and final action-update.

Great! But what about ethical and practical challenges?

#### **YES, THE YELLOW TAPE?**

Ask Sharma about issues like fake complaints, data privacy and data localisation and he does not dismiss them with the typical nonchalance of a bureaucrat. In a refreshing candor, he avers that privacy and safety are paramount priorities for this project.

"Interestingly, one day during the pilot, I was surprised to see a citizen's message that had a video attachment showing the pothole he had complained about. It occurred to us that yes- Bots can use location data, voice notes, pictures and videos to add authenticity and specificity to a grievance. So that fixes the fake grievance issue." Sharma reflects.

As to data security aspects, he asserts how that has been a concern but since WhatsApp messages need not have PII data, it is not that big an issue -presently. Also, grievances etc. often form public information and are in the ambit of administrative data. "Once this solution gathers scale and popularity, we will definitely adapt to any issue and to new questions that will emerge." He assures.

Sharma has planned a two-year horizon for this with one year devoted for development and fine-tuning work. He is ambitious about the uniqueness and scalability of this idea - specially in the realm of governance.

There might be scope for bringing in Voice capabilities next. "As of now, we are in the Pilot stage and fine-tuning algorithms etc. If successful, this model can be replicated across India. It's a unique process and showcases how AI can be used to move grievances to the right place and the right person with good transparency and speed for citizens."

Right now, the project is in the Orange Tape mode. The cables for new communication and lines for 'fresh and better ways to complain' are being set up. It's just the beginning. But it's the breaking of Red Tape in a complete way- and the beginning of a new kind of tape. The Duct Tape. Strong. Robust. Gets things done. 

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# Beyond the Crystal Ball: Flipkart's AI Predicts What's Next

In the e-commerce industry, from enhancing customer experience to streamlining supply chain logistics, success hinges on innovation. Chief Data Scientist Mayur Datar of Flipkart in a webinar showcases the Generative AI approach, independent of any specific model, positioning the company as a fast adopter of machine learning and AI technologies. AI empowers their dynamic pricing, personalized recommendations, fraud detection, and targeted advertising, optimizing operations and enriching user interactions.

By Aanchal Ghatak



# A

As a prominent player in India's e-commerce sector, Flipkart makes substantial investments in AI, machine learning (ML), data science, and other cutting-edge solutions.

During a recent webinar, Datar highlighted how Generative AI facilitates proactive assistance, tailored product recommendations, and enhanced user engagement, revolutionizing the online shopping journey.

Flipkart's AI initiatives span a wide spectrum, aiming to enhance the online shopping experience, operational effectiveness, and HR procedures. These initiatives include elements that improve accessibility and customize suggestions based on user preferences, such as intelligent recommendations and interfaces in regional languages. Voice-activated shopping, image search, and augmented reality integration provide consumers with natural and engaging ways to interact with the platform.

The integration of GenAI enables the creation of personalized content and conversational assistants, enhancing user engagement. Flipkart's AI projects demonstrate a commitment to creativity and user-centricity across all aspects of business operations.

## LOCALIZED AI STRATEGIES: MEETING INDIA'S UNIQUE MARKET DEMANDS

Datar underscores Flipkart's responsiveness to the distinctive obstacles in the Indian market, spotlighting tailored AI innovations. These encompass vernacular language comprehension, enhancing search precision, and advertising optimization attuned to Indian consumer preferences.

Flipkart's AI-powered advertising strategies leverage advanced algorithms and data analytics to precisely target and personalize advertisements based on individual customer preferences, behaviors, and demographics. By analyzing vast amounts of data, including browsing history, purchase patterns, and demographic information,

Flipkart tailors advertising campaigns to resonate with diverse audiences. This approach ensures customers are presented with relevant and compelling advertisements, increasing engagement. Additionally, Flipkart continually optimizes its advertising strategies based on real-time feedback and performance metrics, allowing agile adjustments to better accommodate evolving customer needs and behaviors.

## SEISMIC SHIFT IN BUSINESS

By prioritizing customer needs, Flipkart creates individualized experiences using sophisticated algorithms, enabling custom product recommendations, user-friendly search features, and multilingual interfaces, ultimately enhancing customer satisfaction and loyalty.

Behind the scenes, AI helps Flipkart manage inventory, detect fraud, and display relevant ads to customers. They're also exploring new AI tools, such as chatbots for personalized advice and tools for creating product images. AI isn't just for customers; it's also improving Flipkart's hiring processes and employee workflows. Looking ahead, Flipkart is excited to continue leveraging AI to make online shopping more enjoyable and convenient for everyone.

In addition to enhancing Flipkart's competitive advantage, this strategic use of AI promotes internal efficiency and talent development, positioning the business for long-term success in the rapidly evolving digital landscape.

## BUILDING ON TECHNOLOGY AND DATA

Through significant investments in AI, Machine Learning (ML), and data science, Flipkart ensures its readiness to adapt to the dynamic e-commerce landscape.

In its quest to elevate customer experiences, Flipkart employs various AI-driven initiatives. For instance, regional language interfaces are employed to break language barriers, making



VOICE-ACTIVATED SHOPPING, IMAGE SEARCH, AND AUGMENTED REALITY INTEGRATION PROVIDE CONSUMERS WITH NATURAL AND ENGAGING WAYS TO INTERACT WITH THE PLATFORM.

online shopping accessible to a wider audience. Intelligent recommendation engines utilize sophisticated algorithms to tailor product suggestions based on individual customer preferences, enhancing personalization. Image and text search capabilities, including the 'Immerse'

feature, facilitate intuitive product discovery, reminiscent of traditional shopkeeper interactions. Virtual Reality (VR) and Augmented Reality (AR) integration allow users to virtually experience products, aiding in informed decision-making, while voice-based shopping functionalities offer

Flipkart is continuously strengthening its investments in technology and analytics, and implementing new technologies such as GenAI rapidly to remain agile and future-ready

Flippi/ E2E Assistant	Multimodal Search	Stock images Generation	Automated Catalog Shoot
Offline style conversational shopping interface	Improved search through multimodal inputs	Inspire customers with high quality imagery	Enables Sellers to Convert Images from Flat-shot to Model-shot using Gen-AI

## Ads optimisation

	Home Page Widgets	Banner Ads	Search Listing Ads	Push Msgs.	Video Ads
Click Prediction	✓	✓	✓	✓	✓
Sale Prediction	✓	✓	✓		
Annoyance Prediction				✓	✓

Scalable, personalised platform for user response modelling - ads relevance/ranking to the advertiser ROAS.

## Fulfillment Services



1. Address and Routing Intelligence (Geocoding, address autosuggest)
2. Intelligent Supply chain (Network optimisation, inventory placement)

**“ FLIPKART’S ADVANCED SKIN ANALYSER FEATURE UTILIZES AI TO PROVIDE PERSONALIZED SKIN EVALUATIONS, TRANSFORMING SKINCARE ROUTINES BASED ON USER-PROVIDED DATA.**

added convenience. Additionally, Flipkart’s Advanced Skin Analyser feature utilizes AI to provide personalized skin evaluations, transforming skincare routines based on user-provided data.

Beyond customer-centric applications, Flipkart’s AI extends its impact to various business aspects. AI-driven solutions optimize supply chain management by streamlining inventory, optimizing delivery routes, and allocating resources efficiently. Fraud detection and prevention mechanisms are enhanced through AI algorithms, safeguarding Flipkart and its customers against fraudulent activities like return fraud. Moreover, AI-driven advertising and catalog management personalize marketing campaigns and curate product catalogs, ensuring targeted marketing and enhanced product discovery.

Exploring the potential of GenAI further enhances Flipkart’s capabilities. Conversational AI assistants like Flippi offer personalized product recommendations and guide users through their shopping journey with human-like interactions. GenAI also enables personalized content creation, including product descriptions, high-quality images, and AR experiences, enriching the overall user experience.

Internally, Flipkart leverages AI to transform HR processes, enhancing talent development and employee engagement initiatives. Looking ahead, Flipkart remains committed to AI-driven innovation, with a focus on continuously improving its features based on user feedback. This includes strengthening language support, introducing voice functionalities, and integrating immersive experiences, with the aim of making online shopping more convenient, personalized, engaging, and enjoyable for every customer.

Businesses may achieve new heights of customer satisfaction, operational efficiency, and personalization by investing in AI-driven initiatives, as Flipkart has done. Supply chain optimization and personalized suggestions are just two of the many ways artificial intelligence (AI) can help businesses grow and prosper in the digital era. Adopting AI helps businesses become leaders in their field and adapt to the changing needs of consumers in a market that is changing quickly. The message is therefore very obvious for all e-commerce businesses: embrace AI, innovate constantly, and give your customers a better online buying experience.

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# NIIT, a leading provider of learning and development solutions, is at the forefront of innovation by integrating Generative AI into its curriculum and student engagement strategies

At NIIT, Generative AI isn't just about creating fancy learning modules; it's about unlocking the potential within every student. Imagine a future where learning adapts to your pace, not the other way around. Generative AI makes this a reality by tailoring course content, providing real-time feedback, and offering personalized learning paths. It's like having your own personal tutor... with a supercharged computer brain!

N

By Minu Sirsalewala

IIT, under the visionary leadership of Mr. Rajendra Pawar, is harnessing the transformative potential of Generative AI. This powerful technology promises to personalize and enhance the educational experience, making learning more engaging and effective. However, NIIT acknowledges the importance of responsible implementation, ensuring Generative AI is used ethically and effectively to empower both educators and learners. However, the integration of Generative AI brings its set of challenges and ethical considerations.

In a dynamic discussion between Rajendra Pawar, Executive Chairman, NIIT Limited and Minu Sirsalewala, Executive Editor, Dataquest, the conversation revolved around India's initiatives to establish regulations aimed at preventing the misuse of economic, strategic, and political power. The dialogue emphasized the importance of prioritizing human concerns within these regulatory frameworks. Minu highlighted the need to clarify and address the often misleading perceptions prevalent in public discussions. This prompted a broader recognition that not all new ideas and innovations are beneficial, steering the conversation towards the exploration of potential misuse cases and the implications for policy development.

A comprehensive debate unfolded on how India is aiming to set guidelines to curb the misuse of



**RAJENDRA PAWAR**  
Executive Chairman, NIIT Limited

**“** THESE RISKS ARE EXACERBATED BY THE LACK OF A MECHANISM TO DISCERN THE AI'S 'THOUGHT' PROCESS, LIKENING IT TO A "MISSILE WITH A NUCLEAR WARHEAD" WHOSE TRAJECTORY CANNOT BE PREDICTED OR CONTROLLED ONCE LAUNCHED.

economic, strategic, and political power. This discussion recognized the broad spectrum of impacts, emphasizing the necessity of placing human concerns at the forefront of policy frameworks.

Mr. Pawar pointed out the importance of demystifying the often "hallucinatory" bubbles of public discourse, stressing the need for a reality check. This led to an acknowledgment that not all concepts or innovations might be desirable or necessary, prompting a shift towards identifying and discussing potential 'misuse cases.'

The conversation transitioned into the role of technology in education. Mr. Pawar clarified that they perceive themselves as being in the learning business rather than the teaching business, focusing on student-driven outcomes rather than traditional teaching methods. This approach is rooted in the belief that education should be viewed as a deeply embedded social good, not just as an economic one.

Since its inception in 1981, the organization has actively integrated technology to enhance learning, beginning with multimedia. Their pioneering efforts in computer-based training in the mid-1980s, including hosting India's first conference on the subject, were highlighted. This endeavor stemmed from a critical need to address the talent shortage by leveraging technology to streamline and enhance educational processes.

A significant milestone was when they started creating content for international clients in 1991, beginning with IBM in Atlanta, which showcased their capabilities in transforming traditional content into digital formats. This experience underscored their long-standing commitment to harnessing technology for educational purposes, culminating in the adoption of every emerging technological tool from laser discs to more sophisticated digital solutions.

They went on to talk about the promising potential of AI in education, that is regarded as more transformative than previous technologies. This anticipation stems from AI's capacity to

revolutionize learning methodologies and outcomes, potentially leading to a significant paradigm shift in how educational content is delivered and consumed.

Significant emphasis was placed on the dual nature of new technologies, particularly with regard to their potential misuse. Concerns were raised about the inherent risks of technology, highlighting the importance of mindful application to avoid potential pitfalls related to intellectual property and information misuse.

The conversation then pivoted to the transformative potential of technology in the learning sector. It was noted that while technology can be harnessed for significant positive outcomes in education, its power for negative use is equally potent, marking it as a double-edged sword. Despite this, the focus remains on proactive strategies to leverage technological advancements to enhance learning environments.

