

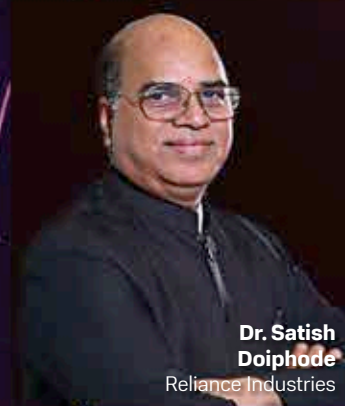
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WHY IS AI STRATEGY STUCK IN FIRST GEAR?

MULTIPLICITY
OF COMPUTE
OPTIONS,
FAILED POCS,
BUDGET
WOES AND
GOVERNANCE
NIGHTMARES
MAKE FOR A
TOUGH DRIVE!

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The cost of an intelligent future

BY 2030, the demand for artificial intelligence (AI) enabled tools and technologies is expected to expand dramatically. The technology will likely evolve from focusing on specialized tasks to Artificial General Intelligence (AGI) capable of human-level reasoning, learning, and adaptation.

We are heading toward an intelligent, machine-influenced future in which the world is expected to be significantly different. However, AI requires vast amounts of computational power, and a significant challenge will be the high energy consumption. This raises the question: Who will bear the cost?

According to a Goldman Sachs report, a ChatGPT query consumes nearly 10 times as much electricity as a Google search. That's massive. In the coming years, widespread AI-driven automation could significantly strain global energy resources, potentially creating a gap between demand and available electricity production. This situation could trigger energy shortages in certain parts of the world, leading to higher operational costs for organizations leveraging AI technologies. Beyond cost, challenges such as carbon emissions, social inequalities, and regulatory compliance also need to be addressed.

There is hardly a technology leader who doesn't acknowledge AI's environmental impact in my offline conversations, but it's also true that most organizations are far from adopting greener AI strategies. And perhaps rightly so because, at the moment, for most top CIOs—at least those we have spoken with recently—there is tremendous pressure to leverage AI to accelerate digital transformation, improve efficiency and customer experience, and drive revenue growth. More than anything else, at least for now, the fear of missing out (FOMO) is driving AI investments.

Big tech firms like Google, Microsoft, Nvidia, IBM, Meta among others are taking initiatives to develop energy-efficient AI models, but there's a long way to go!

Globally, the push for sustainable AI is largely driven by regulations, investor pressure, and concerns around operational costs. However, most organizations “today” at this stage prioritize cost and performance over green AI. Without energy-efficient AI models and regulations, we will face an untenable sustainability crisis by 2030. ■



There is hardly a technology leader who doesn't acknowledge AI's environmental impact in my offline conversations, but it's also true that most organizations are far from adopting greener AI strategies.

Jatinder Singh
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Multiplicity of compute options, failed POCs, budget woes and governance nightmares make for a tough drive!



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Roman Rafiq appointed as Global Chief Information Officer at Startek

Roman Rafiq has been appointed as the Global CIO at Startek. Previously CIO & SVP at IGT Solutions, he led IT strategy, global infrastructure, and compliance. With 20+ years in IT strategy, digital transformation, and leadership roles at EXL, Tata BSS, and HP, he excels in process improvement and team management.



Vaibhav Palan joins Tata Projects as Chief Digital & Information Officer

Vaibhav Palan has been appointed Chief Digital & Information Officer at Tata Projects. Previously, he was Head of Digital & Core Technologies APAC at Holcim, leading digital initiatives and cloud migration. With 20+ years of experience, Vaibhav has held leadership roles at Piramal, Cox & Kings, and Mercator, specializing in IT strategy and innovation.



Bhavesh Gandhi joins KOKI Group as Global Chief Information Officer

Bhavesh Gandhi has been appointed Global CIO at KOKI Group. Previously, he was EVP and CDIO at Aarti Industries, leading digital strategy and business transformation. Bhavesh has held leadership roles at Piramal Pharma, Sun Pharma, and Cox & Kings, specializing in IT strategy and digital transformation.



Raj Upadhyay appointed as Vice President of Technology at EXL

Raj Upadhyay has been appointed as VP of Technology at EXL. Previously VP of IT at Genpact, he has 20+ years of experience in IT strategy, project management, and cost optimization. He has held leadership roles at UnitedHealth Group, HCL, and IBM, driving technology-driven business solutions and operational excellence.



Praveen Chavada joins Laxmi Organics Industries as Vice President and Head IT

Praveen Chavada has been appointed as VP and Head IT at Laxmi Organics Industries Ltd. Previously Head of IT at Aarti Industries, he has 30+ years of experience in IT infrastructure, digital transformation, and vendor management, with leadership roles at United Phosphorus, Lloyds Finance, and Abhishek Enterprise.



Naresh Kumar Pathak joins Dhampur Bio Organics Limited as Chief Digital and Information Officer

Dhampur Bio Organics Limited has appointed **Naresh Kumar Pathak** as its Chief Digital and Information Officer (CDIO). With a career spanning 29 years, Naresh is a renowned leader in the fields of IT, Digital Transformation, and Cyber Security, bringing a wealth of experience and a forward-looking vision to his new role.



Kunal Mehta appointed as Chief Information Officer at Arvind Fashions Limited

Kunal Mehta has been appointed CIO at Arvind Fashions Limited. Previously, he was Head of Strategy at Tata Consultancy Services, managing clients and driving transformation. With 20+ years of experience, Kunal has held leadership roles at Fabindia, Raymond, and Trent Hypermarket, specializing in IT transformation, SAP S/4HANA, and omnichannel strategies.



Anil Bhasin joins Wiz as Area Vice President – India and SAARC Region

Anil Bhasin has joined Wiz as Area Vice President, India and SAARC. Previously VP at Databricks, he drove AI-led digital transformation. With 30+ years in IT, he held leadership roles at UiPath, Palo Alto Networks, and Cisco, specializing in cybersecurity, automation, and enterprise technology growth.



Rajesh Gopal joins Tata Consumer Products as Global Chief Digital Officer

Rajesh Gopal has joined Tata Consumer Products as Global Chief Digital Officer. Previously CIO – APAC at Kimberly-Clark, he led digital transformation. With extensive experience in digital strategy and IT leadership, he has held key roles at ITC, L'Oréal, and Unilever, driving innovation in analytics, e-commerce, and consumer engagement.



Swami TV starts a new position as Head of Digital Business at Tata Motors

Swami TV has been appointed Head of Digital Business at Tata Motors. Previously Global Chief Digital Officer at Tata Consumer Products, he has 20+ years of experience in digital strategy, IT leadership, and AI-driven innovation, with roles at Nissan, GE Digital, and GE Capital, driving enterprise digital transformation.



Akshay Upadhyay appointed as Chief Technology Officer at Parag Parikh Financial Advisory Services

Akshay Upadhyay has been appointed CTO at Parag Parikh Financial Advisory Services. He was previously working as CIO at SBICAP Trustee, where he led digital transformation and cybersecurity. He also held leadership roles at Mahindra Finance and Magna InfoTech previously.



Ramkumar Mohan starts a new position as Senior Vice President & CIO at Air Works Group

Ramkumar Mohan has been appointed Senior Vice President & CIO at Air Works Group. Previously its CIO, he led digital transformation and IT optimization. With 20+ years of experience, he has held leadership roles at Orbis Financial, Manpower, and Reynolds, specializing in IT strategy, cybersecurity, and cloud transformation.



Dr. Yashpal Soni appointed as Chief Information Officer at HGIEL

Dr. Yashpal Soni has been appointed CIO at HGIEL. Previously CIO/CISO at Digital India Corporation, he led digital transformation and cybersecurity initiatives. With extensive experience in aligning IT strategies with business goals, he has held leadership roles at Intex Technologies, Dalmia Cement, and Everest Industries, driving innovation through AI, IoT, and cloud.



Manish Malik starts a new position as Executive Director (Information Systems) and CIO at Indian Oil Corporation Limited

Manish Malik has been appointed as Executive Director (Information Systems) & CIO at Indian Oil Corporation. Previously as IT Head, Marketing Division, he led digital transformation and IT modernization at IOCL.



DPDP Act: Navigating the Evolving Data Privacy Landscape for Enterprises

Organizations need proactive strategies to prepare for the new act

By **Jaspreet Singh** | editor@cioandleader.com

THE RECENT enactment of the Digital Personal Data Protection (DPDP) Act in India marks a significant advancement in the nation's data protection framework. The DPDP Act imposes stringent obligations on enterprises that process personal data, necessitating a paradigm shift in their data management strategies, security protocols, and operational procedures.

Key Provisions of the DPDP Act

One of the key aspects of the DPDP Act is its classification of data fiduciaries and data processors, imposing distinct responsibilities on organizations depending on their role in data handling. Enterprises must establish clear consent mechanisms to ensure that data is collected, processed, and stored strictly within legal boundaries. Data principals have the right to withdraw their consent, necessitating that businesses implement efficient processes for handling consent revocation and data erasure requests.

The Act enforces stringent regulations on cross-border data transfers, restricting the movement of sensitive information to jurisdictions that adhere to Indian regulations. However, we are yet to receive clarity on the countries which are restricted to transfer data to. Companies must perform comprehensive due diligence on international data transfers, guaranteeing that their cloud storage providers and data processing collaborators uphold similar privacy standards.

Additionally, the DPDP Act stipulates immediate data breach noti-

fications, compelling organizations to disclose security breaches within a designated timeframe, thereby strengthening regulatory surveillance of data security incidents. The timeline provided for the same is 72 hours to notify a breach, however, as per CERT-IN guidelines it is still 6 hours from the time of discovery of the breach.

Practical steps for enterprises to prepare for implementation

An indispensable first step is performing a thorough gap assessment. This step allows the mapping of data flows, identifying risk spots, and reviewing the security measures currently existing in the organization. Some may include reviewing current data protection policies, building privacy-centric workflows, and integrating compliance into business operations. Moreover, the company needs to build a comprehensive personal data inventory that classifies information into categories based on sensitivity levels and purposes being processed. The challenge is in creating inventory for unstructured data which flows more freely in any organization in form of WhatsApp texts, chat bot texts, emails, recordings etc. than structured data such as in databases.

Subsequently, organizations must implement a robust data governance framework, encompassing policies, procedures, and controls for data collection, processing, storage, and disclosure.

Furthermore, enterprises must also develop sound consent management systems by which data principals can maintain clear and unequivocal control over their personal data while exercising their rights regarding access, rectification, and erasure. Though we are yet to receive clarity on consent managers and how organizations



Jaspreet Singh

Partner, Grant Thornton Bharat LLP

will forge a relationship with them, in-house automation of consent tracking and versioning control will play an indispensable role in management. The organizations should completely secure sensitive data, with regard to access control and encryption or using masking techniques at every point of processing consent.

Impact on security policies, data governance, and risk management

Organizations must implement a robust security architecture that integrates advanced technical and organizational safeguards, including encryption, anonymization, strict access controls, and regular security audits. We cannot do without the principle of "data protection by design and by default" requiring embedding privacy considerations into the development of new products, services, and systems.

Security policies and risk management frameworks must evolve to meet the Act's stringent requirements, demanding proactive cybersecurity measures such as AI-based threat detection, continuous system monitoring, and a well-structured incident response strategy.

With rising cyber threats, enterprises must adopt a proactive security model that emphasizes rapid breach detection and remediation, ensuring regulatory compliance while safeguarding sensitive data.

Industry best practices for aligning with the new law

Regular compliance audits, impact assessments, and monitoring tools can help businesses maintain adherence to the Act's evolving requirements. Investing in Privacy-Enhancing Technologies (PETs) can further improve data security without compromising business functionality.

Updating privacy policies to reflect legal obligations and enhancing transparency in customer communications will further strengthen compliance and foster trust. Organizations should provide customers with clear, easily accessible privacy notices, explaining how their data is collected, used, and protected. The implementation of self-service privacy dashboards can empower users to manage their data preferences and exercise their rights under the DPDP Act.

Broader implications on trust and transparency with customers

Businesses that treat data protection on priority now when consumers are ever more cognizant of their data privacy rights will have a competitive advantage. In such a case, transparent and ethical data handling practices improve the trust of the consumers, who in turn develop brand loyalty for the long run. Those that do not take appropriate actions run the risk not just of being penalized in terms of regulatory requirements but also subject themselves to reputational harm that may affect their business sustainability. ■

WHY IS AI STRATEGY STUCK IN FIRST Gear?

MULTIPLICITY OF COMPUTE OPTIONS,
FAILED POCS, BUDGET WOES AND
GOVERNANCE NIGHTMARES MAKE
FOR A TOUGH DRIVE!

