



Trust. Value. Velocity

G-Cloud 15

Enterprise Architecture lean framework Composable
Strategy and Design

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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:

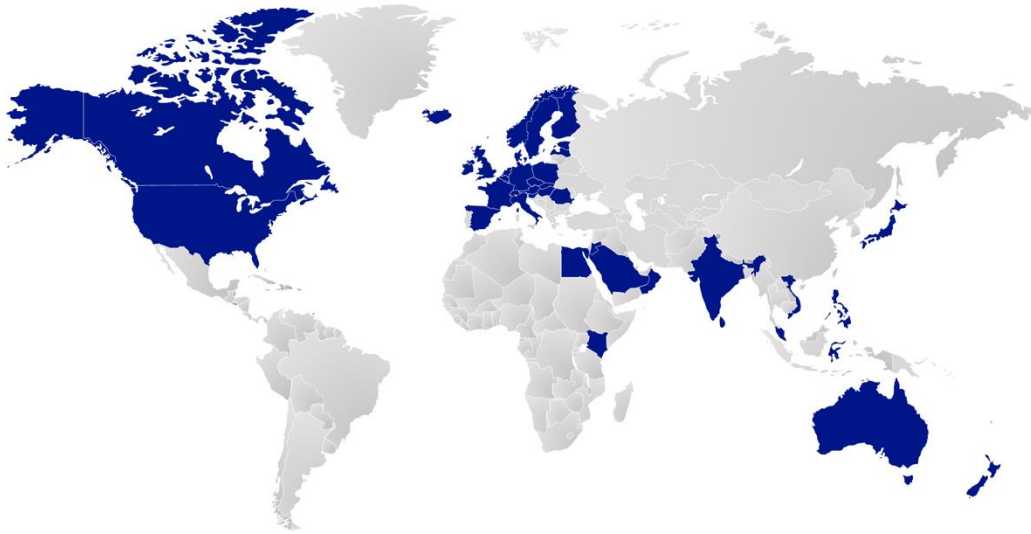
Working through a complex stakeholder landscape: We understand the importance of establishing effective communication channels, building trust and fostering a collaborative working environment that empowers stakeholders to contribute meaningfully to the project's success. Our approach is based on a deep 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, Ministry of Defence and NHS, we have a proven track record of working seamlessly with large stakeholder groups, including civil servants.

Standards, compliances: We comply with >20 policies and standards, including Government Digital Standards and Government CDDO Service Toolkit covering service standards, service manuals, TCoP, API technical and data standards. Our stringent governance, methods, playbooks and processes (both 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, being transparent, leading to enablement, 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

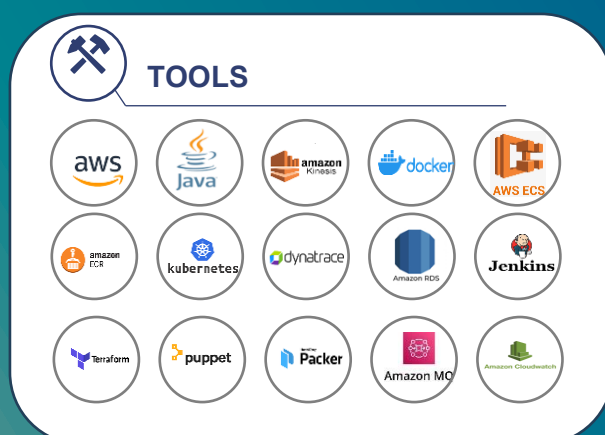
- Transition business-critical Platform services from incumbent supplier with minimal risk
- Migration from private cloud to AWS Cloud.

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.

