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Generative AI use cases for enterprises in 2024

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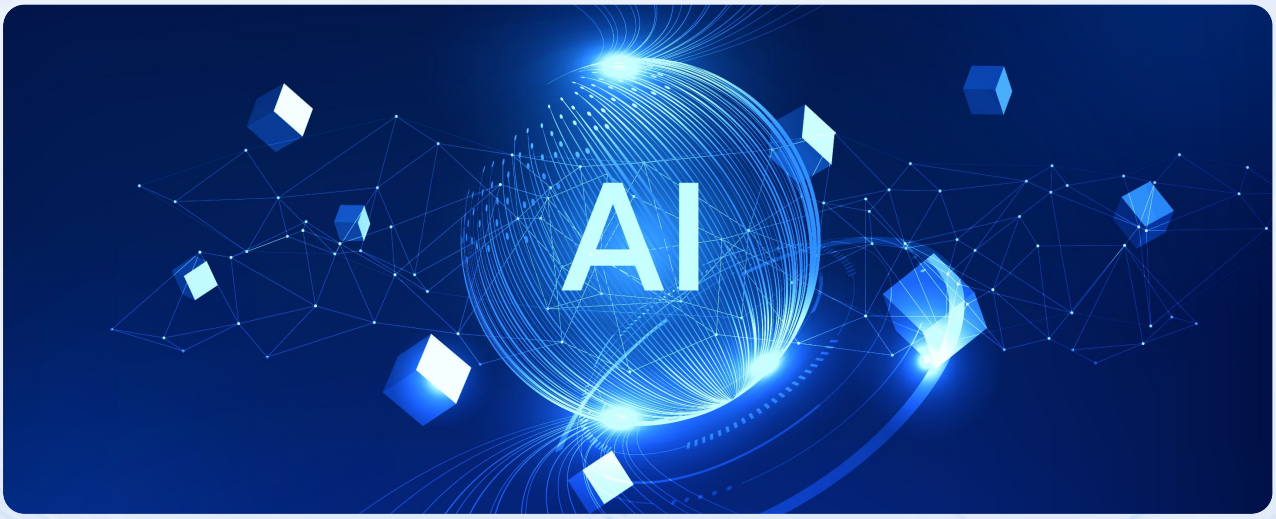
1 Introduction

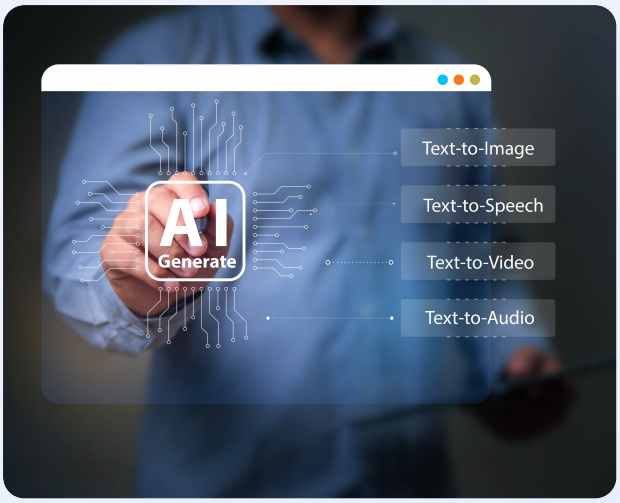
Imagine the first time you were amazed at a smartphone's capabilities—its sleek design, intuitive touch interface, and the revolutionary change it brought to our lives. Generative AI promises a similar leap forward, pushing the boundaries of innovation and productivity in unprecedented ways. It has revolutionized various industries by enabling machines to learn and create content autonomously. Unlike traditional AI, which just processes data, Generative AI learns and utilizes what it learns to create new content such as text, images, video, music, and even code. Thanks to its exceptional capabilities, generative AI is becoming a popular choice for businesses looking to accelerate innovation, optimize performance, and enhance customer experience. Ekotek's ebook will explore the diverse generative AI use cases for enterprises in 2024, highlighting its potential to drive innovation, efficiency, and competitiveness across different sectors.



2 Overview of generative AI

2.1. What is generative AI

Generative AI refers to a subset of artificial intelligence that can produce new content, such as text, images, music, and even code, by learning from existing data. Unlike traditional AI, which primarily focuses on analyzing and processing data, generative AI creates new data that resembles the original dataset. This capability is powered by deep learning models, including Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), and Transformer-based models like GPT (Generative Pre-trained Transformer).

