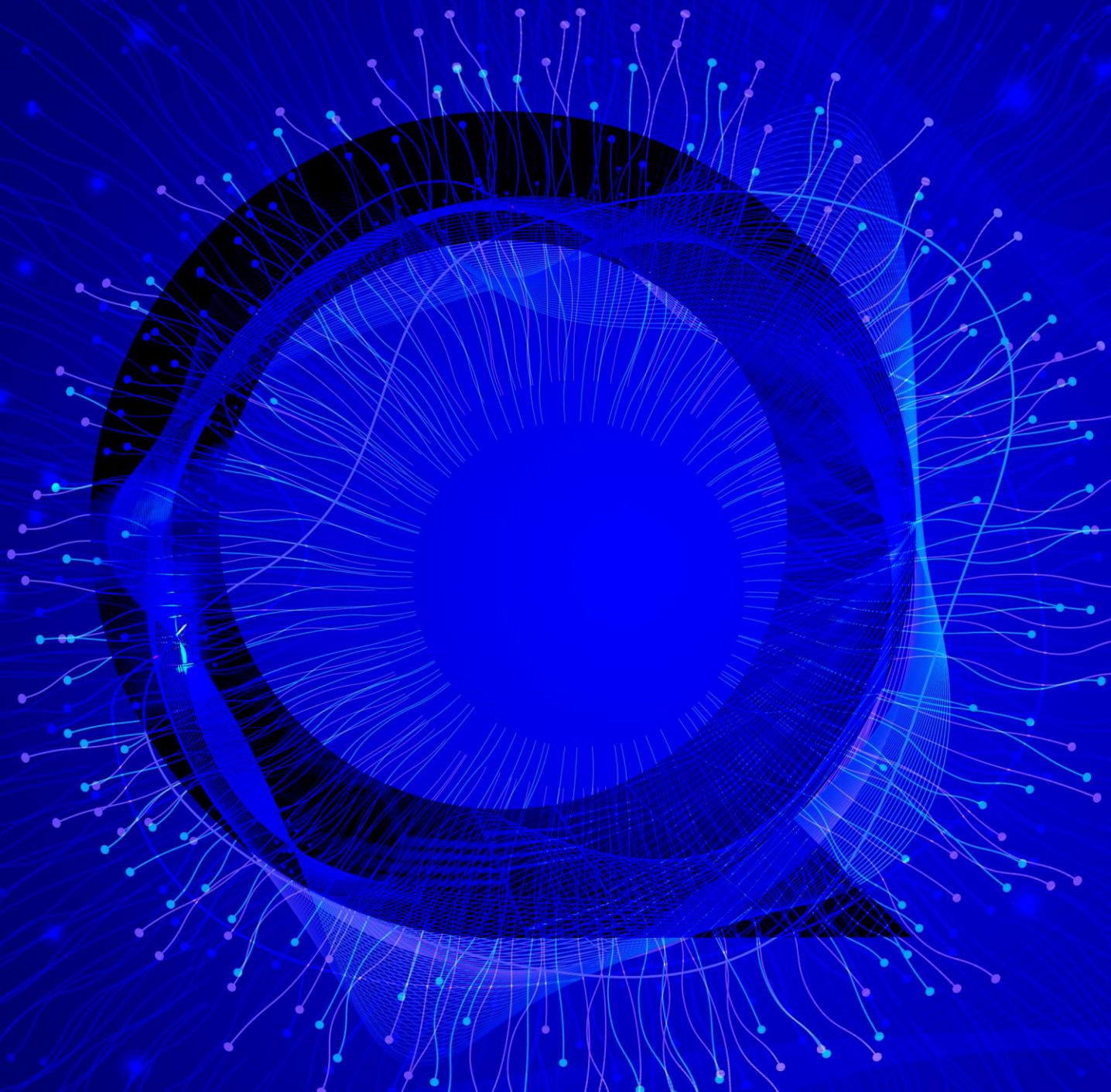


Service Definition Document

G-Cloud 14



Contents

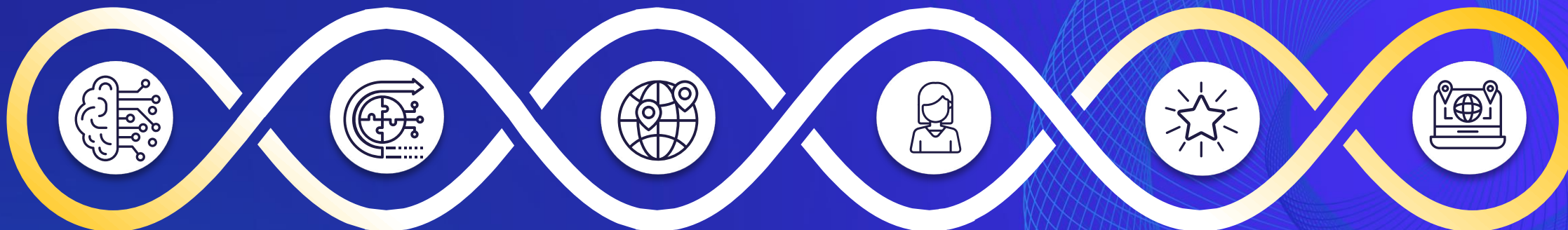
- Overview
- Who are we?
- What do we do?
- Deep Domain Expertise
- How are we different?
- Case Studies



WE ARE The world's leading AI-Powered Quality and Digital Engineering company

with 8,200 engineers worldwide. We deliver projects both directly at client locations and remotely from Qualitest-owned locations across the globe

For over 26 years, we've been helping clients deliver high quality products, enabling businesses to reduce the risk, time, and costs of implementing vital IT solutions by Engineering Quality from inception. Through our capability driven acquisitions, we are pioneering in building modern Digital Engineering services focusing on transformative capabilities, and specialist Quality Engineering, Quality Assurance and Testing services focusing on delivering assured quality rapidly while reducing and controlling costs.



**World's leading
AI Powered QE
and DE company**

**Next-Gen Industry-
aligned solutions**

**70 Nationalities,
12 Countries,
5 Continents**

~40% Women

**Business &
Brand
Assurance**

**Global Service
Delivery (22
DC's)**

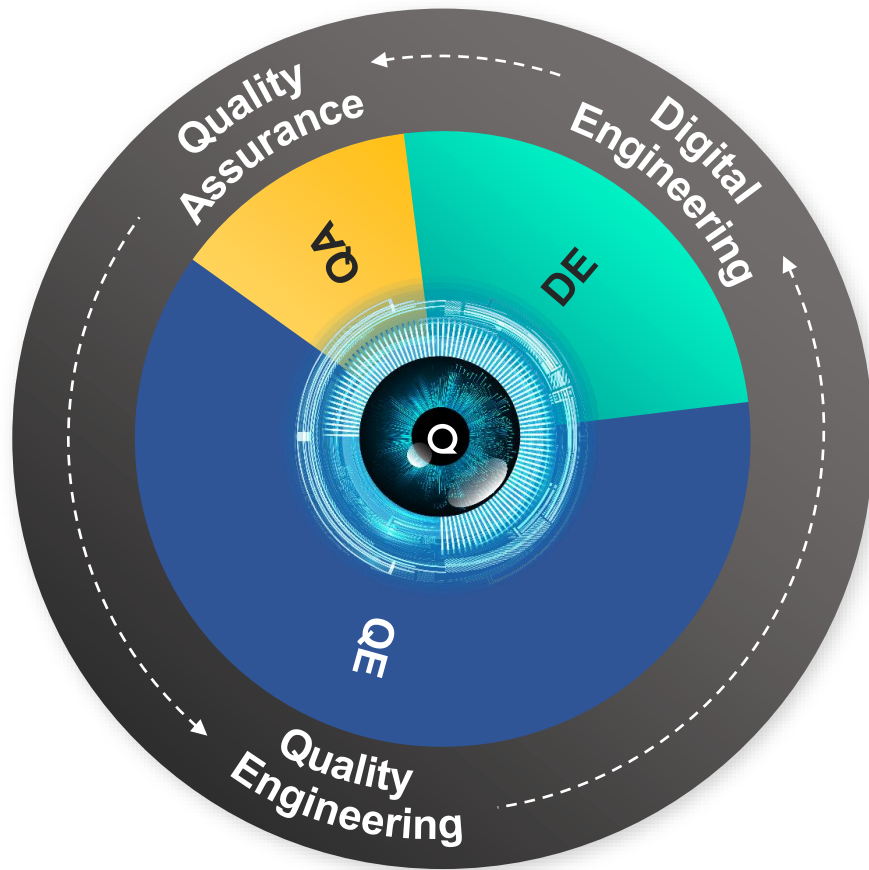
**Customer
base**

**563 active
customers**

**Global
Workforce**

8,200+

What do we do?