Technology has the potential to make learning more interactive, immersive, and persistent, pushing beyond traditional educational boundaries. For instance, technology can transform the mundane task of pushing children to study at home into an engaging and persistent educational experience. The ability to provide timely and relevant assessments was also highlighted as a critical benefit of these technological tools, contrasting sharply with the inflexible and periodic assessment models of the past.

Furthermore, the ability of technology to quickly generate course materials that are rich in quality and tailored to specific educational needs was discussed. This capability not only optimizes the educational content but also enhances the learning experience by making it more accessible and effective through various digital platforms.

Mr. Pawar also shared insights into their company's historical and ongoing engagement with innovative educational practices globally, including strategic acquisitions that have bolstered their capabilities. Notable among these was the acquisition of Cognitive Arts, which was established by pioneers in learning sciences. This acquisition has enabled the company to deepen its engagement with advanced learning

“ THE HUMAN MIND REMAINS A LARGELY UNEXPLORED FRONTIER, AND LEVERAGING AI TO MIMIC OR AUGMENT HUMAN COGNITIVE PROCESSES BRINGS FORTH SIGNIFICANT RISKS DUE TO OUR INCOMPLETE UNDERSTANDING OF OUR OWN BRAIN'S FUNCTIONING.

theories and practices, reinforcing its commitment to revolutionizing education through technology.

The discussion underscored the organization's longstanding dedication to integrating cutting-edge technologies into education, from AI and machine learning tools like GPT to sophisticated simulations and exercises that cater to specific learning needs. The narrative was rich with examples of how technology not only supports traditional educational formats but actively transforms them into dynamic, interactive, and highly effective learning experiences.

This focus is on enhancing specific skill sets through targeted simulations, demonstrating the ability to deconstruct a skill into microskills and generate numerous simulations for each. This method could theoretically produce thousands of tailored simulations to train auditors effectively, exemplifying the power of technology to create specific learning scenarios for every conceivable subskill.

Mr. Pawar noted these processes could be customized further for individual learners, emphasizing the technology's adaptability to personal learning needs. This adaptability extends to generating dynamic content across various domains, significantly beyond basic Google searches, which yield overwhelming results without context. The discussed technology refines these results into structured, meaningful content tailored to specific needs and learning outcomes.

The potential applications of such technology in learning are vast. For example, it can automate and refine the content generation process, making educational material both accessible and specifically targeted to the learner's needs. Additionally, it enables the creation of immersive educational experiences, potentially through video, enhancing engagement and retention of information.

Moreover, the capability extends to assessments, transforming traditional methods to be more aligned with the needs of a post-knowledge society where specific knowledge is highly valued over general information. This precision in assessment helps in accurately gauging a learner's capability and

understanding, allowing for more focused and effective educational interventions.

Emphasis was laid on how AI can transform traditional learning and assessment methods by placing individuals in practical scenarios rather than the conventional model of theoretical question-and-answer methods. This approach is compared to the way artists are judged by their portfolios—a direct demonstration of their skills rather than a description of their abilities. AI can potentially enhance this by simulating various evaluative scenarios, where a learner's response can provide a more accurate measure of their skills and capabilities.

The discussion further explored how AI could serve not just as a tool for content generation but as an advanced reviewer, providing assessments and critiques from the perspective of experienced professionals in various fields. This could significantly alter how skills and competencies are measured and understood, offering a more nuanced view of an individual's capabilities beyond traditional assessment methods.

“This technology is not just about automating existing processes but about enhancing the depth and effectiveness of educational experiences.” The potential of AI to customize learning experiences to an unprecedented degree was discussed, showcasing its ability to adapt to the unique learning curves and needs of individual students.

The dialogue also touched on the broader implications of deploying such technologies at scale, which requires careful preparation to ensure effectiveness and productivity. The application of AI spans from individual projects to large-scale deployments across major corporations, underscoring its versatility and potential impact on various aspects of learning and development.

## GENAI – THE BLACK BOX NATURE

Lastly, the discussion highlighted the fundamental differences between traditional AI applications and generative AI, particularly in the context of

**“** THE TERM “HALLUCINATION” WAS USED METAPHORICALLY TO DESCRIBE HOW AI MIGHT GENERATE RESPONSES BASED ON PATTERNS IT HAS LEARNED, WITHOUT TRULY UNDERSTANDING THE CONTENT.

language. Unlike traditional systems that process and respond based on fixed algorithms, generative AI works with language in a way that can mimic human creativity and understanding, making it a groundbreaking tool in areas ranging from simple content creation to complex problem-solving and educational assessments. This capacity of generative AI stands out as it not only processes but also creates, offering a transformative potential that could redefine the intersection of technology and human cognitive processes.

The conversation explored the capabilities and limitations of language processing in artificial intelligence, specifically focusing on generative AI. Mr. Pawar pointed out that while humans use language to communicate complex ideas and emotions, replicating this nuanced capability in computers is challenging. The term “hallucination” was used metaphorically to describe how AI might generate responses based on patterns it has learned, without truly understanding the content.

The dialogue raised concerns about the “black box” nature of these language models (LMs), which often do not provide transparency about how conclusions are reached. This opacity can lead to issues like the replication of copyrighted material (IP concerns) and privacy violations if the AI discusses sensitive information inappropriately. “These risks are exacerbated by the lack of a mechanism to discern the AI’s ‘thought’ process, likening it to a “missile with a nuclear warhead” whose trajectory cannot be predicted or controlled once launched.”

The conversation highlighted the societal and regulatory challenges arising from these technological advancements, stressing the need for careful consideration of AI’s role in society. They discussed the potential dangers of AI’s persuasive capabilities when the underlying motivations or logic remain unknown. This scenario could lead to misinformation or manipulation at scale, reminiscent of concerns raised by social media’s role in political contexts.

### THE HUMAN COGNITION

Furthermore, the conversation touched on the philosophical and ethical implications of integrating such powerful technology without fully understanding human cognition and memory. The human mind remains a largely unexplored frontier, and leveraging AI to mimic or augment human cognitive processes brings forth significant risks due to our incomplete understanding of our own brain’s functioning.

Ultimately, while AI presents unprecedented opportunities for advancement, its deployment must be navigated with caution, emphasizing transparency, ethics, and regulatory oversight to mitigate potential harms. This underscores the importance of understanding the limitations and ensuring robust control mechanisms are in place as we integrate AI more deeply into societal frameworks.

### KEY CONCERNs

**Expectations vs. Reality:** There is currently a significant gap between expectations and the actual capabilities of AI, fueled by hype and a lack of transparency in how AI systems make decisions. This gap leads to overestimations of what AI can achieve in the short term.

**Intellectual Property and Privacy:** These are two major areas of concern with AI development. The ability of AI to learn from vast amounts of data and potentially share sensitive information without proper controls poses legal and ethical challenges, emphasizing the need for strict regulatory frameworks.

**The Human Element:** The discussion repeatedly touched on the irreplaceable aspects of human interaction, such as emotional intelligence, empathy, and the ability to inspire or motivate. While AI can enhance educational tools and even personalize learning experiences, it lacks the capacity to fully understand or replicate the nuanced emotional interactions that are crucial in educational settings.



THERE IS A NEED FOR REALISTIC EXPECTATIONS AND A BALANCED APPROACH TO INCORPORATING TECHNOLOGY IN EDUCATION, ADVOCATING FOR A "MIDDLE PATH" WHERE TECHNOLOGY IS EMBRACED PASSIONATELY BUT EVALUATED DISPASSIONATELY.

**Control and Unpredictability:** AI systems, especially those based on generative models, can sometimes produce outputs that are unpredictable or hard to control. This unpredictability is likened to a "missile with a nuclear warhead," emphasizing the potential dangers if these systems are misused or malfunctioning.

**Role of the Teacher:** Despite advancements in AI, the role of a human teacher remains vital. Teachers provide more than just information; they mentor, inspire, and understand student needs on a level that AI is not currently capable of. The discussion reinforced the idea of keeping humans "in the loop," ensuring that AI serves as a tool to enhance human capabilities rather than replace them.

**Emotion and Cognition:** The integration of AI in fields requiring emotional sensitivity, like teaching, remains highly limited. Human emotions and cognitive processes are complex and often intertwined, making them difficult for AI to replicate or understand fully. This complexity presents a significant barrier to the full adoption of AI in roles traditionally filled by humans.

In summary, while AI presents numerous opportunities for enhancing educational tools and systems, its limitations, particularly in understanding and replicating human emotional states and complex decision-making processes, remain significant. The conversation underscores the importance of maintaining a balanced perspective on AI's role in society, advocating for a cautious and informed approach to its development and integration.

## COLLABORATION

Mr. Pawar elaborated on the significance of collaboration in learning environments, using the example of the "Hole in the Wall" project. This initiative demonstrated that even young, Underprivileged children in slums could learn effectively when they collaborated around a connected device, without formal instruction. The power of collaborative learning, especially when participants are engaged and help each other, can lead to rapid understanding and problem-solving.

The conversation highlights how traditional educational environments often underestimate the power of collaborative learning, yet it is a critical component that drives deep understanding among peers. This is contrasted with the shortcomings of online learning, which has often failed to replicate these interactive and collaborative dynamics effectively, especially during the COVID-19 pandemic when education systems heavily relied on technology.

The dialogue then shifted towards a critical view of the hype surrounding personalized learning. While personalized learning is touted as a revolution in education, the reality is that it's often overstated and not as easily achievable as claimed. The comparison to sports coaching illustrates that in areas requiring high skill, personal coaching is invaluable and cannot be fully replicated by technology.

Moreover, it was pointed out, that there is a general over-expectation currently placed on educational technology (Edtech) solutions, especially post-pandemic. There's a recognition that while technology can support educational efforts, it cannot replace the nuanced interactions of traditional learning environments. They stress the need for realistic expectations and a balanced approach to incorporating technology in education, advocating for a "middle path" where technology is embraced passionately but evaluated dispassionately.

Finally, the discussion acknowledges the practical steps organizations should take when integrating new technologies. It's advised to start with simple, low-risk applications before scaling up to more complex tasks. This gradual approach helps stakeholders understand both the power and the limitations of new technologies without overwhelming them or exposing them to excessive risk prematurely.

Overall, the conversation emphasizes a pragmatic approach to educational technology, recognizing its benefits while also being mindful of its limitations and the irreplaceable value of human interaction and collaboration in learning.

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# Leveling the Playing Field: How Generative AI is Revolutionizing SMEs and MMEs in India

As small and medium-sized enterprises (SMEs) and mid-market enterprises (MMEs) become pivotal to economic growth, industry leaders like SAP report that a substantial portion of their business revenue—up to 80 percent—comes from this sector, highlighting the growing importance and potential of these businesses in the global market. In light of this, concerted efforts from industry associations like NASSCOM are crucial in equipping these enterprises with advanced technologies such as generative AI, ensuring they remain competitive and innovative in a rapidly evolving digital landscape.

By Minu Sirsalewala

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In an exclusive interview with **Srikanth Srinivasan**, Vice President & Head – Membership & Outreach at NASSCOM, we explore how generative AI is reshaping the operations of SMEs in India, democratizing access to technologies that were once the preserve of larger corporations. This conversation delves into the initiatives aimed at enhancing the adoption of AI technologies, addressing ethical concerns, and ensuring a skilled workforce to harness these advanced tools effectively.

**“** SMEs ARE LEVERAGING THESE TECHNOLOGIES PRIMARILY TO BOOST PRODUCTIVITY, IMPROVE CUSTOMER EXPERIENCES, AND ACCELERATE THEIR TIME TO MARKET.



**SRIKANTH SRINIVASAN**

Vice President & Head – Membership & Outreach,  
NASSCOM

**A COMMON THEME IN THESE DISCUSSIONS IS THE NEED FOR SKILL DEVELOPMENT IN AI, REGARDLESS OF AN INDIVIDUAL'S ROLE WITHIN THE ORGANIZATION.**

**How is generative AI influencing SME operations in India, especially in terms of automation, cost, and access to advanced analytics?**

Today, generative AI and AI technologies are no longer exclusive to just a handful of large companies. The landscape has evolved into a more democratic setup, making these technologies widely accessible in an open-source environment. This shift has particularly benefited SMEs by making advanced tools readily available to them. SMEs are leveraging these technologies primarily to boost productivity, improve customer experiences, and accelerate their time to market. These advantages are helping them utilize AI effectively across various aspects of their operations.

**Are SMEs seeing significant impacts from implementing generative AI?**

In most instances, it's clear that many organizations are still experimenting with AI, largely within the proof of concept (POC) phase. They are engaging in multiple POCs, both internally and with customers, to explore the potential impacts of AI. Initial feedback from these organizations is overwhelmingly positive, with noticeable improvements in efficiency and productivity, which in turn boosts customer satisfaction. While not many have fully implemented these technologies into live projects yet, several are advancing through various stages of POCs and trials. Some are in the early stages, while others are more developed, but a significant number have already begun to harness these capabilities.

