



Trust. Value. Velocity

G-Cloud 15

Azure OpenAI and Generative AI Service

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1. About Mastek

Mastek has been delivering Critical National Infrastructure programmes in the UK Public Sector for over a decade now. We are trusted with multiple contracts for the UK Government across Central Government, Health, Local Government, Policing, Public Protection and Defence. The majority of our national services are delivered in a context of high uncertainty and complexity while collaborating in multi-supplier environments.

While working for these large and complex public sector organisations, we have continuously refined our management, delivery and underlying processes to reflect key learnings from the sector:

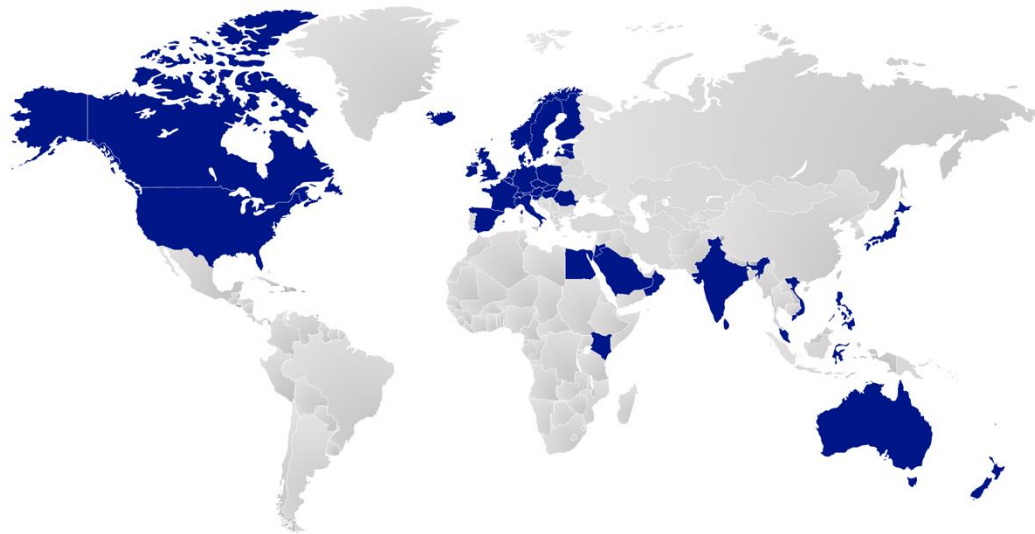
Working through a complex stakeholder landscape: We understand the importance of establishing effective communication channels, building trust and fostering a collaborative working environment that empowers stakeholders to contribute meaningfully to the project's success. Our approach is based on a deep understanding of stakeholder needs and requirements. We leverage our experience and expertise to design governance structures that promote transparency and accountability and use data-driven reporting mechanisms to ensure stakeholders have real-time visibility into project status and progress. At the Home Office, GDS, the Ministry of Defence and the NHS, we have a proven track record of working seamlessly with large stakeholder groups, including civil servants.

Standards, compliance: We comply with >20 policies and standards, including Government Digital Standards and the Government CDDO Service Toolkit, covering service standards, service manuals, TCoP and API technical and data standards. Our stringent governance, methods, playbooks and processes (manual and automated) span across service delivery phases, ensuring continuous compliance.

Policy-driven: Policies and procedures largely drive Public Sector organisations. We need to be Agile and flexible to meet demands for policy/regulatory changes, geopolitical events and ministerial commitments.

Culture: We adhere to the Civil Service core values of integrity, honesty, objectivity and impartiality. Key behaviours we promote stem from a combination of Civil Service and Mastek values. These include being passionate, accountable, sustaining predictable and repeatable outcomes, not transferring risk, transparent, leading to enable, acting with transparency, practising a no-blame culture and being flexible.

Mastek's global presence



Australia

Austria

Bahrain

Belgium

Brunei

Canada

Denmark

Egypt

Estonia

Finland

France

Germany

Hungary

Iceland

India

Indonesia

Ireland

Italy

Japan

Jordan

Kenya

Kingdom of Saudi Arabia
(KSA)

Kuwait

Latvia

Luxembourg

Malaysia

Netherlands

New Zealand

Norway

Oman

Philippines

Poland

Romania

Singapore

Slovakia

Spain

Sri Lanka

Sweden

Switzerland

United Arab Emirates (UAE)

United Kingdom

USA

Did you know?