Quality Assurance (QA)

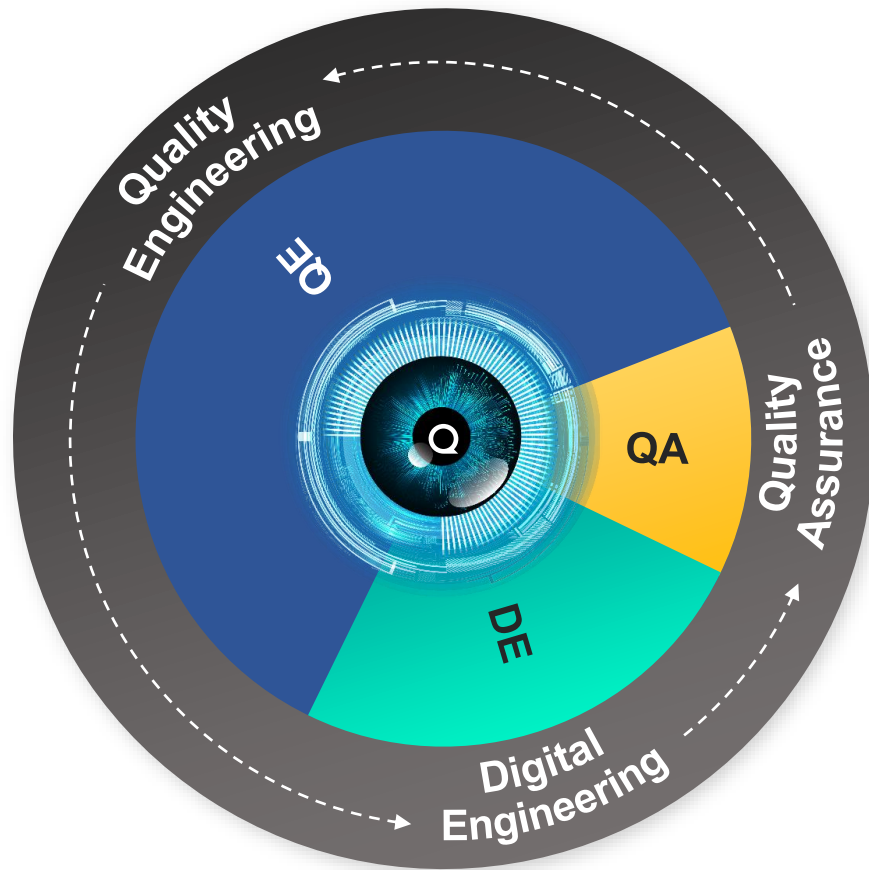
Our Quality Assurance services validate your software meets user expectations and requirements through testing, and ensures compliance with best practice and testing strategy. We identify and apply the right testing types, techniques, and tools to identify defects early in the lifecycle.

Quality Engineering (QE)

Our Quality Engineering services provide a proactive integrated approach across the whole product lifecycle, employing techniques, accelerators and processes to engineer quality from the outset, preventing defects. From requirements to integrated data analysis for better decision-making, we apply AI and automation to optimize effort and enhance quality.

Digital Engineering (DE)

We provide expert digital engineering solutions, including DevOps, product engineering and development, AI and data engineering, AI model development, UX design, digital transformation, and more.



Automation

RPA Bot Testing, Test Automation, Mobile Device and App/Application and Interoperability Test Automation, Automation Guild Formation, Automation Strategy Implementation, Automated Visual Validation, Setup Test Execution Agent, CI pipeline integration, Script branching and Merging Strategy, Compatibility Testing, Effort estimator

Non-Functional

Non Functional Testing (NFT) and Assurance Services, Operational Acceptance & Production Readiness Testing, Performance Test Engineering, Performance & Load Testing, Mobile Performance Testing, Cloud Performance Testing and Engineering, Performance Assurance - Audit and Governance, Application Performance Monitoring, API Performance Monitoring, Performance in DevOps, Chaos Engineering Service, Infrastructure Testing Service, Network Performance Testing Service, Microservices Performance Testing, Disaster Recovery and Fallback Testing

Security

Cyber Security Testing, Penetration Testing, Security Bounty testing, Cyber Security Assessment, Blockchain Security, Cloud Security, DevSecOps, Vulnerability Management, SAST, DAST, SCA, IAST, IaC, Configuration Review, Cellular Network Security Testing, Web Application Penetration Testing, API Security Testing, Mobile Penetration Testing, Cyber Hygiene Testing, Security Controls Testing, Network Penetration Testing, IoT Security Testing, AI Generated Code Security Testing, Medical Devices Security Testing

Domain Specific

Locational Intelligence and GIS Architecture, POS Testing, SCADA Testing

Experience

Accessibility Testing & Remediation Support, Managed Crowd Testing, User Acceptance Testing, UX & Usability Testing

Tools

Test Tool Assessment

Environment

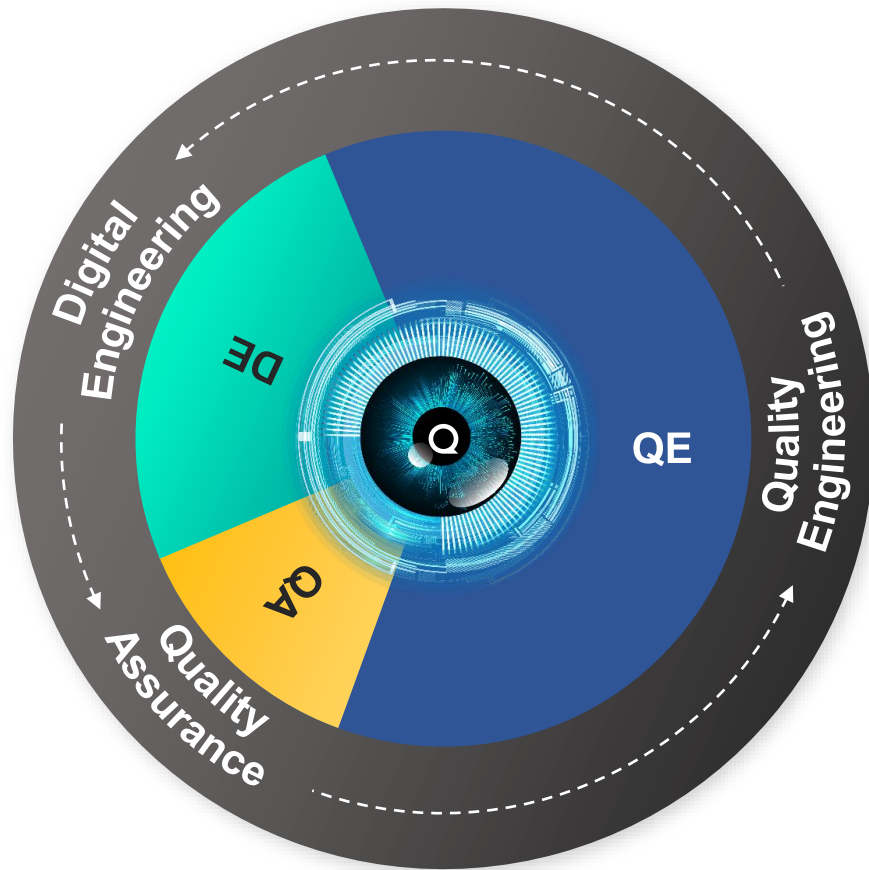
Mobile Device Farm, Test Environment Management

Overall

Digital Solutions Testing, Functional Testing, Managed Test Services, Mobile Device App/Application, non-functional Interoperability Testing - Manual, Quality Engineering & Assurance Services, Testing as a Service, Testing Transition Management Service, Quality Governance and Management, Quality Assurance and Governance

Mainframes

Legacy Applications Testing



Agile & API

Agile Testing, Microservices Testing, Web Services / API Testing, Service Virtualisation

Cloud

Cloud Assurance, Cloud Infrastructure Testing, Cloud Migration Testing, Cloud Native Testing

AI

AI-Powered QE Optimisation, Testing of AI, Testing of Generative AI, Requirement validation and refinement

Advisory

Strategic Quality Assurance Consulting, Test Management and Governance, Test Maturity / Test Assessment / QA Assessment

ERP

CRM Testing, Website and Ecommerce Testing, Enterprise Applications Testing, ERP Testing, HRIS Testing, Microsoft Dynamics QA, Oracle Testing, Salesforce Testing, SAP Testing