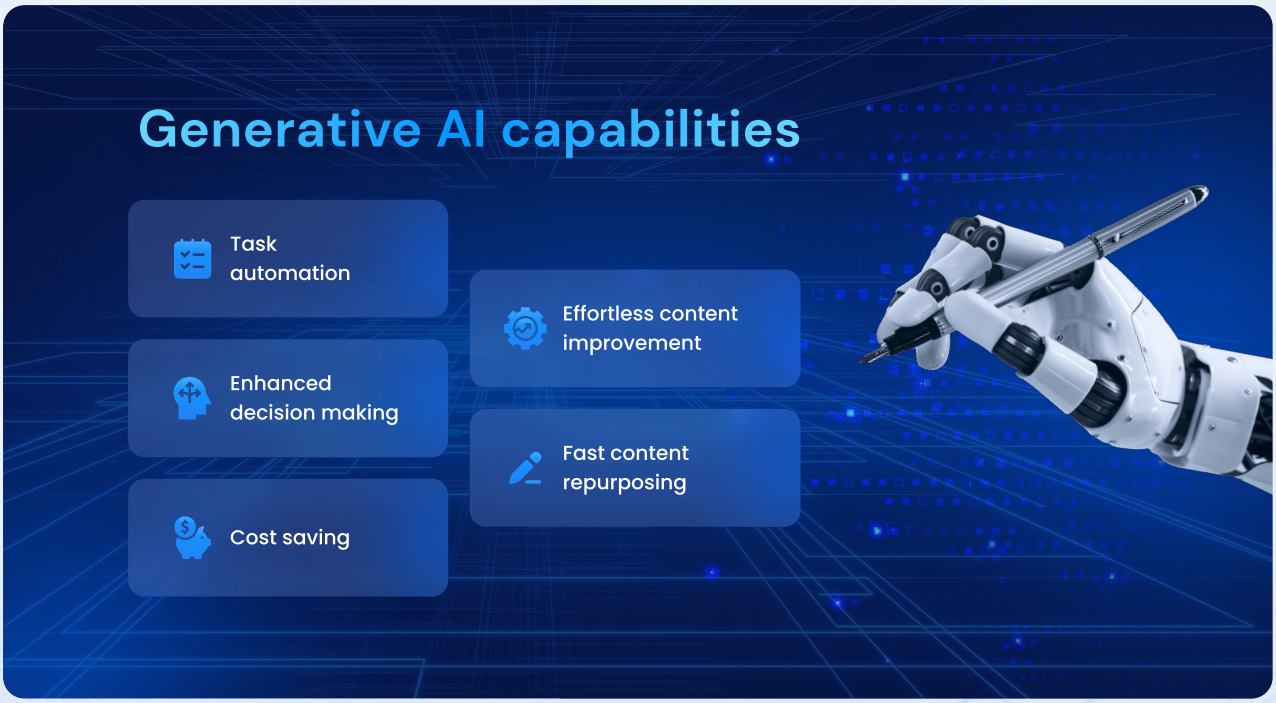


2.2. Generative AI capabilities

Generative AI is characterized by its ability to **create new content** rather than just analyzing existing data. Leveraging advanced machine learning models, generative AI can produce realistic images, videos, music, and even complex textual narratives. Tools like GPT-4 and Midjourney can generate human-like text and highly realistic images, respectively, opening new avenues in creative industries.

Generative AI has substantial applications in **data augmentation**. Creating synthetic data that mimics real-world data can enhance the training of machine learning models, especially in situations where data is scarce or expensive to obtain. This is particularly beneficial in healthcare for generating realistic medical images to train diagnostic algorithms or in autonomous driving for simulating various driving conditions to improve vehicle navigation systems.

For **personalized content creation**, generative AI can tailor content to individual preferences, improving customer engagement and experience. By analyzing user data, generative AI can craft personalized emails, advertisements, or product recommendations, leading to higher conversion rates and customer satisfaction.



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3 Generative AI Benefits

Generative AI offers numerous benefits that make it an attractive tool for enterprises.