75%

Around three quarters of Local Authorities in the UK who run Oracle have worked with Mastek on their digital transformation journey.

300,000 Users

Supported managing up to 750,000 logins per month to MOD through Identity and Access Management

Crime reduction

We designed, built and manage the UK's Strategic National DNA Database that helps Forensics and Law Enforcement Authorities investigate and stop crime

90% faster

We enabled the National Health Service (NHS) to drive 90% faster response times with a billion pharmacy prescriptions a year.

Technical Service Desk

We provide level 2 and ITSM support for the One Login service at Government Digital Service

22k

Our systems enable 22,000 schools to function efficiently every day of the year.

Healthcare and manufacturing

We delivered Finance, HCM and Supply Chain transformations for clients across health and manufacturing globally powered by Oracle Cloud

Transformation of trade

Transforming UK's trade with the EU and rest of the World by supporting Customs Declarations Services and its trade users.

99.99% Availability

We support the Home Office Biometrics (HOB) Platform, Having migrated it to an AWS platform.

Our digital and cloud services portfolio

Powered by Glide 4.0 and value-based delivery

Industry-aligned approach with business outcomes

Digital engineering and experience	• Cloud engineering and migration • Legacy modernisation • Low code / no code App Dev • DevSecOps • Enterprise integration	• MACH • Digital commerce • UX and CX • Platform engineering • Gen AI software development.
Oracle Cloud and enterprise apps	• Oracle Cloud applications • Oracle consulting • Oracle Cloud infrastructure	• Value-based delivery • Glide 4.0.
Data, automation and AI	• Cloud data modernisation • Business Intelligence and Analytics	• Data management • Intelligent automation • Data Governance.
Salesforce	• Sales Cloud • Service Cloud • Marketing Cloud • Industry Cloud	• Experience Cloud • Mulesoft.
Innovation labs and platforms	• Enterprise workforce scheduler • Connected enterprise • icx-Pro – intelligent part assistant	• iLeaseFinPro.
Cloud enhancement managed services	• Oracle managed services • Digital managed services • Commerce managed services	• Salesforce managed services.

Home Office Biometrics (HOB)

Public sector platform modelled 24x7 with 99.99% availability

Problem

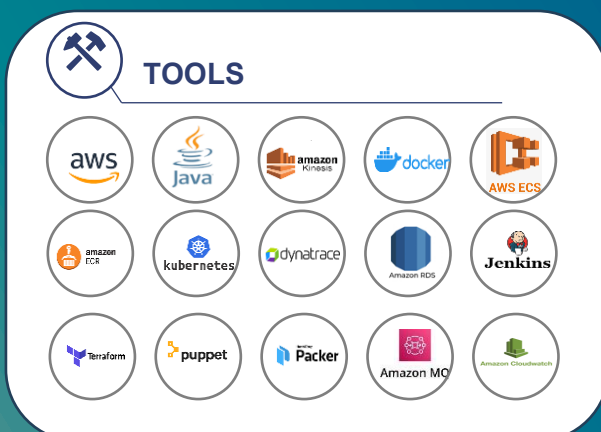
- Transition business-critical Platform services from incumbent supplier with minimal risk
- Migration from private cloud to AWS Cloud.

Solution

- Migrated the infrastructure from private cloud to AWS
- Embedding Kubernetes Containerisation
- Introduced Docker and fully-baked AMIs
- Supporting the platform's self-service functionality using Jenkins Jobs
- Applying security updates to the OS base images through pipelines
- Instituting automated patching and testing for infrastructure images
- Support of configuration, test and releasable artefacts through the pipeline.

Outcome

- **Zero impact** on live service
- **80% automation** of SIT
- Environment Provision **2 days to 1 hour**
- **5x scalability** in handling student BRPs
- Cost saving the authority circa **£9.5m/year.**
- Won the '**Best Use of Cloud Services**' award
- **35%** Incident Volume Reduction.



Government Digital Service

Problem

GDS initiated the One Login programme to create a single front door for identity verification and authentication, which could be adopted and scaled across all government departments. This would improve the user experience by providing the public with a single identification and verification service for the government, reduce costs as each department no longer required its own identity service and reduce identity fraud and identity-enabled crime.

GDS released a tender in June 2023 to provide a Technical Service Desk (TSD) managed service for the One Login service. This service would provide a single point of contact for level 1 and 2 service support as part of the wider support ecosystem. It would be provided in the UK and replace the incumbent's scaled-down non-ITIL-aligned break-fix service.