By **Jatinder Singh** | jatinder.singh@9dot9.in



remember discussing Amazon's secret 2018 trial of an AI-based recruitment tool with a group of tech journalist friends. It ultimately served as a warning sign about the risks of relying entirely on technology. Amazon developed the tool to streamline hiring but systematically discriminated against female candidates. This bias arose because the AI was trained on historical hiring data from Amazon's existing tech workforce, which is predominantly male.

Other companies faced similar problems with their integrated AI models back then. IBM Watson for Oncology gave incorrect treatment advice. Google Photos had issues with racial bias in its image recognition. Tesla's self-driving technology raised safety concerns. Of course, those were the early days of AI.

At the time, these AI projects excited us, but their rapid failures made us question whether AI could deliver results in the short term and what it would take to ensure its success. Many organizations focus on automating their processes for exceptional user experience and productivity. Still, these experiences served as a reminder that AI requires continuous bias checks, diverse training data, and strong human oversight to be genuinely effective.

While AI has made considerable progress since then, with generative AI and agentic AI opening up significant opportunities for productivity and innovation, not all those challenges have been addressed.

For instance, McDonald's recently ended its much-publicized AI voice ordering system at more than 100 drive-thru locations in the U.S. However, this service, introduced to improve

DATA QUALITY AND AFFORDABLE INFRA REMAIN THE BIGGEST CHALLENGES

There are numerous challenges in scaling AI-driven solutions across different business functions, but the biggest is data quality within the organization. It's not just me—everyone is struggling with it

The second challenge is whether the required infrastructure for scaling AI is available at an affordable cost.

The third challenge is governance and compliance—how do organizations ensure adherence to regulations and best practices when scaling AI? These are some of the key challenges every organization faces, and we are actively seeking solutions.

Regarding infrastructure trends likely to impact AI, the first step is determining whether my data center is AI-driven. Without it, I can't effectively run different AI models that could benefit my business.

The second factor is how AI influences decision-making—whether the models are trusted and the organization is prepared to embrace AI-driven decision-making. Ultimately, this boils down to a shift in mindset, people, and skill sets.

DR. AVADHUT PARAB

Group CIO,
Waaree Energies



AI ADOPTION HINGES ON USE CASES, DATA QUALITY, AND SECURITY

AI is constantly evolving, and one of the biggest challenges organizations face is identifying the right use cases. Even when use cases are clear, the real question is whether the organization has the necessary data—and more importantly, the quality of that data—to drive meaningful AI outcomes. Security is another critical concern, as AI models and tools are still not fully proven in terms of how secure they are. Addressing these challenges will be key to increasing AI adoption.

When it comes to emerging technologies and infrastructure trends impacting AI, the biggest need remains a robust infrastructure. The adoption of cloud will be a major trend, enabling organizations to scale AI more effectively. However, security concerns around storing confidential data on the cloud make this transition challenging. A potential solution would be to move beyond reliance on infrastructure alone and focus on AI models that are driven by strong programming, processes, and in-house management, giving organizations more control over their AI adoption.

SHOBHANA LELE

CIO,
The Bombay Dyeing and
Manufacturing Company



customer experience and reduce wait times, could not meet the objectives. Instead, it frustrated McDonald's customers and pushed them to mock the initiative as AI could not understand their orders.

Today, many organizations strategically deploy AI to transform key business functions, from personalized product recommendations and enhanced customer service to optimizing complex supply chain operations. However, for many enterprises, the biggest challenge remains: scaling AI implementations while identifying unique use cases and achieving a clear return on investment. Our discussions with technology leaders reveal that over 60% of CIOs' current AI investments are driven more by competitive anxiety—the fear of being left behind—than a well-defined strategic vision for technological transformation.

CIOs who have successfully deployed AI say that being excited about AI isn't enough. AI success requires careful planning, a strong data foundation, and aligning AI initiatives with business goals. But IT leaders face tough questions:

- How can AI address specific organizational needs?
- How will AI models be governed?
- Can implementations scale from pilot to enterprise-wide?
- What measurable benefits can be achieved?
- What is the actual return on investment (ROI)?

UNCLEAR EXPECTATIONS

Enterprises are dealing with a big headache, as over 70% of AI projects fail to deliver meaningful results. Research from RAND highlights the magnitude of this issue, demonstrating that AI initiatives fail at twice the rate of traditional IT projects, with more than 80% falling short of their intended objectives. According to the research firm Gartner, by the end of 2025, at least 30% of generative AI projects will be abandoned after proof of concept. This is due to poor data quality, inadequate risk controls, escalating costs, and unclear business value.

The root of these failures lies in a fundamental misalignment between technological potential and organizational expectations. CIOs face

a critical challenge in translating AI's promising capabilities into tangible business outcomes, struggling to justify substantial investments in productivity enhancement technologies. The complexity results from businesses' inability to convert AI initiatives into financial benefits, coupled with organizations' lack of clear objectives, insufficient understanding of AI limitations, and inadequate implementation strategies.

The key to success remains developing precise roadmaps, investing in data quality, fostering a culture of realistic innovation, and establishing robust measurement frameworks beyond traditional return on investment metrics.

COST MANAGEMENT AND OPTIMIZATION

As enterprises scale their AI initiatives, managing infrastructure costs has become a critical focus for CIOs. According to Enterprise AI Pulse, a recent survey conducted by CIO&Leader based on responses from over 300 IT leaders, cost management is the primary concern for 32% of CIOs, preventing them from scaling AI initiatives.

A growing debate between CIOs and CFOs revolves around balancing AI's potential with its financial implications. Making AI work effectively requires substantial investment, from modernizing legacy systems and implementing essential guardrails to ensuring data readiness.

Enterprises must allocate significant budgets for infrastructure upgrades, AI model training, and ongoing operations. AI can be expensive, and many IT leaders struggle to make it financially sustainable in the long run.

Gartner reinforces this concern, estimating that over half of organizations abandon their AI and Gen AI initiatives due to cost-related issues. The research firm further notes that fewer than 15% of organizations successfully identify, quantify, and measure these efforts' costs, risks, and value.

According to the Enterprise AI Pulse survey responses on the biggest challenges in managing AI infrastructure costs, CIOs cite GPU and accelerator expenses (30%) as their top concern, followed by data storage and transfer costs (27%), software licensing and tooling (25%), and personnel and training expenses

SCALING AI ISN'T JUST ABOUT INNOVATION—IT'S ABOUT ALIGNING STRATEGY WHILE NAVIGATING LEGACY SYSTEMS AND COMPLEX DATA.

Successfully scaling AI-driven solutions across different business functions requires aligning AI strategy with organizational goals. Many enterprises operate with legacy systems, ERP solutions, and a mix of structured and unstructured data, making integration complex. Our approach has been first to define key performance indicators (KPIs) across the organization and then identify specific areas where AI can drive the most impact. We have invested in world-class engineers with certifications in software automation and focused on critical functions like supply chain and financial automation. By consolidating data from various sources into a centralized big data platform—Data Labs Sub-Agent—we have created a single source of truth. This enables us to build predictive models that optimize efficiencies, streamline tender processes, and enhance overall system performance.

When integrating AI with data infrastructure while ensuring data quality, security, and compliance, the foundational principle is clear—garbage in, garbage out. AI is only as effective as the quality of data it processes. Our first step was identifying and cleansing data sources before bringing them into a unified, structured format. AI alone does not guarantee accurate insights; it requires rigorous data mining and cleansing activities beforehand. This journey has led to incremental improvements in predictability, with structured results emerging over time. As our data governance processes mature, the reliability of AI-driven insights continues to improve, reinforcing the importance of a strong data foundation in successful AI adoption.

RAJKUMAR AYYELLA

CIO,
KEC International
(RPG Group)



(18%). These findings highlight the growing demand for high-performance AI computing, the escalating costs of managing large datasets, and the critical need for skilled talent to operate and optimize AI systems.

The dominance of hardware costs reflects the growing dependence on GPUs, TPUs, and AI accelerators for training and inference workloads. High-end GPUs come at a premium price. Enterprises are exploring cloud-based AI processing and workload optimization techniques such as model quantization and federated learning to reduce infrastructure costs. Similarly, data storage and transfer costs remain a big concern, especially as AI models consume vast datasets.

Cloud egress fees and real-time data processing needs add to the financial burden. Hybrid cloud strategies, edge AI, and tiered storage policies can help enterprises mitigate these costs while ensuring seamless AI operations.

According to industry experts, CIOs will continue to look for ways to manage costs in the year ahead by negotiating software licensing agreements, adopting open-source tools, and implementing AI model lifecycle management to optimize resource utilization.

AI CHIP SHORTAGES

The next big challenge is procuring specialized hardware, such as GPUs and TPUs. Around 27% of ITDMs reported that it is a challenge. The demand for these chips increased with large AI models. Supply chain complications and exorbitant prices, though, are complicating the situation. Companies are now turning to cloud alternatives and other categories of AI chips to cope with these issues.

The rapid development of AI has hugely fueled the need for high-performance chips, especially for natural language processing (NLP) workloads, computer vision, and reinforcement learning.

Enterprises focusing on AI-driven automation, tailored customer experiences, and AI-enabled big data analytics need greater computational power, increasing the demand for specialized hardware like GPUs and TPUs.

Acquiring these chips has been a significant roadblock with supply chain constraints, sky-

THE REAL CHALLENGE ISN'T AI—IT'S ENSURING CLEAN, HIGH-QUALITY DATA FIRST

Data quality and compliance are key considerations. Most organizations generate tremendous amounts of data through various transaction systems. However, the real challenge lies in ensuring the data is accurate, relevant, and high-quality. Clean and well-structured data must be provided before building any AI model or analytical system.

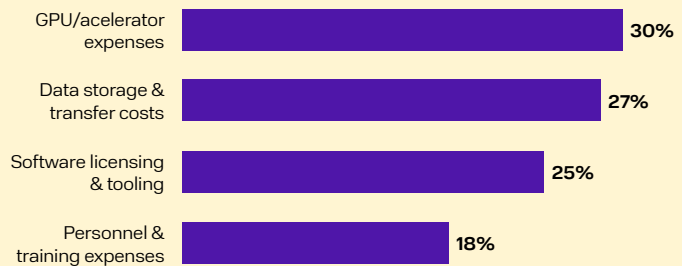
One common issue in organizations is the lack of proper data categorization. Classifying data correctly helps structure models more effectively and enhances their usability. Additionally, governments are introducing various regulations and laws regarding data protection. It is critical to determine which data is used for modeling and which is utilized for analytics while ensuring compliance with these regulations. Addressing these challenges is fundamental to leveraging data effectively and ensuring that AI-driven solutions deliver meaningful insights.

DR. SATISH DOIPHODE

Vice President RPMG-IT and Automation, Reliance Industries



AI Infrastructure: Cost Management Challenges



Source: Enterprise AI Pulse Survey 2025, CIO&Leader

AI SUCCESS STARTS WITH STRONG DATA GOVERNANCE

There's a lot of buzz around AI these days and the various possibilities it can create. However, one aspect that has always been crucial—and arguably even more important today—is an organization's data quality. Ensuring high data quality is fundamental, and one of the best ways to achieve this is by establishing a strong data governance program.

A well-structured data governance program should cover all aspects of data quality, lineage, infrastructure, and serviceability. Even for an AI model—especially a generative AI model—to be successful, one critical factor is how effectively you can build Retrieval-Augmented Generation (RAG) models on top of it. The effectiveness of these models, in turn, depends on the quality of your data infrastructure.

The importance of data quality remains constant throughout the AI journey—from foundational elements like MIS reporting and data analytics to machine learning and algorithms for process improvements, which are now advancing into generative AI. Its relevance is only increasing with time.

MUKESH RATHI

President and
Group CDO,
Hinduja Group



rocketing prices, and procurement issues. The semiconductor sector has been struggling with disruptions due to geopolitical tensions, trade barriers, and pandemic-led production slow-downs.

With chip production clustered in the hands of a limited number of players—TSMC, NVIDIA, Intel, and AMD—supply is exposed to market risks and external disruption. Consequently, AI chip costs have skyrocketed, making it challenging for companies, particularly mid-tier companies and startups, to procure specialized AI hardware.

In the meantime, major cloud vendors and hyperscalers tend to obtain priority access to these chips, leaving other players in an unfavorable position. This imbalance pushes many organizations to consider cloud-based AI infrastructure, different AI accelerators, and hybrid AI approaches to bridge the prevailing hardware shortage.

