

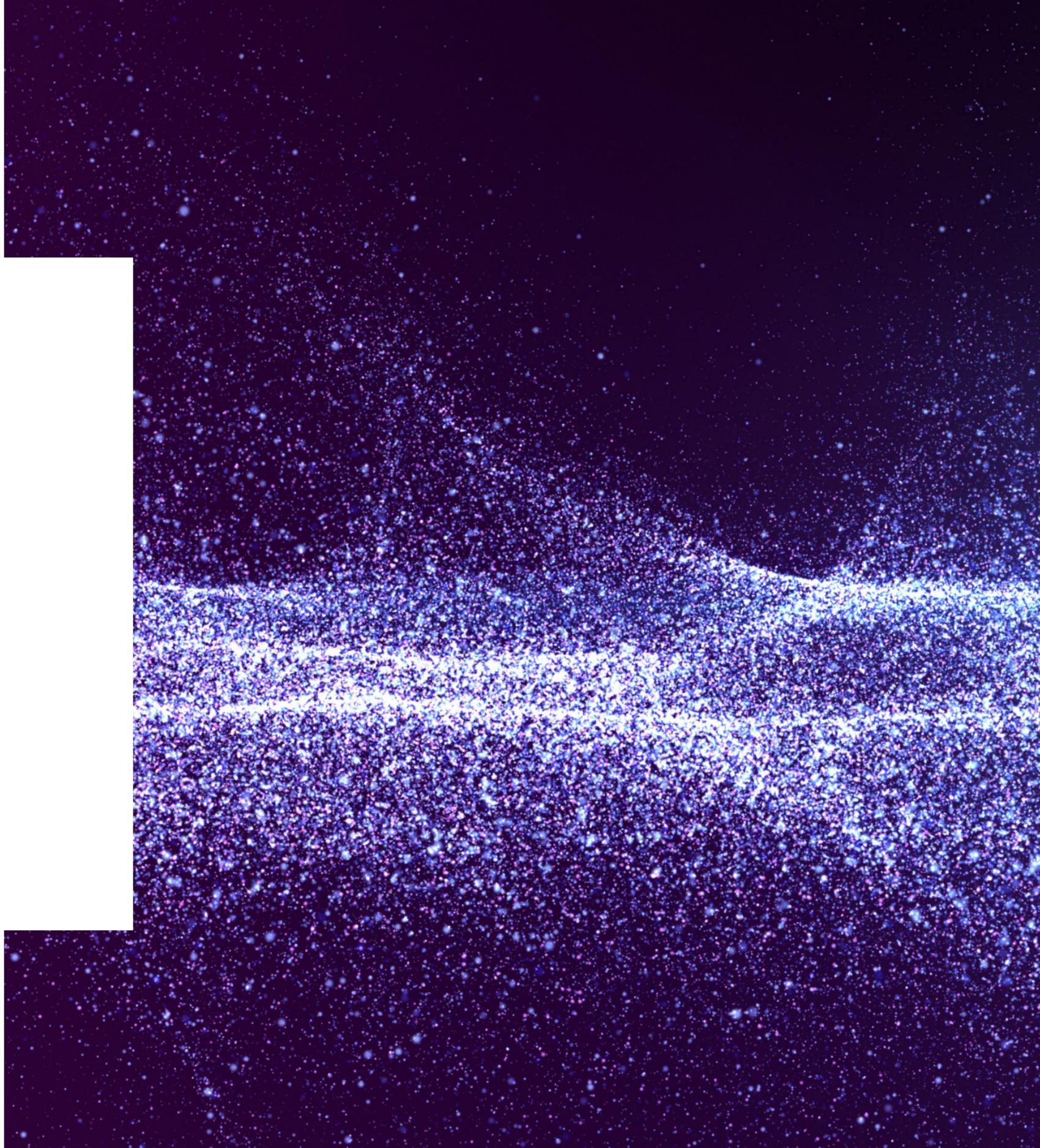


EBOOK

# Driving Business Value With Generative AI

Generative AI (GenAI) has taken the world by storm. The release of ChatGPT made that clear, becoming the fastest-growing consumer application in history, with 100 million users just two months after launching. Rooted in machine learning and artificial intelligence, this remarkable technology is reshaping the business landscape and transforming how businesses operate in every industry.

