

Using technology to deliver services and boost growth

Olivia Neal, Director of Microsoft's Public Sector Center of Expertise Dave Sloan, Chief Technology Officer, Microsoft Worldwide Public Sector Andrew Cooke, Head of Policy, Microsoft Worldwide Public Sector

Agenda

- Welcome and introductions
- Session 1: Digital Maturity and Technology Foundations
- Session 2: Policy Building Blocks
- Lunch
- Session 3: Emerging Technologies Opportunities and Threats
- Session 4: Discussion and reflections





Digital transformation in the Public Sector

Olivia Neal Worldwide Public Sector

Trends driving digital transformation in Government



What drivers of change are you seeing?



Trends:

Leveraging data

Responsible use of new technologies

Listen to the Microsoft podcast

Public FUTURE
Sector FUTURE

John Price

Detective Sergeant, West Midlands Police



Digital Government maturity

Transactional Government

Analog

Service-centered Government

Intelligent Government

Analog Government









People and culture

Governance and rules

Technology and data

			Service-centered Government	Intelligent Government
	Analog	Transactional Government	Government	
	Government Complex processes Lack of data and efficiency			
People and culture	Teams formed from single agencies with single specializations			
Governance and rules	Waterfall implementation Hierarchical structure			
Technology and data	Data held for single scenarios Tech solutions fixed to siloed requirements			

				Service-centered	Intelligent Government
OUTCOMES		Analog Government	Transactional Government Multiple service portals and websites Personal data submitted multiple times Data not shared between teams Policies predicated on limited data sets	Government	
S	People and culture		Digital skills start to be bought in or developed		
ENABLERS	Governance and rules		Mandates and budgets allocated by agency (not outcome)		
	Technology and data		Connection of transactional services to existing back end operating systems		

Intelligent Government Service-centered Government OUTCOMES **Full services offered Transactional** operating across agencies Government 'Tell us once' approach to data use enabled Analog Citizen-facing employees have access to all data they need Government Services can be proactively targeted to groups Multi-disciplinary teams People User research and co-design and culture **ENABLERS** Cross-agency accountability Governance Adapting legislation for full services and rules Implementation of cloud strategy **Technology Digital Identity** and data

				Service-centered Government	Intelligent Government Multiple sources of data used to model impacts and formulate positions, policy and interventions
OUTCOMES			Transactional Government	Government	Personalized, accessible, proactive services and operations Proactive responses to crisis situations
		Analog Government			Citizens control their data and trust uses of Al
					Public servants freed from low-value tasks to add greater value
Si	People and culture				Digital and data embedded in leadership discussions
ENABLERS	Governance and rules				Data standards and governance Al approach with guardrails
	Technology and data				Seamless interoperability Comprehensive, scalable data use

Security,
Governance and
Cloud Adoption

Listen to Microsoft's podcast

Public FUTURE Sector FUTURE

Yeo Beng Huay

Governance Policy and Planning Lead, GovTech Singapore



Digital Government maturity

Transactional Government

Analog

Service-centered Government

Intelligent Government

Analog Government









People and culture

Governance and rules

Technology and data

Where are you on this journey?



Why Hyperscale Cloud for Government? A Rapid Primer

Dave Sloan Chief Technology Officer Microsoft Worldwide Public Sector

July, 2023



Government Cloud Fundamentals





The move to cloud is essential and urgent.

- Understanding of key Hyperscale Value Propositions is critical
 - Agility "Reduce the cost of failure to near zero"
 - Innovation "New technologies now come first to the cloud...
 and soon will come only to the cloud"
 - Cybersecurity "Your data is not safe until it is in the cloud.
 Hyperscale threats require Hyperscale protection."
- Other key benefits (Managed, Resilience, Redundancy, Cost Savings, Scalability, Compliance) are also critical



There is no such thing as a private cloud.

- On-prem data centers cannot deliver the key cloud value propositions that a successful digital transformation requires
 - This is true even on IaaS, let alone PaaS and SaaS
 - Cybersecurity for internet-connected on-premise systems is increasingly non-viable





Building Blocks for a Successful Digital Transformation Strategy

Realizing a Country's True Potential



Technology helps governments drive competitiveness and growth

Harnessing emerging technologies like cloud computing enables you to:



Increase productivity



Realize cost savings



Foster innovation



Engage and support citizens

Digital transformation at scale and at pace requires the right policies



Digital transformation drives economic growth and improves services

What is digital transformation?

Maximizing effectiveness of digital technologies to...



Streamline, innovate and improve the quality of services for citizens



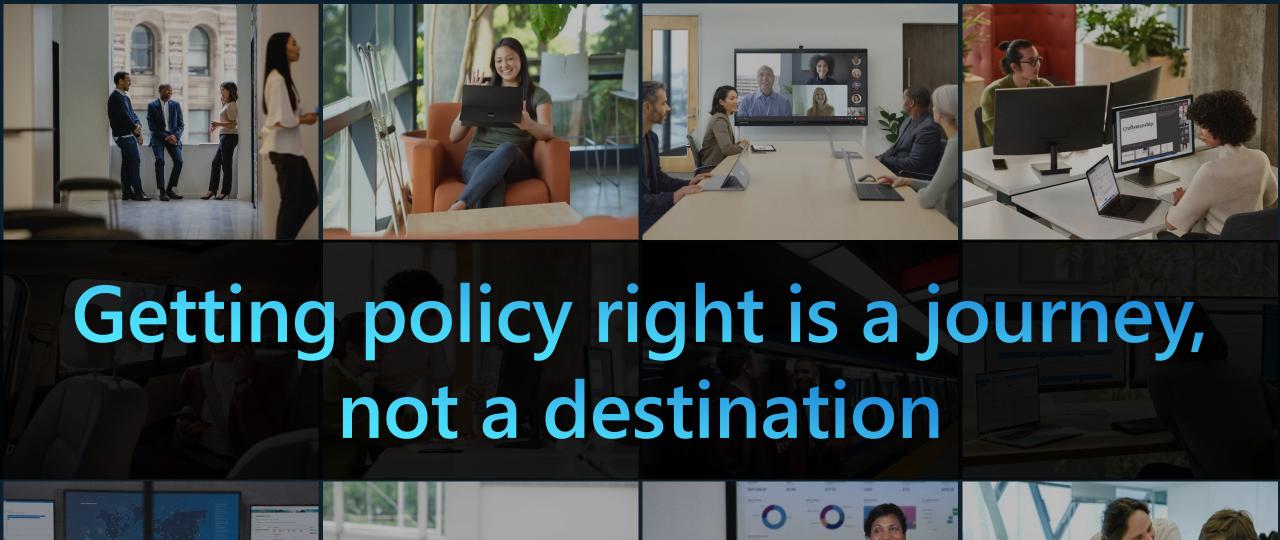
Optimize operations



Gain and act on data insights

Use of digital technologies is correlated with higher growth in gross domestic product













