Examining the Impact of Artificial Intelligence on Business Sectors

KEY TAKEAWAYS

- We view Generative AI as a continuation of a multi-decade trend of companies using learning networks and algorithms as tools to help their businesses be better. Those that succeed should see long-term margin expansion driven by AI-enhanced products and services, increased productivity, or both.
- We see proprietary data as the killer app of the AI era. While the AI models themselves are likely to become commodities, the data offering context for the models will determine which companies gain a competitive edge.
- While AI presents numerous opportunities for business growth and innovation, it also brings challenges related to data privacy, ethical use and potential workforce displacement. We believe companies with strong governance and responsible AI practices are better positioned for sustainable growth.

In October, two scientists, Geoffrey Hinton (also known as the "AI Godfather") and John Hopfield received the 2024 Nobel Prize in Physics for their work in machine learning. Their contributions laid the foundation for the more sophisticated forms of artificial intelligence (AI) that are being put to work by companies and individuals alike.

Thanks in part to their work, AI is a megatrend with vast potential to create and capture value—not just for technology companies, but also across a range of business sectors and industries. Over the long term, AI tools and methods could become a standard cost of doing business, similar to the way email has become a more cost efficient and time-saving form of communication than letters. AI has the potential to be transformative in some areas and incremental in others.

Generative AI: Evolution or Revolution?

AI consists of different systems containing learning technologies and algorithms that compute outcomes. The concept of intelligent machines dates back to ancient myths in Greece and China, but academics established the field in the mid-1950s. As the capabilities have evolved, the importance of data and experiences to inform the learning has become paramount. In theory, the more data and experiences that go into an AI system, the more informed and precise its outcomes can be.

While the groundwork has been laid over more than 50 years, the next digital revolution will come from the companies who are able to harness the capability to improve their business. Many have already been using AI to make their products and services better—like Netflix, which uses algorithms that serve up relevant product recommendations. Others have incorporated vision and learning into their products to enable them to operate autonomously, such as self-driving cars or the Roomba vacuum.

The more recent development of Generative AI, in which sophisticated learning networks can create text, images and music, takes the capability even further. However, deploying these more sophisticated AI models requires more computing power to run the algorithms and plenty of storage for the data that runs through its network.

Yet, for companies to adopt and benefit from this technology, they need to make investments in infrastructure and hire and retain talent that understands the technology and how to deploy it. This means the large companies that have the resources and have been making regular technology infrastructure investments are well-positioned to use AI technology to gain a competitive edge.

None of this could have been done before cloud infrastructure became mainstream. Before cloud computing, a company's technology resources and capabilities were bound by the hardware and software capacity they had in place. But companies that have completed digital transformations to migrate technology infrastructure to the cloud have opened up more flexibility. The cloud infrastructure offers data storage and servers that have multiple processors and can handle large amounts of memory for intensive computing workloads in a fairly cost-efficient way.

As more companies are building more sophisticated AI networks and finding ways to apply AI to their businesses, these systems demand more sophisticated semiconductor chips for processing, more computing power to run the algorithms and more storage for the data. Around the world, data centers are being developed and new sources of power to fuel the data centers are being procured to further set the stage for the next wave of AI deployments. And of course, the demand placed on semiconductor companies for more advanced chips has sent their companies' stocks to record heights.

Will Companies Be Able to Monetize AI?

Meanwhile, the debate about whether companies will be able to monetize AI relates to how and when they make capital allocations to invest in AI technology to improve their businesses. This is not an overnight proposition. Some companies have already been on the path to adopting this technology for years. Others are exploring it. And some are still in "wait and see" mode.

We categorize companies moving down the AI path in terms of "enablers," "providers" and "adopters." The earliest beneficiaries of the latest AI boom have been *enablers*. These companies are using their free cash flow to facilitate AI infrastructure offerings—from the chip makers advancing the computing power of personal computers to the companies operating data centers and other services that help drive the learning models forward, such as Microsoft (MSFT), Amazon (AMZN) and Alphabet (GOOGL). Nvidia (NVDA) is the enabler poster child, because the company was the first to create Graphics Processing Units (GPUs), which are semiconductors that enable real-time 3D graphics capable of making Generative AI mainstream.