AR / VR & Blockchain

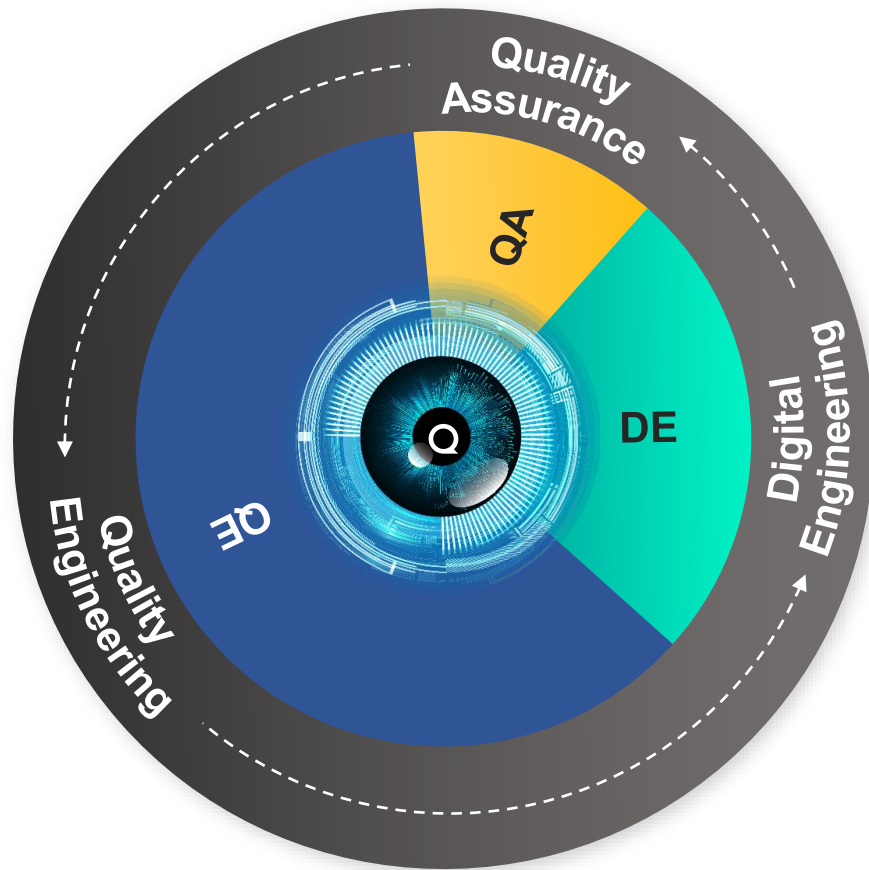
Augmented Reality & Virtual Reality Testing, Blockchain & Distributed Ledger Testing, Game Testing

Data Assurance

Enterprise Data Assurance, ETL/ELT Testing, Business Intelligence and Report Testing, Test Data Management

IoT

Testing in IoT (Internet of Things) Connection Devices, Drone & Unmanned Aerial Systems (C-UAS) Assurance



Agile & API

Agile Consulting, Product Management, API Integration Services

DevOps

DevOps, DevSecOps, DevOps Advisory & Transformation, Continuous X (DIT), Improvement Metrics (DORA)

Automation & RPA

Automation Advisory Services, Robotic Process Automation (RPA)/Business Process Management (BPM) Services

Product Engineering

Product Engineering, Pod Based Delivery/Nearshore Software Development, Site Reliability Engineering, UI UX Services

Data & Cloud

Data Engineering Services, Cloud Consulting, Cloud Native Development, Cloud Transformation and Migration

Management

Requirements Analysis Service, Transition Management

AI & Innovation

AI Consulting, AI Data Services, AI Development, AI-Experimentation, Conversational AI, Innovation-as-a-service

Application Modernisation

Application Transformation, Mobile First Engineering

Learning

Learning Platform Development, Video Encoding, Streaming and Player Development

Customer Experience

Accessibility Delivery Services

Deep Domain Expertise in the Public Sector



AI In Public Sector



Understand the ethical, fairness and bias risk of AI-enabled technology and have the processes in place to guard against them being introduced to their software landscape



Comprehensive approach to AI software delivery, addressing defects in data, modeling, and deployment



Provide a detailed analysis of defect introduction, manifestation, and mitigation strategies



Embed Data Scientists in collaboration with clients to improve AI delivery and testing



Provide updated strategic materials based on industry best practices and extensive research



Deliver documentation outlining ML lifecycle with strategic & tactical quality checkpoints for each stage



Align to industry standard lifecycles and methodologies like CRISP-DM (Cross-industry standard process for data mining) for rollout of intelligent systems to simplify and improve the quality of process adaptation

QA and advisory

Assuring quality of third-party supplier's deliverables to specified accredited standards, working within GDS

AI-enabled solutions to reliably assure these technologies in the safety-critical context of public sector.



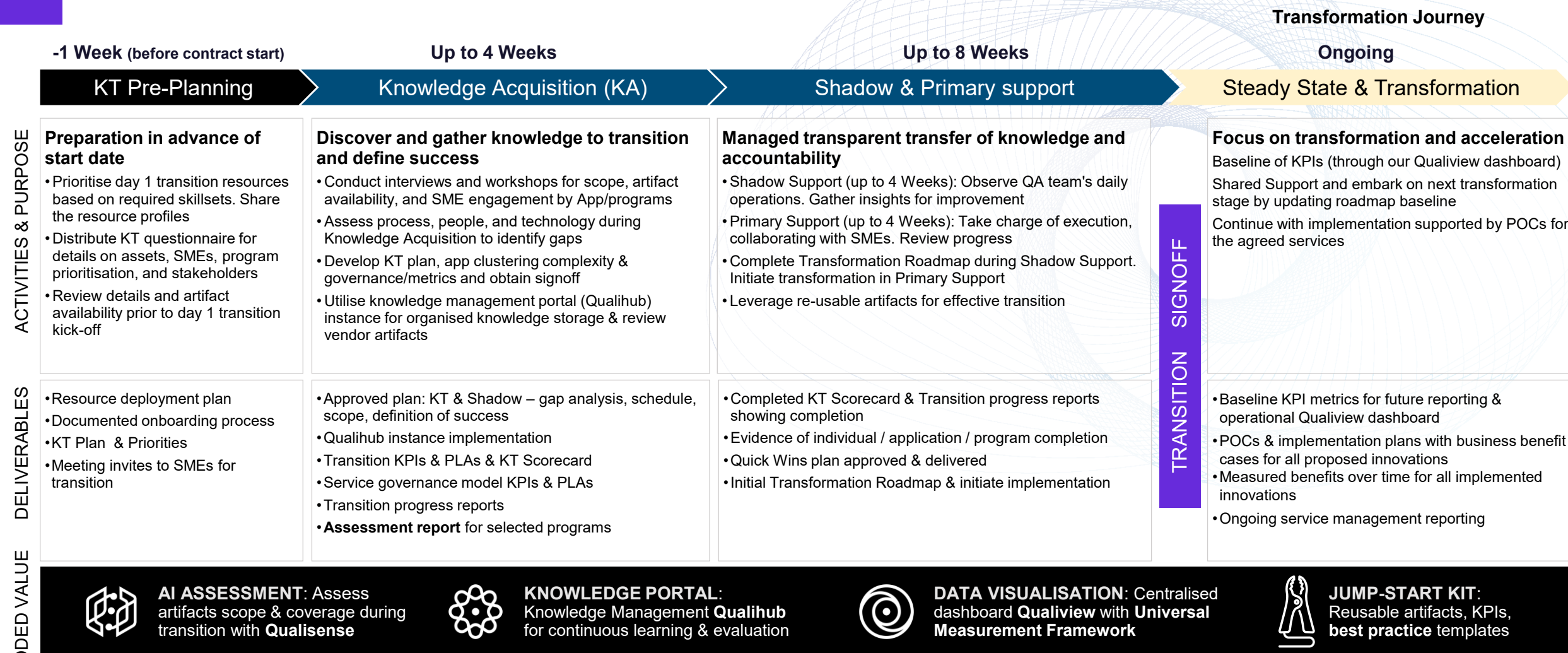
Our Approach to delivering the Services

With our approach, we give our clients deep insights and control of their Quality and Digital Engineering needs, providing confidence in quality at great speed. We emphasise our approach to build partnership with a solid foundation based on trust and collaboration. We commit to go beyond the transactional relationship to support you to always achieve your transformational goals with innovative ideas and deep domain experience and Quality Engineering expertise. We commit to the building blocks of a successful partnership of Transparency, Trust, Mutual Benefit and Shared Vision.

