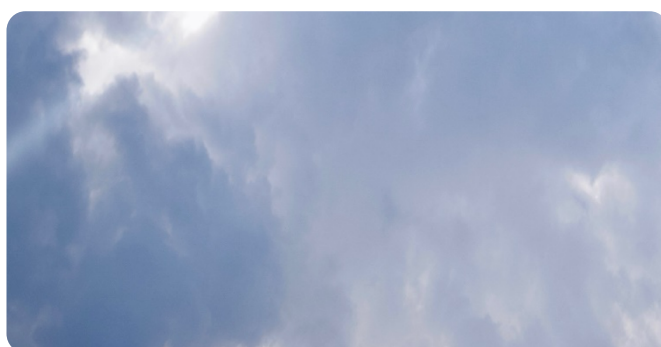
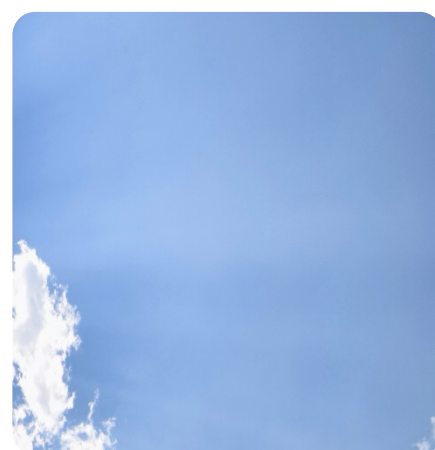




Crown
Commercial
Service



Enterprise Analytics Services & MLOps on Google Cloud

GCloud Service Description

Bringing Ingenuity to Life.
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1 Enterprise Analytics on Google Cloud

1.1 Short Service Description

Enterprise Analytics on Google Cloud is a suite of services that will accelerate your data analytics, Machine Learning (ML) and Generative Artificial Intelligence (genAI) projects. We'll leverage Google's leading AI and data tools, share knowledge and work with you to get the most out of your data on GCP.

1.2 Key Service Features

1. Library of quality code to customise for your project
2. Code samples and notebooks to enhance your analytics workflow
3. Cloud based technology optimised for sandbox development
4. VMs preinstalled with data science packages & ML frameworks
5. Simple process to deploy scale and monitor ML models
6. Unlimited processing power and storage to build ML models
7. Scalable environment, up or down as project requirements change
8. Access to one of the UK's largest data science practices
9. Fast access to powerful data analytics machines
10. Smart Data Accelerator workshops to inform data requirements

1.3 Key Service Benefits

1. Support the development of your internal data science capability
2. Start working immediately on data projects saving you time
3. Don't start from scratch, leverage our Data Analytics experience
4. Build ML models faster with reusable high-quality code
5. Get inspiration for your project from other successful use-cases
6. Work confidently with a pre-configured environment that provides stability
7. Pay only for technology you use, when you use it
8. Accelerate project implementation and data assessments
9. Deploy scalable and highly available models into production
10. Run multiple versions of the model for automated A/B testing

1.4 Service Definition

PA's Enterprise Analytics Services on Google Cloud is a suite of analytics products and services that will help you to accelerate your data analytics, machine learning and artificial intelligence projects by tackling the three problem areas analytics teams face today.

1.4.1 Infrastructure

Limited CPU power: Data Science teams use their local machines to develop and test their models. But with teams experimenting more and more with complex data sets and model, they often reach performance limits quickly, or servers crash upon run.

Managing infrastructure: IT teams are having to support new and evolving data science software which presents challenges to scaling and distributing technical resources, managing updates, bug fixes, security and incompatibility risks.

Dominant legacy systems: Business teams are locked into using existing data science software packages with significantly more expensive licensing fees than alternative open source solutions.

1.4.2 Collaboration

Scarce talent: There has been a rise of open source and machine learning tools to train the data community and promote its increased use, however, experience with R & Python packages still remains scarce.

Sharing culture: Rapid experimentation, sharing both success and failures and reusing data/analytics resources is often still a new culture. Collaboration tools are limited to promoting sharing of assets and it is difficult to find and leverage existing solutions within and across operating companies.