- **Innovation & creativity**: It can drive innovation and creativity, enabling organizations to explore new possibilities. The increased efficiency of businesses in innovation processes through generative AI will enhance their success in disruptive innovation. According to Gartner, by 2030, 30% of businesses will operate using new innovation processes that incorporate generative AI.
- **Efficiency & productivity**: By automating content creation tasks such as writing, image generation, and video production, businesses can significantly reduce the time and resources required, allowing employees to focus on more strategic and high-level work. This can translate to substantial cost savings, as organizations can optimize their operational expenses and allocate resources more effectively.
- **Customer experience**: Through the generation of tailored content, recommendations, and interactions, businesses can deliver a more relevant and compelling experience to their target audience. This not only enhances customer satisfaction but also fosters stronger brand loyalty and loyalty.
- **Decision-making process**: Generative AI also has the potential to enhance decision-making processes within organizations. By simulating various scenarios and generating insights, generative AI can support data-driven decision-making, enabling businesses to make more informed choices, mitigate risks, and identify new growth opportunities.

4 Generative AI use cases across business functions

4.1. Marketing and Sales

- **Content creation:** Generative AI has transformed the marketing and sales landscape by enabling the creation of **highly personalized and engaging content**. AI-driven tools like GPT-4 can generate customized email campaigns, social media posts, and product descriptions that resonate with specific customer segments.

- **Advertising materials production:** By analyzing customer data, these AI systems can **predict consumer behavior** and tailor messages to individual preferences, significantly improving engagement and conversion rates. Moreover, it can produce compelling visuals and videos for advertisements, helping brands stand out in a crowded market.

- **Time and cost saving:** These capabilities allow marketers to execute large-scale, **highly targeted campaigns** with precision and efficiency, **reducing the time** and resources needed for content creation while enhancing the overall customer experience.

One prime example of a brand using generative AI in advertising is Heinz, which created the Heinz A.I. Ketchup by using OpenAI's Dall-E, a short video ad to demonstrate the prominence of its signature bottle design. The campaign had people draw their impressions of ketchup, consolidating the top-of-mind brand position in their target audience.

4.2. Product & service development (R&D)

In the realm of product and service development, generative AI plays a pivotal role in accelerating research and innovation.

- **Ideation and concept generation**: Generate innovative concepts and ideas by analyzing market trends and user needs. Those ideas can then be further refined and evaluated by human product teams.
- **Rapid prototyping**: Create initial prototypes, models, and designs for new products or services, allowing teams to test and iterate on concepts more efficiently.
- **Material and structural design**: Optimize materials, structures, and configurations based on requirements, manufacturing constraints, and aesthetic considerations, leading to more efficient and innovative product designs.
- **Process automation**: Automate various tasks within the product development lifecycle, such as technical documentation, 3D modelling, and component specifications generation, freeing up R&D teams to focus on higher-level strategic and creative aspects.
- **Predictive simulation and testing**: Generative AI models can be trained on historical data to simulate and predict the performance, durability, and user experience of new products or services, enabling more effective testing and validation before physical prototyping or manufacturing.

4.3. Customer service

- **Automated support:** Generative AI enhances **customer service** by providing intelligent, **automated suppor**t that can handle a wide range of inquiries efficiently. AI-powered chatbots and virtual assistants, equipped with natural language processing capabilities, can understand and **respond to customer queries in real time**, offering solutions and guidance without human intervention. This reduces wait times and improves customer satisfaction.

- **Analyze customer feelings:** Furthermore, generative AI can **analyze customer interactions** to identify common issues and suggest improvements to service processes. By generating detailed reports and actionable insights, AI helps companies to continuously refine their customer service strategies. This not only ensures a high level of customer satisfaction but also frees up human agents to focus on more complex and value-added tasks.

Ekotek - a top AI development company in Vietnam, developed an AI chatbot based on OpenAI's ChatGPT for the leading no-code platform NFTify. Our chatbot is designed to crawl data from its sitemaps and learn from internal documents, ensuring accurate and relevant responses to customer inquiries. The chatbot understands context and delivers human-like answers, detecting and responding to user queries in their preferred languages, improving global communication and creating a seamless user experience.

4.4. Software engineering

- **Code generation:** In software engineering, generative AI is revolutionizing how code is written, tested, and maintained. AI models can **generate code snippets**, suggest optimizations, and even create entire software components based on high-level requirements. This accelerates the development process and ensures higher code quality by reducing human error.

- **QA and testing automation:** Additionally, AI can **automate testing** by generating test cases and scripts, identifying bugs, and suggesting fixes. This enhances the efficiency of the software development lifecycle and ensures robust, error-free software releases.
- **Upgrade and modify:** Generative AI can also assist in **maintaining legacy systems** by understanding and documenting existing code, making it easier for developers to implement updates and modifications. With these AI capabilities, software engineering teams can deliver innovative solutions faster and more reliably.

