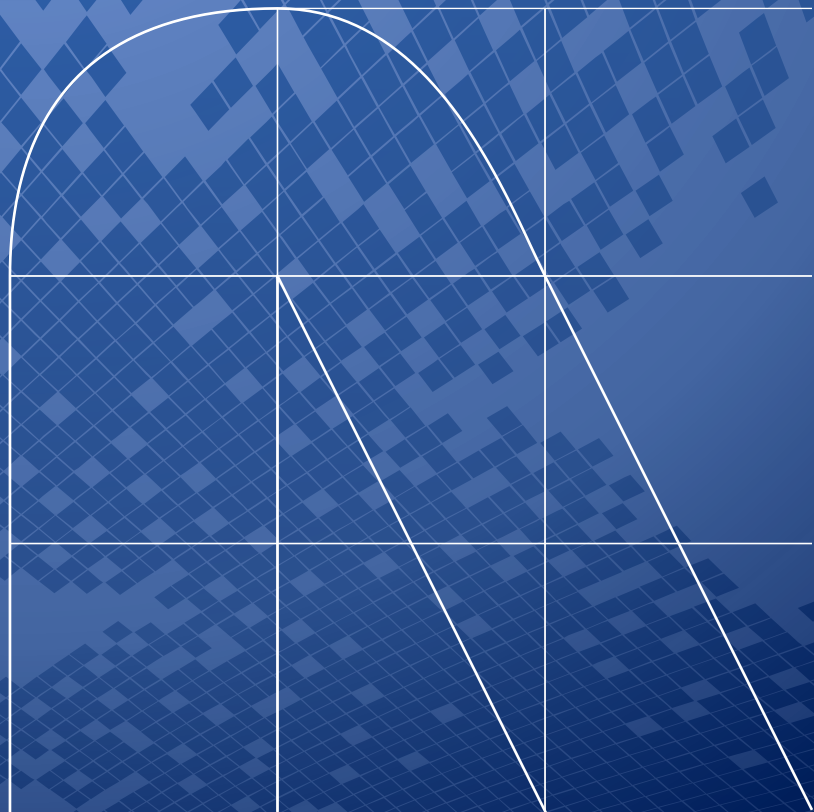


# Disrupting Business with Gen AI: Unleashing the Untapped Potential

NTT DATA point of view on Generative AI and its Complexities and Opportunities in real world scenarios.

NTT DATA Point of View



## From the Business Archives

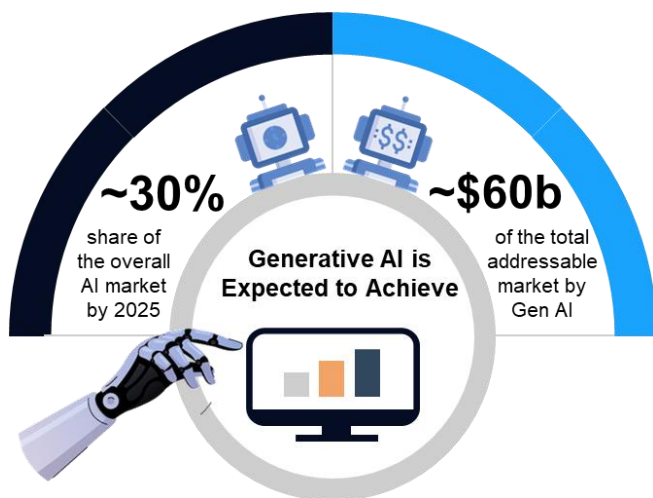
An in-depth assessment of archives of corporate chronicles showcases a recurring theme – the disappearance of once-mighty enterprises. The downfall of market giants like Kodak, Research in Motion, Friendster, Netscape, Motorola, Newsweek, and, more recently, Nokia and Blackberry.