**Could you discuss NASSCOM's initiatives to make generative AI tools more accessible to SMEs?**

I would link this closely with our overall strategy for skilling because, when you look at it, the availability of a tool and the skills needed to use it are interconnected. Being skilled is essential to effectively use a tool; they are essentially two sides

of the same coin. At NASSCOM, we ensure that tools are easily accessible to everyone. As I mentioned earlier, we operate in a democratic, open-source environment where these tools are not only readily available but also affordable since they're cloud-based.

We continuously engage with our members to see how we can better support their productivity and growth strategies. A common theme in these discussions is the need for skill development in AI, regardless of an individual's role within the organization. In response, we've taken two major initiatives. First, we offer a range of courses on AI and generative AI through our Future Skills platform, which provides various learning paths for members to enhance their capabilities. Second, we're launching a multi-city SME AI enablement program next week. This program will be conducted in major cities across the country where we have a significant tech and SME presence.

The program spans two days. The first day offers a broad overview of how AI can be utilized to enhance productivity and other business aspects – a broad sensitization – aimed primarily at SME leaders – those who are promoters or senior figures in their organizations. On the second day, we shift focus to a smaller, more focused group of actual practitioners. This session will include hands-on workshops where participants can directly engage with AI tools, guided by experienced industry professionals. This practical approach aims to help attendees apply what they've learned directly to their work.

**How important is the human element in the integration of AI within SMEs?**

Regarding your question about the human element, I see it as somewhat distinct from the training focus of our sessions. The 'human in the loop' concept is vital for enhancing AI's overall



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WE'RE LAUNCHING A MULTI-CITY SME AI ENABLEMENT PROGRAM THIS MONTH. THIS PROGRAM WILL BE CONDUCTED IN MAJOR CITIES ACROSS THE COUNTRY WHERE WE HAVE A SIGNIFICANT TECH AND SME PRESENCE.

efficiency and effectiveness over time. While AI tools can perform tasks and make decisions, they require human intelligence to learn and adapt. For instance, if an AI system compares two sets of data—say, airfares or hotel rates—it might not always make the most relevant comparisons. What looks comparable to the machine might not align with human judgment. That's where human oversight becomes crucial. By involving humans in the process, such as through random sampling and critical adjustments, we can ensure the data is refined and the model's accuracy improves over time. This iterative process of refinement, supported by human insight, helps enhance the AI model's utility and effectiveness.

#### **What actions is NASSCOM taking to address ethical concerns in AI usage, such as bias and job displacement?**

We are completely cognizant of the ethical concerns associated with AI technologies and take these issues seriously. In collaboration with industry experts, we've developed and released guidelines on responsible AI. These guidelines, which include best practices and strategies to mitigate biases and other potential issues, are readily accessible to all our members through our community platform.

In our workshops, while we may not delve deeply into every aspect, we ensure participants are aware of both the benefits and the potential pitfalls of AI. Our focus is on sensitizing them to be vigilant and proactive in their use of AI, essentially keeping their eyes and ears open to both opportunities and risks.

#### **What do you see as the most exciting potential application of Gen AI for SMEs?**

The greatest potential lies in leveling the playing field for SMEs in terms of access to technology. The primary goal for SMEs is growth, which

presents itself as their biggest challenge, largely due to resource constraints. These resources include both financial means and human talent. With the advent of new technologies, SMEs now find it easier to access these essential tools, giving them a competitive edge and the potential for sustainable growth. Early adopters of such technologies are particularly well-positioned to enhance productivity, achieve cost savings for their clients, and respond more swiftly to market demands, thus improving customer satisfaction.

This technological leverage is crucial for SMEs to outperform competitors. Most SMEs are unlikely to develop their own models due to financial and time constraints; instead, they will utilize existing models, customize them with their own data, and refine processes to accelerate their market response. This strategic use of technology is pivotal in driving their growth and efficiency.

#### **Any closing thoughts on the role of generative AI in empowering SMEs?**

I would emphasize that this is an excellent opportunity for SMEs, as it's a pivotal moment where they can level the playing field with larger corporations due to better access to technology. The key is to seize the early mover advantage by rapidly adopting new technologies and enhancing skills across their teams. It's not just about having good intentions; it's about turning those intentions into action. This means training staff, engaging proactively with technology and initiating discussions with potential clients. By focusing on achievable goals and capturing quick wins, SMEs can experience early success. These initial victories are essential, as they set the stage for sustained growth and can catapult them to the next orbit of development and expansion. ☺

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# Your dog cannot eat THIS homework.

Here's an AI innovator who wants to do the forbidden thing in classrooms- stealing. But the magic of this story is in what he aims to steal, and from whom. Will he pull this off? And what about AI proctors, AI lecturers, cheat-proof AI, Fall of EdTech unicorns and the dream of empathetic personalization? Let's raise our hands and ask.

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By Pratima H

I stand upon my desk to remind myself that we must constantly look at things in a different way.” John Keating in the iconic movie ‘Dead Poets Society’ was an unusual and rare teacher, and he made more than an impact. He etched imprints. But would he have had all that time and space to stand on the desk if his desk was always strewn with time tables to finalize, examination questions to be made and answer sheets to be checked? Apart from all the piles of administrative red tape that spreads like a stubborn vine on almost every teacher’s table, growing like a Sisyphean’s stone all the time! **Dinesh Kumar Poobalan**, CEO & CTO, Greatify wants to change that. He wants to steal. Time from teacher’s watch that’s spent on tasks that can be handled by technology- quicker and easier. From setting question papers to administrative errands to evaluating exhaustion-triggering answers – and unshackle this time for things that truly matter between a teacher and a learner. Let’s see his toolkit. Let’s see if he can create desks that are clean and ready for teachers brave and fresh enough to see the world from a new perspective.

## What's new about Greatify? Shall we say- what's great about Greatify in an already packed room?

I was with companies like Nvidia for many years and then invested in many innovators as an incubator. Initially, I wanted to build a digital school 300 kms from Bangalore- we had done all the testing too. But the pandemic hit and plans changed. The vision, however, remained. We began Greatify in proper form in 2021. Yes, it is a crowded market. But our idea is to look at all those processes which, unnecessarily, weigh down educators. From time-table creation to scoring -- so much can be handed over to technology so that the teacher is free for what a teacher is actually supposed to do.



**DINESH KUMAR POOBALAN**  
CEO & CTO, Greatify

## What kind of users and devices have you covered so far?

We focus on both K12 and university campuses. Our platform is agnostic to existing systems and devices. We work well with many options. Jeppiaar University is using complete paperless exam solution for conducting their exams. Jeppiaar Engineering is using ManageX and LearnX. Also, at Seventh-day

Adventist School, Maninagar - a Complete Digital transformation of the school has been done. We support Web, iOS, iPad, Android Tabs and E-ink-based devices.

**Can digitization of education erase the 'digital divide'? Is that a problem, or an opportunity or is that an irony?**

It is an opportunity. With so much Internet explosion in India in the last four to five years, and a smartphone in so many hands – a lot has changed. I could not have started this company with the same confidence five years back but with so much digitalization in every walk of life and so many government initiatives- I am hopeful and sure, of what can be done.

**As we speak, we are going through a year that had so many headlines about paper leaks and cancelled exams. Can AI help here?**

Yes, for instance, we are creating question banks with the approach of splitting the questions. We encourage teachers to create multiple question sets and release the final paper just an hour before the exam. That way, even if there's a doubt, the set can be changed the last minute because there is no hassle of printing and logistics. We can also use technology for proctored exams.

**Can AI help to remove bias?**

Yes, that's our goal. Digitalization can remove bias with the right data. Question papers are standardized so a lot of bias is removed there. Plus, data can help in spotting anomalies.

**Does AI not take away the power of the teacher- with all this kicking in? The power that most teachers hold on to. And is it easy to make algorithms that match every teacher's unique style?**

No and yes. No – for the first question. The final say is always of the teacher. Technology is always a way to accelerate and simplify the tasks of a teacher. Yes – for the second question. We train the algorithm as per a teacher's data.

**What gaps do you struggle with?**

Having enough, quality-backed, stored and digital data for training- that's one thing we need to confront and navigate.

**Would you also tap facial recognition, VR, gamification etc. in what you do?**

Yes, facial recognition is useful for proctoring and en-

suring secure exams. But we work with content creators on VR. We provide the tools and not the content.

**Right after ChatGPT exploded, there was an anti-AI wave in many universities, specially in the US, on areas like essay writing. How do you balance both sides of AI's use in classrooms?**

There should be a middle ground. Instead of final work, these tools can be used for training students incrementally. They can help them to solve problems. They should have guardrails. We are working on Beta phases of individualized tutors, for instance.

**You have a range of solutions from admin areas to placements. Is that easy?**

The idea is to make everything seamless. With placements, our idea is to fill the gap of looking for individual potential, instead of college potential. Many students can work on their gaps better and sharpen their potential for a particular company or industry if they are hand-held from an early stage- with a personalized tool (With the right targeting, continuous tests, and real-time feedback etc.). The results are better when students are led in the right direction in the first year and not in the fourth year. It also helps to build aspiration goals in the student- so that they can identify and work towards their dream company.

**Hong Kong recently saw AI-generated lecturers. In South India too, experiments on robot teachers are underway. How far are we from full-blown AI-generated lecturers? We might get there in about two years, but we need to fine-tune some areas. Right now, private tutor models with multi-modal learning and human touch are top focus areas. The differentiated and emotional attention that a teacher gives – that's all human.**

**Can we ever have a Ram Shankar-level of personalization of teaching for an Ishaan Awasthi- as seen in the movie 'Taare Zameen Par'? Where students are taught according to their unique strengths and weaknesses? It's not easy but it's doable. If a student can be directed through periodic quizzes, real-time feedback, and the right choices- then we can get there.**

**What's your favourite class-room scene of this tool's use so far?**

A medical exam experiment that we did- that's where I was amazed to see how some students were now free to express themselves with different ways of drawing diagrams.

**Yes, the good part of your solutions is that you do not let technology make hand-writing a vestigial organ. You accommodate and encourage use of stylus and written answers. Was that deliberate?**

Yes, and we are constantly exploring hardware options that can make handwriting etc. very frictionless and easy.

**What have AI Ed-tech players learnt/should learn about the 'Human quotient in education' and 'the right degree of aggression and automation in learning' after the Byju's fiasco?**

After Byju's fiasco, AI Ed-tech players have learned the significance of the 'Human quotient in education' and the delicate balance required between aggression and automation in learning. They must understand that while technology can enhance education, it should never replace the role of human interaction and personalized guidance in a student's learning journey. We should be embracing the human factor in education and calibrating the level of automation to create better, more engaging and more holistic learning experiences for students.

**Is EdTech in a turbulent phase now with the fall of certain Unicorns and the flattening out of a pandemic-triggered explosion in digital learning?**

EdTech is indeed going through a transformative phase, characterized by the decline of certain Unicorns and the stabilization of the pandemic-driven surge in digital learning. As more students and educators adapt to online platforms, the demand for innovative educational technologies grows. This period of change brings both challenges and opportunities for EdTech companies to make a lasting impact on the future of education. Despite these obstacles, I feel the EdTech industry still offers tremendous opportunities for innovation and development, especially in areas like personalized learning, skills transformation, and life-long learning. Companies that are able to adjust to changing times, prioritize quality and value, and create sustainable business models are more likely to thrive in the future.

**There are patterns of young people leaning towards blue-collar jobs to AI-proof their future- especially in markets like the USA. What's your prognosis of how AI will change careers and education?**

AI saves time. It helps. It augments. No one's job in

content, for instance, went out at our office after AI came in. Content writers will become prompt engineers – their nature and possibilities will change, but they will stay. Same goes for many jobs.

**As shown in research from Stanford University, A.I. chatbots have not exactly boosted overall cheating rates in schools. Any thoughts on this?**

The insights from Stanford University's research, as highlighted by The New York Times, resonate with our ethos. It shows that AI, including chatbots, can be integrated into educational systems in ways that support integrity and innovation. This underscores the potential for AI to enhance learning without necessarily leading to an increase in academic dishonesty, aligning with our commitment to developing technology that uplifts and empowers rather than undermines the educational process.

**A Pew Research Center survey had shown how awareness of AI tools varies across income-brackets and demographics; and also how students lean towards use of AI for ideation or research rather than the main work. What's your take here?**

It's enlightening to see students leveraging AI for ideation and research, which aligns with our vision of AI as a tool to enhance creativity and learning rather than replace the educational journey. This insight propels us to further innovate in ways that democratise access to AI, ensuring it serves as a catalyst for inclusive and equitable educational experiences.