5 Industry-Specific Uses of Generative AI

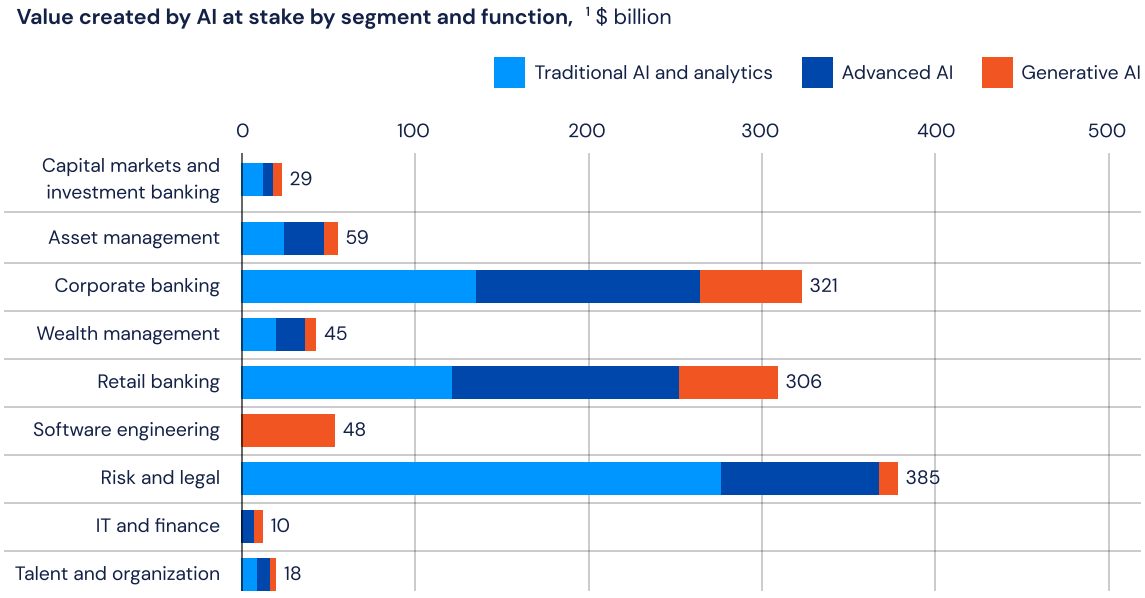
5.1. Banking and finance

Generative AI has found numerous applications in the banking and finance industry, where its capabilities can be leveraged to drive innovation, enhance efficiency, and mitigate risks.

- **Fraud detection and prevention**: Identify fraudulent activities by analysing vast amounts of transaction data. Through real-time monitoring, financial institutions can quickly respond to potential threats, preventing costly losses and protecting their customers.
- **Business simulation**: Simulate various market conditions, economic scenarios, and potential outcomes, enabling financial institutions to assess and manage risks more effectively. By generating insights and projections based on complex data sets, gen AI supports informed decision-making, helping organizations navigate the dynamic and unpredictable financial landscape.
- **Virtual assistant**: Provide personalized and efficient support to customers, addressing their inquiries and concerns promptly. These generative AI systems can be trained to understand natural language, access relevant customer information, and generate tailored responses, thereby enhancing the overall customer experience and improving customer satisfaction.

Morgan Stanley, a leading investment bank, unveiled an internal Gen AI model that was built upon OpenAI's GPT-4, to empower their financial advisors and support staff. The AI helps advisors quickly find answers from the firm's internal knowledge base and streamlines meeting notes and follow-up emails. This aims to enhance the productivity and client experience for Morgan Stanley's wealth management professionals.

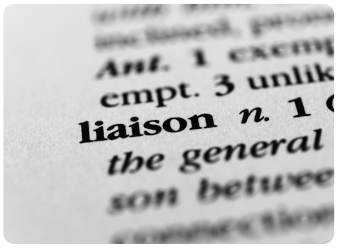
Generative AI has the potential to deliver significant new values to banks - between $200 billion and $340 billion.



