



Whitepaper

# EMBRACING THE AGE OF INTELLIGENCE



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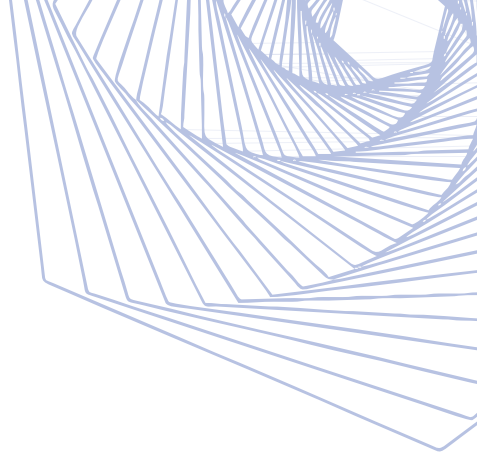
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# EXECUTIVE SUMMARY

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The Fourth Industrial Revolution has brought about the unexpected emergence of technologies that have shaped our lives, bringing a new era in human history. It represents a new phase that increases and widens the impacts of digitization. Artificial Intelligence (AI) is not new, but it has evolved significantly in the last few years thanks to algorithm breakthroughs, vast data availability, and computer power.

Nowadays, intelligence is present in everything we do—from the goods and services we use to how we communicate and work together or how nations and societies develop.

Ground-breaking innovations are anticipated to accelerate enterprises' digital transformation, introduce novel business models, and possibly alter entire industries. AI offers opportunities to improve the functionality of applications, accelerate the development of scalable applications, and develop natural user interfaces. AI will improve customer engagement, streamline business processes, and improve goods and services across all industries.

This Whitepaper presents the transformative impact of artificial intelligence (AI) across various sectors. It likely discusses the role of AI in addressing global challenges, promoting sustainability, and driving innovation and collaboration. It also discusses how AI impacts sectors like manufacturing, finance, healthcare, retail, government, and education, as well as real-world examples of how AI can enhance the lives of individuals.

Additionally, it discusses innovative technologies like Microsoft Azure AI. With a trusted Microsoft partner, TVS Next, we discuss how developers can build applications with generative AI in a safe, reliable, and assured manner.

# Embracing The Age Of Intelligence: AI's Impact On Business And Society



The way we work and conduct business is rapidly changing due to artificial intelligence (AI).

While enterprises ramp up their investments in AI, they face challenges translating AI's potential into tangible advantages. Key challenges include establishing a comprehensive strategy and goals, justifying and securing project assets, and overcoming technical obstacles. Single-use cases often limit the potential of AI, highlighting the need for a holistic approach to AI implementation.

Organizations need to define their "tech intensity" by combining the adoption of technology platforms at scale with specific knowledge and assets to create distinctive domain advantages. A strategic technology partner and a long-term plan are necessary for the successful application of AI. As AI continues to expand, this partnership must address the enterprise's needs and concerns, ensuring that everyone in the organization can leverage the power of AI for productivity, collaboration, and growth.

As Microsoft's partners, TVS Next strives to implement a human-centric AI approach worldwide. The joint objective is to emerge as the leading AI partner for clients, governments, and societies. This vision is pursued through policy advocacy, technological innovation, and vital enabling programs to foster economic growth.

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## According to recent studies



Adopting AI will boost the global GDP by 14% by 2030



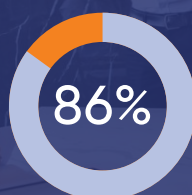
Adding \$15.7 trillion to the worldwide economy

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## Globally, senior executives anticipate that



Expect AI to grow in countries' & industries'



Expect AI to boost productivity



Believe AI will contribute to job creation

# Why now and What TVS Next can do as Microsoft's Partners?



Artificial intelligence (AI) has changed dramatically over time, bringing about revolutionary shifts in society through improvements in data collection, processing speed, and algorithm development.

### Early Development of AI

From 1957 to 1974, AI flourished as computers became faster, cheaper, and more accessible. However, early AI applications were narrow and limited due to the need for large-scale computing power and data. The advent of the Internet allowed for collecting large-scale data, enabling training more impactful and general-purpose machine learning algorithms, such as web search.

### Deep Learning and Computing Power

About a decade ago, there was an explosion of innovations in the field of neural networks with the advent of 'deep learning'. Coupled with the availability of vast computing power in the cloud and web-scale data, deep learning solved many previously intractable problems and became rapidly adopted in various business applications.

### Impact on Society

AI and the Internet are significant technological advancements that can transform the world. AI is still in the early stages of adoption, primarily used in automation and decision-making, with considerable potential for growth in healthcare, transportation, and finance.

### Recent Advances

Materials data science is witnessing rapid growth in the realm of deep learning, encompassing

applications across atomistic, image-based, spectral, and textual data modalities. Ongoing advancements in deep learning techniques are driving innovations in atomistic prediction, materials imaging, spectral analysis, and natural language processing.

### Constraints and Limitations

Onboard AI systems are constrained by processing speed, with the highest-performing models executing large numbers of computations for each output they produce.

### Environmental Impact

The environmental toll of advancing AI technologies is a growing concern, as the increasing demand for computing power generates various environmental consequences, such as heightened freshwater consumption and air pollution.

### Future Outlook

AI is already impacting how users interact with the Internet, and its impact is likely to grow, fundamentally reshaping the future of the Internet and society around it. The history of AI has seen significant advancements in computing power, data collection, and algorithm development, leading to the widespread adoption of AI in various industries and the potential to transform society. However, the environmental impact and constraints of AI systems are considered necessary for the future development and deployment of AI technologies.



# Progress of Microsoft's AI

Microsoft, continues to make significant strides in Artificial Intelligence (AI) in 2023. Some of the critical initiatives and updates include:



## AI Research

AI research endeavours to develop machines that enhance human reasoning, aiming to complement and enrich human experiences and capabilities.



## Democratizing Access to Intelligence

The dedication lies in democratizing AI for individuals and organizations, striving to increase accessibility and value for everyone. Ultimately, this pursuit aims to unlock novel solutions for some of society's most challenging issues.



## AI Updates at Microsoft

### Build 2023

During the 2023 Microsoft Build developer conference, the company unveiled a range of AI enhancements aimed at elevating the intelligence, intuitiveness, and potential ubiquity of Bing and ChatGPT. These initiatives underscore the commitment to a new generation of artificial intelligence tools, swiftly reshaping the tech industry landscape and positioning the company to compete with rivals, including Google.



## Advancements in AI Research

Microsoft has been making significant progress in AI research, with a focus on creating AI models that are more responsible and ethical, with a focus on addressing the potential pitfalls of AI.



## Azure AI Platform

The Azure platform has been powering the future of AI, and the company has been building responsibly by approaching responsible AI and societal impact. They have also outlined and adopted AI principles to guide AI initiatives.



## Generative AI

They are staking future growth by optimizing the Bing search engine with their intelligent chat capabilities, based on large language models touted as more potent than ChatGPT. Microsoft CEO Satya Nadella has been clear that generative AI will reshape every software category and significant transformations are underway throughout the company.

# Progress of Microsoft's AI



## Azure AI Studio

It is an all-in-one AI platform. It provides developers with tools and resources to build, evaluate, and deploy generative AI solutions and custom co-pilots. Azure AI Studio empowers businesses by simplifying AI development and enabling them to harness the power of artificial intelligence in their operations.