To deliver this award-winning service we:

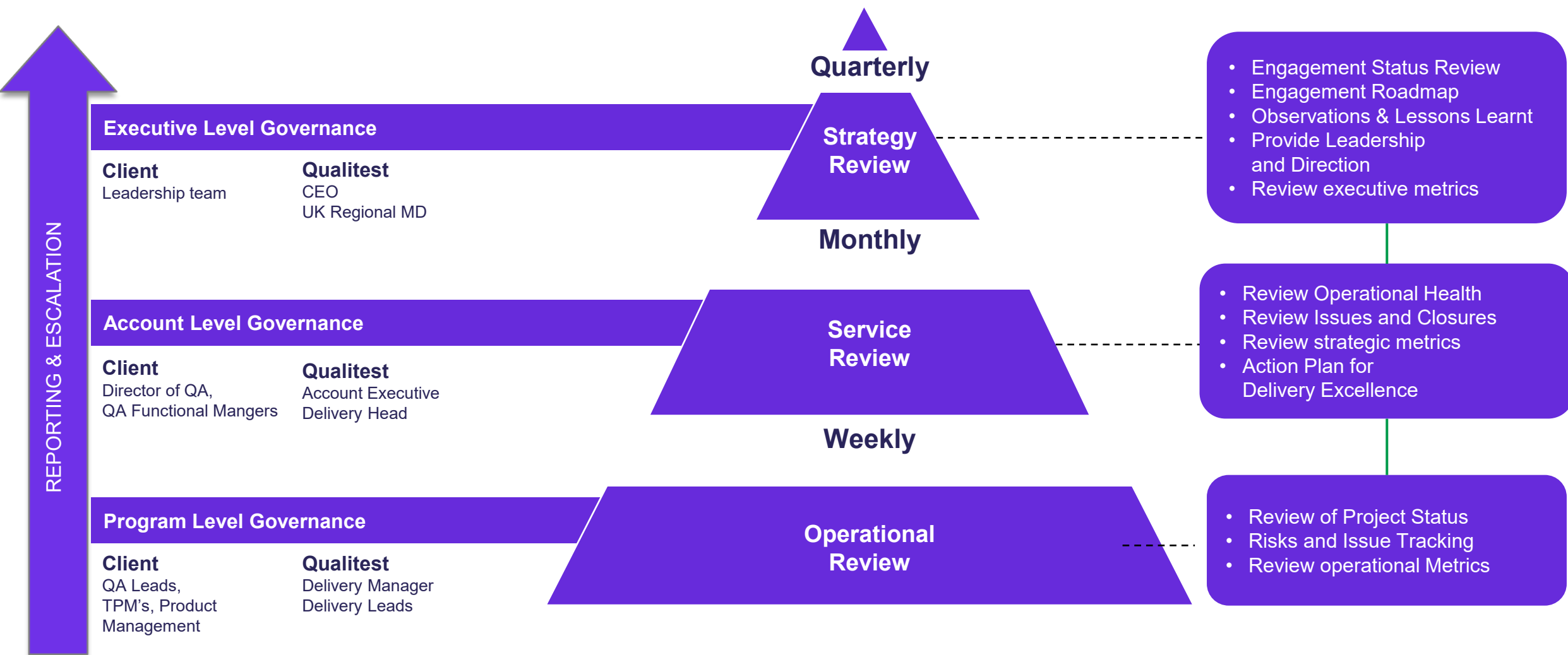
- Start with an optimised **transition** using our proven and documented transition process tailored with you to be specific to our clients. We know the typical challenges faced and risks in any transition, but are driven by a need to ensure innovation, optimisation, and the development of a world-class service.
- Collaborate with you to understand your **strategic objectives**, quality requirements and existing processes to define and implement a **best-in-class governance** model across the service. We operate as the Transformation Bridge across the service to drive the cultural change required to enable our client's to be successful in their transformation journey.
- Establish a mutual understanding and measurable **goals** which align with your strategy across all parties, creating one unified service – one unified team. With this goal in mind, we will measure our success using a comprehensive set of collaborative KPIs with a focus on demonstrating transformational outcomes for your business.
- Help you achieve your goals in the most efficient manner with a strong quality focused governance, clear communication, flexibility and agility insights – primary with a **data driven approach** to drive continuous improvement.
- Utilise our **Front Door Request (FDR)** portal, as a one-stop service for expert resource: automatically estimate demand, raise a ticket with approval workflows, track the ticket status and monitor fulfilment against SLAs, e.g., breach analysis, demand vs estimated response times, fulfilment levels. This data is included in our Strategic Dashboard and included in our reporting paving the foundation for a strong **Demand management**.
- Deliver a service led by **our industry experts**, with 26+ years of experience as pioneers in Quality & Digital engineering, PLUS the absolute best and brightest from our international **Centres of Excellence (CoEs)** to assess and implement innovative techniques.
- Optimise testing: Embed AI to address challenges around over-testing, to find the fastest path to finding defects, and reducing test maintenance and execution effort by identifying inefficient or redundant testing.

Transition approach



KT = Knowledge Transfer, SME= Subject Matter Experts, client or incumbent, KPI = Key Performance Indicators, PLA = Project Level Agreement, POC = Proof of Concept

Governance and reporting



Centres of Excellence

Investment in advanced Capabilities to drive acceleration and enhance Customer Experience through continuous & comprehensive Next Gen Solutions



200+
Experienced
CoE Team



Global Leverage –
across **6**
Geographies



**Sector
Focused
Offerings**



Next Gen R&D – Specialist
capabilities providing leadership,
business support & training



Thought Leadership
through Industry
Renowned CoE Leaders

Automation

End to End Automation,
Consulting , Proven Framework,
Tools & Innovation

Performance

Performance testing, consulting,
and Engineering solutions.

Security

Security Assurance Solutions,
Cyber Consultancy, Vulnerability
testing & assessments, Security
Engineering

Accessibility & UX

Accessibility, UX, Localisation &
Crowd Testing

Data

Test data management utilising
gold copies, real-time data search
and/or test data creation

Digital Engineering

Digital Channels, Domain
Services, DevOps, Remediation &
Support Services

Cloud

Cloud Native Assurance &
Migration, Cloud Infra Assurance,
Component & Contract test
and Microservice Automation

AI/ML

NLP Assurance, Machine
Learning, Vision Assurance

Phygital

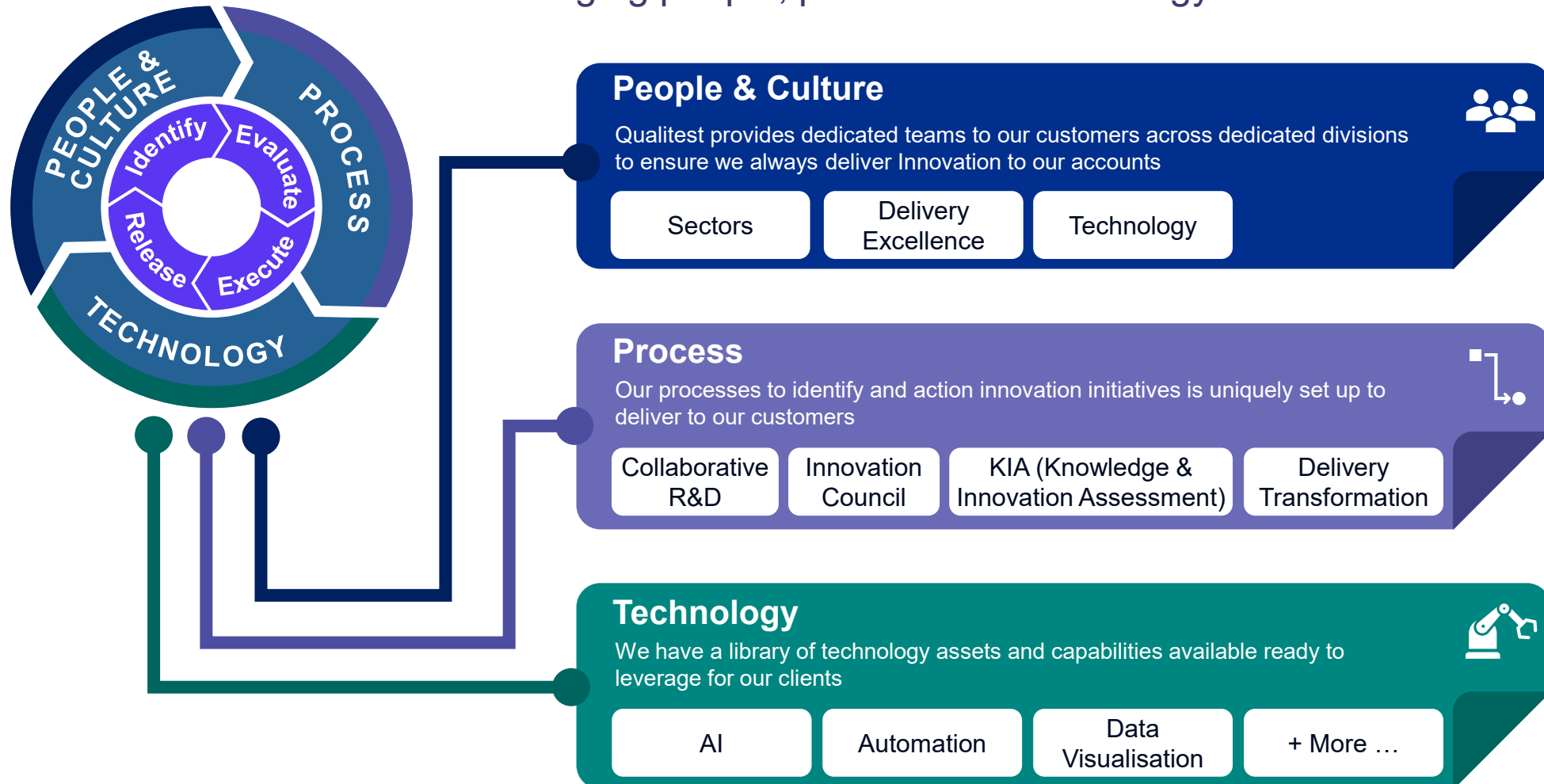
Interoperability, Phygital
Automation, Firmware upgrade &
H/W testing, API, AI ML validation

Qualitest Products

Accelerators enabling Digital
Transformation - Qualiview,
Qualisense, Qualiframe,
Qualihub, Qualicoach, Qualidex

Innovation approach

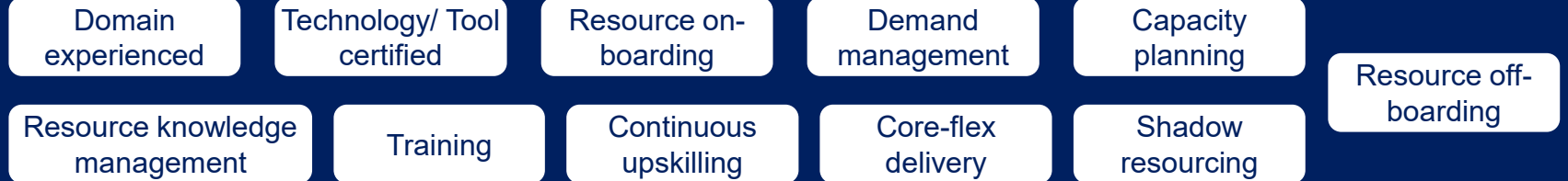
QUALITEST™ Driving Innovation with our customers through a centralised process, leveraging people, process and technology



How do we deliver the service?