5.2. Healthcare

Generative AI — GANs | VAEs | LLMs | FBMs | EBMs

Data Generation



Text Generation

Image Generation

Other Data Generation

Synthetic Data

Drug Discovery

Medical Diagnosis

Clinical Documetation

Patient Education

Personalised Medicine

Healthcare Administration

Medical Education and Training

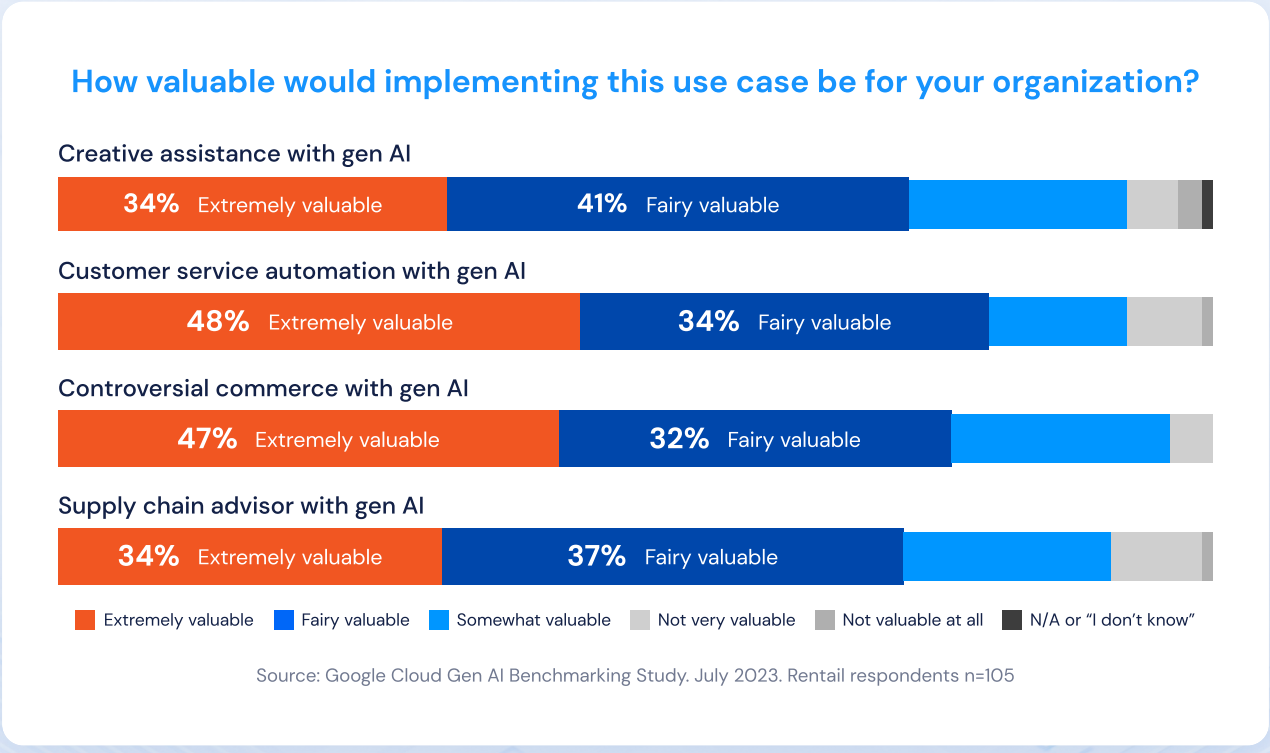
Generative AI is being explored for tasks such as generating patient-friendly educational materials, automating clinical note-taking, and supporting medical research through the generation of synthetic data for testing and validation. 75% of leading healthcare companies are experimenting with or planning to scale Generative AI across the enterprise (Deloitte). As the healthcare industry continues to embrace the transformative potential of generative AI, we can expect to see even more innovative and impactful applications in the years to come.

- **Medical imaging**: Generative AI models can be trained on vast datasets of medical images, such as X-rays, MRI scans, and CT scans, to generate new, synthetic images that are virtually indistinguishable from real ones. These AI-generated images can be used to train diagnostic models, enhancing their accuracy and efficiency in detecting various diseases and abnormalities.
- **Personalized treatment**: By analyzing a patient's medical history, genetic data, and other relevant information, these AI models can generate customized treatment recommendations. This ensures that patients receive the most appropriate and effective care, tailored to their unique needs and circumstances.

Ekotek released a skin evaluation application that uses GCP (Cloud Load & Auto Scaling System) and AI for medical purposes. Our application uses image processing to analyze 8 conditions of the skin: winkle, texture, dirt on the skin, skin transparency, skin moisture, pores, skin type, and skin age. From there, it exports a detailed report with a visualized graph showing their current skin condition and recommends users the best cosmetic products.

5.3. Retail and e-commerce

The integration of generative AI into various aspects of retail and e-commerce operations is expected to become more widespread, driving innovation, improving customer experiences, and enhancing overall business performance.