While cloud adoption for AI workloads is growing, most enterprises (53%) still have less than a quarter of their AI workloads in the cloud, indicating a firm reliance on on-premise infrastructure. Only a tiny fraction (6%) have moved more than 75% of their AI workloads to the cloud, suggesting that full-scale cloud adoption remains rare. Data security, compliance, cost, and performance concerns may slow cloud migration. However, a gradual shift is underway, with 22% of enterprises having 25-50% of AI workloads in the cloud and 19% reaching 51-75%. This suggests that organizations are adopting a hybrid approach, leveraging both on-premise and cloud environments based on business needs and technical feasibility.

DATA STORAGE AND MANAGEMENT

The third biggest roadblock in scaling AI infrastructure, cited by 21% of CIOs surveyed in Enterprise AI Pulse, is data storage and management. AI models rely on vast datasets distributed across on-premises data centers, cloud platforms, and edge devices. This fragmentation creates challenges with data accessibility, latency, and integration, making it difficult to streamline AI workflows.

Transferring large datasets between stor-

ORGANIZATIONS NEED TO BE MINDFUL OF COST FROM THE VERY BEGINNING

For AI projects to scale, you need an end-to-end strategy: identify high-impact use cases, determine whether the right kind of data exists or can be collected, and ensure that the entire pipeline, from data acquisition to deployment, has been thought through. Once a proof of concept is built, there must be a clear path to production, considering real-world constraints such as latency and ROI.

Organizations need to be mindful of cost from the very beginning. This means constantly evaluating whether a complex model delivers better ROI than a simpler alternative. The net benefit might be harmful if the incremental improvement is marginal but the infrastructure demand is significantly higher.

Dr. Hemant Misra

Senior Vice President -
Head of Data Science,
Simpl



age solutions or cloud providers further compounds the issue. High data movement costs, bandwidth bottlenecks, and performance constraints can significantly slow AI adoption. As organizations embrace hybrid and multi-cloud AI strategies, efficient data pipeline management becomes critical to ensure seamless model training and inference.

Beyond infrastructure hurdles, regulatory compliance adds another layer of complexity. Data protection laws such as GDPR and India's DPDP Act mandate stringent controls over data storage, processing, and movement, restricting how organizations can leverage data for AI applications. Maintaining data consistency and quality across distributed environments is also essential for AI accuracy and reliability.

To overcome these challenges, enterprises increasingly adopt hybrid storage architectures, AI-driven data management solutions, and edge computing to minimize data movement and optimize storage efficiency. Implementing a well-structured DataOps strategy can enhance AI scalability by automating data workflows, improving governance, and enabling organizations to maximize AI's potential while staying compliant.

SKILL SHORTAGE AND STAFFING

A major challenge in scaling AI initiatives is the shortage of skilled AI professionals, such as data scientists and machine learning engineers, with 21% of CIOs citing this as a key concern. The lack of in-house expertise makes it difficult for enterprises to build and maintain robust AI teams, slowing innovation and increasing reliance on third-party vendors. At the same time, organizations grapple with data storage and movement challenges, whether managing on-premises infrastructure or navigating complex multi-cloud environments. Efficient data handling remains critical for AI performance, but many companies struggle with accessibility, integration, and cost constraints.

In 2025 and beyond, enterprises are expected to focus on AI automation (AIOps) to streamline IT operations and reduce manual workload. Upskilling internal IT teams will also be a priority, helping businesses develop AI capabilities in-house rather than depending

solely on external talent. Additionally, AI-driven automation will minimize the need for highly specialized roles, allowing organizations to deploy and manage AI models more efficiently while addressing skill gaps.

AI Governance

Many enterprises struggle with the absence of clear regulatory guidelines and industry-wide best practices, making it difficult to establish consistent governance policies for AI models. This gap leads to accountability, risk management, and compliance issues, especially as AI regulations evolve globally. The most significant challenge, cited by 30% of respondents, is the lack of standardized frameworks.

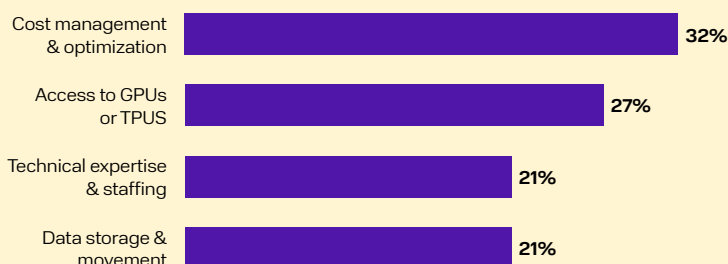
Other significant challenges include technical complexity (28%) and resource constraints (28%). AI governance requires specialized data science, ethics, and compliance expertise, which many organizations lack. Additionally, managing AI systems at scale demands significant financial investment, making budget constraints a critical barrier. Lastly, organizational resistance (15%) remains a challenge, as businesses often face internal pushback when implementing AI governance measures, either due to cultural inertia or concerns about operational disruptions. Addressing these challenges will require a combination of regulatory clarity, investment in AI talent, and cultural change within enterprises.

THE ROAD AHEAD

The mandate is evident from the survey and insights from CIOs who have successfully implemented AI. Achieving AI success isn't about jumping on the bandwagon; it requires a structured, well-governed strategy aligned with business objectives. Based on their experiences, enterprises must take decisive action to move AI initiatives beyond pilots and into scalable, high-impact deployments.

■ **Get clarity on AI goals** – AI should not be a solution in search of a problem. Organizations must define clear, outcome-driven AI goals that align with their business strategy. Whether enhancing operational efficiency, driving customer engagement, or unlocking new revenue streams, AI investments must be tied to measurable business impact. A well-defined

AI Infrastructure: Challenges in Scaling



Source: Enterprise AI Pulse Survey 2025, CIO&Leader

BALANCING FRESH IDEAS WITH PROVEN EXPERTISE FOR A SMARTER FUTURE.

A key challenge we foresee is balancing the expectations of new hires—fresh graduates eager to work with cutting-edge tools—and experienced professionals who bring invaluable domain knowledge. Successfully integrating these two groups requires a thoughtful approach to technology adoption. Our HR teams and leadership must work together to ensure AI and other innovations are embedded to foster inclusivity, collaboration, and seamless knowledge transfer across the organization.

SUMIT DUTTAGUPTA

Group CIO & Sr. Vice President, Information System, Haldia Petrochemicals



BALANCING INNOVATION, COMPLEXITY, AND TRUST IS THE MANTRA

The challenge for large enterprises like ours is determining how many of these solutions can realistically be integrated into our ecosystem. Absorbing 10, 15, or 20 different AI-driven solutions would complicate our technology landscape.

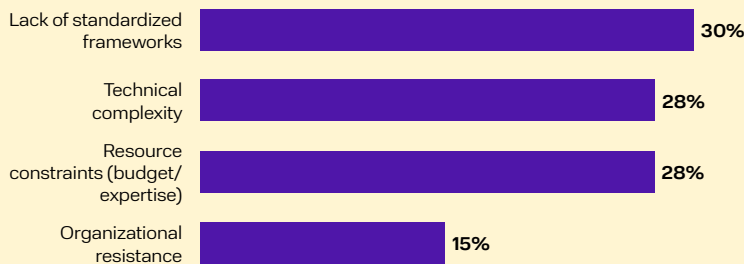
Another primary concern is data security. Many AI solutions require companies to upload sensitive data onto external cloud platforms. But the question is: Will the data remain secure? Could it be used for purposes beyond our knowledge? Could insights gathered from our data be shared with competitors? Its critical for organisations to ensure that data remains secure and compliant, whether it's employee information, customer records, process data, or business transactions.

PROSENJIT SENGUPTA

Group Chief Digital and Information Officer (GCDIO), ITC



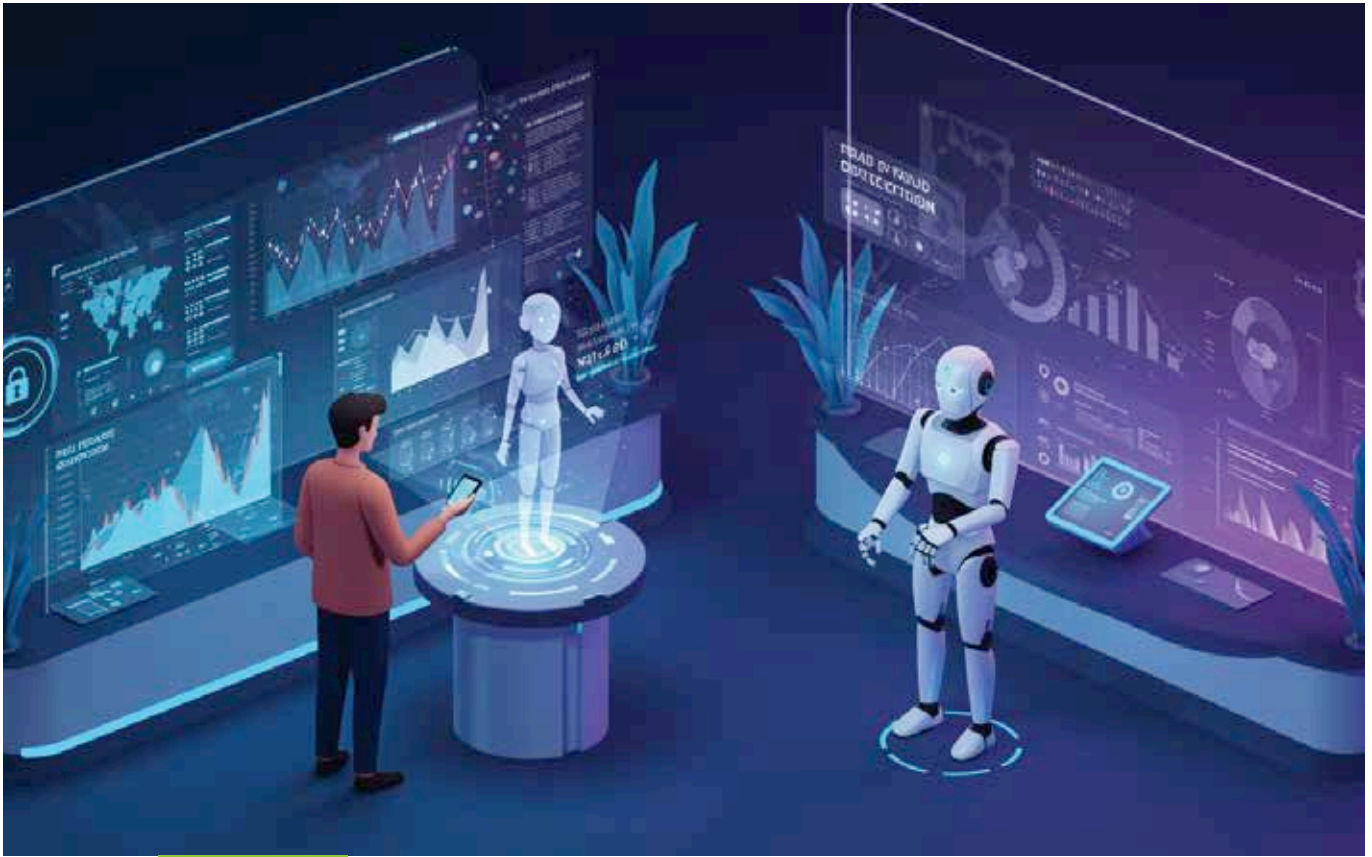
AI Governance: Key Challenges



Source: Enterprise AI Pulse Survey 2025, CIO&Leader

AI roadmap, with input from cross-functional teams, ensures that initiatives remain focused, feasible, and value-driven.

- **Fix the data first** – AI is only as good as the data it runs on. Organizations must invest in data governance, classification, and cleansing strategies to ensure high-quality, bias-free, structured data. Implementing strong DataOps frameworks can help streamline data accessibility, integration, and quality control.
- **Optimize infrastructure with cost in mind** – Managing AI-related infrastructure expenses—whether for GPUs, cloud egress fees, or storage—is a top priority. Enterprises should explore hybrid cloud models, federated learning, and model optimization techniques to balance performance with cost efficiency.
- **Prioritize use cases with measurable impact** – CIOs recommend identifying AI use cases that directly enhance business outcomes instead of broad, vague AI ambitions. Whether it's supply chain optimization, customer experience personalization, or financial automation, AI must drive measurable value.
- **Bridge the talent gap** – With a shortage of skilled AI professionals, companies need to upskill internal teams and leverage AI automation tools like AIOps to reduce reliance on specialized talent. Building an intense AI center of excellence can accelerate internal expertise development.
- **Build strong AI governance frameworks** – AI governance isn't just a compliance requirement—it's a competitive advantage. Organizations must establish clear accountability, ethical AI guidelines, risk assessment models, and explainability frameworks to ensure AI is trustworthy and compliant with evolving regulations.
- **Scale AI with a long-term vision** – CIOs emphasize that AI is a marathon, not a sprint. Companies must move beyond Proof-of-Concept (PoC) trials and pilot projects, investing in scalable AI architectures, automation frameworks, and iterative deployment strategies that ensure long-term success. ■



AI & ML in Digital Banking

The technical challenges banks need to overcome to transform the customer experience and strengthen efficiency

By **Kalyan Gottipati** | editor@cioandleader.com

IN TODAY'S fast evolving financial world, the demand for innovation and operational efficiency is as high as ever. The integration of Artificial Intelligence (AI) and Machine Learning (ML) into digital banking operations is changing customer experience in ways that the world has never before witnessed.