1 PEOPLE

We provide dedicated teams to our customers to ensure right-fit for delivery.



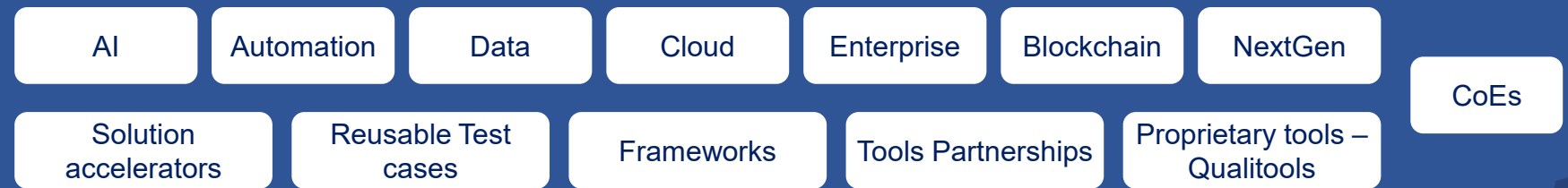
2 PROCESS

Our processes to identify and action innovation initiatives is something uniquely deliver to our customers.



3 TECHNOLOGY

We have a catalogue of technology capabilities, together with our tools and solution accelerators that can be readily leveraged.



How do we engage?

Project Based

- Resource augmentation in T&M model based on specific project needs
- Lead time-based resource ramp-up



Core-Flex

- Core team of resources, in Fixed bid model, supporting specific applications or business units, retaining knowledge
- Flex team of resources, in T&M model, to supply demand fluctuations and specialised skillsets and services
- Monthly capacity review



Managed Service

- Accountability and ownership of service delivery by Qualitest
- SLA based delivery – outcome based
- Focus on innovation & continuous improvement
- Workforce enablement and resource continuity
- Periodic service review



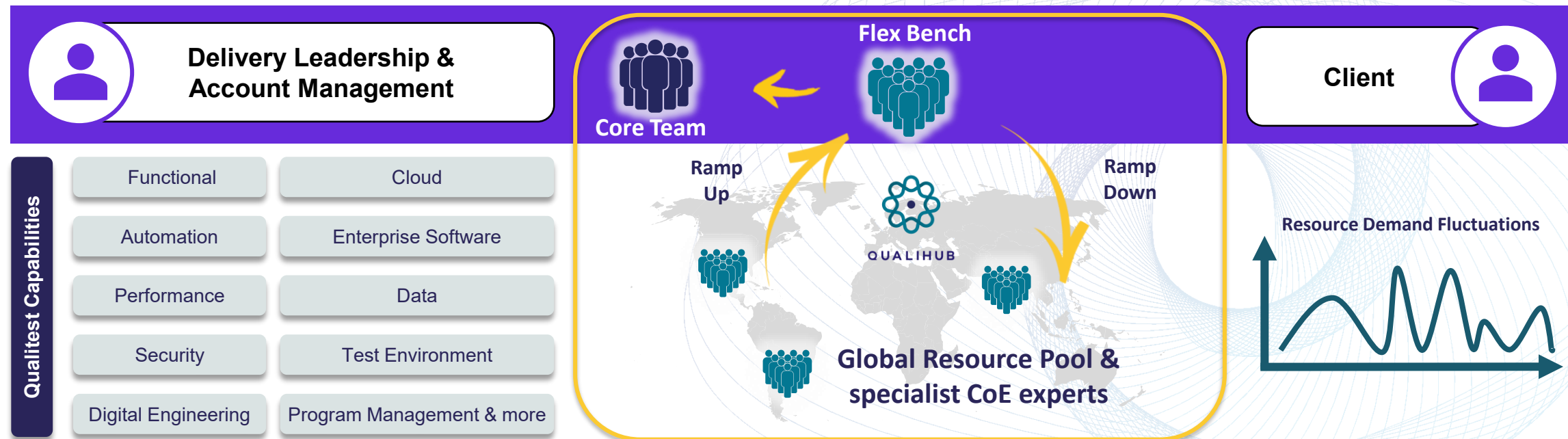
Delivery-as-a-Service

- Delivery based on defined and agreed packages of work
- Discrete services under individual contracts – service on demand



Our Managed Service model allows us to take accountability for delivery, leaving you to focus on your business

Staff augmentation and expert resource supply



~300*
Overall Bench strength

** As on March 2024, may fluctuate depending on demand/ supply of resourcing*

Flex bench & Virtual bench (leveraging our partnership with consultants) to support immediate demand

2-3 weeks
Lead time **

*** For additional global pool up to 5% of the operating capacity, as on date of request*

Onboarding

Onboarding Process

Client Technology training course designed by our technology & training SMEs.

Reviewing knowledge documents on centralised document management repositories.

Resource Pool training sessions modules

- ✓ Client Introduction & Cultural Alignment
- ✓ Stakeholder Map, Client Introduction & Overview
- ✓ Role Expectations, Ways of Working & Core Behaviours
- ✓ Governance & Reporting & Communication Approach
- ✓ Delivery Approach

On project deployment:

- ✓ Client Induction (Required courses provided by Client)
- ✓ Project Team Introductions
- ✓ Set Objectives and Performance Goals



Offboarding

Offboarding Process

Knowledge retention focused on business continuity and minimising disruption.

Smooth transition and handover, return of assets and proactive security control governance.

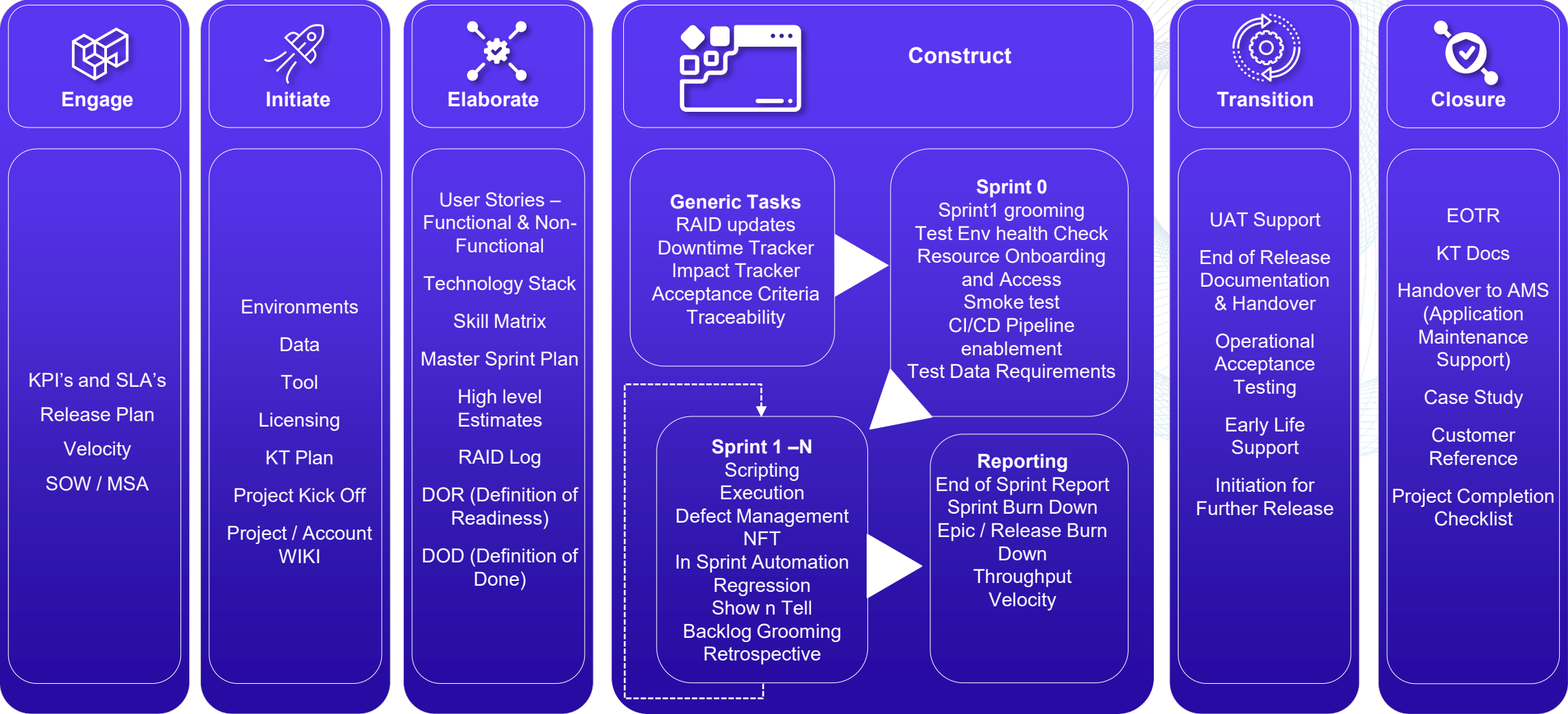
Key offboarding activities:

