Microsoft Azure

Building AI Solutions That Drive Value

Real-world examples of AI impact with Azure

Contents

Driving business value with AI

AI has completely energized the business landscape.

The fast adoption of AI shows that leaders increasingly see it as an integral strategy for driving business value.

According to IDC's Worldwide AI and Generative AI Spending Guide, enterprise spending on AI solutions is expected to grow to **$512 billion**, with a five-year CAGR of just over **31%** from 2022 to 2027.[1] This is more than five times greater than the five-year CAGR of **5.8%** for worldwide IT spending over the same period.[2]

$512B
in expected growth on AI solutions spending[1]

31%
CAGR over five years from 2022 to 2027[1]

The forecast is clear: AI products and services will become more readily available than ever before—and they stand to help organizations yield significant gains across everything they do.

Using advanced algorithms and machine learning techniques, businesses can automate processes, enhance decision-making, and personalize customer experiences like never before. Whether predictive analytics drives smarter marketing campaigns or natural language processing powers virtual assistants for improved customer support, AI is poised to help businesses realize unprecedented value. Its ability to adapt and learn from data ensures that its utility grows over time, making it an indispensable tool for businesses striving to stay competitive in today's fast-paced digital landscape.

As AI continues to evolve, its potential applications for supporting innovation initiatives across all facets of operations become increasingly apparent, offering a pathway for organizations to achieve new heights of success and growth. However, knowing which approach will deliver the best possible outcomes can be challenging with so many choices.

Teams anticipate a bright future with AI

Despite the many questions and uncertainties surrounding AI, IT professionals are optimistic about its potential benefits for their organizations. Surveys from the latest Tech Pulse reveal that the uncertainty surrounding AI is far outweighed by its possibilities.

75%
of global knowledge workers are already using AI[3]

AI users say it helps them:

- → **Save time** (90%)
- → **Focus on more important work** (85%)
- → **Be more creative** (84%)
- → **Enjoy their work more** (83%)[3]

Opportunities with AI today

AI covers many capabilities that can transform products and customer experiences. These capabilities provide opportunities across four main areas: vision, speech, language, and insights.

Vision

AI can identify, classify, and contextualize visual information. This includes image analysis and recognition, optical character recognition, focusing on a particular part of an image, and spatial analysis of presence and movements. For example, AI Vision capabilities can automate retail inventory management by quickly identifying products on shelves, saving manual labor for other activities like helping customers while also improving inventory accuracy.

Speech

Today's technology enables AI to generate human-like, synthetic audio from various voices culled from text and sample speech. It can also assist in batch transcription, language detection, and translation. In customer service, AI Speech capabilities automate call center operations by transcribing and analyzing customer calls in real time. In media and entertainment, it facilitates the creation of audiobooks or podcasts by converting text into natural-sounding speech, saving time and resources.

Language

These AI capabilities include a wide range of functionalities, including sentiment analysis, key-phrase extraction, and opinion mining. AI models use natural language processing to understand human language and generate conversational responses. In marketing, sentiment analysis can help companies gauge public perception of their products or services, allowing for targeted advertising campaigns and brand management strategies. In finance, AI Language can analyze news articles and social media posts to identify trends or sentiments that may impact stock prices, assisting investors in making informed decisions.

Insights

AI-powered insights help users to make more informed business decisions faster by analyzing vast amounts of historical and real-time data. These capabilities aim to emulate human-like reasoning by considering multiple factors, adapting to changing conditions, and optimizing outcomes based on predefined objectives. In supply chain management, this AI capability can help optimize logistics routes based on real-time data, reducing transportation costs and improving delivery efficiency. In healthcare, it can analyze patient data to identify patterns and risk factors, aiding in personalized treatment plans and preventive care strategies.

Shaping the future of business with AI

Capabilities like these allow people to interact with technology more naturally and personally. Now, AI is closing the gap between people and the digital tools they use daily, making it easier for employees and customers to achieve their desired results when interacting with their technologies.

Many of today's most exciting AI benefits come from combining capabilities across vision, speech, language, and insights. As AI becomes more accessible for businesses and customers, we expect to see increasingly sophisticated AI innovations that combine these capabilities to enable productivity, efficiency, and value gains.

Business gains with Azure AI

A study by Forrester Consulting found significant results for companies using Azure AI Services, including vision, speech, language, decision, and OpenAI capabilities:

150%
increase in work output from automating and scaling processes

80%
reduction in manual work with process automation

7%
reduction in costs from improved spending optimization

60%
reduction in error rates on document processing activities[4]

Questions surrounding AI

As AI continues to evolve, its potential applications for supporting innovation initiatives across all facets of operations become increasingly apparent, offering a pathway for organizations to achieve new heights of success and growth. However, knowing which approach will deliver the best possible outcomes can be challenging, given the many choices.