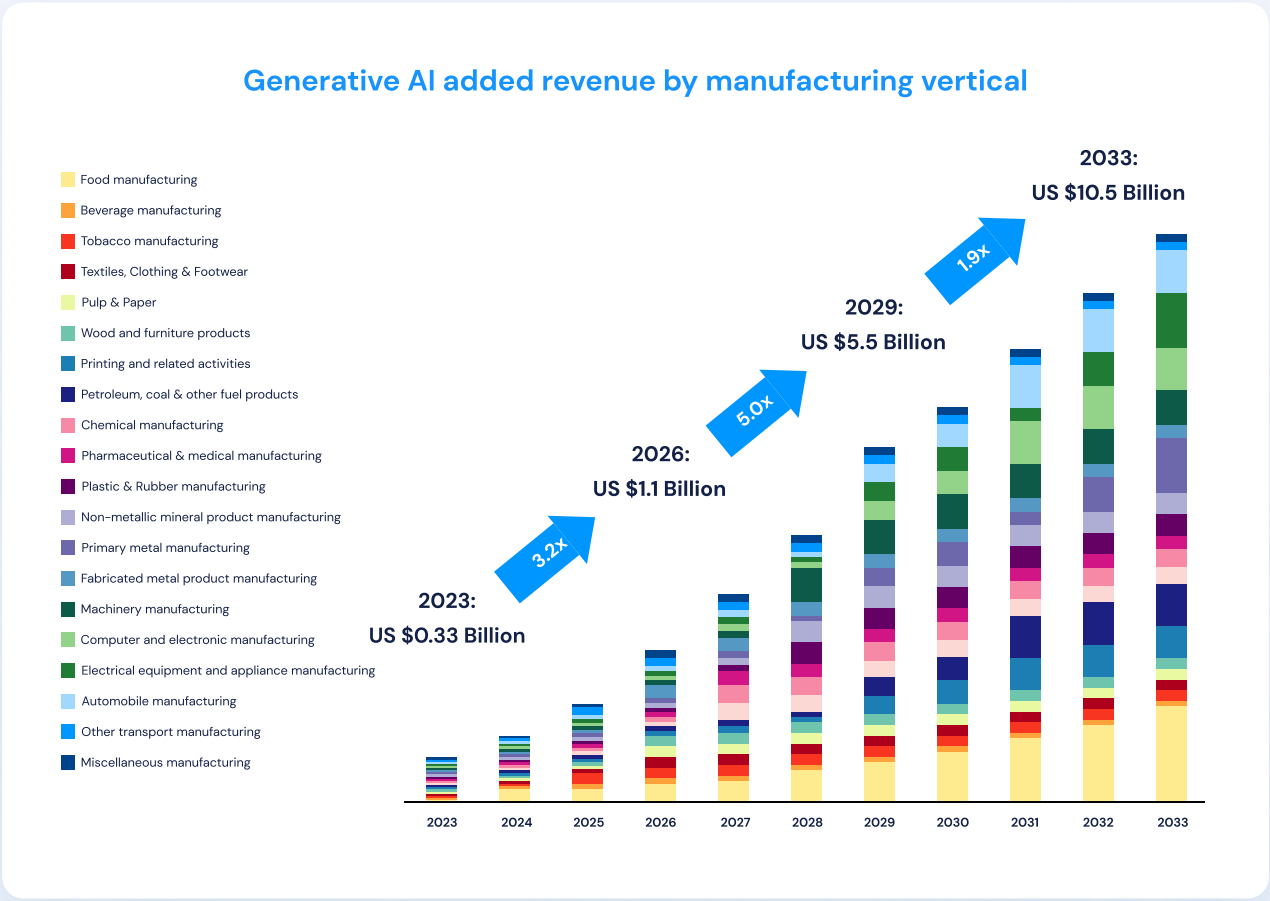
Source: Google Cloud Gen AI Benchmarking Study. July 2023. Rentail respondents n=105

- **Product recommendations**: By analyzing vast amounts of customer data, including browsing history, purchase patterns, and demographic information, it can identify personalized product recommendations for each customer. This personalization not only improves the customer experience by presenting them with relevant and tailored offerings, but it also leads to increased sales and customer loyalty.
- **Inventory management**: These AI models can leverage historical sales data, market trends, and external factors to predict future demand for products. This enables retailers to accurately forecast inventory requirements and make data-driven decisions to maintain optimal stock levels. By minimizing stockouts and overstock situations, generative AI helps retailers reduce costs, improve customer satisfaction, and enhance overall operational efficiency.
- **Virtual try-ons**: With AI-generated images and simulations, retailers can enable customers to virtually try on products, such as clothing, accessories, or even furniture, before making a purchase. This enhanced shopping experience allows customers to visualize how a product would look on them or in their homes, reducing the likelihood of returns and increasing customer confidence in their purchases.