**What's next? Any work-in-progress that is about to show up in your portfolio soon?**

We are excited about PlaceX - A unique AI Powered placement management system – that bridges the gap between students, educational institutions, and employers. PlaceX helps students find suitable job opportunities by aligning their skills with market demands, while providing companies access to a pool of qualified candidates. Overall-We want to be agnostic and fluid in every kind of learning environment. And to make our UI so simple that training is redundant. That's how it should be. And a teacher should spend time on creating learning outcomes. On teaching. That's it. We want to give time back to teachers. 

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# Architecting the Next Horizon: ITC's Digital Blueprint for Future Competitiveness and Growth

In our exclusive interview with **Gaurav Kataria**, VP Digital (Manufacturing) & CDIO PSPD, ITC Limited, we dive deep into how the company's strategic 'ITC Next' framework is shaping the future of its operations. Highlighting the role of digital innovation in enhancing competitiveness and driving sustainable growth, Gaurav details the transformative impact of technology across ITC's business verticals. Discover how ITC leverages cutting-edge digital solutions to achieve efficiency and foster a consumer-centric, climate-positive future.

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ow do you prioritize technology investments at ITC Limited to ensure alignment with business objectives and maximize ROI, particularly in the manufacturing sector?

Let me take a step back before I answer your question about investments.

At ITC, our ITC Next strategy seeks to architect the next horizon of competitiveness, growth and profitability in the face of global uncertainties. It aims to transform ITC into a Future Tech, Consumer Centric, Climate Positive and Inclusive enterprise. The strategy has six foundational pillars one of them being Digital. For each business of ITC, digital is helping unlock value across our value chain. For e.g.: For our consumer facing businesses digital helps us drive Superior Insight, Agile Innovation, Hyper-personalization and Marketing ROI. At the same time for our manufacturing operational digital helps drive Energy optimisation, Quality Improvement, Yield Improvement, and Operational efficiency.

Going back to your question on investments, at ITC the use case helps define the technology and how the ROI is measured. For each digital project establishing a clear understanding of the end-outcome is critical. I can broadly classify the projects into three categories: Efficiency / Productivity improvement projects, Growth / Revenue enhancing projects, and projects that create a Societal impact.

In a manufacturing context we deploy multiple Industry 4.0 technologies to help drive the outcome I have mentioned earlier.

By Minu Sirsalewala



**GAURAV KATARIA**

VP Digital (Manufacturing) & CDIO PSPD,  
ITC Limited

**Could you elaborate on your strategies for breaking down silos within the organization to foster collaboration and innovation across different departments, especially in the context of digital transformation initiatives?**

ITC's diverse businesses like Food, Personal Care,

Education and Stationary, Paperboards and Speciality paper, etc., each have multiple uses cases and technology needs. To aid innovation, collaboration, and agility, we at ITC have established multiple Centre of Excellence's (CoEs) like Industry 4.0 CoE, Analytics CoE, SixthSense Command Centre. We leverage the Central IT team to help with cloud adoption, technology selection, and security solutions. We also have a Digital Council that is chaired by our Chairman Mr. Sanjiv Puri.

At the Paperboards and Speciality Paper Division, we follow the Total Productive Maintenance (TMP) methodology. Under this approach we have split the entire mill operations into Daily Management Team's (DMT) who are responsible for their specific areas. As we scale digital adoption across the mills, we conduct regular training sessions at a DMT level and are also identifying and training Digital Champions in each DMT. The champions meet on a regular basis to discuss challenges, possible solutions and new technology developments.

Apart from this we follow best practices of conducting regular knowledge sharing sessions, annual meets, vendor & partner interactions, and participation in events. There is also a big focus on go-and-see visits and, startup collaborations to facilitate our learning.

**In your experience, what are some common challenges faced by technology leaders in achieving seamless integration of digital solutions into traditional manufacturing processes, and how do you address these challenges at ITC Limited?**

The manufacturing landscape in India is undergoing a rapid transformation with organizations realizing the benefits digital technologies can unlock. Large corporations to MSME's are all experimenting and deploying technology to help drive efficiencies. D2C firms are leveraging technology to drive revenues and customer experience. In this frenzy of going digital some pitfalls are best avoided to realize the gains expected:

- **Business benefit led investments:** 4 years back, when ITC PSPD embarked on our Industry 4.0 journey, the project was driven by the business teams under the guidance of a consulting partner. This ensured that from the start we had a business buy-in and use cases were identified bottoms-up. As the practice matured, we have managed to not only sustain, but also scale the impact Industry 4.0

has delivered. In hindside, our approach to clearly articulate the business benefit and have each digital project have a business and technology owner has been a big differentiator.

- **Re-design business processes:** As we implemented digital projects, we soon learnt that for realization of benefits, the underlying business process will need to be modified to take into account the recommendation of the project. This could mean engineering changes, addition of sensors, implementation of golden batch's to drive process adherence or even changing the KPI's that are tracked across the various DMT's. We have ever since intertwined the digital initiatives with the TMP maturity levels to institutionalize the use of digital levers across the manufacturing operations.
- **Scale beyond PoC:** When exploring new technologies it is critical to experiment. As per Eric Ries, author of "The Lean Startup", failing fast is equally important. As we adopt technology, we execute several proof of concepts (PoC), but at times without a clear vision on how these PoC's can be scaled. This leads to low adoption and hence low impact. At ITC while designing a PoC, we have learnt to keep scale in mind from the word go. Additionally, we have adopted the approach that "Digital funds Digital". This ensures that we are able to focus on digital projects that are value accretive.
- **Change Management and Culture:** I cannot emphasise enough on the importance of change management needed to help drive digital adoption at all levels. Many times great initiatives fail because of lack of buy-in at the shop floor or a lack of business leadership alignment or a lack of business sponsorship. At ITC, digital transformation is not a Digital or IT teams' role, it is the business team that needs to be in the driving seat along with the digital team as the partner. When it comes to digital projects any change requires buy-in, and an appreciation and minimal understanding of Industry 4.0 concepts across levels from shop floor to board room. Keeping this in mind, many interventions including trainings, reward and recognition, go & see events, newsletters, and townhalls are organized involving ITC managers and shop floor staff.
- **Industry leading talent:** Every digital transformation program depends on the people

who are implementing it. A lack of focus on involving current and new talent with technology and business skills often becomes a limiting factor for initiatives. While we hire from the best engineering institutes, we have also developed a robust program that encourages team members at the shift supervisor, DMT lead level to learn digital skills and lead programs under the mentorship of the Industry 4.0 team. This model is helping us deliver a sustained impact.

**Collaboration with external partners and vendors often plays a crucial role in driving technological innovation. Can you share insights into your approach to building and managing partnerships to accelerate digital transformation efforts within ITC Limited's manufacturing operations?**

ITC, with its diverse portfolio of businesses has different needs. This coupled with the ever-evolving business priority, finding an out of box solution is tricky. Hence, while we follow an approach of developing solutions in-house, we are also leveraging the vast partner, startup and academic eco-system to co-create solutions.

This eco-system come with the significant advantage of deep investments into R&D, building scalable technology solutions, and especially cross customer and cross-industry experiences. These aspects are critical for us to deploy solutions with agility.

**How does ITC Limited leverage data analytics and artificial intelligence in its manufacturing processes to drive efficiency, optimize resource utilization, and enhance product quality?**

Across ITC we have many examples, but let me for this conversation focus on our Paperboards and Speciality paper division.

While starting our digital transformation Journey we tried to implement couple of AI/ML based data analytics projects and during those projects implementation, we identified more than 40% of the project time was getting consumed for data collection and data stitching. Also, we found we are not having enough historical data to perform machine learning techniques as we are not storing the data generated by the sensors available within our processes.

To overcome this limitation, we identified the need for establishing a Data Historian which now holds data from the process sensors, quality parameters from SAP, data from MES, and other data sources.

Post this, 100+ use cases have been implemented leveraging data analytics and artificial intelligence. These projects have created a 2.4% EBIDTA impact for the paperboard & speciality paper division over the past several years.

Various levers in manufacturing that got positively impacted from these projects include:

- Variable cost reduction
- Quality improvement
- Throughput Improvement
- Process optimization
- Energy consumption reduction
- Safety & Equipment Reliability

**Cybersecurity Measures: As digitalization increases connectivity and data exchange, how does ITC Limited ensure robust cybersecurity measures are in place to protect sensitive information and manufacturing operations from cyber threats?**

Industry 4.0 has brought in the need to integrate Industrial Control Systems (ICS) on the OT environment with IT environment for carrying out advanced analytics use cases across multiple areas in operations. This integration increases the surface of exposure and the risk of cyber-attacks on critical plant and ICS infrastructure.

It is therefore important for organizations to have an effective cybersecurity program by adopting a strategy known as "Defense-in-Depth"; layering security mechanisms such that the impact of a failure in any one area is minimized. This should be formalized by creating OT Security Policy & Procedures, Risk Registers, Guidelines and Checklists for users. Regular awareness sessions on cyber security should be conducted for OT and IT teams and the users.

To minimize risk exposure on account of IT - OT convergence, we have also implemented a comprehensive security solution. Security Enforcer (Firewall - OT Aware) implementation helps us to monitor and manage North-South traffic flow and CTD (Continuous Threat Detection) technology helps us to monitor and manage East-West traffic flow within the OT network.

Many technology solutions like network segmentation to restrict impact of an attack (if it happens) to a specific zone, Deep inspection, Intrusion Prevention Systems (IPS), Virtual Patching, help mitigate the risks on the OT environment. 

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# GenAI: Powering Enterprise Transformation through Trust

Enterprises are rapidly moving beyond GenAI experimentation and seeking to scale its implementation for real business impact. This requires a data-driven shift in how work is done to unlock GenAI's full potential.

By Prabhu Ram



Over the past year, Generative Artificial Intelligence (GenAI) adoption in the enterprise focus has moved from experimentation to achieving significant and scalable and GenAI implementation. Enterprises are eager to embrace GenAI, spearhead innovation, and unlock opportunities at scale. While launching GenAI pilots is straightforward, scaling them to deliver

substantial value remains a daunting challenge. This necessitates a fundamental shift in how work is actually done. This data-driven and customer-centric approach is precisely where GenAI shines.

Our ongoing research at CyberMedia Research (CMR) highlights the significant potential of GenAI in enabling enterprises with the development of customer-centric products (60%),



THE ADOPTION OF ROBUST DATA GOVERNANCE FRAMEWORKS WOULD ENSURE QUALITY, SECURITY, AND ETHICAL USE OF THE DATA THAT TRAIN AI MODELS.

data-driven decision-making (59%), and enhanced customer experience (47%). These findings paint a compelling picture on how GenAI can steer a data-driven and customer-centric enterprise-wide transformation.

As an analyst, I believe GenAI presents a unique opportunity for enterprises to unlock a new era of productivity, personalized customer service, and sustainable growth. However, GenAI represents a paradigm shift for enterprises and is fraught with both potentially tremendous gains as well as significant risks.

My conversations with enterprise leaders, in Asia and beyond, reveal a shared belief: one of the most transformative applications of GenAI lies in delivering transformative customer experiences leveraging AI bots. Large Language Models (LLMs) possess the ability to handle complex inquiries, delivering swift and natural-sounding responses that mimic human interaction.

#### **SO, HOW CAN ENTERPRISES EMBARK ON THEIR GENAI JOURNEY?**

When it comes to enterprise GenAI adoption, the key lies in identifying and prioritizing meaningful and high-impact use cases for GenAI. This would entail a strategic analysis of areas within the enterprise where GenAI can deliver tangible value. By prioritizing applications with the greatest potential return on investment (ROI), enterprises can maximize the benefits of GenAI.

The next crucial step pertains to responsible GenAI implementation. This translates to adhering to industry best practices, such as, implementation of explainable AI models. A critical element here is establishing robust data governance frameworks. The adoption of robust data governance frameworks would ensure quality,

security, and ethical use of the data that train AI models. Most importantly, it is imperative to foster a meaningful culture of human-AI collaboration. From an analyst perspective, I believe that as we move into the future, GenAI will not replace humans, but rather be a powerful tool in augmenting human expertise. By leveraging their unique strengths alongside AI, human employees can achieve superior results.

Maximizing the benefits of GenAI hinges not just on responsible implementation but also on a future-ready workforce. Here, the focus should shift towards equipping employees with the skills and knowledge-sets to leverage GenAI. This would necessitate a multi-pronged approach centered around comprehensive training programs.

Employee upskilling and reskilling initiatives are crucial for addressing the specific capabilities needed to collaborate effectively with AI tools. Employees should develop a strong understanding and expertise in leveraging AI capabilities for tasks such as data analysis, content generation, and automation. Additionally, training should equip employees to navigate the evolving work environment. This includes fostering adaptability, critical thinking skills, and the ability to solve problems creatively alongside AI partners.

Transparency is paramount. By providing employees with a clear understanding of AI limitations and potential biases, enterprises can empower them to make informed decisions about AI outputs.