Providers encompass giant software providers like Oracle (ORCL), Salesforce (CRM) and Intuit (INTU) that offer specialized software with AI features powered by the proprietary data of their customers.

The third category, AI *adopters*, covers companies that are integrating AI into their business, leveraging the proprietary data they've collected over time.

Of these three categories, the enablers are currently monetizing AI, but future opportunities will be much larger for providers and even greater for adopters. From an investment standpoint, we are watching for signs that companies are expanding margins—either through topline revenue growth, operational cost savings or both.

We also see proprietary data as the killer app of the AI era because it can help companies drive revenue growth by enhancing their products and services and save costs by increasing productivity and efficiency.

Sector Impacts from AI

We believe active management is essential to investing in AI. As investors, we meet with executives and closely monitor the ways that companies are deploying AI and managing the data that make it useful. Trust plays a key role in managing proprietary data in ways that honor customer privacy and promote secure and fair outcomes. That's why we also study a company's governance and transparency around AI.

When we select companies for our concentrated portfolios, we seek high-quality companies that have increasing relevancy, durable competitive advantages, strong management teams and sustainable business practices. When it comes to AI investments, we evaluate the way companies are allocating capital expenditures, their use of data and how that relates to their technology infrastructure.

We focus on companies with strong AI capabilities, responsible development practices and sustainable growth potential. Key challenges include data privacy and integrity, cybersecurity and regulatory concerns.

Below, we examine some existing and potential use cases of AI adoption in key sectors, from agriculture to banking and hospitality to healthcare. In each sector, there are leaders that have already adopted AI use cases or are experimenting with applications that can benefit them in the short term, and potentially even more so in the future.

AI Impact on Industrials Sector

Manufacturing companies, the backbone of the economy, are always looking for an edge to improve efficiency, productivity and costs. Innovations in the Industrials and Materials sectors date back to the introduction of the assembly line to improve automobile manufacturing efficiency and quality. Today, some companies are already seeing impacts from data center construction, energy efficiency, improved product design and predictive monitoring technologies.

These improvements are not merely incremental enhancements, but rather essential steps toward the sector's evolution, effectively setting the stage for more significant long-term transformations, like the assembly line was over a century ago. Longer term, AI could bring benefits through advanced robotics and more efficient supply chains and assembly lines, lowering costs through automation and redefining quality-control standards and improving worker safety.

Representative Use Cases

CURRENT	SHORT TERM	LONG TERM
■ Data center construction and cooling ■ Energy and operational efficiency ■ Predictive monitoring of supply chains and assembly lines ■ Advanced chip/ industrial design	■ Power grid improvements ■ Automation ■ Ag tech—machine vision, autonomous tractors	■ Advanced industrial design ■ Advanced robotics ■ Deeper, real-time insight into supply chains and logistics ■ Quality control ■ Autonomous fleets

Company Case Studies

Ferguson Enterprises (FERG) is a prominent distributor of plumbing, HVAC and other building products in the construction and repair industries. The company is building distribution centers designed to streamline operations through AI automation and robotics to manage inventory and logistics, giving them a competitive advantage over primary competitors. The buildout of new data centers running AI models is increasing demand for building products and cooling systems, which Ferguson and Trane Technologies (TT) are positioned to serve.

Deere & Co. (DE) may be most recognizable for its iconic green tractors, but the company is forging the future with precision-agriculture solutions. The company straddles all three AI categories. It's an enabler, with AI-powered tractors employing machine vision to target weeds. It's a provider, with an army of engineers writing software to help its equipment sense and react to its surroundings. Deere continues to invest in adopting AI innovations, aiming to make farming processes significantly more efficient and helping to feed more people with less land and cost.