- ✓ Update existing knowledge artefacts
- ✓ Create new knowledge artefacts as required
- ✓ Hand over inflight activities including testing, defects and open items
- ✓ Migrate all key documents and artefacts to centralised repositories
- ✓ Return of all assets, including IT equipment
- ✓ Process offboarding requirements including access control
- ✓ Reverse hand over checklist completion and validation



Methodologies supported

Qualitest provides a fully-GDS compliant service. If, however, you need another approach, we can provide our **Qualitest Operating System (QTOS)**, an internal standardised methodology incorporating best practices. We have waterfall, Agile and hybrid methodologies to suit your organisation. Below is our **Agile methodology QTOS**:



Public Sector partner of choice

Fostering Dedicated Public Sector Skills



300+
Experts

>60%
Certified

20+ Successful
Client
Engagements

**Dedicated Sector
Leadership**

**Extended Partner
Network**

**Investing in Transforming
our workforce**

**Investing in SMEs &
Social Value**

**Reusable
frameworks**

Partnering with external
**Expert consulting
agencies** who specialise in
Government Digital
Standards and the Testing
Codes of Practice

**Dedicated Internal
Training program**
specialised for Public
Sector Domain

**Expertise in Government Standards &
Policies** - Government Digital Standards,
GDPR, DCB0129: Clinical Risk Management,
DCB0160: Clinical Risk Management,
Government Security Classifications Policy, ISO
27001, GovS 005: Digital

**Investing in SMEs &
Startups**
Tech UK Relationship

Delivering to Public Sector Standards

GDS | Technology Code of Practice | Accessibility and data standards | Cyber Essentials plus | ISO 27001
DDaT | ISO 9001 ESG Policy | Modern Slavery Policy

Social Value

Fighting climate change



- Committed to **reducing waste, energy and water usage**, and to recycling whenever possible
- Encourage **homeworking** wherever possible, subject to our client's requirements
- Leverage technology to reduce travel through **online collaboration**
- Registered with **EcoVadis** to manage risks, reduce costs and drive innovation and new revenue
- Detailed policies and processes to comply with our **Environment and Sustainability commitments**
- Develop our management processes to ensure that **environmental factors are considered** during planning and implementation

Covid-19 recovery



- Our **flexible homeworking policy** prioritises diversity and inclusion. It allows us to attract talent from a wider range of backgrounds, including those in **economically disadvantaged areas and regions impacted by COVID-19** (subject to client needs).
- Invest in employee growth through universal training, **customised development plans**, merit-based promotions, and role rotations
- Prioritise employee well-being with a 24/7 confidential support program, online resources, and **access to counseling**
- Actively support local communities through charity partnerships and volunteer opportunities for our staff.

Tackling economic inequality



- Encourage remote work for wider talent access, reduced employee costs, environmental benefits and offer **competitive pay** above the National Living Wage
- Invest in all our staff through **comprehensive training**, personalised development plans, and opportunities for advancement through promotions and role rotations
- Foster a culture of **fair treatment** with transparent practices aligning with the Good Work Plan.
- Regular feedback** and communication are ensured through performance reviews, town halls, and Q&A sessions
- Prioritise innovation** through a dedicated R&D centre, leveraging AI to improve efficiency and customer value

Equal opportunity



- Qualitest's **Diversity & Inclusion (D&I) Committee** is led by our senior leadership team who define and enact our D&I Strategy. Our strategy identifies groups within our organisation and/or industry that are underrepresented and required additional support, these are:
 - Qualipride** - Employee Resource Group (ERG) for LGBTQ+ community
 - Women@Qualitest**
 - People of **Colour** (BIPOC)
 - People with **Disabilities**
 - People **returning to work**
 - Veterans**
- Zero tolerance** towards slavery and human trafficking

Wellbeing



- We offer a **24/7 Employee Assistance Program**, online resources, access to counselors, and mental health initiatives (yoga, speakers, training)
- Mental Health Support:** We have mental health first-aiders, champions, and regular wellness communications to prioritise employee well-being
- Offer **tax-efficient bike** purchases to encourage exercise and cost savings
- Promote remote work for environmental benefits, reduced employee costs, and **improved work-life balance**/mental well-being

Case Study - QA practices with AI for NHS England

QA
practices

Qualitest partnered with the NHS who wanted to ensure that as AI-enabled solutions arrive in their landscape, they have the existing collateral, processes, quality enablers and accelerators ready to ensure they can reliably assure these technologies in the safety-critical context of healthcare.

Business Need

The client wanted to:

- Understand the current state of industry's awareness and readiness for the assurance of AI & ML powered technology.
- Identify the new approaches and refinements to existing approaches required to enable us to assure the quality of AI software vs. traditional software.
- Understand the ethical, fairness and bias risk of AI-enabled medical technology and have the processes in place to guard against them being introduced to their software landscape.

Qualitest Solution

- Qualitest provided a comprehensive approach to assure the end-to-end processes of delivering a successful software as defects in AI-infused software can arise from data, modeling, and deployment.
- Deployed Data Scientists in Test who worked closely with the client to understand delivery of software and enhance existing test and assurance efforts for AI-enabled technology.
- Our consultants provided the client with updated strategic materials based on industry best practices and extensive research.
- Delivered documentation outlining the Machine Learning system lifecycle with details of strategic and tactical quality considerations that must be met in each stage of that lifecycle.
- Aligned to CRISP-DM industry standard lifecycle to simplify process adaptation for the client.
- We gave a detailed picture of where defects could be introduced, what they might exhibit as, and the quality processes required for defect prevention and testing.



Provided a tool kit to improve quality practices and earlier defect detection



Detailed documentation to enable the creation of robust QA Practices



Proactive steps to prepare their quality approaches



Strategies to maximise speed-to-market



Case Study – Non Functional Testing for NHS England

E2E
Performance
& NFT Service

Qualitest partnered with the NHSX, now part of NHS England to support the Covid Pass Programme. We provided Quality Assurance services including Non Functional testing of the Azure FHIR solution for both Web and Native mobile applications.

Business Need

The client wanted to:

- Derive and validate critical Non-Functional Requirements for the entire service specifically focusing on Performance, Accessibility and Security.
- Certify scalability of Azure cloud hosted services, to handle usage at peak times across different business transactions.
- Setup Non-Functional test regression test suite to quality assure the weekly release cadence.
- Benchmark the application and identify hardware sizing needed for services to handle 5X to 10X peak load, since the application was government-mandated across the country.
- Validate the App against WCAG 2.1 guidelines for both Web and Mobile application.
- Detect potential Performance, Accessibility & Security bottlenecks early, protecting the service and ensuring rapid release capabilities.

Qualitest Solution

- Produced detailed Non-Functional Requirements specification against the 'Pass service' solution across all non-functional test types and categorised with MoSCoW rule.
- Performed high concurrency load simulation with various performance test scenarios aligning to the Workload Model forecasted for a peak day.
- Continuous performance evaluation, performance monitoring & diagnosis, security testing and accessibility testing as a services as part of weekly releases.
- Performed exhaustive Accessibility testing across the application.
- Usage of AppInsights and NewRelic to observe of metrics, logs and traces within the platform and to analyse performance metrics.
- Sharing knowledge with the live service team to optimise the infrastructure resource and clearly articulate accepted technical debt to be prioritised for a remediation.

QUALITEST™



We delivered the first release with **no priority 1 or 2 production incidents**



Automation first approach to accelerate delivery



Won the “**Best Agile project**” at The European Software Testing Awards 2022



Shift left non-functional testing and **shift right** production monitoring



Case Study - Automation for Ministry of Justice

UAT
E2E
regression

The Crime program is an IT enabled business change program, providing user-focused digital services and products. Qualitest partnered with the client in providing effective UAT and end to end regression.

