



Trust. Value. Velocity

G-Cloud 15

FinOps and Cloud Cost Optimisation Architecture

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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.

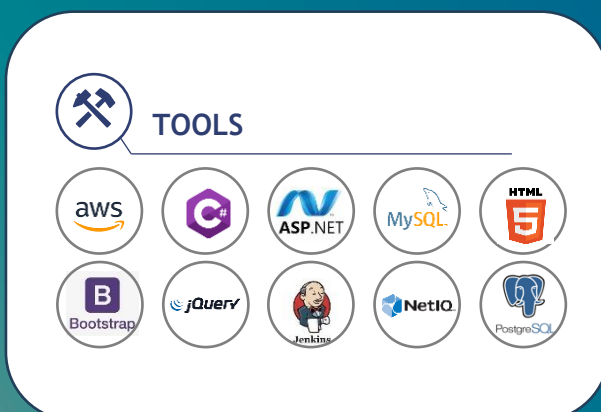
Solution

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

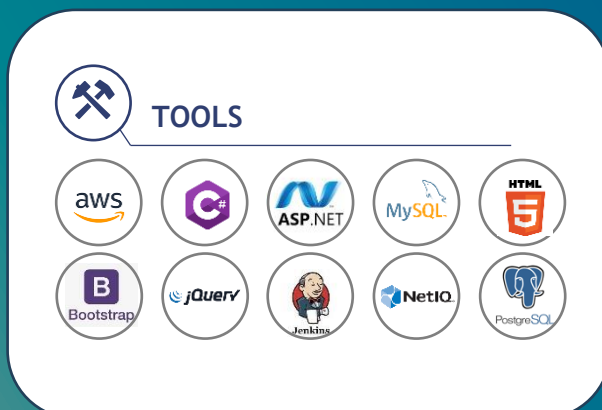
- Leveraging DevOps platform based on reusable GitHub, AWS and Azure DevOps Pipelines
- Introduce more flexible, scalable and reusable IaC capabilities
- Implement CI/CD pipelines.

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

FinOps and Cloud Cost Optimisation Architecture delivers a comprehensive, AI-assisted financial operating model for cloud environments, transforming cost management from a reactive reporting function into a proactive, data-driven business discipline. The framework spans the full lifecycle of cloud financial governance, starting with automated discovery and real-time spend visibility across multi-cloud estates, followed by intelligent cost allocation, chargeback/showback, financial accountability, budgeting and forecasting, contract optimisation, architectural right-sizing and continuous optimisation through sustainability-driven practices (“GreenOps”).

Our operating model integrates the pillars of FinOps with enterprise and solution architecture disciplines, enabling organisations to simplify and rationalise their application and service landscapes while systematically reducing wastage and technical debt. Through AI-powered automation, workload pattern analysis, forecasting engines, rightsizing policies, idle resource suppression, and consumption alerts, we create operational guardrails that ensure cloud spend remains predictable, efficient, and aligned with business demand.

We embed KPI dashboards and performance scorecards, covering cost per workload, per service, per product team, per business unit, and per transaction, to provide full transparency into where spend originates, how it evolves, and how it compares against market benchmarks. This enables leaders to establish realistic targets for unit economics, scaling strategy, operational efficiency, and cloud maturity progression.

Sector-specific controls (such as UK public sector security classification, budgetary constraints, sustainability regulations and procurement compliance) are built into the framework to guarantee governance, audit readiness and regulatory alignment. We further drive accountability by integrating FinOps ways of working into product and engineering teams, ensuring every pound of cloud spend is owned, justified, benchmarked and continuously optimised against enterprise KPIs and measurable business outcomes.

Ultimately, our FinOps and Cloud Cost Optimisation Architecture ensures that cloud becomes a strategic value lever, not just a platform expense. We enable organisations to derive maximum commercial value from cloud investments through better forecasting, predictable budgeting, vendor negotiation optimisation, architectural standardisation, and sustainable compute strategies.

The end result is a cloud estate that is financially efficient, operationally mature, environmentally responsible and continuously tuned to deliver business growth at optimised cost.