Solution

In September 2023, Mastek were successfully awarded the TSD contract to deliver TSD on behalf of GDS. GDS had an extremely aggressive programme driven by the onboarding of HMRC as a user, which was a major milestone planned for February 2024, migrating new and existing HMRC users to the One Login platform. The TSD service was expected to go live in November 2023. This was an extremely complex programme which, within this timescale, would deliver:

- The contact centre provider for level 0 directly facing the public
- The TSD supplier in place directly facing all government departments
- The TSD supplier in place providing L1 and L2 engineering support and monitoring
- Continued delivery on the One Login backlog of features
- Continued migration of smaller government departments to the platform.
- Delivery of a new ITSM toolset to be configured for use by GDS and the One Login programme, integrating level 0 to level 3 support
- Working as one team, Mastek quickly integrated into the programme, appointing the leadership team early in the engagement. We collaborated with GDS from the outset, ensuring we tailored the service to their expectations rather than delivering what was written in the contract.

Our leadership team consisted of:

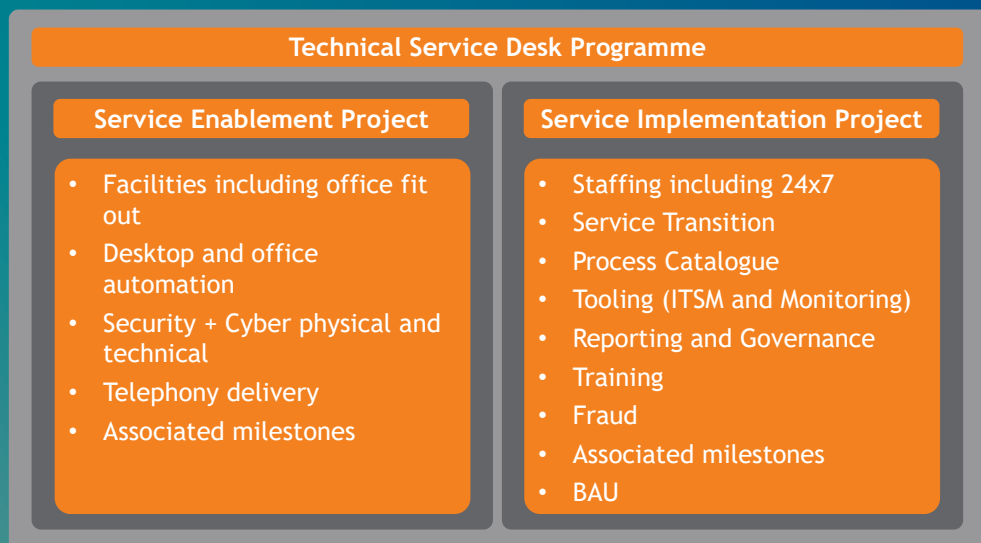
- Service Management Vice President
- Programme Director
- Chief Technology Officer
- Programme Management office lead.

Outcome

At its height, the programme team was circa 15 strong, covering programme/project delivery, PMO, architecture, fraud, security, support, omni-channel and quality assurance. The service team is currently in place providing circa 21 resources now covering end-to-end service management, service delivery and L1 and 2 engineering roles.

As the One Login migrations continue, Mastek is supporting Government departments onboarding to the platform as they transition into the new service and provide One Login a secure Technical Service Desk managed service with:

- Omni channel access for other government departments via telephony, email and web form
- Provision of L1 and L2 engineering support
- 24x7, 365 days a week cover
- 24x7x365 eyes on monitoring service
- Fraud detection and security, GDPR compliant
- End-to-end (L0-3) incident and problem management
- End-to-end 24x7 Major incident management (MIM)
- On-call/call-out engineering support, incident and MI management
- Adherence to stringent SLAs on incident response, call handling and fix times
- End-to-end monthly service reporting alongside TSD KPI and SLA reporting.
- A shift left culture and mindset, reducing the impact of service on product teams (L3)
- Support with service maturity in the programme, preparing GDS to run critical national infrastructure.



Internet-facing platform and applications for Army Digital Services

Developed mobile app and web app with 24*7 high availability

Problem

- New Defence Gateway Portal
- Combine all internet-facing applications into one
- Easy to use
- Enable easier access to the MySeries portfolio of products.

