AZURE AND GENERATIVE AI

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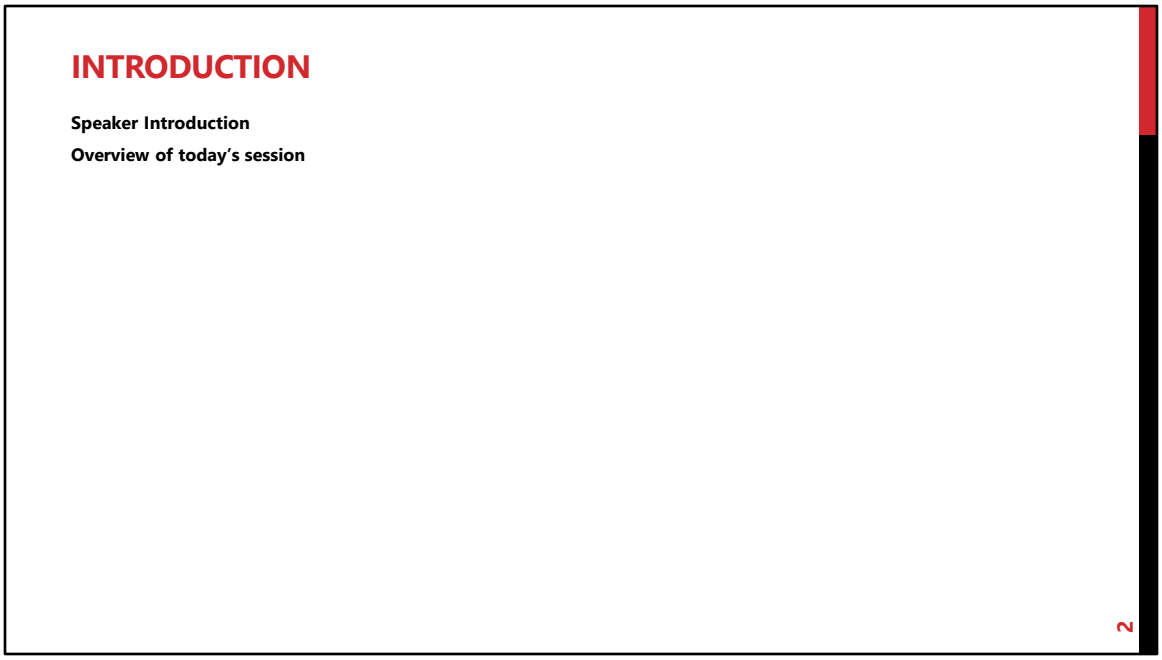
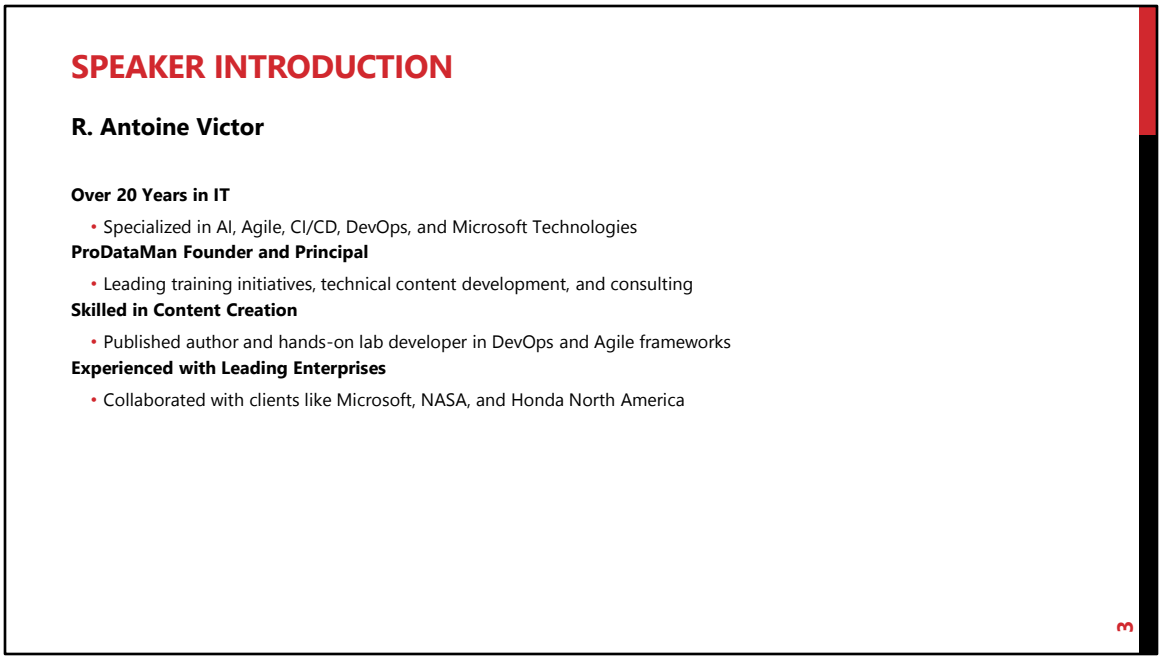


Visual: Speaker image and session overview flowchart.

Introduction to Antoine Victor
Introduce yourself, highlighting your expertise in cloud and AI technologies. Express your enthusiasm for AfroTech and its mission of fostering diversity and inclusion in the tech industry.

Overview of today's session
This session will cover Azure Cloud, Generative AI, real-world applications, and leadership strategies for driving digital transformation.

AfroTech & the role of technology in the future
AfroTech is dedicated to promoting innovation, particularly for underrepresented groups in tech. We will explore how AI and cloud computing are central to shaping industries and fostering new opportunities.



Background

Over 20 Years in IT

- Antoine has more than 15 years of experience working with cloud and AI technologies, leading large-scale projects involving Azure and AI solutions.
- With focus in AI, Agile, CI/CD, DevOps, and Microsoft Technologies

ProDataMan Founder and Principal

- Leading training initiatives, technical content development, and consulting

Skilled in Content Creation

- Published author and hands-on lab developer in DevOps and Agile frameworks

Notable Projects

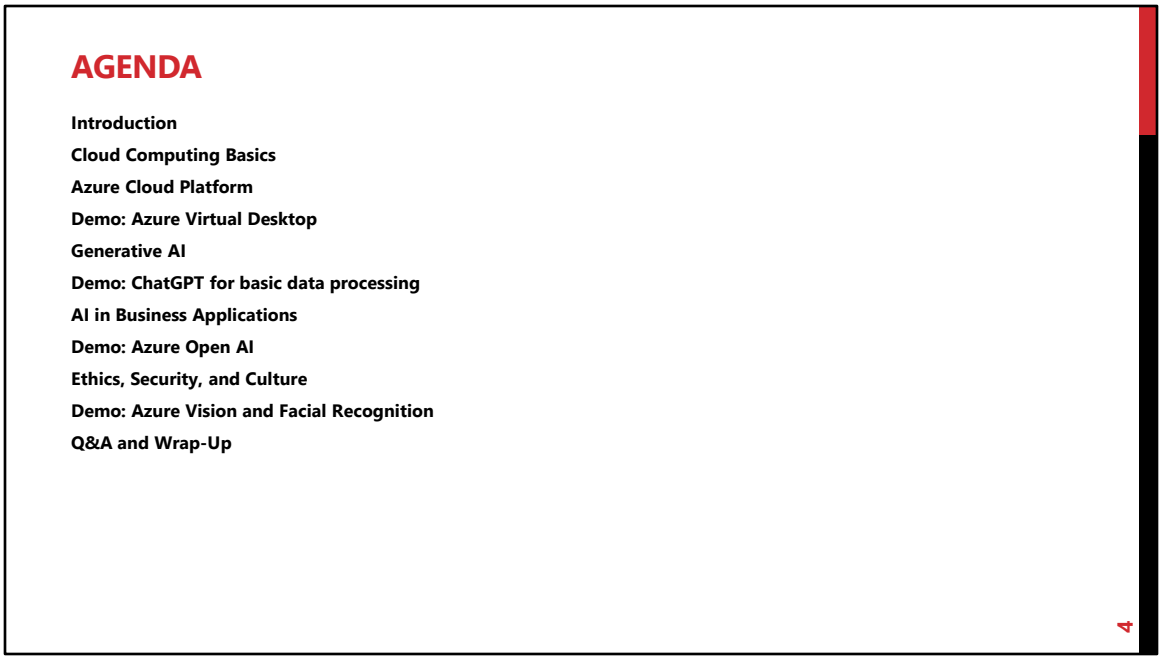
- AWS and Azure implementations, Prompt Engineering, AI model development, and scaling AI for Fortune 500 companies.

Experienced with Leading Enterprises

- Collaborated with clients like Microsoft, NASA, and Honda North America

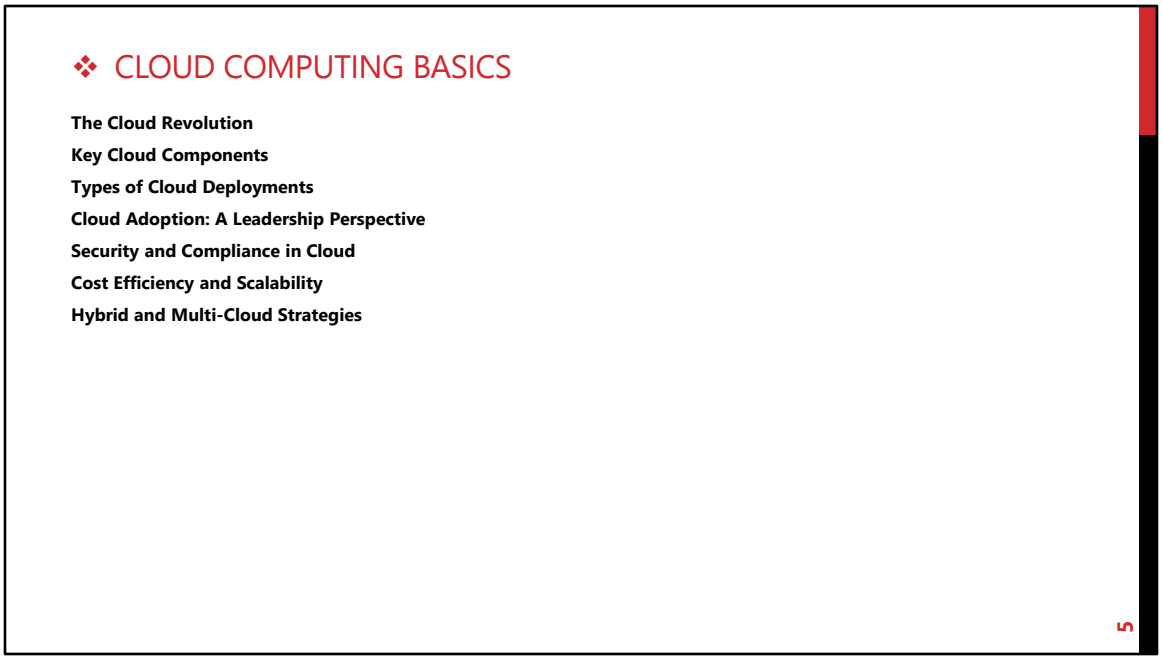
Focus:

- Committed to fostering diversity in the technology space, empowering underrepresented groups and promoting inclusion in AI model training.



Visual: Simple list showing all section names to give attendees a roadmap of the session.

This agenda outlines what we will cover today. We'll start with an introduction, move into cloud computing basics, explore Azure and Generative AI, then shift to AI in business applications. Demos will be interspersed throughout, followed by ethics, security discussions, and a Q&A wrap-up.



In this section, we'll explore the core elements of cloud computing relevant to Bank of America's technology leaders. Cloud computing has transformed industries by providing scalable resources and cost efficiencies. We'll discuss the types of cloud deployments, essential aspects of adopting cloud technology from a leadership perspective, and the importance of security and compliance in a financial context. Additionally, we'll cover strategies like hybrid and multi-cloud models, which provide flexibility for integrating cloud with on-premises resources.

The Cloud Revolution

Cloud computing is reshaping the way organizations manage IT infrastructure by offering on-demand access to computing resources. This shift allows businesses to scale quickly and reduce the need for physical hardware, making it ideal for rapid growth and innovation in sectors like finance.