What unites these industry titans in their downfall? A meticulous examination reveals a common denominator – they crumbled to the relentless tide of disruptive technology. Yet, amidst this turbulence, there's a silver lining – the future of technology is forecastable. However, the real challenge lies in our ability to swiftly adapt to these disruptive forces.

These examples give us a great platform to segway into the world of Generative AI, a buzz world which is taking all the sectors by storm. So, understanding and navigating this dynamic landscape becomes paramount to unleashing untapped potential and redefining the business narrative.

## The Techronic Shift

In the contemporary business landscape, the transformative force of Generative AI is undeniable. According to Goldman Sach's Global investments in AI technologies, notably Generative AI, is projected to approach \$200 billion globally by 2025<sup>1</sup>, signaling a robust confidence in its potential to reshape industries.



Applications of Generative AI have spawned across sectors such as healthcare, finance, and creative arts, reflecting its versatility and adaptability.



As we delve into the current state of AI adoption, businesses are increasingly recognizing its strategic significance. Leading industries, such as:

In the pharmaceutical domain, renowned companies like Amgen<sup>2</sup> and Insilico Medicine, alongside academic researchers, are harnessing Generative AI to revolutionize the design of proteins for medicinal purposes. Tackling the intricate challenge of predicting protein folding, a longstanding obstacle for geneticists and pharmaceutical developers, is now being addressed with the precision of Generative AI.

In the manufacturing sector, industry leaders such as Autodesk and Creo are leveraging Generative AI to redefine the design process for physical objects. This technology goes beyond conceptualization; in some instances, it plays a pivotal role in the creation of objects through innovative methods like 3D printing, computer-controlled machining, and additive manufacturing.

Also, Generative AI has revolutionized the way businesses operate in manufacturing and supply chain logistics sector. Global hospitality marketplace like Airbnb, has leveraged Generative AI to bridge language barriers effortlessly. With the help of AI-powered translation plug-in, it now enables hosts and guests to communicate seamlessly in various languages in real time. This transition has helped tourists from throughout the globe to make their international travel experience pleasurable. Similarly, Amazon is using Generative AI in its supply chain management to accurately forecast

and manage inventory levels, which in turn helps minimize costs and enhance customer satisfaction.

Generative AI can be used for a variety of applications, such as generating news articles, social media posts, and even entire books. As a matter of fact, BloombergGPT is a powerful tool that uses natural language processing and machine learning to analyze large amounts of data and generate human-like text.

The entertainment industry, too, is embracing the power of Generative AI. Tools like ChatGPT and DALL-E are actively employed to generate conceptual art, guiding the development of scenarios and environments. Additionally, with the introduction of OpenAI's Sora<sup>10</sup>, a text-to-video model that generates one-minute videos (currently) based on user prompts demonstrates a deep understanding of language, accurately interpreting prompts to create compelling characters that express vibrant emotions. These tools are poised to play a central role in the future, contributing to the creation of complete environments, thereby reshaping the landscape of content generation in the entertainment domain.

It is very evident that corporations are integrating Generative AI into their operations, fostering efficiency, innovation, and elevated customer experiences. According to Gartner®. "By 2026, more than 80% of enterprises will have used generative artificial intelligence (GenAI) application programming interfaces (APIs) or models, and/or deployed GenAI-enabled applications in production environments, up from less than 5% in 2023,"



## Consequences of Non-Adoption

**Competitive Erosion:** Resisting Generative AI risks losing competitiveness, allowing rivals to gain through advanced technology.

**Operational Inefficiencies:** Failure to embrace Generative AI may cause operational inefficiencies, increased costs, and hinder agility in adapting to dynamic business landscapes.

**Customer Disconnect:** Non-adoption of Generative AI may lead to a disconnect with customer expectations, resulting in dissatisfaction due to outdated services.