In preparing their business for AI, leaders must first answer some critical questions:

- Which AI use cases will yield the maximum impact?
- Can you access the right data sources to ensure your AI proof of concepts can be deployed successfully?
- Do your teams have the skills and resources to bring your AI use case to life?
- How can you ensure security for your AI projects and the data powering them?
- How can you ensure responsible governance of your AI systems as you expand to multiple use cases?

The answers to these questions will bedetermined by the path you take to adopting AI within your organization.

Paths to implementing AI

When adopting AI, you can buy an off-the-shelf AI solution, build your own, or employ a combination of both. For many companies, starting with a ready-made solution is a reliable way of realizing immediate value from AI, while also building on that experience to create more specialized AI solutions later. This strategic decision depends largely on your organization's unique requirements and AI readiness.

Build, buy, or both?

How to know which path is right for your AI transformation

Buying an off-the-shelf solution offers the significant advantage of speed of deployment, as these pre-built apps can be quickly implemented with minimal disruption. These solutions are often cost-effective due to lower upfront investment than in-house development.

They also come with established support and maintenance frameworks and are generally designed with a focus on ease of use, making them accessible to a broad range of users.

However, no two businesses are alike. Sometimes, an enterprise's processes and requirements are so unique that an out-of-the-box solution isn't sufficient to fulfill their needs. If only some customizations are called for, certain ready-made solutions can be tailored to meet those specific demands. For example, Microsoft Copilot Studio is a low-code tool that allows users to extend Copilot's capabilities for more unique requirements.

When an even higher level of customization is needed, building your AI solution may be the best option—depending on the use case and your business objectives for implementing AI. Azure AI Foundry helps develop custom AI apps enabled with speech, language, vision, and other advanced AI capabilities for projects requiring more specialized needs.

Benefits of custom-built apps

While Copilot Studio is a good starting point for building your own AI copilot solutions, sometimes you want even more advanced capabilities. Building a custom AI app allows you to create a tailored fit that aligns with specific objectives, providing a competitive advantage that off-the-shelf solutions cannot offer.

Building your own AI solution gives you full control over the features and the handling of data, which is particularly important when dealing with sensitive information. Although this route may involve higher initial costs and more significant time investment in research, development, and deployment than for out-of-the-box solutions, it also offers greater long-term benefits that can be crucial for businesses with specific operational processes or those looking to maintain a competitive edge in a rapidly evolving market.

Having a solution perfectly integrated with your company's operations and evolving in tandem with strategic goals can outweigh the risks and costs associated with building it. For many organizations, particularly those with specialized needs, long-term vision, and sufficient resources, building their own AI solution often emerges as the more attractive option, aligning more closely with their strategic objectives and allowing for greater agility and scalability.

Off-the-shelf and ready to work

Microsoft Copilot is an off-the-shelf AI solution designed to enhance productivity and decision-making, giving teams a ready-to-go AI companion capable of:

- Enabling intuitive interactions
- Creating novel content
- Generating code
- Understanding and executing complex commands
- Automating repetitive tasks
- Providing insightful analytics

Custom-built AI app use cases

When it comes to delivering value through custom-built AI applications, the potential use cases are as diverse as they are impactful. Across industries, tailored AI solutions aren't just enhancing efficiency and optimizing operations—they're also uncovering new opportunities to differentiate their enterprise with a truly unique and competitive advantage in the market.

Read more about use cases for building AI solutions and real-world examples of how organizations are using Azure AI to bring their AI apps to life.

Use case:
Deliver new innovative experiences

An electric vehicle company wants to build a solution that gives drivers more control of their vehicle while keeping their eyes on the road. In automotive design, AI computer vision, predictive analytics, and natural language processing (NLP) can be used to anticipate and prevent accidents and enable hands-free controls to make for a safer driver experience.

Capabilities and benefits:

- Understand natural language and user intent
- Provide tailored experiences that adjust to user preferences
- Build a reputation as a leading innovator
- Increase accessibility to break down language and disability barriers
- Enable voice control for hands-free use

Real-world innovative experience solution

Mercedes-Benz used Azure OpenAI Service and Azure Vision to build MBUX Voice Assistant. This in-car voice control solution delivers hyper-personalized experiences, adapting to habits, anticipating needs, and keeping drivers' eyes on the road.

"The integration of ChatGPT with Microsoft in our controlled cloud environment is a milestone on our way to making our cars the center of our customers' digital lives."