Gartner says this seismic shift's impact on technology compares to that of the steam engine, electricity, and internet, adding, "the impact of generative AI will grow as people and enterprises discover more innovative applications for the technology in daily work and life." Businesses increasingly turn to generative AI to streamline operations, automate processes, and create innovative products and experiences.



Manufacturing is one example. The industry is already seeing revolutionary benefits from generative AI. Because AI algorithms can analyze vast amounts of sensor data and compare performance over time, generative AI can predict equipment failures before they occur. That minimizes downtime, reduces maintenance costs, and increases productivity.

U.S. Steel is one real-world example. The company's generative AI implementation enables maintenance team members to ask its generative AI implementation how to fix equipment using an easy-to-understand summary. U.S. Steel predicts that the new tool will reduce the time needed to complete a work order by an estimated 20%.

Regardless of your industry, generative AI offers a powerful tool to help you drive business success. But before you can leverage this tool, your data must be AI-ready. Achieving generative AI readiness demands a data transformation process that can be costly in terms of money, time, and the need for specialized expertise and resources, such as a data lake.

Businesses that take traditional approaches to implementing a data lake to support their generative AI initiatives may find it takes months — even years — to prepare their data so it can be used for advanced analytics and improved decision-making.

What's needed is a solution that lets you quickly, securely, and efficiently transform your data so that it's production-ready and can help you quickly realize results from generative AI.

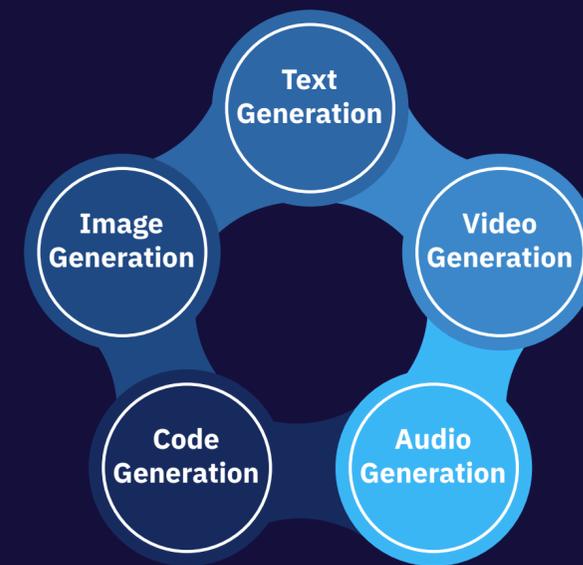
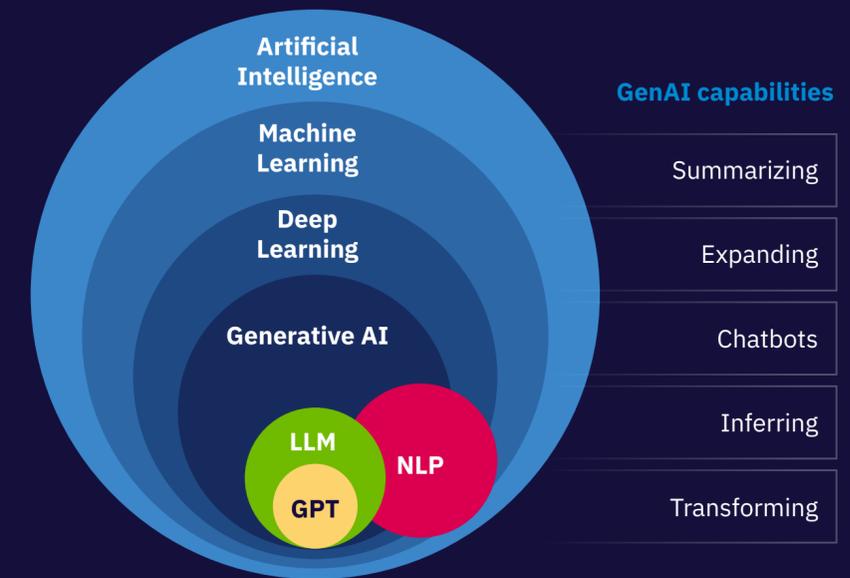
In this eBook, we'll describe the benefits of generative AI, how it is being applied in specific industries, and the Mactores process for streamlining its implementation.