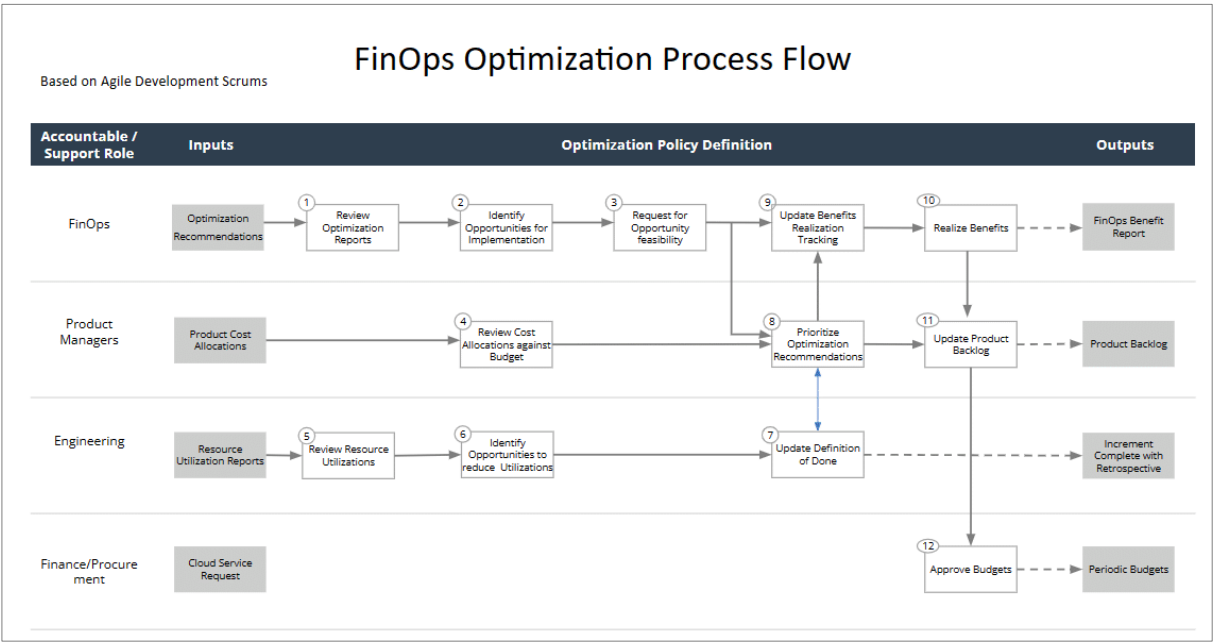


Figure 1: FinOps Optimisation Process Flow

3. Masteks Service

3.1 Discovery and Baseline Assessment

- Spend and usage baselining across accounts/subscriptions, tagging hygiene review and cost drivers by service family and environment (prod/non-prod).
- Architecture rationalisation scan to identify technical debt, idle/over-provisioned resources, and outdated patterns (e.g., redundant data services, over-sized compute, duplicated observability stacks).
- Governance current-state: roles, budget ownership, policy enforcement, exceptions handling and reporting cadence; alignment to GDS/NCSC/UK data protection norms.

3.2 FinOps Framework and Operating Model

- Establish FinOps domains (Inform → Optimise → Operate) and define RACI across Finance, Product, Engineering and Operations—to drive clear accountability for budgets, forecasting and savings actions.
- Policy pack: cost guardrails (auto-shutdown, scheduling), budget thresholds, reserved capacity policy, tagging/taxonomy standards and variance escalation playbook.
- Portfolio governance: cadence for Well-Architected reviews; remediation backlog; exception management; quarterly business reviews (QBR) on KPI trends.

3.3 Optimisation Architecture and Automation

- Rightsizing and commitments: workload sizing, burst vs baseline separation; Savings Plans/Reserved Instances strategy and purchasing governance; autoscaling policy tuning.
- Data and dashboarding: cost and usage reporting consolidated into role-based KPI dashboards (forecast accuracy, unit economics, cost per transaction/service).
- Automation: orphaned resource cleanup; schedule-based shutdown; spot/preemptible optimisation; lifecycle hooks to prevent waste; policy-as-code for compliance.

3.4 Continuous Improvement and Sustainability (“GreenOps”)

- Carbon-aware optimisation: align workload placement and schedules to lower-carbon regions/providers; integrate ESG metrics with FinOps KPIs.
- Sustainable patterns: energy-efficient architectures (storage tiers, serverless/event-driven patterns) and efficiency scoring in design reviews.
- Outcome reporting: monthly variance analysis, quarterly savings attestation and environmental impact summaries in board-friendly packs.