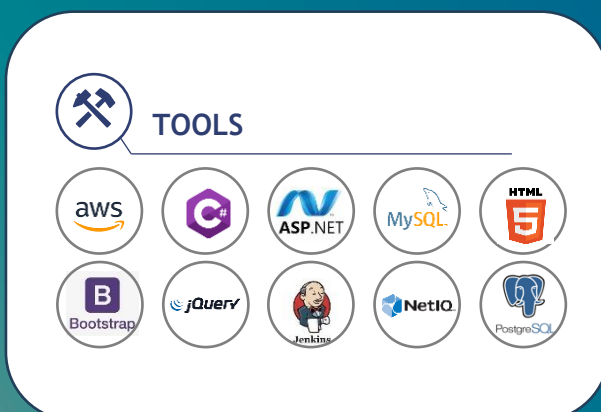
Solution

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

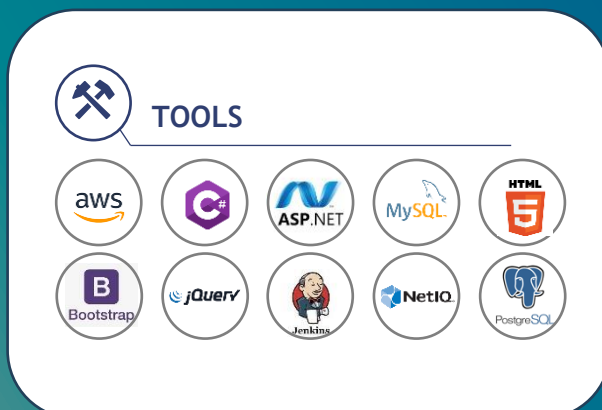
- Leveraging DevOps platform based on reusable GitHub, AWS and Azure DevOps Pipelines
- Introduce more flexible, scalable and reusable IaC capabilities
- Implement CI/CD pipelines.

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

Enterprise Architecture Lean Framework: Composable Strategy and Design is a next-generation service offering that enables organisations to architect, govern and evolve their enterprise landscape with maximum agility, modularity and business alignment. This service leverages lean principles to eliminate waste, accelerate decision-making, and focus on value creation. Meanwhile, composable architecture patterns empower organisations to assemble, reconfigure, and scale capabilities as business needs change.

The framework is built on modular building blocks, business and technology capabilities, APIs, microservices, data products and automation assets that can be rapidly composed, reused and adapted. By integrating rapid design cycles, stakeholder co-creation and continuous feedback, organisations can respond to market shifts, regulatory changes and innovation opportunities with speed and confidence.

The service encompasses the full lifecycle, including strategy, architecture, design, implementation, governance and continuous improvement, ensuring that every investment is traceable to measurable outcomes and that the enterprise remains resilient, scalable and future-ready.