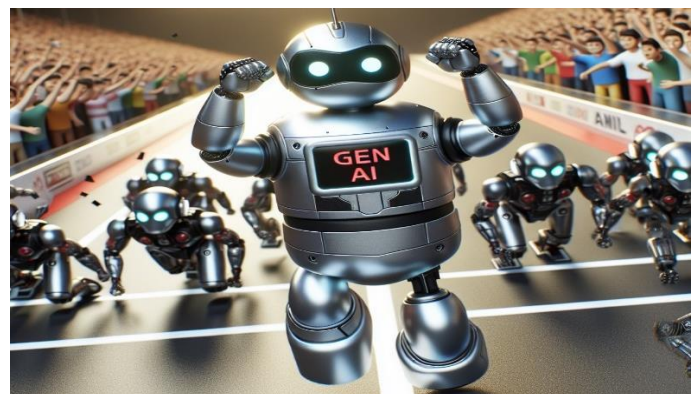
**Innovation Stagnation:** Resisting Generative AI hampers innovation, limiting the ability to explore and implement novel ideas, hindering long-term growth.

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***By 2026<sup>5</sup>, over 100 million people will engage Robo-colleagues (synthetic virtual colleagues) to contribute to enterprise work.***

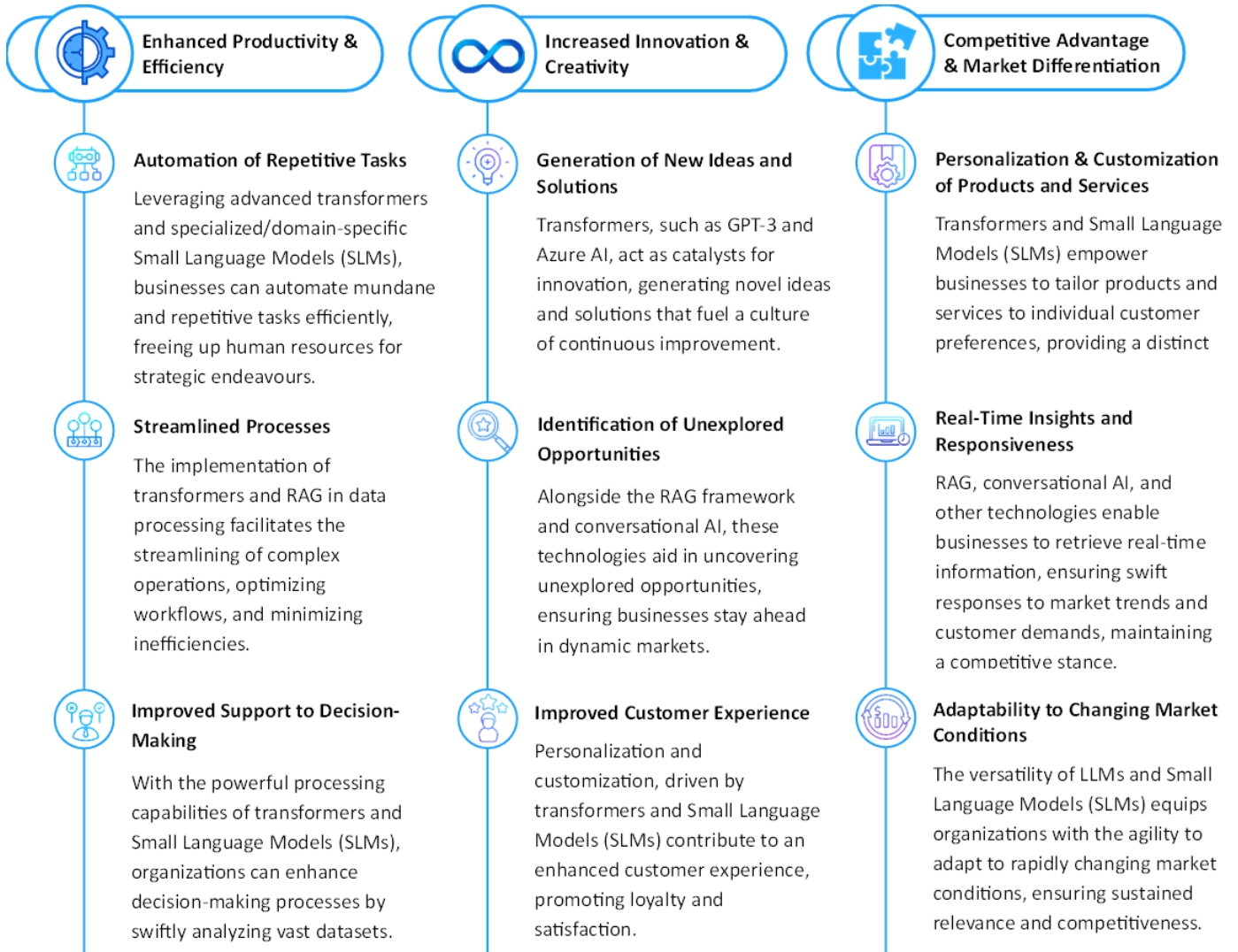
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The current situation regarding AI is dynamic and ever-changing. It is no longer the domain of large technology companies or educational institutions. Anyone can now use AI-based tools to improve their quality of life. Generative AI tools have opened the eyes of the world to its capabilities. This is especially the case with ChatGPT which can improve productivity on an individual level by 30% or 40% in terms of saving time. However, the question remains, *"how do we remain competitive in the rapidly changing market, and how quickly businesses must leverage the untapped potential of Generative AI and adopt a proactive approach to integration."*