The Policy Building Blocks

1 A national cloud strategy and cloud first policy

5 Use of government framework agreements

A data classification framework fit for the digital age

6 Flexible and adaptive finance rules

Adoption and implementation of a digital identity solution

7 A collaborative approach amongst stakeholders

4 A centralized procurement function

8 A digital culture and technology skilling agenda

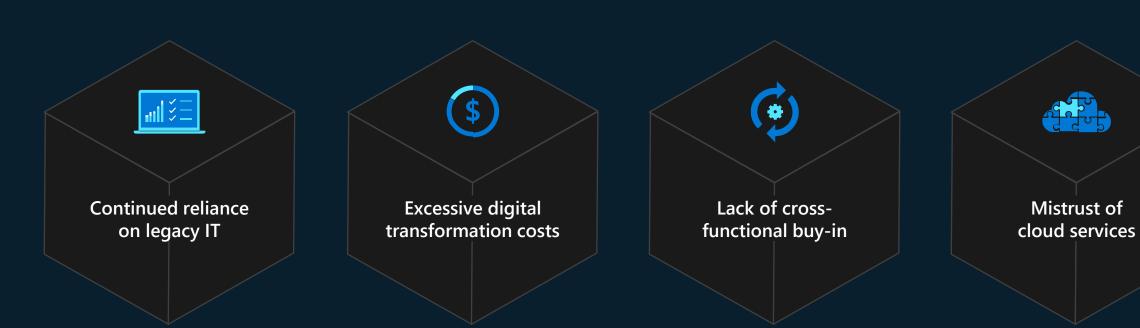
BUILDING BLOCK 1

Adoption and implementation of a national cloud strategy and cloud first policy

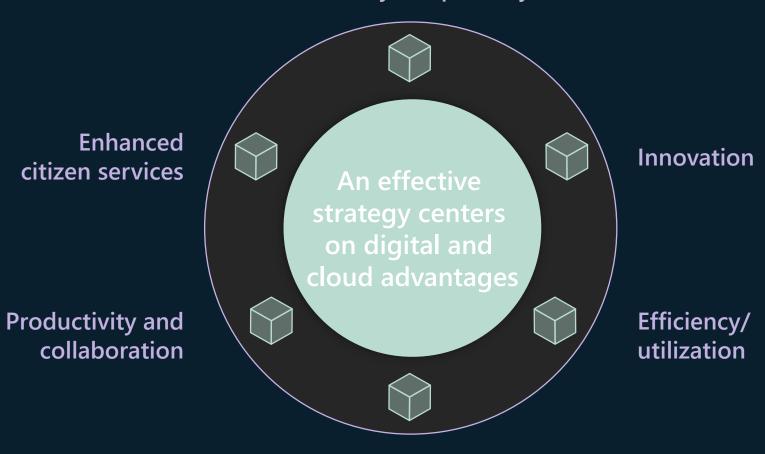


An effective strategy and a cloud-first policy work together to accelerate digital transformation while setting clear goals and success metrics.

Overcome these digital transformation barriers



Flexibility/adaptability



Cost reduction and consolidation of investment

Examples of national cloud strategies and cloud first policies





US federal "Cloud Smart" strategy fosters adoption and implementation



UK public-cloud-first policy reduced cloud costs up to 40%



Chile, Brazil, Argentina, and Columbia prioritize cloud services through legislation and government support



Canada implemented a Cloud Adoption Strategy mandating the public cloud as the preferred option for IT services



Singapore connects separate government agencies with a readymade platform



Nigeria adopted a cloudfirst policy in 2019



Australia introduced principles-based Secure Cloud Strategy enabling consistency with flexibility

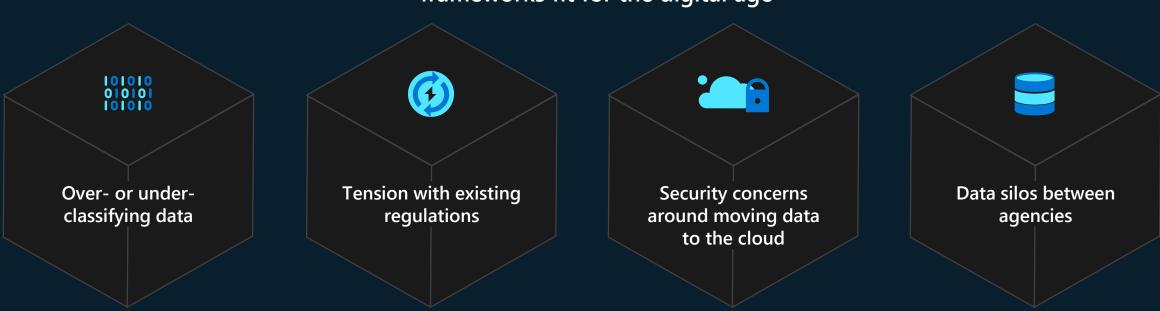
BUILDING BLOCK 2

Data classification and security framework



Classifying excessive amounts of data in the highest categories can impede transformation and ultimately hamper effective data use.

Overcome transformation barriers with data classification frameworks fit for the digital age



Technology-neutral

Differentiates data management based on relative value

Fosters internal collaboration

Characteristics of successful data classification frameworks

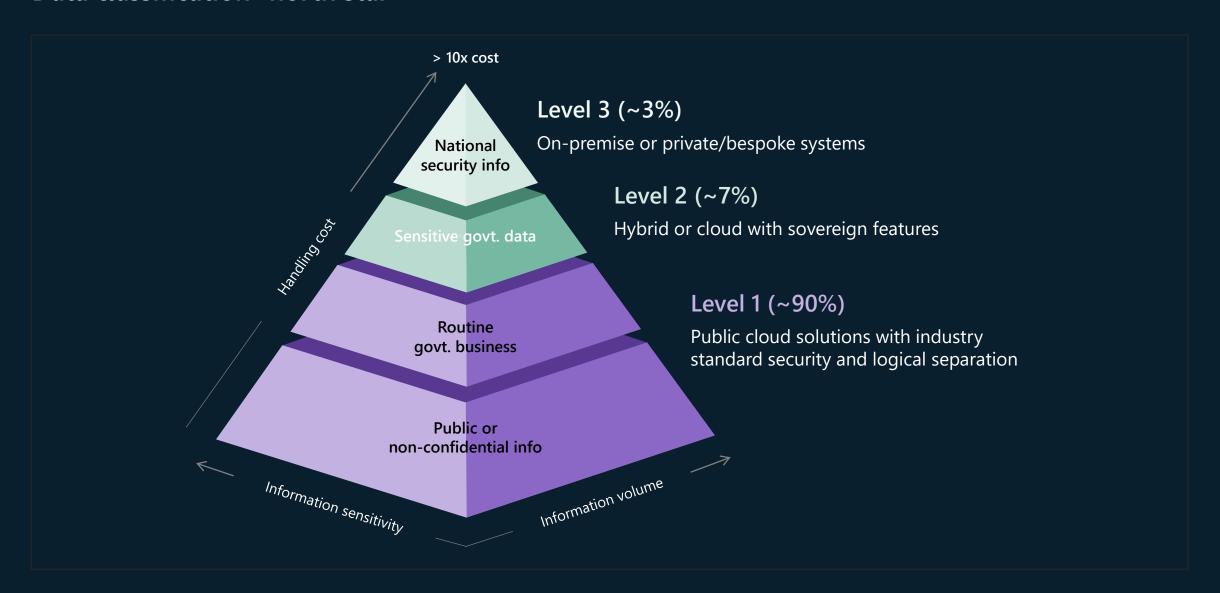
Iterative, flexible, and principles-based

Conformed, simplified, and well-documented

Helps decision makers choose appropriate storage for data types

Contextualized with national technology agenda, modernization objectives, and security best practices

Data classification "north star"



Examples of government data classification strategies





UK uses lowest level for 90% of data, saving billions of pounds and improving governance





Canada determined 92% of data could be placed under lowest level of classification

BUILDING BLOCK 3

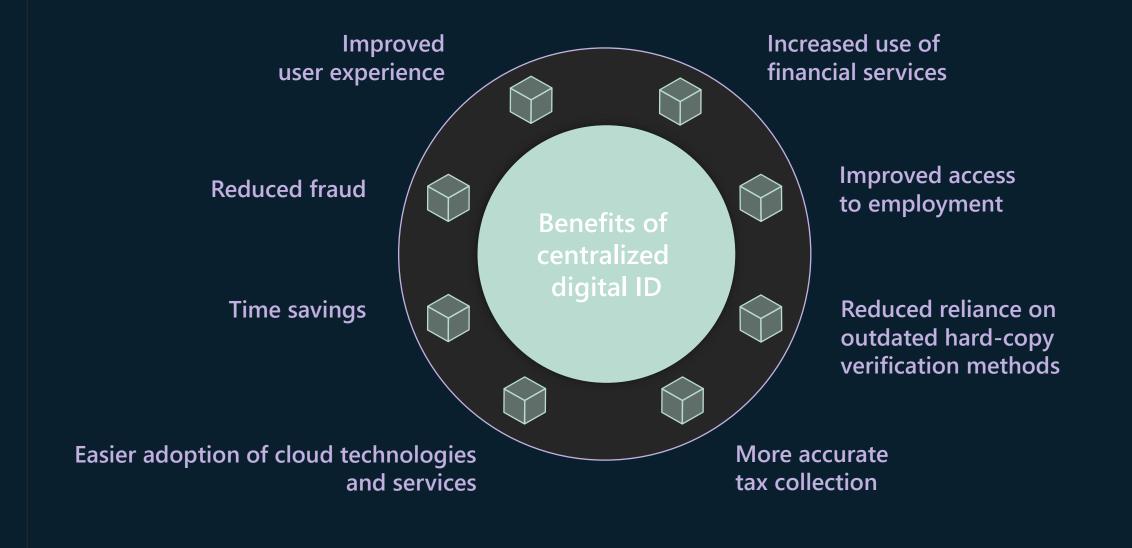
Adoption and implementation of a digital identity strategy



Effective digital identity technology and policy enables seamless, unified delivery of services to citizens. Widespread use can unlock huge economic value.

