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PRACTICAL THOUGHT LEADERSHIP ON AI. AUTOMATION AND ANALYTICS
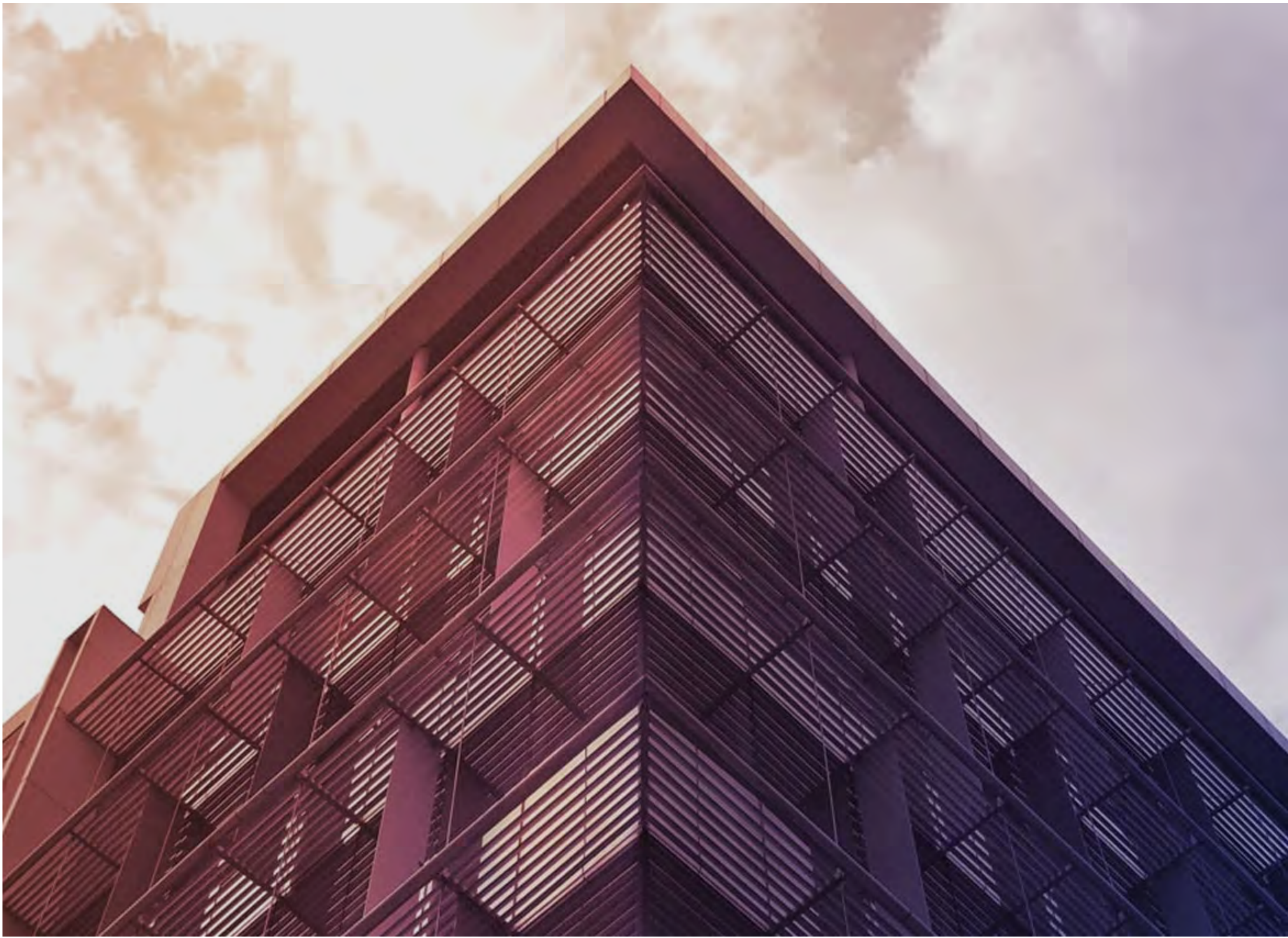
AI ADVANTAGE

REIMAGINING ENTERPRISE BUSINESS FOR GROWTH & EFFICIENCY

edgeverve
An Infosys company

EdgeVerve Headquarters, Bengaluru, India

About EdgeVerve

EdgeVerve Systems Limited, a wholly-owned subsidiary of Infosys, is a global leader in developing digital platforms, assisting clients to unlock unlimited possibilities in their digital transformation journey. Our purpose is to inspire enterprises with the power of digital platforms, thereby enabling our clients to innovate on business models, drive game-changing efficiency and amplify human potential. Our platforms portfolio across Automation (AssistEdge), Document AI (XtractEdge), and Supply Chain (TradeEdge) helps inspire global enterprises to discover & automate processes, digitize & structure unstructured data and unlock the power of the network by integrating value chain partners. EdgeVerve, with a deep-rooted entrepreneurial culture, our innovations are helping global corporations across financial services, insurance, retail, consumer & packaged goods, life sciences, manufacturing telecom and utilities, and more.

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AI Advantage

Reimagining Enterprise Business for Growth & Efficiency

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In the fast-paced, digital landscape of today, enterprises are not merely adapting to change; they are embracing it with open arms. Faced with escalating demands and digital complexities, businesses are reimagining their futures through the lens of artificial intelligence. The AI Advantage— a technological edge—can help them redefine the way businesses operate, innovate, and grow. As enterprises integrate AI into their core operations, a wave of efficiency sweeps through. Smart automation takes over repetitive tasks; AI-driven insights unlock business value from the unseen; foresee trends; make informed decisions; and fuel innovation. The AI Advantage transforms the technology ecosystem of an enterprise, propelling it into the next generation of growth and efficiency.

In this edition of our magazine, we uncover invaluable insights around how artificial intelligence (AI) can enable enterprises to optimize operations, slash through inefficiencies with surgical precision, and personalize experiences.

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The Cognitive Revolution
Steering Supply Chain From Fragility To Foresight

Sateesh Seetharamiah
Global Head, Edge Platforms, EdgeVerve

Summary

The cracks in our current supply chains are showing with disruptive delays and product traceability. Yet, with AI as our compass, we're witnessing a radical shift, where supply chains are smarter and more proactive than ever. Embracing a unified platform approach is key, urging businesses to lead this transformation.

In the vast network of global commerce, supply chains stand at the very core of business operations. The recent unsettling revelation of a £1.9 billion loss for UK SMEs[1], primarily due to supply chain delays, paints a stark picture of the fragility of our current systems. With sectors like wholesale, retail, and franchising facing substantial hits, there's an unmistakable realization: Our age-old supply chain paradigms are ill-equipped[4] to tackle today's challenges, let alone the unknown complexities of tomorrow.

It's about time we shed light on the hurdles and understand the course forward.

The Complex Web Of Supply Chain Challenges

In today's intricate business landscape, supply chains are the links in the intricate webs of interdependence and opportunity. However, the intricacy brings forth its set of challenges.

Operational costs are spiraling due to unforeseen delays, putting a dent in profitability. These delays cascade, causing disruptions that ripple through project timelines, jeopardizing client trust and potential business deals. Beyond this, the ability to trace products across the supply chain remains a critical concern[2], with limited visibility leading to costly recalls and reputational damage.

Mars UK had a significant problem with product traceability due to its supply chain's limited visibility. This lack of transparency manifested in frequent and costly product recalls. When a company cannot efficiently trace its products throughout the supply chain, any issues with product quality or safety can lead to large-scale recalls. These recalls not only have financial implications but can also damage the company's reputation.

The root of the problem was data siloes. Without a unified, comprehensive view of product movement, Mars was struggling to trace products swiftly and efficiently.

To provide a specific measure of the extent of the challenge: the process of traceability for Mars took them 4 days. That's a substantial amount of time, especially in situations where rapid response is crucial, such as in the case of defective or unsafe products that need to be recalled from the market promptly.

> Data, the gold of the 21st century, presents its own dilemma. With sources aplenty, harmonizing fragmented data while maintaining quality is a daunting task. Legacy systems[4] weigh heavily on businesses, especially SMEs, stifling their agility. The hesitancy to embrace new tech solutions, for fear of added complexity, further restricts adaptability.
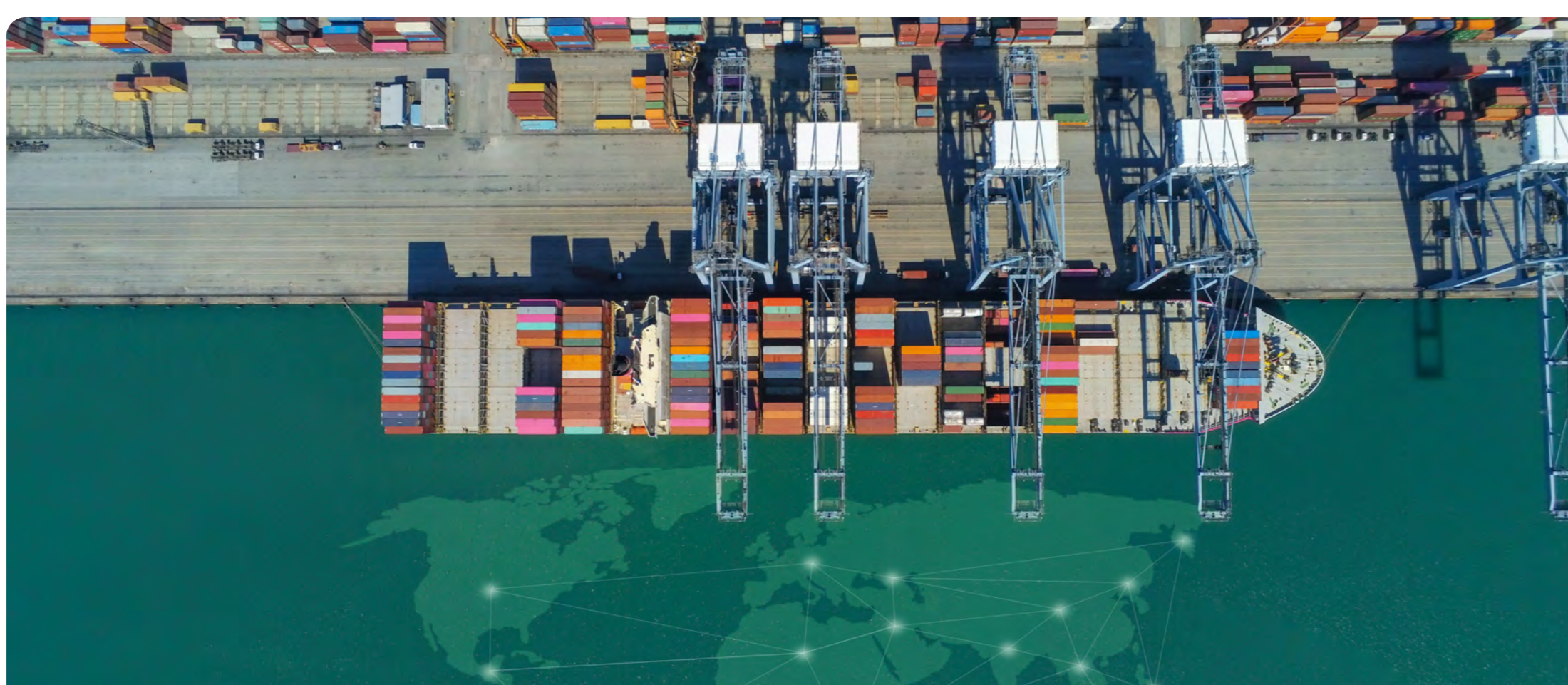
From Patchwork To Radical Reinvention

But where do we go from here? The solution is more profound than a mere patchwork of existing methodologies. The answer isn't merely about fixing a broken system. It's about revolutionizing the way we perceive, interact with, and utilize supply chains.

> The modern supply chain needs to be predictive, proactive, and, above all, intelligent. This means leveraging AI to offer real-time insights, adapting to market shifts, and recalibrating strategies on the fly.

This isn't just about damage control; it's about reinvention.

Real-world successes amplify the potential of this approach. Take Mars, for instance. Once bogged down by product traceability that took days, they harnessed the power of AI-infused platforms and witnessed a dramatic reduction in traceability time to just two hours. Similarly, another global consumer goods conglomerate, once plagued by fragmented data, capitalized on modern supply chain solutions to connect with 2300+ partners across 35 nations. This new clarity, combined with expedited onboarding and precise data submissions, led to a massive 90% reduction in data acquisition efforts and an impressive leap in SKU mapping coverage.

These aren't just case studies—they're testaments to a transformative shift, and a new approach stands at the epicenter of this transformation.