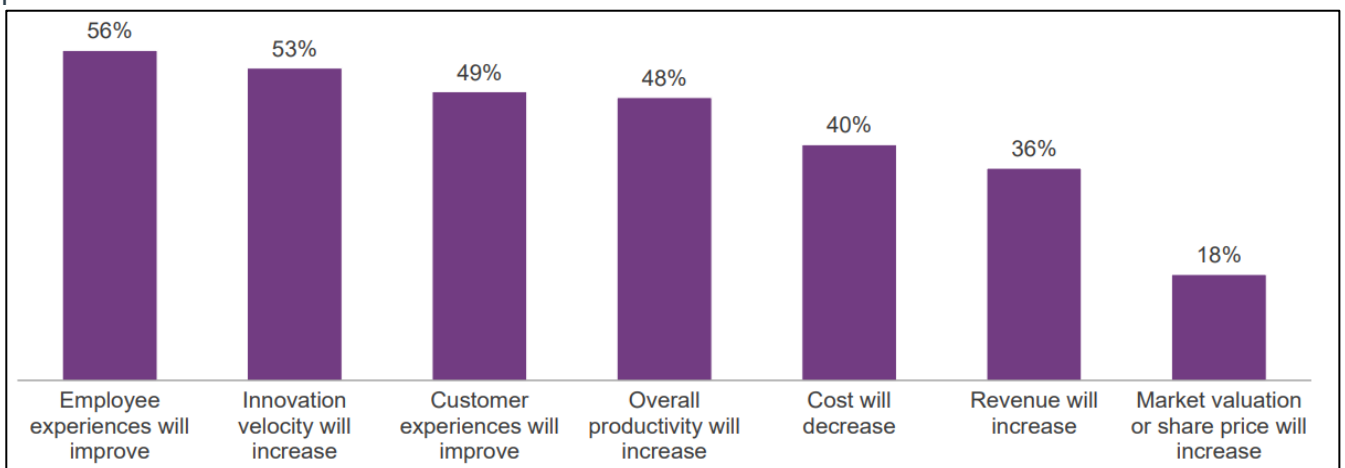
# The Multi-Dimensional Impact

The integration of Generative AI into business operations offers a multitude of compelling benefits, making it a strategic imperative for companies aiming not just to thrive but also keep them relevant in the current dynamic landscape.



As per HFS research<sup>8</sup>, Generative AI will have multidimensional impact on various vertical of business which is represented in the form of graph.