Overcome these digital transformation barriers





Examples of countries using a single digital ID solution





Italy allows citizens to access public administration services with a single, secure and protected digital identity



Singapore Singpass issued to 97% of those15 or older for government and private-sector transactions



UK announced plans to establish an Office for Digital Identities and Attributes





British Columbia, Canada offers BC Services Cards since 2013, expanding from health insurance to other government services



India established a nationwide ID system called Aadhaar, improving efficiency and reducing fraud



Estonia issues a digital ID to all citizens covering a breadth of digital services, saving 2% of GDP annually

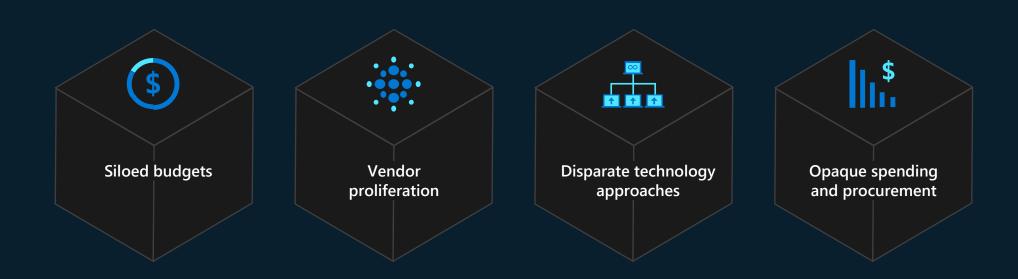
BUILDING BLOCK 4

A centralized procurement function/central purchasing entity



Make it simple for departments to get the services they need. Excessive complexity undermines the value of centralization.

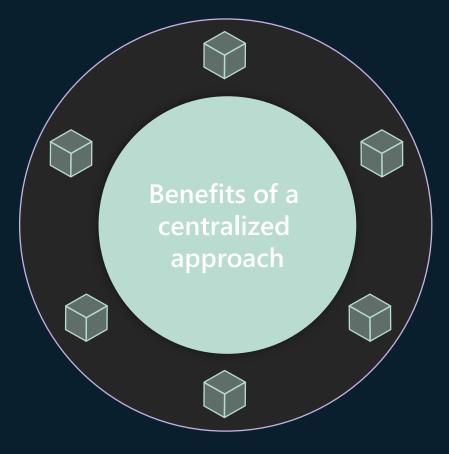
Overcome these digital transformation barriers



Economies of scale

Simplified HR management

Increased focus on contract issues and problem resolution



Standardization of terms

Technology harmonization

Transparent governance

Examples of central procurement of digital services





UK Digital Marketplace is managed by Government Digital Services, with another program enabling procurement of short-term, pay-as-you-go services



Canada established a central authority with strong procurement governance and oversight to validate decisions and drive volume discounts



Australia streamlined digital sourcing by consolidating ICT procurement into one function



Singapore created a onestop e-procurement portal for suppliers to access government procurement opportunities online

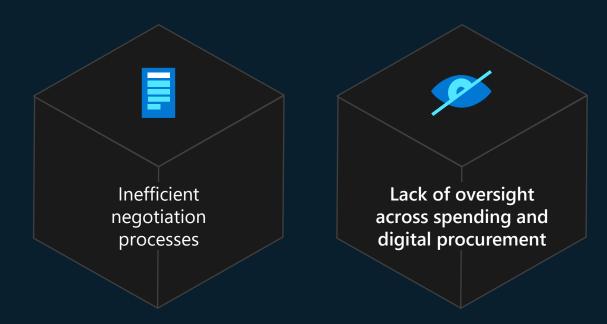
BUILDING BLOCK 5

Use of whole-of-government framework agreements



Consistency is key. Giving departments too much flexibility to modify the agreement undermines the benefits framework arrangements.

Overcome these digital transformation barriers



Connected to advanced, centralized procurement function

Use of contract specialists able to compare offers and establish call-off contracts



Use electronic procurement platforms

Scale approach

Examples of whole-of-government framework agreement





Italy manages \$13B in purchases annually using 127 framework contracts, saving 20% on average over traditional bids



UK signed framework agreements with key technology suppliers giving public entities access to services at the best prices through a centralized Digital Marketplace



Australia uses whole-ofgovernment agreements to manage purchase of ICT products and services used across departments

BUILDING BLOCK 6

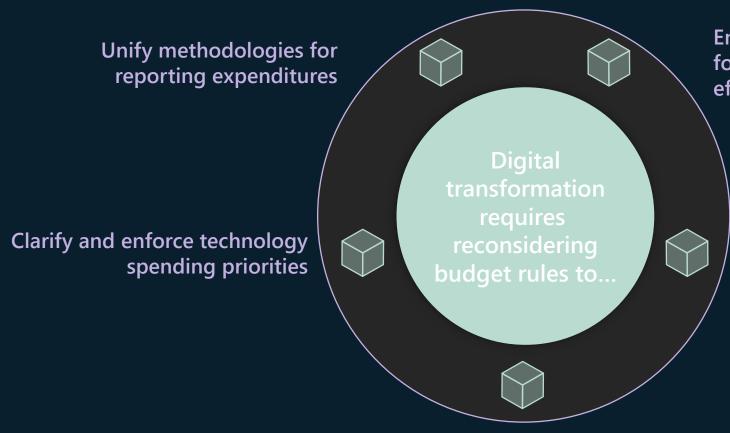
Need for flexible and adaptive finance rules



Financing Rules are often decades old, and often weren't crafted in contemplation of digital transformation and technology initiatives

Overcome these digital transformation challenges





Enable longer-term investment plans for digital and IT, enabling costeffective, multi-year commitments

Increase budget flexibility and deployment speed

Incorporate support, guidance, and training into IT budgets

Examples of countries using flexible and adaptive finance rules





UK spend controls reduce waste and encourage crossgovernment collaboration, while red lines encourage competition and value for money



Australia provides a process for converting Capex to Opex, enabling greater investment in cloud



Finland empowers citizens through procurement transparency



Argentina published technical standards and requirements for ICT projects



Singapore framed cloud procurement as infrastructure to accelerate clearance

BUILDING BLOCK 7

A collaborative approach between different parts of government, regulators and the private sector



Don't go it alone. Digital transformation is complex and ongoing. Different stakeholders can bring critical knowledge and skills to the table.

Overcome these barriers to digital transformation



Intergovernmental efforts:
Collaborate with other
governments to advance
public-sector digital
transformation



Internal government alignment: Get buy-in from each constituency

Cross-stakeholder engagement: Include regulators and technology vendors

Examples of digital transformation collaboration





UK 'one government cloud strategy' encourages cross-functional collaboration throughout the cloud lifecycle



Singapore Smart Nation and Digital Government Office coordinates collaboration among agencies, helping enable end-to-end digitalization of 95% of all transactions with the Singapore government



Denmark supports collaboration between legislators and civil servants to ensure legislation is digital-ready



Nigeria collaborates with Microsoft to accelerate its digital transformation through technical and policy recommendations

BUILDING BLOCK 8

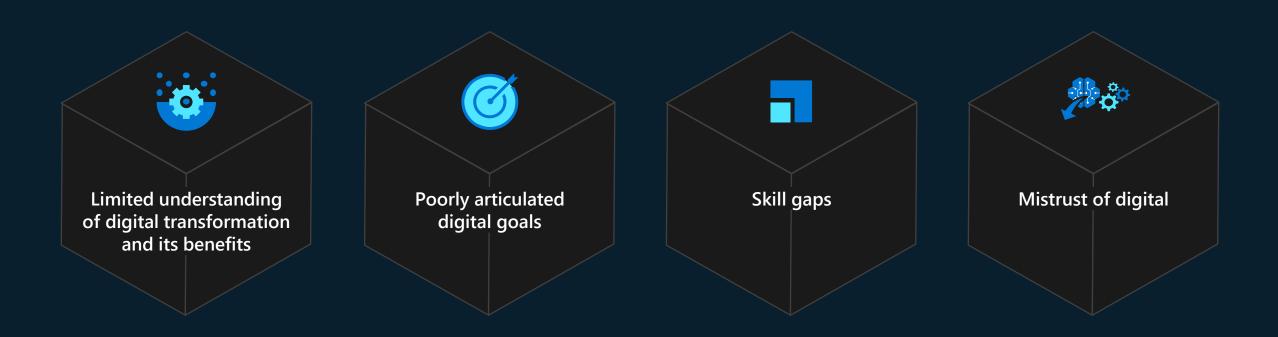
Promotion of a digital culture and civil servant upskilling



People are the key to successful digital transformation.