A Unified Platform Approach: Rethinking, Redefining, Revolutionizing Supply Chains

But what sets this approach apart? Imagine having a bird's eye view of your entire distribution network in real-time — that's the channel visibility a platform-based solution offers. A system that melds the power of AI with operational intricacies, offering unparalleled visibility and predictive analytics. A platform that dives deep, sensing demand nuances before they become apparent. A swift partner onboarding system, a compliance dashboard that streamlines regulatory adherence, and promotional tools that amplify marketing campaigns, all in one unified platform, make a game-changing for the modern market's ever-shifting dynamics.

From Siloed Tracks To Interconnected Supply Networks

> The future of supply chains is a tantalizing blend of possibilities and challenges. Imagine a world where supply chains aren't just linear systems but a dynamic, interconnected network, one that's responsive, agile, and cognizant. Where disruptions aren't merely managed, but anticipated and addressed proactively. This isn't a distant dream—it's the imminent future, heralded by platforms like TradeEdge.

And so, as businesses and supply chain professionals, we must ask ourselves: Are we merely participants in this future, or are we the architects? The narratives of tomorrow are being written by the decisions we make today.

Disclaimer: Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the respective institutions or funding agencies

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Bridging The Digital Islands

Rethinking Enterprise Transformation For A Connected Journey

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Summary

A connected enterprise is crucial to dodge inefficiencies and prevent revenue loss, ensuring survival in disruptions. Success stories show how embracing connectedness revolutionizes operations, enhancing decision-making and customer service. But how can we shatter our silos to achieve a truly connected enterprise?

Which department in your company plays the most important role? As business leaders, we know that every department, from sales to IT, plays a significant role in achieving our business objectives, and the essence of success lies in effective collaboration. Without it, customer issues become a game of hot potato, valuable information is often repeated, and unnecessary administrative tasks consume employee efforts. This issue becomes even more pronounced when dealing with multiple external partners.

An insightful Harvard study[1] asked leaders about their primary focus in workplace relationships. Many pointed to vertical, hierarchical connections – the immediate up and down lines in their own departments. However, the narrative shifted when questioned about the relationships that deliver the most value to customers.

> Modern business growth and innovation are found in collaborative efforts across different elements — involving people, processes, data, and technology. Essentially, customers are seeking comprehensive one-stop solutions that require a cohesive, horizontally integrated approach across the enterprise – a connected enterprise.

In this article, we will cut through the jargon and get straight into what this means for businesses, what's holding them back, and outline practical steps to overcome these obstacles.

The Cost Of Siloes

What does it look like when your company is not connected? In manufacturing, this might look like a production line churning out products without any clue about changing market demands. In supply chains, it's like dominoes – one issue, like a customs delay, and suddenly everything's falling apart.

Businesses pour time and money into tech to get ahead. They pick up point solutions and tools that are great for one task or department but don't integrate well with other tools or systems. These tools offer quick wins but cannot scale as the company grows.

This piecemeal approach can backfire and water down the benefits when outdated processes are fixed with new technologies. Businesses end up feeling let down – That's it after all that work and money? Worse, every new point solution and piecemeal approach to digital transformation solves some problems but creates others in the larger scheme of things – Organizational siloes.

> Companies lose up to 30% of their revenues[2] just from the inefficiencies stemming from these siloes. Imagine employees spending nearly 12 hours a week[3] just juggling and rekeying information from disparate systems. Shockingly, about 70% of businesses[4] don't fully achieve their digital dreams, capturing only 30% of what they hoped for.

So why aren't we addressing these silos more directly? On the surface, it seems more straightforward, but underneath lies a whole tangle of point solutions and dated processes.

> The existing legacy systems and targeted solutions work well independently. Overhauling these reliable systems is a daunting task, both financially and operationally – a significant risk. But, if we look closely, the systems themselves aren't the main issue; the issue is their inability to communicate, integrate, scale, or pave the way for straight-through automation.

So, what we really need is a one-stop platform, a single source of truth where everything – from every role, function, and process within and beyond the company – ties together.

But can we really pull this off, or is it too much to aim for?
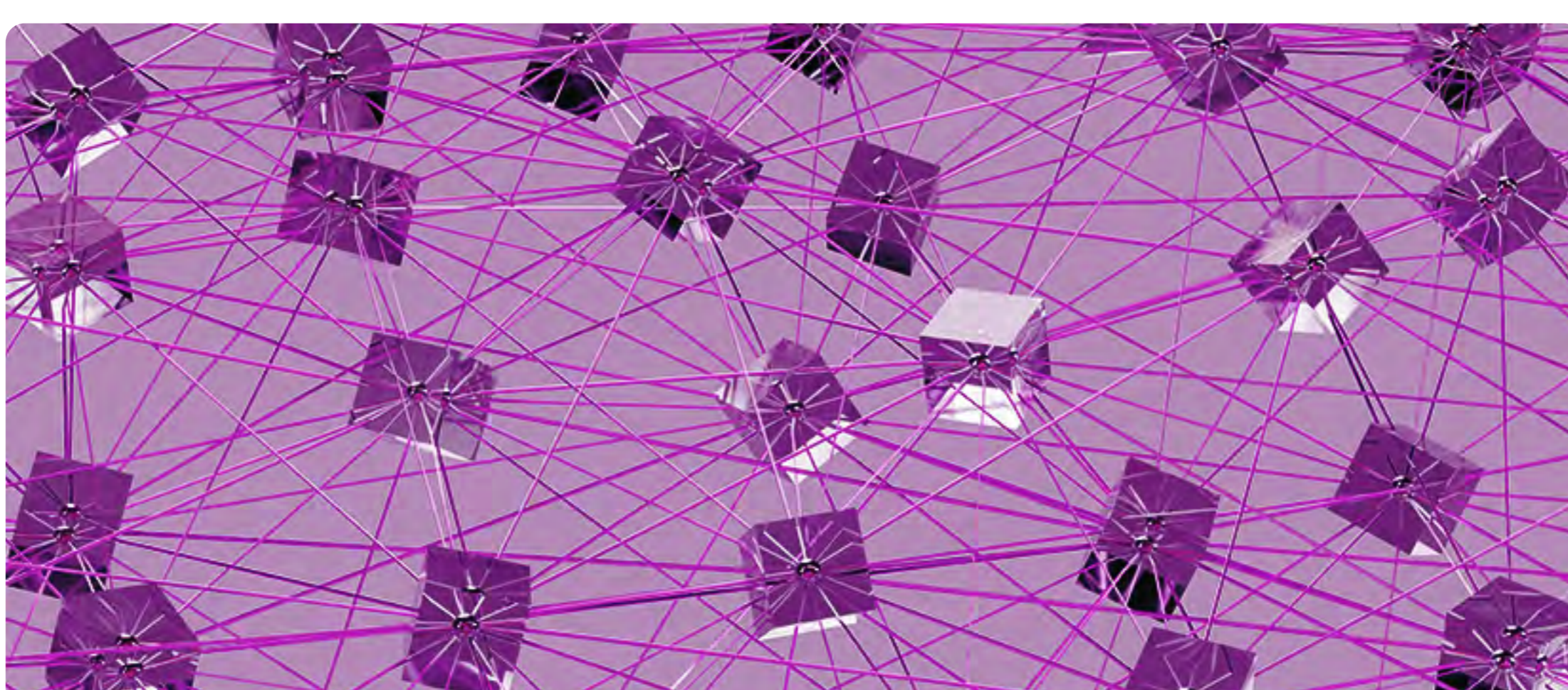
Bridging Old And New With A Unified Tech Platform

Take a look at giants like Amazon. From e-commerce to cloud services, they're everywhere, excelling with a unified, connected way of working. They see the big picture, bringing varied aspects under one roof with a connected mindset. They use AI platforms that sit on top of old and new tech, helping these different functions collaborate with each other. This approach gathers scattered data and transforms it into clear, actionable insights. This way, everyone in the business can see the whole picture, make better decisions, and work from the same page. A connected enterprise brings a range of other benefits, too.

Unlocking Efficiencies at Scale

Consider the case of one of the world's largest shipping companies, handling up to 10,000 bookings daily. Their system was messy – 40% of bookings came in with incomplete information, and their team had to jump between 10 different systems and offline environments to keep the show going.

Connecting all these systems under one platform turned things around for them: their work got 53% faster, half of the bookings were straight-through processed and didn't need any manual input, and they saved $2.4 million a year. That's the power of unlocking efficiencies at scale in a connected business.

Augmenting Human Potential

But the story doesn't end there. Think of the time and effort saved. With half the bookings now automated, employees can spend time on things that matter, like decision-making or customer engagement. Leslie Wilcocks, a professor specializing in technology, calls this "taking the robot out of the human."

And it gets better. The AI platform, through rule-based automation, initially managed 50% straight-through processing. The other 50% - more complex cases – still needed human input. Over time, the system will learn and improve, steadily increasing its automation rate and confidence in handling bookings.

But, this idea of working smoothly together isn't just for inside a company. It's also about how companies work with others, like suppliers and partners. What does that look like?

Harnessing a Connected Ecosystem

Imagine a digital marketplace where companies work together seamlessly. It's not just a dream; it's been happening for years. Consider the ATM network: anyone can withdraw cash from any bank's machine, not just their own bank. That's a simple, shared system that works for everyone, and the customer focus is clear.

> This concept is already reshaping industries. A Fortune 500 sportswear brand, during the pandemic, faced logistical challenges that prevented them from stocking retailers, hitting their revenues hard. Their breakthrough? Creating a connected network linking their operations, retail partners, and shipping providers. This shift meant direct-to-consumer shipping, avoiding out-of-stock scenarios and double handling, all through a touchless, fully automated system. Every participant had complete visibility and tracking. This is what a connected way of working can achieve.

A Connected Future

Tackling siloes in a business isn't straightforward. It sounds like a tough job, and it is. The good news? The technology we need is already here. To make the most of it, though, we have to get our own digital act together first. Any existing siloes, mismatched processes, or blind spots we have now will only turn into bigger headaches later. Companies that smooth out their tech systems today towards a connected enterprise will be ahead of the game tomorrow, especially as external collaborations become more and more essential. It's tempting to stick with what's working. But remember, just because it's not broken today doesn't mean it won't be tomorrow without a strategy to stay connected.

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Trailblazing Transformation

Gen AI's Influence On Business Process Management

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Summary

Explore the game-changing fusion of Gen AI and BPM, unlocking optimized processes, predictive analytics, and unparalleled personalized experiences, shaping the future of every industry.

Since its public roll out last year, Gen AI has rapidly evolved and has exerted a transformative influence across various sectors, akin to the profound impact the invention of the steam engine had on businesses at the dawn of the 19th century. Just as the steam engine revolutionized transportation, textiles, mining, and machine tools, Gen AI, with its ability to create new content, such as large text, images, videos and other forms of media outputs resembling human-created content, holds the potential to leave an indelible mark on every industry it will touch and have a ubiquitous impact. However, its Midas touch is poised to be nothing short of spectacular in certain sectors, and the business process management (BPM) industry stands at the cusp of this revolution.

So why is the industry going ga-ga over Gen AI's impact on BPM? Several BPM characteristics align seamlessly with Gen AI's capabilities, such as:

- **Structured processes with unstructured data:** BPM deals with a wide variety and volume of structured processes, but often encounters unstructured data and documents in diverse and complex formats, with dynamic business rules and judgment-based actions to be taken. Gen AI is tailor-made to optimize, automate and innovate in such situations. This positions Gen AI in a sweet spot to enhance existing structured processes, and even enable the creation of smarter processes and actionable insights.

- **Data-driven operations:** BPM heavily relies on data for informed decision-making. Gen AI can rapidly and deeply analyse large amounts of data across multiple sources, extracting hard-to-discern patterns, predicting potential issues before they escalate, and recommending corrective actions and decisions based on business context, and historical and real-time data.

- **Efficiency, effectiveness, experience and empathy:** While BPM aims to deliver benefits across the four E's to streamline and power operations, Gen AI can rapidly accelerate and amplify this journey with a human plus software (human-ware) model, creating significantly greater value.

With increasing adoption in BPM and rapid technology innovation, Gen AI is poised to become the mantra to disruptively transform business operations through automating, innovating, and improving processes continually.

Where do we see these capabilities play out?

AI Redefining BPM Operations

The integration of AI and intelligent automation (IA) into BPM unlocks the twin benefits of liberating BPM professionals from repetitive, rule-driven tasks while enabling smarter decision-making even in complex, judgement-based activities. This liberation enables professionals to redirect their focus towards higher value endeavours. The result is an immense potential to impact customers' bottom lines and top lines, while ensuring impeccable precision and reliability in BPM operations.

One of the leading global insurers is experimenting with a "60-second claim" process. This AI-powered loss assessment and evaluation enables the insurer to process a claim in less than a minute by uploading photos and documents.

While cost savings and error-free claim processing might be the obvious benefits accrued, the seamless customer experience and savings in time for the insurance professionals and the company from these AI-BPM initiatives are substantial.