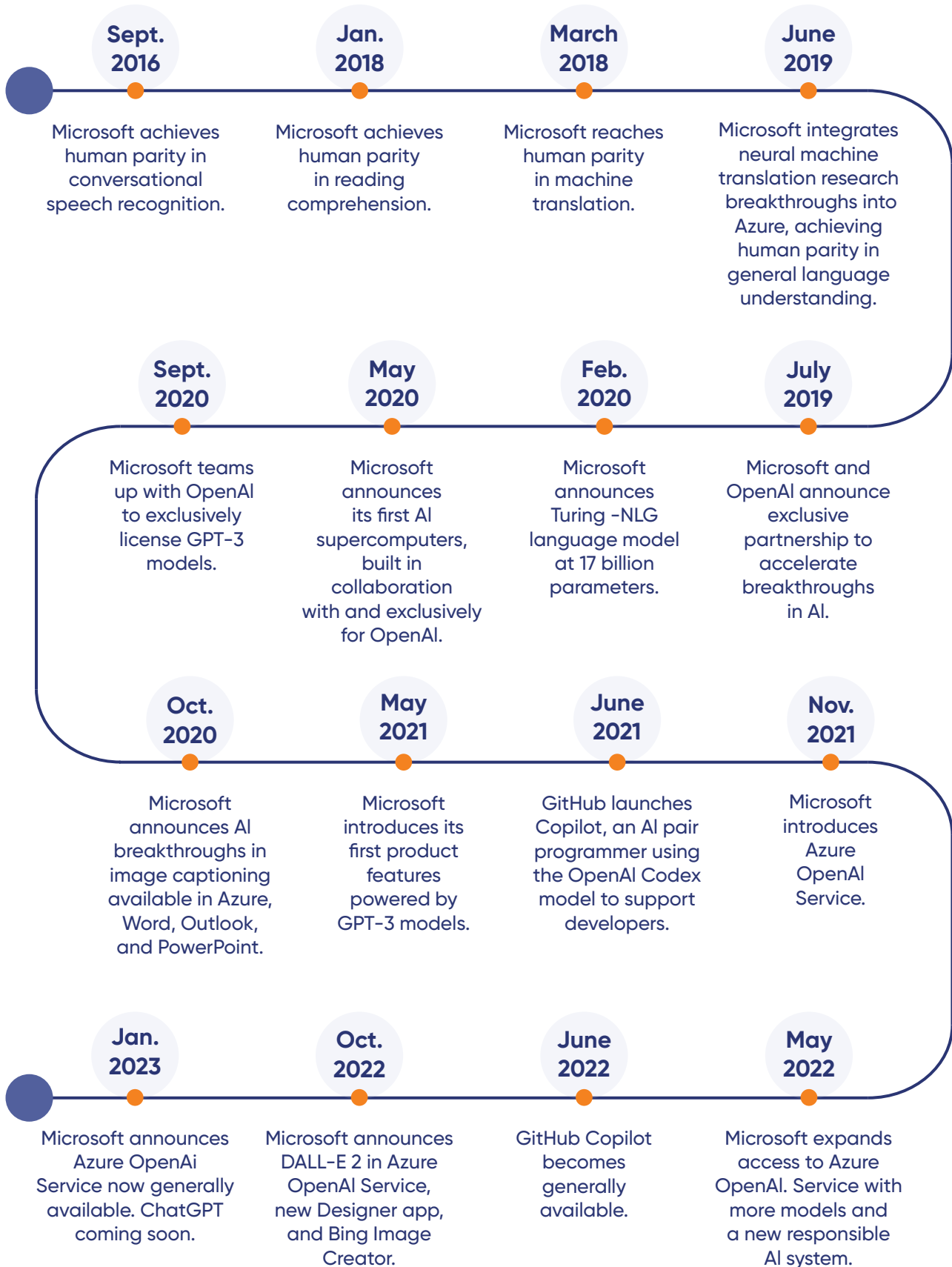


## Azure Co-pilot Studio

Azure Copilot Studio is a platform offered by Microsoft that enables the customization and creation of co-pilots for Microsoft 365. Copilot Studio simplifies the process of building and publishing plugins for Copilot using a drag-and-drop low-code approach. It is built on conversational AI technologies, such as Power Virtual Agents, and is interoperable with Azure AI.



# Timeline of Key Microsoft AI Breakthroughs





AI has revolutionized society through enhanced data collection, faster processing, and advanced algorithms. While primarily utilized in automation and decision-making, AI shows promising potential for growth in healthcare, transportation, and finance.

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# Moving your Business into the AI Era



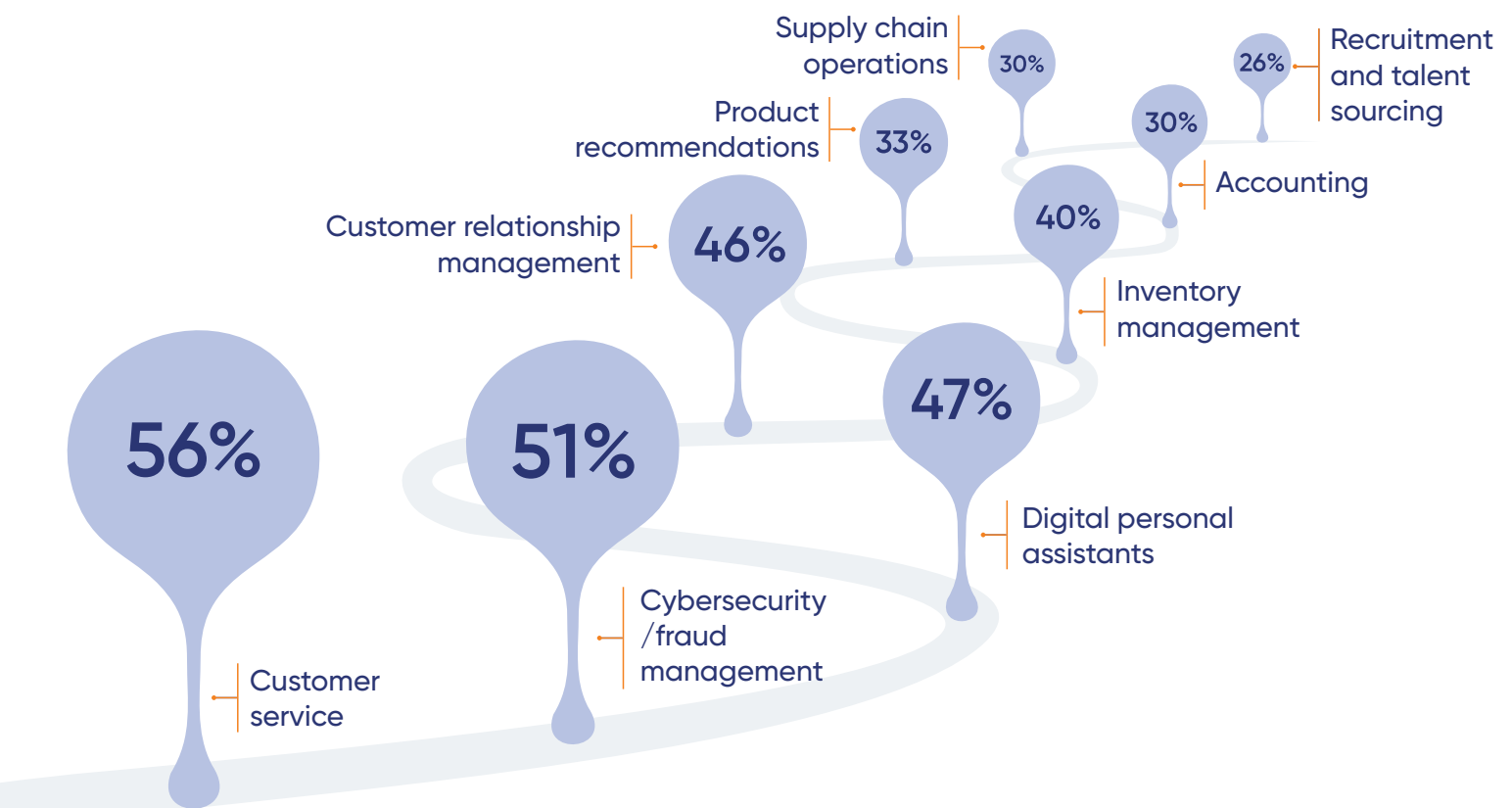
Businesses today must leverage data to its full extent to gain practical insights and solutions that could give them a competitive advantage.

AI is finally beginning to assist early adoption organizations in the real world due to the accessibility of cloud computing, the widespread availability of parallel processing power, cheap data storage, and an exponential increase in digital data. As a result, AI is now used in

real-world business scenarios across multiple industries, surpassing mere technological experimentation. Manufacturing, financial services, healthcare, and the automotive industries are among some of the major sectors that use AI to take advantage of untapped opportunities. The operations of a business, including marketing, customer service, and human resources, integrate AI into their operations.

## Top Ways Business Owners Use Artificial Intelligence

Forbes advisor surveyed business owners to find out how they currently use or plan to use AI within their business



A business can accomplish far more with an extensive AI strategy than implementing minor enhancements through use cases. Organizations must have a thorough solution map to integrate AI **into every application, every business process, and every employee.** Additionally, it must ensure that every employee will benefit regardless of their technical expertise.