Maintaining digital competence is an ongoing process requiring constant internal dialogue.

Overcome these digital transformation barriers



Shifting workplace culture: Employees who understand how digital transformation benefits them are more likely to engage with it



Executive buy-in: A Cloud or Digital Center of Excellence model helps drive collaboration, training, and cultural change

Upskilling civil servants: Successful initiatives combine development of existing workforce skills and acquisition/retention of specialists

Examples of governments promoting digital culture





UK Office for National Statistics increased its training budget to upskill staff in cloud technology and employed roundtable discussions with experts and workshops about cloud usage



Singapore established The Digital Academy as a technology-focused learning institute for the public service



Canada established a Digital Academy to help federal public servants to gain the knowledge, skills and mindsets they need in the digital age



The Philippines implemented a framework to develop competencies and training needs for individuals in different ICT areas

Next Steps



Check out the whitepaper <u>here</u>

Lunch

We'll get started again at 13:30



Cybersecurity, Data Protection, and Generative Al

Dave Sloan
Chief Technology Officer
Microsoft Worldwide Public Sector

July, 2023



Agenda

About the Threat

About the Target

About Microsoft

What do you do about it?

Q&A

(Cyber)Crime Pays

Revenue opportunity for Cybercrime as a Service (CaaS) drives speed, scale and growth

\$6T

Annually today

\$10T By 2025

... and it's accelerating

1 K Attacks/Second

2x Ransomware demands



Public Sector is the Target

128 targets

42

countries from Russia alone

63%

of attacks targeted the top 4 sectors:

- IT Services
- Think Tanks/NGOs
- Education
- Government

90%

of Russian activity targeted **NATO** Member states



49%

of Russian attacks targeted **Government** agencies

Time is not on our side

Cyberattacks move fast, victims are slow

1hr to access data

<2 hr to move laterally 14 days

after vulnerability is published before exploit is broadly available

The more you wait, the more they take

78% of devices still used an unpatched version even

9 months after a patch is released

The State of the Union is Inadequate and **Unprepared**



DLP

Cross-cloud

Monitoring

- Lower Security adoption
- **†** Higher Attacker ROI creating ongoing incentives for more attacks.

How resilient is my organization?

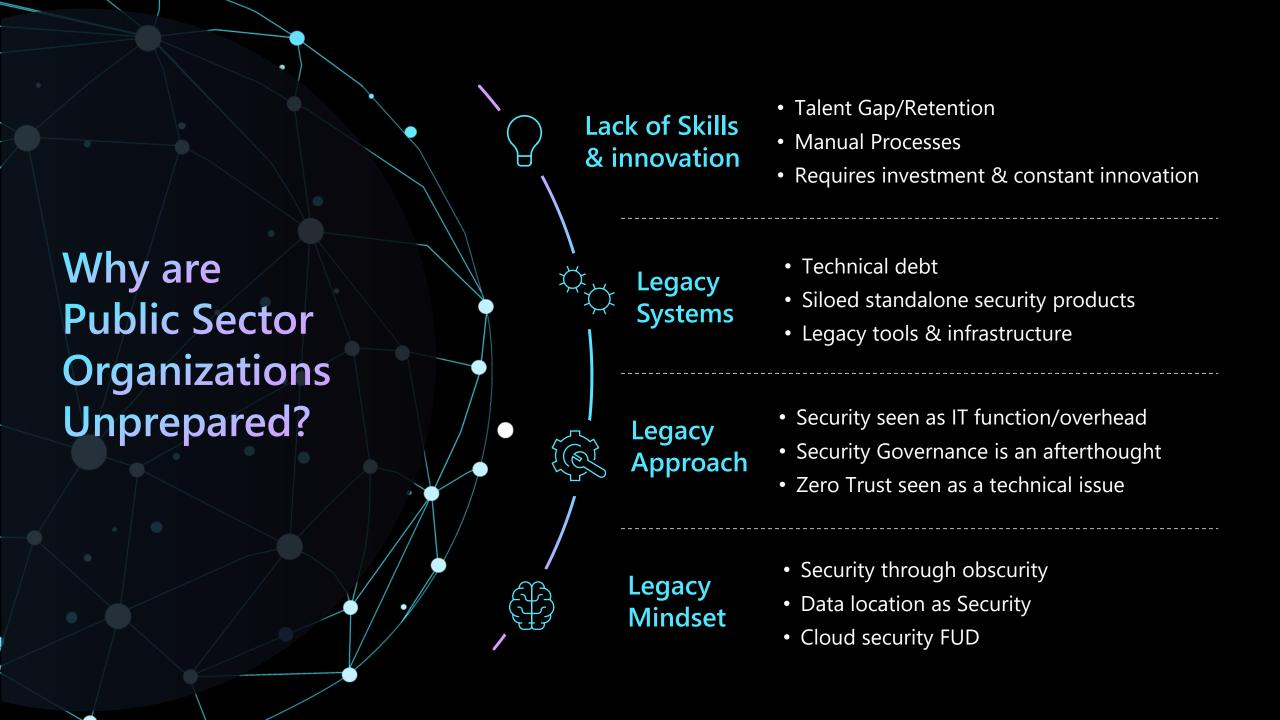
80%

of security
incidents
can be traced to a few
missing
elements that could
be addressed
through modern
security approaches

Key areas affecting Cyber Resilience

Microsoft studied victims of cyberattacks and found these factors to be the top 6 contributors to their vulnerability

Insufficient privilege access and lateral movement controls		929
Insecure configuration of identity provider	86	%
Limited adoption of modern security frameworks	85%	6
Lack of multi-factor authentication 74	%	
Lack of information protection controls 64%		
Low maturity of security operations 58%		



Hyperscale Cloud automation from the World's Largest Security Provider

Microsoft helps level the playing field

Over 43 trillion daily ~2K security signals DDoS attacks mitigated per day Al powered defense 8500+ experts Human analysts, expertise, and insights 900