Sustainability Considerations

We believe AI is best used as a tool to assist and augment workers rather than replace them. Companies considering the impacts to their workforce should consider the potential for worker strikes, regulation and reputational damage. Concerns around the environmental impact of operations, worker safety and the potential displacement of employees may also necessitate a careful and responsible approach to AI adoption.

AI Impact on Financials Sector

Within the Financials sector, the banking industry is still dependent on forms, paperwork and manual processes such as handling customer payments and mortgage originations. For this type of work, AI has the potential to expedite time-consuming data-processing chores. For example, AI can help detect errors on loan processing to ensure that loans are in compliance. Automating such tasks may not only speed up operational processes, it can also free up staff to focus on improving the customer experience, which can increase customer retention. AI is also helping banks enhance customer service, streamline operations and strengthen fraud detection. Insurance companies use AI technology to better forecast weather risks and underwrite policies. And it's helping financial advisors create more personalized financial plans.

Representative Use Cases

CURRENT	SHORT TERM	LONG TERM
■ Customer service and AI agents ■ Insurance underwriting and weather forecasting ■ Expense management ■ Reduction of paperwork processing through back-office automation ■ Machine learning in financial market analysis	■ Advanced fraud detection ■ Data processing and analytics	■ Trading desks ■ Mortgage payment processing

Company Case Studies

Bank of America (BAC) has developed an AI-powered chatbot called ERICA for consumer and business customers that handles 22 million daily interactions. Most customer queries are routine ones, such as checking credit scores and interest rates, setting up autopayments or other account-specific information. At the same time, Bank of America is opening more branches for face-to-face meetings with customers to deepen loyalty and focus on products that drive revenue.

Allstate (ALL) and **Progressive** (PGR) are using AI to enhance insurance underwriting, forecasting and risk mitigation. This technology helps them maintain a competitive edge by refining risk assessment and pricing strategies. Accurate underwriting, influenced by factors like weather and driving behavior, can tap into broader data sources to improve outcomes for insurers by boosting earnings and for their customers by offering more competitive rates.

Sustainability Considerations

Balancing AI advancements with ethical considerations around tracking data privacy and security, behavior tracking and consumer consent is crucial. Some insurers have used tracking monitors in cars to assess driver safety without allowing drivers to opt in. Similarly, AI agents like ERICA must not only simplify consumer interactions but also adhere to stringent data protection standards. As consumer-finance companies explore AI for enhancing fraud detection, the balance between leveraging technology and safeguarding consumer rights remains a critical concern. We look for companies with a strong track record on data privacy and protection when assessing AI adoption.

AI Impact on Consumer Sector

The Consumer Discretionary and Consumer Staples sectors are broad, ranging from clothing and specialty retailers to grocery chains to travel and hospitality service providers. AI has been helping e-commerce companies improve their client experience by offering more personalized products and targeted recommendations, allowing companies to unlock new revenue streams. For example, clothing companies use personalized design to improve fit, create consumer-specific designs and monitor emerging fashion trends, which can improve customer satisfaction.

Entertainment companies like Netflix have used AI to recommend programs or generate ideas for new programming. Broader AI adoption may help improve operational efficiencies by making the sales process more efficient, strengthening supply-chain resilience and introducing new advances in speed to market as well as warehouse and distribution management.

Representative Use Cases

CURRENT	SHORT TERM	LONG TERM
■ Personalized product search ■ Personalized recommendations ■ Personalized design ■ Digital ads ■ Warehouse and distribution management for big retailers ■ Fraud protection	■ Supply-chain resilience ■ Inventory management ■ Demand forecasting	■ Speed to market improvements ■ Warehouse and distribution management (smaller retailers)

Company Case Studies

MercadoLibre (MELI), the leading e-commerce and payments company in Latin America, uses AI to enhance the user experience. AI improves search functionality and personalized product recommendations that can increase conversion rates. In the company's fintech offerings, AI aids in fraud protection and credit scoring by analyzing data from e-commerce activities to assess credit risk.