The Cognitive Leap: Gen AI's Smart Process Innovation

While AI and IA pave the way for cognitive automation, Gen AI takes transformation to a higher echelon. It harnesses the power of neural networks to create not just efficient but truly optimized and smart processes, paralleling human cognition. The result? Businesses attain levels of agility, adaptability, and impact that were previously elusive, allowing them to pivot swiftly in response to evolving market dynamics and customer expectations.

Transforming Businesses With Predictive Insights

Think of the following scenarios

- Predicting consumer behaviour in retail
- Detecting fraudulent financial transactions
- Predicting propensity of a customer to default on their payments
- Curating and creating new content
- Predicting maintenance requirements in manufacturing

Predictive analytics empowers businesses and BPM providers to gain a deeper understanding of their customers, minimize risks, eliminate inefficiencies, streamline operations, enhance productivity, and boost revenues.

In the financial services domain, predictive analytics can proactively detect and prevent transgressions and associated risks by leveraging historical data on past transgressions. Healthcare can be hyper-personalized by predicting patient outcomes fine-tuned to each individual's health profile.

AI's prowess in predictive analytics, coupled with Gen AI's near-human cognitive capabilities, offers businesses not only insights into current operations, but also foresight into future trends, events, and recommended actions. This proactive approach acts as a shield against disruptions, reducing costs and consistently optimizing processes.

Personalized Experiences Amplified By Gen AI

Gen AI is poised to revolutionize the customer experience landscape by ushering in an era of unprecedented hyper-personalization. Its remarkable ability to extract and analyse vast amounts of customer data enables businesses to gain deep insights into individual preferences and predict behavioural patterns with unparalleled accuracy. This empowers enterprises to craft tailored offerings and experiences that resonate deeply with each customer fostering a level of engagement and loyalty that was previously unattainable. AI-driven BPM solutions are at the forefront of this transformation, with global revenues from customer personalization, projected to surpass $9 billion this year[2], a testament to the transformative potential of this technology.

The profound impact of AI and Gen AI on BPM manifests in their ability to cultivate genuine customer-centricity and deliver immersive, personalized experiences that resonate deeply with individual customer. Consider these examples:

1. **Personalized customer interactions:** Gen AI can power chatbots or virtual assistants to engage customers in personalized conversations. By analysing past interactions and customer data, these AI-driven systems can understand preferences, anticipate needs, and provide tailored recommendations or assistance, creating a more immersive and personalized experience for customers.

2. **Agent assist and AI copilot:** Using techniques like retrieval augmented generation (RAG), Gen AI can be a powerful 'agent assistant', crafting concise responses to complex questions, by drawing upon a vast knowledge repository of SOPs, policy documents, tickets, and other knowledge artefacts. AI copilots, advanced intelligent systems designed to collaborate closely with human workers, can revolutionize BPM by providing continuous guidance and personalized assistance in accomplishing various tasks. These AI-driven capabilities will serve as invaluable assets to human workers, augmenting their capabilities and enhancing their productivity.

3. **Dynamic content generation:** AI can generate dynamic, contextual, and personalized content for customers and users. For instance, in customer service interactions, marketing campaigns, and customer communications, Gen AI can craft customized and automated responses, messages, product recommendations, or offers tailored to individual preferences and behaviours, enhancing the overall customer journey, engagement, and efficiency.

4. **Predictive customer service:** Leveraging Gen AI for predictive analytics, BPM providers can proactively anticipate customer needs or issues before they arise. By analyzing historical data and patterns, AI systems can predict potential service requirements and issues, enabling proactive and personalized customer support, thus enhancing satisfaction and loyalty.

Gen AI's integration within BPM is poised for a transformative leap. The steam engine freed up human and animal muscle power. This time, Gen AI will free up and unlock cognitive faculties, empowering enterprises to revolutionize their processes. As enterprises embark on this journey, they can take a moment to pause to reflect on a famous quote by Ralph Waldo Emerson: "Do not follow where the path may lead. Go instead where there is no path and leave a trail."

This paradigm shift isn't merely an upgrade; it represents an uncharted frontier. The innovative minds of today will decide how best to harness the power of Gen AI to reimagine and reconstruct the very fabric of Business Process Management.

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Redefining Supply Chain Agility

The Power Of Real-Time Demand Sensing

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Summary

Explore the supply chain revolution through real-time demand sensing. Learn how real-time data-fueled AI reshapes agility, efficiency, and customer responsiveness for modern enterprises and can render their supply chains 'shock-proof'.

Today's CPG, manufacturing, and retail enterprises are facing their Netflix 'point of inflection.' A media company that started as a DVD-by-mail rental service, was faced with the winds of change when the digital streaming era emerged on the horizon. Much like the industries in the CPG and manufacturing sectors, Netflix faced the challenges of changing consumer preferences and the rise of digital technology.

Netflix provides a textbook case study on successfully embracing change. Enterprises for whom the supply chain is the lifeline of their business will do well to draw a leaf out of Netflix's story that predominantly revolves around 'The Data First Approach.' Supply chain disruptions, such as those caused by the COVID-19 pandemic, natural disasters, or geopolitical events, have exposed vulnerabilities in global supply chains. Omni-channel retailing has introduced a new layer of sophistication. All these changes in the landscape have prompted a revisit to make the supply chain more agile and resilient.

> Technology today has seen leaps in terms of digital data collection, and data analytics eventually leading to data-enabled collaboration. The 'Data First approach' that transformed Netflix can deliver tangible benefits via real-time data-driven demand sensing to modernize global supply chains.

The Increasing Need To Sense Demand Real-Time

One, 'customer demand' has always been at the crux of how a supply chain works. Supply chains commonly operate in the de facto mode of using last year's demand for demand forecasting. However, disruptions caused by COVID-19, and turmoil across key geographies have played havoc with the supply chains. It has exemplified the over-reliance on demand forecasting and subsequent lack of resilience and agility in supply chains to bear the brunt of disruptive events.

Two, the increasing need to cater to both in-store and online customers and the whole gamut of new fulfilment methods like BIS, BO, BOPIS, ROPIS, BORIS, and BOSFS, have stretched the prediction models in new directions. Demand forecasting and inventory placements just got more complex!

> Three, omnichannel data is highly granular and rich in the insights it throws up on consumer behavior, website traffic diagnostics, product performance, marketing campaign performance, advertisements, and product/brand display embedded on websites and media channels that draw more traffic, etc.

The Case For Demand-Sensing

Demand sensing, unlike demand forecasting, uses data acquired, days and even just hours ago to make spot-on short-term predictions about the demand for goods and services. This is imperative for customers and brand owners in the fast-moving CPG, Manufacturing and Retail space.

> The focus on real-time data to monitor demand and adjust forecasts at shorter intervals equips businesses to respond rapidly to changes in the market and avert lost sales due to stockouts.

Getting Demand Sensing To Work For You

Only a data-first approach powered by end-to-end digitalization allows swift and seamless data sharing with all stakeholders in a product's ecosystem. Suppliers upstream can track stock, plan, and expedite inventory replenishment across stores by gaining near-instant access to 'customer demand' data.

> Understanding the demand for such data, major retailers are investing heavily in capturing and monetizing rich consumer behaviour, sales diagnostics, campaign diagnostics, planning & forecast data beyond the regular sales and inventory data, and making it available near real-time. Retailers are moving towards API-based, digital, and automation-friendly data sharing rather than manual portal downloads.

For instance, large retailers like Amazon and Walmart (with its Luminate program) are moving away from portal download to sharing the data with brands in near real-time through API-driven digital integrations. Enterprises like Carrefour and Instakart are leveraging cloud platforms and big data stores for the same.

The number one challenge faced by enterprises is the heterogeneity of data and data sources across the stakeholders. Procuring data from hundreds of channel partners across geographies, each of whom uses disparate systems and software, is a mammoth task. Having obtained the data, next comes the task of scrubbing the data and transforming it to make it consumption-ready to enable upstream suppliers to extract insights from it.

The second challenge is the new need for enterprises and brands to run large, heavily staffed, complex IT programs at scale to continue to reap the benefits of demand sensing.

You can address both these challenges by using off-the-shelf AI-powered demand-sensing solutions. These customizable solutions come with inbuilt capabilities, domain expertise and enable automation, thereby reducing the time and effort needed to acquire and process data. They provide brands and enterprises with rich insights that can be translated into action.

Improving Outcomes With Real-Time Data

Real-time data is the real deal! Real-time data is like the lubricant that does away with the friction points in your supply chain. It drives home at least five distinct advantages.

1. **Efficiency Revolution**: Automation and AI/ML technology can transform data from heterogeneous systems into consumption-ready data that you can swiftly push to suppliers, significantly reducing processing time from weeks to mere minutes, thereby enhancing your supply chain's responsiveness.

2. **Swift Data Flow**: The enterprise and its suppliers obtain store sales and inventory data, the very next day, enabling swift, data-driven decision-making.

3. **Data Precision**: Suppliers can predict future sales based on past trends and ensure data accuracy by quickly validating information within hours. For instance, P&G reported a reduction in forecast errors by up to 50%.[1]

4. **Customer-Centric Responsiveness**: Enterprises can leverage real-time sales and inventory information to promptly adjust to evolving consumer preferences and enhance their execution and planning strategies. Walmart has introduced a weekly demand-sensing program that connects all its North American stores across the USA, Canada and Mexico to its vendor ecosystem to drive down uncertainty in its supply chain.[1]

5. It also tames the **bull-whip effect** common in traditional supply chains where supplier variability upstream is often 200% more than the actual customer demand downstream[2]. **Direct visibility of end customer demand** is relayed to upstream suppliers mitigating this phenomenon.
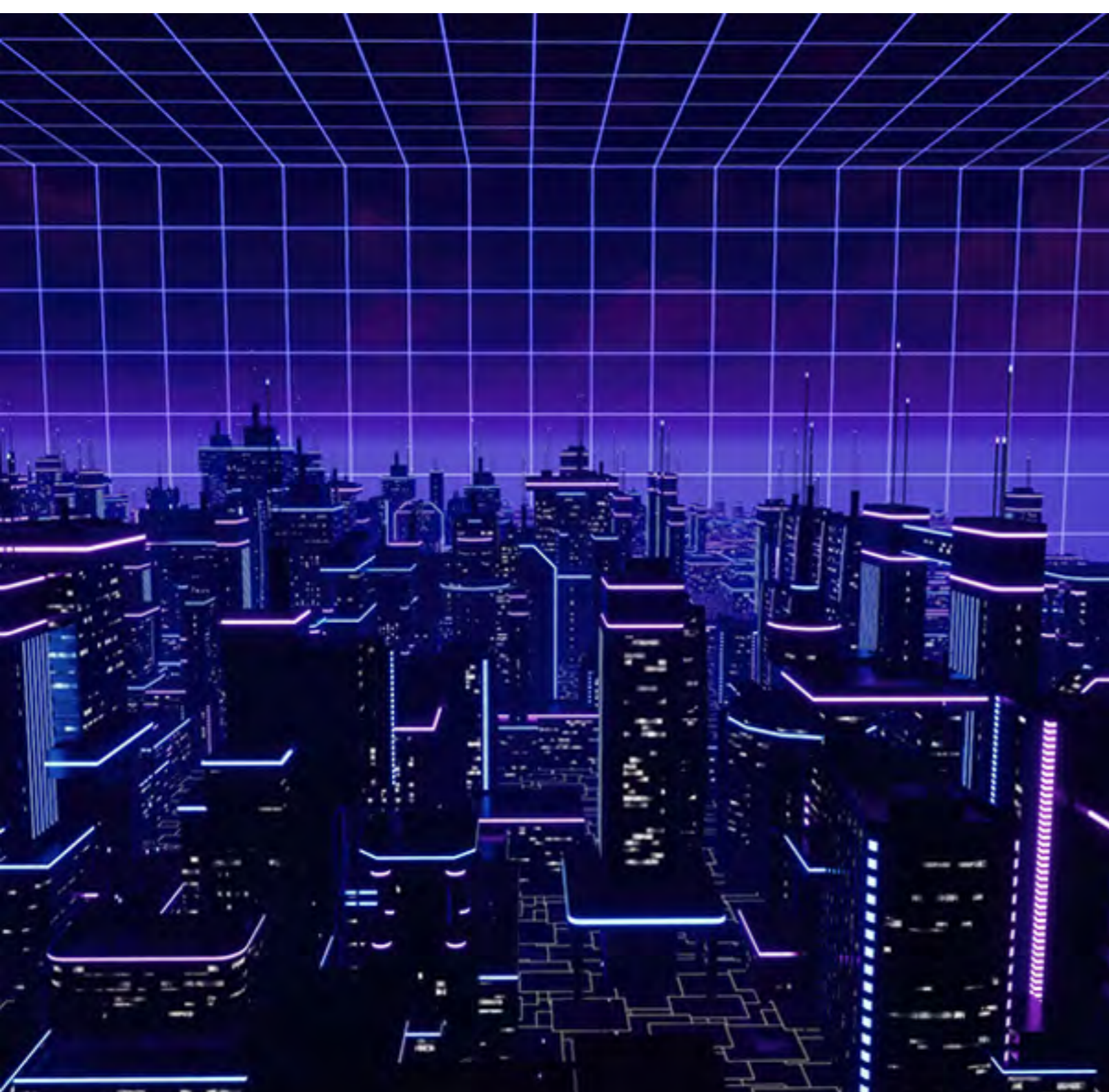
Connected Supply Chains

Supply chains are increasingly globalizing, and the demand for connectivity continues to grow. While connected supply chains augur well for customers, they also are susceptible to the domino effect when black swan events disrupt business. AI-powered demand sensing can ensure connected supply chains stay resilient in ensuring business continuity while staying agile to adapt to changing scenarios.