Business Need

- It aims to unify and transform the Criminal Justice System (CJS); and enhance the Criminal Justice experience for all users.
- As the digital enabler for the transformation of the UK Justice System, the CPP is creating an end -to-end case management for Crime, the police, Crown Prosecution Service (CPS), defence organisations and HMCTS.
- This will improve the experience for victims and witnesses, result in more efficient criminal justice processes, leading to lower costs for the taxpayer, and bring our courts into the digital era.

Qualitest Solution

- Creating an effective UAT end to end regression suite (90% automated and 10% manual) by close co-ordination with business product owners who in turn liaised with end users (Judge, prosecutor, advocates, defence users).
- The UAT regression suite is risk based upon business severity and technical complexity having optimum coverage of 70%.
- The UAT Regression pack is run mainly by the business owners but is coordinated by the UAT lead whereby few of the test cases are also run by the end –to-end testing team.
- The UAT scenarios are end user specific with judges, advocates, defence users.
- Reduction in technical and operational debt by 50%
- 100% compliance of User stories to 'INVEST' standards
- 600 users with 350 hearings per hour



250+ User stories spread across 12+ releases deployed in Live with **no Severity 1 or Severity 2 defects**



Increased automation coverage to **90%**



WCAG compliance of **99%**



5+ critical security vulnerabilities identified



1.5 Million API calls handled on a peak day



Case Study – Data Centre Migration Testing for ECC

Qualitest partnered with Essex County Council (ECC) to work alongside the new hosted data centre supplier for and on the client's behalf to provide independent and objective quality assurance, quality governance and testing of the migration program

Business Need

- The client realised the limitations their on-prem architecture was placing on their operational capacity, they embarked on a program of work to migrate their IT systems from their existing data centre to a new hosted data centre.
- There was a requirement to plan, analyse, and design an effective and efficient approach to client's data centre migration testing.

Qualitest Solution

- Our extensive portfolio of prior work on large-scale data migrations, combined with holistic testing of complex infrastructure projects, provided the assurance blueprint. This included detailed visual reporting to support informed risk-based decision-making points throughout the program lifecycle.
- Implemented a project team with strong leadership experience and to establish a collaborative approach with the business users, server, and network experts. The team brought extensive expertise in assuring Extract, Transform and Load (ETL) processes, in leading ETL tools and in data migration best practice.
- The team was led by our Operational Acceptance Test Manager, focused on data quality and integrity from the user perspective and also coordinated configuration management activities, environments, defect tracking and defect management.
- Developed an efficient risk-based approach and plan for the quality assurance, quality governance and testing of the client data migration program: from the assurance of the data itself to the validation of the data in the target applications for the assurance of the business users.
- At each point in the project plan, our expert evaluation provided key decision-making information to the client about their readiness to progress to migration and any outstanding risks, their impact, and mitigation recommendations.



Streamlined Operations:

Achieved a smooth migration of 6 critical applications to the new data centre, enhancing efficiency



Expanded Capacity:

Successfully completed a "lift and shift" migration of over 40 applications from the secondary data centre



On-Time Delivery:

Delivered all migrations within contracted timelines, ensuring minimal disruption



Enhanced Trust: Established a strong partnership with a reliable testing partner

Case Study – Data Migration Testing for MoJ

E2E
Performance
UAT
Rollback

The Ministry of Justice (MOJ) undertook a data migration project across all their facilities, Qualitest provided support across all aspects of the migration and conducted an extensive data analysis and supported data clean-up of redundant data objects and processes.

Business Need

- The Client migrated the data to their new “future-proof” servers and built a new instance of their CRM solution over the top with all the apps that were needed to support their operations.
- Assurance was needed on the migrating data that would be migrated fully, integrated effectively, and work seamlessly in the new applications to maintain Business As Usual (BAU).

Qualitest Solution

- Qualitest provided support across all aspects of the migration, deploying a small team led by a senior experienced data migration and data warehousing testing specialist. With no data mapping or system diagrams available, it was down to Qualitest to engineer the quality rather than simply “quality assure”.
- We worked very closely with the program designers and developers, the Database Administrators (DBA) and the Data Owners, the Business Analysts and the Business SMEs (Subject Matter Experts) to determine the scale and scope of the migration.
- The holistic granular test strategy started with detailed data assurance and incorporated robust end-to-end testing to support the complexity introduced by the sweeping scale of the changes, and the criticality of Operations to the success of the Client organisation.
- Implemented end-to-end testing with the following coverage : Regression Baseline Testing, Redundancy Testing, Extract Testing, Transformation Testing, Data Migration (Load) Testing, Performance Testing, Technical Application Regression, UAT, Rollback Testing, Application Testing & Field testing.
- We developed a sophisticated automated dashboard, which provided reporting across all the projects to all the individual timelines and quality markers. This ensured that data was available daily to empower critical program decision making.
- Production validation found a total of 13 errors, all non-critical, which were resolved by the war room over the weekend and before operations recommenced on the Monday morning, assuring production stability and zero impact to operations.



Cost-optimised with early bottleneck fixes



On time delivery within budget



Right-first-time migration with no errors in the data records and no application failures



Reduced anticipated production downtime by 20% less than planned



No priority production defects and No dropped records



Case Study – CRM solution assurance for Shaw Trust

Crowd
testing

The Client is the UK's largest third sector provider and one of the government's lead partners in the delivery of employment programs for disabled and disadvantaged people. Qualitest was partnered to test a complex, customised CRM system from an off-shore, Vietnamese supplier. It was a critical component to both the service offering and the client revenue collection.

Business Need

- The client needed an approach for the testing of a complex, customised CRM solution that was being delivered by an off-shore, Vietnamese supplier.
- The CRM system would be used by both in house teams and partner organisations. It is a critical component to both the service offering and the client revenue collection.
- The project was partway through when the client approached us, and the software had proven to be very complicated and they had experienced an unexpectedly high number of issues in the first two releases.

Qualitest Solution

- We created a clear and pragmatic test strategy in order to achieve the goals within the given time frame.
- Along with an experienced on-shore team, our off-shore team were engaged on the project to meet test volume requirements and budget restrictions.
- Managed crowd testing was also incorporated to the final solution.
- The solution comprised of deliverables from the Qualitest on-shore and off-shore teams including:
 - Test plans
 - Test entry and exit meetings
 - Defect management
 - Exploratory testing
 - Scripted testing
 - Daily reports
 - Test exit reports
- The test team worked closely with the on-site Client Business Analysts and Technical Architects as well as the Off-shore Development team to ensure clear communication and efficiency in delivery.



Successful implementation with government guidelines from the Department of Work and Pensions (DWP)



Achieved high throughput while rapidly onboarding



Planned fixes to address remaining issues



Long term strategic relationship with client

Case Study – Crowdsourcing for Met Office

Crowd
testing

The Client is monitoring and predicting weather systems across the globe. They are a commercial organisation focused on scientific research and providing one of the best weather services in the world. Qualitest partnered with the client to use one of our crowdsourcing partners which provides access to a global network of testing experts.

Business Need

- The client needed to expand their testing capacity, potentially offshore, to increase efficiency but faced limitations in keeping development in-house.
- Discussions revealed that offshoring development wasn't an option due to the client's need to maintain on-site control.
- As an alternative and cost-effective method, Qualitest proposed the use of one of our crowdsourcing partners.

Qualitest Solution

- We addressed the client's need for cost-effective testing with a crowdsourced solution. Our platform grants access to over 20,000 global experts for targeted testing within a set budget and timeframe.
- Testers are graded and profiled, allowing you to choose specialists based on location and expertise to ensure thorough testing of your application.
- To showcase the platform's benefits, we run events like those on (<https://www.zapper.com/support/>) where teams compete to find bugs in a limited time.
- We conducted a similar event for the client, testing the final stages of their web application. Both attendees and the wider crowdsourcing community participated.
- This live demonstration impressed the client with the speed and quality of bug identification achieved globally within just 2 hours.
- The crowdsourced testers even discovered unexpected bugs missed by the client's internal team, highlighting the value of "fresh eyes" in testing.
- The event also emphasised the importance of clear testing requirements for efficient bug reporting and resolution, as evidenced by the need for Zappers rules and a current bug list to avoid duplicates.



Increased Speed of Defect Detection: 65 defects were detected in just 2 hours



Improved Defect Coverage: Crowdsourced testers found bugs that's missed by internal team



Significant Cost Saving: Crowdsourced testing for 2 hours was equivalent to 1 full-time tester working for 3 days



Case Study – Test Management & Governance for LCC

The Lancashire County Council (LCC) is a local governmental body covering approximately 1.5 million people and around 1,200 square miles. Qualitest helped prepare government workers to perform formal test governance using a customised testing approach, supporting social care systems

Business Need

- The Client testing was unstructured and informal in nature and was rarely scripted. It was not auditable, or traceable to business requirements, and their tests were not reproducible.
- The Client had to deliver a significant and high profile IT program that involved migrating their two in-house social care systems, for adults and young persons, utilising COTS packages from 2 different 3rd party providers.
- The business critical nature of these systems meant that there was no tolerance for errors in the delivery.

