



Trust. Value. Velocity

G-Cloud 15

Business Analysis for Cloud Systems 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, 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 (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 & 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 & 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 & migration • Legacy modernisation • Low code / no code App Dev • DevSecOps • Enterprise integration	• MACH • Digital commerce • UX & 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 & 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 & applications for Army Digital Services

Developed mobile app & 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

2.1 Strategic Aims

Moving to the cloud is seen as a necessity for most organisations looking to compete in a digital age.

The cloud is a platform that can deliver a better customer experience, allowing businesses to deliver services more efficiently and cost-effectively, gain a competitive advantage, and drive growth. Therefore, a presence in the Cloud is not optional; for some businesses, it is essential.

2.2 Benefits

The benefits of delivering businesses in the Cloud are clear; this is evident in the number of companies that have migrated to it, particularly their customer and market-facing operations.

The cloud is ubiquitous and resilient, providing a 24x7 presence, so CIOs and business leaders implementing a digital strategy can reach more customers. They can also adopt a more reactive approach to change, knowing that the necessary infrastructure is already in place, and the Cloud enables them to react quickly.

Often, this means being better able to connect with and respond to situations affecting the market or their customers, and grow or relocate operations to reach and fulfil new or increasing demand. It is not surprising that these businesses are opening new markets and leaving some competitors in existing markets behind by implementing cloud systems.

The Cloud, as a platform for business, social media, and entertainment, is Agile, adaptable, and scalable.

2.3 Implementation

Implementation is critical and different, so Business Analysis is key to getting the approach right, and essential to assuring success.

It is essential because the implementation is different. For example, the way that customers or users can interact with the cloud is different. The business model and some ways revenue is generated are different. The way the business is established and supported may be different. Businesses will not realise benefits and succeed unless these differences in implementation are addressed.

For businesses migrating to the cloud and those already there, setting up and evolving are journeys, much like stages of growth - a journey that continues even for established businesses.

2.4 Mastek's Business Analysis for Cloud-Based Systems

The cloud is constantly evolving and changing, meaning business processes and ways of working must be adapted accordingly.

Mastek has a team of consultants, business analysts, and digital and cloud specialists who understand this and can help businesses successfully implement and develop their Cloud-based strategy.

In this context, the role of Mastek's team is to help businesses and service buyers improve their business processes, products, and services, and prepare or optimise them for the Cloud.

This involves a process of Discovery in which Mastek analysts gather information to understand the business, and sometimes to help stakeholders within the business understand the differences in the business model. Particularly, that their users or customers are, or will be, engaging with their products and services differently.

Migrating to the Cloud, which involves, for example, a basic switch from a local client and database to a distributed service delivering multiple media types via a browser or several apps to many different types of end-user devices, is a journey that alters everything.

3. Masteks Service

Business Analysis requires analysts with the skills and tools to understand and model business processes, aims and objectives. At the same time, implementation requires conceptually more technical skills to deliver infrastructure and systems technology. But these skills overlap, and in Mastek, our Business Analysts, BAs, are also technologists.

Technologists also become involved in understanding business processes. When migrating and developing for the Cloud, it appears that much of what is delivered requires the flexibility to combine these capabilities.

We demonstrate this in the following diagram.