Types of Cloud Deployments

Different deployment models provide various levels of control, security, and cost-efficiency. Public, private, and hybrid clouds each offer distinct advantages, enabling organizations to choose the approach that aligns best with their operational and compliance needs.

Cloud Adoption: A Leadership Perspective

Adopting cloud technology requires strategic planning, particularly in a large financial institution. Leadership must align cloud initiatives with business objectives, ensuring that cloud resources are used efficiently and in ways that add value to the organization.

Security and Compliance in Cloud

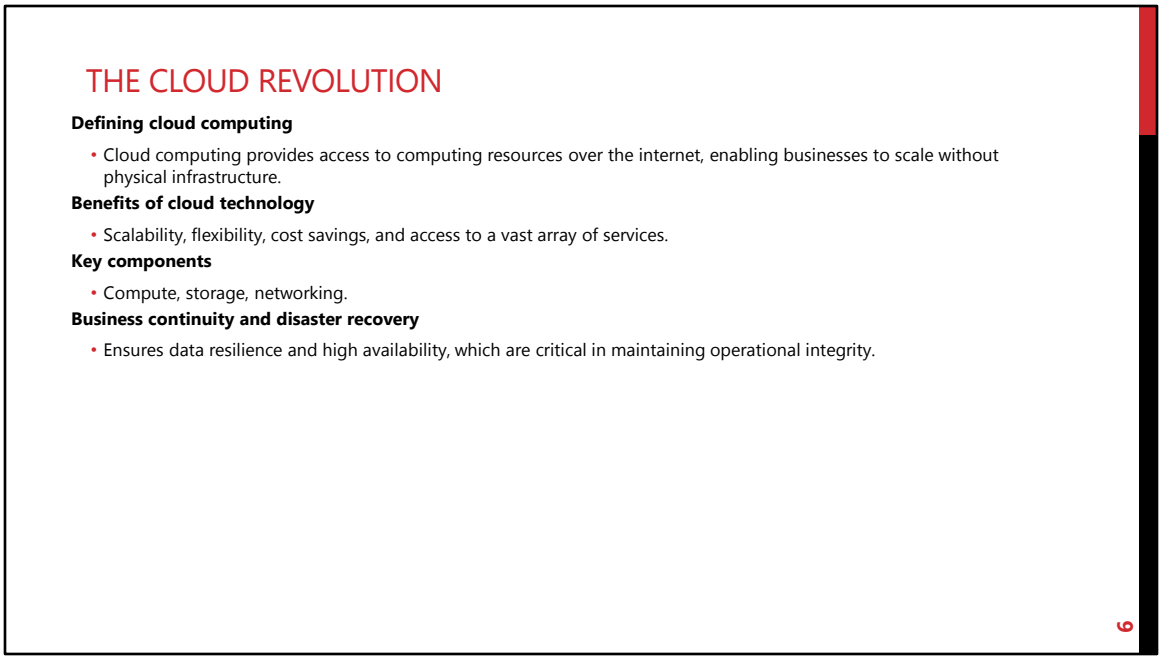
For financial services, security and regulatory compliance are paramount. Using cloud services means adopting strict data protection measures and meeting regulatory requirements like GDPR and ISO 27001. Security frameworks and compliance certifications are essential for managing sensitive financial data in the cloud.

Cost Efficiency and Scalability

One of the significant benefits of cloud technology is the cost-saving potential. With pay-as-you-go models and auto-scaling capabilities, organizations only pay for the resources they use. This is especially beneficial in finance, where operational costs and scalability can directly impact profitability.

Hybrid and Multi-Cloud Strategies

Hybrid and multi-cloud approaches provide flexibility, enabling organizations to blend on-premises and cloud resources. This strategy is valuable for organizations in highly regulated industries, allowing them to keep sensitive data on-premises while leveraging cloud resources for other workloads.



Cloud computing has fundamentally transformed the way modern enterprises operate, particularly in how they handle resources, scale, and innovation. By leveraging the cloud, organizations like Bank of America can benefit from highly adaptable and cost-efficient computing models that support rapid scaling and on-demand service access.

Defining cloud computing

Cloud computing involves providing on-demand access to a range of computing resources—including servers, storage, databases, and applications—over the internet. Unlike traditional setups that require extensive physical infrastructure, cloud resources are provisioned and scaled as needed. This flexibility allows businesses to respond swiftly to changing demands without costly hardware investments.

Benefits of cloud technology

The key benefits include:

•**Scalability**: Organizations can scale their resources up or down based on real-time needs, optimizing usage and costs.

•**Flexibility**: Cloud solutions allow for diverse applications and data management strategies, supporting a range of business processes and workflows.

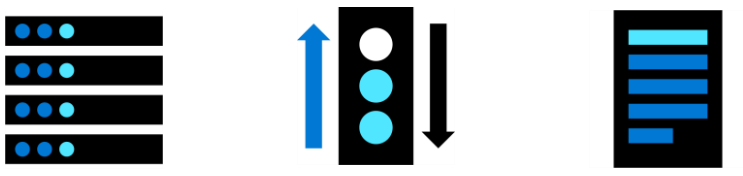
•**Cost Savings**: With a pay-as-you-go model, businesses avoid significant capital expenses, paying only for the resources they actively use.
•**Access to Services**: The cloud provides immediate access to advanced tools and services, such as AI, data analytics, and machine learning, empowering organizations to innovate faster.

Key components

Cloud platforms like Azure are built on foundational components:
•**Compute**: The processing power to run applications, manage data, and execute complex calculations.
•**Storage**: Solutions to store data securely and access it quickly, which is critical for handling large volumes of transactional and financial data.
•**Networking**: Enables secure, reliable communication between cloud resources and on-premises systems, ensuring seamless data flow and connectivity.
This foundation allows organizations like Bank of America to operate with heightened efficiency, improve their capacity to handle large-scale transactions, and support continuous innovation while adhering to security and regulatory standards.

KEY CLOUD COMPONENTS

Cloud Computing: The delivery of computing services over the internet, enabling faster innovation, flexible resources, and economies of scale.



https://docs.microsoft.com/learn/modules/describe-cloud-compute/3-what-cloud-compute

Cloud Computing is:

- A model for enabling on-demand access to a shared pool of configurable computing resources – servers, network, storage, applications, and services
- Ubiquitous, convenient, on-demand network access
- Rapidly provisioned and released with minimal management effort or service provider interaction

Definitions found at:

NIST definition - https://csrc.nist.gov/publications/detail/sp/800-145/final

TYPES OF CLOUD DEPLOYMENTS

Public Cloud

- Shared infrastructure accessible over the internet, owned by a cloud provider.

Private Cloud

- Dedicated infrastructure for a single organization, providing greater control over resources.

Hybrid Cloud

- Combines both public and private cloud elements, allowing businesses to run workloads on-premises and in the cloud.

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Visual: Venn diagram comparing public, private, and hybrid cloud models.

Public Cloud
Public cloud infrastructure is managed by cloud service providers, and customers access resources over the internet.

Private Cloud
In private clouds, an organization owns and operates its own infrastructure, which allows for greater security and customization.

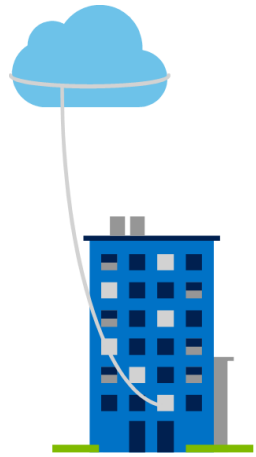
Hybrid Cloud
A hybrid cloud approach allows businesses to use both on-premises infrastructure and public cloud services to meet specific business requirements.

PRIVATE CLOUD

Organizations datacenter used to create a cloud environment.

Organization is responsible for maintaining and operating the services.

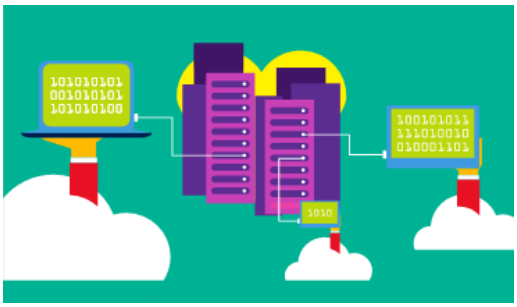
Resources not shared with users outside of the organization.



https://docs.microsoft.com/learn/modules/describe-cloud-compute/5-define-cloud-models

- Owned and operated by the organization that uses cloud resources.
- Organizations create a cloud environment in their datacenter.
- Self-service access to compute resources provided to users within the organization.
- Organization is responsible for operating the services they provide.

PUBLIC CLOUD



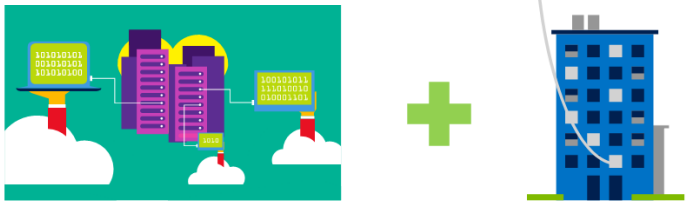
- **Owned by cloud services or hosting provider.**
- **Provides resources and services to multiple organizations and users.**
- **Accessed via secure network connection (typically over the internet).**

https://docs.microsoft.com/learn/modules/describe-cloud-compute/5-define-cloud-models

What are public, private, and hybrid clouds? - https://azure.microsoft.com/en-us/overview/what-are-private-public-hybrid-clouds/

HYBRID CLOUD

Combines Public and Private clouds to allow applications to run in the most appropriate location.



https://docs.microsoft.com/learn/modules/describe-cloud-compute/5-define-cloud-models

Hybrid cloud models have the following characteristics:
•**Resource location**. Specific resources run or are used in a public cloud, and others run or are used in a private cloud.
•**Cost and efficiency**. Hybrid cloud models allow an organization to leverage some of the benefits of cost, efficiency, and scale that are available with a public cloud model.
•**Control**. Organizations retain management control in private clouds.
•**Skills**. Technical skills are still required to maintain the private cloud and ensure both cloud models can operate together.

CLOUD ADOPTION: A LEADERSHIP PERSPECTIVE

Developing a cloud adoption strategy

- Leaders must define workloads to migrate first, considering business goals.

Aligning cloud initiatives with business goals

- Cloud adoption should directly support larger objectives such as cost optimization and enhanced customer experience.

Overcoming challenges

- Common challenges include security concerns and organizational resistance, which can be addressed through training and transparent communication.

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Visual: Flowchart outlining the steps for cloud adoption.

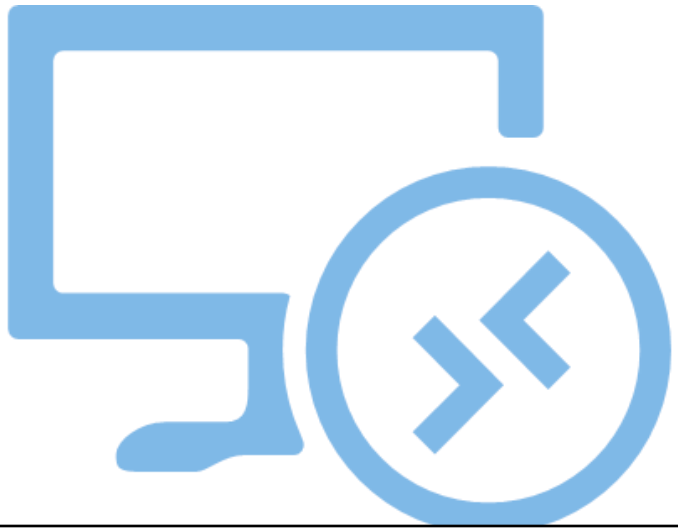
Developing a cloud adoption strategy
Leadership should prioritize which workloads to move to the cloud first, based on factors such as cost-effectiveness and operational needs.

Aligning cloud initiatives with business goals
Cloud adoption is most successful when it is aligned with key business objectives, such as improving customer satisfaction, reducing costs, or increasing innovation.

Overcoming challenges
Resistance to cloud adoption can come from concerns over security, costs, or lack of understanding. These challenges can be mitigated through clear communication, training, and security best practices.

❖ AZURE VIRTUAL DESKTOP

Key Features
What is it
The Value of Multisession
Use Cases
Minimum Requirements
Supported OS's
AVD Walkthrough



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KEY FEATURES

1. Scalability: AVD provides the ability to scale up or down the number of virtual desktops and applications based on demand.