> In a world marked by constant change, demand sensing has emerged as the cornerstone of supply chain resilience and agility. Much like Netflix's adaptation to the digital streaming era, modern enterprises are rewriting the rules by harnessing real-time data. Embracing AI-powered demand sensing, they're better equipped to respond swiftly to shifting market dynamics, ensuring products are where and when consumers need them, ultimately revolutionizing the efficiency and precision of their supply chains.

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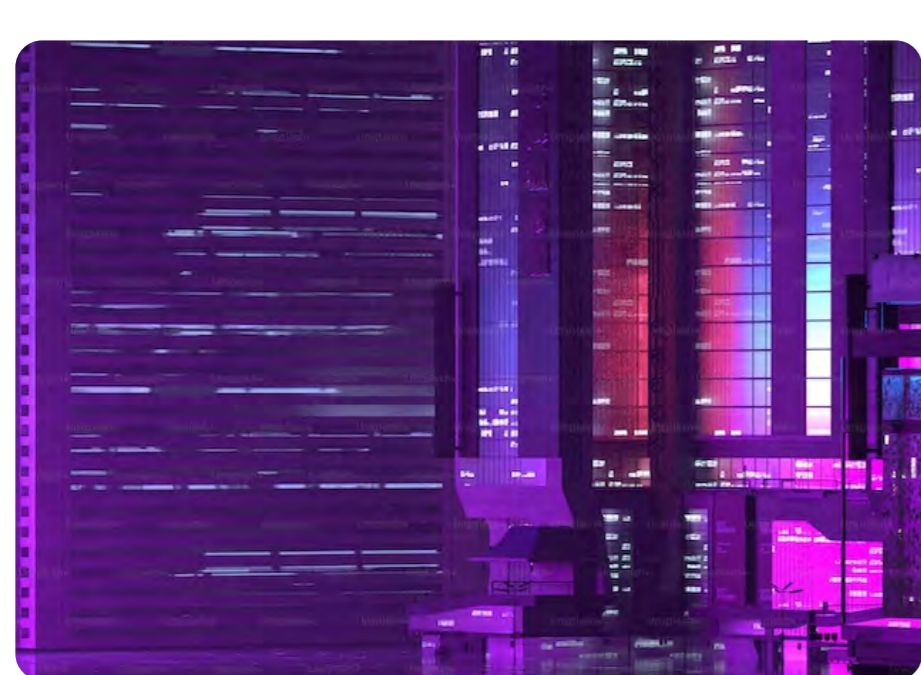
Embracing Gen AI

Navigating The Future Of Work And Learning

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Summary

Gen AI represents a transformative shift in how we work and learn. It also emphasizes the importance of continuous learning, collaboration between humans and AI, and the need for ethical frameworks to harness the full potential of AI.

> "The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."
> - Alvin Toffler

The only thing constant about technology is change. Every new technological wave has forced change upon society, industries, and people. This change has been best embraced by people who have exhibited the mindset to learn, unlearn, and relearn. This time around, we have Gen AI. It's not just about AI; it's about a symbiotic relationship between humans and technology, a paradigm shift from competition to collaboration, from fear to opportunity.
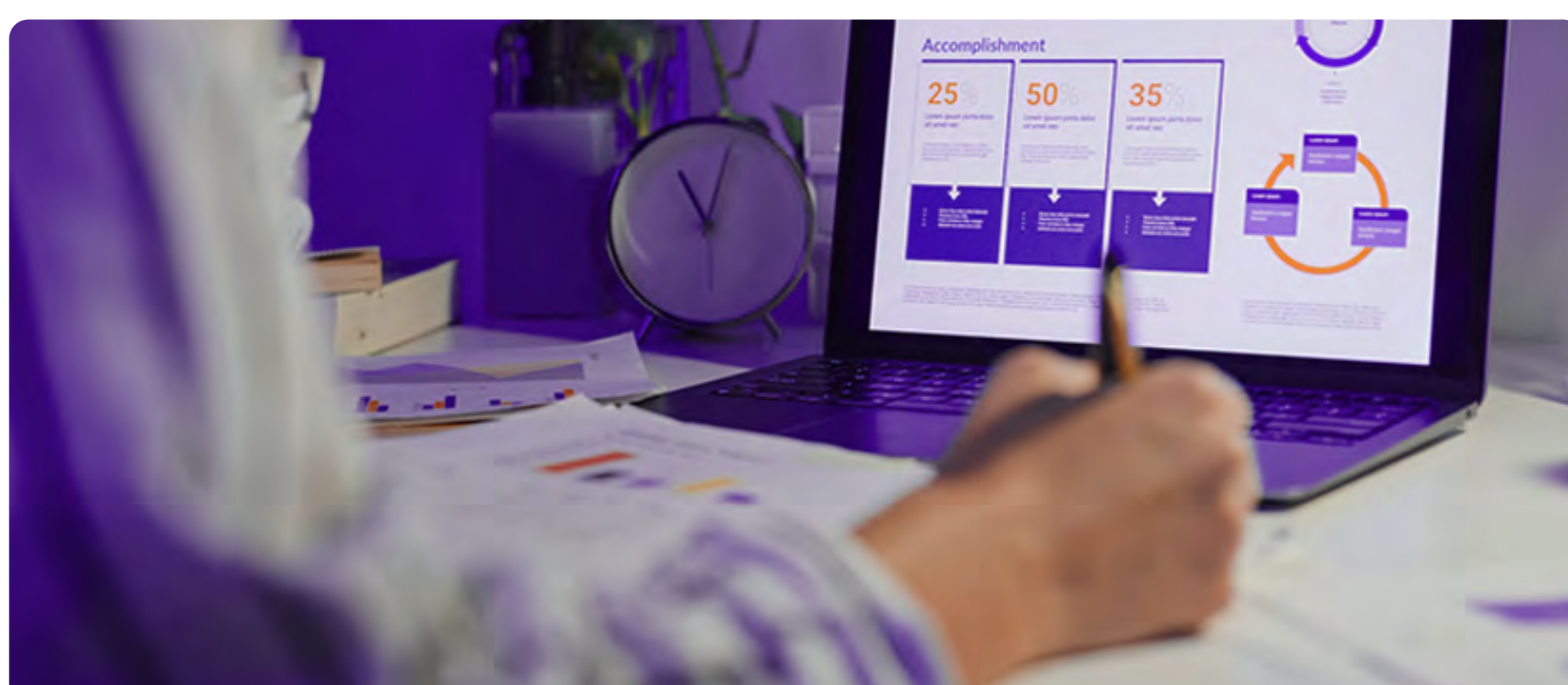
AI In Workforce Transformation: Automation And Beyond

Gen AI's capability to handle routine tasks has sparked optimism, raising the question of potential mass human replacement at entry-level tasks. This is true of not just one sector or domain but across the board. Wherever there exists a job whose characteristics comprise repeatability, lack of creativity, and space for human error to creep in, they are prime candidates for AI to take over.

Take, for instance, the banking sector. Organizations use AI algorithms to streamline mundane tasks like data entry and verification in the banking sector, freeing up human talent to focus on nuanced customer interactions and problem-solving. AI-powered automation transforms the banking industry, enabling financial institutions to stay competitive, adapt to evolving customer needs, and deliver exceptional services.

Gen AI isn't just about automating tasks; it's about creating new opportunities. The growing field of AI ethics requires the human element to help AI navigate to the morally right decision. Integrating ethics into artificial intelligence-based programs is crucial for preventing negative outcomes such as privacy breaches and biased decision-making². Human-AI teaming (HAIT) presents additional challenges, as the ethical principles and moral theories that provide justification for humans are not genuinely appreciated by machines. This emerging discipline requires human intellect to define ethical frameworks within technology.

Gen AI holds the potential to significantly boost labor productivity by opening the doors for novel career opportunities. Organizations that will win in the talent marketplace are those that create a compelling value proposition using both their human talent and the tech prowess that Gen AI brings to the table.

Gen AI: Revolutionizing Creativity And Predictive Capabilities

Creativity and innovation, once considered solely human attributes, are now getting a Gen AI makeover. AI algorithms are boosting human creativity. They are offering fresh insights into music composition, design, and even content creation. Professionals in fields such as education, law, technology, and the arts are likely to see parts of their jobs automated².

AI's predictive abilities are remarkable. They are being used in marketing to analyze consumer behavior, identify trends, and pinpoint potential opportunities and threats. Amazon's recommendation system is a prime example of AI predicting consumer preferences with remarkable accuracy. The system uses existing user insights, such as past interactions and interests, to make personalized recommendations. In 2021, about 35% of all sales on Amazon happened via recommendations, highlighting the power of AI prediction.

Gen AI In Education: Personalized And Immersive Learning

Gen AI promises to revolutionize learning by shattering the one-size-fits-all approach. Think of a classroom where each student's learning journey is hyper-personalized. Content adapts to the learner's pace and preferences. Adaptive learning platforms like Duolingo are already pioneering this change, customizing lessons based on individual proficiency.

Moreover, Gen AI transforms learning into an absorbing and interactive experience. Virtual reality (VR) and augmented reality (AR) are reshaping education, making complex concepts tangible and immersive. Students can dissect a frog or explore ancient ruins, all within the confines of a classroom.

Reimagining Work Dynamics With Gen AI

Gen AI could annually add the equivalent of $2.6 trillion to $4.4 trillion across various use cases, marking a substantial increase in labor productivity². As we see the transition to a full knowledge economy, we will tend to see the demand for a redefinition of the workplace.

Here are five ways in which today's workforce can redefine their work dynamics to leverage Gen AI.

1. **Perpetual Learning**
   Embracing lifelong learning is the cornerstone of relevance in this age. Upskilling and reskilling become important to stay relevant in a dynamic job market. The key to extracting the most from Gen AI lies in mastering learnability—the art of perpetual learning. It is not just about accumulating knowledge; it's about the willingness to adapt, unlearn, and relearn new skills.

2. **Teaming up with AI**
   AI can manage repetitive tasks, but the human touch is indispensable for higher-order tasks. Emphasizing this transition would require empowering employees to focus on innovation while letting AI handle mundane tasks.

3. **AI-Driven Personalization**
   Embrace AI-powered tools that offer personalized learning experiences and workflows. These tools adapt to individual preferences, optimizing work processes and learning journeys.

4. **Diversity and Innovation**
   Diversity and collaboration drive innovation. Teams comprising diverse skill sets and perspectives spark creativity. AI-driven tools like Microsoft Designer and Canva are all precursors to how AI can be used to jump-start human creativity.

5. **Ethical AI frameworks**
   Ethical considerations loom large in AI's ascent. Human intervention is essential to mitigate biases and errors within algorithms.

Gen AI isn't just a technological marvel; it's a paradigm shift. It's about humans and technology complementing each other—a fusion that unleashes unprecedented potential. It's about a future where learning isn't confined by boundaries, where work transcends routine, and where innovation thrives in diverse, collaborative ecosystems.

The journey ahead is exciting, and at Infosys, we're pioneering this expedition into the future—one where Gen AI propels us forward, hand in hand with human ingenuity.

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The Rise of Gen AI in Insurance

Key Tools And Considerations For Insurance

This article is an excerpt from a webinar between

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Summary

Gen AI is reshaping insurance with precision risk assessment, quick fraud detection, and hyper-personalized customer service and is set to add $1.1 trillion in value. While Gen AI brings sweeping changes, fostering a culture of continuous learning, accuracy with 'human in the loop' and experimentation are key to staying ahead of the competition.

Technological breakthroughs are akin to tsunamis. They take everyone by surprise, pack a punch and alter everything in their path. You can either ride the gigantic wave successfully or it will swallow you. The insurance industry is experiencing its tsunami moment, with reports predicting a $1.1 trillion addition in value for the global insurance industry by 2030[1].

How can the Insurance industry players seize the opportunity to ride the wave successfully? Let's explore.