Banks are being empowered to offer greater personalization of services as well as to improve the efficiency of overall service delivery, decision

making, and security through AI and ML. Let's take a look at how these technologies are transforming banking services, the real-world results they can yield and the technical challenges banks need to overcome to unlock their potential.

The Growing Role of AI and ML in Digital Banking

The global AI in banking market is expected to grow a compound annual growth rate (CAGR)

of 23.37% from 2020 to 2025, with financial services being a hotbed of AI adoption. This growth is fueled by a growing need for personalized banking experiences and the operational efficiencies in an increasingly digital first world.

Integrating AI and ML into banking systems: The technical roadmap

Banks must take several technical steps to adopt AI and ML successfully:

- **Hybrid Cloud Architecture:** Many banks still use legacy on-premise systems. Working around that barrier has to do with a hybrid cloud architecture. This enables banks to incrementally migrate workloads to the cloud while still having complete control over sensitive customer data in on-premise environments.

- **APIs for Integration:** Financial institutions must guarantee proper integration between their legacy systems and new AI applications. APIs allow AI solutions to communicate with existing platforms, so that real-time data between various banking platforms can flow smoothly, without interrupting operations.

- **Data Privacy and Security:** Banks also have to ensure data security and compliance with regulations such as GDPR and PCI DSS when they deploy AI.

- **Seamless Data Integration:** AI models can be successful only when they are trained on the right data, which mean banks need to invest wisely towards setting up a proper data infrastructure to ensure high quality, integrated data across systems.

Security and ethical considerations

AI also brings a number of security and ethical challenges to be solved by banks to get responsible deploy-

The global AI in banking market is expected to grow a compound annual growth rate (CAGR) of 23.37% from 2020 to 2025, with financial services being a hotbed of AI adoption.

ment with these technologies:

- **AI-Driven Adversarial Attacks:** As AI becomes more essential to banking, the risk of adversarial machine learning attacks increases. These attacks control AI models to create incorrect results, such as counterfeit fraud detection. Banks must implement robust cybersecurity measures like continuous monitoring, AI-driven threat detection, and adversarial training to secure their AI models.

- **Algorithmic Bias:** In sensitive sectors like credit scoring and loan approvals, AI systems may unknowingly carry biases. Financial institutions must place algorithmic fairness to make sure their AI models are not discrimination between customer groups.

- **Transparency:** Customers need to understand how AI algorithms make decisions, for example for credit approvals or fraud detection.

Future trends

Developments for AI and ML in banking is set to shape the future landscape:

- **Quantum Computing:** Quantum computing will transform encryption methods promote faster processing and more secure transactions.

- **AI-Driven Decision-Making:** 5–10 years out, AI will develop

the ability to manage complex decision-making process. We'll witness increasingly intuitive AI systems that can do more than provide financial advice but can also anticipate future financial trends, making banks more proactively in addressing customer needs.

Customer experience beyond Personalization

AI great at personalizing customer experiences, but its ability to help streamline service across the board is equally important. AI-driven chatbots, for example, gives customers to get immediate responses to queries, while AI-powered mobile applications can track spending habits and provide customized recommendations for saving.

AI's potential to automate laborious tasks such as processing loans or detecting fraud, also frees up human resources for value added services, providing faster service across the board for customers.

Takeaway

AI and ML are the future of banking. AI is transforming customer engagement for financial institutions, from fraud detection to personalized banking services. Banks that want to remain competitive in today's volatile market must embrace AI not only for operational efficiencies but also to meet increased expectations from modern consumers.

For this successful transformation, the banks should ensure that they have secure and transparent AI implementations, consume cloud-based solutions, and address ethical issues in AI such as algorithmic bias in its practices. AI powers the future of digital banking. Adopt these technologies to continue to offer a smarter, faster and more personalized customer experience than ever before. ■

Data privacy matters in today's digital world



It has become critical for organizations to establish a strong data governance framework for a strategic advantage

By **Pritam Shah** | editor@cioandleader.com

INDIA'S FAST-GROWING digital economy coupled with the country's internet user base is expected to exceed 900 million this year, making the protection of data privacy a societal imperative.

Let's take a look at some of the related statistics. A Survey Report 2024 was released recently by the Confederation of Indian Industry (CII) and Protiviti, on the preparedness of Indian industries for data privacy and the Digital Personal

Data Protection (DPDP) Act. The survey was conducted across various industries. Key findings from the survey revealed that over 60% of companies are engaged in practices that raise data privacy concerns, 52% have experienced a data breach in the past five years, and only 39% of larger organizations have a dedicated Data Privacy Office.

Another recent survey by PwC administered

to 3,233 consumers across 24 cities and 186 organizations across India reveals that only 16% of consumers are aware of the Digital Personal Data Protection (DPDP) Act. The survey also states that 56% of consumers are not aware of their rights related to personal data and 69% of consumers are not aware of their rights to take back their consent. Whenever a minor's personal data is involved, 72% of respondents are not aware that handling a minor's personal data requires a parent/guardian's consent.

Data privacy – a top priority

With a significant rise in data breaches and privacy violations, organizations are compelled to protect the sensitive data of customers and proprietary information for business operations to avoid huge business losses, customer churn, and damaging their reputation. Data apps and IoT devices can also track and collect personal information of individuals including their activities, interests, photos, and financial details.

Apart from being a compliance issue, data privacy protects the fundamental rights and freedoms of individuals in India and becomes a moral responsibility for organizations. Hence data privacy is a key concern for both individuals and businesses. Individuals should be made aware of data privacy, especially in India, which has a huge population base of Internet users. Data privacy also enables organizations to build trust among customers by establishing a culture of transparency and accountability while regarding individual privacy.

Data privacy in India-legal frameworks

The legal Frameworks for Data Privacy in India include the Information Technology (IT) Act, 2000,



Pritam Shah
Global Practice Head
OT Security and Data Security

the IT (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rule, 2011, and the recent Digital Personal Data (DPDP) Act, 2023. On January 3 this year, the Ministry unveiled the draft DPDP Rules, 2025 which has been published for feedback from the public where suggestions are invited until February 18, 2025. The DPDP applies to the processing of digital personal data within the country, as well as outside India concerning the delivery of goods or services to individuals in the country.

Challenges to data privacy

A significant percentage of India's population is not yet aware of data privacy rights and the potential risks due to the misuse of this data. Secondly, the high costs involved in implementing data protection measures, especially for SMBs and startups can pose a challenge to ensuring data privacy.

Furthermore, cyberattacks are getting more sophisticated as attackers are leveraging advanced technologies such as AI and others to exploit vulnerabilities where

achieving data privacy is difficult. Lack of resources in these organizations can result in non-compliance as well. The burden of compliance may sometimes hinder innovation and growth, more importantly in tech startups.

Best practices for data privacy management

A comprehensive data governance framework should be established at the very outset, where roles and responsibilities are defined and data quality and accuracy are established. Data privacy principles have to be integrated into the design of products and services and not added as an afterthought. Employee access to customer information should be restricted and granted solely based on their specific roles and responsibilities.

Implementing best practices in data privacy not only safeguards customer information but also provides a strategic edge. Organizations should institute clear governance, define roles, ensure data accuracy, and embed privacy principles into products from the start. Restricting employee access according to role and maintaining transparent data usage policies with consent mechanisms are vital. Robust security measures—encryption, access controls, and audits—reinforce trust, while training employees and educating customers underscore a commitment to privacy. Alignment with customer values delivers further competitive benefits. Regularly reviewing practices to address emerging threats and regulations keeps organizations ahead of the curve. As digital transformation accelerates, prioritizing data privacy is critical. Data Privacy Day on January 28 reminds everyone to renew their pledge to strong policies and further reinforce awareness among all stakeholders. ■

AI Roadshow: Making AI work for you



The Mumbai edition of CIO&Leader's AI Roadshow conference featured top CIOs sharing thought-provoking and actionable insights on AI implementation roadmaps

By CIO&Leader | editor@cioandleader.com



C

IO&LEADER HOSTED the Mumbai edition of its flagship conference, The AI Roadshow, on January 29, 2025, at the Jio World Center. Themed "Making AI Work for You," the event brought together 70 enterprise technology leaders, AI experts, and solution providers. Participants engaged in discussions focused on practical AI adoption approaches, implementation strategies, and real-world use cases across various industries.

The conference was hosted in association with Snowflake, HPE-Ingram, and Data Science Wizards. The agenda featured compelling keynotes on critical topics, including creating a data ecosystem for enterprises, AI and networking, and breaking barriers to AI adoption and accelerating enterprise AI at scale.

The day began with a welcome note emphasizing the growing importance of responsible AI deployment, followed by the presentation of a nationwide survey on the current state of AI adoption in Indian enterprises, revealing both the promising potential of AI-led transformation and the challenges organizations face in expanding pilot projects into full-scale implementations.

The event saw discussions centered on taking a lean, startup-inspired approach to AI development, leveraging AI for networking, illustrating the ways automated, intelligent infrastructures can underpin more secure and efficient operations. Attendees also participated in a fireside chat spotlighting AI-driven network solutions, discussing practical ways to streamline operations and bolster cybersecurity through predictive analytics.

The day successfully concluded with a vote of thanks by 9.9 Group and partners. The event provided a platform for technology leaders to share insights on AI implementation strategies, challenges, and success stories, emphasizing practical approaches to derive business value from AI technologies. ■



Welcome Address by R Girdhar, Group Editor, 9.9 Group

He set the tone for the conference by stressing that IT leaders are not merely guardians of technology, but also visionaries driving innovation in an era of unprecedented digital complexity.



State of AI Adoption in Indian Enterprises survey presentation by **Jatinder Singh**, Executive Editor, CIO&Leader



Smart & Lean AI Development: The Startup Way!: Dr Hemant Misra, Senior Vice President & Head - Data Science, Simpl



Creating a Data Ecosystem for for Enterprises: Murag Wagh, Director - Sales Engineering, Snowflake



AI for Networking: Networking for AI: Abir Banerjee, National Bsuiness Manager, HPE Aruba Networking, India



Unify AI: Breaking Barriers to AI Adoption & Accelerating Enterprise AI at Scale: Sandeep Khuperkar, CEO & Founder, Data Science Wizards



AI in the Enterprise: Simplify, Streamline, Succeed: Kunal Pande, National Co-Head - Digital Risk and Cyber & National Leader - Digital Trust for Financial Services Sector, KPMG



Fireside Chat: AI for Networking, Networking for AI: Abhijeet Chakraborty, Executive Vice President - Networks & Cyber Security, Kotak Mahindra Bank, in conversation with - Abir Banerjee, National Business Manager, HPE Aruba Networking, India

Panel Discussion: Accelerating Enterprise AI: From PoC to Production: (From left to right) R Giridhar, CIO&Leader, Rajneesh Garg, AllCargo, Vinod Sivarama Krishnan, Essar Group, Mukesh Rathi, Hinduja Group, Ramesh Narayanaswamy, Aditya Birla Capital, Ravindra Ranade, HPE





Transforming learning and development at Mahindra Group with AI

Mahindra Group revamped L&D with AI, enabling personalized, data-driven learning and boosting engagement, adoption, and workforce readiness.

By **CIO&Leader** | editor@cioandleader.com

The Challenge: A Workforce Ready for Change

Mahindra Group, a global powerhouse spanning over 20 industries with a workforce of over 260,000 people, faced a growing challenge: how to modernize its Learning & Development (L&D) strategy in the face of an evolving workforce and fast-changing business needs. The traditional approach of classroom learning and top-down training simply wasn't cutting it anymore.

The company's diverse workforce, scattered across different regions and business units, needed a learning experience that was flexible, inclusive, and engaging. However, Mahindra encountered several hurdles before they could take the leap into the future of learning:

■ **Shifting from Physical Classrooms to Digital Learning:** The company noticed a significant decline in learner attention over the years. The old method of in-person training sessions was no longer effective in keeping employees engaged. The group recognized the need to move to a hybrid or fully digital learning format.

■ **Expanding Learning Access:** Traditionally, L&D initiatives at Mahindra focused on high-potential talent, but the company wanted to widen the net. They understood that fostering a culture of growth meant providing equal learning opportunities for all employees, regardless of their role or grade.