# AI into Every Application



Building business apps with intelligent capabilities is one of AI's most apparent use cases. The use of AI in applications is growing. Artificial Intelligence provides an incredible opportunity to enhance the capabilities of current business applications while transforming them into devices for enhanced consumer engagement and employee productivity. Most companies' app developers need more AI expertise to make this a reality.

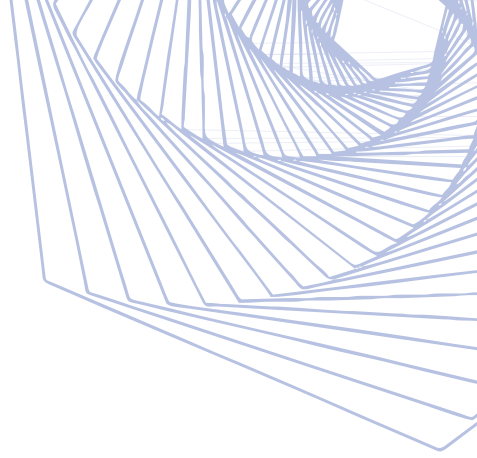
The impact of AI on application development is profound, revolutionizing how software is built, tested, and maintained. Microsoft's AI can automate routine tasks like code generation, testing, and debugging, enabling developers to focus on strategic decision-making and innovation.

Microsoft and OpenAI have partnered to introduce AI supercomputers via Azure OpenAI Service, allowing developers to create advanced AI applications. This partnership automates repetitive tasks, allowing developers to focus on more complex tasks. AI can predict project timelines, streamline development cycles, reduce manual effort, and improve creative problem-solving. Azure AI offers tools to add speech, vision, language, and decision capabilities to applications, create chatbots, and uncover insights through AI-powered search. Developers can also learn to develop AI-infused apps by building intelligent chatbots and adding pre-built AI capabilities. The future of application development will involve:

- Working alongside AI and automation
- Leveraging these technologies to build faster
- More intuitive applications with greater returns on investment

# AI into Every Business Process

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AI significantly impacts business processes, including automation of routine tasks, improved decision-making, and enhanced customer service. 54% of leaders quote AI as having increased productivity within their business already. AI can automate traditionally manual procedures, freeing up employees to concentrate on more strategic responsibilities. AI can also accurately predict project timelines, streamline development cycles, reduce manual effort, and enhance creative problem-solving.

AI possesses the capability to primitively detect risks, assess their potential impact, and employ predictive analytics to mitigate these risks. Anticipated to trigger substantial industry transformations, AI is poised to bolster data security, refine estimate accuracy, and streamline developmental procedures.

Here are several examples illustrating how artificial intelligence (AI) is leveraged to enhance productivity and effectiveness across diverse industrial sectors, encompassing manufacturing, healthcare, retail, finance, human resources, and more.

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## AI Market at a Glance



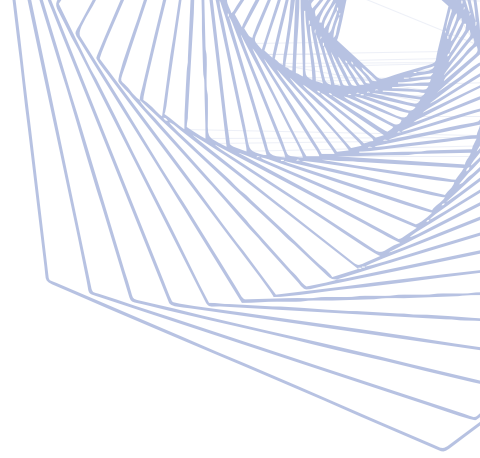
Current  
Valuation:  
Surpasses  
\$136 billion



2025 revenue  
forecast:  
Targeting  
\$126 billion

# AI into Manufacturing

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Artificial Intelligence (AI) can potentially transform the manufacturing industry completely. AI can monitor and improve production and quality control on factory floors, and it can be used to automate complex tasks and unearthing previously unknown patterns in manufacturing. AI's benefits in manufacturing include increased productivity, decreased expenses, enhanced quality, and decreased downtime.

AI can improve defect detection by using complex image processing techniques to classify flaws across a wide range of industrial objects automatically. AI's application in predictive maintenance serves to curtail unplanned downtime, forecast efficiency lapses for improved planning, and identify quality defects, streamlining predictive maintenance initiatives.

Manufacturers use AI to analyze data from sensors and machinery on the factory floor to understand how and when failures and breakdowns are likely to occur, which can ensure that resources and spare parts necessary for repair will be on hand to ensure a quick fix. AI can also be used for forecasting and for understanding anomalies or outliers. To start with AI in manufacturing, experts suggest focusing on data, starting with experimentation, and keeping an eye on ROI AI, improving safety, productivity, quality, and other vital measures in the manufacturing industry. It is used for design and planning, risk identification, and predictive analytics to help reduce risks.

Microsoft's AI offers a range of solutions and capabilities that can significantly benefit the manufacturing industry. Here are some ways Microsoft's AI can help in the manufacturing industry:

## **Predictive Maintenance**

Predictive maintenance, utilizing Microsoft's AI, can be used to anticipate maintenance needs, thereby avoiding costs associated with unscheduled downtime. By connecting to devices and monitoring their data, patterns that lead to potential problems or failures can be identified, allowing for proactive maintenance to optimize equipment lifetime and minimize downtime.

## **Defect Detection and Quality Control**

AI-powered robots and cameras can inspect products on assembly lines, detecting defects and ensuring high-quality production. This can lead to improved speed and accuracy in operations. Microsoft's AI can also monitor defective components and detect anomalies in production, allowing for real-time defect detection and analysis.

## **Efficiency and Productivity**

Microsoft's AI can deliver unprecedented efficiencies in manufacturing by optimizing operations, streamlining the supply chain, and improving how employees work. It can increase productivity, enhance product quality, and reduce downtime.

### Safety and Risk Prevention

AI solutions developed by Microsoft can identify and prevent potential safety risks through deep learning models and image analysis. It can proactively predict and prevent future risks, and create a knowledge base to improve worker safety training.

### Custom AI Vision Inspection

Microsoft's AI offers custom AI computer vision algorithms running at the edge on Azure Stack Edge devices, enabling real-time defect detection from multiple camera streams. It can significantly optimize defect detection and quality control in manufacturing lines.

### Industry 4.0 Technologies

Microsoft's AI is part of the transformation occurring in manufacturing to integrate digital technologies such as cloud computing, analytics, and machine learning. This integration can bring smart manufacturing to factories and smart warehousing to logistics, leading to a more efficient and connected manufacturing ecosystem.

Hence, As Microsoft's Partners, TVS Next can help the manufacturing industry by providing solutions for predictive maintenance, defect detection, quality control, efficiency and productivity improvements, safety and risk prevention, and integration of Industry 4.0 technologies. These capabilities can transform manufacturing operations and drive innovation and efficiency across the industry.

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## AI in Manufacturing: Future Projections



Staggering  
Growth Rate:  
Forecasted at  
57.2% CAGR



2026 Market  
Value: Set to  
Reach \$16.7  
Billion



# AI into Healthcare



AI is already being used in healthcare to help diagnose patients, for drug discovery and development, to improve physician-patient communication, and to transcribe medical documents. AI contributes to the automation of routine administrative tasks, such as appointment scheduling and processing insurance claims, leading to cost reduction and heightened efficiency within the healthcare system.

AI analyses medical imaging data to identify early signs of diseases like cancer, often more accurately than human doctors and at a lower cost. AI holds the potential to eliminate or substantially decrease the time allocated to routine administrative tasks, which may account for up to 70% of a healthcare practitioner's time. AI is used to personalize treatment options and much more.

However, significant challenges must be security, scepticism about AI, and ethical security, scepticism about AI, and ethical and societal concerns. Policymakers have the opportunity to foster the development or broadening of access to high-quality medical data for the creation and testing of machine learning (ML) diagnostic technologies.

While AI holds significant potential for delivering substantial benefits to healthcare, it is crucial to address the associated challenges and concerns during its implementation. As Microsoft's Partners, TVS Next has significantly helped the healthcare sector by providing

various solutions and advantages. These are a few ways that AI solution is benefiting the healthcare sector.

## **Transforming Business Processes and Patient Care**

AI solutions can transform business processes, cost management, patient care, and customer service in the healthcare sector. These solutions aim to improve patient care, streamline clinical and administrative staff operations, and provide new insights through more innovative analytics.