<sup>1</sup> Krystal Hu. "[ChatGPT Sets Record for Fastest-Growing User Base—Analyst Note.](#)" Reuters, 2023.

<sup>2</sup> Gartner. "[Gartner Experts Answer the Top Generative AI Questions for Your Enterprise.](#)" 2024.

<sup>3</sup> Tomorrow's World Today. "[How U.S. Steel Uses Generative AI for Manufacturing.](#)" 2023.

# Understanding Generative AI



# Generative AI

## In the Real World

Generative AI brings endless possibilities across your business landscape. Consider the following list of benefits as a starting point as you evaluate how and where to implement generative AI in your business.



### **Deeper insights, better decisions**

Streamlined data analysis empowers you with deep insights into critical business areas to help you make more informed decisions.



### **Reduced processing time, improved data quality**

Automated data processing and analysis reduces staff time and ensures that high-quality, trusted information is always available.



### **Competitive advantage built on innovation**

Faster, better decisions guided by generative AI deliver competitive advantages that ensure your business can evolve and adapt at the speed of today's markets.



### **Faster innovation cycles across industries**

Generative AI-driven automation offers faster time-to-insights and creates opportunities for new applications that deliver unmatched business value and competitive advantages.



# Generative AI Business Applications: **A World of Possibilities**



# Use Case: Generative AI in Manufacturing

Because manufacturing is inherently complex, generative AI can profoundly impact every aspect of operations.



## Optimize product design

Generate and evaluate unlimited product design iterations, accelerating prototyping and enhancing product development efficiency.



## Expand materials research and selection

Analyze vast databases to identify innovative materials that meet specific performance criteria, such as strength and weight.



## Tighten quality control and defect detection

Combine AI with computer vision to inspect and identify defects in manufactured components, reducing the need for manual quality control and enhancing overall product quality.



## Optimize supply chains

Leverage historical supply-chain data to predict demand fluctuations, optimize inventories, and streamline logistics, reducing costs and production delays.



## Enhance energy efficiency

Optimize energy consumption by modeling and identifying improvements in manufacturing processes, reducing operational costs, and supporting sustainability goals.



## Employ process automation and robotic controls

Optimize robotics control algorithms to improve precision and efficiency in welding, painting, assembly, and other tasks.



## Implement predictive maintenance programs

Identify when manufacturing equipment will likely fail based on sensor data and historical performance, enabling proactive maintenance and reducing downtime and costs.



## Offer customized manufacturing

Realize the potential of Industry 4.0 by creating adaptable production lines for personalized manufacturing, enabling efficient custom product production at scale.



## Forecast market demand

Use market data and trends analytics to predict shifts in consumer demands and support production plans that can be adjusted to align with market dynamics.



## Meet sustainability and green manufacturing goals

Employ generative AI to suggest eco-friendly practices, reduce waste, and minimize environmental impacts.

# Use Case: Generative AI in Financial Services

The financial services industry's pace of change is breathtaking. Generative AI can help financial services firms accelerate innovation and stay ahead of the competition.



## Optimize algorithmic trading

Employ generative AI to develop and optimize trading algorithms based on historical market data and execute high-frequency trades with enhanced precision.