■ **Promoting Self-Directed Learning:** Mahindra wanted employees to have more control over their learning. The goal was to create an environment where people could pursue their personal development, set their own learning goals, and follow paths that suited their individual needs and career aspirations.

■ **Breaking Down the Fragmented Learning Ecosystem:** With multiple learning systems across various business units, employees were struggling to navigate a fragmented and cluttered learning environment. The need for a unified platform was clear.

■ **Data-Driven Insights for Better Decisions:** The group realized that decisions about L&D should no longer be based on guesswork or intuition. They needed actionable data to guide content investments, measure engagement, and drive continuous improvement.

The Solution

The solution arrived in the form of an AI-powered Learning Experience Platform (LXP) implemented by Cornerstone. The partnership aimed to overhaul Mahindra's L&D ecosystem, helping them build a workforce ready for the future. Here's how the AI-driven platform tackled Mahindra's challenges:

■ **Unified and Seamless Integration:** One of the first things Mahindra needed was a platform that could integrate with existing systems and consolidate all learning resources in one place. Cornerstone's LXP provided a streamlined, user-friendly interface that connected disparate learning tools and content into a single hub.

■ **Personalized Learning Paths:** The AI-powered platform didn't rely on outdated systems that grouped employees by job title or grade. Instead, it created tailored learning journeys based on employees' unique personas, learning styles, and career aspirations. This personalization ensured that each learner received content that was relevant and engaging, no matter where they sat within the company.

■ **Empowering Self-Directed Learning:** The platform gave employees the tools to customize their learning experience. With

a focus on autonomy, Mahindra employees could now take ownership of their professional development, choosing courses that aligned with their personal goals and skills.

■ **Learning in the Flow of Work:** To ensure that learning didn't disrupt the workday, the platform embedded learning experiences directly within commonly used applications like Microsoft Teams and Google Search. Employees could access learning materials without ever having to leave their regular workflows.

■ **Data-Driven Decision Making:** The LXP's analytics capabilities gave Mahindra real-time data about learning patterns, content effectiveness, and employee progress. This allowed the L&D team to make informed decisions on how to improve training programs, where to allocate resources, and which content was most valuable to employees.

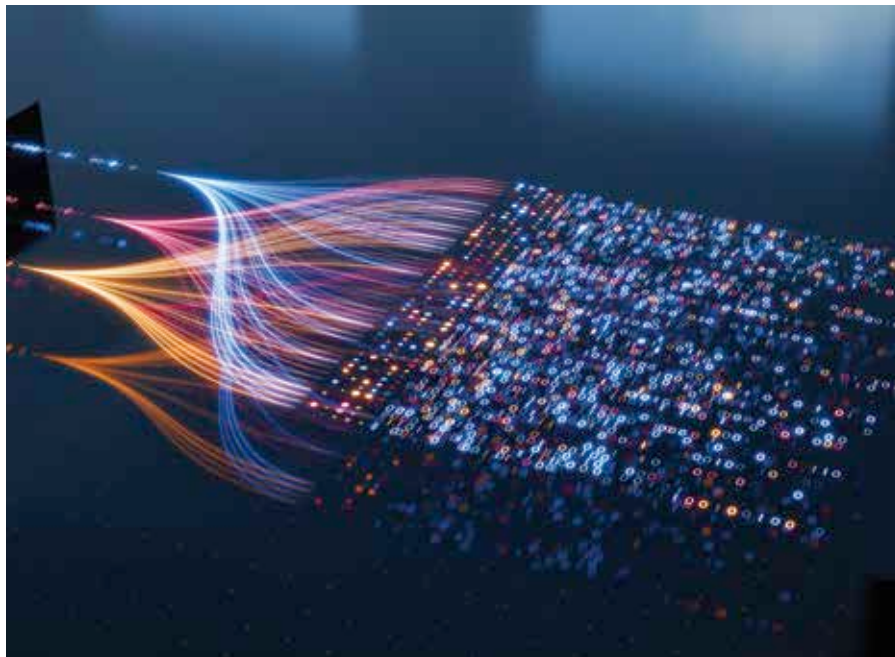
The Transformation: Navigating Challenges and Driving Adoption

Implementing the new system wasn't without its challenges.

■ **Change Management:** Moving from traditional methods to a digital-first strategy required more than just technology—it required a shift in mindset. The company launched extensive awareness campaigns to communicate the benefits of the new platform and provide the necessary training to both leaders and employees.

■ **System Integration:** Integrating the new platform with existing ERP and HRMS systems was a significant task. With the help of Cornerstone's automated integration tools, Mahindra ensured smooth compatibility and minimal disruption during the transition process.

■ **Driving Adoption Across a Global Workforce:** Mahindra's geographi-



cally dispersed workforce presented a unique challenge. To ensure widespread adoption, the company focused on intuitive onboarding, personalized content, and clear communication about how the new platform would benefit employees on an individual level.

Despite these obstacles, Mahindra was able to successfully roll out the LXP across its organization, setting the stage for long-term success.

The Results: A Transformative Shift in Learning & Development

The impact of the AI-powered LXP was evident almost immediately. Mahindra achieved remarkable success in terms of both engagement and outcomes:

- **Adoption & Deployment:** In phase one, the platform was rolled out to over 24,000 employees, with an impressive 80% adoption rate within six months. This early success demonstrated that employees were embracing the new digital learning experience.

- **Engagement & Learning**

- **Outcomes:** Engagement levels remained high, with 64% of employees actively participating each month. In total, over 2 million content items were completed, and the course completion rate reached an outstanding 71%.

- **Employee Satisfaction:** The platform's Net Promoter Score (NPS) of 8.7/10 reflected a high level of employee satisfaction, suggesting that the LXP was not only effective but also highly valued by users.

QUALITATIVE IMPACTS:

- **Personalized Learning:** Employees were no longer lumped together based on titles or grades. The new system grouped them according to their learning needs, fostering a culture of individualized growth.

- **Future-Ready Workforce:** With role- and skill-specific content, Mahindra equipped its employees with the tools needed to stay ahead of industry trends and tackle emerging challenges.

- **Seamless Integration:** The platform's ability to integrate with Mahindra's existing systems resulted in a smooth user experi-

ence and reduced friction, allowing employees to access learning content effortlessly.

- **Data-Driven Insights:** The platform's analytics allowed Mahindra to refine its L&D strategy, focusing on high-impact content and ensuring continuous improvement in training programs.

Lessons Learned: Key Insights for AI-Powered Learning Initiatives

The success of Mahindra's AI-driven learning transformation offers several key lessons for companies looking to implement similar initiatives:

- **Personalization Drives Engagement:** AI's ability to personalize learning journeys makes it possible to cater to individual preferences, which drives higher engagement and more meaningful skill-building.

- **Unified Platforms Ensure Seamless Learning:** A single, integrated platform that connects various learning resources creates a smooth, efficient experience for employees and encourages widespread adoption.

- **Leverage Data for Continuous Improvement:** Real-time analytics allow organizations to make smarter, data-driven decisions about content, resources, and learning strategies.

- **Change Management is Essential:** Clear communication, proper training, and leadership involvement are crucial to overcoming resistance and ensuring that employees embrace new technologies.

For Mahindra Group, the journey with Cornerstone's AI-powered LXP has marked the beginning of a new era in learning and development—one that is more personalized, inclusive, and adaptable to the ever-changing needs of the global workforce. ■

Balancing fresh talent with experienced experts is key to AI success

By **Jatinder Singh and Praneeta** | jatinder.singh@9dot9.in



Sumit Duttgupta, CIO of Haldia Petrochemicals, shares insights on driving AI-led innovation through collaboration, inclusivity, and measurable ROI.

A S AI moves from proof-of-concept to large-scale deployment, CIOs are tasked with a multifaceted challenge: integrating advanced technologies while managing workforce transitions, budget constraints, and operational efficiency. AI's potential extends beyond automation—it is reshaping industries through predictive analytics, digital twins, and real-time decision-making. However, its true impact lies in how seamlessly organizations embed AI within a people-centric framework.

In an exclusive interaction with CIO&Leader, Sumit Duttgupta, CIO of Haldia Petrochemicals, shares his insights on driving AI-led innovation while fostering collaboration, inclusivity, and measurable ROI. From tackling legacy system integration to leveraging AI for demand forecasting and plant reliability, he outlines the strategic roadmap for AI implementation in 2025.

Sumit is a seasoned technology leader with a wealth of experience in senior leadership roles, including Group CIO, VP, and Head of IT. In his current role, he leads Haldia Petrochemicals' digital transformation initiatives, emphasizing process optimization, automation, and the seamless integration of plant and business data. His efforts are geared towards enabling proactive, predictive, and prescriptive decision-making. Sumit is also a recipient of the prestigious 6th CIO&Leader Samman. Below are excerpts from the interview.

CIO&Leader: How do you see AI adoption evolving particularly in terms of balancing technological advancements with workforce transition and maintaining a collaborative work environment?

SUMIT DUTTAGUPTA: 2024 was essentially a "wait and watch" year. Several key developments emerged, such as the maturity of AI as a technology. In our business, we also faced a highly volatile commodity market. Additionally, in the chemical and petrochemical industries, concerns about environmental sustainability deepened, prompting organizations to adopt ESG initiatives. While necessary, these efforts required significant investments in process re-engineering and long-term planning, as they are expected to impact business operations over the next 5 to 10 years.

Furthermore, escalating geopolitical tensions disrupted supply chains, driving up transportation and shipping costs.

Looking ahead to 2025, as these developments mature, this year is expected to be both challenging and decisive for new technology adoption. We anticipate that AI will have a profound impact on an organization's people-centric approach, necessitating the development of integrated workplace architec-



We have implemented AI-based predictive analytics for equipment maintenance. This helps us minimize unplanned downtimes by providing early alerts on potential failures.

ture. At the same time, it is crucial to foster a workplace culture that embraces new technologies while promoting a data-driven analytics approach.

However, it is equally important to preserve the essence of a cohesive and collaborative work environment. The introduction of new technologies may empower certain "smart users" to work independently with confidence, but technology adoption should not lead to silos. Instead, it should enhance teamwork and collaboration within the organization.

A key challenge we foresee is balancing the expectations of new hires—fresh graduates eager to work with cutting-edge tools—and experienced professionals who bring invaluable domain knowledge. Successfully integrating these two groups requires a thoughtful approach to technology adoption.

Our HR teams and leadership must work together to ensure AI and other innovations are embedded in a way that fosters inclusivity, collaboration, and seamless knowledge transfer across the organization.

CIO&Leader: How are technologies like digital twins, AR, and VR helping drive innovation and new business models?

SUMIT DUTTAGUPTA: When it comes to adopting predictive technologies, we've already developed a digital twin for our naphtha cracker unit. This real-time optimizer allows us to simulate and optimize plant operations, ensuring maximum efficiency and optimal yield. In addition, we have implemented AI-based predictive analytics for equipment maintenance. This helps us minimize unplanned downtimes by providing early alerts on potential failures. While scheduled main-



A key challenge we foresee is balancing the expectations of new hires—fresh graduates eager to work with cutting-edge tools—and experienced professionals who bring invaluable domain knowledge.

tenance is a given, AI ensures that critical assets are monitored continuously, helping us proactively mitigate risks.

Safety and reliability are also key priorities, especially given that we operate in a hazardous environment with complex processes. By integrating various data sources—including digital logbooks, e-permits, quality parameters from e-LIMS, and water information management systems—into an AI-driven platform, we generate real-time heatmaps and predictive insights. Our MQAI platform helps identify potential safety risks, allowing us to take preventive measures before an incident occurs. AI, therefore, plays a dual role: ensuring compliance and providing forward-looking insights for complex operations.

CIO&Leader: Integrating legacy systems remains a significant challenge in scaling AI effectively. What best practices should enterprises follow to overcome this issue?

SUMIT DUTTAGUPTA: That's a

very real challenge. Without a well-structured and clean foundational database, AI will produce inaccurate insights. Enterprises must focus on data normalization and standardization before layering AI on top.

When integrating AI with multiple siloed systems, a clear strategy for data interfacing is crucial—particularly in defining primary and secondary keys and building real-time data caches. Additionally, contextualizing machine-generated data with business data is essential. If the integration lacks context, AI models will struggle to extract meaningful insights.

This requires a collaborative effort between IT, data scientists, and domain experts. For example, if I want AI to analyze pump performance in relation to our captive power plant, I need engineers who understand both the technical aspects and energy distribution patterns. A strong data governance framework, combined with domain expertise, ensures AI delivers relevant insights.