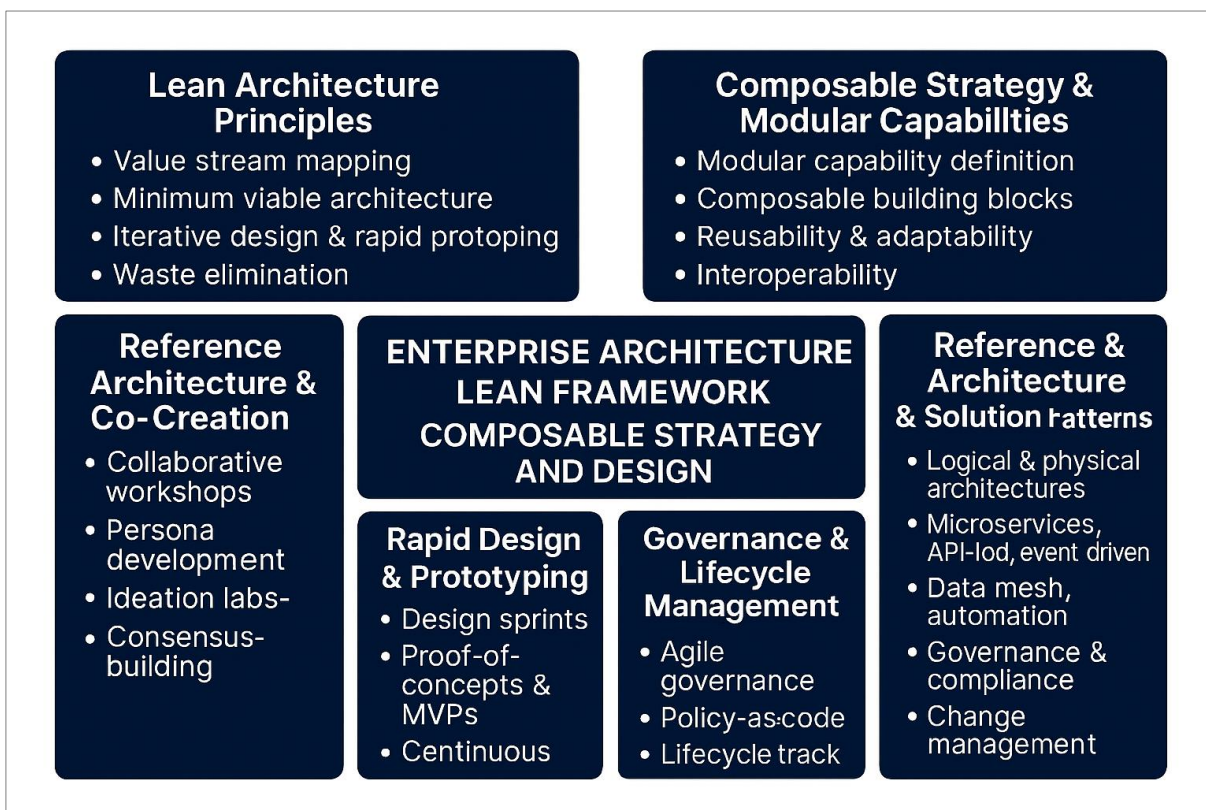


Figure 1: Enterprise Architecture Lean Framework: Composable Strategy and Design

3. Masteks Service

This service provides comprehensive support for designing, implementing and optimising enterprise architecture using lean and composable principles.

The offering is structured into several interconnected phases and deliverables:

3.1 Lean Architecture Principles

- Value Stream Mapping: Analyse end-to-end business processes to identify bottlenecks, redundancies and opportunities for automation or optimisation.
- Minimum Viable Architecture: Focus on delivering just enough architecture to enable rapid experimentation, reduce time-to-value and minimise technical debt.
- Iterative Design and Rapid Prototyping: Use design sprints, proofs-of-concept and MVPs to validate solutions, gather stakeholder feedback and refine requirements.
- Waste Elimination: Continuously identify and remove non-value-adding activities, documentation and legacy artefacts.

3.2 Composable Strategy and Modular Capabilities

- Modular Capability Definition: Decompose business functions into granular, reusable capabilities (e.g., customer onboarding, payment processing, analytics).
- Technology Enablement: Package capabilities as APIs, microservices, data products and automation assets with clear interfaces and governance.
- Composable Building Blocks: Enable rapid assembly, reconfiguration and scaling of capabilities to support new products, channels and business models.
- Interoperability and Integration: Ensure seamless connectivity between composable assets using open standards, integration platforms and event-driven architectures.

3.3 Reference Architecture and Solution Patterns

- Logical and Physical Architectures: Develop reference models for business, data, application and technology domains, tailored to composable principles.
- Solution Patterns: Document reusable patterns (microservices, API-led, event-driven, data mesh, automation) with implementation guides, technology stacks and best practices.
- Governance and Compliance: Define architecture principles, guardrails and policy-as-code for automated compliance and lifecycle management.

3.4 Rapid Design and Prototyping

- Design Sprints: Organise focused, time-boxed sessions to ideate, prototype and validate solutions with stakeholders.
- Proofs-of-Concept and MVPs: Build and test minimal solutions to demonstrate feasibility, gather feedback and de-risk investments.
- Continuous Feedback Loops: Implement mechanisms for ongoing stakeholder input, adaptation to changing requirements and iterative improvement.

3.5 Stakeholder Engagement and Co-Creation

- Collaborative Workshops: Facilitate multi-disciplinary sessions to align business, IT and partner priorities, define outcomes and build consensus.
- Persona Development and Empathy Mapping: Understand stakeholder needs, motivations and constraints to inform architecture decisions.
- Ideation and Innovation Labs: Surface new ideas, prioritise initiatives and foster a culture of experimentation and learning.

3.6 Governance and Lifecycle Management

- Agile Governance Boards: Establish cross-functional boards for architecture review, decision-making and escalation.
- Policy-as-Code and Automated Compliance: Codify principles, guardrails and compliance requirements into automated policies for CI/CD pipelines and cloud platforms.
- Lifecycle Management: Track composable assets from ideation to retirement, ensuring traceability, versioning and continuous optimisation.