Airbnb (ABNB), along with hotel giants like **Marriott International** (MAR) and **Hilton Worldwide** (HLT), are using AI agents to provide personalized accommodations and concierge services, such as local recommendations. Airbnb intends to draw on guest data to build deeper personalization that increases the chance of a successful booking and to evolve recommendations as it learns more about users. Hosts can also benefit from predictive pricing, targeted discounts to attract guests and customer profiling to identify fake profiles or higher-risk guests.

Sustainability Considerations

Ethical considerations around consumer data privacy and security are also important in the consumer sector. Many AI applications focus on personalization and efficiency, drawing on data shared by consumers to offer these enhancements. Companies that fail to safeguard against breaches and privacy rights can suffer reputational damage that can lead to painful financial impacts. Overreliance on technology can also disrupt operations. Companies should establish and maintain policies, procedures and programs that promote balanced data governance and ethical AI use.

AI Impact on Healthcare Sector

AI in Healthcare can offer benefits in different areas. Among healthcare providers and healthcare plans, AI promises improved efficiencies and data-driven decision making that could support better patient outcomes. Immediate applications focus on operational efficiency, such as automating claims processing and customer service. In drug development, AI has sped up R&D work to identify proteins, detect biomarkers and discover irregularities in datasets. For example, among thousands of components in a complicated structure, an AI model can identify the ones that are most likely to elicit a strong immunological response. **Pfizer** (PFE) and **Moderna** (MRNA) both used AI technology to accelerate the development of their COVID-19 vaccines.[1]

Representative Use Cases

CURRENT	SHORT TERM	LONG TERM
■ Customer service and claims processing ■ Incremental efficiencies from data analysis ■ Robotic surgical assistance ■ Better and earlier disease detection	■ Data analytics to streamline targets ■ Improvements to drug bioprocessing and manufacturing yields ■ Better, faster diagnostics	■ Protein modeling, predicting and "degradation" targeting ■ Advanced drug development ■ Advanced robotics

Company Case Studies

Intuitive Surgical (ISRG) uses AI technology in its surgical robotics systems for minimally invasive procedures. Intuitive has drawn on more than 10 million surgical procedures from its da Vinci systems to provide insights that help speed surgeon training, assess patient risk factors and predict potential complications. New systems enable surgeons to receive tactile feedback, such as vibrations or pressure that simulate the sensation of touch or texture, to avoid tissue trauma for better surgical outcomes.

Among pharmaceutical companies applying AI to drug discovery, **Eli Lilly** (LLY) recently hired a Chief AI Officer to oversee the use of AI in the company's drug discovery, clinical trials, manufacturing, commercial activities and internal functions. Lilly is also collaborating with ChatGPT creator OpenAI to discover novel medicines that can treat drug-resistant bacteria.

Sustainability Considerations

Data privacy and security are especially critical in healthcare, requiring strong governance. AI in healthcare poses significant risks, particularly regarding sensitive data privacy and security and maintaining human oversight in the AI-assisted diagnosis and treatment decisions. For pharmaceutical companies, large datasets are needed for effective AI models in drug discovery, but their proprietary nature complicates usage. Data breaches or misuse may also pose significant reputational and financial risks. We expect regulatory and ethical considerations to shape AI adoption in healthcare in the long term. Because of the regulation and sensitivity around patient and genomic privacy, data needed to drive advanced drug development using AI may be restricted for some time. The sector must balance innovation with privacy and regulatory obligations to realize AI's full potential responsibly.

Assessing the Long Game of Monetizing AI

While the immediate benefits will likely come from operational efficiency and enhancing customer experiences, the long-term potential of AI could reshape industries, create new business models and bring about applications we haven't even imagined yet.

In our experience, high-quality businesses tend to remain high quality even during periods of technological change or rapid innovation. Companies that are forward thinking and have the resources, data assets and innovation capabilities are better positioned to benefit from AI. Our focus as investors is on identifying the risks and opportunities to the company's earnings in the pursuit of long-term returns. ■

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[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9279074/

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