## Increase credit risk assessment accuracy

Analyze vast datasets to improve credit risk models, more accurately assess borrower creditworthiness, and reduce risks from non-performing loans.



## Strengthen fraud detection

Identify patterns that indicate fraudulent activities using generative AI to monitor transaction data.



## Improve customer support

Engage with and answer customer inquiries and questions — and even provide basic financial advice — by leveraging generative AI chatbots.



## Tighten portfolio management

Use generative AI to optimize portfolios and identify potential assets based on market trends and risk profiles.



## Improve financial forecasting

Predict market trends and analyze financial indicators to make more informed investment decisions and improve strategic resource allocation.



## Personalize financial advice

Generative AI can create personalized investment recommendations or financial plans by analyzing customers' financial profiles.



## Simplify mortgage applications

Reduce the time and effort required for mortgage lending by using generative AI-powered chatbots to guide customers through the application, document collection, and submission process.



## Analyze market sentiment

Use generative AI to analyze news and social media to gauge market sentiment and keep traders abreast of changing markets.



## Enhance security with voice recognition

Add next-level security using generative AI for voice recognition to authenticate customers quickly and effectively.



## Streamline regulatory compliance reporting

Reduce the manual effort required for regulatory compliance reporting by leveraging generative AI to generate reports and summaries of financial transactions.

# Critical Considerations for **Generative AI Implementations**

While generative AI brings obvious benefits, realizing those benefits requires a concerted effort.

First, you must define a clear set of business objectives and how you'll use generative AI to meet them. That includes identifying the specific problems you want to address: process automation, cost reduction, increased efficiency, innovation, enhanced customer experiences, or any other areas that need improvement.

High-quality and relevant data is crucial for training and deploying generative AI models, so you'll need to assess the availability and quality of the data you plan to use for any specific use case. You'll also need to ensure each use case complies with applicable industry regulations and data privacy requirements, such as PCI-DSS, PII, CCPA, GDPR, and HIPAA.

A feasibility evaluation, where you identify any obstacles, is next. Is your technical infrastructure ready to meet the demands of generative AI? That includes factors such as data storage, processing power, and model deployment to ensure your systems can support each use case. For example, do you need a modern data lake to support your generative AI implementation? And will the projected return on investment for the generative AI use case outweigh the costs?

You'll also want to assess your internal skills and knowledge to determine whether you have the required expertise to develop, deploy, and maintain your generative AI models. If not, you could train or hire new personnel. But looking to outside experts like Mactores for help typically makes good economic sense.

You must address scalability across departments or processes to ensure you deliver value, align with workflows, and drive end-user needs to ensure acceptance and integration. Ethical considerations are also vital as you endeavor to eliminate bias and ensure transparency.

Naturally, security must be a top priority, including knowing how each generative AI use case will impact data security and implementing appropriate safeguards to protect sensitive information. Plan for ongoing model maintenance and updates to ensure you stay abreast of evolving risks.

Carefully consider these factors as you can select initial generative AI use cases well-suited to your objectives, capabilities, and ethical standards. That will help ensure you get the best results while minimizing risks and challenges.



## Mactores: **The Proven Framework for Generative AI Adoption**

Mactores has the expertise, experience, and proven processes to ensure a seamless generative AI implementation, alignment with business objectives, and a successful outcome.

As your collaborator and partner in implementing generative AI, we are laser-focused on ensuring your success.

To learn more about the Mactores Generative AI Framework and how we can help you accelerate innovation and increase efficiency in your organization, please read our [Generative AI Solution Brief](#).

## About **Mactores**

Mactores is a trusted leader among businesses in providing modern data platform solutions. Since 2008, we have been enabling businesses to accelerate their value through automation by providing end-to-end data solutions that are automated, agile, and secure. We collaborate with customers to strategize, navigate, and accelerate an ideal path forward with a digital transformation via assessments, migration, or modernization.