## **AI for Health Projects**

AI for Health program supports non-profits, researchers, and organizations working on global health challenges by providing access to AI technology and expertise in population health, imaging analytics, and genomics & and proteomics.

The program has partnered with more than 200 grantees, supporting projects accelerating medical research, enhancing research capabilities, increasing global health insights, and addressing health inequities.

## **Data and AI Solutions**

Microsoft has introduced new data, AI solutions, and capabilities to help healthcare organizations unlock insights and improve patient and clinician experiences. These solutions offer a unified, safe, and responsible approach to data and AI strategy, enabling healthcare organizations to take advantage of the breadth and scale of

Microsoft Cloud for Healthcare.

### Data and AI Solutions

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These solutions offer a unified, safe, and responsible approach to data and AI strategy, enabling healthcare organizations to take advantage of the breadth and scale of Microsoft Cloud for Healthcare.

### Empowering Health Organizations

Microsoft Cloud for Healthcare empowers health organizations with generative AI and actionable data insights, allowing them to transform the patient experience and discover new insights with the power of machine learning.

The expansion of Azure AI Health Bot allows healthcare organizations to build co-pilots for their healthcare professionals to manage administrative and clinical workloads and improve patient experiences.

### Addressing Global Health Challenges

AI for Health grantees and partners are addressing global health challenges, such as

developing COVID-19 solutions, exploring the use of AI to increase the efficiency and equity of organ donations and transplants, and employing a community-based approach to provide quality, affordable healthcare services to people living in poverty.

AI solutions in healthcare demonstrate a commitment to leveraging technology to improve patient care, streamline operations, and address global health challenges. By spearheading initiatives such as AI for Health and the creation of innovative data and AI solutions, these organizations are playing a pivotal role in advancing healthcare through the responsible and impactful application of AI.

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## AI in Healthcare: Market Projections

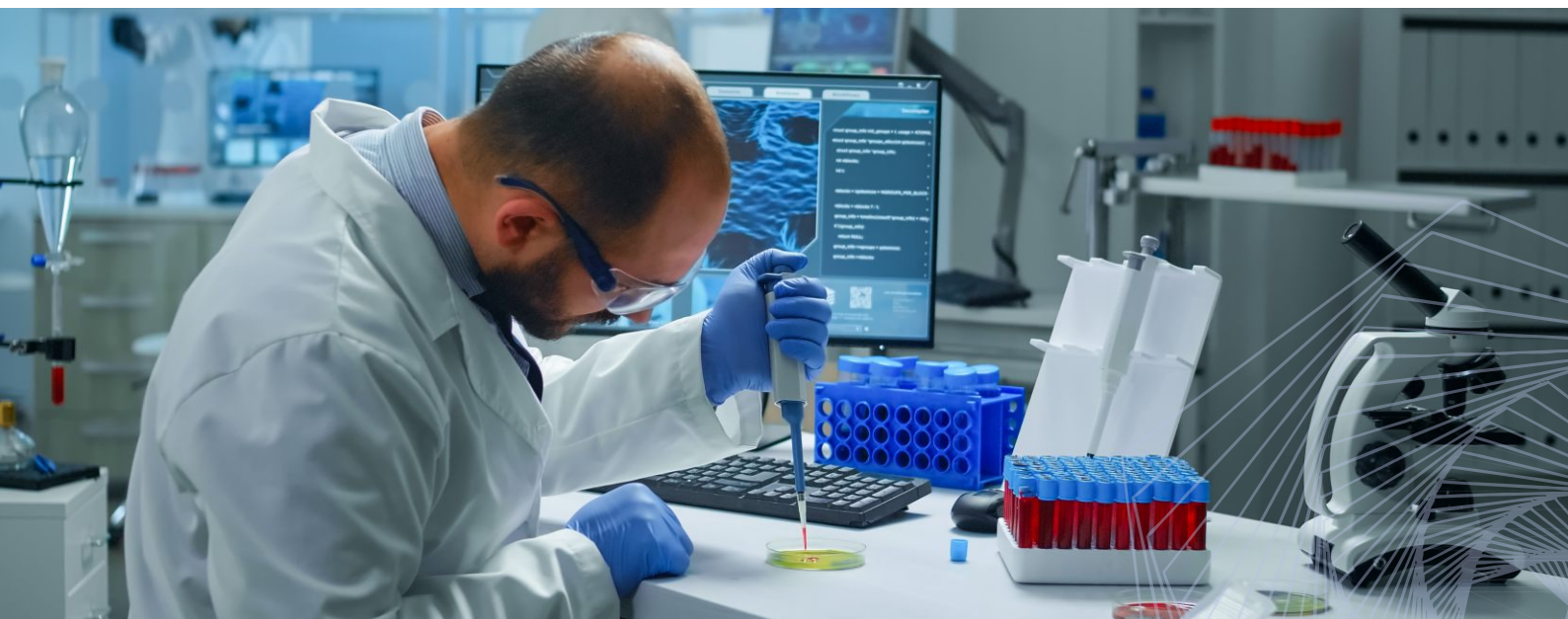


Projected  
Growth: Est. to  
reach \$187.95  
Billion



Target Year  
2030

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# AI into Finance



Artificial intelligence (AI) is transforming the financial services sector by enabling faster, more accurate credit decisions, enhancing risk management, and revolutionizing traditional processes. From reducing operating costs to providing personalized customer service through chatbots, AI is at the forefront of financial innovation, disrupting traditional components and opening doors to new operating models. It offers growth and opportunities across customer, risk, and operations functions, ultimately improving efficiency and transforming decision-making processes in the financial industry.

Artificial intelligence (AI) is being used in various ways in the financial services industry. Here are some of the most common applications of AI in finance:

## **Risk Management**

AI is transforming risk management in the finance industry by providing enormous processing power to handle vast amounts of data quickly and manage both structured and unstructured data.

Artificial intelligence algorithms examine the past data of high-risk cases to identify early warning signs of future problems. This helps reduce the risk of bad debt and helps financial institutions make better lending decisions.

## **Credit Decisions**

AI facilitates quicker and more precise evaluations of potential borrowers at a reduced cost, incorporating a broader spectrum of

factors.

This technology empowers financial institutions to enhance lending decisions, diminishing the risk of bad debt while refining the accuracy of credit assessments.

## **Fraud Detection and Prevention**

AI is deployed to oversee extensive volumes of credit card and e-payment transactions on a daily basis, identifying alterations in purchase behavior.

This implementation streamlines the process for addressing fraudulent activities, ensuring a more efficient means of protecting customers.

## **Data Analytics**

AI is used to analyze real-time activities in any given market or environment, providing accurate predictions and detailed forecasts based on multiple variables. Artificial Intelligence (AI) helps financial institutions make better investment choices, reduce risks, and boost overall performance.

## **Customer Service**

AI, particularly through applications like chatbots, enhances customer experiences by providing personalized support, answering queries, and lowering costs for financial institutions. This diverse application of AI in the finance industry not only improves risk management and credit decisions but also boosts efficiency and customer satisfaction. As AI continues to advance, its transformative impact on finance is expected to grow,

presenting opportunities for both institutions and customers.

TVS Next as Microsoft's partner offers customized solutions for the financial sector, utilizing scalable infrastructure and robust safeguards to drive transformation reliably, effectively, and responsibly. Some examples of AI solutions for financial services include.

### Customer Experience

AI-powered digital agents and digitized customer service to enhance customer experience and provide targeted offers or next-best actions.

### Identity Management

AI solutions for B2C and B2B identity management to improve security and streamline processes.

### New Banking Products

AI-powered innovations to develop new banking products and services, enhancing operational efficiency and customer satisfaction.

### Regulatory Compliance and Risk Management:

AI tools for regulatory compliance, risk

assessment, fraud detection, money laundering prevention, and cybersecurity in the financial industry.

### Microsoft Cloud for Financial Services

This platform integrates AI-powered analytics and blockchain-based solutions, empowering financial institutions to adapt to changing market dynamics swiftly, enhance customer experiences, drive innovation in lending, and detect and prevent fraudulent activities in real time.

These examples illustrate how Microsoft's AI solutions are designed to address specific challenges and opportunities within the financial services industry, ultimately aiming to improve operational efficiency, customer satisfaction, and risk management.