In essence, the adoption of state-of-the-art Generative AI models is not just a technological upgrade; it is a strategic decision that unlocks a spectrum of advantages. From operational efficiency to market differentiation, these models



position businesses at the forefront of innovation and competitiveness in an era marked by rapid technological advancements.

## The Delayed Leap

Generative AI has proved itself beyond doubt that it stands out as a technology which has transformative potential. Yet, there are several factors that act as barriers hindering its adoption such as:

### Knowledge and Understanding: Shaping the Path to AI Adoption

The barrier to adopting Generative AI often lies in a lack of awareness and understanding about its potential applications. Organizations must proactively invest in educating themselves about the capabilities of AI to envision its profound impact on operational excellence. Overcoming this hurdle requires a concerted effort to enhance awareness and foster a deep understanding of AI's transformative possibilities.

### Financial Frontiers: Deciphering the Investment Puzzle

The perceived high cost of AI technologies can deter organizations, but a strategic approach involves decoding the secrets of financial success. While AI investments may initially seem substantial, organizations should carefully consider the long-term benefits and return on investment. Exploring diverse funding options, forming strategic collaborations, and prioritizing AI initiatives can help overcome budget constraints, enabling organizations to allocate resources effectively and realize the enduring value of AI.

### Data Dynamics: Navigating Availability and Quality

AI thrives on data, yet insufficient data availability and poor data quality can impede progress. Establishing robust data management strategies, ensuring data quality, and forging partnerships for data acquisition are critical steps. By addressing these data challenges, organizations can unlock the true potential of AI, leveraging data as a valuable asset rather than an obstacle.

### Ethical Navigation: Charting the Course for Responsibility<sup>4</sup>

As AI advances, ethical and legal considerations loom large. Organizations must set clear

guidelines and frameworks for responsible AI use, with transparency, fairness, and data privacy at the forefront. This ethical foundation is crucial for building trust and overcoming barriers related to the moral compass of AI adoption.

### Cultural Transformation: Shifting from Resistance to Resilience

Resistance to change is a common hurdle in adopting new technologies. Cultivating a culture of innovation, fostering open communication, and providing training and support to employees can instill resilience and enthusiasm for AI adoption. Involving employees in the AI adoption process is pivotal for overcoming resistance and cultivating an organizational mindset that embraces technological evolution.

### Skill Empowerment: Bridging the Workforce Gap

AI technologies demand skilled professionals, proficient in data science, machine learning, and AI implementation. Organizations should invest in upskilling existing employees and attracting new talent to bridge the skill gap. Building a competent workforce equips organizations with the confidence to embrace AI and harness its capabilities effectively.

### Integration Harmony: Aligning with Existing Systems

Integrating AI solutions with existing systems poses challenges, yet organizations can dismantle silos by fostering collaboration across departments and leveraging technology partners. Streamlining integration processes allows organizations to seamlessly incorporate AI into their operations, creating a harmonious synergy between new and existing technologies.

### Facing the Unknown: Managing Risks and Uncertainties

AI adoption inherently involves risks and uncertainties. Organizations must approach AI implementation with a mindset of continuous learning and improvement. Thorough risk assessments, model testing, and robust monitoring mechanisms are essential for mitigating risks and ensuring a smoother journey towards AI adoption.

Overcoming these barriers is a formidable task, but organizations breaking free from these

constraints unlock the immense potential of AI. Through investments in awareness, resources, skills, and ethical frameworks, organizations can unleash the power of AI to drive innovation, efficiency, and a competitive advantage. Embracing challenges and seizing opportunities, AI paves the way for a future of organizational excellence.