Unleashing The Power Of Gen AI In Insurance

Gen AI as a Game-Changer

AI's transformative potential lies in the ability to enhance underwriting, claims processing, and customer service by automating complex tasks, improving accuracy, and reducing operational costs.

1. Vast datasets can be processed for precise risk assessment leading to personalized policy creation.
2. Quick validation and fraud detection via Gen AI can significantly enhance claims processing.
3. Gen AI-powered chatbots will handle up to 95% of all customer interactions by 2025[1] leading to hyper-personalized customer interactions 24/7.

These represent just the tip of the iceberg.

The bigger portion of the opportunity iceberg is predominantly spread across four major areas that insurance players can explore for use cases. These are search, summary generation, content creation and code.

- **Search function** could lead to use cases around policy research, market analysis and compliance checking.
- **Summary generation** can involve customer communication, claims processing and policy renewals.
- **Content creation** can be around customer support via chatbots, claims reports and policy explanations.
- **Code** can bring in its fold Natural Language to SQL Conversion, documentation automation and custom software solutions.

However, high-quality training data is key to achieving AI success. Poor data results in sub-optimal training that can have disastrous consequences. Think of claims data riddled with errors or inconsistencies. An AI engine trained on such data might incorrectly process claims resulting in delayed payments, wrongful claim denials, or even fraudulent claims slipping through unnoticed. We all know how frustrating such experiences can be!

Humans in the Loop

How can one be absolutely sure of the training data? Sadly, we don't have the luxury of trusting all of the training data due to its very nature of having emerged from a not-so-perfect world. An alternative is to have Gen AI complement humans instead of replacing them. The "human in the loop" approach, where humans collaborate with AI, can provide accurate results and, more importantly, reassure end customers that AI conclusions are human-vetted.

Safety Concerns

Potential pitfalls include data privacy risks, bias in AI models, and over-reliance on automation. Ensuring data privacy and compliance with regulations is crucial, as AI systems handle sensitive customer information. Consider plausible scenarios that might unravel.

- The AI model might unfairly charge higher premiums or deny coverage to a particular demographic group if historical data is biased against it.
- Mishandled personal data by AI can invite legal action and financial penalties.
- Over-reliance on automation may end up in double whammy with AI as well as humans missing out on new fraudulent patterns. AI due to poor training data and humans due to overreliance on AI!

In contrast, in a medical context, it was observed that AI, when used alone, outperformed human doctors, providing the most accurate results. This highlights the need for continuous testing and analysis when integrating AI into various industries, including insurance. Balancing accuracy with efficiency will be a challenge for some time to come.

Tools And Techniques To Ride The Gen AI Wave

While a lot of Gen AI tools and techniques abound, here are the approaches that could provide the greatest dividends for the successful implementation of Gen AI in commercial insurance.

Easily Integrable Tools

Insurers will do well to adopt tools that can seamlessly integrate with their existing technology ecosystem, which may include legacy core systems and private cloud infrastructure. Natural Language Processing (NLP) Libraries, Predictive Analytics tools like RapidMiner, KNIME, or DataRobot, Language Translation Services like Google Cloud Translate or AWS Translate, and Sentiment Analysis tools are some easy-to-integrate tools.

You don't always need to chase the latest AI models. Previous AI versions may be more suitable for certain use cases and can be more cost-effective, making them a viable option for insurers.

Gen AI-constructed responses need to be presented in a manner that is discernible and acceptable to humans. Developing interfaces that allow non-technical users to understand and verify AI outputs is crucial.

Fail Fast, Fail Cheap

Experimentation is inevitable. However, insurers should engage in small-scale, rapid experiments to determine the feasibility and potential impact of Gen AI on specific use cases. Rapid elimination of 'what does not work' can help your teams to bring the focus back on 'what can be potentially pursued'. Experimentation is preferred over a 'wait-and-watch' approach.

The democratization of AI has enabled a rare opportunity for employees in the insurance industry to move to more value-adding activities[3]. This should also put the focus back on low-hanging fruits that can be the focus of early experimentation within insurance enterprises.

Budgetary Considerations And Cultural Shifts

Budgetary Challenges

Allocating budgets can be challenging as AI experimentation may not provide a clear cost-benefit analysis. No Pain–No Gain – This adage underlines the need for experimentation without overly worrying about the cost. Allocate a portion of the budget for experimentation and risk-taking to facilitate AI adoption.

The rapid development of AI has also led to a mushrooming of vendors, making it essential for insurers to be cautious. It might be prudent to build on existing partnerships and conduct pilot projects with trusted vendors.

Also, it pays to remember that while AI technology evolves quickly, organizational culture changes slowly. It is recommended that enterprises work towards

- catalyzing the organization about these AI-powered technological changes,
- leveraging the existing workforce's willingness to experiment and adapt, and
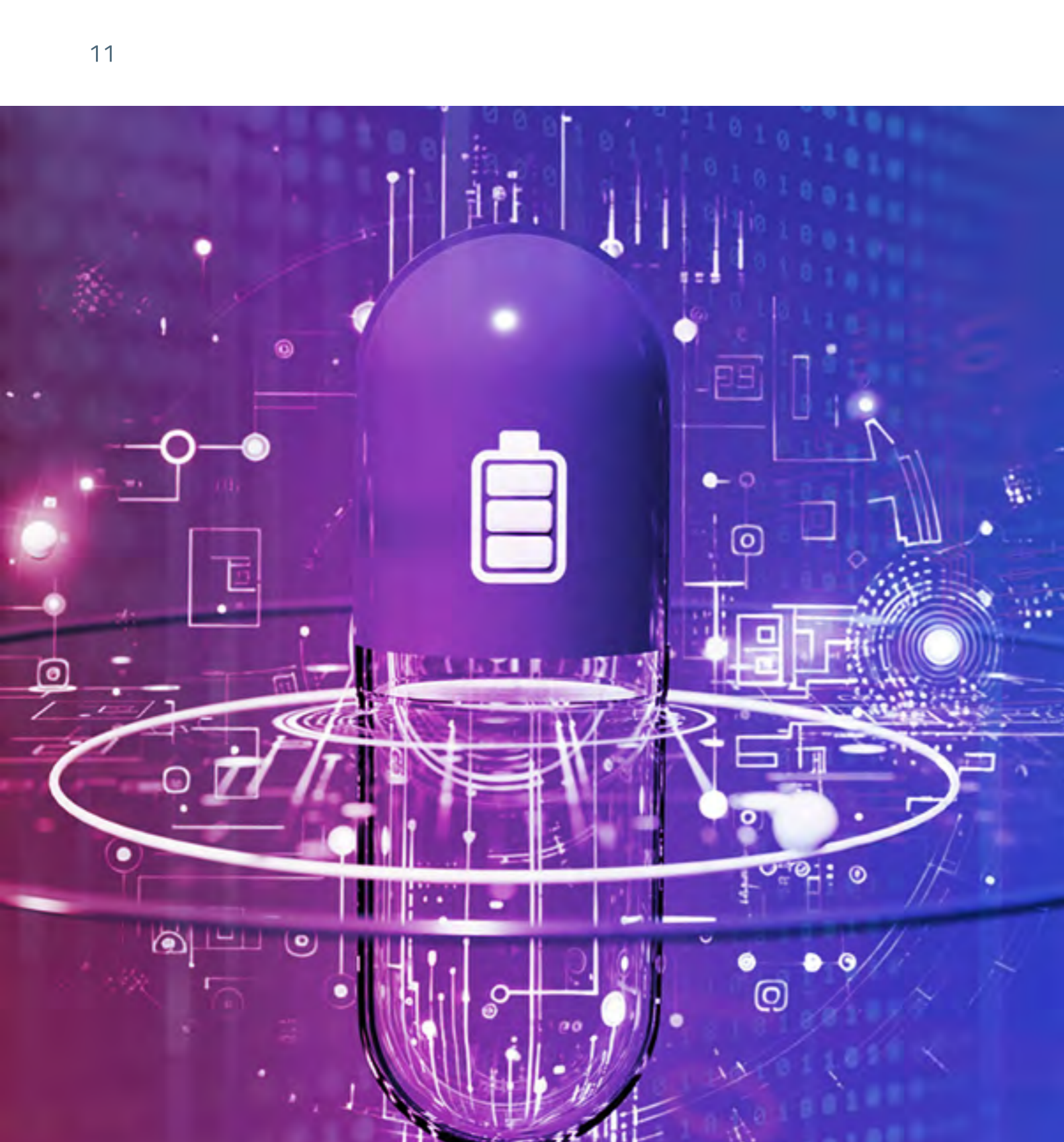- fostering a culture of continuous learning and innovation.

The sweeping changes that the Gen AI wave will bring in insurance are unstoppable, and companies that adapt, experiment, and leverage this technology will remain at the forefront of this transformative wave. While challenges exist, the future of insurance will be defined by those who embrace Gen AI intelligently and innovatively.

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AI in Pharma
A Booster Shot For Drug Discovery

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Summary

In the complex world of pharma, AI and machine learning are transforming the way we discover and develop drugs. From analyzing vast datasets to predicting drug efficacy and safety, AI is reducing the traditionally long and costly process of drug development.

Human bodies are complex, as are the diseases that affect them. Consequently, many diseases do not have a cure even today. While the reasons are many, one of the major bottlenecks is the expensive, drawn-out drug development process. Discovering and developing a drug can take up to 15 years of human effort and cost over $2.8 billion. It also has an overwhelming failure rate.[1] But does it have to be such a daunting task? With technology advancing at an unprecedented pace, we now have enough data and tools to do everything better. Finding better drugs faster that impact millions of lives should be the top priority of the tools we have today. Visionary pharmaceuticals and biotechnology companies understand this. They have digital teams to identify use cases that can have maximum impact in shrinking the timelines and increasing the precision at every step of the process.

> The scope of AI/ML spans the entire product life cycle, from drug discovery to post-market surveillance. From offering granular insights during the early stages to identifying the candidate molecules for developing strategies for lead compounds, AI/ML systems can speed up the entire drug development process while ensuring accuracy, precision, and safety.

A significant challenge for this innovation, however, has been regulatory compliance, but recent strides from the FDA has created new hope.

The Federal Pill

> The U.S. Food and Drug Administration (FDA) has recognized the increased adoption of AI / ML in biopharma processes and digital health technologies. In 2021 alone, it received 100+ applications[2] to leverage AI for product development. In response, the FDA is creating an ecosystem to facilitate technology-driven innovation to develop medicines, improve the quality of existing medicines, and boost availability across therapeutic areas.

The Center for Drug Evaluation and Research (CDER) at FDA has undertaken the Framework for Regulatory Advanced Manufacturing Evaluation (FRAME) Initiative in collaboration with the Center for Biologics Evaluation and Research (CBER) and the Center for Devices and Radiological Health (CDRH).

FRAME focuses on developing a framework for AI-enabled development and manufacturing of pharmaceuticals. Regulatory oversight and a connected ecosystem will enable pharmaceutical manufacturers to modernize the technological infrastructure and integrate AI / ML models and analytical applications into core functions.

An R&D Transformation

How exactly should R&D teams leverage AI in the drug discovery process? We discuss three focus areas that pose the touchest challenges in developing new treatments.

Drug design

Let's dissect a typical drug discovery process. Millions of datapoints need to be analyzed to find potential drug compounds that might effectively treat diseases. Once a potential compound is identified, it has to be matched with a specific protein receptor– the right biological target for the compound to interact with. After mapping the compound with a protein, we must validate this pairing (to make sure it's the right target) and optimize its structure. Determining the structure of just one such protein could take years of laboratory work.

> Automation and computational capabilities of AI/ML can significantly impact this process. It helps avoid relying solely on human analysis, making drug discovery fast and efficient. Take the modelling tool RoseTTAFold, for example. It is a deep learning tool that uses minimal data to accurately predict new protein structures in just under 10 minutes[3]. It enhances performance, it is easy to use and it just needs a single gaming computer.

Drug Screening

Deep learning models can also predict the properties –biological and biochemical activity, physicochemical properties, and toxicity – of these molecules by analyzing their structure. Researchers need this information to understand how a drug will behave in the body, screening out compounds that are not likely to succeed. This allows the R&D teams to focus and select the most promising compounds to be taken forward for development. It also allows the teams to optimize efficiency and safety features prior to the synthesis or production of the new drug molecule.

Drug Repurposing

While AI has already made its mark in small molecule discovery, it's the large molecules like antibodies and proteins that make the pipeline in pharmaceuticals – the market is expected to grow to $3.2 trillion[4] by 2030.

Scientists are now harnessing AI/ML capabilities to predict structures and functions of proteins, and in streamlining the process of designing both traditional drugs and advanced therapies like RNA-based vaccines. This more than just about bringing new drugs to market faster; it's about repurposing existing ones for new uses.