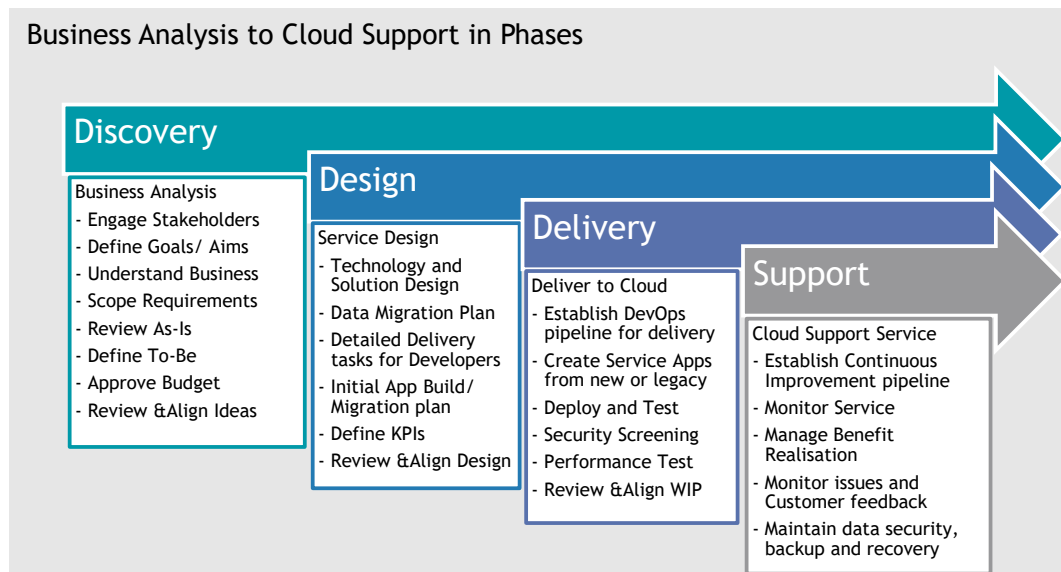


Figure 1: Business Analysis to Cloud support in phases

The BAs lead in the Discovery phase to understand business processes, define requirements, collaborate on user research, and determine the required outputs. The technical architect, technical engineers, test engineers and DevOps pick up the stories and deliver them.

3.1 Discovery

This is where the foundations of the analysis are established and where the Business Analyst is initially involved.

Included in this phase is work to:

- Define project aims and objectives.
- Analyse business processes and requirements.
- Perform gap analysis to identify needs to be addressed in implementation.
- Create a delivery plan around a prioritised work schedule to deliver the plan.
- Identify outputs and predict the impact they will have on the outcome.
- Recognise positive outcomes in the benefits realisation plan.
- Include adverse outcomes or disbenefits as risks or issues.
- Create or update the blueprint for implementation of business services.

- Carry out user research to map services to user needs.
- Estimate user numbers and performance requirements.
- Pinpoint business-critical processes and create backup and recovery plans.
- Ensure the security plan addresses privacy and data protection requirements.
- Decide how users of the services will be supported.
- Define the reporting requirements.

Discovery should conclude by establishing a migration and implementation plan that achieves an appropriate balance in addressing requirements for security, scalability, customer growth, high-priority business processes, risks, and compliance with regulations.

3.2 Design

Work continues with the involvement of more technologists and other specialists in the activity, including user researchers, technical architects, and test engineers.

Including in this phase work to:

- Assess the requirements that have been generated during Discovery.
- Estimate cost based on requirement complexity and potential benefits.
- Challenge the requirements, not everything, but report and discuss progress daily within the team and regularly in design review meetings.
- Agree on what development or Cloud migration activity to prioritise.
- Decide on the approach: buy rather than build, and reuse if possible.
- If migration is involved, decide which applications to move to the cloud; this may include some rewriting or replacement to deliver services as a web app or software-as-a-service.
- If the move to the Cloud is incremental, develop a strategy that will enable Cloud-based and other services to communicate and work together if they must do so.
- Create and update the test plan and acceptance criteria.
- Complete the design work required.
- Start work on delivery.

3.3 Delivery

In the Delivery phase, the role of the Business Analyst is to support the technical engineers who build and deploy services to the Cloud.

They base this on decisions made in collaboration with stakeholders and by analysts during the analysis in the Discovery and Design phases. Therefore, what to migrate, what to buy, and what to create new should have been agreed upon with stakeholders before entering the Delivery phase, which makes delivery in this phase far more likely to succeed.

Including in this phase work to:

- Deliver applications and data to the desired Cloud infrastructure.
- Shift parts of an existing application stack (legacy) to a new paradigm (Cloud) and do all that is necessary to migrate individual application layers.

- Develop new applications or apps for the Cloud.
- Transform data, potentially adapting data so that it can be moved, all or in part, to distributed physical infrastructure without compromising security.
- Carry out required security checks, which may involve an independent assessment of cybersecurity – also known as an IT Health Check.
- Automate some migration and perhaps operational processes; consider using AI. The extent to which automation is justified depends on the role it might play in a new operating model that enables businesses to complete repetitive tasks or innovate more quickly in the future.