2. Security: AVD offers built-in security features like role-based access control (RBAC), Azure Active Directory integration, and network isolation.

3. Accessibility: Users can access AVD from various devices, including Windows, Mac, iOS, and Android.

4. Cost-Efficiency: AVD helps reduce infrastructure costs by leveraging Azure's pay-as-you-go pricing model.

WHAT IS AZURE VIRTUAL DESKTOP?

Azure Virtual Desktop (AVD) is a comprehensive desktop and app virtualization service provided by Microsoft Azure. It allows users to securely access their virtualized Windows desktops and applications from anywhere, using any device.

THE VALUE OF MULTISESSION :

Pooled Compared to Personal Deployment

How many fish tanks do you want to pay to maintain?

Think about per VM infrastructure including security stack, log collection, OS resources

Fewer VMs can significantly reduce cost

USE CASES

1. Remote Work: AVD enables organizations to provide remote access to desktops and applications, facilitating remote work scenarios.

2. App Compatibility: AVD helps with running legacy or specialized applications that require a Windows environment.

3. Scaling Seasonal Workloads: AVD allows scaling up or down desktops and applications to meet seasonal demand, such as during holiday sales.

Azure Virtual Desktop Minimum Requirements
These components are on the critical path for deployment of AVD

Azure Subscription connection to Azure AD Tenant

AD Domain with AD Connect Syncing users to Azure AD Tenant

- Access to an Azure AD Tenant GA account to deploy AVD
- Domain Admin or User with computer domain join rights

VNET(s) set up and ready

VPN or Express Route with Defined Routes (if needed - for access to on prem resources)

Domain Controller Line of Sight (if seamless access to AD resources required)

- Locating a Domain Controller in Azure close to the customer's AVD Hosts is a best practice
- An alternative is if you have ER or VPN, an on prem Datacenter would work (NOTE: This could introduce latency and slower logins)

SMB File Share for user Profiles: FSLogix – S2D Cluster, Azure files, or ANF

Licensing: Check eligibility of Windows and M365 licenses for access to AVD

MFA or Conditional Access (Not a requirement for AVD but Highly recommended)

Supported OS

"Insert text here"

Windows 11 Enterprise Multi-session

Windows 10 Enterprise Multi-session

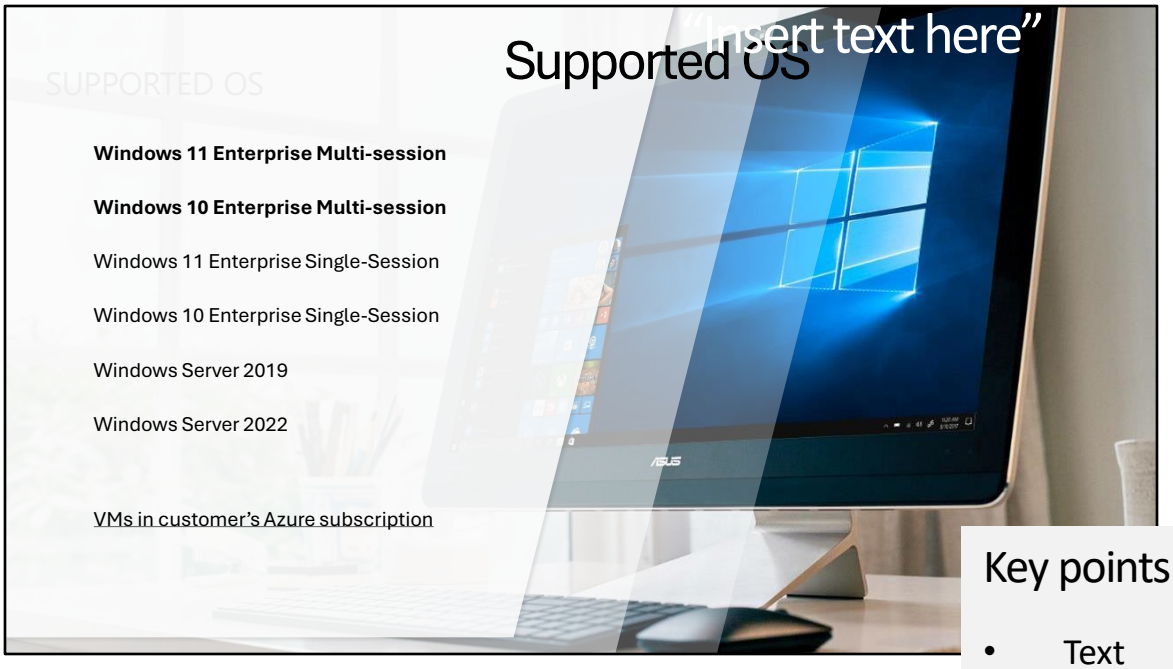
Windows 11 Enterprise Single-Session

Windows 10 Enterprise Single-Session

Windows Server 2019

Windows Server 2022

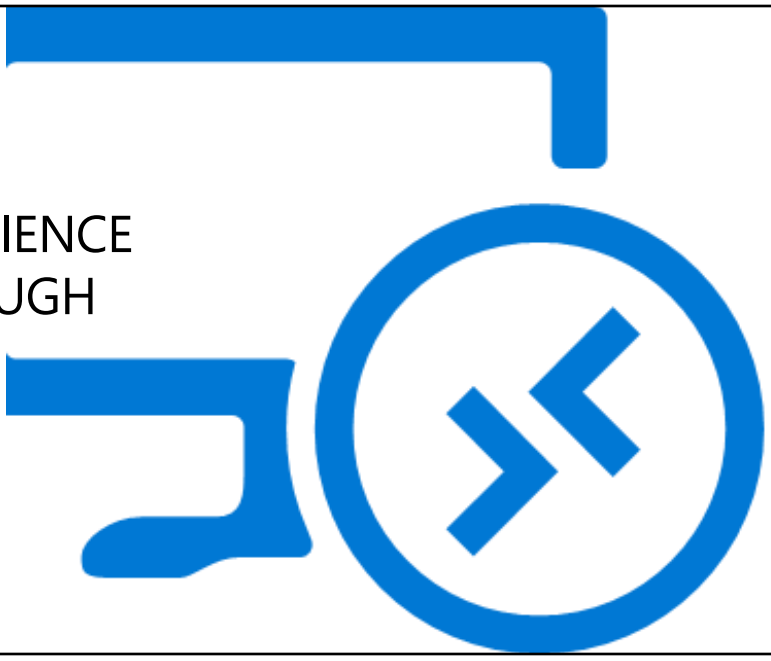
VMs in customer's Azure subscription



Key points to land

- Text
- Text
- Text

AVD:
USER EXPERIENCE WALKTHROUGH



PREDICTIVE ANALYTICS

Azure Machine Learning

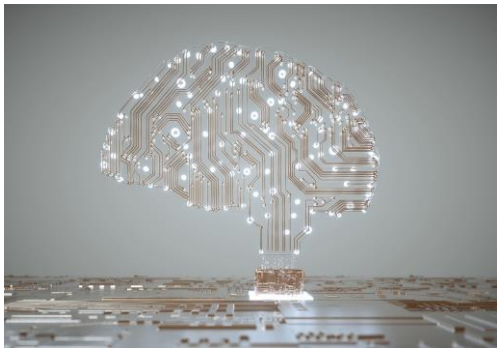
- Azure Machine Learning is a cloud-based service that enables you to build and deploy machine learning models at scale. It provides a range of tools and services for developing, testing, and deploying predictive models.

Predictive Models

- Predictive models are machine learning models that can make accurate forecasts and predictions based on historical data. They can help businesses and organizations make informed decisions about the future.

Azure Machine Learning enables you to build and deploy machine learning models at scale. We will explore how you can use Azure Machine Learning to build predictive models that can help you make accurate forecasts and informed decisions.

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING



Azure Cognitive Services

- Azure Cognitive Services provide pre-built APIs for computer vision, natural language processing, and speech recognition, allowing you to easily add AI capabilities to your applications.

Azure Machine Learning

- Azure Machine Learning is a cloud-based platform that lets you easily build, deploy, and manage machine learning models at scale.

Azure provides a comprehensive suite of AI and machine learning services. We will explore how you can use Azure services such as Azure Cognitive Services and Azure Machine Learning to build intelligent applications and automate business processes.

DEMO: CHATGPT PROCESS CLIENT DATA

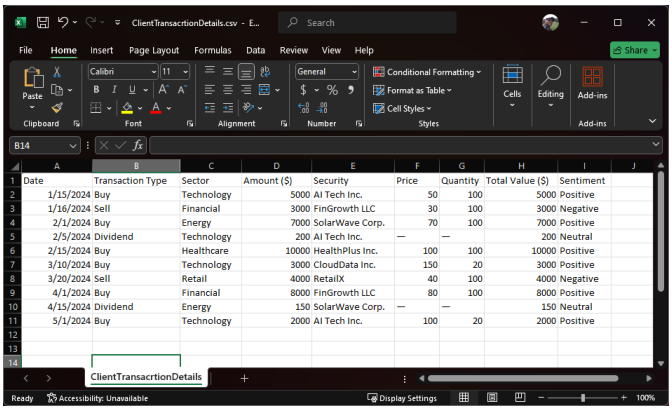
Step 1: Prepare Mock Transaction Data

Step 2: Feed Data into a Generative AI Model

Step 3: Expected AI-Generated Output

Step 4: Display Output in a Dashboard Format

Step 5: Extend with an Interactive Q&A



Date	Transaction Type	Sector	Amount ($)	Security	Price	Quantity	Total Value ($)	Sentiment
1/15/2024	Buy	Technology	5000	AI Tech Inc.	50	100	5000	Positive
1/16/2024	Sell	Financial	3000	FinGrowth LLC	30	100	3000	Negative
2/1/2024	Buy	Energy	7000	SolarWave Corp.	70	100	7000	Positive
2/5/2024	Dividend	Technology	200	AI Tech Inc.	—	—	200	Neutral
2/15/2024	Buy	Healthcare	10000	HealthPlus Inc.	100	100	10000	Positive
3/10/2024	Buy	Technology	3000	CloudData Inc.	150	20	3000	Positive
3/20/2024	Sell	Retail	4000	RetailX	40	100	4000	Negative
4/1/2024	Buy	Financial	8000	FinGrowth LLC	80	100	8000	Positive
4/15/2024	Dividend	Energy	150	SolarWave Corp.	—	—	150	Neutral
5/1/2024	Buy	Technology	2000	AI Tech Inc.	100	20	2000	Positive

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Step 1: Prepare Mock Transaction Data

Sample dataset with transaction details for a hypothetical client's portfolio.

Example Dataset: ClientTransacrtionDetails.csv

Step 2: Feed Data into a Generative AI Model

Use the dataset to input into a generative AI model (such as GPT) and prompt it to generate a summary of insights based on the data provided.

Prompt Example:

•"Analyze the above transaction data. Summarize key trends in sector performance, identify any patterns in buying or selling behavior, and provide an overall sentiment analysis for the client's portfolio."

Step 3: Expected AI-Generated Output

Example Output:

Client Portfolio Summary – Q1 2024

•**Sector Performance**:

- *Technology*: The portfolio saw significant activity in the technology sector with notable buys in AI and cloud technologies, indicating a positive sentiment toward tech growth, especially in AI-driven companies.
- *Energy*: Solar investments demonstrated a growing interest in

renewable energy with SolarWave Corp. contributing positively to portfolio diversification.

•**Transaction Patterns**:

- *Buying Trends*: Majority of purchases are in Technology, Financial, and Energy sectors, showcasing a balanced approach between growth and stability.
- *Selling Trends*: Sells mainly occurred in Financial and Retail sectors, which may suggest divestment in less promising areas.

•**Sentiment Analysis**:

- Positive sentiment across Technology and Healthcare investments indicates strong confidence in these areas, particularly AI, cloud services, and healthcare technology.
- The portfolio sentiment appears generally positive, aligned with growth-oriented sectors, suggesting a strategic focus on long-term, high-value industries.

Step 4: Display Output in a Dashboard Format

Use a simple dashboard or visual display to showcase key findings, with sections for **Sector Performance**, **Transaction Patterns**, and **Sentiment Analysis**.

For the demo, you can either:

•Use a presentation slide with highlighted insights, graphs, or charts based on the AI-generated summaries.