## Generative AI! It's Here to Stay

Generative AI's ability to create new, unique data and models will revolutionize industries such as healthcare, finance, and manufacturing by enabling the creation of personalized treatments, financial models, and product designs. Its impact will also be felt in the creative industries, as Generative AI will enable the generation of new forms of art, music, and video that were previously unimaginable. Additionally, Generative AI will play a critical role in the development of smart cities and transportation systems, as it will enable the creation of intelligent infrastructure and optimized traffic flow.

### Textual/coding-based Innovations

In the domain of Financial Services, Generative AI offers a transformative approach to customer due diligence reporting. By automatically generating comprehensive summaries of new customer profiles, including vital information for Know Your Customer (KYC) processes, employees can efficiently review and make informed decisions for customer onboarding.

In the Technology, Media & Telecommunications sector, Generative AI presents innovative solutions for cybersecurity threat detection and generate executive reports highlighting potential threats such as malware, anomalies, and other security vulnerabilities. In Life Science & Healthcare, Generative AI can revolutionize patient care by summarizing complex Electronic Health Records (EHR) clinical notes.

For consumers, Generative AI offers the potential for a personalized supermarket experience. By generating email campaigns with custom meal plans and shopping lists tailored to individual buyers or families, considering store availability and personal preferences, retailers can enhance customer engagement and satisfaction.

### Image/Video Innovations

The Financial Services sector can benefit from image-based innovations as Generative AI presents innovative solutions for fraud detection. By generating customer signatures, institutions can enhance internal fraud models, especially in areas like credit card authorization, and effectively summarize potential fraud hotspots for proactive mitigation.

For Technology, Media & Telecommunications, Generative AI offers advancements in semiconductor chip design. It enables rapid iteration and enhancement of chip designs based on performance parameters, thereby reducing the development life cycle time. In the field of Life Science & Healthcare, Generative AI can revolutionize medical imaging, by generating large sets of synthetic medical images, it can be used to train imaging algorithms to better identify abnormalities.

For consumers, Generative AI can transform product photography and details. It can generate detailed and ultra-realistic photographs of new and existing products in various environments, providing consumers with a more immersive and engaging shopping experience.



### Speech/Audio-based innovations

Here, Financial Services can leverage Generative AI to revolutionize retail banking transaction support. It can provide human-like support for complex retail transactions, including customer applications, questions, negotiations, and more, enhancing customer service and streamlining operations.

For Technology, Media & Telecommunications, Generative AI offers groundbreaking capabilities in translations, subtitles, and descriptions. In Life Science & Healthcare, Generative AI can automate follow-up processes. By ingesting clinical notes, it can identify patients who require

follow-up care and create audio messages to schedule appointments and encourage healthy habits, improving patient outcomes and reducing administrative burden.

Generative AI can also enable conversational retail experiences. It can provide detailed product support and guidance using human-like chatbots in retail stores, focusing on specific brands and categories. This enhances the shopping experience by providing personalized and informative interactions.

### 3D innovations

Here, Generative AI can enhance financial models by generating synthetic data to pressure test an institution's liquidity and processes. In Technology, Media & Telecommunications, it can aid in telecom network maintenance by training digital twins on synthetic data to identify network faults and provide remediations for on-field technicians. In Life Science & Healthcare, Generative AI can accelerate new drug discovery by generating the structure and function of proteins and biomolecules. In the Consumer sector, it can accelerate product prototyping lifecycles by creating unique and high-fidelity product mock-ups and synthetic behavioral data for buyers.

## How is your AI Game?

Let's now assess different stages of AI adoption and what would be an efficient and effective deployment of AI, specifically Generative AI, and how can we leverage it to achieve maximum business impact.

In the world of AI, the game has evolved from traditional machine learning to the dynamic realm of Generative AI. Unlike machine learning, which focuses on training algorithms to make predictions based on data, Generative AI goes a step further. It not only understands data but also has the remarkable ability to create new content, ideas, and solutions.

While machine learning requires large datasets for training and relies on predefined rules, Generative AI, powered by models like transformers and LLMs, can generate innovative outputs without explicit programming. This makes it easier for organizations to adopt and integrate AI into their operations, driving creativity and innovation like never before.