—**Markus Schäfer**, Chief Technology Officer, Mercedes-Benz Group AG[5]

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Use case:

Automated customer support

A financial services company could build an AI-driven chatbot to help customers carry out routine tasks like getting their account balance or guiding them through the proper steps after losing a credit card. Using natural language processing (NLP) and speech recognition, an AI-powered customer support bot like this can provide instant assistance without sounding robotic or impersonal.

Capabilities and benefits:

- All-day availability means customers are never left without assistance
- Support bots adjust and tailor responses based on the user's preferences
- Minimize human errors that typically happen during routine tasks
- Handle high call volumes without adding pressure on agents
- Collect data on user inquiries to further improve service

Real-world customer support AI solution

Vodafone uses Azure AI Search, Azure OpenAI Service, and Azure AI Foundry to power a digital customer support assistant called TOBi that can provide customers with information in a natural and conversational manner before passing them to an agent. By offering faster resolution to inquiries, the company has boosted customer satisfaction and expanded into new markets while keeping development costs low.

20%

Powering TOBi with generative AI has resulted in a 20% net prompter score (NPS) increase

70–90%

Agents using generative AI have helped improve first-time resolution from 70% to 90%[6]

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Use case:
Automation

An energy company wants to develop a custom AI solution to automate the monitoring and management of its power grid. Using AI-driven IoT integration and machine learning algorithms, the app can analyze real-time data from various sensors across the grid, predict demand, identify potential outages, and suggest optimal distribution, reducing costs and improving decision-making.

Capabilities and benefits:

- Foresee and prevent equipment failures
- Optimize resource usage to reduce waste
- Automatically schedule maintenance based on optimal times
- Gain deeper insights into operations
- Prevent equipment downtime to enable more reliable service

Real-world automation AI solution

Leading architecture and engineering firm Sweco builds a time-saving AI assistant called SwecoGPT using Azure OpenAI Service, prompt flow, and Azure AI Services. By automating document creative and analysis and enhancing search capabilities, SwecoGPT gives consultants more time to deliver more personalized service to customers.

"We really appreciate the one-click deployment of the models in Azure AI Foundry and that it makes Azure AI offerings transparent and available to the user. The straightforwardness of these technologies helped us get to SwecoGPT fast."

—**Shah Muhammad**, Head of AI Innovation, Sweco

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Use case:
Streamline operations

An industrial equipment supplier aiming to streamline its highly specialization processes creates an AI-driven sourcing and procurement platform. This app uses AI to automate repetitive tasks such as purchase order generation, machine learning to analyze real-time data to predict demand, and automated data integration to provide a comprehensive and real-time view of operations.

Capabilities and benefits:

- Monitor operations in real time to detect bottlenecks
- Optimize resource allocation
- Find the most consistent and efficient way of executing processes
- Remove the need for human intervention in certain processes

Real-world operations streamlining AI solution

Siemens developed a custom AI solution using Azure OpenAI Service to enhance its product lifecycle management (PLM) system, Teamcenter. By infusing Teamcenter with generative AI, Siemens was able to offer full visibility across the entire product lifecycle, from planning to manufacturing to purchasing, while also ensuring global scalability.

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Use case:
Data analytics and insights

A large manufacturing enterprise seeks to reduce waste and optimize the way it uses resources. Its IT team develops a custom AI app that uses predictive analytics and machine learning to power business intelligence and provide deeper insight into resource optimization.

Capabilities and benefits:

- Collect operational data from multiple sources
- Predict potential downtime and suggest maintenance schedules
- Monitor equipment in real time and flag potential issues
- Provide key metrics and insights

Real-world data and analytics AI solution

One of the largest healthcare systems in the United States, Mercy wanted to make better use of nearly five terabytes of patient data. Using Azure Machine Learning and Azure AI Document Intelligence, Mercy built an intelligent data platform capable of providing insights that enable proactive care and lead to improved patient experiences.

"We're using Azure Machine Learning tools to do advanced data science around outcomes for conditions like hypertension and congestive heart failure. We will be able to identify better who's at risk for certain conditions and what the next best actions are for different types of care."