•Use a Jupyter notebook or similar tool to dynamically display the summarized text and graphs.

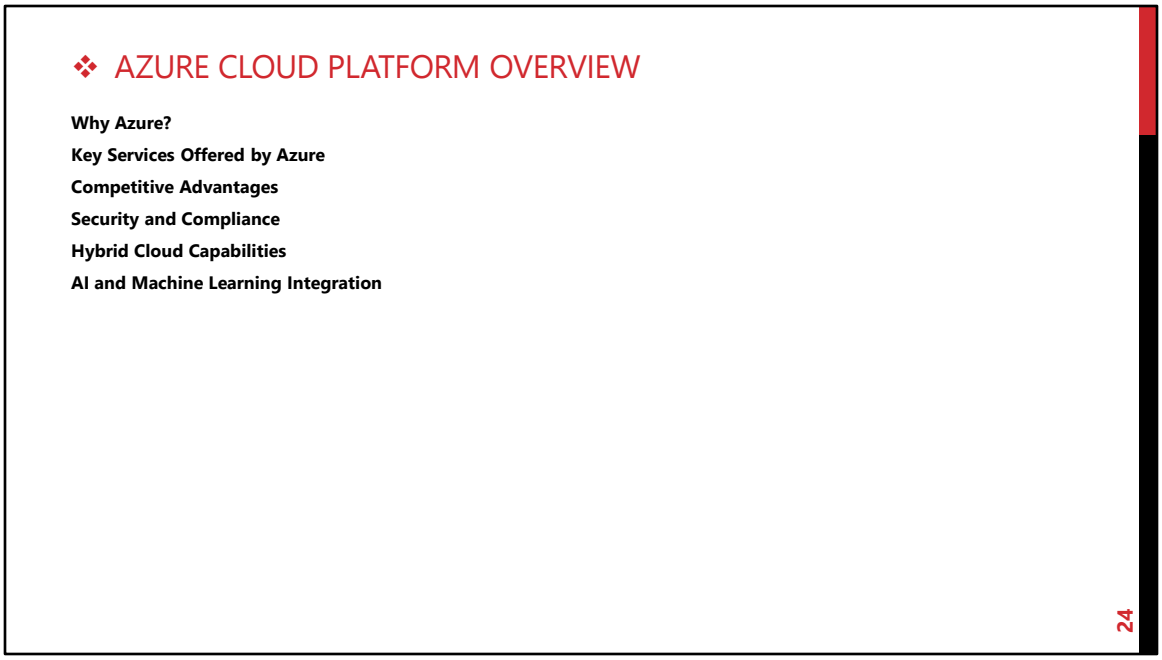
Step 5: Extend with an Interactive Q&A

Allow for questions and show how the model can adapt to follow-up questions.

Examples:

•“What are the top performing sectors?”

•“Which investment has the highest return?”



Visual: Simple infographic or icons representing each topic for quick visual reference.

Why Azure?

Highlight Azure's market leadership and trusted reputation among Fortune 500 companies.

Key Services Offered by Azure

Briefly touch on essential services like compute, storage, networking, and specialized AI tools.

Competitive Advantages

Emphasize Azure's unique strengths, including integration with Microsoft products and a wide array of compliance certifications.

Security and Compliance

Describe Azure's commitment to data security and meeting industry standards.

Hybrid Cloud Capabilities

Azure's hybrid services, such as Azure Arc, enable seamless management across on-premises and cloud.

AI and Machine Learning Integration

Azure's robust AI tools make it easy to incorporate machine learning models and cognitive services into applications.

Visual: World map with Azure data center locations highlighted.

Microsoft's Leadership and Global Trust

Emphasize Azure's reputation in the industry, trusted by leading companies worldwide, especially those with high-security and innovation demands.

Security, Scalability, and Compliance

Highlight Azure's strong compliance portfolio and enterprise-grade security measures, assuring leaders that data is protected and compliant with global standards.

Global Infrastructure for High Availability

Azure's network of data centers enables businesses to provide low-latency and highly reliable service to users worldwide, minimizing downtime.

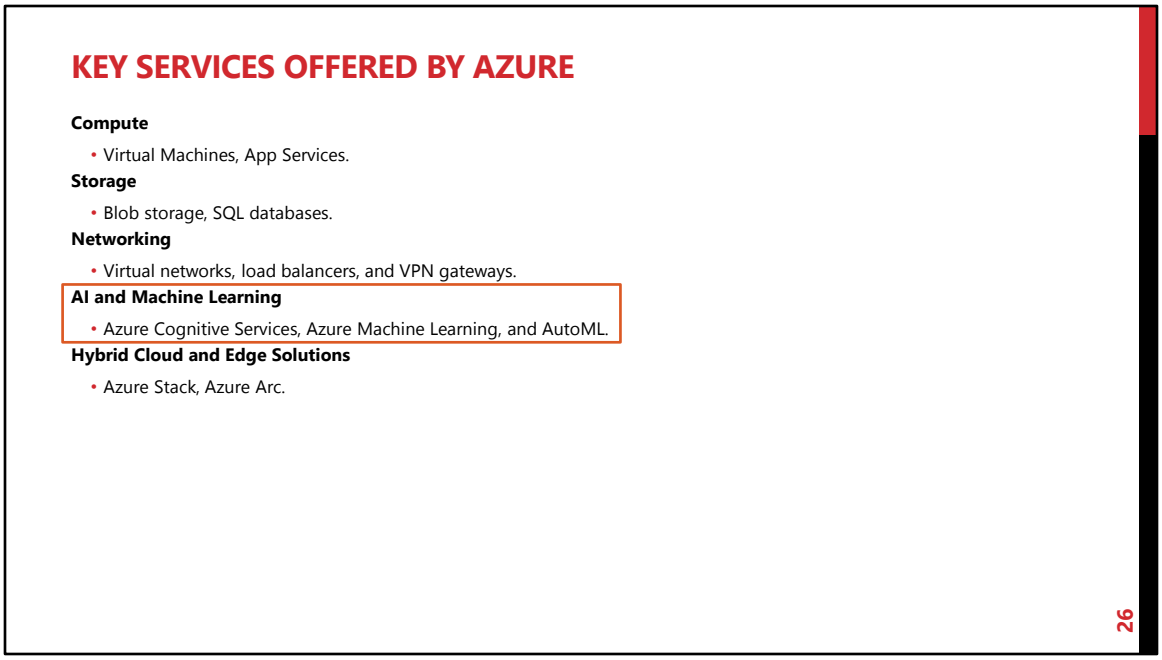
Hybrid Cloud and Edge Solutions

Azure's hybrid capabilities make it a versatile choice for organizations with both on-premises and cloud resources, helping them bridge systems and expand to edge computing when needed.

AI and Analytics for Insights

Azure's suite of AI and analytics tools empower organizations to leverage data effectively, supporting business intelligence, predictive analytics, and decision-making.

Integrated Developer Ecosystem
Azure is developer-friendly, supporting a wide range of programming languages and DevOps integrations, enabling efficient development and continuous delivery.
Cost Management and Optimization
Azure provides tools like Cost Management and the Pricing Calculator, helping leaders monitor and optimize cloud spending in line with budget goals.



Visual: Infographic showing Azure's key services grouped by category (Compute, Storage, Networking, AI).

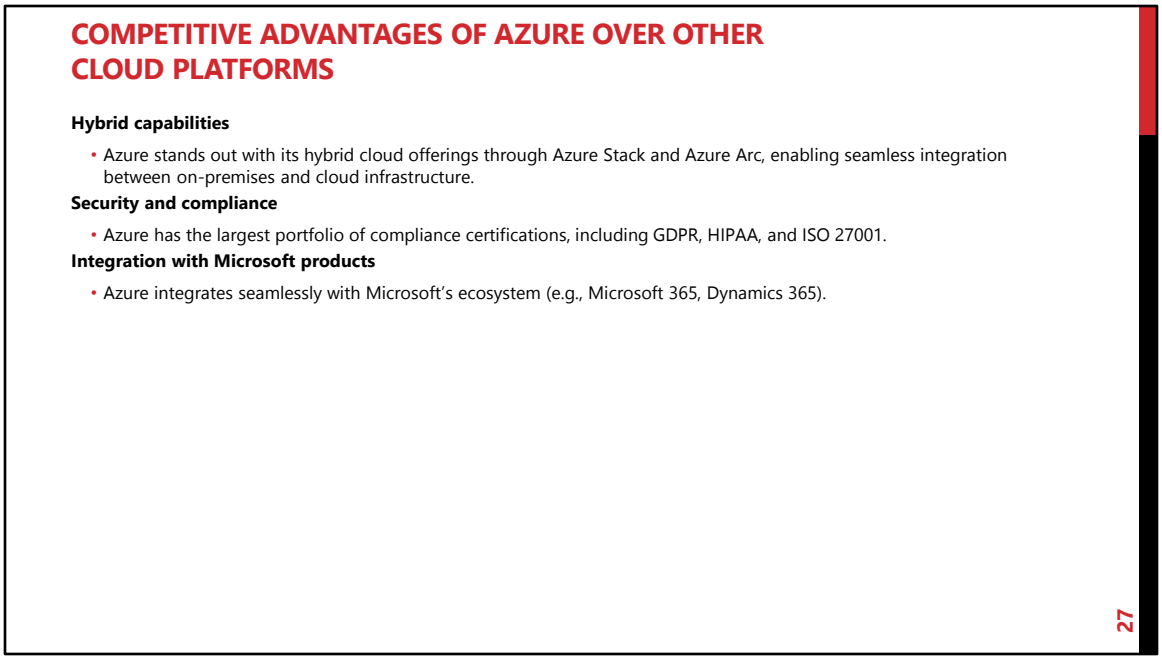
Compute
Azure's virtual machines allow businesses to run applications on virtualized hardware without the need for physical servers.

Storage
Azure Blob Storage handles unstructured data, while Azure SQL Databases provide secure storage for structured data.

Networking
Azure's networking services enable users to connect securely and scale their network infrastructure globally.

AI and Machine Learning
Azure offers industry-leading AI tools, such as Azure Cognitive Services and Azure Machine Learning, allowing businesses to integrate AI easily into their workflows.

Hybrid Cloud and Edge Solutions
Azure offers hybrid solutions, including Azure Stack and Azure Arc, allowing businesses to seamlessly manage on-premises, multi-cloud, and edge environments.

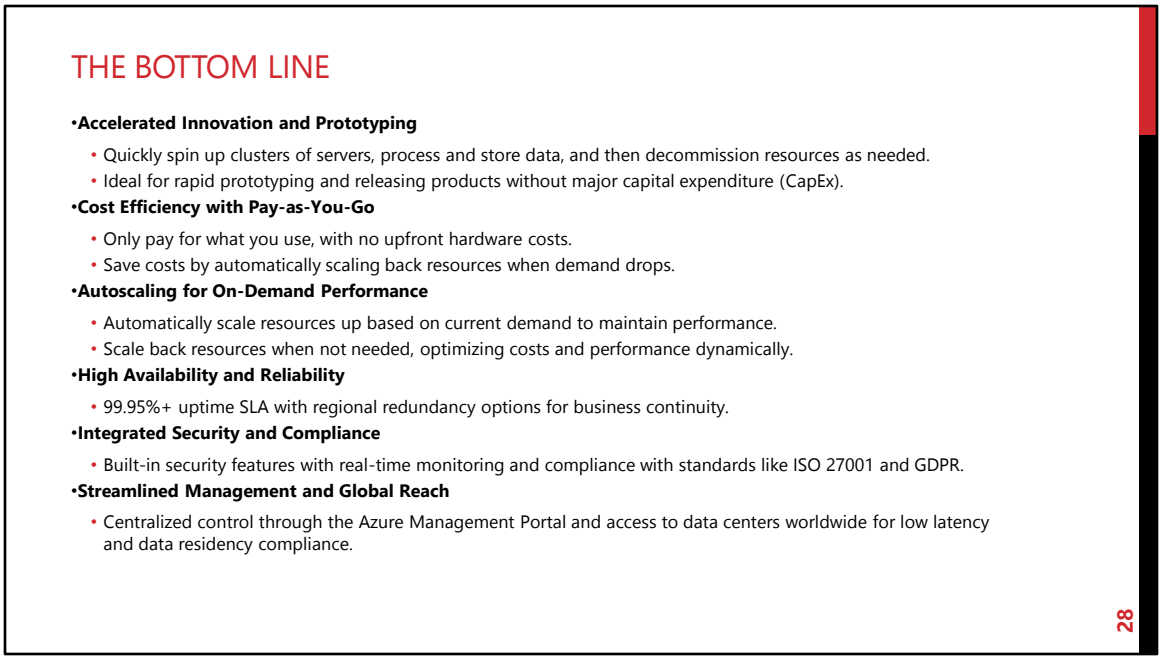


Visual: Comparison table of Azure vs. AWS vs. Google Cloud with Azure's advantages highlighted.