> Password attacks defended per second

\$20B investment over next 5 years

70B

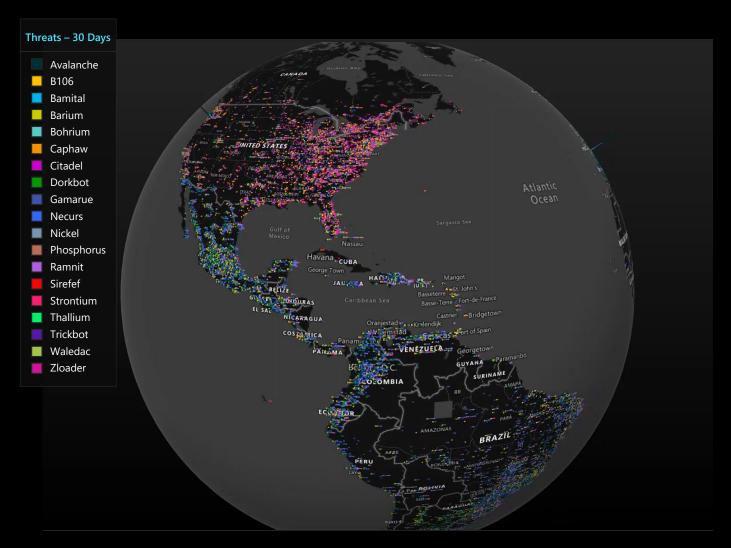
Email and

identity

threats

blocked

Digital Crimes Unit | Detect and Disrupt Cyberattacks



Use **legal and technical means** to **disrupt hacker infrastructure**

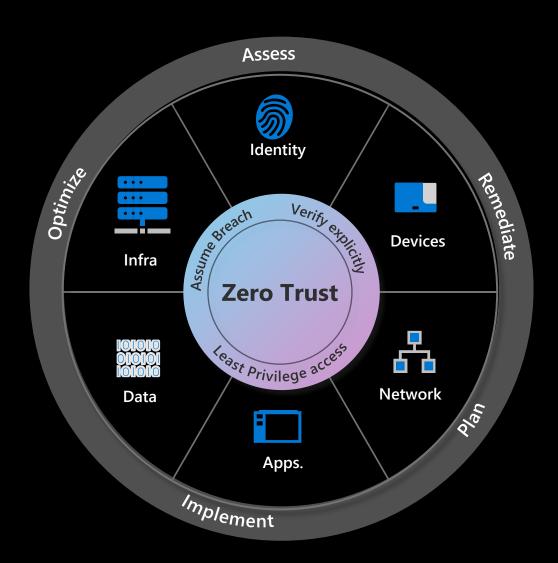
2,750,000 site registrations blocked

531,000
Unique phishing URLs
taken down

10,000 cybercriminal websites removed

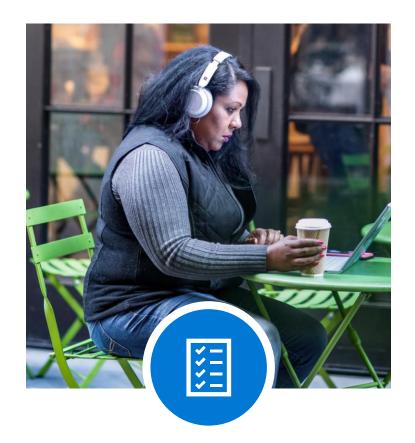
600
nation-state actor websites
re-directed

Modern Approach to CyberSecurity in Government

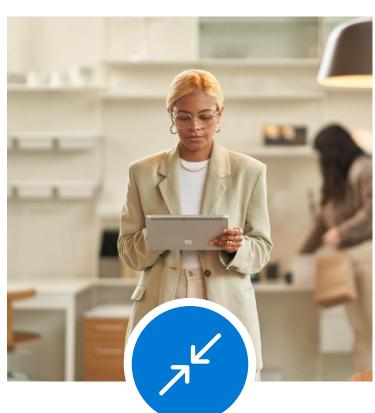


"Zero Trust is at the foundation of security transformation" - Satya Nadella

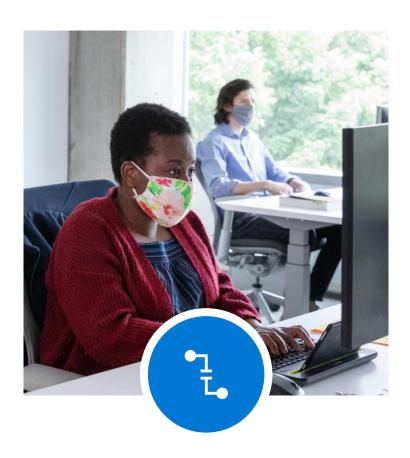
The guiding principles of Zero Trust





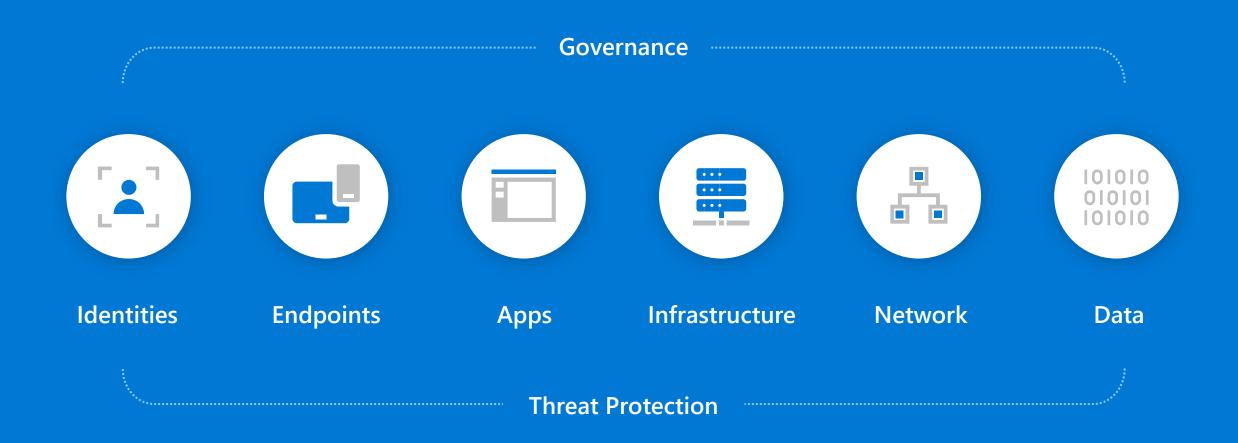


Use least privilege



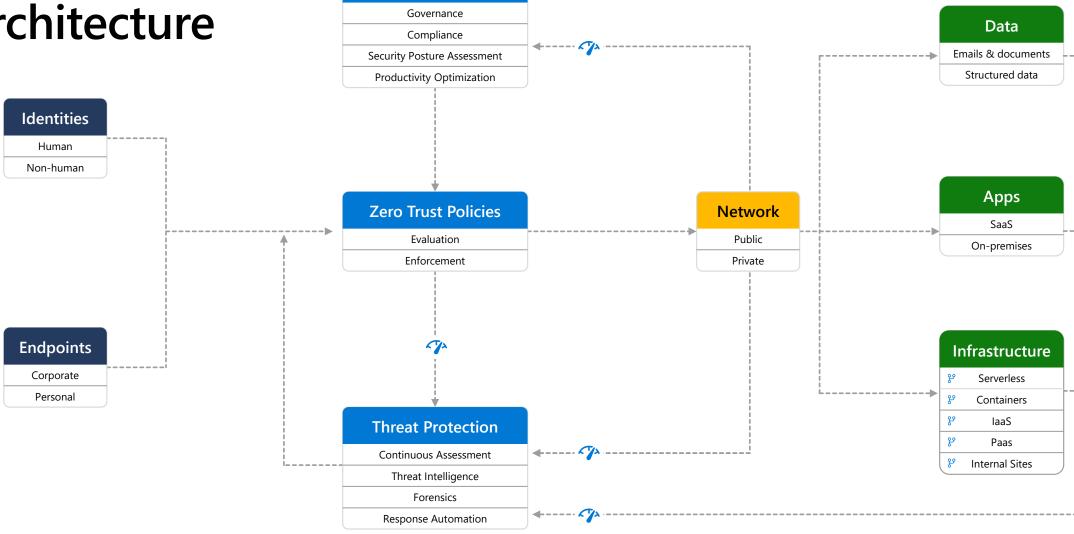
Assume breach

Zero Trust pillars





Zero Trust architecture

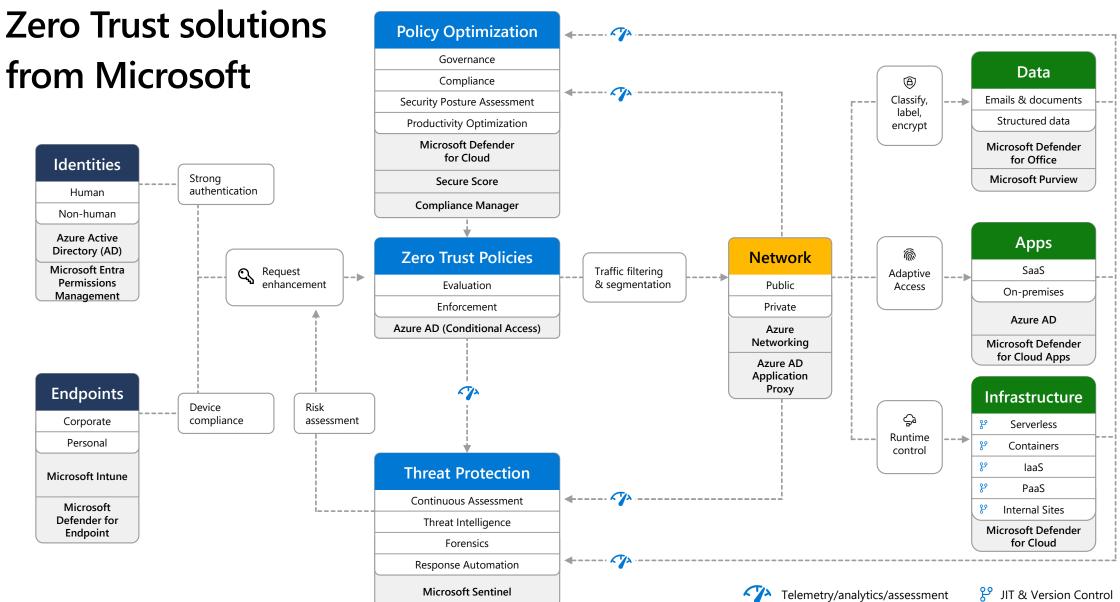


Policy Optimization



Zero Trust Policy Optimization architecture Governance Data Compliance (4) Classify, **Emails & documents** Security Posture Assessment label, Structured data **Productivity Optimization** encrypt **Identities** Strong authentication Human Non-human **Apps** <u></u> **Zero Trust Policies** Network SaaS Request Traffic filtering Adaptive enhancement & segmentation Evaluation **Public** Access On-premises Enforcement Private **Endpoints** Infrastructure Device Risk compliance assessment Corporate Serverless Runtime Personal Containers control laaS **Threat Protection** Paas Continuous Assessment Internal Sites Threat Intelligence **Forensics** Response Automation