Another important factor is UI/UX. If AI-powered analytics tools

aren't intuitive, users won't engage with them effectively. A simple, well-designed interface encourages adoption and maximizes the value derived from AI.

CIO&Leader: What are some of the AI-driven projects and innovations currently in progress at Haldia?

SUMIT DUTTAGUPTA: Within our organization, most work processes are now digitized, providing us with a solid data foundation. We have adopted the ISA-95 framework, integrating automation at the root level, implementing Manufacturing Execution Systems (MES), and linking these to business insights. Now, we're focusing on leveraging AI agents. One key area of exploration is private LLMs tailored to our specific needs. Unlike generic LLMs like OpenAI's models, which generate excessive and often irrelevant data, custom models would deliver more precise recommendations.

Other AI-driven initiatives include:

■ **Process Simulation for Polymer Production:** AI helps us analyze cause-and-effect relationships

when disruptions occur, enabling faster corrective actions.

■ **AI-Enhanced Demand Forecasting:** By incorporating external factors such as shipping trends, geopolitical risks, and commodity price fluctuations, we aim to improve planning accuracy.

■ **AI-Generated Heatmaps for Plant Reliability:** We have piloted an AI model for early event detection and are now scaling it across the plant.

■ **Customer Behavior Analytics:** With over 4,500 customers, AI-driven segmentation is helping us optimize product distribution and pricing strategies.

■ **AI-Augmented Roles:** We are exploring AI-assisted decision-making tools for procurement and HR performance management, aiming to streamline operations and improve efficiency.

Some of these initiatives are in pilot stages, while others will be scaled in 2025, subject to budgeting considerations.

CIO&Leader: Is ROI a major concern for CIOs when implementing AI, and is there increasing pressure from the board to define clear performance metrics for its success?

SUMIT DUTTAGUPTA: Absolutely, ROI is critical. No enterprise will adopt AI just for the sake of it. However, senior management is increasingly open to experimenting with AI through small-scale pilots. They recognize that AI adoption is an iterative process—initial projects may not yield full returns immediately, but incremental successes build confidence and justify larger investments.

Rather than deploying AI across all processes, organizations should identify revenue-generating or efficiency-enhancing use cases first. Once proven, these initiatives can be scaled.

CIO&Leader: What has changed in AI priorities for CIOs this year as compared to the last year?

SUMIT DUTTAGUPTA: The biggest shift in 2025 is the move from AI concepts and prototypes to real-world applications. Senior management is looking for tangible, operational AI successes.

CIOs are now focusing on two key aspects:

■ **Leveraging proven AI models**—rather than experimenting with untested solutions, organizations are evaluating AI implementations in peer industries and adapting them.

■ **Securing early wins**—quick success stories help build confidence among decision-makers, leading to broader AI adoption.

CIO&Leader: Given budget constraints and the need for cost optimization, how should CIOs balance innovation with financial sustainability?

SUMIT DUTTAGUPTA: Budget constraints will always exist, but this doesn't mean CIOs should take a step back from innovation. What we need to do is thoroughly understand the domain alongside business stakeholders and identify two or three high-impact use cases that affect operations, production, or procurement – for instance, implementing a faceless purchase system.

While these initiatives may sound good in theory, the real challenge lies in implementation: how do you model these scenarios in an AI system and create solutions that work effectively on the ground? If you can select and implement the right use cases, the ROI will naturally follow. Initially, when building these systems, the ROI might be conservative, but the benefits become clear during implementation.

There are multiple approaches to achieving ROI. In some cases, you might have excess staff, so you can automate processes and redeploy personnel to other areas. In other cases, where you have limited manpower, you can make the existing processes more intelligent and retrain the small team to perform better analytics using the new system. Through these approaches, we're improving process efficiency and demonstrating tangible value in terms of both productivity and financial returns.

CIO&Leader: Talent acquisition and skill gaps remain major barriers to AI adoption. What strategies can CIOs implement to address these challenges?

SUMIT DUTTAGUPTA: AI isn't solely about coding; successful adoption involves a cross-functional approach. To embark on a business or digital transformation program where AI is central, assemble a comprehensive team that includes domain experts and business professionals who thoroughly understand operational realities.

Within your organization, identify technology enthusiasts who have already embraced new tools, and provide them with the necessary re-skilling to handle emerging technologies effectively. After forming this cohesive internal team equipped to manage AI solutions, partner with a reputable consulting firm that can offer global best practices and specialized expertise.

Together, systematically develop use cases, gradually building momentum and trust among leadership and end users. This methodical approach lays the groundwork for a wider digital transformation journey, ensuring genuine, sustainable, and lasting organizational impact across all functions and fosters alignment among diverse stakeholders. ■

AI is not a disruptor, it's your new digital employee.

By **Jatinder Singh** | jatinder.singh@9dot9.in

Prosenjit Sengupta, Group Chief Digital and Information Officer (GCDIO) at ITC, shares exclusive insights on AI, the top challenges faced by CIOs, and their key focus areas.



CIO&LEADER RECENTLY sat down with Prosenjit Sengupta, Group Chief Digital and Information Officer (GCDIO) at ITC, for an exclusive discussion on AI, the top challenges CIOs face, and the key technology priorities shaping their agendas. With over two decades of experience, Sengupta leads ITC's digital strategy, leveraging technology to drive growth, enhance customer experience, and streamline operations.

Challenging the conventional perception of AI as a disruptor, Sengupta reframes it as an enabler—augmented intelligence that amplifies human capabilities rather than replacing them. He delves into the complexities of AI adoption, from securing sensitive data and integrating emerging technologies to bridging the growing skills gap in the workforce. According to Sengupta, successful AI implementation goes beyond

technology—it requires a culture of continuous learning, collaboration, and strong governance. Aligning people, processes, and policies is crucial to unlocking AI's full potential and ensuring a sustainable, human-centric future.

Read on to explore his insights on how organizations can navigate AI adoption, ensuring technology complements human expertise. Excerpts from the interview:

CIO&Leader: As AI takes center stage, it brings along challenges such as complexity, data security, and workforce retention. How can CIOs and IT leaders navigate AI adoption while effectively balancing these risks?

PROSENJIT SENGUPTA: We've witnessed rapid technological advancements over the past few years. This took off with OpenAI's introduction of ChatGPT and large language models (LLMs). Since then, we've seen a surge in startups and established companies offering AI-driven point solutions across various business areas. The challenge for large enterprises like ours is determining how many of these solutions can realistically be integrated into our ecosystem. Absorbing 10, 15, or 20 different AI-driven solutions would complicate our technology landscape.

Another primary concern is data security. Many AI solutions require companies to upload sensitive data onto external cloud platforms. But the question is: Will the data remain secure? Could it be used for purposes beyond our knowledge? Could insights gathered from our data be shared with competitors? Our customers, employees, and stakeholders are responsible for ensuring that our data remains secure and compliant, whether it's employee information, customer records, process data, or business transactions.

The growing number of AI solutions has created a knowledge gap, leaving organizations without enough skilled professionals to evaluate and implement the right technologies.

A third challenge is talent. The growing number of AI solutions has created a knowledge gap, leaving organizations without enough skilled professionals to evaluate and implement the right technologies. Many organizations remain stuck in endless PoCs and pilots, finding it difficult to scale due to security and integration concerns. Meanwhile, employees who upskill in AI often leave for better-paying opportunities, making it even harder to build internal AI expertise. Companies find themselves in a perpetual cycle of proof-of-concept (PoC) and pilot testing but struggle to progress with full-scale implementation due to a lack of confidence in security and integration.

Employees who invest time in upskilling—especially in AI and emerging technologies—often leave for startups or companies offering higher pay and better growth opportunities. This talent drain makes it even harder for organizations to build a robust internal AI competency.

CIO&Leader: How do you approach change management, particularly in cultural shifts and workforce integration?

PROSENJIT SENGUPTA: One of the most significant cultural challenges organizations face today is man-

aging a multi-generational workforce. We have Gen X professionals—many of whom are in senior leadership positions or nearing retirement—alongside Gen Y, who are in mid-management roles, and Millennials, who are just joining the workforce. With the rise of AI and automation, we're introducing yet another "generation" to the workforce: intelligent machines and AI-driven systems.

Previously, robotic process automation (RPA) handled repetitive tasks, but now, generative AI takes automation a step further by analyzing data, drawing insights, and even making decisions. Essentially, we're integrating a new "worker" type into the enterprise that operates differently from any human employee.

Managing such a diverse workforce requires significant changes in organizational culture and leadership ideas. Senior employees, who have spent decades relying on traditional decision-making frameworks, must now adapt to AI-driven insights. Mid-career professionals must bridge the gap between legacy systems and cutting-edge technology. At the same time, younger employees—often more adaptable to AI—must learn to navigate corporate structures and governance.

The expectations of a 25-year-old from a company are vastly different from those of previous generations. Whether job satisfaction, the relationship between employees and their managers, working conditions, working hours, learnability, or career aspirations, everything varies significantly across generations. This makes cultural and change management an essential consideration.

The key to successful change management is developing a culture of continuous learning and collaboration. Organizations must

invest in training programs that upskill employees at all levels, ensuring that AI and automation complement human expertise rather than replace it. Leadership also needs an environment where knowledge sharing is encouraged across generations, allowing experienced professionals to mentor younger employees while learning from them.

CIO&Leader: Given these challenges, how should enterprises balance adopting AI-driven innovations and maintaining operational stability?

PROSENJIT SENGUPTA: Striking the right balance requires a phased approach. Enterprises should start by identifying high-impact areas where AI can deliver tangible value—customer service automation, predictive analytics, or supply chain optimization. Instead of deploying AI across multiple business functions simultaneously, companies should prioritize targeted implementations that align with their strategic goals.

Another critical aspect is governance. Clear policies should guide AI initiatives around data privacy, compliance, and ethical considerations. Enterprises must establish robust frameworks to ensure that AI solutions are used responsibly, mitigating bias, security breaches, and regulatory compliance risks.

Collaboration with trusted technology partners is also essential. Rather than experimenting with multiple standalone solutions, companies should seek partnerships with vendors who offer scalable, secure, and enterprise-grade AI capabilities. It not only simplifies integration but also ensures long-term sustainability.

Finally, leadership commitment is critical. CIOs and business leaders must actively champion AI

initiatives, encouraging a culture that welcomes change rather than resists it. By investing in people, processes, and technology in a balanced manner, organizations can implement AI-based solutions effectively while maintaining stability.

CIO&Leader: That's a strategic perspective. As AI adoption accelerates, what key insights or best practices would you offer CIOs and IT leaders still navigating AI integration in their organizations?

PROSENJIT SENGUPTA: My advice would be to start small but think big. AI adoption doesn't have to be an all-or-nothing approach. Begin with pilot projects in specific areas where AI can demonstrate clear value. Monitor results, learn from early implementations, and gradually scale up based on success. CIOs should also focus on building AI literacy within their organizations. This means upskilling technical teams and educating business leaders on AI's potential and limitations. AI should be seen as an enabler rather than a disruptor—it's about augmenting human intelligence, not replacing it.

Additionally, companies must prioritize ethical AI practices. Transparency, accountability, and fairness should be at the core of AI deployments. Organizations can mitigate risks and build stakeholder trust by establishing strong governance frameworks.

Most importantly, IT leaders should stay agile. The AI landscape is evolving rapidly, and organizations remain flexible and open to change.

CIO&Leader: With your expertise and insights from new-age leaders, how do you see the CIO's role evolving over the next five to six years? What new challenges

might CIOs encounter as Gen AI reshapes enterprises beyond those we've discussed?

PROSENJIT SENGUPTA: The most significant challenge for future leaders will be integrating technology into every business process. There are a few key aspects to consider:

- **Data management** – Understanding data, whether at rest or in motion, will be critical. With the upcoming DPDP (Digital Personal Data Protection Act), enterprises must navigate vast amounts of structured and unstructured data while ensuring data protection and compliance with regulations. Managing and securing organizational data will be a top priority for CIOs.

- **AI-driven decision-making** – Until now, AI was primarily used to process information, with humans making the final decisions. However, in the future, there will be more automated decision-making. CIOs must determine which decisions can be fully automated, which require human oversight, and how to manage AI hallucinations effectively. Striking the right balance between unsupervised automation and necessary human intervention will be crucial.

- **Factory automation and Industry 4.0**—Although we've been discussing Industry 4.0 and IoT for years, full-scale implementation across industries is still in its early stages. Over the next five to ten years, factory automation will become a significant priority, transforming shop floors with advanced technologies.