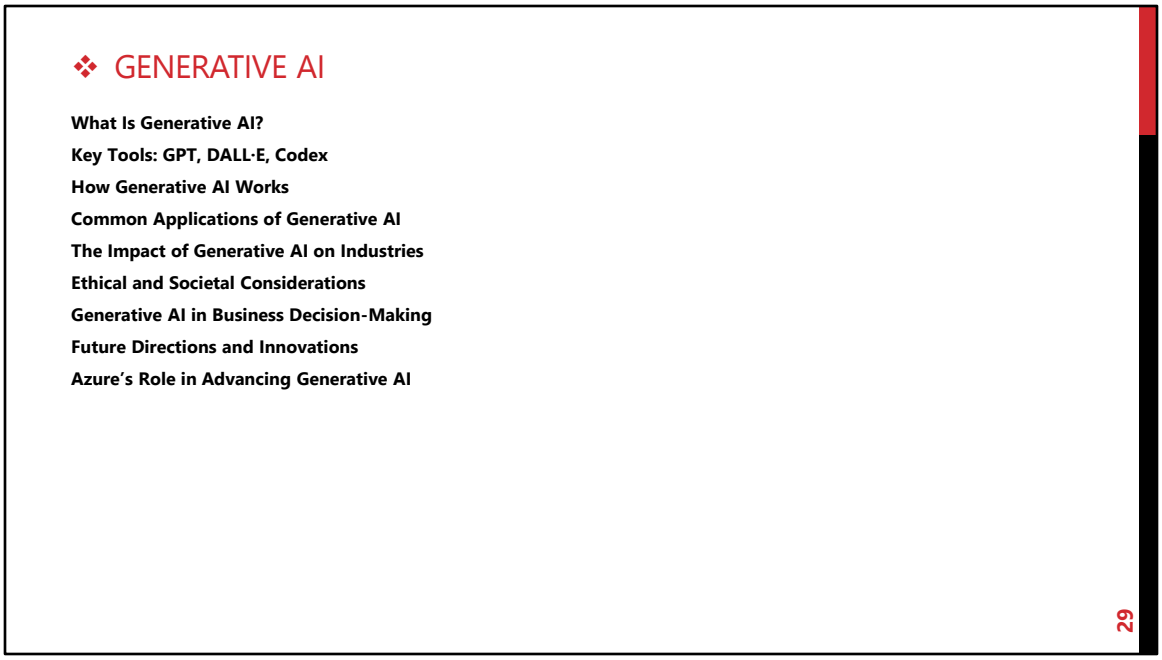
Hybrid capabilities
Azure leads the market in hybrid cloud solutions, making it easier for companies to manage both on-premises and cloud workloads.

Security and compliance
Azure has a deep focus on security, offering industry-leading compliance and privacy protections, which is a major advantage over its competitors.

Integration with Microsoft products
One of Azure's key strengths is its seamless integration with popular Microsoft products, such as Office 365, Teams, and Dynamics 365, offering users a unified experience.



•**Accelerated Innovation and Prototyping**Quickly spin up clusters of servers, process and store data, and then decommission resources as needed.
•Ideal for rapid prototyping and releasing products without major capital expenditure (CapEx).
•**Cost Efficiency with Pay-as-You-Go**Only pay for what you use, with no upfront hardware costs.
•Save costs by automatically scaling back resources when demand drops.
•**Autoscaling for On-Demand Performance**Automatically scale resources up based on current demand to maintain performance.
•Scale back resources when not needed, optimizing costs and performance dynamically.
•**High Availability and Reliability**99.95%+ uptime SLA with regional redundancy options for business continuity.
•**Integrated Security and Compliance**Built-in security features with real-time monitoring and compliance with standards like ISO 27001 and GDPR.
•**Streamlined Management and Global Reach**Centralized control through the Azure Management Portal and access to data centers worldwide for low latency and data residency compliance.



What Is Generative AI?
Introduce the concept of Generative AI, which involves creating new data, such as text, images, and more, based on patterns in existing data.
Key Tools: GPT, DALL·E, Codex
Explain some of the popular tools developed by OpenAI that represent different applications of Generative AI: GPT for text, DALL·E for images, and Codex for code.
How Generative AI Works
Provide a basic explanation of the underlying technology, such as neural networks and deep learning models, to give attendees a foundational understanding.
Common Applications of Generative AI
Discuss practical applications across industries like customer service, content creation, healthcare, and finance to help the audience see its real-world relevance.
The Impact of Generative AI on Industries
Highlight how Generative AI is transforming various sectors, enabling efficiency, personalization, and automation at unprecedented levels.
Ethical and Societal Considerations

Address important ethical issues, such as biases in AI outputs, data privacy concerns, and the potential impact on jobs and industries.

Generative AI in Business Decision-Making

Explore how Generative AI can assist in analyzing data, creating reports, and generating insights to support quicker and more informed decision-making in business contexts.

Future Directions and Innovations

Briefly discuss upcoming advancements in Generative AI, including model interpretability, improved real-time capabilities, and potential cost reductions.

Azure's Role in Advancing Generative AI

Position Azure as a trusted platform that not only provides robust tools for AI development but also emphasizes responsible and ethical AI practices, supporting businesses in adopting Generative AI confidently and securely.

WHAT IS GENERATIVE AI?

- **Defining Generative AI**
  - Generative AI models create new content, such as text, images, or code, based on patterns learned from existing data.
- **Difference from Traditional AI**
  - Traditional AI primarily analyzes and classifies data, generating insights or predictions. In contrast, Generative AI produces entirely new content.
- **Core Techniques**
  - Uses techniques like neural networks, transformers, and deep learning to recognize complex patterns in data.
- **Applications of Generative AI**
  - Media: Automated content creation, from news articles to social media posts.
  - Retail: Personalized marketing, product recommendations, and virtual shopping assistants.
  - Healthcare: Synthesizing medical images for research and generating personalized treatment plans.
- **Impact on Productivity**
  - Generative AI automates repetitive or time-intensive creative tasks, freeing up time for innovation and strategic work.

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Visual: A brief graphic comparing traditional AI (analyzes and classifies) and generative AI (creates and generates).

Generative AI is a cutting-edge technology that is redefining how we interact with artificial intelligence. Unlike traditional AI, which primarily analyzes and classifies data, Generative AI has the unique capability to generate new content. Think of it as the AI moving from simply understanding patterns to creating something new—be it a piece of writing, an image, or even a piece of code. This shift from predictive analytics to content generation opens up a world of possibilities, allowing us to automate creative tasks.
In the media industry, for instance, Generative AI can produce visual content for marketing campaigns. In healthcare, it can assist in generating medical imaging data to aid diagnoses. And in retail, it personalizes shopping experiences by creating unique product descriptions or even generating new product ideas. These applications streamline processes, reduce manual effort, and allow human workers to focus on more complex and strategic tasks. Generative AI's capacity to enhance productivity and foster innovation is truly transformative, and as we explore this further, we'll see how industries are evolving with this technology.

Defining Generative AI

Generative AI refers to models that generate entirely new content rather than just analyzing or classifying existing data. These models are trained on vast datasets, enabling them to produce text, images, or even code. This innovation is particularly transformative because it allows technology to replicate tasks that were once exclusive to human creativity, such as drafting emails, creating artwork, or even writing computer programs.

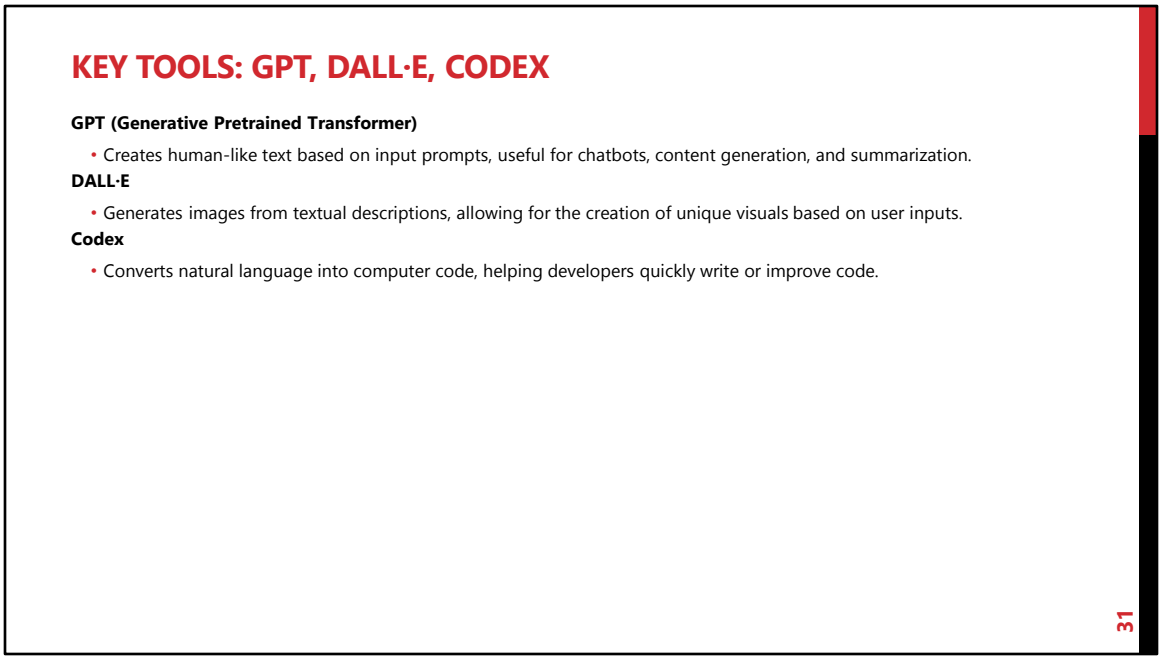
Difference from Traditional AI

Unlike traditional AI models that focus on analyzing or classifying data—such as determining whether a transaction is fraudulent—Generative AI creates new, data-driven outputs. This capability allows businesses to explore and use AI in more dynamic and creative ways, helping teams to automate repetitive tasks while allowing for creative problem-solving.

Applications in Finance

Generative AI holds particular promise in the finance sector. For instance, it can be used to generate detailed reports on market trends by summarizing large datasets and presenting them in an easily digestible form. It can also enhance customer service by generating realistic, AI-driven responses that feel personalized and engaging. Additionally, generative models can help predict fraud patterns by analyzing transaction data and simulating scenarios, which can support better-informed decisions around risk management.

This is especially relevant for leaders at Bank of America, where understanding and leveraging data effectively can give a significant edge. By incorporating generative AI into finance workflows, you're not only saving time but enhancing the quality and accuracy of insights.