Why implement a Zero Trust strategy with Microsoft

Experience across many Zero Trust deployments

Comprehensive, end-to-end security

Pre-integrated solutions ready to go

Vast third-party ecosystem

Simplicity of a single guide for your Zero Trust journey



In Summary

- Criminals and nation state actors are hunting you
- You can't bring a knife to a gun fight
- Focus on what you're good at
- Microsoft can help you level the playing field
- Do More with Less

What is behind "sovereign" requests?

Security -

Myth: "I secure my data in my data center instead of risking cloud breaches"

Fact: Hyperscale is now the gold standard in cybersecurity

Myth: "A US cloud provider won't protect my data from the US government"

Fact: Sovereign Risk to Public Sector Enterprise data is extraordinarily low

In extreme cases, Microsoft technologies that can lower sovereign risk further

Resilience -

Myth: "The cloud can't maintain access to my workloads during catastrophic events"

Fact: Hyperscale uptime and SLAs far exceed on-prem data centers

Political and Natural Disaster risk are extraordinarily low

Military risk may vary by country, but **Geo-resilience risk** should also be considered

In extreme cases, hybrid cloud may lower resilience risk for limited workloads



What else is behind "sovereign" requests?

Residency ——

Myth: "Data residency in my country gives me security, jurisdiction and resilience"

Fact: Residency is not a security control

Fact: Residency does not affect jurisdiction

Fact: Residency does not ensure resilience

Economics –

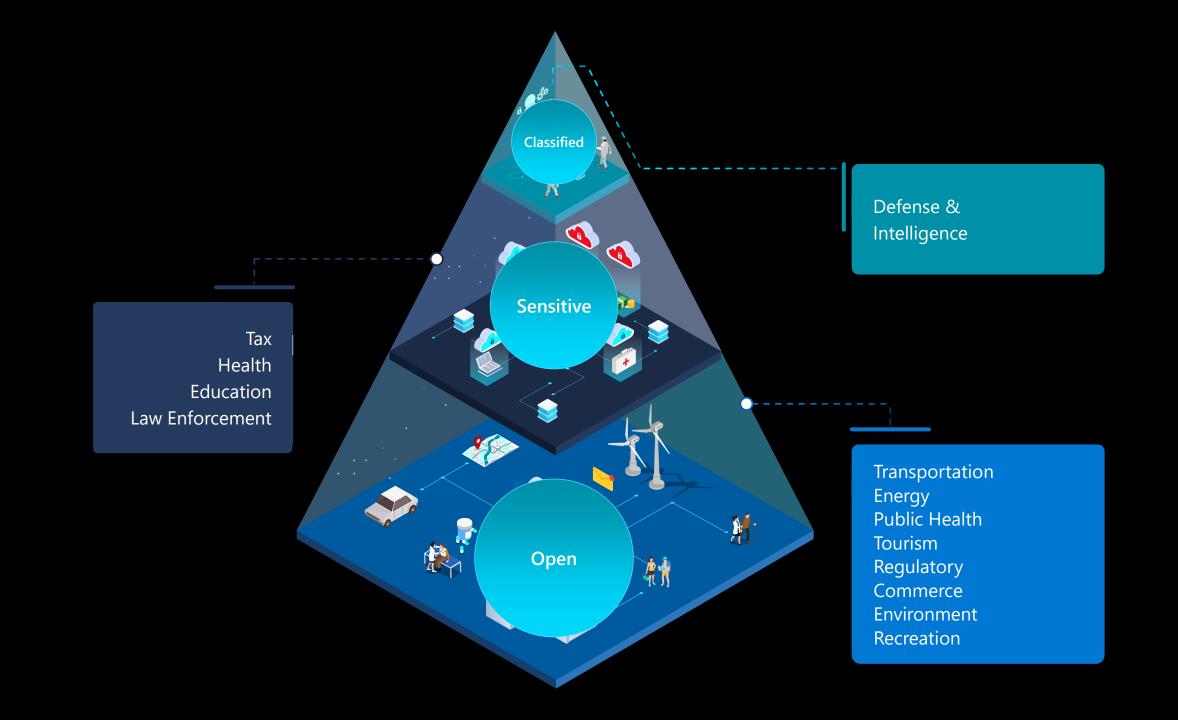
Myth: "Hosting my own data center is good for my economy"

Fact: Digital Transformation delivers economic benefit far **faster** in the hyperscale

In country investment and job creation is **very low** for data center hosting

Forward looking partners want to exit commodity hosting services and move up the value chain by leveraging innovation for digital transformation





Uncertain

Sensitive

Tax Health Education Law Enforcement

Concerns about:

Privacy Regulatory Compliance Sovereignty



What's changed



Digital Transformation Track Record

Collaboration, hybrid, work/life

Transformative citizen services

Predictive governance



International Relations

United States
Executive Order and
Attorney General's
Recommendation

European Commission Adequacy Decision

> Greenberg Traurig opinion



Transformation of Threat Environment

Rise of APTs and Nation State actors

Increase in sophisticated criminal gang activity

Targeting of Public Sector



Microsoft Corporate Commitment

European Union Data Boundary

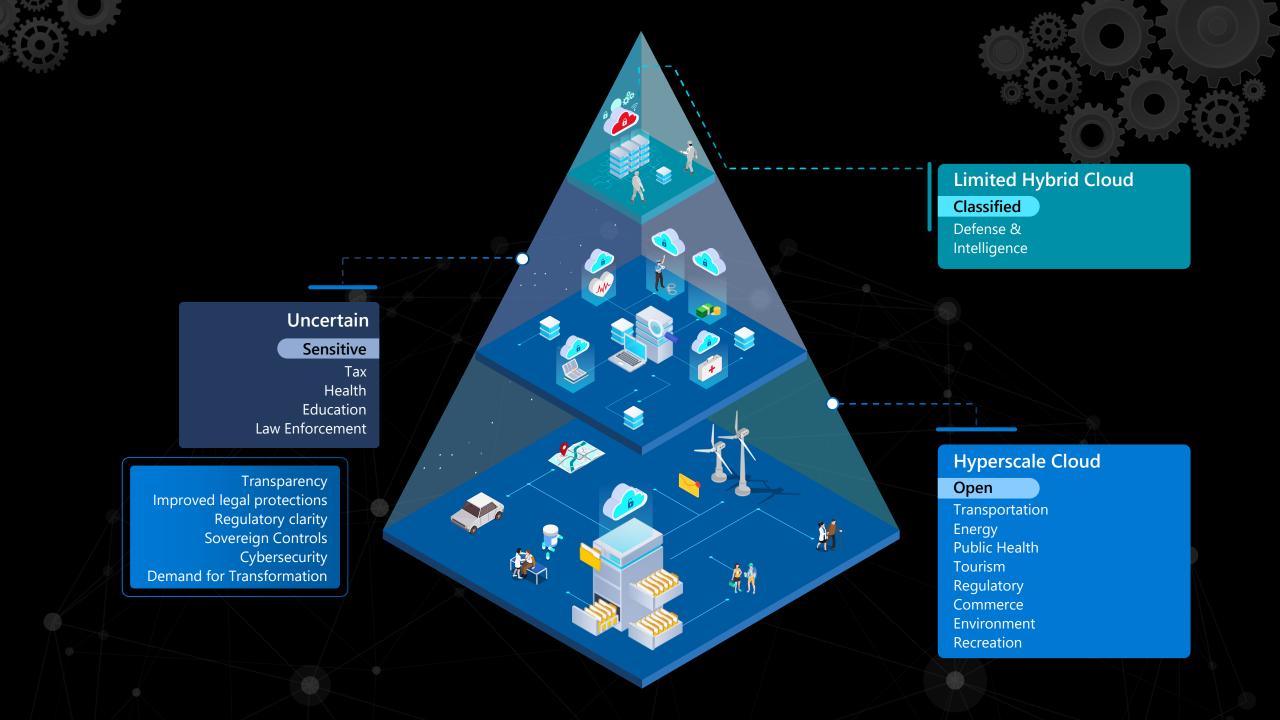
Legal process transparency

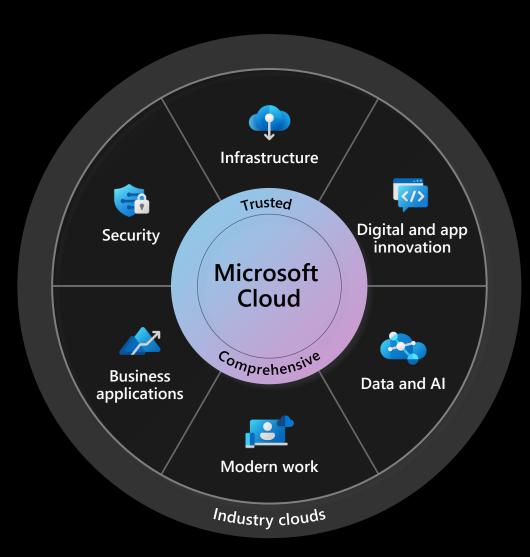


Technological Innovation

Increased policy transparency and contractual commitments

Additional Sovereign Controls





Microsoft Cloud in the era of Al

Transform citizen services with new capability and accessibility

Advance public sector workforce productivity with Copilot

Trust your data to a responsible cloud provider

AI breakthroughs

Object recognition 2016 Human parity Speech recognition 2017 Human parity Machine reading comprehension 2018 Human parity 2019 Machine translation Human parity 2020 **Conversational QnA** Human parity 2021 Image captioning **Human** parity **Question Answering** 2021 Human parity

January •

Azure OpenAl Service becomes generally available Microsoft extends our partnership with OpenAl

February •

Teams Premium with GPT becomes generally available
Viva Sales adds generative AI capabilities
Microsoft announces the new Bing and Edge
Microsoft announces Bing momentum and Skype Copilot
Windows 11 updates bring AI-powered Bing to the taskbar

March •

17161

Al innovation

LinkedIn introduces collaborative articles Microsoft introduces Dynamics 365 Copilot Florence comes to Azure Cognitive Services for Vision Azure OpenAl Service adds ChatGPT capabilities Microsoft announces powerful new virtual machines LinkedIn adds new AI-powered capabilities Microsoft introduces Microsoft 365 Copilot Microsoft introduces Copilot for Power Platform **Nuance introduces DAX Express** Azure OpenAl Service adds GPT-4 Bing Image Creator comes to the new Bing GitHub introduces GitHub Copilot X Microsoft introduces Microsoft Security Copilot

Empowering every organization with Azure Al

Azure OpenAl Service Azure Cognitive Services

Azure Machine Learning

Azure Al Infrastructure

Large foundation
Al models enriched
with your
parameters and
your data

Family of cognitive APIs for vision, speech, language, and decision making Build, deploy, and manage highquality models faster and with confidence

Purpose-built Al supercomputing infrastructure for accelerating innovation

Learn more

Learn more

Learn more

Learn more

A copilot for every Microsoft Cloud experience

Microsoft 365 Copilot

Works alongside you in the apps you use every day

Dynamics 365 Copilot

Turbocharge your workforce with a copilot for every job role

Copilot in Power Platform

Imagine it, describe it, and Power

Platform builds it

Microsoft Security Copilot

Defend at machine speed with Microsoft Security Copilot

Windows Copilot

The first centralized AI assistance on a platform

GitHub Copilot

Increase developer productivity to accelerate innovation

Microsoft Security Copilot

The first and only generative AI security product to help defend organizations at machine speed and scale.









Enables response in minutes, not hours

Simplifies the complex with natural language prompts and easy reporting

Catches what others miss with deeper understanding of events

Addresses talent shortage by extending human expertise

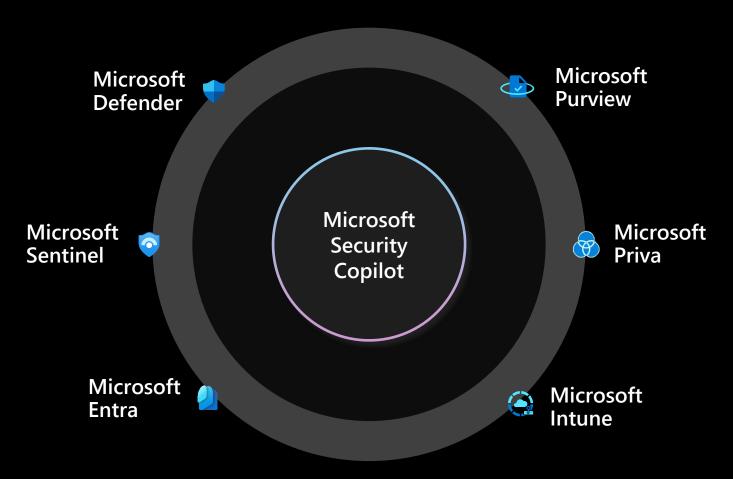


Announcing

Microsoft Security Copilot

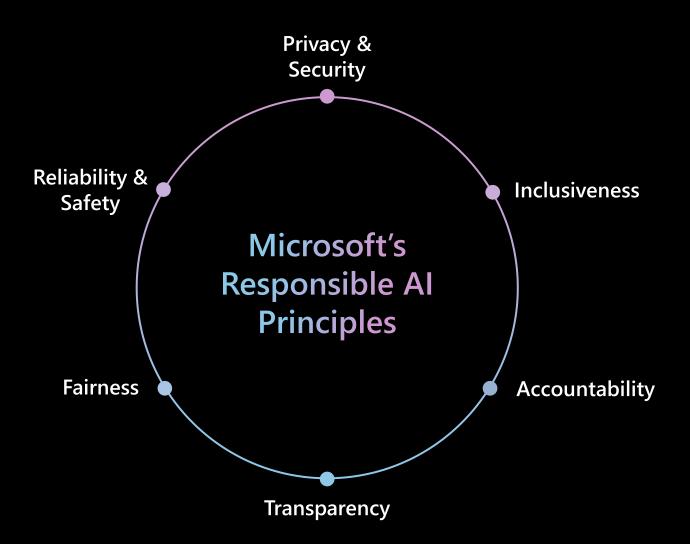
Defend at machine speed with Microsoft Security Copilot