So, if machine learning is like playing chess, where you anticipate your opponent's moves based on patterns, Generative AI is like writing a novel, where you create entirely new worlds and characters.

It's a game-changer that promises to revolutionize industries and unlock limitless possibilities<sup>9</sup>.

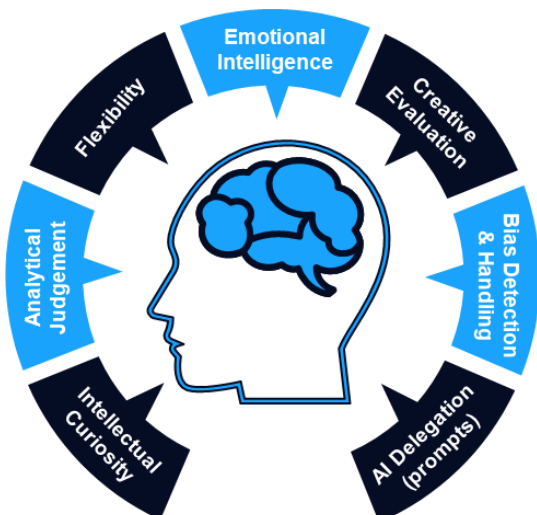


Characteristic	AI	Traditional ML	Generative AI
Purpose	Develop computer systems that can perform tasks that typically require human intelligence.	Make predictions or decisions based on given data.	Generate new data samples that resemble a given set of training data.
Data Interaction	Models use various techniques and strategies designed to mimic human intelligence across a wide range of applications.	Models learn from data to make predictions or decisions on new unseen data.	Models produce new data that weren't part of the original dataset but share similar characteristics.

## How to Get There?

Embarking on the journey towards Generative Artificial Intelligence (GenAI) adoption is like nurturing the growth of a neural network within an organization. Here, organizations must focus on skills not roles hence, it becomes evident that cultivating new skills among employees is imperative to navigate the intricacies of AI evolution.

**Skills Evolution:** Human mind is known for adaptability and already possesses for its analytical judgment, intellectual curiosity emotional intelligence etc. However, to unlock the potential of GenAI, employees must undergo a skills metamorphosis, adapting to the dynamic landscape of AI technologies. The advent of transformers, recurrent neural networks, and deep learning necessitates a workforce adept at harnessing these tools. Continuous learning and upskilling initiatives become the synaptic connections fuelling the organization's cognitive capacity in the AI domain.



## Pillars of GenAI Strategy:

The journey of Vision to execution of AI relies of multiple factors. However, as per Gartner®, "For more AI impact, we need to fortify four key pillars of your AI strategy: Vision, value-realization, risk and adoption plans."



Source: Gartner

**Vision:** Crafting a visionary roadmap is the cornerstone. Define how GenAI aligns with organizational objectives and how it will reshape operations. Implementing transformers and neural network architectures requires a clear vision that transcends traditional boundaries.

**Value:** The value proposition of GenAI lies in its transformative impact on operations. Leverage the power of Generative models to innovate products and services. Integrating transformers can enhance natural language processing,



empowering applications to elevate customer interactions and internal communication.

**Adoption:** Seamless adoption of GenAI depends on meticulous planning and integration. Develop strategies for incorporating Generative models into existing workflows. Consider how transformers can optimize data processing, enhancing the efficiency of machine learning algorithms and augmenting decision-making processes.

**Risks:** Understanding and mitigating risks is paramount. As GenAI interacts outside the organizational firewall, cybersecurity becomes a critical consideration. Assess the impact of transformers and deep learning models on data privacy, ensuring robust measures to safeguard sensitive information.

## Impact on Organizational Neural Network

GenAI, much like a neural network, establishes connections across the organization, fostering innovation, creativity, and adaptive responses. The introduction of transformers amplifies the organization's processing capabilities, enabling rapid synthesis of information, and fostering a dynamic, learning-centric culture.