—**Brian Albrecht**, Vice President of Technology Strategy, Mercy

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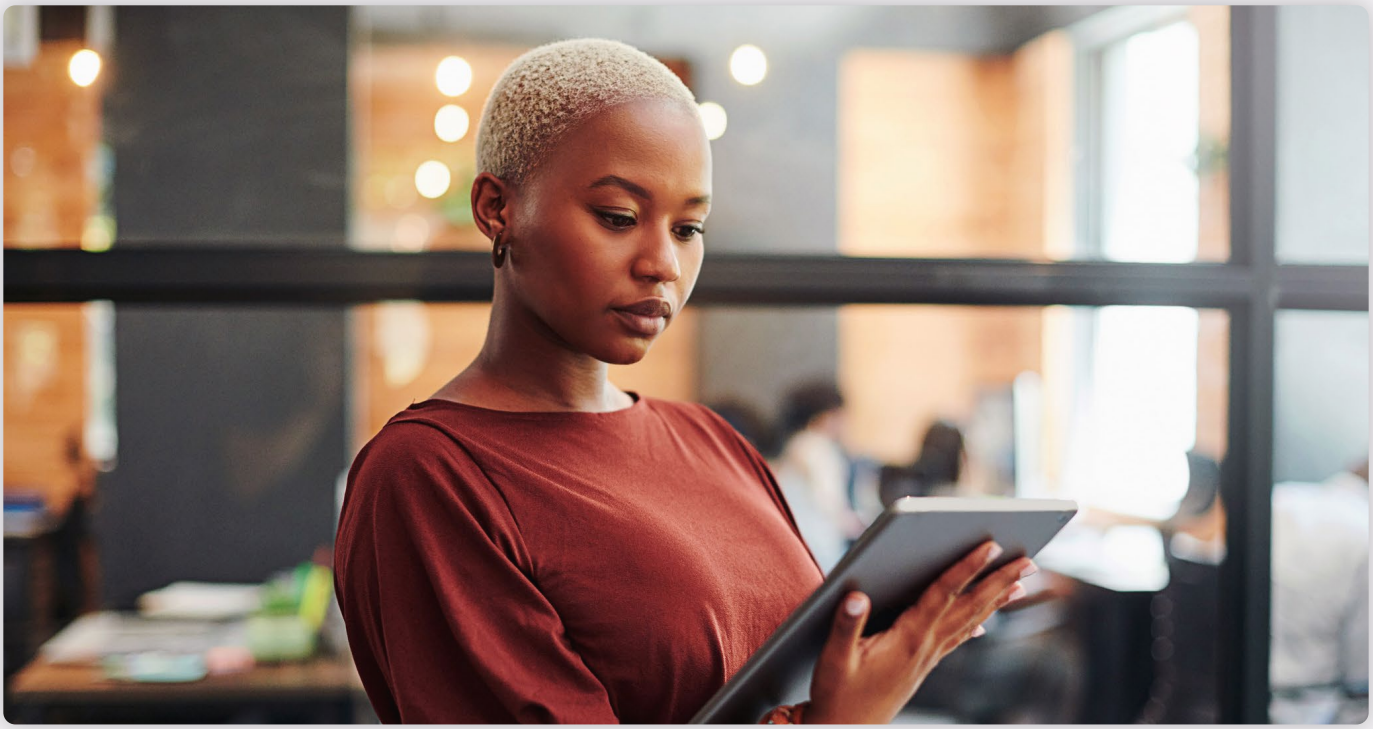

Use case: Fraud detection and security

A financial institution wants to address its current challenges with increasing incidents of fraudulent transactions and security breaches. The company's IT team develops a custom AI app that uses machine learning and cloud-native security to detect and prevent fraudulent activity in real time so the company can preserve customer trust and financial stability.

Capabilities and benefits:

- Identify unusual patterns or anomalies in transaction data
- Analyze and score transactions based on fraud risk
- Automate response protocols for potential threats and alert security teams
- Enable identity and access management to authenticate and authorize users
- Reduce the need for manual intervention

Real-world fraud detection and security AI solution

Offering a full range of banking and insurance products, Belfius uses Azure Machine Learning, Azure Databricks, and the Microsoft Intelligent Data Platform to calculate fraud risk scores and automatically close false positives. Processing hundreds of millions of transactions annually, the new solution gives Belfius analysts more time to focus on high-risk alerts.

"We want our data scientists to focus on creating transformative features rather than waiting for data engineering. We're excited to provide them best practices and standardized processes across the company on our new corporate data platform."

—**Thibaut Roelandt**, Lead Engineering for the Central AI Team, Belfius

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Cultivating trusted AI

Whichever use case you decide to pursue, ensuring your AI apps are trustworthy is critical. Designing AI solutions responsibly is fundamental for gaining the trust required for businesses and their customers to confidently take full advantage of AI.