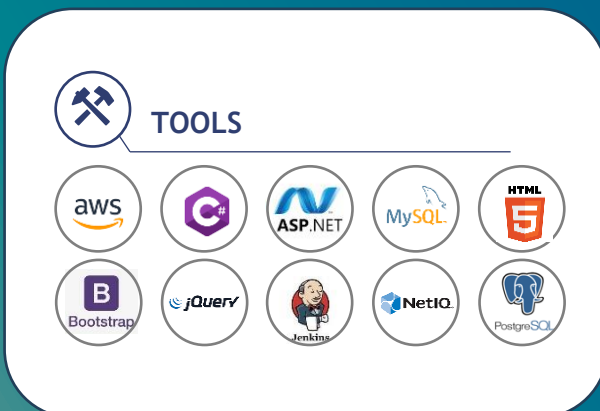
Solution

Designed and developed the following easy-use Progressive Web Apps:

- Defence Gateway Landing Page
- My Leave App
- My Expenses App
- My Health App
- My Details App
- My Appraisal App
- My Admin App
- COVID-19 Reporting Tool
- Commanders' COVID-19 Tool.

Outcome

- Delivered 20+ successful projects
- Deployment Automation
- £7.5m in savings annually
- Zero Downtime
- Environment creation in hours.



Delivered a platform for the Department for Health and Social Care

Delivered capability supporting 200k+ tests in a day, traced millions of COVID-19 infections

Problem

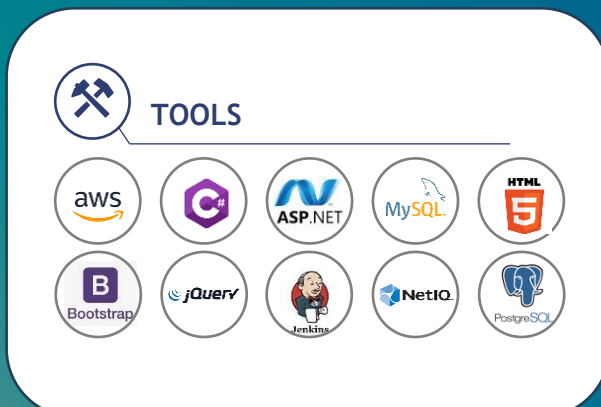
- Leveraging DevOps platform based on reusable GitHub, AWS and Azure DevOps Pipelines
- Introduce more flexible, scalable and reusable IaC capabilities
- Implement CI/CD pipelines.

Solution

- Uplifted from Cloud Formation into Terraform (IaC)
- Pre-built the AMIs using Packer, with automated security checks
- Immutable infrastructure, thus eliminating the risks of partial upgrades and patches
- Continual Cost Optimisation processes and other service functions, such as Change and Risk management
- Migrated into an organisation-wide collaboration toolset. This included Jira, Confluence, Trello, Miro, Teams, SharePoint, O365, Slack, etc.

Outcome

- 75% reduction in lead time due to pre-built AMIs
- Zero Downtime Deployments
- Delivered a Platform - Secured, multi-tenanted hosted on Azure and AWS in 5 weeks
- Cost reduction achieved through close monitoring of resource utilisation.



Mastek and Technology in the Public Sector

Technical Capabilities	Relevant Technology Capability	Mastek Scale
Software Development Continuous Integration, Platform - Other Products, Cloud Collaboration Tools		Software Engineering 2354 FTE
QA and Test ; API, Automated Functional and Compatibility, Accessibility & Performance		QA and Testing 774 FTE
Cloud Platforms Amazon Web Services AWS Microsoft Azure		Cloud Platforms 1046 FTE
Data BI/MI Components, Integration		BI and Visualisation 725 FTE
User-Centered Design		UCD 25 FTE
Office Automation Tools		Collaboration 4565 FTE

2. Summary

Mastek delivers **Secure, Enterprise-Grade Generative AI Services on Microsoft Azure** to enable public sector and regulated organisations to adopt Generative AI safely, responsibly and at scale.

Our Azure OpenAI services are designed to move organisations beyond isolated experimentation into **production-ready, governed AI capabilities** that integrate seamlessly with existing Microsoft 365, Azure and line-of-business platforms. Solutions can be deployed within UK-hosted Azure regions where required, supporting data residency, sovereignty and regulatory assurance needs. We focus on **Retrieval-Augmented Generation (RAG)** and Copilot-aligned architectures that combine Microsoft-hosted foundation models with authoritative organisational data, ensuring AI outputs are accurate, auditable and policy-aligned.