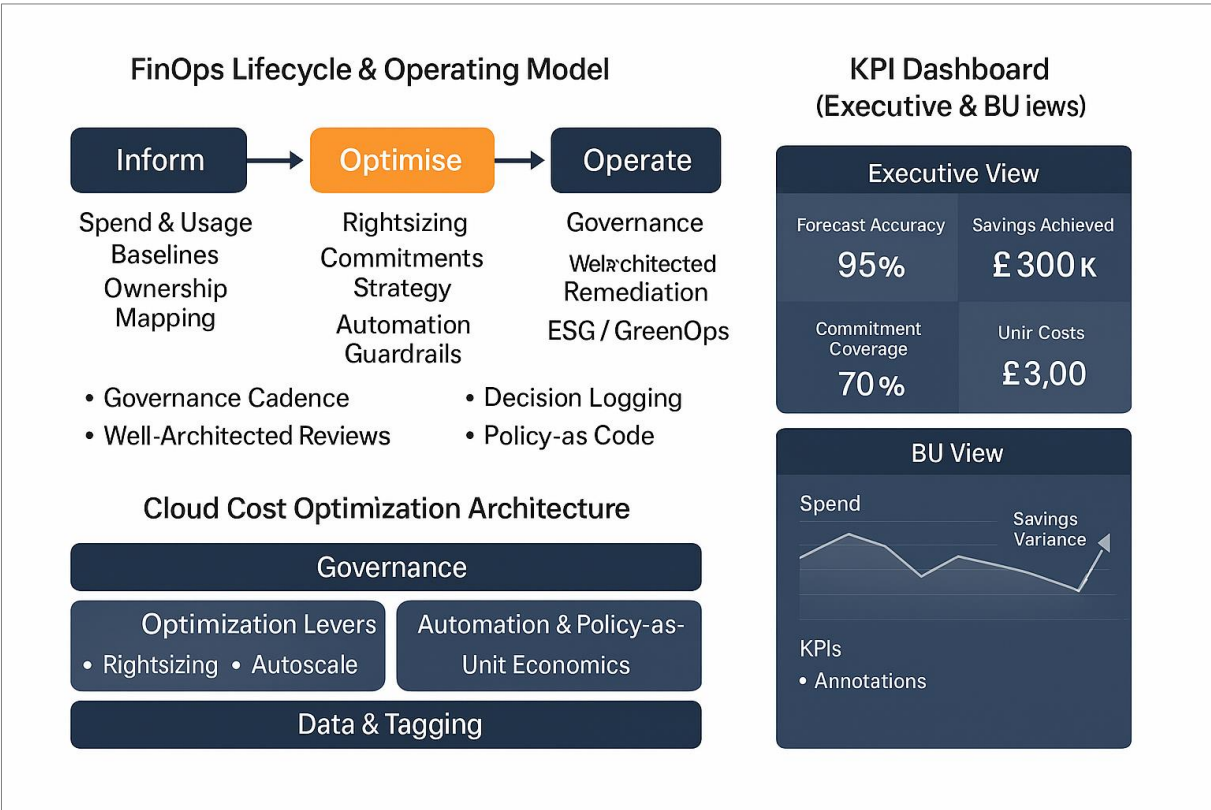


Figure 2: FinOps Lifecycle and Operating Model

4. Key Features

- Multi-cloud spend discovery and baselining (accounts, services, tags, BU mapping).
- FinOps operating model and RACI across Finance, IT and Product with shared accountability.
- Architecture rationalisation to eliminate redundancy and modernise cost-heavy patterns.
- Policy pack and guardrails, including auto-shutdown, budgets, commitments and variance escalation.
- Rightsizing and commitment strategy using Savings Plans, Reserved Instances, autoscaling and spot capabilities.
- Role-based dashboards covering forecast accuracy, unit cost transparency and trend analytics
- Automation playbooks for cleanup routines, scheduling, lifecycle enforcement and IaC integration.
- Well-Architected review cadence supported by remediation backlog and structured funding paths.
- Public sector control framework aligned to GDS, NCSC and UK compliance expectations.
- GreenOps integration with ESG metrics and carbon-aware architectural and operational decisions.

5. Business Benefits

- Financial control and transparency through a single source of truth for spend, BU and service allocation, explainable variance and board-ready reporting.
- Predictable budgets driven by improved forecast accuracy, baseline trending and commitment planning.
- Lower run costs through elimination of idle waste, rightsized compute and storage and Autoscale governance.
- Operational efficiency enabled by reduced manual effort, automation, standardised guardrails and policy-as-code.
- Governed delivery through a recurring Well-Architected review cadence, risk and exception management and remediation tracking.
- Multi-cloud agility with consistent governance, policy alignment and vendor-agnostic controls across AWS, Azure and GCP.
- Sustainability impact through carbon-aware workload placement, ESG metric adoption and GreenOps integration into KPI packs.
- Stakeholder alignment enabled by clear RACI, shared accountability and strengthened Finance-IT-Product collaboration through FinOps practices.
- Regulatory confidence through alignment with UK public-sector security, procurement and compliance standards.
- Measurable ROI demonstrated through quarterly savings attestation, cost trend analytics and unit cost benchmarking per service.

6. Technologies, Languages, Methodologies and Vendor Support

#	Technologies	Languages	Methodologies	Vendor Support
1	AWS Cost Explorer, Azure Cost Management, GCP Billing	SQL, Python	FinOps Framework (Inform/Optimise/Operate)	AWS, Microsoft, Google.
2	Dashboards: Power BI/Tableau	DAX, SQL	KPI Dashboarding and Outcome Mapping	Microsoft, Tableau.
3	IaC and Policy: Terraform, ARM/Bicep, OPA	HCL, JSON/YAML	Policy-as-Code Governance	Open Source.
4	Well-Architected Tooling	-	AWS Well-Architected Review and Remediation	AWS
5	Automation: Scheduling/Cleanup Scripts	Bash, PowerShell	Continuous Optimisation and Guardrails	Open Source.
6	Sustainability data sources	-	GreenOps / ESG Reporting	-

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