Through dedicated training and a culture of transparency, enterprises can ensure a workforce that is not only comfortable working alongside AI but also empowered to maximize its potential. This human-AI synergy is the key to unlocking the true potential of GenAI that I alluded to earlier.



TRANSPARENCY IS PARAMOUNT. BY PROVIDING EMPLOYEES WITH A CLEAR UNDERSTANDING OF AI LIMITATIONS AND POTENTIAL BIASES, ENTERPRISES CAN EMPOWER THEM TO MAKE INFORMED DECISIONS ABOUT AI OUTPUTS.



COPYRIGHT INFRINGEMENT REMAINS A POTENTIAL RISK. GENAI CAN LEAD TO CONTENT CREATION THAT MIRRORS COPYRIGHTED MATERIAL. ENTERPRISES SHOULD ENSURE PROPER DATA LICENSING AND IMPLEMENT TRANSPARENT CONTENT GENERATION PROCESSES WITH METADATA TAGGING.

## ETHICAL CONSIDERATIONS

Several key ethical concerns surround GenAI.

The spread of misinformation through fake news articles and deepfakes can erode trust and manipulate markets. Businesses can mitigate this by investing in fact-checking collaborations and employing tools to detect fake content.

Another ethical concern pertains to bias in AI models, stemming from biased training data and contributing to discriminatory outcomes. This can translate to discriminatory outcomes. To prevent this, enterprises must leverage diverse datasets and conduct regular audits to identify and remove biases. Enterprises can gain understanding and expertise on fair AI practices by partnering with enterprises specialized in such areas.

Copyright infringement remains a potential risk. GenAI can lead to content creation that mirrors copyrighted material. Enterprises should ensure proper data licensing and implement transparent content generation processes with metadata tagging.

Privacy concerns arise when GenAI models are trained on personal data. Robust data security measures, and data minimization practices can help mitigate these risks.

## BUILDING TRUST AND VALUE

Ethical considerations are not merely a box to check. They are, in fact, key to responsible GenAI use. Failing to address these concerns can potentially lead to reputational damage and even financial instability. Responsible GenAI use requires companies to be aware of these challenges, develop clear policies, and prioritize transparency and trust.

Trustworthy AI practices are fundamental for unlocking the full potential of GenAI. Transparency, accountability, and ethical considerations throughout the AI lifecycle are essential. Enterprises need to establish clear lines of responsibility for outputs, implement auditable

traceability mechanisms, and integrate AI ethics into GenAI design.

## DATA AS THE BEDROCK FOR GENAI

Effective data utilization is the lifeblood of generating value from GenAI models. Beyond ensuring data quality, targeted data augmentation efforts are crucial, especially for unstructured data like text and videos. This type of data holds immense value for GenAI.

Enterprises should take a proactive approach by identifying valuable unstructured data sources within their organization. Establishing standardized metadata tagging allows GenAI models to process this data efficiently and facilitates future use cases. Additionally, exploring innovative approaches like capturing tacit institutional knowledge from departing employees can further enrich the data pool and provide valuable insights for AI models.

Optimizing data infrastructure to lower costs at scale is also critical. This might involve implementing tiered storage solutions or on-demand processing capabilities to ensure cost-effectiveness while maintaining data accessibility.

## CONCLUSION

Generative AI offers immense potential across industries. By prioritizing responsible AI practices, fostering human-AI collaboration, and preparing the workforce, enterprises can unlock a new era of productivity and growth. A commitment to responsible innovation ensures GenAI serves as a tool for progress, shaping the future of work for years to come.

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# The GOOCI problem. Can technology give a Blue Tick here?

Invisible signatures, 3D Printing, AI, software piracy, image recognition and NFTs- which side is technology on – helping counterfeits or curbing them?

**D**

By Pratima H

AVE, KATKOT and ADDIDAS. The list goes on and does not stop at soaps, chocolates and sneakers- and of course, handbags. The problem of counterfeiting is rampant in most industries- especially fashion, pharma, and IT. For instance, recently HP found out Rs. 30 crore worth of counterfeit ink and toner cartridges that were illegally brought to the Indian market in the period between November 2022 and October 2023. A report by ASPA and CRISIL pegs that in India 25-30 percent of products sold are spurious with counterfeiting. Turn to what the '2023 Review of Notorious Markets for Counterfeiting and Piracy' from the office of the US Trade Representative unfolded – there is a clear trend with social commerce platforms being used to facilitate sales of products openly known to be counterfeited. But several platforms have also invested in artificial intelligence (AI) and machine learning technologies as a way to scale up and quickly adapt traditional anti-counterfeiting measures. A 2023 report from Michigan State University Center for Anti-Counterfeiting and Product Protection showed that 52 percent of consumers bought counterfeits at least once that year- and non-deceptively. Those who were deceived in doing so were about 68 percent. In fact, 21 percent turned out to be frequent buyers and 38 percent decided to keep a counterfeit even after learning it was fake. Can technology help to solve this blurry problem, especially when it has contributed to its easy growth in a large way? **Padmakumar Nair**, CEO and Co-Founder of Ennoventure, Inc. lets the cat out of this look-alike bag on how technology can help to knock out the knock-offs.

**How serious is the problem of counterfeiting today?**  
The COVID-19 crisis increased the preference for contactless purchases and delivery methods. Going



**PADMAKUMAR NAIR**  
CEO and Co-Founder of Ennoventure, Inc

digital has led to higher risks of counterfeit products entering the market, which are often difficult to detect. Counterfeiting significantly affects sectors like FMCG, currency, medicine, alcohol, and automobiles in India, with an estimated annual financial impact exceeding INR 1 lakh crore. Particularly, counterfeit medicines pose severe health risks and can damage

the reputation of pharmaceutical companies. It is reported that over 30 percent of drugs purchased online are counterfeit, potentially causing over a million deaths.

**How much role is technology playing as a part of the problem? Especially with the ease of e-commerce, speed/scale given by the Crypto industry etc.**

Technology has made it easier to replicate product designs and packaging through advances in computer vision and machine learning, complicating the detection of genuine products for consumers. In response, companies have been investing in anti-counterfeit technologies, though these solutions often do not reach consumers effectively. Increased internet penetration in India suggests that more consumers are informed and seek current information about their purchases. However, existing sticker-based technologies in the market often lack transparency and reliability.

To address these issues, companies need to adopt advanced technologies that ensure trust, transparency, and integrity for stakeholders. At Ennoventure, we aim to empower brands and consumers by offering our patented technology that is invisible to the human eye and accessible via smartphones.

**Is the problem limited to certain kinds of products? Any specific categories (like pharma, luxury products) or regions that are more prone to this?**

Counterfeiting is not limited to specific kinds of products but can affect various industries and regions. However, certain categories are more prone to counterfeiting due to their high value or demand.

Pharmaceuticals and luxury products are indeed among the most commonly counterfeited goods due to their profitability and the potential risks associated with using counterfeit items. In the pharmaceutical industry, counterfeit drugs pose significant health risks to consumers. Similarly, counterfeit luxury goods can deceive consumers into purchasing low-quality imitations while damaging the reputation of the original brands. The other notable sectors that face a massive counterfeit issue are Automobiles and FMCG. Genuine automotive parts are crucial for the automobile industry as they directly impact the safety of its customers' lives. FMCG also places a lot of importance on safeguarding its products from the clutches of counterfeiters.

Certain regions, particularly those with weaker intellectual property protection laws or enforcement,

may experience higher rates of counterfeiting. Developing countries often face challenges in combating counterfeiting due to limited resources and regulatory frameworks.

**Do software/services also fall in this ambit?**

While physical goods are more commonly counterfeited, software and digital services are also susceptible to piracy and unauthorized distribution. Software piracy, for example, involves the unauthorized copying, distribution, or use of software without proper licensing, leading to revenue loss for software developers and potential security risks for users.

**How can technology play a part in the solution? What can Blockchain, invisible signatures, water-marks, time-stamps, holograms, bar codes, micro-printing etc. do here?**

Technology can play a crucial role in combating counterfeiting by providing innovative solutions to authenticate products and track their supply chains.

The effectiveness of technology in combating counterfeiting depends on a holistic approach that considers factors such as degree of security, cost-effectiveness, interoperability, regulatory compliance, and industry collaboration. By leveraging a combination of these technologies tailored to specific use cases, stakeholders can enhance product authentication, strengthen supply chain integrity, and protect consumers from counterfeit goods.

While legacy technologies have been in the market for decades, their evolution is a must. Cryptography is a huge leap in this respect. Our Invisible Signatures are an example. We can encrypt product labels and provide better security, cost-efficiency, scalability, and sustainability in the long run.

**Are NFTs a problem or an answer here?**

NFTs are becoming more accessible due to a growing ecosystem. We're yet to see its full potential being recognized. However, since it is a relatively new technology, there are still some challenges that need to be addressed before they become mainstream solutions.

**What would be the most ideal technology to address this problem?**

A comprehensive anti-counterfeiting solution that leverages advanced technologies. These technologies can create a multi-layered security system that makes

it extremely difficult for counterfeiters to replicate or tamper with genuine products.

Our Invisible Signatures technology requires no process change, no CAPEX, and is easily scalable. It also provides additional services, such as engagement with the brand and analytics to combat the counterfeit menace.

#### **Can consumers contribute through crowdsourcing/blacklisting apps here?**

Crowdsourcing and blacklisting apps enable consumers to report suspicious or malicious issues in real-time, harnessing collective intelligence for enhanced digital security. Users report scams, counterfeit products, or inappropriate content, providing valuable data for analysis. This collective input helps identify emerging threats and patterns, feeding into machine learning models to improve their accuracy over time. Brands benefit by swiftly addressing reported issues, demonstrating a commitment to consumer safety and brand protection. Ultimately, these apps empower users and contribute to a safer online environment.

#### **What have you been doing in this area? Any brand examples?**

In an era dominated by online transactions and a projected global economic counterfeiting value of \$2.3 trillion, ensuring the authenticity of goods has become imperative for safeguarding brand trust and investments.

Distinguished by our patented technology, we offer a cutting-edge approach to authentication. By embedding cryptographic signatures directly onto packaging artwork, we transform traditional packages into digital entities. These covert signatures, invisible to the human eye, can be effortlessly verified using any smartphone, providing unparalleled protection against counterfeit threats.

#### **Why is it unique?**

What sets us apart is our cloud-based platform, which leverages artificial intelligence and cryptography to authenticate products. Unlike conventional solutions, our technology requires no modifications to existing manufacturing processes and eliminates the need for specialized equipment. Moreover, our commitment to sustainability is evident in features such as eLeaflet, which reduces paper usage by replacing traditional instruction booklets, no use of

specialized equipment or ink, and reducing carbon footprint for brands globally. Ennoventure empowers companies to protect their brand reputation, mitigate financial risks, and provide consumers with genuine, high-quality products.

#### **Would AI compound this issue with the rise of deep fakes and 3D printing?**

The rise of AI, deep fakes, and 3D printing indeed introduces new challenges in the fight against counterfeiting. AI can potentially compound the issue by enabling more sophisticated methods of creating counterfeit products, including deep fakes that mimic authentic brands or products with alarming accuracy. Similarly, advancements in 3D printing technology allow counterfeiters to produce replicas of physical objects with intricate details, making it increasingly difficult to distinguish between genuine and counterfeit items.

However, it's essential to recognize that AI can also be leveraged as a powerful tool in the fight against counterfeiting. AI-powered algorithms can be deployed to detect counterfeit products more efficiently, analyze patterns of counterfeiting behavior, and develop predictive models to anticipate future threats. Additionally, AI can enhance authentication processes by enabling the rapid and accurate verification of product authenticity through image recognition and other advanced techniques.

#### **Does the 'Right to Repair' movement help counterfeiters? How can consumer activism towards repair, no-more-closed-systems and sustainability etc. align well with the measures necessary to curb counterfeiting? Is it a tough balancing act?**

This movement has been going on for over a decade. It points to the consumers' rights to have more control over what they own and advocates for their ability to repair their own products.

This aligns more with the goals of sustainability and reducing waste. However, it is up to the manufacturers and brands to make a unanimous decision on the same. More research and analysis would be required to completely comprehend the relationship between the "Right to Repair" movement and efforts to combat counterfeiting, to strike the right balance between consumer rights and anti-counterfeiting measures. 

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# Threading The Needle - Technology and Home Appliances

From an intelligent fridge that can tell you what recipe to make from the ingredients available right 'very' now to a smart needle that can help you pick amongst thousands of embroidery designs- technology is bursting at its seams in the world of household genies. Even in the cozy and creative corner of sewing machines!