Rather than treating Generative AI as a standalone tool, Mastek designs it as a **managed digital capability** embedded within the wider technology and operating environment. AI initiatives are aligned to clearly defined business outcomes, such as improved productivity, reduced operational friction, enhanced decision quality and more effective use of staff time, rather than technology adoption in isolation. Solutions are aligned to government assurance expectations, responsible AI principles and long-term sustainability as Microsoft's AI platform evolves.

Mastek applies Azure OpenAI and agentic AI to accelerate modernisation, reduce manual effort and improve service responsiveness, drawing on delivery experience that demonstrates tangible improvements in delivery speed, testing efficiency and operational effectiveness.

This includes applying Generative AI to support application modernisation, such as accelerating understanding of legacy code, documentation and refactoring activities, while maintaining engineering accountability and change control.

Our approach is informed by **hands-on delivery of AI accelerators, proofs of concept and live AI-enabled workloads**, including AI-assisted modernisation, secure knowledge assistants and enterprise information retrieval solutions. In practice, this experience includes applying Generative AI to accelerate understanding, documentation and testing of legacy systems, reducing delivery effort while maintaining engineering accountability.

Mastek applies **controlled agentic AI patterns** to decompose complex tasks into governed steps, with explicit boundaries, logging and human oversight embedded by design. Our delivery model reflects an **AI-augmented approach**, where Azure OpenAI enhances – rather than replaces – established engineering, testing and assurance practices. Proven reusable patterns and delivery assets are used to reduce implementation risk and shorten time-to-value, while ensuring solutions remain portable and avoid vendor lock-in. This enables organisations to move from isolated AI experimentation to **AI-enabled systems of execution** embedded within everyday platforms and workflows.

3. Mastek's Service

Mastek is a Microsoft Solutions Partner in Digital and App Innovation and the Data and AI and Information Services Group (ISG) has recognised us in the Generative AI area.

We provide an end-to-end Azure OpenAI service covering discovery, delivery and live operation.

3.1 Discovery and AI Readiness Assessment

We assess organisational readiness for Generative AI by examining:

- Business use-case suitability and value.
- Data quality, sensitivity, classification and access boundaries.
- AI risk, assurance and compliance considerations.
- Alignment with Microsoft 365, Azure and existing digital platforms.

Readiness assessments consider not only technical feasibility, but also data maturity, governance, operating model and organisational readiness to support responsible AI adoption at scale.

3.2 Proof of Concept and Pilot Delivery

We design and deliver controlled, evidence-driven GenAI pilots, focusing on:

- Retrieval-Augmented Generation over trusted content and data.
- Prompt design, evaluation and robustness testing.
- Accuracy, grounding and hallucination reduction.
- Secure, identity-aware access using Microsoft Entra ID.

Pilots are structured to validate operational impact, cost, supportability and assurance, not just technical feasibility.

3.3 Implementation and Scale-out

We implement **production-ready Generative AI solutions** designed for secure operation and enterprise scale. Solutions include **enterprise-grade AI assistants and chatbots** that connect securely to multiple line-of-business systems, supporting employees, users, or service teams through a single conversational interface.

This includes:

- AI copilots and assistants using Azure OpenAI and Copilot Studio.
- Secure integration with SharePoint Online, APIs, databases and line-of-business systems.
- Role-based data access and information grounding to enforce permissions and data boundaries.
- Usage monitoring, cost controls and performance optimisation to support predictable AI operations.

Where appropriate, **AI-assisted testing techniques** are applied to support test case generation, test data creation and regression coverage, improving testing efficiency while retaining human review, validation and approval.

Delivery is accelerated through the use of **reusable patterns and reference implementations** derived from previous client engagements.

3.4 Agent-based Orchestration

Mastek differentiates between AI assistants that support individual productivity and agent-based patterns that orchestrate defined process steps across systems. Where appropriate, controlled agent-based AI patterns are applied to decompose complex tasks into steps such as information retrieval, reasoning, validation and response composition. Agentic designs are implemented with clear boundaries, logging and human-in-the-loop controls, ensuring Generative AI augments operational workflows without introducing unmanaged autonomy or risk.