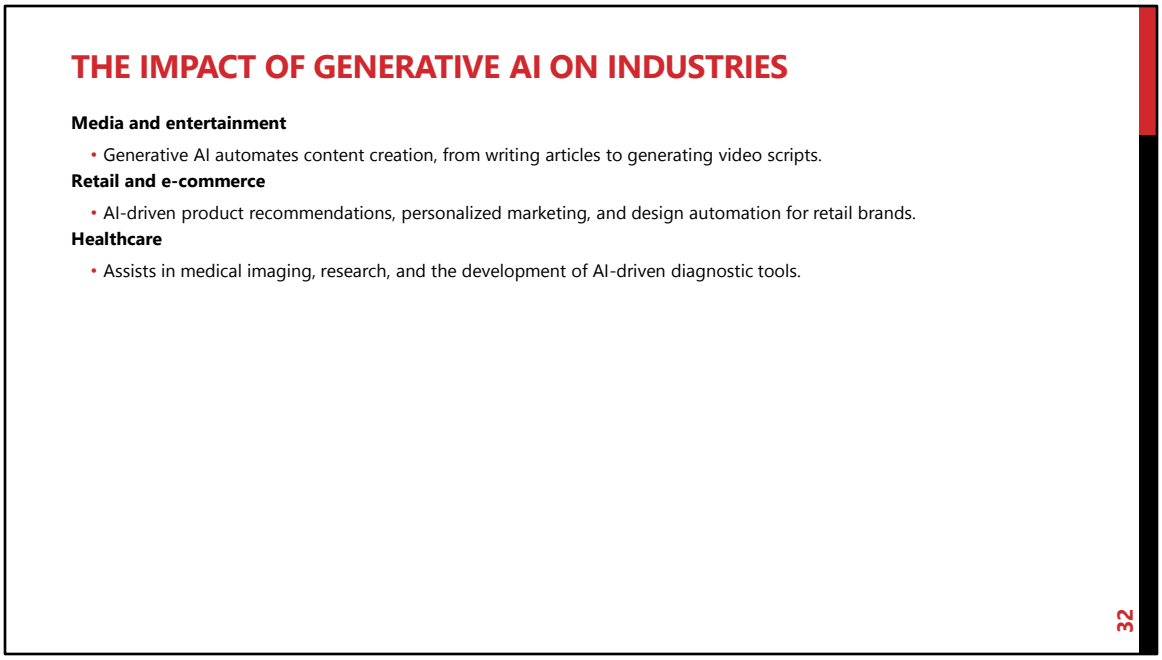


Visual: Side-by-side comparison of GPT (text generation), DALL·E (image creation), and Codex (code generation).

GPT
GPT is one of the most advanced text generation models available, capable of producing human-like responses for customer service, content generation, or summarization.

DALL·E
DALL·E generates high-quality images from text descriptions, enabling users to create custom visuals for marketing, design, or media production.

Codex
Codex allows developers to input natural language prompts and receive functional code in return, making it easier to automate coding tasks and speed up development cycles.



Visual: Industry-specific images showing applications of Generative AI in media, retail, and healthcare.

Media and entertainment
Generative AI tools can create text, audio, and video content, automating tasks that previously required human effort, making content creation more scalable.

Retail and e-commerce
Generative AI helps retailers personalize product recommendations, automate marketing campaigns, and even design custom products for customers based on their preferences.

Healthcare
Generative AI is being used to improve medical imaging, speed up research, and assist doctors in diagnosing diseases by providing AI-driven insights.

❖ AI IN BUSINESS APPLICATIONS

Generative AI Applications in Business

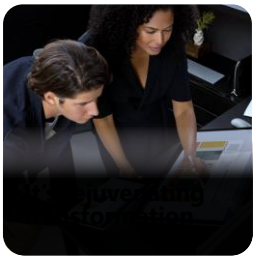
Generative AI in Product Design

Generative AI in Marketing

AI HAS FOREVER CHANGED WHAT SOFTWARE MAKES POSSIBLE

ChatGPT crossed 1 million users in 5 days of launch, setting the platform record.[1]

The value of AI is projected to increase 13x—to $15.7 trillion by 2030.[2]



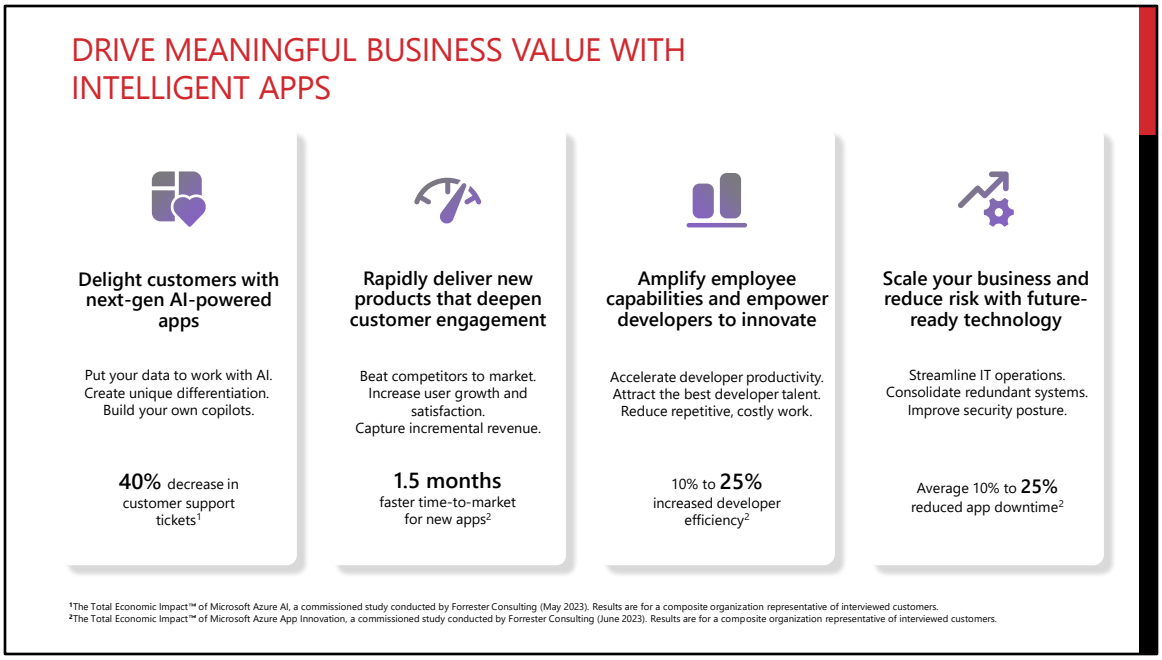
87% of organizations believe AI will give them a competitive edge.[3]

[1]OpenAI public statements
[2]Global Artificial Intelligence Study: Exploiting the AI Revolution, PwC
[3]AI Global Executive Study and Research Project, MIT Sloan and BCG

Generative AI has fundamentally changed what we can accomplish with software and changed our expectations of software.

It's driving tremendous adoption of services, it's reshaping industries, and it's prompting organizations to consider how they can use AI and what new digital products, services, and experiences they can create.

Sources:
1. https://twitter.com/gdb/status/1599683104142430208?lang=en
2: https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html
3. https://sloanreview.mit.edu/projects/expanding-ais-impact-with-organizational-learning/?utm_medium=pr&utm_source=release&utm_campaign=ReportBCGAI2020



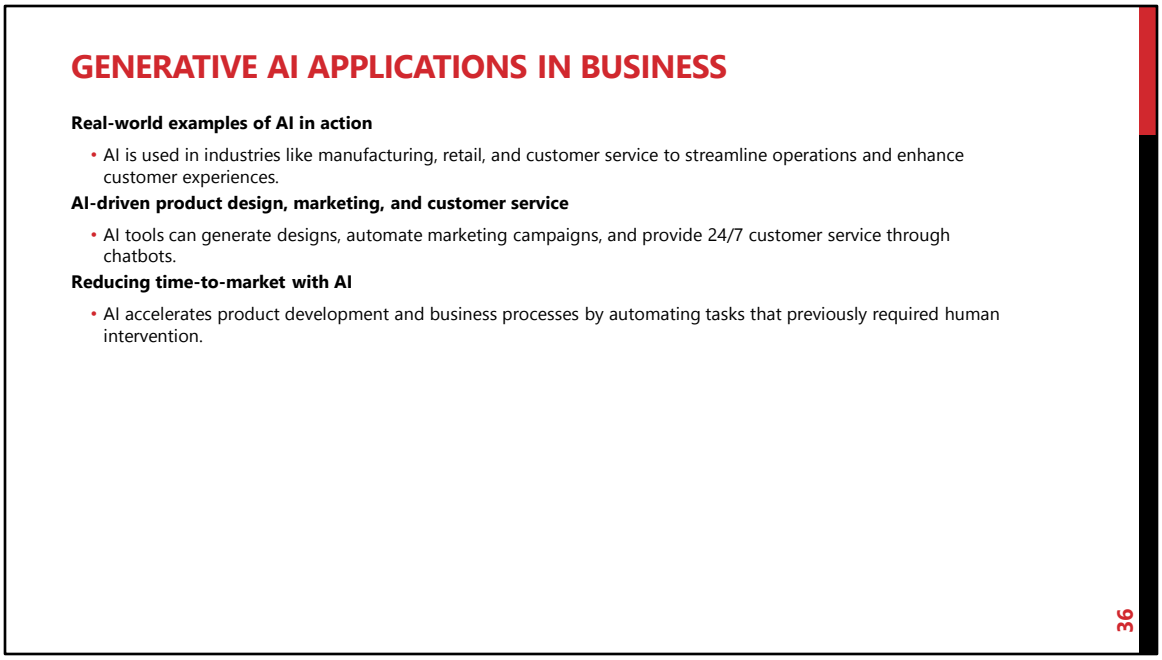
There are many benefits that intelligent apps can offer to your business

First, it means you can outpace competition, right by delivering, you know, innovative new applications.

You can also amplify employee capabilities and you can increase developer productivity.

You can also scale your business and future proof .

And being able to future proof is possible whether you're leveraging AI right now or not.

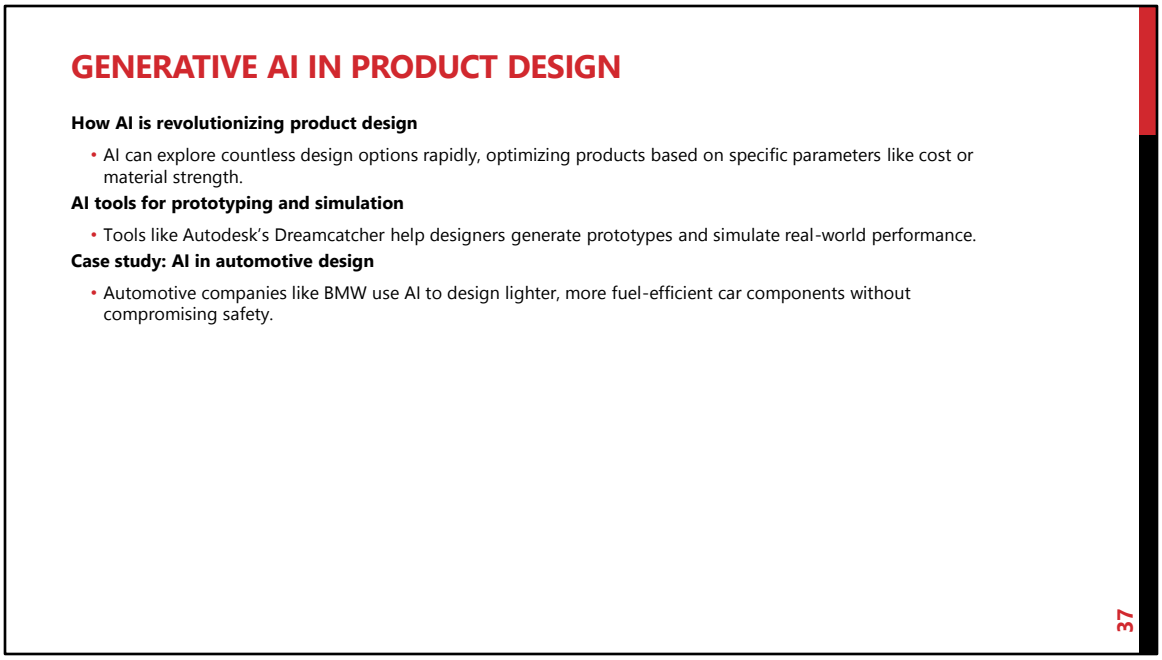


Visual: Infographic showing AI use cases across product design, marketing, and customer service.

Real-world examples of AI in action
Businesses across various industries are implementing AI to optimize operations. For example, manufacturers use AI to predict equipment failures, and retailers use it for inventory management.

AI-driven product design, marketing, and customer service
AI tools are transforming the way businesses approach design, customer interaction, and marketing. Chatbots provide instant support to customers, while AI algorithms personalize marketing campaigns for better engagement.

Reducing time-to-market with AI
By automating repetitive tasks like product design iterations or campaign creation, AI allows companies to bring products to market faster.