T

By Pratima H

urns out that if Mrs. Harris went to Paris now, there would be no 'Paris Syndrome' hitting her (as far as technology is concerned). This space is unfolding step by step and is making sure things don't get tangled up in unexpected knots. Singer India Limited is a well-known name in the world of sewing machines. Established in 1851, the company has stitched its name neatly in the space of manufacturing and selling sewing machines globally. But what's next- as the new fabric of technology rolls out - will it be a beautiful interlace or turn into a tatterdemalion? In this chat with **Rakesh Khanna**, Vice Chairman and MD, Singer India, he unravels the new seam-line between technology and the home appliance business.

**170 years! What a legacy! Is it easy to weave in new advancements when you have been around that long?**  
Our brand has been strong and rich in associations with customers for many decades. From old machines to new, the brand continues to be a leader in this category. We are still in the global 'numero uno' league in the manufacture of sewing machines. We are also embracing a digital mindset and adopting new directions - with the help of technology. Be it zig-zag machines or easy-to-function options or electronically-controlled and computerised machines or embroidery machines that let the user choose amongst thousands of designs- our technology direction is quite exciting. There is a huge transformation happening in this category.



**RAKESH KHANNA**  
Vice Chairman and MD, Singer India



DIGITIZATION SHOULD ALWAYS START IN-HOUSE BEFORE IT CAN GO TOWARDS THE CUSTOMER. IF WE HAVE TO DEAL WITH DIGITALLY-SAVVY CUSTOMERS, THEN WE HAVE TO BE DIGITALLY-SAVVY OURSELVES.

**Like Live Assist- tell us more about it. And will this feature move towards remote and predictive maintenance as well?**

The service, the first of its kind, will provide real-time, virtual, face-to-face support for customers from the comfort of their homes. It helps us set new standards in customer satisfaction by utilizing technology to provide live resolution and demonstration. As we keep transforming, we discover that our customers need a faster pace of help- especially when machines are bought outside the city. So we are now providing this solution where technically trained experts can guide a customer through a video studio- using the same machine the customer had. They can give instructions and tips and also help in problem resolution. This idea was born out of customer insight and executed by our digital mindset. As of now, we are using simple data analytics in our products. As we move towards AI etc., we can make a lot of things proactive and faster. Most products, today, are robust - they do not fail so much. Issues are usually around software and small areas that can be handled with proper and timely guidance.

#### **How does this help in the sales and support areas?**

Singer's Live Assist is useful, especially for customers located remotely. This service is designed to efficiently address their concerns, providing timely assistance at their convenience. Also, it caters to all new buyers, by providing resolution to queries and giving live online demonstrations of the sewing machine.

Additionally, for those requiring further assistance, a complimentary home demonstration is also available upon the purchase of every Singer sewing machine.

#### **How has this solution worked so far? What about interoperability?**

It's been great. We are witnessing faster turnaround times, a fall in costs, a jump in customer satisfaction (due to quality and quick access of interactions) and quick product demos. We aim toward broader compatibility and make sure that our designs can adapt well to many users. Ex: the SE9185 sewing machine uses VP3 format for embroidery design files and we offer the software 'MySewNet' that can convert any file format (such as DST, EXP, HUS, JEF, PES, etc.) into VP3.

**What are your thoughts on the 'servitization' of products?**

Like how we have started seeing this shift in cars and factory equipment. Are products moving towards services and software for new revenue streams?

Machines are definitely becoming more and more intelligent. We bundle a lot of services with our software. As of now, the advanced tech features we offer are complementary but in future, they can be monetized.

**The likes of GE, Samsung etc. are already welding in Gen AI in home appliances like ovens and refrigerators.**

**Will you move that way ahead?**

Yes, but not immediately. As of now, we are offering a connected device and a platform. The idea is to make the skill part simpler without intruding on the creativity of the user. AI is catching a lot of buzz and we can think of it not just for our products but for the way we work as well.

**With fears like eavesdropping and abuse of data- how can home appliances juggle the thin wire between personalization and data privacy?**

It is a huge topic and a global one too. Whether it is a voice assistant or a smart car- we are looking at a big issue. Not much can be done when the data is so large. It is a big debate and a tough balancing act. But governments are coming up with stricter rules and I believe that, over a period of time, society will find solutions to these questions.

**Where else do you use technology- before the products, inside the company?**

Digitization should always start in-house before it can go to the customer. If we have to deal with digitally-savvy customers, then we have to be digitally-savvy ourselves. For instance- every quarter we have a Townhall with our employees. Similarly, we do regular feedback and all-ear sessions with our dealers and trade partners. All that is not possible without digital support. We also use technology in CRM, predictive inventory planning, supply chain management, e-commerce channels, and communications with customers and so on.

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# Beyond the Pike Place: Percolating Customer Connections with Starbucks' Tech Brew

In a world where technology is revolutionizing every facet of business, the role of Chief Technology Officers (CTOs) has become increasingly vital. At the forefront of this technological evolution stands **Vipin Gupta**, the CTO of TATA Starbucks, offering invaluable perspectives on how technology intertwines with the broader organizational strategies of one of the world's most iconic coffee brands. His insights unveil how Starbucks harnesses technological advancements not merely as tools, but as catalysts for transformative change. We delve into the realm of technology-driven strategies with Vipin Gupta, uncovering the secrets behind Starbucks' success in navigating the digital landscape while staying true to its core values of community, connection, and the perfect cup of coffee.

A

By Aanchal Ghatak

s Starbucks CTO, how do you perceive the evolving role of technology in shaping and aligning with the overall business strategy at Starbucks? The role of technology is fundamental in enabling and shaping the business strategy for any business. Not only does technology create cost and labor efficiencies across the value chain, it enables stronger customer and employee experiences, but also allows businesses to do things that otherwise are not possible. While Starbucks is gearing up for aggressive expansion in India, on one end we have developed systems that automate various processes in-store and enterprise functions, creating more access to data for various stakeholders for faster decision-making, on the other end we have endeavored to create differentiated customer experience through a loyalty mobile app. The app not only brings out the key brand elements around coffee, warmth, and connection, offers personalized experiences but also provides an easy in-store ordering experience. At

“ WE RECENTLY LAUNCHED A SUBSCRIPTION PRODUCT WHERE CUSTOMERS CAN BUY A SET OF DRINKS AT A RELATIVELY LOWER PRICE ONLY ON OUR APP.



**VIPIN GUPTA**  
CTO, TATA Starbucks



WE HAVE REVOLUTIONIZED WELCOME MESSAGES FOR GOLD CUSTOMERS! NOW, EACH CUSTOMER RECEIVES A PERSONALIZED GREETING TAILORED TO THEIR FAVORITE DRINK, AGE RANGE, AND CONTEXT. THIS ENSURES A UNIQUE AND RELEVANT EXPERIENCE, EVEN FOR THOSE WHO USE THE APP DAILY.

the same time, we have also implemented next-gen wi-fi systems that provide differentiated connectivity experiences for customers in stores. Technology at Starbucks will continue to enable profitable growth and create consistent and differentiated experiences for customers.

**What strategies or approaches do you employ to ensure that technology initiatives not only support but also drive Starbucks' business objectives?**

Our technology initiatives are strongly disciplined. Only those technology initiatives are adopted that will either create revenue or cost impact or enhance customer or partner experience. Given the current phase of business in India, there is a strong focus on creating newer digital products that will drive business. For example, we recently launched a subscription product where customers can buy a set of drinks at a relatively lower price only on our app. The drinks are credited to customers' loyalty accounts and the drinks can be redeemed within a defined period. Another example is the use of advanced customer segmentation and omni-channel campaign management. Leveraging customer segmentation, businesses can develop a stronger understanding of customer behavior and create campaigns and offers for them. With the use of omni-channel campaign management, right communications can be sent to consumers on preferred channels (e.g. sms, email, app notification, whatsapp or social) at the right time. Customer segmentation can also be used to personalize messaging on our mobile app, showcase product favorites create more stickiness for customers and further drive the business.

**Ways in which AI and data analytics are being leveraged to enhance consumer experience**

**i) Making the customer experience more personalized**

- Identifying segmentations based on buying patterns and offering them personalized offers.

- Identifying product favorites and enabling quick ordering on the App
- Enabling personalized greetings on the App leveraging generative AI

**ii) Tracking customer experience time (i.e. entry to exit time) in stores** (using computer vision analytics) to reduce friction points and identify the right staffing to enhance the customer experience

Methods used for data collection

Starbucks limits itself to largely first-party data that is aligned with regulatory standards. Few methods in place:

- Loyalty registrations and associated transactional data.
- Wi-Fi data
- Google analytics, and vision analytics for online and offline behavioral data
- App for customer feedback

**iii) Measures that are in place for data protection and security for customers**

- Starbucks follows global industry standards when it comes to data protection and security. This includes end-to-end data encryption while at rest and in transit and data masking
- Our App also enables 2-factor authentication (similar to banking apps) for login.
- Customer data is only captured via App, and not on POS

Industry-standard cyber security measures are also in place to proactively monitor, detect and respond as required

**With the increasing emphasis on digital experiences, how do you envision technology's potential impact on the coffee and retail sector, particularly in product innovation, customer engagement, or business operations?**

**How do you anticipate the integration of emerging technologies shaping Starbucks' strategies, offerings, or customer engagement over the next few years?**

With recent advancements in technology such

as mobility, cloud, analytics, generative AI etc., there is a potential to create a huge impact on product innovation, customer engagement and business operations.

## Specifically

- Use of social analytics, organizations can understand the recent customer trends, identify newer products that customers are looking for, capture feedback post-launch and quickly decide whether to scale up or not. The entire product cycle can be shortened enabling businesses to launch more innovations within the same period.
- Mobility, cloud, analytics, and generative AI, organizations can create personalized customer engagements at scale. With the increased number of mobile users and internet penetration, mobility becomes a key lever to create brand presence in digital. Mobile apps can enable loyalty, in-store and delivery orders, disseminate coffee at-home techniques, reaching out to consumers for any new products and offers etc. Analytics and generative AI can enable personalization of content, menus, and offers that may not be possible otherwise.
- Analytics and advanced automation can create efficiencies in business operations ranging from Finance, to legal to HR. In store development, it can help zoom in to the right locations and predict potential revenue from prospective store sites. Within the supply chain, forecasting both at store and warehouse levels can help reduce manual effort, wastage and product availability at stores. At stores, automation of daily routines of store managers, AI / ML driven labor management can free-up time for store managers to focus more on customer management. With edge computing and use of other technologies such as IoT and vision, more stores activities such as inventory management and in-store customer management can be simplified thereby creating more impact on business.

While there are many exciting technology developments, organizations will have to contextualize the use cases basis their specific business needs and investment appetite.

**Are there any initiatives or explorations within Starbucks that delve into leveraging emerging**

## technologies for business advancement or customer interaction?

At Starbucks, while the initiation selection is very disciplined, there is a continuous focus on being an early adopter on emerging technologies for business enablement. One such example is the use of generative AI to generate personalized content on mobile apps. We have revolutionized welcome messages for Gold customers! Now, each customer receives a personalized greeting tailored to their favorite drink, age range, and context. This ensures a unique and relevant experience, even for those who use the app daily. Thousands of messages are generated every day using such a technique.

We are also planning to use generative AI to generate weekly/monthly sales summaries for stores and the executive team - which takes in all possible variables, assesses which is most relevant, and creates a half-page summary. The users can then focus on actions rather than making sense of large amounts of data.

Use of vision analytics has already been discussed above where using GAIT analysis, customer behavior is captured inside the store -- Tracking customer experience time (i.e. entry to exit time) in stores (using computer vision analytics) to reduce friction points and identify the right staffing to enhance the customer experience

## Methods used for data collection

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Few methods in place:

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WE STRONGLY BELIEVE THAT TECHNOLOGY IS BOTH AN ENABLER AND DRIVER OF BUSINESS. CLOSE COLLABORATION BOTH AT LEADERSHIP LEVEL AND OPERATING TEAMS AND BUILDING TRUST VIA STRONG DELIVERY IS KEY TO EFFECTIVE CHANGE MANAGEMENT FOR TECHNOLOGY ADOPTION.

Industry standard cyber security measures are also in place to proactively monitor, detect and respond as required.

**How does Starbucks view the convergence of physical and digital experiences in the coffee and retail industry, and what steps are being taken to embrace this transformation?**

Convergence of physical and digital experiences are an aspiration for all retailers across the globe. How we can ensure that physical and digital experiences are similar, how customers can seamlessly transition between the physical and digital world while interacting with the brand are some of the areas that all retailers are working towards. At Starbucks India, we are also working on the same and aspire to making it completely omni-channel in future. Our mobile app is a key platform where we have enabled:

- 1. Mobile ordering:** Mobile app and WhatsApp platforms tries to replicate the in-store experiences of connection and warmth with strong elements of digital avatars of baristas and coffee culture. Customers can order on the app from anywhere and pick up in-store while on the way to work or some other place. Customers are continuously updated about their order status from the store via app notifications. They can also purchase subscriptions on the App that is digital only product and redeem in stores.
- 2. In-store ordering:** All orders done in can be rated on the app, order history and card balances can be tracked on the mobile app. Baristas also see customers' full loyalty profiles, favorite drinks to enable them to have a conversation with customers.
- 3. Loyalty and gift cards:** All loyalty related activities – earn and burn, gift cards and offers can be conducted and tracked on the app regardless of channel where the activity was initiated.