AI is making this possible by identifying and classifying new targets for existing drugs and determining similarities between molecules. For instance, AI-based analysis of the toxicity of similar compounds improves safety while reusing a drug for a new therapeutic use.

> A significant advantage in repurposing the drugs is bypassing some early trial stages. And that means with AI, we can accelerate the development timeline, particularly for repurposed drugs.

Clearly, AI technologies create immense value in every stage of the drug discovery process. They're making the process faster, finding new ways to use existing drugs, and helping ensure that these drugs are safe and effective.

Faster Clinical Trials

Once a new drug is discovered, pharmaceutical manufacturers conduct extensive studies on new drugs, vaccines, and biologics to establish the effectiveness and safety of the treatments. They take a phased approach– Phase 1, Phase 2, and Phase 3 – with each phase having different objectives. After successfully completing the trials, they submit detailed reports to the FDA for review. Only after the FDA's approval can they launch a drug into the market. This process can take several years to complete.

During the pandemic period, for instance, Moderna took just about 65 days to develop their mRNA vaccine. Clinical trials and authorization by the FDA, however, took an additional 270 days.[5] While the importance of safety is not up for discussion, we can certainly speed up the process to make the right treatment available at the right time.

> Machine learning systems can play a vital role here. They streamline tasks across preclinical and clinical stages, from designing study protocols to establishing safety standards for manufacturing. These AI/ ML tools can analyze laboratory and animal study data and assess factors like absorption, metabolism, and toxicity. Their predictive capabilities can forecast human physiological and pharmacological responses, guiding critical decisions around dosages and administration methods. They even predict potential side effects, contributing to real-time safety monitoring during trials and post-market analysis.

1. **Digital Twins**

   AI brings another innovative application in drug development is the creation of digital twins. These are virtual replicas of patients designed to predict responses to treatments without various medical scenarios accurately. Digital twins facilitate a faster transition from early, small-scale tests to comprehensive Phase 3 clinical studies. They boost the speed, safety, coverage and predictability

2. **Research Bias**

   AI also brings a strategic edge to clinical trials, optimizing resources by fine-tuning study protocols, size, and duration. It enhances the reliability and efficiency of these investigations, cutting down on research bias and enabling remote data collection through IoT devices. This not only allows for real-time health status analysis but also aids in reporting adverse reactions promptly.

3. **Coverage**

   Biotechnology and pharma companies should recruit a diverse patient population to prove that a drug is safe and effective for its intended use. Clinical trial reports should demonstrate how the therapy affects patients across diverse demographic segments and medical conditions. AI-powered tools aid in participant enrolment and patient screening, ensuring a broad and representative sample for these trials. Algorithms assess electronic health records to identify the most appropriate patients for a study based on exhaustive trial criteria.

4. **Compliance**

   Significantly, reliable data trails help enterprises address the stringent requirements for statutory approval. Digital documentation eliminates error-prone paperwork and minimizes administrative workloads while creating a comprehensive database of the design and clinical outcomes of each new drug. Further, automated data analysis accelerates the submission of new drug applications and enables regulatory teams to expedite review and approval.

Getting Started

AI-powered systems shorten the timelines for designing and delivering new chemical entities. In turn, it ensures economic viability for drug developers and efficient treatment for patients. Possibly, every pharma and biotech company realizes the importance and impact of AI. But barely 14%[6] have successfully embedded digital technologies into their R&D workflows and thus far into their mature process. So the question is where should companies start? The first step must be aligning key stakeholders and experts and developing a comprehensive road map – digital transformation, talent strategy, partnerships, investments – to get a jumpstart in the right direction.

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Gen AI in Cybersecurity
Defender, Attacker, Or Both?

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Summary
From phishing scams to ransomware, Gen AI can be a double-edged sword, upping the game on both sides. In this article, we discuss how Cybersecurity teams can use Gen AI to stay one step ahead of the hackers.

The high-stakes chess between cybersecurity teams and hackers is constantly escalating, with Gen AI playing on both sides of the field. On one hand, Gen AI is helping threats morph at breakneck speed in the digital underworld. On the other hand, Businesses can leverage Gen AI to prevent, detect, and combat these threats with zero tolerance. While the hackers need just one of their attacks to succeed, security teams need to neutralize every single shot aimed at them. Clearly, for enterprises, playing defense[1] is no longer sufficient; they need to predict—and deflect—the next move.

In this article, we discuss common cyber attacks and how Gen AI's inherent capabilities are equipped to counter these attacks. We will also discuss how security teams' Gen AI vs hackers' Gen AI pans out.

A Strong Defender For Cybersecurity Teams

Gen AI can comb through a mountain of data in no time, learning about patterns and odd behaviors. It uses these learnings to guess potential[2] cyber attacks. Each time it interacts with data from past attacks, it learns from them and improves. Let's look at some big-name cyber attacks and how Gen AI works to keep them at bay.

Phishing in the Enterprise Context with Gen AI

You receive an email that appears legitimate, but the tone or a suspicious link gives you pause. This could be a phishing scam, where cybercriminals trick people into revealing personal information. In the U.S. alone, there were over 500 million attacks[2], over 500 million attacks, and a loss of over $ 50 million due to these scams last year. As phishing becomes more sophisticated, traditional signs like poor grammar and spelling errors are disappearing, making it difficult for human eyes to spot them. Gen AI steps in here, utilizing its natural language processing to spot anomalies in communication, boasting a 96.2% success rate[1] in identifying such scams.

Take, for instance, your finance team gets an invoice that has slightly unusual details. Gen AI can compare these against vast data sets, alerting the team to potential risks before any payments are processed.

Malware Detection and Gen AI

Malware, or malicious software, can infiltrate a network with just a simple click on a suspicious link or email attachment. Traditional antivirus software, with its reactive approach, often leaves us a step behind emerging threats. Here, Gen AI offers a more proactive solution. Leveraging advanced machine learning, it continuously monitors and analyzes behavior within your software environment. For example, in a complex supply chain network involving multiple vendors, Gen AI is constantly vigilant. Upon detecting an anomaly – like a vendor's software behaving unexpectedly – it responds immediately, isolating the issue to prevent widespread impact across the network. Security analysts can use this malware to analyze its behavior in a secure sandbox, expose their security system's vulnerabilities, and understand the extent of damage that can occur.

Ransomware Mitigation Through Gen AI

Ransomware locks away an organization's data or systems until a ransom is paid. Recently, the notorious LockBit gang[3] targeted Boeing, publicly declaring the theft of a vast amount of sensitive data on their leak site. Despite negotiations, LockBit went on to release a portion of the stolen data. This breach spotlights the harsh reality: no entity, not even a tech giant, is immune to ransomware — risking operational chaos and severe blows to both confidentiality and corporate credibility. Gen AI can enhance predictive models[4] to identify the early signs of ransomware behavior, such as rapid encryption of files, and stop it before it takes hold.

Combating Deepfakes and Vishing with Gen AI

Vishing, or voice phishing, uses phone calls to trick individuals into surrendering private information. Deepfakes use AI to create convincing fake audio or video content[5]. Gen AI counters this by being trained to detect the subtle signs[4] that content has been manipulated, like inconsistencies in facial movements or audio that doesn't quite match lip movements.

Imagine a video circulating seemingly from the CEO, announcing that a key executive is exiting the company or declaring bankruptcy. That would cause a ripple effect of a fall in stock prices and market manipulation. A Gen AI system trained to recognize the CEO's speech and mannerisms could analyze the video, identify it as a deepfake, and alert employees not to act on the instructions.

In each of these cases, the value of Gen AI lies in its ability to learn and adapt from data—both in recognizing known patterns of threats and in identifying new ones. It's a continuous cycle of improvement, making Gen AI an invaluable asset in the ongoing battle to protect enterprise assets in a connected, digital-first business world.

Gen AI Vs Gen AI: The Other Side

Is Gen AI defense stronger than Gen AI attack? Who will win in this technological tug-of-war?

Consider this. Phishing emails used to stand out with their bad grammar and spelling errors. Now, hackers are using OpenAI's ChatGPT to write better phishing emails. This is just the start, though. Ask the experts, and many say that Gen AI seems to be giving the bad guys an upper hand right now. But in the long run, it will benefit defense teams more.

Does that mean we lose this Gen AI vs Gen AI battle? Fortunately, enterprises don't rely solely on Gen AI for security. They employ a layered approach, or in-depth defense, which includes other technologies and human oversight. Even if Gen AI-generated threats bypass one layer, others may still catch them.

Human-Powered Gen AI To Beat Cyber Risks

The most effective cybersecurity systems involve collaboration between AI and human experts. Gen AI aids humans in identifying potential threats, but human intuition and experience play critical roles in interpreting and responding to those threats, providing a check against AI-generated attacks that might otherwise slip through.

As long as defenders are vigilant and continue to evolve their Gen AI capabilities, they can keep pace with or even outstrip the capabilities of offensive Gen AI. So, the real question is, how prepared is your team to embrace Gen AI? Are you geared up to not only match the pace but also outthink today's more cunning cyber threats?

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The New Face of Supply Chains

AI And Automation In Action

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Summary

The pandemic showed how fragile our supply chains are, pushing the need for more intelligent, AI-driven systems. By using AI and automation, companies are making supply chains faster and smarter, helping them keep up with changes and challenges. Can this tech wave turn supply chains from cost centers into our strongest assets?

Billions of people around the world depend on supply chains to fulfill their needs and desires. It's something we often take for granted, but recent times have spotlighted how essential they are. The pandemic turned out to be a magnifying glass that revealed the vulnerabilities and inefficiencies of the traditional supply chains. Naturally, legacy supply chains shot up as a major concern, with a staggering 60% of CEOs[1] finding their supply chains under unprecedented stress. There is now an urgent need to rethink our supply chain strategy.

This idea is not entirely new; a paradigm shift has already been simmering beneath the surface of global supply chains. For over a decade, the term "digital transformation" has echoed through boardrooms and conferences, yet its essence remains elusive to many. Let's demystify this and understand why it's the need of the hour.

Lighting The Digital Pathway

While the concept of warehouse automation has been around for over a century, today's digital transformation requires a more integrated and advanced approach. At the heart of this transformative journey lies the superpowers – AI, machine learning, and automation. But where should one start their transformation journey?

The best bet is to eliminate the low-value-added tasks first. Pandemic or not, Intelligent automation (IA) proves invaluable when it comes to streamlining time-consuming routine processes. With Intelligent automation (IA) in the driver's seat, what used to take hours can now be accomplished in just minutes. Unlike most humans, Intelligent automation (IA) excels at repetitive tasks—especially the ones that tend to be tedious and mundane. This not only liberates employees to focus on more strategic endeavors but also delivers substantial productivity gains for the company.

> Bringing AI into the now automated process is a natural and logical progression. These algorithms take a collaborative approach where the system suggests actions and seeks your confirmation. The system adapts and refines its decision-making as it learns from your preferences. From Machine Learning (ML) to Gen AI, a spectrum of technologies work together in an ecosystem we call "Intelligent Process Automation (IPA)."

Peering Through The Digital Lens

Why is this fervor towards digital transformation? What might IPA look like in action? Imagine a day in the life of supply chain operations: Robots handle repetitive tasks such as entering orders and updating inventory. AI and ML make intelligent, independent decisions about the best shipping routes or stock levels. Meanwhile, the system reads and writes complex reports, and cognitive agents suggest when to repair equipment. Everything from orders to shipments is tracked in real-time, ensuring smooth transitions between different steps and disparate systems.

But there is more to this story. The unmatched visibility and agility a true transformation offers and a host of benefits these two factors bring.

Visibility, Agility, and Risk Management- Knowing Before It Happens

A telling study from McKinsey linked supply chain risks to a lack of visibility[2]. In line with this, a CGS survey found that 87%[3] of respondents consider supply chain visibility a significant challenge they are currently working on.

> AI and Intelligent automation (IA) can constantly scan and audit the entire supply chain and identify potential single points of failure and areas vulnerable to shortages or price volatility. They provide actionable intelligence, helping businesses avoid costly surprises. The real-time insights from AI enable companies to be agile, adjusting quickly to failures or shifting resources in response to changing customer needs.

Imagine preempting a potential supply shortage by flagging a critical vendor's financial troubles, allowing for a timely switch to a more reliable supplier.

Sustainable and Cost-effective Operations: The Green Edge

Every single one of the Fortune 1000[4] CEOs said Sustainability is important to them. Walmart[5] has underscored the significance of sustainability and ESG factors throughout its entire supply chain, extending to subcontractors and every participant in the value chain. However, collecting and overseeing traceability data can be pretty demanding.

> With AI-driven transparency, companies can better identify and sidestep unreliable suppliers or unethical manufacturing practices. Compliance becomes easier, helping the business avoid costly violations. But without this help from AI and automation, ensuring ESG compliance can be expensive and impact daily operations significantly.