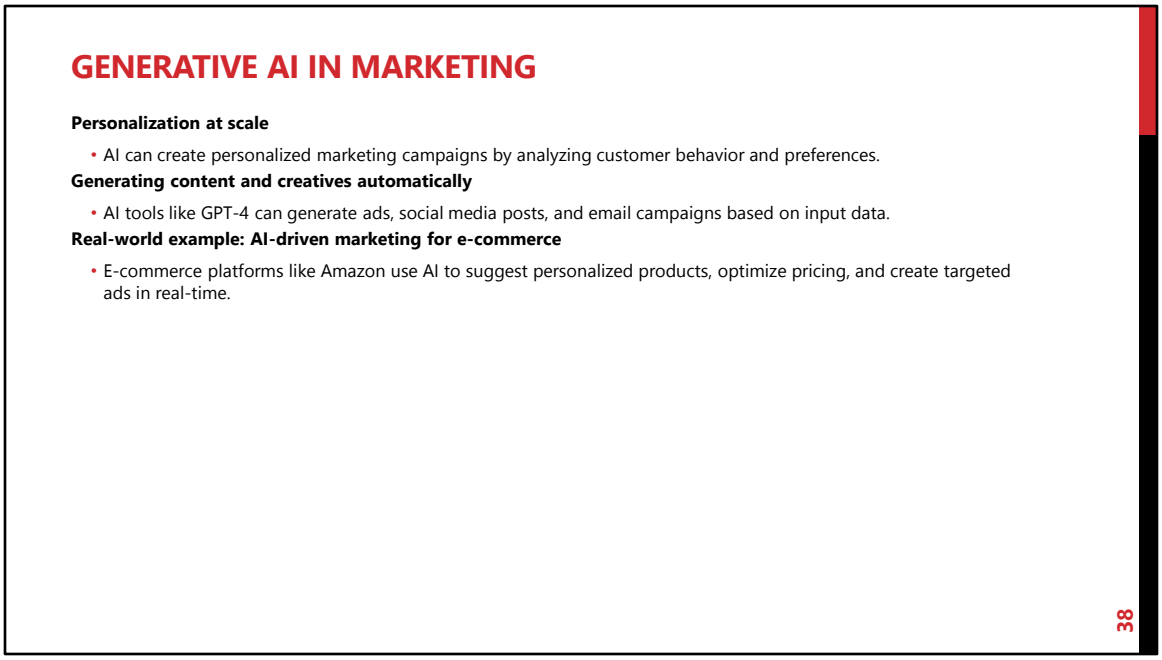


Visual: Example of AI-generated product designs from tools like Autodesk Dreamcatcher.

How AI is revolutionizing product design
AI allows companies to optimize their product designs by rapidly iterating through different configurations, saving time and improving efficiency.

AI tools for prototyping and simulation
Generative AI tools can simulate how products will perform under various conditions, which helps companies avoid costly errors before production.

Case study: AI in automotive design
AI is particularly valuable in the automotive industry, where companies like BMW use AI to design car parts that are both lighter and stronger, optimizing fuel efficiency and safety.



Visual: Example of an AI-generated marketing campaign.

Personalization at scale
AI allows marketers to create customized content and campaigns for individual customers, leading to higher engagement and conversion rates.

Generating content and creatives automatically
AI tools like GPT-4 can automate the creation of marketing materials, from social media posts to email campaigns, saving time and improving consistency across platforms.

Real-world example: AI-driven marketing for e-commerce
AI enables e-commerce platforms to provide personalized product recommendations, optimize dynamic pricing, and automate the delivery of ads based on customer preferences.

DEMO: PROCESSING CLIENT DATA PRIVATELY

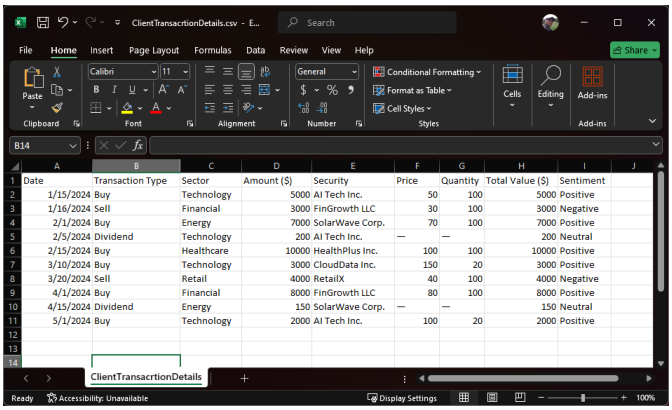
Step 1:Provision Azure OpenAI Service

Step 2: Prepare Your Data Locally

Step 3: Use Azure SDK to Call the API

Step 4: Generate and Store Insights

Step 5: Extend with an Interactive Q&A



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Step 1: Prepare Mock Transaction Data

Sample dataset with transaction details for a hypothetical client's portfolio.

Example Dataset: ClientTransacrtionDetails.csv

Step 2: Feed Data into a Generative AI Model

Use the dataset to input into a generative AI model (such as GPT) and prompt it to generate a summary of insights based on the data provided.

Prompt Example:

•"Analyze the above transaction data. Summarize key trends in sector performance, identify any patterns in buying or selling behavior, and provide an overall sentiment analysis for the client's portfolio."

Step 3: Expected AI-Generated Output

Example Output:

Client Portfolio Summary – Q1 2024

•**Sector Performance**:

- *Technology*: The portfolio saw significant activity in the technology sector with notable buys in AI and cloud technologies, indicating a positive sentiment toward tech growth, especially in AI-driven companies.
- *Energy*: Solar investments demonstrated a growing interest in

renewable energy with SolarWave Corp. contributing positively to portfolio diversification.

•**Transaction Patterns**:

- *Buying Trends*: Majority of purchases are in Technology, Financial, and Energy sectors, showcasing a balanced approach between growth and stability.
- *Selling Trends*: Sells mainly occurred in Financial and Retail sectors, which may suggest divestment in less promising areas.

•**Sentiment Analysis**:

- Positive sentiment across Technology and Healthcare investments indicates strong confidence in these areas, particularly AI, cloud services, and healthcare technology.
- The portfolio sentiment appears generally positive, aligned with growth-oriented sectors, suggesting a strategic focus on long-term, high-value industries.

Step 4: Display Output in a Dashboard Format

Use a simple dashboard or visual display to showcase key findings, with sections for **Sector Performance**, **Transaction Patterns**, and **Sentiment Analysis**.

For the demo, you can either:

•Use a presentation slide with highlighted insights, graphs, or charts based on the AI-generated summaries.

•Use a Jupyter notebook or similar tool to dynamically display the summarized text and graphs.

Step 5: Extend with an Interactive Q&A

Allow for questions and show how the model can adapt to follow-up questions.

Examples:

•"What are the top performing sectors?"

•"Which investment has the highest return?"

COMPUTER VISION

- Azure Cognitive Services offers pre-built APIs for computer vision, enabling you to extract insights from images and videos. You can use Azure Cognitive Services to recognize faces, objects, and text in images.

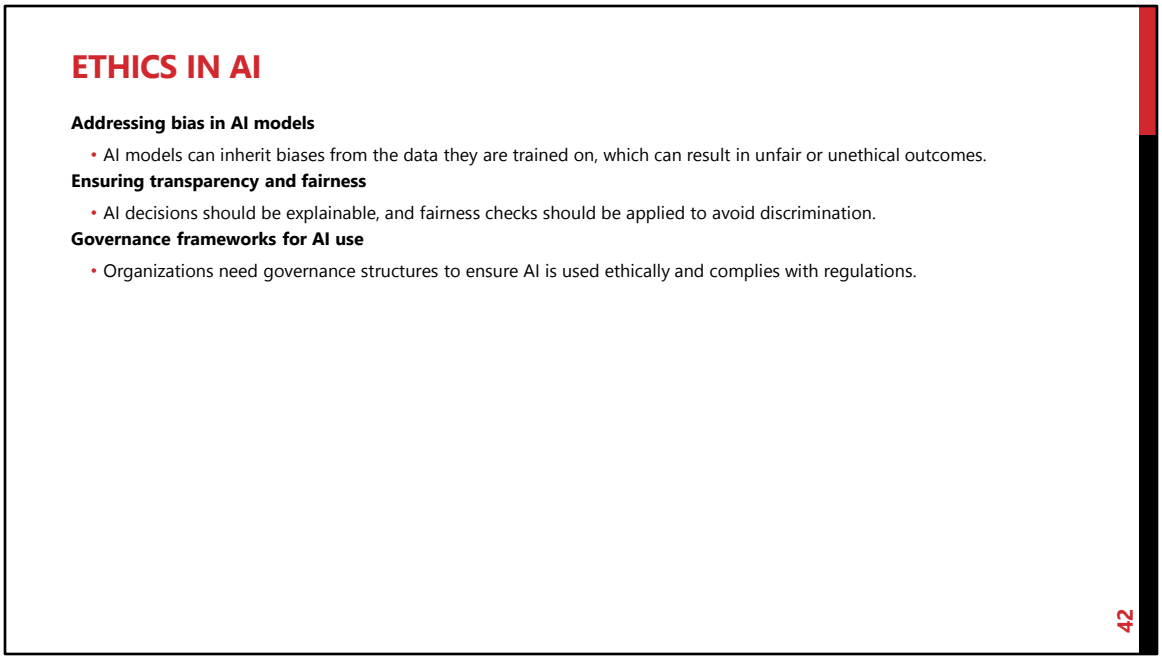
Azure Cognitive Services provides pre-built APIs for computer vision, enabling you to extract insights from images and videos. We will explore how you can use Azure Cognitive Services to recognize faces, objects, and text in images.

❖ ETHICS, SECURITY, AND CULTURE

Ethics in AI

Cloud Security & Compliance

Building a Cloud-Ready Culture

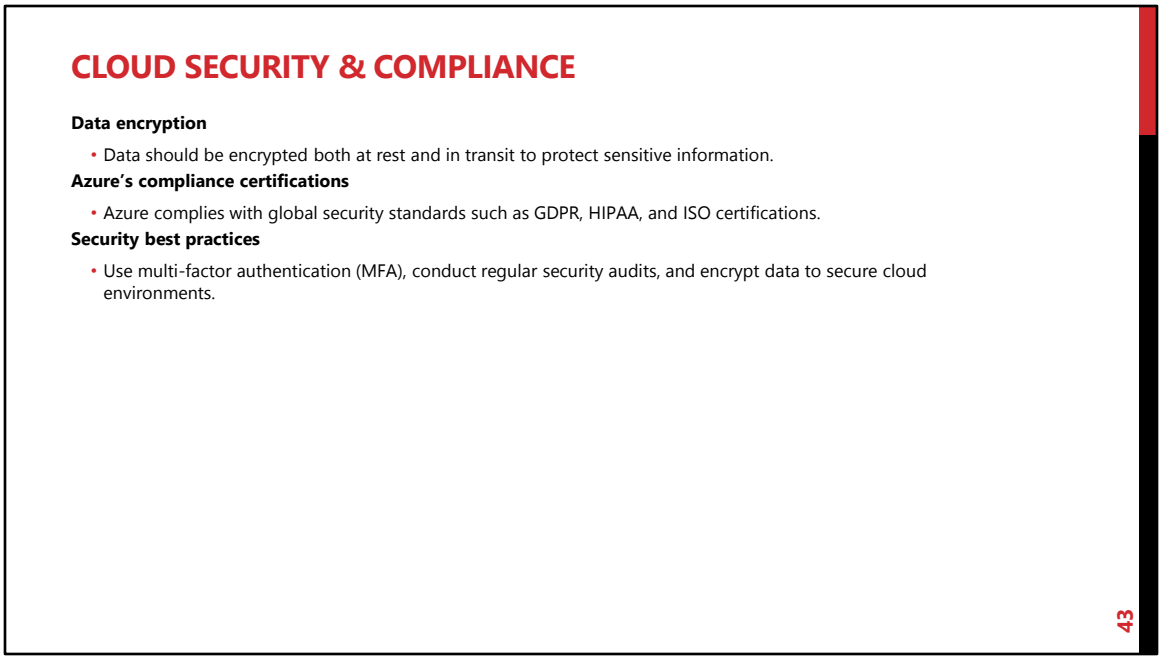


Visual: Flowchart outlining an AI governance framework and steps for addressing bias.

Addressing bias in AI models
AI models are only as good as the data they are trained on, and biased data can lead to unfair outcomes. Regular audits and diverse datasets can help mitigate this risk.

Ensuring transparency and fairness
AI decisions should be explainable to build trust. Fairness checks should be applied to avoid bias in AI outputs, ensuring ethical use.

Governance frameworks for AI use
Organizations need clear governance frameworks to guide the ethical development and deployment of AI systems, ensuring compliance with laws and industry standards.