- 4. Wi-fi:** With a new upcoming feature, customers can connect to wi-fi via mobile app directly without requiring an OTP

As customer preferences evolve, we are continuously endeavoring to further increase the customer services that are converged in physical and digital world.

**How do you collaborate with other C-suite executives to integrate technology into the broader organizational strategy at Starbucks?**

We strongly believe that technology is both an enabler and driver of business. Close collaboration both at leadership level and operating teams and building trust via strong delivery is key to effective change management for technology adoption. Technology now a days has to go beyond the traditional realms of receiving a business requirements document, doing development and managing go-live to having a first-hand strong understanding of various business processes, specific function needs, proactively identifying the technology interventions that can further enable their work, implementing, change management and demonstrating business benefits of a particular implementation. We have a concept of 'smart project managers' where a typical IT personnel is expected to have three key skills – knowledge of one or two key business functions, ability to execute projects in an agile way, and managing vendor relations strongly. This way we are able to execute fast and with accuracy leading to credibility and trust building with other functions.

Technology strategy is driven from broader organizational strategy. Close collaboration with other C-suite executives enables 'technology / digital first' culture and higher speed to digital transformation at Starbucks.

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# AI & the Art of CX: Teleperformance's Guide to Winning in India

India's internet user base is exploding like a supernova, creating a gravitational pull for exceptional customer service. Teleperformance, a global leader in outsourced digital business services, is strategically navigating this new force. Imagine a symphony orchestra where each instrument – AI, cloud technology, data analytics, and a geographically dispersed workforce – plays in perfect harmony. **Vispi Palsetia**, CIO of Teleperformance India in a tete-a-tete with Minu Sirsalewala, Executive Editor, Dataquest, unveils how Teleperformance is orchestrating a winning customer experience strategy in India's hyper-connected market.

I

By Minu Sirsalewala

**India's internet users are exploding. How is Teleperformance adapting its operations and strategies to cater to this hyper-connected customer base?**

Teleperformance, a leading global outsourced digital business services provider, is actively adapting its operations for India's rapidly growing internet user base. The company has heavily invested in digital technologies like cloud solutions, RPA (Robotic Process Automation), and AI tools to enhance service delivery and offer personalized experiences. Recognizing evolving preferences, Teleperformance adopted an omnichannel approach, integrating communication channels for consistent experiences across touchpoints. It has focused on talent acquisition, and training a digitally adept workforce for exceptional digital customer service. Leveraging data analytics, the company gained

**“RECOGNIZING EVOLVING PREFERENCES, TELEPERFORMANCE ADOPTED AN OMNICHANNEL APPROACH, INTEGRATING COMMUNICATION CHANNELS FOR CONSISTENT EXPERIENCES ACROSS TOUCHPOINTS.**



**VISPI PALSETIA**  
CIO. Teleperformance India



THIS CLOUD-POWERED REMOTE MODEL OFFERS IMMENSE AGILITY - WE CAN RAPIDLY SCALE OPERATIONS UP OR DOWN ACROSS LOCATIONS BASED ON FLUCTUATING DEMAND.

insights into Indian internet users' preferences, behaviors, and pain points to personalize services, optimize operations, and make data-driven decisions. Teleperformance is also forging strategic partnerships with technology providers and digital service companies in India to stay ahead in catering to the hyper-connected customer base.

**Omnichannel experiences are the new CX battleground. What specific measures is Teleperformance taking to ensure a smooth, unified journey across all touchpoints?**

Teleperformance and other organizations in the customer experience (CX) sector are leveraging AI, automation, and omnichannel systems to enhance customer experience in the rapidly growing Indian market. Digital solution providers are implementing omnichannel platforms that integrate multiple communication channels, allowing seamless switching between touchpoints and consistent, personalized experiences. These platforms often incorporate AI-powered routing algorithms to optimize resource utilization, reduce response times, and ensure seamless experiences and customer delight.

The seamless transition across channels creates a more convenient and efficient experience, increasing customer loyalty. By leveraging comprehensive customer data, companies can deliver personalized, proactive support, anticipate needs, and address issues before they arise. The data-driven approach enables continuous refinement of service delivery to align with evolving customer expectations.

**Your \$185 million Azure cloud commitment is a big move. How will this partnership with Microsoft, particularly leveraging AI like TP GenAI, empower Teleperformance to elevate customer service?**

The \$185 million Azure cloud commitment between Teleperformance and Microsoft aims to elevate customer service through AI. Leveraging Azure Cloud and TP GenAI's advanced AI capabilities powered by Azure OpenAI, Teleperformance will transform service delivery and provide enhanced

experiences. TP GenAI helps identify customer needs and pain points across touchpoints, reducing call handling times, improving email responses, customer satisfaction, and sales conversions. The partnership will fuel enhancements to Teleperformance's AI-powered services like TP Interact, TP Digital Floorwalker, and StoryfAI, strengthening its ability to deliver superior customer service. By combining Microsoft's Azure Cloud, AI capabilities, and Teleperformance's expertise, this collaboration has the potential to revolutionize how organizations interact with customers, increasing satisfaction and loyalty.

**Teleperformance is a champion of remote workforces. How has your cloud infrastructure facilitated geographically dispersed teams, and what advantages does this offer in terms of agility and scalability?**

Teleperformance Cloud Campus is an award-winning global virtual workforce platform enabling remote teams to deliver seamless and consistent customer services. Our cloud infrastructure has been instrumental in facilitating our geographically dispersed workforce across the globe. Our cloud-based contact center solutions empower agents to securely work remotely, seamlessly servicing customers from anywhere. This cloud-powered remote model offers immense agility - we can rapidly scale operations up or down across locations based on fluctuating demand. It allows us to optimize resource utilization and align costs with business needs effectively. Moreover, our cloud ecosystem provides access to a vast talent pool, enhancing our operational capabilities. We can onboard, virtually train and engage the best professionals regardless of their location, delivering superior customer experience. Crucially, this remote working model backed by a robust cloud infrastructure ensures business continuity even during disruptions. Our agents can productively work from secure locations, providing consistent service to clients. Overall, our cloud-first strategy centered around enabling a remote workforce to drive agility, scalability, access to talent, and operational resilience - underpinning



TELEPERFORMANCE IS USING DATA ANALYTICS, ARTIFICIAL INTELLIGENCE (AI), AND MACHINE LEARNING TO GAIN INSIGHTS FROM CUSTOMER INTERACTIONS ACROSS VARIOUS CHANNELS LIKE VOICE, CHAT, EMAIL, AND SOCIAL MEDIA.

our commitment to delivering excellence and information security.

**Data security and privacy are paramount. Can you elaborate on Teleperformance's strategies to ensure client data remains secure while fostering innovation in data privacy practices?**

At TP, ensuring the security of client data while fostering innovation in data security practices is paramount. We adhere to industry-leading standards and regulatory compliances such as the NIST Cybersecurity Framework, ISO 27001, PCI DSS, SOC 1, SOC 2, GDPR, HIPAA, CCPA, DPDPA etc. to establish robust security and privacy practices. Our strategy includes defense in depth, multi-layered security approach to ensure heightened security for our IT environment and data. We prioritize ongoing employee training to promote awareness of cybersecurity best practices, ensuring a culture of security throughout the organization.

Innovation in data privacy practices is fostered through continuous development of the security program, staying abreast of emerging technologies and evolving threat landscape. Compliance with relevant regulations such as GDPR and CCPA is rigorously maintained to uphold privacy regulatory requirements and build trust with our clients. By integrating these strategies, we not only ensure the security of client data but also drive innovation in data security and privacy practices, positioning our company as a trusted leader in the market.

**With the evolution of customer expectations and technology, how is Teleperformance nurturing its workforce to adapt to changing roles and skill requirements?**

Aware of evolving customer expectations and technological shifts, Teleperformance is deeply committed to upskilling and reskilling initiatives. Comprehensive training programs span analytics, automation, AI, cloud technologies, and soft skills. Online learning platforms, mentorships, and bootcamps empower employees to enhance expertise

continuously. A culture of learning and innovation is promoted, with R&D teams exploring disruptive concepts and redefining customer experience. Strategic talent acquisition focuses on professionals with future-ready skills across emerging technologies, providing growth opportunities. Through continuous upskilling, cultivating a learning mindset, bringing in new-age talent, and fostering innovation, Teleperformance nurtures a workforce adept at navigating change and delivering exceptional service in a dynamic business environment.

**How is Teleperformance leveraging data insights and AI technologies to deliver personalized customer experiences at scale, and what are the key challenges in achieving this?**

Teleperformance is using data analytics, artificial intelligence (AI), and machine learning to gain insights from customer interactions across various channels like voice, chat, email, and social media. These insights help us understand customer preferences, sentiments, and behavior patterns. This data is then used to personalize customer experiences at scale through features like intelligent routing, real-time analytics-driven recommendations for agents, and predictive models for proactive customer service.

However, achieving this level of personalization at scale comes with challenges. One major challenge is integrating and analyzing massive amounts of structured and unstructured data from multiple sources in real-time. Another is maintaining data privacy and security while leveraging customer data. There are also challenges in developing and deploying AI/ML models that can accurately understand complex customer contexts and provide relevant recommendations. However, integrating massive data, ensuring data privacy, developing accurate AI/ML models, and blending human-AI capabilities pose key challenges which Teleperformance addresses through continuous investment in advanced technologies and workforce training.

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# How Secure Are You?

Australia & India will contribute about 25% each to the region's cybersecurity spending this year

By Raju Chellam



*Digital trust is quite hard to find,  
With scams and hacks of every kind.  
We type in our info,  
Hoping it won't go,  
To some cybercriminal mastermind.*

If that limerick made you wonder, these stats should make you ponder: The Indo-Pacific region outside of Japan will spend a whopping US\$36 billion to beef up cybersecurity this year, up 12.3% over 2023, according to IDC (International Data Corp) estimates. That spend includes security hardware, services, and software. IDC expects spending on security to grow at a five-year CAGR (compound annual growth rate) of 12.8% between 2022 and 2027 to reach US\$52 billion by 2027.

The surge in cyberthreats utilizing AI – such as deepfakes, pretexting, and identity theft – has

spurred a heightened demand for comprehensive security solutions in the region that include threat detection, automated remediation, and behavioral analysis capabilities,” says Sharad Kotagi, an IDC regional market analyst. “The demand for security in complex IT environments, including networks, cloud services, and endpoints, remains high amid a cybersecurity talent shortage.”

That’s a slew of opportunities for vendors to provide a range of security services, especially managed services, which could form nearly 40% of overall security spend. “Regulatory requirements and data protection laws will be a catalyst for spending on security consultation and integration services,” says Benjamin Ten, an IDC research analyst for IT services. “The managed security services market will be buoyed by the increasing complexity of IT environments and the shortage of cybersecurity talent.”

## HOT SECTORS

The “hot” sectors? BFSI (banking, financial services, insurance), government agencies, and telco. Together, these sectors will account for more than half of the total security spend this year. “Companies are investing strategically to keep up with tech advancements such as open banking, digital payments, e-governance, modernization of IT infrastructure, and regulations,” IDC says.

On the other side, are governments doing enough to keep their citizens and nations safe? Nope. Take the US as an example. Gartner predicts 75% of US Federal agencies will fail to implement zero trust security policies over the next two years, due primarily to funding and talent deficits.

Gartner defines zero trust as a security paradigm that starts from the baseline of trusting no end user. It explicitly identifies users and grants them the precise level of access necessary to accomplish their tasks. Zero trust is not a specific technology, product, or service. Instead, it is a set of security design principles that contrasts with the traditional perimeter-based security approach.

“With the September 2024 deadline for specific zero trust requirements for US Federal agencies being established, requirements are broad for all agencies,” says Mike Brown, a Gartner vice president. “One of the main impediments is a skills shortage. Government agencies are challenged to compete with the private sector for staff with necessary skills. To address these shortages, agencies should be working simultaneously with service contracts, to reskill existing staff and to recruit new staff.”

Failure to meet policy deadlines will continue to leave Federal agencies exposed to risks that could be cascaded downstream, especially because of the big new elephant on the scene: AI. Hackers have been able to leverage AI and GenAI way more innovatively and insidiously than scrupulous users.