Privacy, data governance, and security play pivotal roles in achieving this trust. People interacting with AI apps want assurance that their personal data won't be misused or exposed. Setting clear guidelines for how data is collected, stored, and used can help prevent incidents and preserve trust. Moreover, AI implementation requires robust security measures to ensure the integrity of AI apps so they don't become vulnerable to malicious actors.

Microsoft believes that when you create technologies that can change the world, you must also ensure that the technology is used responsibly. Our goal is to develop and deploy AI that will have a beneficial impact and earn trust from society. **Our work is guided by a core set of principles:**

We take a cross-company approach through cutting-edge research, best-of-breed engineering systems, and excellence in policy and governance.

Microsoft Azure provides a wide range of data and AI services that work together to help customers implement AI responsibly and effectively, including Azure AI Foundry, Azure OpenAI Service, and Azure Machine Learning.

Learn more about Microsoft's commitment to responsible AI ›

Adopting a portfolio approach to AI implementation

Rather than selecting a single AI use case for implementation, consider taking a portfolio approach to AI adoption. By taking a diverse approach and applying AI in various ways across different aspects of your operations, you can mitigate risks and capitalize on opportunities more effectively.

Employing a portfolio strategy helps you maximize your cloud investment. By spinning up multiple AI projects at once, you can more easily identify the projects with the best potential of succeeding in the real world. Rather than spending all of your budget on a single proof of concept, you can test multiple initiatives at once and then focus the rest of your investment on the most promising ones.

This strategy allows you to explore multiple use cases, experiment with different AI technologies, and adapt to evolving market dynamics. Furthermore, diversifying your AI initiatives can spread the risk and increase your chances of success, ultimately driving innovation, efficiency, and competitive advantage.

FAQs: Innovating with AI

Question:

How can my team embrace AI to impact our organization?

Answer:

When embracing AI, vagueness can hinder innovation. Start by identifying specific business goals or challenges that AI can address. Whether improving customer service, optimizing supply chains, or enhancing decision-making, having clear objectives will guide your AI proof of concepts. Next, ensure your organization has a robust data infrastructure, including data collection, storage, and quality control. Clean, relevant, and diverse data is essential for training effective AI models. Check out Azure Databricks to learn more about **preparing your data for AI**.

Question:

What if my team doesn't have experience with AI and machine learning?

Answer:

IT pros and developers consider AI and machine learning to be the most important technical skills they will need in the future, but they feel that they are among the skills in which they are least proficient. Ongoing technical training helps team members confidently work with new technologies and gives software developers more opportunities to hone their AI skills.

Encourage your team to stay updated on AI trends, attend conferences, and participate in online courses and certifications like the ones offered through **Microsoft Learn**.

Question:

How do we ensure data security?

Answer:

Securing AI requires privacy by design, robust anonymization and encryption methods, and adopting a Zero Trust approach with transparent communication and ongoing employee education. Regular updates and patching are essential to address emerging security vulnerabilities promptly. By following a well-planned roadmap for AI adoption and transparently communicating security measures, you can confidently embrace AI without compromising security.

To learn more about the security capabilities required for generative AI, read about the latest tools for **building trustworthy generative AI apps**.

Take the next steps

Building AI solutions to improve business outcomes and drive meaningful change requires a flexible and secure cloud infrastructure. Azure provides a range of tools and resources to help you ensure successful proof of concepts and bring your AI visions to life on a trusted cloud platform.

Today, embracing new technologies like AI can be the determining factor in being able to drive growth and stay competitive. By using AI as a strategic tool to save time, uncover insights, and create innovative products and experiences, your organization can differentiate itself in a crowded market. As emerging technologies continue to push the boundaries of business potential, adopting AI isn't only about keeping up in a competitive landscape—it's about leading the way and shaping the future of your industry.

Envision what your business could achieve with AI

Learn how to bring your AI vision to life.
Explore Azure AI >

Stay up to date with the latest executive perspectives on AI and innovation.
Visit Azure innovation insights >

Find out how business leaders are strategizing to get the most benefits from AI.
Watch the webinar >

[1] IDC Worldwide AI and Generative AI Spending Guide, V1 (February 2024).

[2] IDC Worldwide ICT Spending Guide: Enterprise and SMB by Industry (February 2024).

[3] Microsoft and LinkedIn, 2024 Work Trend Index Annual Report

[4] The Total Economic Impact™ Of Microsoft Azure AI, a commissioned study by Forrester Consulting, April 2023. Results are for a composite organization based on interviewed customers.

[5] Mercedes-Benz takes in-car voice control to a new level with ChatGPT, June 2023

[6] CX Today, Vodafone Boosts Its NPS by 20% After Augmenting Its Virtual Agent with GenAI, May 2024