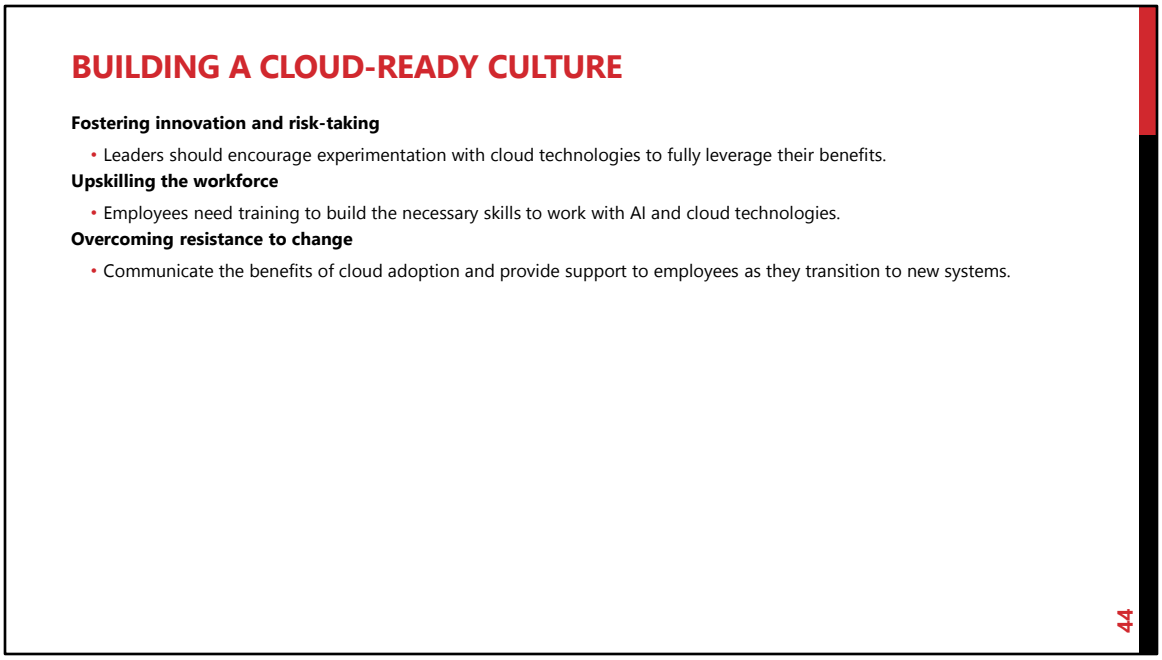


Visual: Azure compliance certifications and security best practices (MFA, encryption).

Data encryption
Encryption is essential for securing data, both at rest (when stored) and in transit (when being transferred), to prevent unauthorized access.

Azure's compliance certifications
Azure complies with many international security regulations, such as GDPR and HIPAA, ensuring that businesses using Azure meet legal data protection requirements.

Security best practices
Organizations should adopt best practices such as multi-factor authentication, regular audits, and encryption to strengthen their security posture in the cloud.



Visual: A roadmap for building a cloud-ready culture with milestones for innovation, upskilling, and overcoming resistance.

Fostering innovation and risk-taking
Encouraging a culture of innovation and risk-taking will help businesses get the most out of cloud technologies. Leaders must promote experimentation.

Upskilling the workforce
Providing training and resources will ensure that employees can effectively use AI and cloud technologies, helping businesses remain competitive.

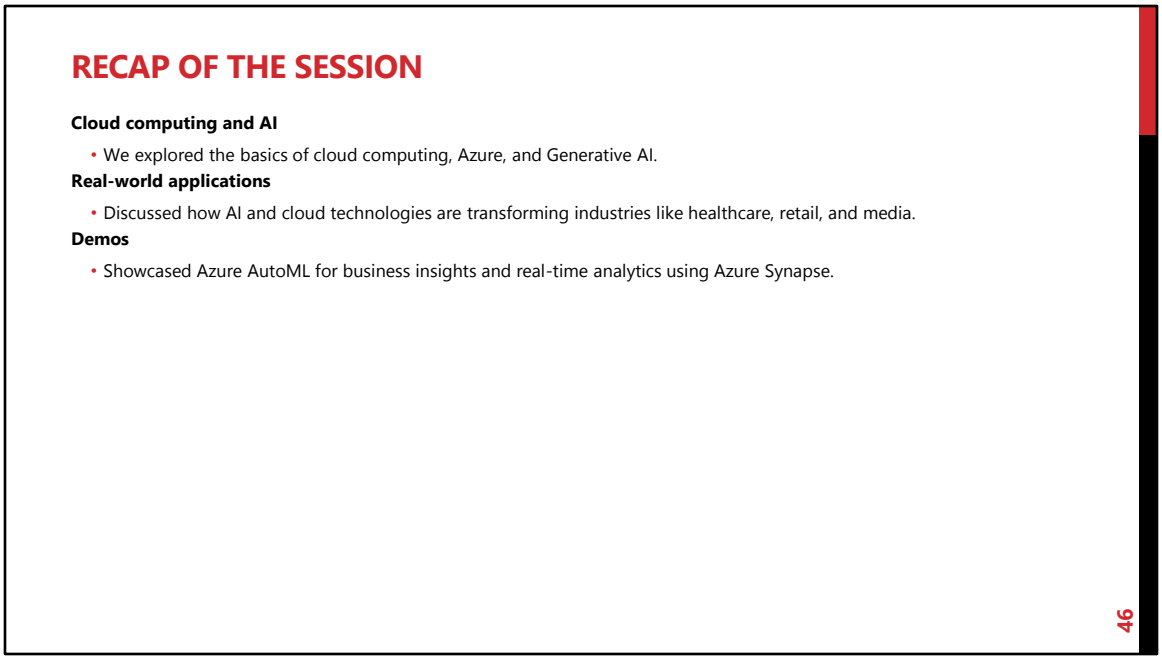
Overcoming resistance to change
Many employees may be hesitant to adopt new technologies. It is important to communicate the benefits clearly and provide support to help them adapt.

❖ WRAP-UP & KEY TAKEAWAYS

Recap of the Session

Call to Action: Start Your Cloud and AI Journey

Q&A with the Audience

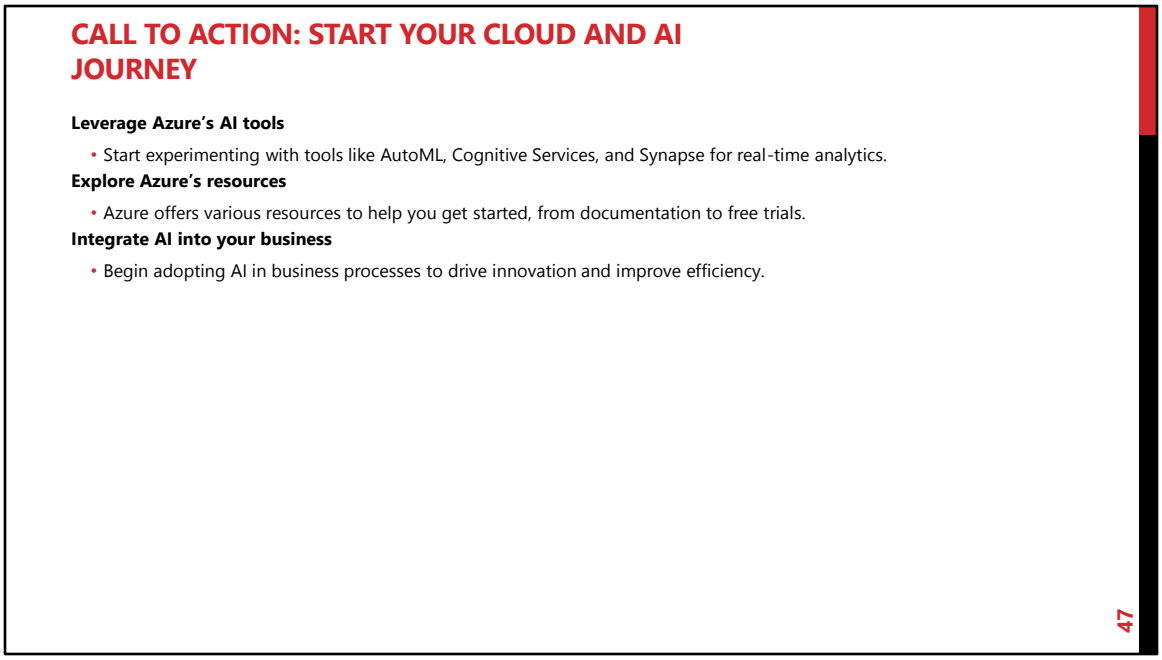


Visual: Simple recap slide with bullet points summarizing the key topics discussed.

Cloud computing and AI
We covered the fundamentals of cloud computing, Azure, and Generative AI and discussed how they are becoming essential tools for modern businesses.

Real-world applications
We explored real-world applications of AI and cloud technologies, including personalized marketing, customer service enhancements, and product design optimization.

Demos
We walked through practical demos of Azure AutoML and Azure Synapse for business analytics, showcasing their real-time capabilities.

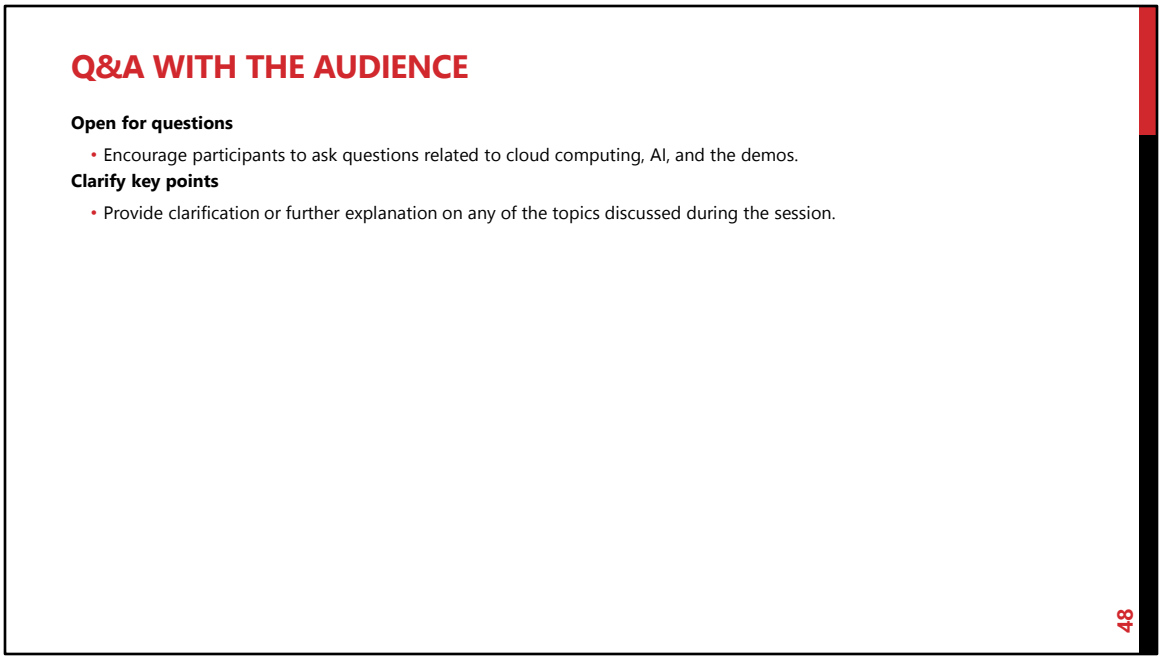


Visual: QR code linking to Azure's resources page or a relevant Azure trial/demo link.

Leverage Azure's AI tools
Encourage the audience to take their first steps into using Azure's AI tools, such as AutoML and Cognitive Services, for automating tasks and enhancing their business capabilities.

Explore Azure's resources
Point the audience to Azure's documentation, training resources, and free trial options to get started with cloud and AI tools.

Integrate AI into your business
Explain how AI adoption can drive innovation, reduce costs, and improve operational efficiency in their organizations.



Visual: Simple slide with a "Q&A" title, inviting the audience to ask questions.

Open for questions
Open the floor for any questions from the audience about the session's topics, including cloud computing, AI, or the demos.

Clarify key points
Take the time to provide further explanations or answer specific questions on Azure's tools or business applications of AI.