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## AI in Financial Services: Growth Outlook



2020  
Market Value:  
\$7.3 Billion



2026  
Projections:  
Expected to  
surge to \$26.5  
Billion



CAGR  
(2020-26)  
Anticipated  
at 23.37%

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# AI into Retail



AI has a significant and diverse impact on the retail industry. It transforms customer interactions, inventory management, and overall operations. By automating manual tasks, AI reduces costs, improves efficiency, accuracy, and enhances the customer experience. However, it also has the potential to create unfair advantages, potentially creating an uneven playing field in retail.

AI in retail has empowered businesses with high-level data and information, leading to improved retail operations and new business opportunities, with an estimated \$40 billion of additional revenue being driven by AI in retail in a 3-year span.

Retailers looking to stay competitive are increasingly leveraging AI to drive operational efficiency, enhance customer experiences, and uncover new business opportunities. Overall, AI is reshaping the retail industry, driving improved operations, new business opportunities, and enhanced customer experiences.

AI can significantly benefit the retail industry in various ways, revolutionizing the shopping experience and operational efficiency. Here are some ways AI can help in the retail industry:

## **Frictionless Shopping and Checkout**

AI, particularly computer vision, enables frictionless checkout and enhances loss prevention for brick-and-mortar stores. It can recognize customer intent and optimize the shopper's journey, leading to more engaging experiences and improved customer learning.

## **Automation and Efficiency**

AI can streamline processes, automate tasks, and free up employees to focus on more value-adding activities. This leads to reduced costs, improved efficiency, accuracy, and customer experience.

## **Customer Service and Employee Management**

AI in retail automates many tasks that specialists used to do manually, allowing employees to focus on more customer-focused assignments. It also helps in identifying increased demand for employees in specific locations based on customer traffic, empowering scheduling decisions and hiring opportunities.

## **Competitive Advantage:**

Certain businesses may gain an unfair competitive advantage from AI-driven systems. Access to more sophisticated AI technology can lead to advantages in pricing, customer service, and overall market competitiveness.

## **Personalized Customer Experience**

AI enables retailers to personalize and enhance the customer experience, creating a more engaging shopping journey and boosting customer satisfaction.

These examples illustrate how AI is transforming the retail industry by enhancing customer experiences, optimizing operations, and driving business growth. Retailers are increasingly leveraging AI to create more engaging and

efficient shopping experiences, ultimately leading to improved customer satisfaction and operational effectiveness.

As Microsoft Partners, TVS Next empowers the retail industry in various ways, enhancing customer experiences, optimizing operations, and driving business growth.

### Empowering Employees and Limiting Waste

AI-powered solutions help empower employees and limit waste. This can lead to lower expenses, more efficiency, and an improved customer experience by simplifying procedures, automating jobs, and freeing up employees to focus on things that are important.

### Intelligent Retail Solutions:

AI solutions enable retailers to deliver better customer experiences, empower employees, and build an intelligent supply chain. Personalized experiences, connections, and great customer service are all made possible by utilizing AI solutions, which eventually increase customer satisfaction and operational effectiveness.

These examples illustrate how Microsoft's AI solutions address the specific needs of the retail industry, ultimately aiming to improve operational efficiency, customer satisfaction, and business growth. Retailers are increasingly leveraging AI solutions to create more engaging and efficient shopping experiences, ultimately leading to improved customer satisfaction and operational effectiveness.

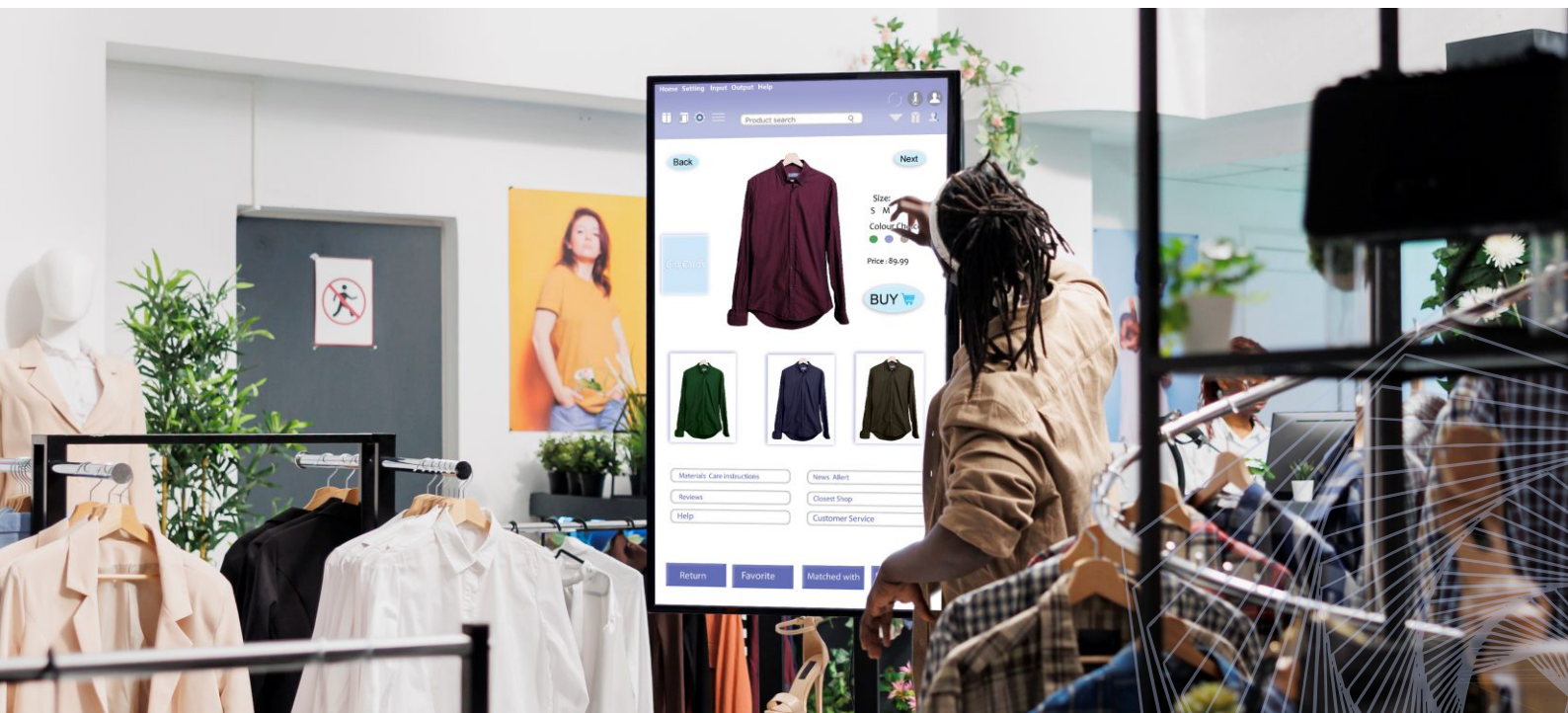
## AI in Retail: Future Revenue Outlook



2016  
Revenue:  
\$643.7 Million



2025  
Projections:  
Soaring to  
\$36.8 Billion



# AI into Government



AI is transforming the government sector by improving efficiency, decision-making, and service delivery. It streamlines processes, managing information, people, finance, security, and access more efficiently, providing public servants with additional capacity to engage constituents further and address a more complex, value-added workload.

AI also enhances decision-making by analyzing large amounts of data to identify patterns and insights. Employees can concentrate on more challenging and valuable work by using AI to automate repetitive tasks like data entry and paperwork processing. AI also improves communication and engagement with citizens and residents. Yet, there are worries about how AI will affect jobs and privacy; the government must take these into account as they implement AI-based solutions..

The use of AI in government processes frees up millions of labor hours, allowing government workers to focus on more important tasks and provide services to the public faster. When AI works effectively in the public sector, it can have a significant and direct impact on government cash flows. For example, it may be used to detect tax evasion, fraud, and incorrect payments in grant and transfer systems—all of which are major sources of financial leakage.