Ekotek's innovative solution, Etheia, integrates AI and computer vision to enhance the shopping experience by focusing on objects and human activities. Etheia personalizes the shopping experience through facial recognition, identifying clients as an advanced alternative to traditional loyalty cards. Utilizing CCTV footage and computer vision technology, our solution creates digital versions of merchandising efforts, providing accurate reports on customer interactions with products. This includes tracking how often items are picked up and put back, similar to online abandoned carts, and analyzing competitors' shelf space usage.

5.4. Manufacturing

Maintenance issue prediction: By analyzing data from sensors embedded in production equipment, generative AI models can identify patterns and anomalies that indicate potential maintenance issues. Manufacturers can anticipate and address problems before they lead to costly breakdowns or unplanned downtime. According to Deloitte, Gen AI increases productivity by 25%, reduces breakdowns by 70%, and lowers maintenance costs by 25%.



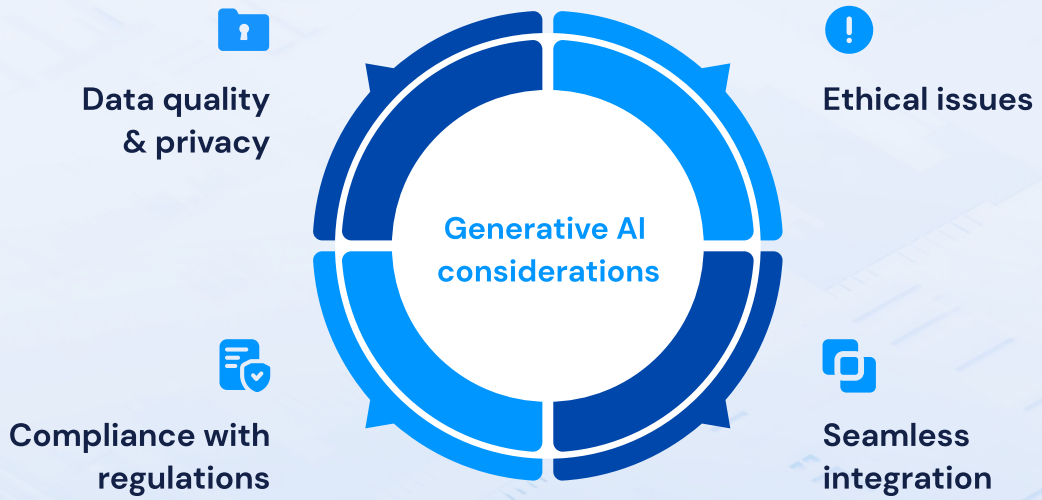
Product design process: With AI-powered design tools, manufacturers can generate innovative and optimized product designs that improve functionality, aesthetics, and performance. Generative AI algorithms can explore a vast design space, considering multiple variables and constraints, to create novel solutions that may not have been easily identified through traditional design methods. This can lead to the development of products that are more efficient, durable, and visually appealing, ultimately enhancing the competitiveness of manufacturers in the market.

Quality control: Generative AI models can be trained on large datasets of product samples, both defective and non-defective, to learn the characteristics of high-quality products. These models can then be deployed to inspect and detect defects or anomalies in real-time during the production process. This helps manufacturers maintain strict quality standards and reduces waste and rework, leading to cost savings and improved product quality.

6 Immediate steps for leaders to adopt generative AI in business

When deploying generative AI technology in businesses, organizations need to carefully consider several important aspects.