The Catalyst For Change

While AI is exciting, the road ahead has its challenges. Companies face issues[6] like skill gaps, technology limitations, high implementation costs, and managing change every day. The good news is that providers are making solutions more user-friendly, making the transition smoother.

The use cases and benefits we discussed are just the beginning for supply chains today. For a long time, supply chains were seen mainly as cost centers and not competitive advantages like now. With competition increasing, especially with a focus on supply chain resilience, AI and Intelligent automation (IA) shine as strong options. No matter where you are in your digital journey, you can find your winning formula and a catalyst for change in AI and automation.

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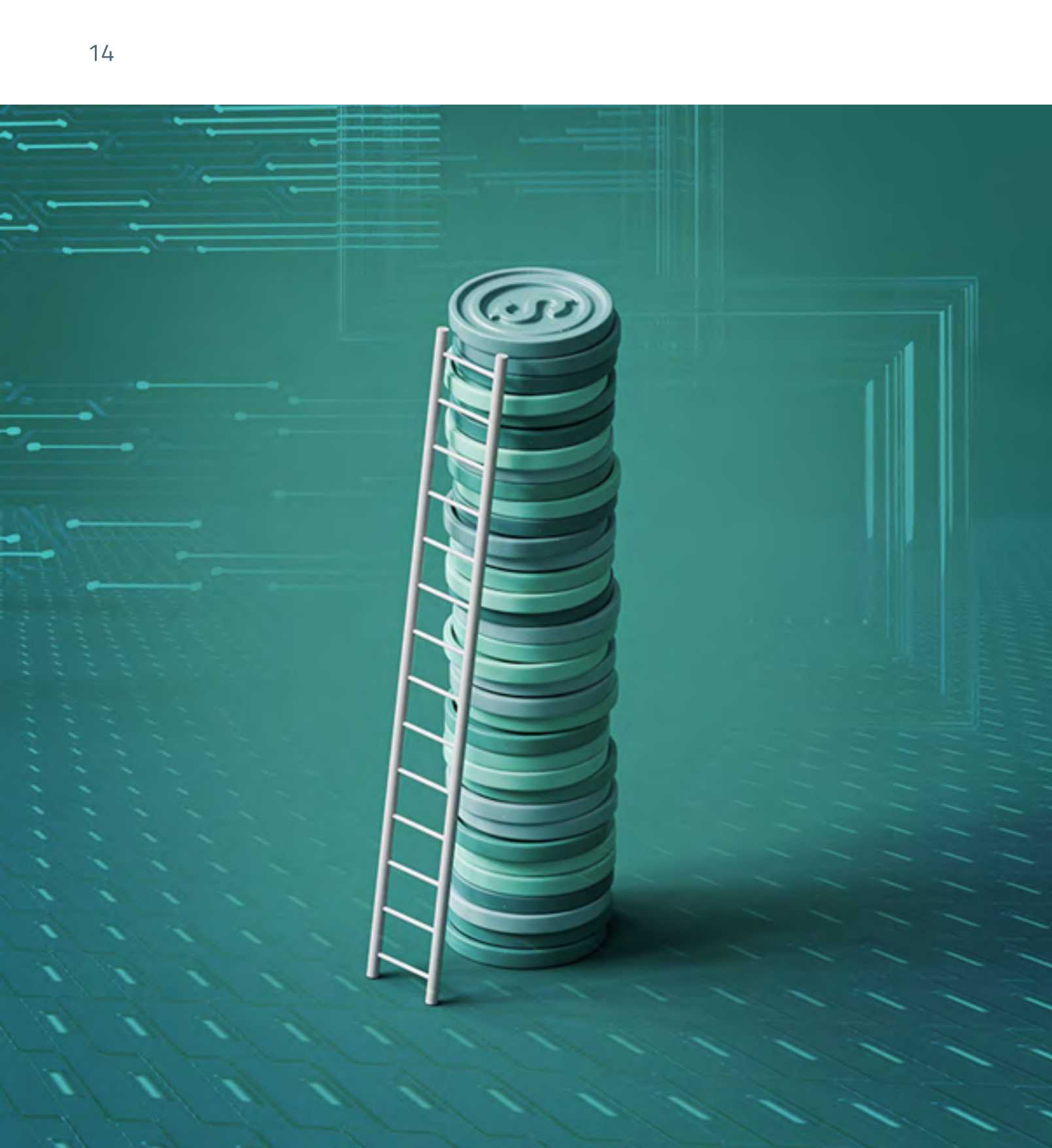
A Symphony of Technological Evolution

Reshaping The Banking Landscape

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Summary

Embark on banking's technological odyssey, from the reluctant adoption of cloud computing to pandemic-propelled digital shifts. Discover the transformative force of Gen AI poised to unlock a $200–$340 billion value in reshaping financial services.

In the ever-evolving symphony of technological progress, the banking industry stands as a testament to transformation. Over time, banking technology has undergone an incredible journey. From the early days of cloud computing to today's rise of Gen AI, the path of banking technology has been a testament to constant change, adaptation, and meaningful influence.

> Think of it as a journey. Banking technology has evolved through disruptive shifts. It all started with the excitement and buzz around something new, akin to the early hype of cloud computing. Then came the phase of learning and adjustment, where digital innovations were integrated into banking technology. Finally, it settled into a steady rhythm, becoming an integral part of how we bank and operate, much like the steady implementation of Gen AI today.

Cloud Computing: Embracing Flexibility And Security

Amazon Web Services pioneered cloud computing". Its advantages, including seamless hardware scalability and cost efficiency through the pay-as-you-go model, were specifically tailored for industries like banking and financial services, historically reliant on substantial computing power. However, the banks initially responded tepidly.

The reason for this was the stringent compliance standards and security concerns that governed the banks.

This spurred Amazon and other cloud providers to weave robust security protocols, encryption measures, and compliance certifications tailored specifically to meet the rigorous standards of the financial sector, into their cloud offerings.

This transformed the perception of cloud computing within highly regulated banks. Banks began adopting cloud computing and today most global banks operate on hybrid cloud models, leveraging multiple hyperscalers like Amazon, Google, and Microsoft.

Digital Transformation: The Pivot Prompted By A Pandemic

> Digital Transformation had been about the transformational leap to a 'bank of the future'. It encompassed a myriad of mobile-centric, metaverse, and chatbot-driven initiatives, envisioning the future of banking. The onset of the pandemic accelerated the urgency to eliminate in-person dependencies. Although the world has largely reverted to in-person modes, the technological innovations from that period have become deeply ingrained. Zoom and team calls have reshaped interactions, while mobile enablement has revolutionized work, ingraining digital transformation into the core operations of banks.

AI-Powered Transformations

> In the banking landscape, AI had initially found its footing in Robotic Process Automation (RPA) for mundane back-office tasks and in aiding fraud detection. Gen AI and Chat GPT technologies mark the beginning of a transformative era. They empower banks to offer a more personalized and efficient customer experience while drastically improving operational efficiency and decision-making capabilities.

1. **Front Office Revolution: Enhanced Customer Interaction**
   Gen AI-powered chatbots' capable of engaging customers in natural, human-like conversations used by financial institutions to recommend products, assist with queries, and personalize interactions based on individual customer preferences will become the norm.

2. **Mid and Back Office Transformations: Efficiency at Scale**
   Risk and Compliance teams will leverage AI-powered systems to analyze vast amounts of data, documents, and regulatory information, automating tasks like report generation and anomaly detection, reducing not just human error but opening the doors to quicker and more accurate decision-making. This will also strengthen security measures, protecting both institutions and customers from fraudulent activities.

> "In the business world, the rear view mirror is always clearer than the windshield." - Warren Buffet

Technology adoptions seen in hindsight, as previously, clearly point to certain set patterns of adoption. Though the outcomes of new technologies remain uncertain, we can glean insights from past industry adoptions. The lifecycle of these transformative technologies follows a familiar trajectory:

1. **Hype and Confusion**: This phase is marked by initial excitement and discussions around the nascent technology. A lot of ideas and possibilities are being passed around. Actual implementations are just a handful.

2. **Intense Learning Phase**: A phase where companies engage in learning programs around the facets of the new technology. Enterprise teams confront challenges, learn hard lessons and also watch a lot of project cancellations. A few continue to be dormant at the proof-of-concept stage.

3. **Steady Implementation**: Enterprises advance armed with confidence in established strategies and insights into potential pitfalls. Companies implement refined strategies, significantly increasing the success rate of projects.

Gen AI is currently transitioning to the second stage. Here are some use cases that should double up as quick wins.

1. **Front Office** – AI leveraged to serve as co-pilots to bank staff to guide and recommend the appropriate products for customers. For example, predictive use cases that help relationship managers to provide robust product recommendations, and "next best actions" based on the customer's response.

2. **Mid Office** – Risk and Compliance teams would experience huge increases in efficiency and accuracy with AI use cases to help read through documents and data points, and to automatically generate reports that require minimal or zero human involvement. Another use case could be around AI's ability to automate repetitive tasks, such as anti-money laundering (AML) checks, which could significantly reduce workloads.

3. **Back Office** – Operations and fulfilment teams will experience huge productivity increases with AI use cases that can generate responses to queries, predict errors or 'missing data' and prompt the human operator to correct them. AI's machine learning capabilities enable it to identify patterns and anomalies in large datasets, leading to more timely and accurate risk identification.

The ongoing evolution in banking technology underscores the enduring truth in Roy Amara's words —"We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run." As banks traverse these technological frontiers, the convergence of AI and banking envisages a future that transcends human limitations, redefining the very essence of financial services. $200-$340 billion is the estimated productivity value that is waiting to be unlocked through Gen AI technology in the banking sector'. Now, isn't that something to look forward to?

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Gen AI
The Future Of Work Is Here And Now

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Summary

Automation has gradually entered into our work, mainly through bots handling repetitive tasks. But Gen AI is not just automating tasks. It is enhancing how we think and create, stretching into domains of creativity. Not very far in the future, each employee might have a Gen AI assistant tailored to their role. How will this shift impact our roles?

Ever wondered what our jobs would look like if they came with a 'self-driving' mode? A few years back, McKinsey threw a figure into the ring: 30% of tasks in 60% of jobs[1] could be automated. Fast forward to the era of Gen AI, and it's not just the routine tasks in the list anymore. We can automate a lot more – in fact, there is more 'auto' in automation than ever before.

We have seen automation inch into our work lives, mostly in the form of bots that handle repetitive tasks. The old McKinsey data, insightful as it was, didn't account for the Gen AI revolution. Back then, the thought of machines performing jobs requiring a high level of creativity or cognitive skills was more science fiction than impending reality.

> But Gen AI changes the game. It stretches the automation spectrum to domains previously guarded by human cognition - creativity, decision-making, and complex problem-solving. Now, it's not just about automating what we do; it's about enhancing how we think and create. It's also about adding trillions of dollars[2] to the global economy.

Ours is now a world where automation is no longer just an assembly line but an AI-powered assistant that can think, design, and innovate. So, where does this take us?

An AI For Each One Of Us From A Robot For Each

Take contact centers, for example. In the not-so-distant past, each customer call was individually tended to by a person who would consult ledgers, navigate systems, and weave in solutions—a meticulous but slow art form.

The advent of RPA automated the basic patterns of customer service—account checks, billing inquiries, and routine data entries. The bots were fast, tireless, and error-free, handling tasks with a mechanical grace that lacked only a human's intuitive touch.

> Artificial Intelligence (AI) then stepped in, infusing the process with a semblance of human understanding. Chatbots began to converse, to empathize, and to learn from each customer interaction. They offered customized solutions, using machine learning to make decisions once thought beyond the reach of rule-based code.

Today, Gen AI is revolutionizing the field, blurring the lines between the once distinct capabilities of AI and RPA. It's an evolution of the process—a leap from mechanized assistance to creative and cognitive partnership.

This isn't just automation as we've known it; it's a reimagined collaboration. The spectrum of automation has broadened to include not just tasks but the very seeds of creativity and strategic thought. For every organization, this means a redefinition of possibilities. It's taken us from a bot for every employee to an AI for every employee.

Sparking A Productivity Revolution

The true essence of Gen AI's impact lies in its ability to transform productivity. Companies like JPMorgan, for instance, have harnessed the power of their customized version of ChatGPT, turning it into a tool for simplifying financial operations and customer interactions.

Many companies are using capabilities such as content summarization, content discovery, and content creation in many processes and tasks that earlier could not be automated through RPA and similar technologies. This means that a lot more tasks and activities could be augmented and help professionals from various functions save time, reduce errors, improve quality, and increase efficiency.

Industry-specific processes such as credit processing, claims processing, doctor's review, procurement document preparation, and review are heavy with paperwork and manual verification. The AI evaluates the information available with precision, reducing processing time from days to mere seconds[3]. This isn't a marginal upgrade; it's a reinvention of the workflow, slashing operational costs and enhancing customer satisfaction.