AI can help in the government sector in various ways, including improving efficiency, enhancing decision-making, and providing better services to the public. Some applications of AI in the

government sector are:

## **Monitoring network activity**

AI can be used to monitor unusual network activity and identify potential data vulnerabilities, fortifying access restrictions to critical data

## **Intrusion detection systems**

AI can improve the accuracy of intrusion detection systems, helping to protect government networks and sensitive information

## **Automating public benefit decisions**

AI can be used to assist in public benefit decisions, streamlining the process and improving the quality of services offered

## **Fraud detection**

AI can help detect fraud in various government services, such as welfare payments and immigration decisions

## **Infrastructure planning**

AI can be used to plan new infrastructure projects, optimizing resource allocation and reducing costs

## **Answering citizen queries**

AI-powered tools can help answer citizen queries, improving the overall experience and satisfaction of the public

## **Personalized services**

Governments can harness the power of AI to provide personalized services and automated processes, such as Singapore's "Ask Jamie" virtual assistant

## Healthcare triage

AI can be used to triage healthcare cases, helping to prioritize and improve the quality of care provided to citizens.

## Education

AI can be used to help educate public servants and improve the efficiency of the education system

## Immigration decisions

AI can assist in making immigration decisions, streamlining the process and improving the overall experience for immigrants

To fully harness the potential of AI in the government sector, governments need to overcome challenges such as building an AI culture, raising employee awareness, and ensuring the implementation of AI technologies in an ethical and secure manner.

As Microsoft's Partners, TVS Next offers several ways to enhance government operations and services.

AI revolutionizes government operations by automating routine tasks, allowing employees to

focus on complex assignments. Azure AI offers tools for speech, vision, language, and decision capabilities, fostering enhanced communication with citizens. It aids decision-making by analyzing vast datasets, identifying patterns, and informing choices. Microsoft's Responsible AI standard ensures ethical development, aligning with the White House's executive order for safe AI. Our collaborative solutions empower governments to tackle societal challenges, from climate change to healthcare, driving productivity and innovation in the public sector.

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## AI in Government Market Growth



2021  
Valuation:  
\$8.80 Billion



2026  
Projection:  
Forecasted at  
\$15.5 Billion



# AI into Education



AI has the potential to transform education by improving the effectiveness, efficiency, and accessibility of learning. Positive effects include increased focus on personalized learning, improved teaching models, greater accessibility to customized learning, and tailoring and automating grading models to reduce bias.

However, concerns exist regarding potential job displacement for teachers and educators. There are also policy challenges related to the use of AI in education, emphasizing the importance of keeping "humans in the loop" and retaining agency for teachers, learners, and others.

AI has the potential to change K-12 education by improving personalized learning experiences for students and increasing the use of data-driven decision-making by educators. While AI has great potential to enhance the current educational system, specific issues must be resolved to ensure its responsible and successful deployment.

As Microsoft Partners, TVS Next is significantly impacting the education sector by empowering educational institutions, vendors of educational technology, and collaborators to use artificial intelligence (AI) in various ways. Here are some key ways AI is helping in the education industry:

## **Personalized Learning:**

Artificial Intelligence (AI) improves educational operations, saves time, and personalizes learning. It is enabling the development of new learning tools, providing aid for creating content, building AI literacy, improving student services, and simplifying scheduling.

## **Automated Assessment**

AI systems can enhance formative assessments by leveraging machine learning algorithms to analyze student performance data and provide timely feedback.

## **Task Automation**

AI can help automate tasks such as grading, attendance tracking, and lesson planning, allowing educators to focus more on teaching and student engagement.

Efficient data management: AI can help educators manage vast amounts of data generated by students, teachers, and educational institutions, leading to more informed decision-making and improved teaching strategies.

## **Empowering Educators**

TVS Next with Microsoft's expertise is committed to empowering educators to explore the potential of artificial intelligence through courses designed to help them navigate the world of AI in education. These courses cover essential AI concepts, practical applications, and Microsoft AI, aiming to support AI literacy among educators.

## **Enhancing Student Learning**

AI-powered solutions, such as Learning Accelerators and Education Insights, are designed to personalize learning, engage students, analyze data, and automate routine tasks. These solutions simplify data collection and analysis, providing a more holistic view of each student at various levels.

## University Collaboration

Microsoft is collaborating with universities to drive the development of AI adoption and enable the use of generative AI through the Azure OpenAI Service. This partnership will transform teaching and learning methodologies, and students will gain the required skills to integrate AI into their studies and work.

As a result of Microsoft Azure's leading AI technology, AI is transforming the education industry by empowering educators, improving student learning, and driving AI adoption in educational institutions. Since AI continues to evolve, it is essential for educators, institutions, and policymakers to address the implications and ensure that AI serves as a tool that supports student learning and growth while upholding ethical and transparency standards.

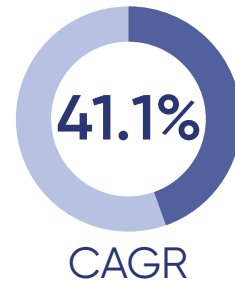
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## AI in Education: Global Expenditure Forecast



2025 Prediction:  
Anticipated global  
spending at \$6 Billion

Between 2022 and 2027,  
the Artificial Intelligence (AI)  
Market in the Education  
Sector is projected to  
increase at a



# AI into Every Employee

Fostering innovation and collaboration across the enterprise by placing AI in the hands of every employee is a transformative vision that promises to revolutionize the workplace. By democratizing AI, organizations can empower employees to harness the potential of artificial intelligence, driving creativity, ideation, and problem-solving.

One-way AI is helping employees is by optimizing their daily routines. For example, AI can help employees better understand their workplace routines and optimize them to be more productive. It can send reminders for walk breaks, suggest corporate events and seminars, and provide helpful information and insights daily, acting as a digital assistant.

AI is also used to ensure compliance and protect sensitive data in the workplace. It can read, classify, and protect personally identifiable information at a speed and scale that was previously impossible, addressing concerns about data security and privacy.

In human resources, AI plays a crucial role in hiring, promoting, and training workers. Massive amounts of data can be examined by it to provide leaders in HR with useful insights that will boost the effectiveness and productivity of

HR departments. AI can also assist employees in finding new positions within their company and help them choose the best company benefits plan to enrol in, enhancing their overall experience.

Moreover, AI supports HR teams and makes them more effective. For instance, it can answer employee questions about HR, IT, and facilities, providing accurate and instant responses within the workflow, saving employees time and effort.

By combining the expertise of TVS Next with the industry-leading AI technology of Microsoft Azure AI, the organization's creativity and innovation can be encouraged by providing idea-generation and collaboration tools. It can assist in collating diverse ideas, providing a foundation for transformation, and fostering a culture where employees feel comfortable sharing their ideas. AI-powered idea generation and collaboration tools can track and measure the impact of an employee's idea, nurturing a culture of innovation and rewarding innovative contributions.

Placing AI in every employee's hands can foster innovation and collaboration, drive creativity, and address employees' pain points, ultimately transforming the workplace and driving business growth.





Chatbots or  
conversational agents  
are leading the  
way in government  
AI technology  
adoption, with  
**26% of survey**  
respondents reporting  
they have already  
deployed them



- Gartner

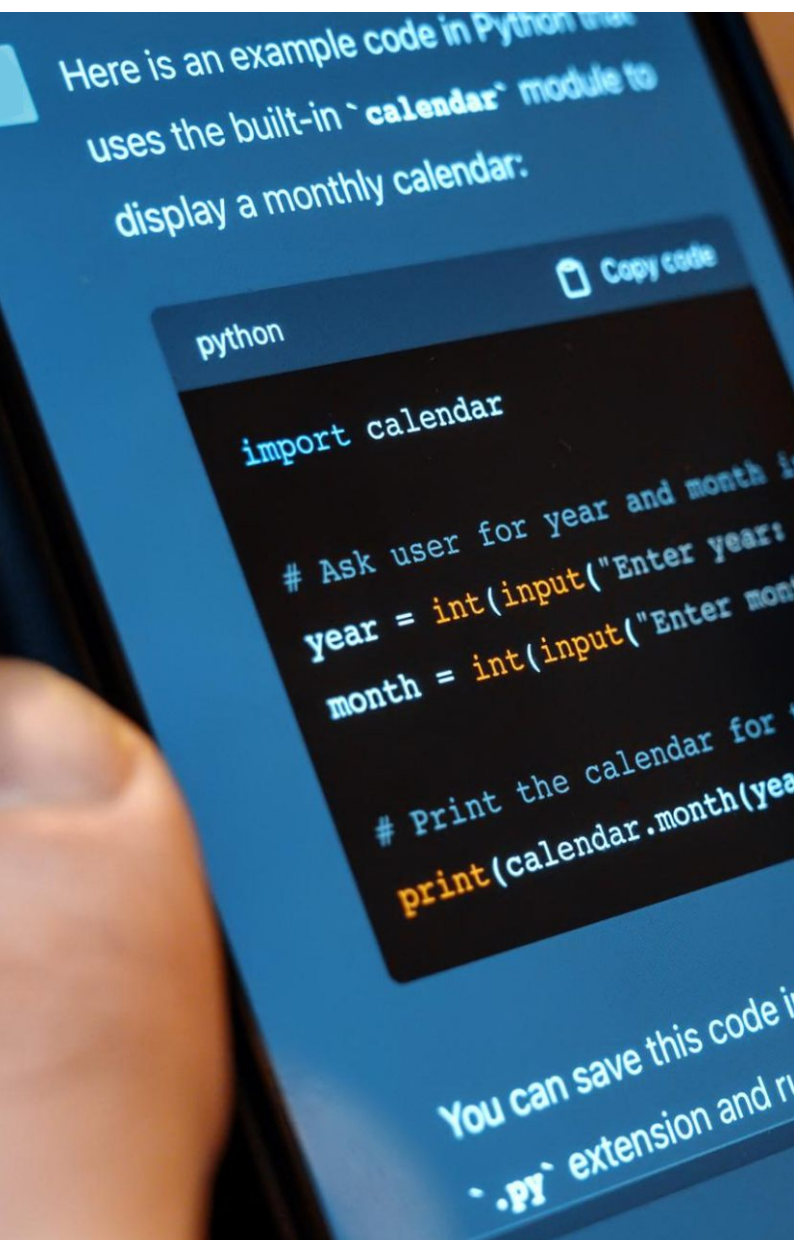
# Transform with Intelligence: Building AI-Powered Apps on Azure