- **Sustainability and compliance** – Sustainability is becoming an essential part of corporate reporting in India. The government has already mandated sustainability disclosures for the top 500–1000 companies, and in the next decade, all businesses will be required to



AI readiness depends on data, but most companies aren't prepared. Poor data quality, collection issues, and security concerns hinder adoption, especially for GenAI, which relies on clean, structured data.

demonstrate sustainable practices. CIOs will be key in measuring and managing sustainability metrics, ensuring compliance, and integrating sustainability into business processes.

■ **The SAP transition** – Another major shift in the next five to six years will be the transition to SAP S/4HANA. SAP has clarified that the current generation of ECC systems will reach end-of-life by 2027–2030. This means that companies must migrate to the new platform within this timeframe. Organizations will face a critical decision: either transition to SAP's next-generation offerings or explore alternative enterprise solutions. These transformations will redefine the role of the CIO and demand a deeper focus on technology integration, regulatory compliance, and business sustainability.

CIO&Leader: How important is mentorship in leadership? Should it focus on successors or the whole team? Should CIOs take a

broader approach to drive growth and innovation?

PROSENJIT SENGUPTA: Mentorship is essential at all levels because different types of guidance are needed at various career stages. We've discussed how the expectations for a new CIO change dramatically—they must shift from a technical mindset to a business leader's perspective, align with the CEO's vision, and understand the company's broader strategy.

A CIO must also have deep expertise in technology—past, present, and future—and strong capabilities in change management, cultural transformation, and leadership. Beyond reporting to their immediate boss, CIOs often engage with the CEO and, at times, the board, making their role increasingly complex.

So, while mentorship is critical for aspiring CIOs, it is equally essential for those below the CIO level. However, it is especially crucial for CIOs, given the diverse stakeholders they interact with and the complexity of their decision-making.

CIO&Leader: Are Indian enterprises truly AI-ready? With the rapid pace of change and gaps in mentorship and skills, do they have what it takes to manage AI effectively?

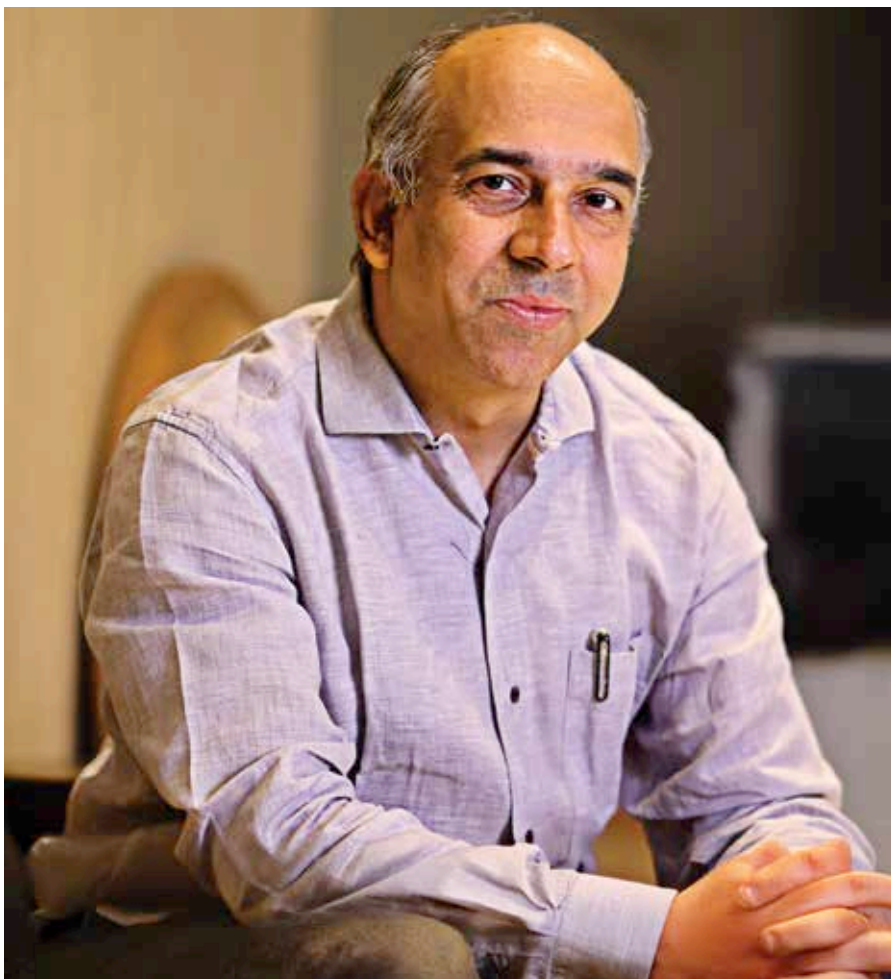
PROSENJIT SENGUPTA: AI readiness depends on data, but most companies aren't prepared. Poor data quality, collection issues, and security concerns hinder adoption, especially for generative AI, which relies on clean, structured data.

Another challenge is the skills gap. While startups and tech firms have strong AI talent, many large enterprises, especially OEMs, lack deep expertise.

Many working in Gen AI are early in their careers—skilled but inexperienced in managing risks. Meanwhile, having navigated past tech shifts, established firms are better at risk management. Startups drive innovation but often lack foresight. Leaders must guide and collaborate with them to balance innovation with responsible AI adoption. ■

Simplicity can outperform complexity if it delivers better ROI

By **Praneeta** | praneeta@9dot9.in



AI development demands iterative learning rather than a one-time, linear approach. **Dr Hemant Misra** warns of siloed data, lost knowledge, and overspending on complex models without clear ROI. Emphasizing robust data governance and mindful infrastructure usage, he showcases how digital-native practices guide sustainable AI growth.

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ITH MORE than 27 years of experience in the field of AI, Hemant Misra has been at the forefront of developing, deploying, and scaling data-driven solutions. Currently heading the Data Science team at Simpl, he focuses on translating AI models into real-world production systems ranging from fraud detection to complex chatbot solutions.

In an exclusive conversation with CIO&Leader, Hemant Misra discusses the biggest challenges

enterprises face in scaling AI initiatives, how organizations can learn from digital-native companies, and the importance of data governance. Below is an edited version of the interview:

CIO&Leader: What are the biggest challenges enterprises are facing in terms of scaling AI, and what's needed for the industry to overcome them?

HEMANT MISRA: There are two major challenges. First, AI systems don't follow the same linear development process as typical software systems. Traditional software often has fixed specifications before deployment, but AI initiatives need iterative learning and refinement. This requires a mindset shift: start with smaller projects, learn quickly, and improve iteratively, rather than expecting a fully production-ready system from day one.

Second, many organizations struggle with data, either it's locked in silos or not well understood due to lost institutional knowledge. Even if data is available, its value can be hard to leverage if people don't know where it resides or how to interpret it. For AI projects to scale, you need an end-to-end strategy: identify high-impact use cases, determine whether the right kind of data exists or can be collected, and ensure that the entire pipeline, from data acquisition to deployment, has been thought through. Once a proof of concept is built, there must be a clear path to production, taking into account real-world constraints such as latency and ROI.

CIO&Leader: From a digital-native company standpoint, which key learnings can large enterprises adopt?

HEMANT MISRA: Digital-native firms are typically very conscious about ROI and cost-effectiveness.

There is a mindset which needs to be changed that we may start with something which is small, then iteratively we learn and then we move to the system which is going to help us move the needle.

They also recognize that simpler machine learning solutions can often be as effective as cutting-edge methods, especially in the initial stages. If a classic model solves the business problem well and is cheaper to deploy, there's no need to complicate things.

It's crucial to adopt an iterative approach, start with a simpler model, see if it solves the problem effectively, and only add complexity when there's a clear need. Many younger data scientists may be trained in the latest deep learning frameworks, but classic ML techniques can still be extremely powerful. The overarching lesson is don't chase complexity for its own sake; always align the solution with practical business ROI.

CIO&Leader: What are the infrastructure challenges CIOs face, and how does that shape the future outlook?

HEMANT MISRA: One common challenge is inefficiency arising from outdated or redundant AI models running simultaneously. For instance, when an updated model goes into production, the old one might still be consuming resources, inflating infrastructure costs. These inefficiencies can

severely impact the bottom line.

Organizations need to be mindful of cost from the very beginning. This means constantly evaluating whether a complex model truly delivers better ROI compared to a simpler alternative. If the incremental improvement is marginal but the infrastructure demand is significantly higher, then the net benefit might be negative. Constant monitoring and a frugal mindset should guide both deployment and development.

CIO&Leader: What are your thoughts on data governance, and how do you think AI implementation is affecting our perspective on data?

HEMANT MISRA: Data governance is essential because end-users rarely know the origins or destinations of their personal data. Governments must establish and enforce regulations to protect citizens' identities and personally identifiable information (PII). Companies, on the other hand, should be transparent about why they collect data and how it will be used—offering clear benefits or ROI to the end-user for sharing that information.

Regulations such as GDPR are a good example, allowing users to choose whether to accept certain cookies and enabling a greater degree of personalization if they opt in. This clarity and simplicity should be the standard. Organizations also need internal policies outlining how data is collected, stored, and shared. Collecting data "just in case" or planning to sell it to third parties without proper consent is unethical and risks violating both user trust and legal standards. Ultimately, governments, businesses, and individuals all share responsibility for creating an equitable data ecosystem—one where data is protected and leveraged responsibly. ■



Sunil Pandita

Senior VP & Geo Head-South Asia at Newgen Software

Digital transformation shifts from IT to boardrooms

In a recent interaction with CIO&Leader, **Sunil Pandita, Senior VP & Geo Head-South Asia at Newgen Software**, shared insights into how automation has evolved from back-office operations to boardroom priorities, while highlighting the critical role of data science and AI in driving business outcomes.

By **Praneeta** | praneeta@9dot9.in

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DIGITAL TRANSFORMATION has evolved dramatically in recent years, shifting from routine back-office operations to critical boardroom discussions. Companies are no longer satisfied with mere process improvements - they demand concrete business outcomes that directly impact their bottom line.

In a recent conversation with CIO&Leader, Sunil Pandita, Senior VP & Geo Head-South Asia at NewGen Software, brings clarity to this changing landscape of enterprise automation. He offers insights into how NewGen is helping businesses navigate this complex environ-

ment, leveraging AI, data science, and low-code platforms to drive growth while maintaining strict compliance standards. Excerpts from the interaction:

CIO&Leader: How do you see automation and digital workflows landscape evolving for businesses in the next 3-5 years?

SUNIL PANDITA: The biggest change is automation moving right up to the management and board level. Today, people want outcomes that impact business. It's not just about enhancing IT and processes anymore. Customers want to make

business impact for their consumers, across industries. Automation has moved from back office to what we call the experience layer. We're talking about end-to-end journeys. Our workflows orchestrate processes with front ends tightly integrated to the mid office. Different technologies have evolved. We started with process automation, then moved to front end automation.

The focus is on breaking silos, enabling integrations, and giving stakeholders better systems to serve customers. Customers want platforms that will evolve and scale, while providing ready applications

that reduce implementation time. Project delivery has changed too. We're not talking months anymore - it's days and weeks now. Budgets are available and boards support these initiatives, but they expect business objectives to be met. IT's role has elevated. Every company now has a chief digital officer, AI officer, and innovation officer. The conversation has shifted from "doing this for IT" to "doing this for business."

CIO&Leader: Could you elaborate on Newgen's approach to integrating AI and ML into Enterprise Digital transformation roadmap?

SUNIL PANDITA: Most of our customers are at various stages of technology adoption, whether for serving end customers or internal efficiencies. They want to extract more value from their process data, content, and customer data. In India, the challenge is twofold - getting more customers in underserved markets and increasing customer lifetime value, since acquisition and servicing costs remain high. We invested in a data science company, now part of NEWGEN One platform, to help customers mine data and understand their segments better.

There's growing interest in hyper personalization. We look at behavioral and interaction data, with pre-built models helping banking and insurance customers increase cross-sell and up-sell. Our platform also helps with customer servicing, product selection, and fraud prevention. We added a GenAI layer that lets business users talk to data in simple language. A head of credit cards can easily get specific insights about cross-selling to customer segments.

CIO&Leader: Which industries have shown the most growth in adopting Newgen's solutions, and how?

Success requires partnerships across the ecosystem as we now live in a connected world and platform economy.

SUNIL PANDITA: Banking financial services is significant for us, and we do considerable business in government. In the enterprise sector, we serve retail, CPG, manufacturing and pharma. Our horizontal offering helps customers across these sectors solve departmental problems. Beyond our purpose-led applications in banking, financial services, lending and claims, we've built specific industry applications for manufacturing and oil and gas. We manage end-to-end tender processes for a major Indian oil company. For a large retail company, we handle vendor onboarding, invoice management, and accounts payable.