In sectors like IT, for example, where once troubleshooting was a time-consuming puzzle, AI now offers instant solutions. The result? Teams are liberated from the drudgery of problem-solving to concentrate on innovation. It's about the quantifiable leap[3] in output and the qualitative enhancement of work.

> Gen AI-embedded solutions are changing the very nature of tasks. For example, with Gen AI, we can summarize each ticket or task, derive initial inferences, and make them available for final submission. We can now create insights and augment most other tasks that were previously performed with only rule-based automation.

Redefining Work As Creative, Not Clerical, With Gen AI

Consider the procurement process. A task that used to consume countless hours of monotonous data entry into systems like ERP, Excel, or specific company websites now unfolds in minutes. Better yet, it often requires no human touch at all, running seamlessly from start to finish.

The explosion of productivity aside, what really grabs our attention here is the new definition of work. What used to be long, laborious hours of manual rekeying is now a task completed with a few clicks, leaving employees free to refocus on more strategic and creative endeavors.

For example, with Gen AI-powered Copilot, the role of the FPA analyst will undergo a significant transformation. They can now converse and conduct Q&A with data using natural language. Procurement specialists can also read through pages of PDF documents and summarize RFP responses while reviewing contract clauses. In essence, Gen AI isn't just a tool for cost-cutting or better productivity—it's a catalyst for a fundamental shift in how work is done. It's not about replacing humans. No. It's about redefining their roles, enabling them to engage in more meaningful work while AI handles the rest. This is the crux of the productivity explosion: liberating human potential by offloading the mundane to machines at a scale that we have not seen before.

Meet Gen AI's Potential With Prudence

AI and, in fact, Gen AI is not very new[4]. What is new is that it is now readily available to the masses. Employees at every level are recognizing its potential, creating a groundswell of demand for its integration into daily operations. But it is not as straightforward as it might seem to legitimize it in an enterprise.

For companies looking to capitalize on Gen AI, the priority is clear: ensure the right access. This means securing B2B subscriptions that fit the business model and legal frameworks, thus legitimizing Gen AI's use. With only a year since these tools became mainstream, every company is at a different stage in their Gen AI journey.

A cautionary tale comes from the tech sector, where Samsung developers[6] found their proprietary code suggestions being shared by Gen AI platforms. This incident spotlights the importance of using public domain Gen AI tools responsibly and ensuring that they are trained appropriately to respect legal and IP boundaries. Caution is understandable, especially around data security and intellectual property rights.

Choosing Progress

One thing becomes abundantly clear: Not providing these advanced capabilities to employees is a missed opportunity and a strategic oversight with far-reaching implications.

In the near future, visionary companies might equip every employee with a Gen AI assistant tailored to their specific role. A finance professional could have an AI that manages and analyzes complex data sets and predicts market trends with precision. In marketing, an AI assistant might autonomously optimize digital campaigns in real-time, learning and adjusting from each interaction. These are the companies that will attract top talent who seek to work in a culture that's both progressive and productive.
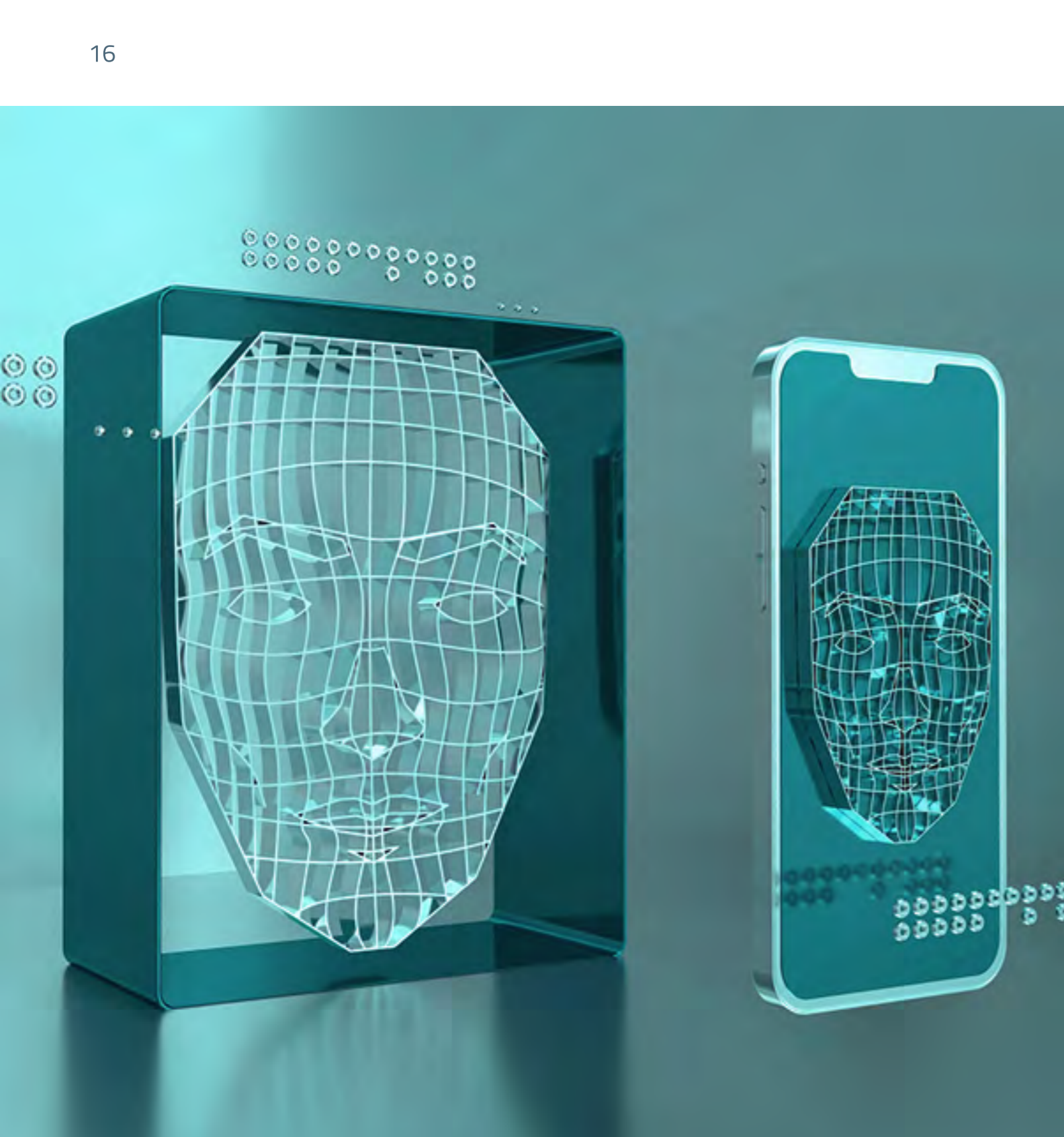
These are now available at the fingertips of every employee through Microsoft Copilot and other similar applications.

In this future, a company that lags risks stagnation or, worse, regression. It's like clinging to outdated fax machines in a world dominated by instant messaging. So the critical question we need to ask ourselves is this – Are we inching, if not leaping, towards this future enterprise, or are we risking our future by standing still in a rapidly advancing technological landscape?

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Synthetic Data

The Catalyst For AI Breakthroughs In Financial Services

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Summary

Explore Synthetic Data's Revolutionary Role in Fuelling AI driven innovation in finance. Learn how synthetic data makes up for data scarcity, overcomes privacy hurdles, and speed constraints, removing the hurdles for AI innovation in finance.

> "AI is the engine; data is the fuel."
> – Fei-Fei Li, Computer Science Professor

Artificial Intelligence (AI) is fast emerging as a transformative force in the financial services industry, throwing open the promises of unparalleled advancements and innovations. Yet, despite its immense potential, this sector faces a formidable challenge in adopting AI. One that is serious enough to limit the value potential compared to other industries. It involves data.

> In the realm of artificial intelligence, data reigns supreme. It is the lifeblood fuelling AI's marvellous capabilities. Data is like fuel—it powers up AI's incredible abilities. But here's the catch: sourcing high-quality and right data from the real world poses a significant challenge to financial services firms —complexities due to siloed infrastructure, regulatory constraints as financial data is considered most sensitive, costs, and time constraints present formidable barriers. Yet, obtaining the right data is both crucial and challenging enough a problem in empowering robust AI.

Synthetic Data: A Game-Changing Solution

Enter synthetic data, a game-changing solution to this perennial predicament – imagine being able to create 100% regulatory compliant and statistically representative data. Synthetic data encapsulates a brilliant concept – it offers a pragmatic approach to addressing the problem. Essentially, synthetic data is machine generated data that resembles real data in statistical representation. This data generation is possible at a volume, velocity and veracity and can be meticulously tailored to the required specifications, such as, applying privacy constraints. It's a paradigm shift, offering a bespoke and scalable solution to the perennial data sourcing challenge in AI development.

The seriousness with which data scientists have sought a solution to this problem is evident from Gartner's visionary prediction that 60% of data for AI training will be synthetic, up from 1% in 2021[1].

Addressing Data Challenges With Synthetic Data

So, what makes the case for such synthetic data?

Volume of Data:
The scarcity of certain types of historical data or market information creates a bottleneck. This scarcity hampers the ability to provide large volumes of data, hindering the development and training of robust AI models.

Data Privacy:
Anonymization, which involves transforming data to prevent the re-identification of data subjects, is a powerful tool for data processing while being compliant with data protection regulations such as GDPR. However, ensuring that data anonymization is correctly applied at a large scale is a daunting task, especially when trying to minimize risks and ensure proper anonymization. Traditional methods of anonymizing data struggle to keep up with the demands of large-scale data requirements, raising significant concerns about data privacy and compliance.

Data at Speed:
Real-time data acquisition and utilization pose a considerable challenge, preventing financial firms from capitalizing on immediate insights for innovation and decision-making. Data quality issues can arise due to various factors, such as inconsistencies in data sources or errors in data collection.

Diversity of Data:
Certain critical use cases, such as fraud detection, suffer from highly imbalanced datasets, making it difficult to train AI models effectively. Collecting data connected to fraud detection is similar to collecting real-world driving data by autonomous car manufacturers to train the AI engine. Collecting real-time data for every conceivable scenario an autonomous vehicle might encounter on the road is simply not possible. Given the unpredictability of the real world, it would take hundreds of years of real-world driving to collect all the data required to build a truly safe autonomous vehicle[3]. So is the case for fraud detection if one were to wait for such data to get generated naturally.

These challenges create roadblocks that limit the industry's ability to harness the full potential of AI.

> Top business scenarios, including Fraud Detection to improve robustness of fraud models, Anti-Money Laundering (AML), Market Execution[4], and the evolution of Digital Banking and New Products, stand to gain tremendously from the strategic deployment of Synthetic Data.

Methods Of Synthetic Data Generation

Synthetic Data Generation is akin to a talented artist sketching an alternative reality—it creates a safe and scalable space, like a secret lab, to nurture AI without compromising due to data-based limitations. Various techniques exist to create synthetic data, each having its nuances and considerations.

Statistical Distribution Methods: These methods heavily rely on the expertise of data scientists. They are adept at mimicking the statistical properties of original datasets.

Agent-Based Modelling: While effective, machine learning methods face the challenge of potential overfitting. This makes it necessary to give due consideration to how the data is put to use.

Deep Learning/Generative Models: Generative Adversarial Networks (GANs), Variable Autoencoders (VAEs), and Language Models emerge as the most reliable options, leveraging complex neural networks to create synthetic data. Data generated via these models mirror the original while preserving privacy and scalability.

CXOs looking to embark on this transformative journey need a deliberate strategy to start with Synthetic Data Generation:

Assessment and Evaluation: Carefully evaluate the available options (commercial products and python-based libraries) and choose a methodology that aligns with the organization's specific needs and goals.

Expertise and Implementation: Consider leveraging the deep expertise of data scientists to navigate the complexities of Synthetic Data Generation methods effectively. Several best practices that impact the accuracy of synthetic data need to be considered, such as, during preparing clean data, managing anomalies, and measuring the utility of synthetic data to real data through different techniques.

Continuous Innovation: Embrace a culture of ongoing innovation to adapt different techniques and evolve the synthetic data generation process continually. One such approach is using simulation scenarios as a digital twin to create a continuous improvement cycle.

> In conclusion, the adoption of synthetic data generation represents a pivotal step toward overcoming the challenges that impede AI initiatives in the financial services sector. By addressing issues of data scarcity, privacy, speed, and diversity, financial firms can unlock the true potential of AI, paving the way for unparalleled innovation and a competitive edge in the market.

As the industry hurtles toward a future dominated by AI, embracing Synthetic Data Generation stands as a strategic imperative for CXOs seeking to harness AI's transformative power, ensuring their organizations remain at the forefront of financial innovation.

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