In the quest for GenAI adoption, aligning the vision, realizing value, fostering adoption, and managing risks form the synaptic connections that propel the organizational neural network into the realm of transformative AI. It's a journey marked by continuous evolution, where the right skills and strategic pillars converge to unlock the full potential of Generative Artificial Intelligence.

## Conclusion

The journey into Generative AI indicates transformative possibilities for businesses. Navigating through historical lessons to contemporary Generative AI landscapes, organizations stand at a pivotal juncture for innovation. Real-world applications showcase its impact, reshaping industries from pharmaceuticals to entertainment. Overcoming challenges, fostering workforce skills, and embracing the pillars of Vision, Value, Adoption, and Risk Management are essential. This transformative technology promises unparalleled innovation and competitive advantage for organizations committed to technological leadership.

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**CareMates** Brings Digital Care Accessibility to Senior Communities in the US.

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NTT DATA to Unleash the Potential of Microsoft Azure Open AI Services at **Almirall**

NTT DATA leverages Microsoft Azure OpenAI to transform Almirall's medical research, enhancing efficiency and accuracy in domain-specific data and document processing.

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NTT DATA Partners with **L'Oréal** to Enhance Its Digital E-Commerce Platforms

NTT DATA collaborates with L'Oreal, integrating advanced AI in eva<sup>7</sup> for personalized e-commerce experiences, revolutionizing beauty-tech customer engagement.

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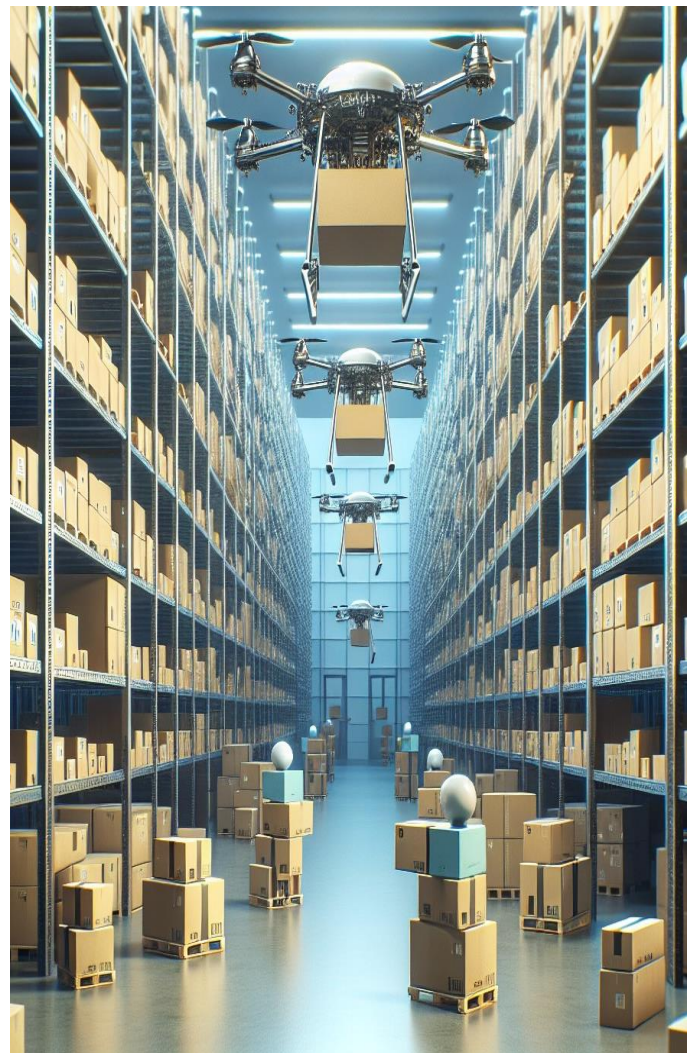
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