3.5 Operate, Assure and Optimise

We provide ongoing support to ensure Generative AI remains effective, secure and compliant throughout its lifecycle:

- Prompt and model lifecycle management, including model selection, version upgrades, regression validation and controlled rollout of **Large Language Model (LLM)** versions.
- Monitoring, logging and usage analytics covering performance, cost and response quality trends to detect drift or degradation over time.
- Responsible AI controls, including transparency, explainability and ethical use, aligned to public-sector expectations.
- Human-in-the-loop review, approval and escalation workflows for sensitive, high-impact, or ambiguous outputs.
- Continuous optimisation for cost efficiency, accuracy, resilience and operational stability.
- Reusable prompt libraries, templates and evaluation assets are maintained to support consistency, rapid onboarding and controlled evolution of AI capabilities across use cases.

Recognising the probabilistic nature of Large Language Models, AI outputs are subject to review, validation and escalation controls appropriate to the use case and risk profile. This approach reflects experience operating AI-enabled services alongside existing live platforms, ensuring AI adoption does not compromise service continuity, assurance, or trust.

3.6 Risk Management

Mastek applies a **risk-led approach** to the delivery of Generative AI, ensuring AI capabilities are introduced in a controlled and proportionate manner. Key risks such as data leakage, hallucination, model drift, uncontrolled autonomy and cost escalation are addressed through Retrieval-Augmented Generation (RAG), role-based access, prompt governance, monitoring and human-in-the-loop controls. Agentic AI patterns are implemented only where appropriate and are bounded by explicit orchestration, logging and escalation rules. This ensures Generative AI enhances service delivery and decision-making without compromising security, compliance, or operational stability.

4. Key Features

Mastek's Azure OpenAI services provide enterprise-grade capabilities underpinned by Microsoft-hosted **Large Language Models (LLMs)** and governed enterprise AI services:

- **LLM access via Azure OpenAI**, including GPT-4-class models, delivered within Microsoft's trusted cloud boundary.
- Integration with **Azure AI Services** (Language, Document Intelligence, Vision, Speech) to support multimodal AI use cases.
- **Azure AI Foundry-aligned delivery**, including prompt flows, evaluation frameworks and lifecycle controls.
- **Retrieval-Augmented Generation (RAG)** using Azure AI Search, SharePoint Online, databases and APIs to ground AI responses in authoritative data.
- **Copilot-aligned architectures** supporting Microsoft 365, Teams and Copilot Studio experiences.
- Reusable delivery assets and reference implementations, including **Mastek's InfoGenius accelerator**, to reduce delivery risk and accelerate onboarding.
- **Structured prompt engineering, prompt libraries and evaluation frameworks** to support consistency and controlled reuse.
- **Responsible AI controls**, including refusal handling, escalation patterns and auditability
- **Role-based, identity-aware access** using Microsoft Entra ID with tenant isolation and permission enforcement.
- **Enterprise AI search and unified knowledge access**, enabling users to query multiple structured and unstructured systems through a single, governed natural-language interface.
- **Human-in-the-loop workflows** for review, approval and escalation of sensitive or high-impact outputs.
- **Cost, usage and performance governance** to support predictable and sustainable AI operations
- **AI-assisted engineering, testing and modernisation**, including support for legacy system understanding, test case generation and regression validation, with human accountability.

5. Business Benefits

By adopting Mastek's Azure OpenAI services, organisations achieve:

- Safer adoption of Generative AI through built-in assurance and governance.
- Improved productivity and decision-making through faster access to trusted information.
- Higher confidence in AI outputs grounded in authoritative data.
- Operational efficiency through automation of repeatable knowledge-based tasks.
- Scalable, future-ready AI capability aligned to Microsoft's roadmap.
- Enhanced employee and user experience through natural-language interfaces.
- Cost transparency and control through monitored AI usage.

These benefits are informed by Mastek's experience delivering AI-enabled solutions across modernisation, digital platforms and enterprise services, including applying Generative AI to accelerate modernisation activities, improve testing efficiency and reduce manual effort across complex enterprise platforms while maintaining assurance and accountability.

6. Technologies, Languages, Methods and Vendor Support

#	Technologies	Languages	Methods	Vendor support
1	Azure OpenAI (LLMs), Azure AI Services, Azure AI Foundry, Azure AI Search, Copilot Studio, Power Platform (including AI Builder), Azure Machine Learning, Azure App Service, Azure Functions, Azure Storage, Azure SQL, SharePoint Online, Microsoft Entra ID, Playwright (test automation), InfoGenius Accelerator, reusable prompt libraries and delivery templates, enterprise AI search and knowledge frameworks	Python, C#, JavaScript, TypeScript, PowerShell, HTML, CSS	Agile, Scrum, Kanban, DevSecOps, DDaT-aligned delivery	Microsoft

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