3.7 Change Management and Enablement

- Adoption Roadmaps: Develop readiness assessments, communication strategies and training programs to drive change and sustainment.
- Support Channels: Provide ongoing support, knowledge sharing and continuous improvement mechanisms.
- Benefits Realisation: Embed measurement and reporting of outcomes, KPIs and ROI into architecture processes.

4. Key Features

4.1 Lean Architecture Principles

- Value stream mapping, minimum viable architecture, iterative design, rapid prototyping and waste elimination.
- Continuous improvement, stakeholder feedback and technical debt reduction.

4.2 Composable Strategy and Modular Capabilities

- Modular capability definition, technology enablement, composable building blocks, interoperability and integration.
- Reusability, adaptability, scalability and support for new business models.

4.3 Reference Architecture and Solution Patterns

- Logical and physical reference architectures, solution patterns, implementation guides, technology stacks and best practices.
- Automated governance, compliance and lifecycle management.

4.4 Rapid Design and Prototyping

- Design sprints, proofs-of-concept, MVPs, solution validation and risk mitigation.
- Continuous stakeholder feedback, adaptation and iterative improvement.

4.5 Stakeholder Engagement and Co-Creation

- Collaborative workshops, persona development, empathy mapping, ideation labs and consensus-building.
- Alignment of architecture decisions with business priorities and innovation opportunities.

4.6 Governance and Lifecycle Management

- Agile governance boards, policy-as-code, automated compliance, lifecycle tracking, versioning and optimisation.
- Transparent decision logs, traceability and auditability.

4.7 Change Management and Enablement

- Adoption roadmaps, training programs, support channels, readiness assessments, communication strategies and knowledge sharing.
- Sustained change, benefits realisation and continuous improvement.

5. Business Benefits

- **Agility and Adaptability:** Rapidly respond to market changes, regulatory requirements and business priorities through modular, composable architecture and lean practices.
- **Optimised Investments:** Maximise ROI by focusing on reusable, scalable capabilities, minimum viable solutions and elimination of waste.
- **Accelerated Value Delivery:** Shorten time-to-value through rapid design cycles, prototyping and continuous stakeholder engagement.
- **Resilience and Scalability:** Build resilient, scalable enterprise solutions that evolve with business needs and technology advancements.
- **Stakeholder Alignment:** Ensure architecture decisions are co-created and aligned with business, IT and partner priorities, fostering buy-in and reducing resistance.
- **Transparency and Compliance:** Provide clear governance, traceability and compliance with regulatory and operational requirements through automated policy-as-code and lifecycle management.
- **Continuous Improvement:** Embed lean principles and feedback loops for ongoing optimisation, sustained benefits and technical debt reduction.
- **Innovation Enablement:** Foster a culture of experimentation, learning and rapid innovation through composable building blocks and stakeholder co-creation.

6. Technologies, Languages, Methodologies and Vendor Support

#	Technologies	Languages	Methodologies	Vendor Support
1	LeanIX, Orbus iServer, MEGA HOPEX, ArchiMate, Sparx EA	Java, .NET, Python, SQL	Lean architecture, composable design, TOGAF, ArchiMate	LeanIX, Orbus, MEGA, Sparx
2	Jira, Confluence, Miro, Azure DevOps	JavaScript, TypeScript, YAML	Agile, Scrum, Kanban, design sprints, rapid prototyping	Atlassian, Microsoft, Miro
3	AWS, Azure, GCP, IBM Cloud	Python, Go, Java, Node.js	Microservices, API-led, event-driven, automation	Amazon, Microsoft, Google, IBM
4	Power BI, Tableau, Qlik, Excel	DAX, SQL, Python	Value stream mapping, benefits realisation, dashboarding	Microsoft, Tableau, Qlik
5	GitHub, GitLab, Bitbucket	YAML, JSON, Shell	Policy-as-code, governance, CI/CD, lifecycle management	GitHub, GitLab, Atlassian
6	Slack, Teams, Zoom, Webex	HTML, CSS, JavaScript	Stakeholder engagement, change management, enablement	Slack, Microsoft, Cisco

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