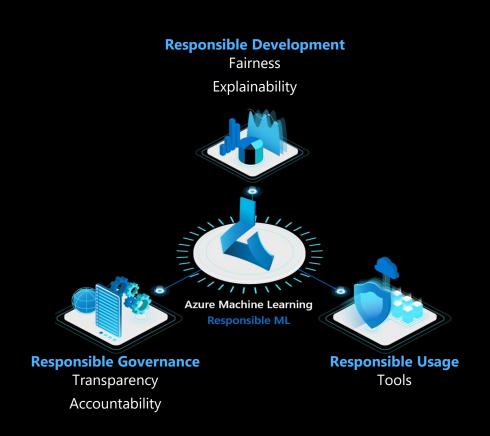
Microsoft Security Experts -----

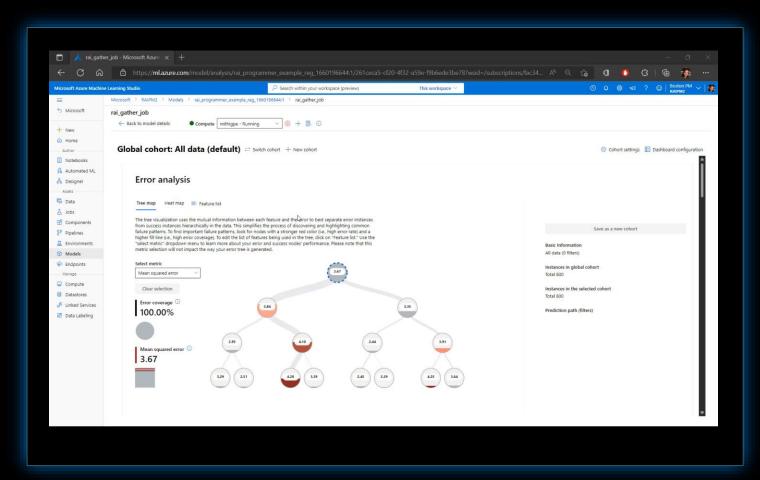


Building blocks to enact principles



Responsible Al Dashboard in Azure Machine Learning





Announcing

Azure Al Content Safety Service

Detect and assign severity scores to unsafe content

Works on human/Al generated content

Integrated across
Azure Al

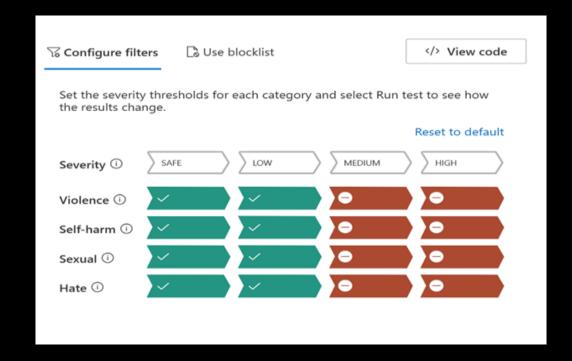
Available in Preview

Azure Al Content Safety



Introducing Azure Al Content Safety

Azure Al Content Safety uses Al to help you create safer online spaces. With nuanced, cutting edge Al models, it can detect hateful, violent, sexual, and self-harm content and assign it a severity score, allowing businesses to prioritize what content moderators review. Plus, its multi-lingual models enable it to understand many languages simultaneously.





Azure Al Content Safety classifies harmful content into four categories:









Hate

Sexual

Self-harm

Violence



Next, it returns a severity level for each category from 0 - 6:

Hate: 0 - 2 - 4 - 6Sexual: 0 - 2 - 4 - 6Self-harm: 0 - 2 - 4 - 6Violence: 0 - 2 - 4 - 6



Then, it surfaces content based on the severity level:

High risk: Auto blocked

Medium risk: Sent to moderator
and prioritized by risk level,
topic, and user reputation
Low risk: Auto approved

Update

Azure OpenAl Service

GPT-3 Codex DALL·E ChatGPT GPT-4



Deploy on your own data

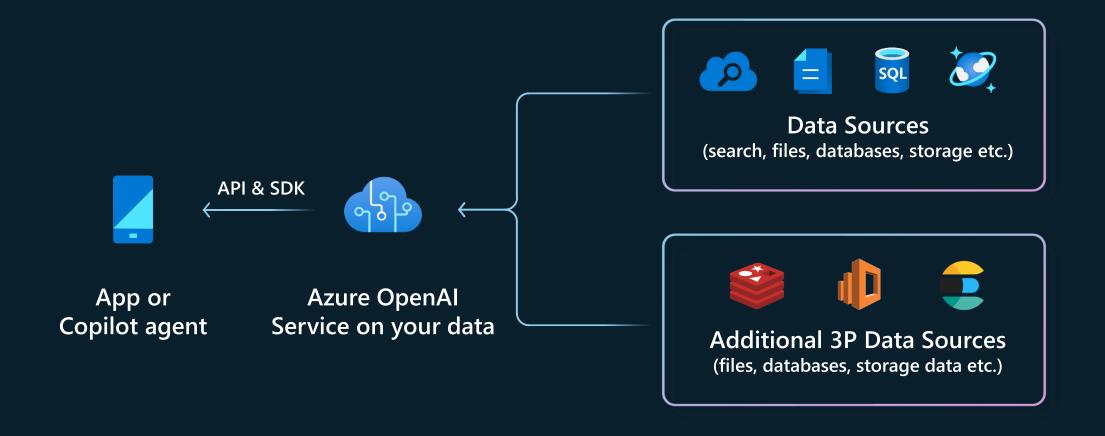


Provisioned Throughput Model



Plugins for Azure OpenAl Service

Azure OpenAl Service on your data



Azure Al Al you can trust

Your data is your data

Your Al instance is <u>isolated</u> from every other customer

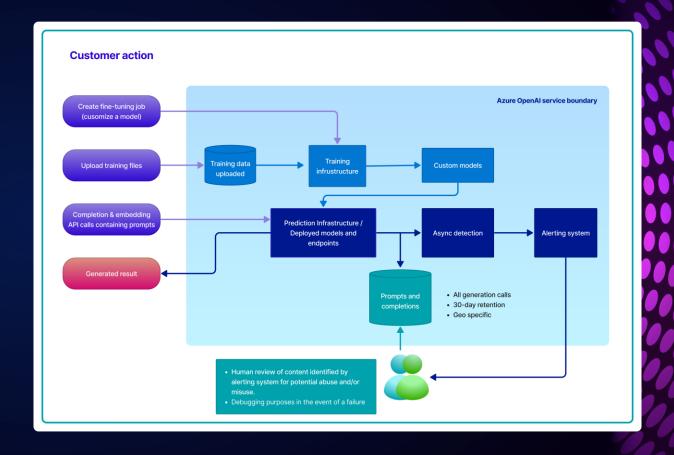
Your data is <u>not</u> used to train the foundation models

Your data is <u>protected</u> by the most comprehensive enterprise compliance and security controls

Privacy and Security in Azure OpenAl Service

https://learn.microsoft.com/en-us/legal/cognitive-services/openai/data-privacy

- Authorized Microsoft employees will have access to prompts and responses that triggered automated systems for the purpose of investigating and verifying potential abuse
- You can request the ability to opt out of both data logging and the human review process. This allows trusted users with low-risk scenarios to have the data and privacy controls they need
- Additional training data uploaded can be stored and encrypted at rest with Microsoft Managed keys or Customer Managed Keys
- Azure OpenAl has consistent terms with other Azure Al Services





Azure OpenAl Service | Capabilities & Use Cases in Government



Content Generation

Summarization



Code generation



Semantic Search

Drafting correspondence in public entities

Process automation meets natural language

Call Center support automation

Data summaries based on human-language prompts

Enhance audit management, clearance and inspection

Support writing code to accelerate development work within Government workforce

Code documentation

Knowledge management for cross department collaboration

Assist the public with complex forms and processes

Opportunities for AI in Education

 Personalize learning based on individual student needs with tailored content and targeted coaching to support improvement

 Improve accessibility with translation, captioning, read-aloud, and voice input

 Build Al literacy among staff, educators, and students to encourage responsible usage and effectively advance learning

 Equip students with the skills they'll need to thrive in the future of work

 Defend at machine speed with gains in quality detection, speed of response, and ability to strengthen security posture

• **Protect your data** with the most comprehensive compliance and security controls in the industry

 Engage learners by providing interactive experiences, a jump-start to creative processes, and real-time feedback

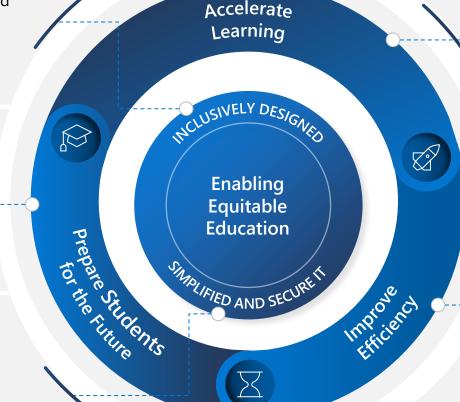
 Analyze data efficiently and deliver actionable insights from unstructured data across diverse sources of information

 Create and customize content for lesson plans, quizzes, rubrics and more for any topic, in any language, for any level

Enhance support services with the ability to answer FAQs, recommend resources, and provide personalized information

• **Unlock productivity** and save staff time spent writing, searching, editing, and analyzing

Automate processes for administrative or repetitive tasks such as managing IT helpdesk tickets, course scheduling, and more





What are your reflections from today?

- 1. What questions are outstanding?
- 2. What concerns do you have?
- 3. What's the biggest opportunity in your country?