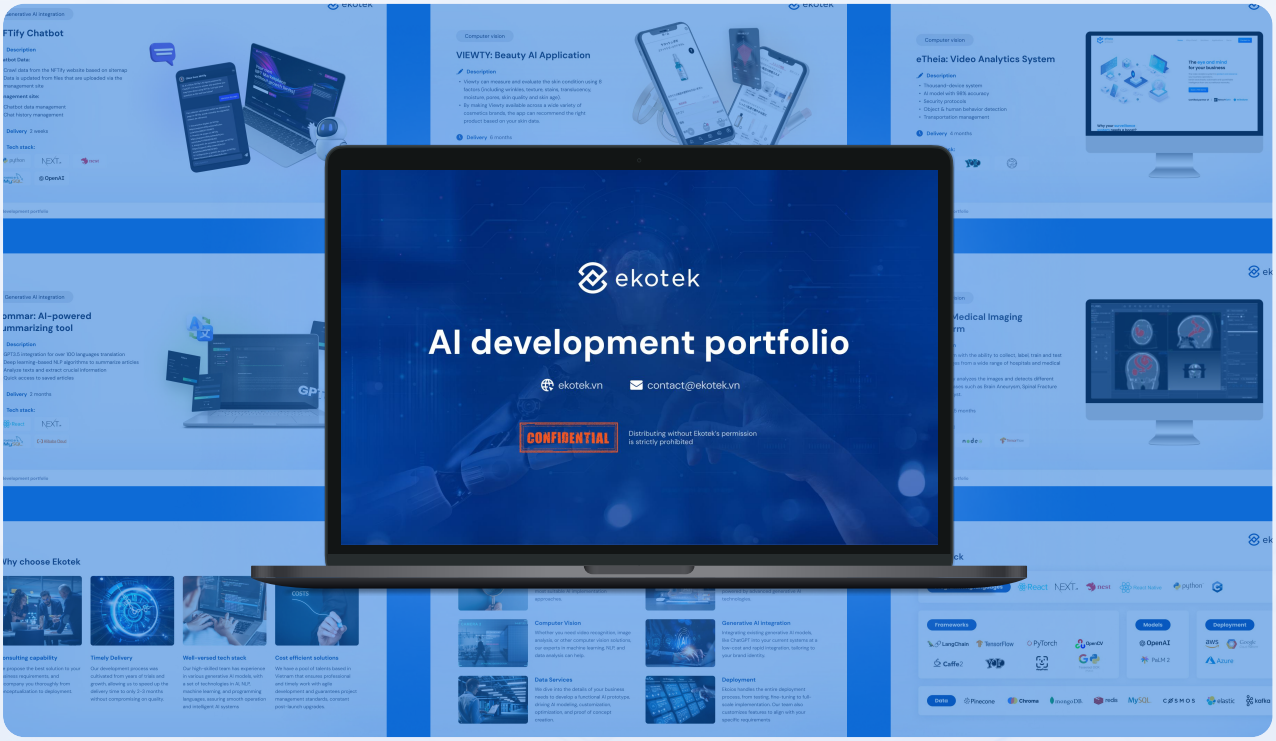
- **Quality and privacy of data**: Businesses must ensure that the training data for their generative AI models is of high quality, diverse, and representative to produce accurate and reliable outputs. Simultaneously, the protection of sensitive data and the maintenance of privacy are also crucial.
- **Ethical issues**: They need to be addressed appropriately, such as preventing biases in the content generated by AI and preventing the misuse of generative AI technology for malicious purposes like the spread of misinformation. The development of clear ethical guidelines and principles is necessary.
- **The integration of generative AI**: Integrating into existing business systems and processes is vital to maximize the benefits and minimize disruptions. This requires close collaboration between information technology, engineering, and business teams.
- **Compliance with laws and regulations**: Ensuring compliance with current regulations and standards is also an important aspect to be mindful of to avoid potential legal issues. Organizations need to closely monitor legal developments and update their policies and processes accordingly.



7 Ekotek AI development service

Ekotek is one of the leading AI development service providers in Vietnam. With years of experience, our team of over 180 tech specialists brings extensive knowledge and expertise to the table. We excel in a robust tech stack and frameworks including Langchain, Pinecone, OpenAI, TensorFlow, PyTorch, OpenCV, and TPOT, enabling us to build AI products with advanced functionalities, seamless integrations, and natural language understanding. Following an agile development approach, Ekotek ensures efficient project management and speedy delivery of high-quality AI solutions, while also offering ongoing support, maintenance, and upgrades as needed.

👉 Have a look at our portfolio to see how our AI solutions help clients harness digital transformation.



8 The future is at hand

Generative AI represents a transformative force that is reshaping industries and driving innovation. Its ability to create new content and automate complex tasks offers significant benefits to enterprises, from improving efficiency and personalization to enhancing decision-making and creativity. As we move forward, embracing generative AI and leveraging its potential will be key to staying competitive and thriving in the ever-evolving digital landscape.

If you want to explore other generative AI use cases, feel free to contact Ekotek. We are here to help you navigate the future of technology and achieve your business goals.

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