3.4 Cloud Support

For businesses that have deployed or migrated to the Cloud, Mastek provides or can provide support to manage what they have implemented, monitor and improve performance, improve the way the services work, and continue iterating through the analysis and delivery phases to migrate more of the existing legacy services or build and deploy more new services to the Cloud.

Included in Cloud support work to:

- Deliver continuous improvement – migrating to the Cloud is not the end game.
- Manage benefit realisation by tracking KPIs to verify that benefits align with what the business and Business Analysts expected to achieve.
- Track the performance of services and make recommendations based on measurement to optimise use of Cloud infrastructure and investments;
- Monitor the activities performed by the Cloud infrastructure provider.
- Monitor support service transactions and customer or user feedback.
- Ensure there is customer and user feedback by running surveys.
- Continue monitoring risks and issues and review them at monthly and quarterly Service Review meetings.
- Continue to maintain data security, backup, and recovery procedures.

Business Analysis and Cloud Support services have enabled buyers to successfully implement cloud systems. During this time, Mastek has acquired technical skills and valuable experience, which, as lessons learned, are contributing to continuous service improvements.

4. Key Features

- Discovery phase, including stakeholder engagement and user research.
- Business process analysis and mapping.
- Data modelling and analysis.
- Service blueprint definition and models.
- User-centric approach and focus on usability and accessibility.
- Security fundamentals covered, including data privacy, encryption requirements, identity management and non-repudiation, and regulatory compliance.
- Resilience modelling, including backup and recovery planning.
- Automation and use of AI, Robotic Process Automation RPA, and Chatbots.
- Definition of the delivery roadmap and budgetary preparation and approval.
- Definition of KPIs, service performance and management metrics.
- Benefit plan and management approach defined.

5. Business Benefits

- Validation and quantification of business case and business benefits.
- Understanding service requirements and benefits using a collaborative and GDS-aligned approach.
- Business stakeholders and delivery team aligned on understanding and approach.
- Reduced risk of missed requirements and unwelcome surprises.
- Minimum Viable Product (MVP) and opportunity to optimise the cost of delivery based on MVP;
- Reduced deployment times due to the continuous nature of delivery.
- Improved mapping of the solution to user requirements and benefits.
- Ensuring security and regulatory compliance.
- Improved change management and pipeline for continuous improvement.
- Discovery of regulatory requirements and constraints.
- Identification of Business, Operational, and Technical risks with mitigation strategy.

6. Software Languages and Technologies

All major technologies, the latest toolset, best practices, and standards are supported.

6.1 Microsoft Stack

- Languages: C#, ASP. Net, SQL, MVC.
- Technologies: MS CRM, MS SharePoint, Azure, TFS, DevOps, POWER BI, MSBI.

6.2 Java Stack

Languages: Java, J2EE, JSP, Servlets, JavaScript, XML.

Technologies: Mule ESB, IBM ServiceMix, JBoss Fuse, Tibco, Spring Integration, AWS, SVN, GitHub, Spring Boot, Spring Web Services, Spring Security, Hibernate, Drools, Open AM, Open DJ, Apache Solr, Junit, Mockito jQuery, Mustache, Dojo, JSON, SOAP/WSDL.

6.3 Database and Storage Technologies

DB2, Flashback and Data Guard, Ingres, MariaDB, MongoDB, MySQL, Oracle, PostgreSQL, RAC, Riak, SQL Server.

6.4 Environment and platform technologies

UNIX, Windows, Amazon, Microsoft Azure, Skyscape, Hyper-V, VMware, secure IL0, IL2, IL3 environments.

6.5 Methodologies and Standards

Agile, BS 7799, DevOps, ISO 20000, ISO27001, ISO9001, ITIL, PMP and Prince2.

6.6 Mastek's Accreditations

- ISO and OHSAS accreditations
- Cyber Essentials PLUS
- CMMI Maturity Level 5.

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