Azure is a trusted platform used by businesses worldwide for mission-critical application workloads. Developers can build with generative AI here safely, responsibly, and assuredly. Let's delve deeply into recent developments in AI and application development technologies that pave the way for the next wave of innovation.

The initial goal is to equip you with the knowledge and resources necessary to develop safely and ethically using AI and its applications. The second goal is to provide you with a cloud-native app platform so you can leverage AI to power your business-critical applications. Finally, it concerns the developer tools with AI assistance that enable you to deliver the code that only you can develop safely.

## Unleashing the Power of Generative AI: Transforming into a Dynamic Data



With OpenAI's GPT-4 in Azure OpenAI Service, developers can now incorporate unique AI-powered experiences into their applications. In addition to releasing OpenAI's GPT-4 in Azure OpenAI Service, we're expanding on that news by introducing several new features that you can take advantage of to deploy generative AI to your data and integrate AI with your systems.

The release of Azure AI Studio gives developers an easy-to-use platform to quickly and efficiently implement robust conversational AI models—such as OpenAI's ChatGPT and GPT-4—using their data. Using natural language-based app interfaces, users—employees, customers, and partners—can extract valuable information from large datasets with the upcoming public preview of Azure OpenAI Service in conjunction with Azure Cognitive Search. This improvement facilitates the development of more immersive experiences and helps uncover insights specific to an organization, such as the level of inventory or benefits related to healthcare.

Azure Cognitive Search to enhance large language models by powering vectors in Azure (currently in private preview). This capability enables the storage, indexing, and delivery of

search applications using vector embeddings across various organizational data types, such as text, images, audio, video, and graphs. Additionally, the private preview of Azure OpenAI Service introduces support for plugins, simplifying the integration of external data sources and facilitating API building and consumption. Notable plugins include Azure Cognitive Search, Azure SQL, Azure Cosmos DB, Microsoft Translator, and Bing Search. The upcoming Provisioned Throughput Model, soon to be generally available in limited access, provides limited access to enhance performance.

Customers such as Volvo, Ikea, DocuSign, Crayon, and 4,500 others are already reaping

the benefits of Azure OpenAI Service.

Microsoft is constantly innovating throughout the artificial intelligence (AI) portfolio, bringing new features in Azure Machine Learning to enable developers and data scientists to leverage generative AI's power on their data.

Foundation models in Azure Machine Learning, now in preview, allow data scientists to fine-tune, analyze, and implement open-source models developed by Azure Machine Learning, models from Hugging Face Hub, and models from Azure OpenAI Service, all in a single model catalog. It helps data scientists access a broad repository of popular models via the Azure Machine Learning registry.

## Azure Empowerment: Scaling Intelligent Apps with AI



Azure's cloud-native platform, which seamlessly integrates Azure's native AI services, stands out as the ideal environment for running and scaling applications. It allows you to choose between control and flexibility while ensuring productivity irrespective of the option.

Azure Kubernetes Service (AKS) gives you complete control and the quickest initialization possible when creating and implementing intelligent, cloud-native applications on Azure, in data centers, or at the edge. It includes guardrails and integrated code-to-cloud pipelines. It gives a lot of pleasure to introduce some of the most eagerly awaited innovations in AKS, created especially to boost the scale and reliability of applications operating on this platform.

We are announcing long-term support for Kubernetes, which will allow customers to stay on the same release for two years—twice as

long as it is now –to give enterprises more control over their environment. Azure Linux, an operating system platform optimized for AKS, is now available for container hosts. Furthermore, we can now provide Azure users with simple click-through deployments from Azure Marketplace, giving them access to a thriving ecosystem of first-party and third-party solutions. Finally, keeping with Kata Confidential Containers, confidential containers will shortly be integrated into AKS as a first-party supported offering. Teams can execute

applications in a way that allows zero-trust operator deployments on AKS with the help of this feature.

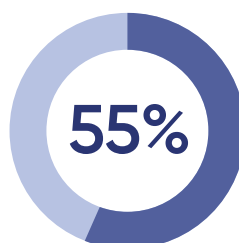
Azure Container Apps offers a fully managed service for serverless microservices and containerized applications. It now allows developers to run jobs on demand, schedule applications, and execute asynchronous tasks, simplifying application development and enabling intelligent cloud-native apps on Azure.

## Empowering Developers: Seamlessly Integrated AI Tools for Success



It is essential to encourage developers to dedicate more time to strategic and meaningful work instead of tedious tasks like infrastructure management and debugging. GitHub Copilot is revolutionizing the development of AI-embedded apps on Azure, allowing developers to focus on meaningful work, simplifying processes, and increasing developer velocity and scale.

GitHub Copilot, an AI developer tool, has been integrated into Visual Studio, enhancing code speed by 55%. With these updates, Microsoft Dev Box has new starter developer images and an improved Visual Studio integration that reduces setup time and boosts performance. In addition to Azure Resource Manager, HashiCorp Terraform support and Azure Deployment Environments are now available.



Coding speed boost with GitHub Copilot in Visual Studio

# Ensuring Secure and Reliable Experiences in the AI Epoch



In developing, deploying, and operating intelligent applications, prioritizing security is more critical; Developer-first tooling and seamless workflow integration play a crucial role. Microsoft's investment in innovative features and capabilities allows you to integrate security early in your software development lifecycle. This approach facilitates the identification and resolution of security issues before code deployment. Additionally, they offer tools to ensure the deployment of trusted containers to Azure.

Azure DevOps is introducing GitHub Advanced Security, a solution that integrates three core features of GitHub Advanced Security into the platform, enabling automated security checks in workflows. It includes code scanning powered by CodeQL to detect vulnerabilities, secret scanning to prevent sensitive information inclusion, and dependency scanning for vulnerability identification.

For nearly seven years, Microsoft invested in a cross-company program to ensure AI systems are responsible by design. The company has learned that more than policies are needed; tools and engineering systems are required to build with AI responsibly. New products and features help improve accuracy, safety, fairness, and explainability throughout the AI development lifecycle. retail, finance, human resources, and more.

Azure AI Content Safety is a preview feature that helps developers create safer online environments by detecting and assigning

severity scores to unsafe images and text. It can be customized to address the organization's regulations and policies and integrate Azure AI content safety across the products, including Azure OpenAI Service and Azure Machine Learning, which helps users evaluate and moderate content in prompts and generated content.

Azure Machine Learning's responsible AI dashboard now supports preview text and image data, enabling users to identify model errors, understand performance and fairness issues, and provide explanations for various

machine learning model types. In production, users can monitor models and data for drift, perform data integrity tests, and make interventions with the help of model monitoring. Microsoft helps developers and machine learning engineers with responsible AI implementation by providing shared resources, tools, and systems.