Our low-code platform addresses complex data and process challenges that other platforms couldn't solve. We're replacing technologies that promised but couldn't deliver, mainly because they couldn't handle India's complexity. With our 30-year presence and huge partner ecosystem, we have the talent to discover use cases and implement solutions quickly.

CIO&Leader: What do you see as the next big technological disruptor for the industries Newgen serves?

SUNIL PANDITA: Security and data privacy are primary concerns, especially with the DPDP Act. Organizations will trust technology providers who ensure data privacy compliance. Recent security

breaches have increased scrutiny. We work closely with customers on security mechanisms, firewalls, and certifications. Many customers now only accept certified products and applications. Another key area is decision-making technology. In banking and financial services, underwriting is crucial.

Systems must leverage the Fin-Tech ecosystem and India stack for better underwriting decisions to reduce delinquency risk. Collections are also important. Our solution combines core technology and AI models to prevent defaults through early warning systems and probability assessments. We help with both retail and institutional collections, including litigation and recovery management. Our low-code foundation helps us adapt quickly to regulatory changes, which is crucial in banking and insurance industries.

CIO&Leader: What advice would you give CIOs/IT Leaders on investing in automation, and Newgen's 3-5 year vision?

SUNIL PANDITA: CIOs and IT leaders are now central to decision making. They're business partners in leadership teams. Early adopters are taking bolder decisions. Their decisions aren't just supporting business - they're enabling new opportunities. Success requires partnerships across the ecosystem. We live in a connected world and platform economy. No customer can succeed in isolation.

We'll be core to the ecosystem that enables customers to leverage opportunities. When solving business problems, focus on high-value, impactful projects and implement quickly to show value to business and the board. This leads to more investments and budgets for solving other problems. ■

(With inputs from Sachin Mhashilkar)



Sharat Sinha
Director & CEO,
Airtel Business

We need to be realistic about AI limitations: Airtel Business

In an exclusive interaction with CIO&Leader, **Sharat Sinha, Director & CEO of Airtel Business**, discusses how AI solutions are transforming the enterprise telecommunications and cybersecurity landscape

By **Praneeta** | praneeta@9dot9.in

THE MERGER of artificial intelligence and 5G marks a turning point in India's telecommunications sector. This is especially significant for enterprises working to update their digital systems. As these technologies advance, telecom providers must balance innovation with practical results. They also face growing demands for better security and efficiency.

In this interview with CIO&Leader, Sharat Sinha, Director & CEO, Airtel Business examines how AI solutions are changing enterprise telecommunications. The interview looks at the real-world results of Airtel's recent technology projects. From cloud-based communication to security systems, Sinha offers insights into

what current enterprise solutions can and cannot do in India's growing digital market.

CIO&Leader: How is Airtel Business leveraging AI algorithms to empower businesses to stay ahead of cyber threats?

SHARAT SINHA: We understand that cyber threats are consistently growing, and therefore, proactive defense is crucial to safeguarding enterprises.

We have leveraged advanced AI algorithms to monitor our customers' networks in real-time, constantly scanning for irregular activities, potential vulnerabilities, and signs of cyber threats to provide real-time enterprise protection. Airtel's i-SOC (Security Operations

Center) actively monitors networks 24/7, detecting and reducing the risk of potential cyber threats by utilizing AI-driven threat intelligence and Machine Learning (ML). As a result, the AI-powered orchestration tools enable continuous automated threat detection, response, and mitigation, greatly increasing the effectiveness of cybersecurity defenses while decreasing human intervention and response time.

Additionally, we use AI for proactive network management, ensuring seamless and secure connectivity across its pan-India Internet Leased Line (ILL) network. AI technology also adapts to evolving threats, ensuring enterprises remain secure in a dynamic digital

environment and strengthening their overall cybersecurity posture.

These initiatives underline our commitment to providing enterprises with robust, adaptive, and AI-enhanced cybersecurity frameworks that address the complexities of today's digital threats.

In addition to these, we have also built cybersecurity solutions for our customers. While Airtel Secure Internet provides comprehensive end-to-end protection by integrating Fortinet's advanced firewall with Airtel's high-speed Internet Leased Line (ILL), Airtel's Secure Digital Internet uses Zero Trust Architecture (ZTA) to continuously validate users, devices, and network interactions. Both solutions enable businesses to reduce attack surfaces and simplify security management.

CIO&Leader: How is Airtel Business enabling CIOs and CISOs to seamlessly navigate the challenges of balancing innovation in security? How are you addressing their evolving needs?

SHARAT SINHA: Today, CIOs and CISOs are under immense pressure to foster innovation while ensuring robust security measures are in place. At Airtel Business, we understand the importance of balancing these priorities for business continuity and growth. Our solutions are designed to empower organizations to innovate securely without compromising their cybersecurity posture.

Through our customizable solutions, we are focused on delivering cutting-edge solutions specific to each industry. We offer round-the-clock monitoring and proactive threat detection through our state-of-the-art Intelligent SOC (iSOC), enabling businesses to stay ahead of emerging risks.

With our security capabilities, we ensure that organizations can balance fostering innovation and



maintaining a secure digital environment, providing CIOs and CISOs to thrive and focus on business growth.

CIO&Leader: Can you elaborate on your latest solution, "Airtel Secure Digital Internet?" How does it address the unique challenges of today's hyperconnected world?

SHARAT SINHA: In today's hyper-connected but increasingly risky digital landscape, where data flows seamlessly across devices and even borders, securing digital ecosystems has never been more critical. Airtel Secure Digital Internet is our solution to this challenge, designed to redefine cybersecurity standards by providing a robust, comprehensive, and real-time defense against evolving threats.

With built-in features like a secure web gateway, cloud firewall, intrusion prevention, and content filtering, Airtel Secure Digital Internet offers an end-to-end framework that adjusts to your enterprise's specific needs, ensuring that unauthorized access, data breaches, or disruptions do not

affect business operations.

This innovative solution offers advanced security features like threat protection, SSL inspection, cloud firewall, and secure cloud application access. Enterprises can also customize security by tailoring settings based on specific needs, such as protecting sensitive sectors like banking or healthcare and ensuring compliance with regulatory standards.

Built on a Zero Trust Architecture (ZTA), our solution simplifies security by transitioning to a cloud-based framework from traditional hardware. It ensures that every interaction with the internet is met with rigorous verification and authentication, protecting enterprises from evolving cyber threats. Ultimately, Airtel Secure Digital Internet allows businesses to operate confidently in a connected world—knowing a trusted partner that is constantly ahead of the curve in cybersecurity innovation backs them.

CIO&Leader: How is Airtel IQ's integration of cloud computing



In the future, the confluence of AI with 5G and cloud computing will unleash innovative transformations and drive revenue opportunities for businesses across industries.

and AI affecting business communication patterns, and what insights have you gained from enterprise implementations so far?

SHARAT SINHA: Airtel IQ Business Connect is a transformative platform that seamlessly integrates calling, SMS, and WhatsApp into a unified interface. The device-agnostic, multi-channel cloud platform eliminates communication silos caused by isolated conversations held by sales teams or relationship managers, ensuring continuity even during personnel transitions. By centralizing all customer interactions within a secure ecosystem, businesses gain greater visibility and control while enhancing customer engagement. Notably, this solution also helps businesses reduce their hardware costs and their total operations cost.

Airtel IQ Business Connect helps improve and streamline customer engagement. The platform empow-

ers businesses to optimize their communication strategies and provide individualized experiences that appeal to their clientele. It enables businesses to automate routine customer service processes, making it easier and more efficient to manage large volumes of customer inquiries. The platform leverages cloud technology, enabling scalability and seamless access with minimal capital investments in hardware.

Though we launched the product recently, we have been witnessing a positive response from our customers. With Airtel IQ Business Connect, companies are not only streamlining their communications but also positioning themselves for growth in an increasingly competitive market. By providing data-driven insights that enable better decision-making, the technology is revolutionizing communication strategies for Indian organizations, especially SMEs. Businesses

have reported enhanced seamless stakeholder interactions, improved operational efficiency, reduced response times, and improved customer satisfaction metrics. The seamless integration of multiple channels, encapsulated within a device-agnostic platform, offers businesses a future-proof solution for dynamic customer engagement.

CIO&Leader: What key emerging technologies are Airtel Business focusing on this year?

SHARAT SINHA: 2025 will be a year of opportunities wherein new technologies like AI and Cloud will increasingly converge to drive transformations across industries.

AI will enable smarter, more efficient network management and real-time data analytics. In the future, the confluence of AI with 5G and cloud computing will unleash innovative transformations and drive revenue opportunities for businesses across industries. Additionally, the increased IoT coverage and network slicing capabilities of 5G will allow enterprises to manage complex, high-demand environments more efficiently.

Another major trend is the rise of AI and machine learning in cybersecurity. With the increasing complexity and volume of threats, AI-powered security solutions can proactively identify vulnerabilities, detect anomalies, and automate threat responses. This will help organizations stay ahead of cybercriminals by reducing response times and increasing threat detection accuracy.

Customers will continue to be at the core of all technological advancements, and it will become increasingly imperative to invest in technologies that can offer rich engagements that enable fostering deep customer connections, which can, in turn, lead to increased revenues. ■



Fabio Fratucello
CTO, International,
CrowdStrike

75% of attacks use stolen credentials, not malware: CrowdStrike

In a recent interaction with CIO&Leader, **Fabio Fratucello, CTO – International at CrowdStrike**, shared insights into how cybersecurity has evolved from behind-the-scenes defense to a top boardroom concern, while highlighting the critical role of integrated platforms and AI in helping businesses stay ahead of advanced cyber threats.

By **Praneeta** | praneeta@9dot9.in

CYBERSECURITY HAS never been more critical in today's rapidly evolving digital world. As enterprises embrace hybrid cloud architectures, AI-driven advancements, and an increasingly sophisticated threat landscape, securing their infrastructure demands a proactive and unified approach.

In an exclusive conversation with CIO&Leader, Fabio Fratucello, CTO – International at CrowdStrike, sheds light on the biggest technology shifts shaping 2025. From the rise of AI-powered attacks to the

necessity of integrated security platforms, he explores how businesses can stay ahead of cyber adversaries. Edited excerpts are below:

CIO&Leader: What trends do you foresee shaping the IT landscape, particularly in areas like cybersecurity, cloud infrastructure, and AI/ML?

FABIO FRATUCELLO: In 2025, hybrid cloud security will dominate as attackers exploit gaps across interconnected domains, including



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ing comprehensive visibility and protection for AI models against threats like data poisoning and model tampering. Our strengthened partnerships with AWS, HPE, and NVIDIA are driving secure AI innovation. Additionally, our AI Red Team Services combine elite expertise and threat intelligence to help customers proactively identify and mitigate vulnerabilities in AI systems.

CIO&Leader: Could you share any upcoming CrowdStrike initiatives or product innovations that align with the anticipated technology trends?

FABIO FRATUCELLO: We are committed to delivering innovation beyond technology. Falcon Flex provides adaptable licensing to the Falcon platform's full portfolio of best-in-class modules, allowing customers to use what they need, when they need it. Our newly launched CrowdStrike Financial Services provides tailored financing solutions for the Falcon platform, ensuring access to industry-leading tools. These initiatives accelerate platform consolidation, streamline operations, and maximise ROI, empowering organisations to stop breaches with greater agility and efficiency. ■

cloud, on-premises, and identity. With 75% of initial access attacks now malware-free, adversaries are bypassing traditional defences by abusing compromised credentials. Enterprises must adopt unified platforms that provide end-to-end visibility and protection, enabling them to detect and mitigate sophisticated cross-domain attacks before they escalate.

CIO&Leader: How will these trends impact enterprise decision-making and technology adoption?

FABIO FRATUCELLO: These trends will push enterprises to prioritise unified platforms over fragmented tools. Current reliance on disjointed security solutions creates visibility gaps and operational complexity, which adversaries exploit. Unified platforms centralise visibility and protection across identities, cloud, and endpoints, enabling streamlined workflows and closing security gaps. This approach reduces complexity and enhances defend-

ers' capabilities to prevent breaches in hybrid environments.

CIO&Leader: What do you think will be the key priorities for CIOs in 2025?

FABIO FRATUCELLO: AI and Generative AI are reshaping industries but have become prime targets for cyberattacks. Threats to AI services and LLMs jeopardise the integrity of the data and applications powering innovation. CIOs in 2025 must prioritise secure AI integration to confidently deploy these transformative technologies while safeguarding against threats like model tampering and data poisoning.

CIO&Leader: How will CrowdStrike's offerings align with addressing these priorities (e.g., AI acceleration)?

FABIO FRATUCELLO: We are leading the charge in securing AI infrastructure and models. We recently introduced AI Security Posture Management (AI-SPM), deliver-

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