Qualitest Solution

- We provided a Test Process Improvement review and were engaged to provide the organisation with a formal, documented test approach, tailored to suit the social care migration program requirements/capabilities.
- While the budget did not allow for a professional test team, we provided the Program Test Manager and mitigated this risk by providing formal training for the council's business testers as well as additional test consultants to mentor and support them during test preparation and execution. This also ensured that the council's business representatives were upskilled and better able to support future implementations.
- Social care systems can't fail, and we were up for the challenge of introducing effective testing processes and utilising social workers as the primary testers for these two significant system migrations.



Customised test approach and templates aligned with industry best practices



Strategies for delivery excellence



Risk-based testing enabled to deliver critical systems that were fit for purpose



Key stakeholders engaged in testing much earlier



Won the 2014 **BCS award** for IT Project Team of the Year

Case Study - Skills Development & Management for Met Office

Skill
development

The Client is monitoring and predicting weather systems across the globe. Qualitest partnered with the client to develop and implement an enhanced framework for skill development, which was compatible with the SFIA version 4, but would then enable them to manage it following the term of consultancy.

Business Need

- The Client assess their test teams' capabilities annually for their on-going skills and development program and they knew that there was a need to increase effectiveness, efficiency and proactive working practice.
- Each team member's current skill set needed to be analysed so that the most relevant and effective personalised plans could be put together.
- The Client required support integrating with the SFIA version 4 framework while making development plans applicable to the business and motivating and engaging staff.

Qualitest Solution

- **Experienced Training Management:** Our expert in the software development lifecycle (SDLC) was assigned to guide the client through the improvement process.
- **Needs Assessment:** We collaborated with the client's management team to identify their priorities and how our framework could address them.
- **Skills Gap Analysis:** Through interviews and self-assessments, we identified existing skills and areas needing development within the client's team.
- **Personalised Development Plans:** We created individual development plans for each team member, outlining their current skill levels and a roadmap for improvement.
- **Sustainable Framework:** We designed a system that the client could manage internally with minimal ongoing support from us. This approach empowered the client's team for long-term growth while reducing their reliance on external consultants.



Seamless implementation, minimising disruption to the team's workflow



Enhanced team skills by identifying areas of strength and opportunities for improvement



Personalised development plans for each team member achieved the highest performance standards



Case Study - NFT Process Improvement for MoJ

NFT

The Ministry of Justice (MOJ) is a ministerial department of the Government of the United Kingdom. Qualitest partnered with the client to improve the process of Non-Functional Testing on their platform to achieve desired performance.

Business Need

- Their platform is expected to support 6k concurrent users, but with the current design and infrastructure it's supporting only 1000 users.
- Two of the key services 'Notepad Parsing' & 'Share Results' of Hearing creations are failing to respond within timeout limit while executing with more than 1k users and other services are responding slow.

Qualitest Solution

- Derive and validate critical Non-Functional Requirements for the entire project.
- Designed transaction workload models based on real world customer behaviour
- Utilised Dynatrace, Kibana, Zabbix, Azure portal for monitoring and analysing server-side stats.
- Realtime Dynatrace dashboards implementation in NFT environment.
- As the project proposed the approach to migrate IAAS to PAAS and services migration to AKS to achieve desired performance, Validated the AKS cluster and components are sized appropriately to support both current and forecasted volumes.
- Involved in planning and orchestrating of Resilience tests
- Identify potential bottlenecks in the new application that may impact the future peak trading.
 - Monitored and analysed few problem areas (Private and Public topics) extensively and identified hotspots that are resulting in high response times and suggested the resolutions. As a result, application started supporting 1k users from 300 in the past.
 - Identified timeout issues related to 'Notepad Parsing' & 'Share Results' calls during the load tests executing with more than 1k users.
 - Identified and fixed the Redis cache issues where the data hasn't been properly added for Cache mechanism
 - Spotted deadlocks related to file services during large file process



Automated Test Data

Preparation: Reduced the time needed from 2 hours to 15 minutes



Increased test efficiency by allowing multiple tests to be run throughout the day



Realtime Dynatrace dashboards for performance Monitoring



Enhanced Test Script

Accuracy: Identified & fixed inaccurate response times within existing test scripts



Case Study - UI Automation Process Improvement for MoJ

Automation

The Ministry of Justice (MOJ) is a ministerial department of the Government of the United Kingdom. Qualitest partnered with the client to improve the process of UI automation to improve execution timelines and accelerate release testing.

Business Need

- Requirement to automate entire Regression Pack which is part of every week release testing.
- Existing automation framework was designed on unit test Javascript framework which was not feasible for UI Automation across different browsers. Also, this framework doesn't support connectivity to DB due to which 40% of regression pack was unable to Automate.

Qualitest Solution

- Identified all the UI requirements as part of release regression pack.
- Identified a solution and developed new framework using Serenity Java framework.
- With this UI automation framework we were able to connect to UI/API and DB.
- We now automated 95% of regression coverage using the newly developed framework.
- As the project proposed the approach to migrate IAAS to PAAS and services migration to AKS. This proposed automation framework will help in connecting both IaaS and PaaS connectivity.



Improved execution timelines from **2 days to 5 hours**



Consistency in the execution results for every release



Defects were **identified earlier** in every release with this framework

Case Study – Test Automation Framework for MoJ

The Ministry of Justice (MOJ) is a ministerial department of the Government of the United Kingdom. Qualitest partnered with the client to introduce improved test automation framework with coverage into the API and database layers well beyond the previous UI layer and to automate regression test cases to further improve QAT efficiency.

Business Need

- There was a need to improve the quality of deliverables on the programme in line with stakeholder expectations and to introduce innovation and best practices.
- The client wanted a detailed situation assessment and consultation with their stakeholders and third parties to introduce a new test framework to raise standards.
- Also, enhancements required in their legacy test cases with poor traceability to cut root cause analysis effort, eliminate inconsistencies in execution across lower environments and further increase efficiencies in day-to-day operations.

Qualitest Solution

- Introduced improved automation framework reducing UI regression runtime by >70%
- Revamped a failing partially-automated approach to data creation and enhanced it to provide fully automated test data aligned across all databases, reducing data generation time by more than 85% while increasing reliability, allowing multiple NFT test runs within a single day for the first time.
- Our critical analysis of legacy test scripts deployed by the previous incumbent allowed us to identify and eliminate false positives, which led directly to a reduction in the developer workload, allowing them to optimise their time.
- Our framework pushed automated coverage into the API and database layers well beyond the previous UI layer. This allowed 95% of all regression test cases to be fully automated, further improving QAT efficiency.
- Application of best practice: Collaborative input into sprint planning rationalised sprint targets enabling the development team to deliver consistently on time and at the required level of quality.
- Our input into overall programme planning and strategy allowed for more accurate estimates of effort and time that have led to programme revisions with more informed and attainable timelines.



Regression coverage increased from **40% to 100%**



95% regression automation



Root cause analysis time reduced to **>50%**



0% Production leakage

Case Study – Test Automation for The Post Office

Qualitest responded to an urgent need at The Post Office to help evolve the test function into an envisioned CI/CD model for the delivery of features to production. They also required Qualitest to help deliver a flawless user experience in addition to implementing a modern test engineering approach, Qualitest helped to increase user traffic capacity from 1M to a 5M surge.

Business Need

- There was a need to work collaboratively with the client and multiple third-party suppliers to lead significant change while supporting them through training and upskilling to realise their goal of a CI/CD model for delivery of features to production.
- They also wanted to enhance skills through assessment and training, improving the performance of 13 teams of diverse capabilities, to demonstrate scalability, improve testing efficiency and framework robustness, achieving cost savings and gain control over data analysis and enabling faster feedback.

Qualitest Solution

Implemented an iterative process model, with two clear, well-defined phases and provided a precise performance testing strategy

- Built a 50-member community through team building, mentoring, and upskilling of third-party suppliers.
- Created Proof of Concepts (POCs) for uniform solutions across the scrum teams and rolling out once evaluated for ROI.
- Increased code commits, emphasising automation-first delivery. This enabled the code to move to the next stage when previously stuck.
- Introduced reusable test pipelines and process documents. Enabled the loading of the packs into the cloud to be automatically run and save 75% of effort on smoke testing, and the use of a common solution and collaboration across teams onboarding their 26 test automation packs
- Designed a scalable cloud-based testing pipeline adopted by 13 teams.
- Improved the automation framework, introducing an open-source E2E test framework. Common adoption, increased the response time for changes to the code base, very fast to write the test and therefore the verification of new features is accelerated. Previously Sprint +1 (10+ days), now it can be done in-sprint on the same day (2 days).



Increased test automation metric from 11% to 31%



75% saving on the smoke testing which is run on demand from cloud



Increased the capability of the testing team from 9 members to 50 members

The World's Leading AI-Led Quality Engineering Company - Qualitest (qualitestgroup.com)

QUALITEST™

For more information, please contact:

Simon Blackmore

simon.blackmore@qualitestgroup.com

QUALITEST™