AI represents a significant computing breakthrough. Whether it is incorporated into your workflow or incorporated into cloud development to power your intelligent, next-generation applications, the developer community is driving this transformation.



**We're about to enter this fascinating new era of AI, where it's no longer just a novel and fascinating technology. We're getting into the specifics of safety, actual productivity gains, product deployment, and all the issues that arise in the real world.**

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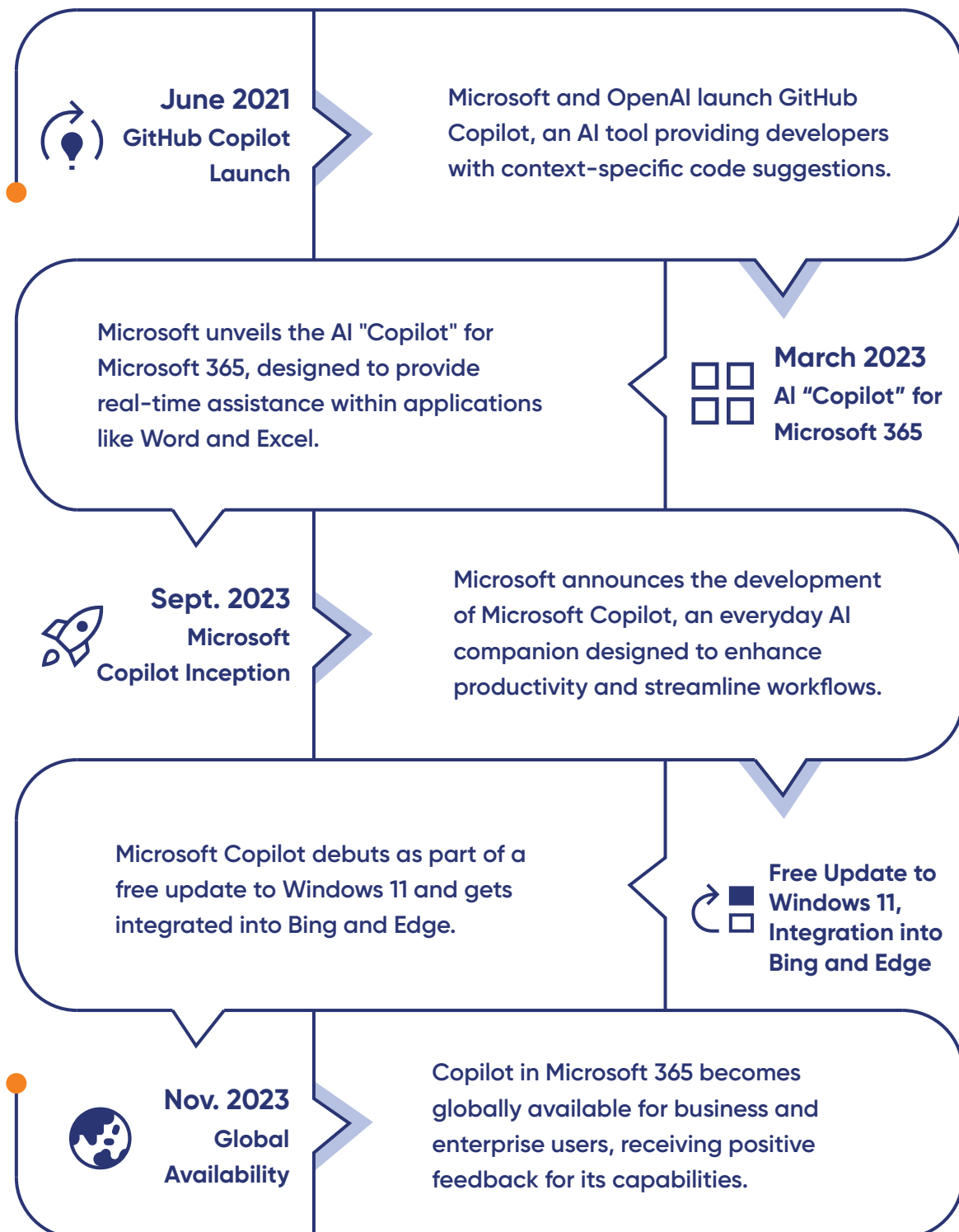
**- Satya Nadella**

# Microsoft Copilot: Detailed Overview



# The Evolution of Microsoft Copilot

Microsoft Copilot's shift from a GitHub coding assistant to an AI companion in Microsoft 365 emphasizes AI's transformative impact on digital interactions. Ongoing investments featuring the GPT-4 model and integration with Microsoft Graph and M365 apps promise innovative solutions. Positioned at the forefront of AI, Copilot is set to enhance work and productivity in our digital lives significantly.



# Copilot's Multifaceted Assistance

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Microsoft Copilot, an artificial intelligence (AI) powered tool developed by Microsoft and OpenAI, is designed to revolutionize how we interact with software. This innovative technology offers a new level of assistance, learning from user behavior to provide personalized, context-aware suggestions. It has been integrated into various Microsoft applications, including Microsoft 365, Bing, Edge, and Windows 11.

Here is how Microsoft Copilot can assist different user groups: people (end-users), customers, and operations (ops)..

## Copilot for People

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Microsoft Copilot is a personal assistant for end-users that enhances productivity and streamlines workflows. It's incorporated into everyday tools like Word, Excel, and PowerPoint within Microsoft 365, providing real-time assistance to improve user experience.

In Word, Copilot can help with text formatting, grammar corrections, and even content suggestions, making it easier to create high-quality documents. Copilot assists with data analysis, formula creation, and spreadsheet management in Excel, simplifying complex tasks. It also integrates with Outlook, helping manage emails and schedule meetings efficiently.

Beyond Microsoft 365, Copilot enhances the browsing experience in Microsoft Edge by highlighting important information on web pages and providing quick answers to questions. Windows 11 offers personalized assistance based on usage patterns, helping manage files, applications, settings, and more.

# Copilot for Customers

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For customers, Microsoft Copilot provides a more personalized and efficient service experience. It's integrated into Microsoft Dynamics 365, a suite of business applications, to offer AI-powered insights and assistance.

In Dynamics 365 Customer Service, Copilot can help service agents resolve customer issues more quickly by suggesting solutions based on past interactions and knowledge base articles. It can also assist customers directly through chatbots and virtual agents, providing instant responses to common queries and freeing human agents to handle more complex issues.

In Dynamics 365 Sales, Copilot can guide sales reps through the sales process, suggesting next steps based on customer data and sales best practices. This helps sales reps focus on building customer relationships rather than administrative tasks.

# Copilot for Ops

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Microsoft Copilot is a powerful tool for operations to enhance operational efficiency and decision-making. It's integrated into Dynamics 365 Supply Chain Management and Dynamics 365 Finance to provide AI-powered insights and automation.

In Supply Chain Management, Copilot can help predict demand, optimize inventory levels, and streamline production planning, using machine learning algorithms to analyze historical data and forecast trends. In Finance, Copilot can automate routine tasks like invoice processing and expense management and provide real-time financial insights to support strategic decision-making.

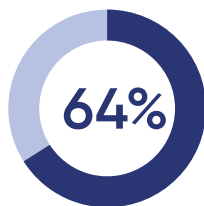
In a nutshell, Microsoft Copilot represents a significant milestone in leveraging AI to enhance digital interactions. Providing context-aware assistance across various applications and user groups allows us to focus on higher-level tasks, making our digital experiences more efficient and enjoyable.

## Co-pilot Statistics

### Efficiency Boost



Users complete task faster



Spend less time on email



Completion rate with Co-pilot



Completion rate without Co-pilot

### Code Quality Improvement



Copilot enhances code quality

### Time Savings



Users save valuable time using Copilot

### User Satisfaction



High user satisfaction, with 77% not willing to give up Copilot.

# Conclusion: A Glimpse into Tomorrow's AI

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## *Together Let's collaborate to create the History*

As a partner of Microsoft, TVS Next is deeply committed to harnessing AI's power to address local and global challenges effectively. The organization envisions a future where AI is pervasive, democratized, and integrated into every aspect of enterprise operation. Through innovative solutions and strategic partnerships, TVS Next is dedicated to driving positive environmental impact and fostering sustainability. As a leading player in the AI revolution, the company's commitment, investments, and collaborations position it at the forefront of driving innovation and inclusivity across diverse sectors.



*AI will be pervasive across devices, apps, and infrastructure to drive insights and act on your behalf.*

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