## COOL FRAUDS

In a survey by the US-based Association of Financial Professionals, 65% of respondents admitted that their organizations had been victims of attempted or actual payments fraud in 2022. Of those who lost money, 71% were compromised through email. Larger organizations with annual revenue of US\$1 billion were the most susceptible to email frauds, according to the survey.

Here is an alarming example: A finance employee in Hong Kong received a message from the firm’s UK-based CFO (chief financial officer) asking for a US\$25.6 million bank transfer. Though initially suspicious that it could be a phishing email, the employee’s fears were allayed after a video call with the CFO and other colleagues whom he recognized. It was only after he checked with HQ that he discovered the deceit: Everyone on the call was deep faked. But by then the money was transferred.

“Everyone present on the video calls except the victim was a fake representation of real people,” South China Morning Post reported on February 4, 2024. “The scammers applied deepfake tech to turn publicly available video and other footage into convincing versions of the meeting’s participants. Police said they were highlighting the case as it was the first of its kind in Hong Kong and involved a large sum. They did not reveal details about the company, or the employees involved.”

McKinsey says organizations should be aware of four primary sources of inbound risk from the adoption of GenAI:

- **Security Threats:** These result from the increased volume and sophistication of attacks from GenAI-enabled malware.
- **Third-Party Risk:** These emerge from challenges in understanding where and how third parties may be deploying GenAI, creating potential unknown exposures.
- **Malicious Use:** These arise from the potential for bad actors to create compelling deepfakes of company representatives or branding that could result in significant reputational damage.
- **IP Infringement:** These result from intellectual property (including images, music, text) being scraped into training engines for underlying large language models and made accessible to anyone using the technology.

“The essential starting point for organizations deploying GenAI use cases is to map the potential risks associated with each case across key risk categories to assess the potential risk severity,” McKinsey advises. “For example, use cases that support customer journeys – such as GenAI-enabled chatbots for customer service – may raise risks such as bias and inequitable treatment across groups (by gender and race, for example). Others are privacy concerns from users inputting sensitive information, and inaccuracy risks from model hallucination or outdated information.”

“

ACCORDING TO IDC, CHINA LEADS REGIONAL SECURITY INVESTMENTS, COMPRISING OVER 40% OF TOTAL SPENDING IN 2024, WITH A CAGR OF 13.5% FROM 2022 TO 2027. AUSTRALIA AND INDIA ARE NEXT, ACCOUNTING FOR MORE THAN 25% TO THE REGION'S SECURITY SPENDING.

### DESIRABLE DOZEN

So then, how secure are you and your enterprise? How can your business cultivate a robust cybersecurity environment for your employees, partners, and customers? Here are a dozen desirable recommendations from me, in alphabetical order:

- **Audit:** Regularly. Particularly in the areas of cybersecurity and sustainability. This will expose weaknesses and enhance both security and eco-conscious initiatives, potentially elevating your digital trust scores for your stakeholders to continue to do business with you.
- **Build:** Transparency. Make it clear how you gather, utilize, and safeguard customer data. Your company's privacy policy should be defined, easily accessible and comprehensible to your users.
- **Communicate:** Policies and practices. Share your privacy policies, data protection strategies, and security protocols. This can instill confidence in your end-users and suppliers, reassuring them that their privacy is well-protected.
- **Deploy:** Certifications and standards. Implement third-party certifications (like SSL) and follow standards (as recommended by ISO or your national standards organizations) to validate your security and data protection efforts.
- **Encourage:** Feedback. Welcome customer feedback and treat any issues or complaints with seriousness. This shows your suppliers and customers that their input is valued and acted upon.
- **Foster:** Data protection policies. Stress the significance of safeguarding sensitive data to your staff and stakeholders. Internal breaches can be just as, if not more, damaging than external ones.
- **Generate:** Trust. Cultivate a culture of trust within your business and make trust a fundamental value. This encourages staff to adhere to best practices and be conscious of security and privacy.
- **Handle:** Data responsibly. Treat customer data ethically and responsibly. Refrain from using customer or partner information in ways that could potentially harm or exploit them.
- **Invest:** In endpoint security, information and

data security applications, and identity and digital trust software. Boost network security, including firewalls, intrusion detection and prevention, unified threat management, and the use of VPNs (virtual private networks).

- **Justify:** Robust security measures. Enforce strong security measures within your organization. Employees should be required to use strong passwords, multifactor authentication, encryption, and other security measures to ensure data safety.
- **Keep:** Systems and policies updated. Maintain your software and systems, especially with the most recent security patches and updates. This can reduce the risk of cyberattacks and prompt you to implement mitigation strategies.
- **Learn:** From mistakes and mishaps. Accept responsibility when things go wrong and act swiftly to rectify the situation. This can foster trust by showing a commitment to accountability.

Why bother at all? Because cyberattacks are increasing in intensity and breadth across the region. This requires a shift in addressing cyberthreats. According to IDC, China leads regional security investments, comprising over 40% of total spending in 2024, with a CAGR of 13.5% from 2022 to 2027. Australia and India are next, accounting for more than 25% to the region's security spending.

And finally, since we started with a scary limerick on cybersecurity, let us end with a scarier one:

*Members of the board gathered around,  
To decide cybersec strategy, which was sound.  
“Encrypt all the things,  
So no data leak springs!”  
But the secure password was lost; never found.* 

Raju Chellam is a former Editor of Dataquest and is currently based in Singapore, where he's the Editor-in-Chief of the AI Ethics & Governance Body of Knowledge, and Chair of Cloud & Data Standards. [maildqindia@cybermedia.co.in](mailto:maildqindia@cybermedia.co.in)



# SAP NOW India 2024: Accelerating Growth with Innovation and Sustainability

The event, themed “India: Incredible to Inevitable,” underscored SAP’s commitment to empowering Indian companies of all sizes to achieve their digital transformation goals.

By Minu Sirsalewala



SAP NOW India 2024, held in Mumbai this April, convened together over 2,000 delegates to explore the intersection of innovation, technology, and sustainable practices for Indian businesses. The event, themed “India: Incredible to Inevitable,” underscored SAP’s commitment to empowering Indian companies of all sizes to achieve their digital transformation goals and become leaders in the global marketplace.

In his keynote address, Paul Marriott, President of SAP Asia Pacific Japan, expressed immense gratitude towards India for embracing him in a nation where progress is truly monumental. “Currently, India is celebrating significant achievements, such as its recent lunar mission—congratulations once more on this remarkable feat, and this is just the start.” At this

pivotal time, India is preparing to conduct the largest election ever witnessed globally, with over a billion potential voters. This staggering number underscores the magnitude of the upcoming elections. As political leaders from various parties outline ambitious goals, there’s a collective vision to increase India’s GDP to \$30 trillion by 2047, marking a tenfold escalation from current levels. “When I first encountered this goal, I was taken aback by its sheer scale, but reflecting on India’s robust talent pool, youthful demographic, the world’s leading AI and technology startup ecosystems, dynamic business sectors, exceptional leaders, and a proliferation of startups and unicorns, it’s evident that these aspirations are achievable.” To reach these heights, however, businesses in all



80% OF SAP'S CUSTOMERS IN INDIA ARE FROM THE SMALL AND MEDIUM BUSINESS SECTOR, WHICH ILLUSTRATES THE DEPTH OF SAP'S IMPACT ACROSS DIVERSE BUSINESS LANDSCAPES.



industries must leverage technology and innovation, particularly through what we at SAP call business relevance AI and the potential of generative AI. We are wholeheartedly dedicated to fostering this growth, investing in India to equip our clients with state-of-the-art technology and help every one of them capitalize on these opportunities.

During the event, Manish Prasad, the newly appointed President and Managing Director of SAP Indian Subcontinent shared his insights and vision for the future of SAP in India. Celebrating his recent leadership role, Manish highlighted the strong foundation SAP has built over 27 years in the country, with 60% of India's GDP interacting with SAP systems. He outlined the company's strategic priorities, emphasizing the integration of business AI and sustainability to deliver solutions at scale and speed. He also noted significant investments, including a state-of-the-art data center launched last year, which supports the enhancement of cloud solutions and contributes to the success factor. Manish reaffirmed SAP's commitment to sustainability and inclusive growth, proudly mentioning that 80% of SAP's customers in India are from the small and medium business sector, which illustrates the depth of SAP's impact across diverse business landscapes.

### SHOWCASING INNOVATION ACROSS INDUSTRIES

Manish went on to share updates about SAP's offerings and their impact on customers and showcased a range of innovative solutions across various industries. From Larsen & Toubro and an unnamed chemical company leveraging SAP AI for operational excellence to Bhole Baba, Vahdam Tea India, G S Express Logistics and Mahindra Group utilizing SAP cloud solutions for business transformation, the event provided a glimpse into the future of Indian businesses empowered by technology.

Looking ahead, Manish highlighted three cornerstone areas for SAP in India: innovation, talent, and investment. "With one of the largest R&D centers outside Germany and around 15,000 STEM engineers, SAP is deeply invested in fostering a culture of innovation and transparency. Upcoming initiatives will further enhance data center capabilities and harness the rich talent pool in India, with partners playing a crucial role in helping customers quickly realize the value of their investments in SAP's platforms."

### SUSTAINABILITY TAKES CENTRE STAGE

A key highlight of the event was the unveiling of a new SAP sustainability study conducted in India.



"GROW WITH SAP FOR SCALEUPS" PROGRAM OFFERS FREE SIX-MONTH TRIALS OF SAP S/4HANA PUBLIC CLOUD, INDUSTRY-SPECIFIC SOLUTIONS, AND ACCESS TO SAP'S ECOSYSTEM FOR COLLABORATION AND GROWTH OPPORTUNITIES.

The study revealed a heartening trend: 86% of Indian organizations recognize a moderate to strong connection between sustainability and profitability. This finding aligns with comments from Paul, "The Asian market represents more than 50 percent of the world's emissions, and India, as one of the fastest-growing hotbeds of innovation and economic activity, is in a unique position to lead the charge against climate change."

The study also emphasized the importance of accurate sustainability data for informed decision-making. Manish, echoed this sentiment, stressing, "Sustainability data needs to be integrated with financial data to make the right business decisions." Companies like Sakata Inx, a leader in sustainable manufacturing practices, showcased how SAP solutions can help integrate sustainability into core business functions.

## CLOUD ADOPTION AND STARTUP GROWTH

Cloud technology emerged as a major driver of growth at SAP NOW India. The event saw the launch of "Grow with SAP for Scaleups," a program specifically designed for Indian startups. This program offers free six-month trials of SAP S/4HANA Public Cloud, industry-specific solutions, and access to SAP's ecosystem for collaboration and growth opportunities.

Sanket Deodhar, Vice President & Head of Digital Natives, SAP India, emphasized the crucial role of cloud technology for startups, stating, "Embracing cloud technology isn't just an option; it's an imperative in today's competitive landscape." Testimonials from high-growth companies like Nykaa and Atomberg further solidified the program's potential. Ganesh P, CFO of Nykaa, highlighted how SAP solutions have enhanced customer satisfaction, while Manish Bansal, CFO of Atomberg, stressed the importance of leveraging data-driven decisions for sustainable growth.

## A LOOK AHEAD: WILL SAP BE A FORMIDABLE CONTENDER IN THE GENERATIVE AI ARENA?

SAP NOW India recently showcased itself as a

dynamic platform for Indian businesses, emphasizing the transformative power of integrating technology with sustainability. As India positions itself as a future global economic powerhouse, SAP reaffirms its commitment to being a reliable partner, equipped with the necessary tools and resources to facilitate "incredible" growth and secure an "inevitable" future.

However, an analytical perspective raises a crucial question about SAP's entry into the generative AI market, particularly considering its longstanding dominance in the ERP segment. SAP has been a leader in data management and enterprise resource planning for decades, yet the rapid ascent of generative AI technologies led by giants like Google, OpenAI, and Microsoft might suggest SAP is somewhat late to the game. This raises a strategic concern: Can SAP effectively carve out a significant presence in the generative AI space, which is quickly becoming crowded with these well-established tech behemoths?

SAP's historical strength lies in its deep integration within the operational frameworks of some of the largest companies worldwide. This advantage can be leveraged to introduce AI solutions that are seamlessly integrated with existing ERP systems, enhancing their value proposition.

Furthermore, SAP's recent expansion of its partnership with Nvidia positions them to develop and deliver powerful generative AI solutions. Announced in March 2024, this collaboration focuses on building and delivering SAP Business AI, including scalable, business-specific generative AI capabilities inside the Joule® copilot from SAP and across SAP's portfolio of cloud solutions and applications.

The company's focus on business relevance AI might not only cater to their current customer base but also attract new ones looking for comprehensive, enterprise-level AI solutions. This strategy could position SAP as a bridge between traditional enterprise operations and cutting-edge AI applications, potentially allowing them to compete effectively in this new arena.

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