1.4.3 Getting started / production ready

Getting started: Data teams face unclear processes, responsibilities, tools and a lack of access to high-quality data for analytics often results in lengthy delays to start an analytics project.

Getting production-ready: Once a project is finally underway, getting a solution ready for use in a production environment and maintaining a stack optimized for specific use cases is hard and time consuming.

We believe that analytics is a team sport. We;

- **Think big:** We help organisations understand the value of data and show where they are on their journey to become a data-driven organisation.
- **Start small:** We demonstrate the potential of Data Digital innovation by showing immediate results.
- **Scale fast:** When we have proven the success of initiatives, we help our clients drive transformation across their entire organisation

Enterprise Analytics Services consists of the following products and services:

- Data, ML & GenAI Accelerator studio
- Model Libraries
- Sandbox as a service
- Machine Learning (ML) DevOps

How we'll start:

Data, ML & AI Accelerator studio

Our Data, ML & AI Acceleration Studio can prove the data-driven intelligence that can be derived from new and existing data sets. Our philosophy of 'lead, share, support' builds capability and skills in your team.

Google Cloud Platform provides a collaborative environment for Data Scientists with easy-to-use interactive tools, a hosted AI repository and on-demand analytics via a serverless, highly scalable and cost-effective cloud data warehouse.

Technology solutions can be integrated with your existing architecture or rapidly deployed as stand-alone analytic tools.

Next Steps:

Model Library

Today, teams browse through numerous online sites on their way to find useful code, with little time given to checks on code quality and proper documentation. Often, such code samples are saved in private folders on local machines.

Analytics Cloud Factory makes available a shared collection of assets designed for people building models and machine learning systems. Get started with useful shared code snippets across the main analytics code formats including Python, R, and much more. You can add to the collection by sharing your own code samples and get reviews from the data community.

Sandbox as a Service

Data analytics teams have been running their models on local machines and are quickly reaching capacity and computation limits when experimenting with more complex data types and machine learning algorithms. Several teams have expressed this as a key blocker in their analytics projects and have expressed a strong desire to get access to a temporary, high-performance machine.

Sandbox-as-a-Service is designed exactly to meet this need. Through a few simple, straightforward steps, you can now get access to your very own data analytics Sandbox created for you in the Ageas cloud. Your machine comes with the most common data analytics packages pre-installed to get your project up and running quickly.

Machine Learning (ML) DevOps

Deploying and maintaining models in a production system has never been easy, data analytics teams often face this very difficult challenge with each deployment taking weeks and months, involving a multiple teams across Business, IT and Analytics functions.

ML DevOps is a service that is focused on the goal of providing you with a simple, easy-to-follow process to deploy your models as an API or Container, log and monitor their performance, easily making adjustments where necessary.

1.5 Why PA Consulting Group (PA)?

A trusted partner for cloud, AI, and digital technologies

PA Consulting Group (PA) is a leading technology and innovation consultancy and one of the UK government's most trusted advisors, combining strategy, delivery assurance and deep engineering to turn complex ambition into assured outcomes. We bring end-to-end capability across cloud architecture, data and AI, cyber, and advanced technology R&D, backed by a track record of scaling innovation in the public and private sectors.

Our UK work is anchored by secure, standards-led delivery. PA maintains ISO/IEC 27001 certification across global operations, demonstrating disciplined information security and operational control, and applies UK government good practice (GDS, NCSC CAF) across cloud and digital programmes.

We combine consultancy with real engineering. At our Global Innovation & Technology Centre (Cambridge), 300+ scientists, designers and engineers operate extensive labs and studios to prototype and industrialise solutions, bridging physical and digital from concept to production.

1.5.1 Why PA for cloud, data and AI

- **Hyperscaler alliances without vendor lock-in.** PA is Premier Tier with **Google Cloud** (13+ years; 150+ certifications; specialisations in infrastructure, data analytics, app dev and security) and holds deep **AWS** and **Microsoft** credentials, accelerating secure data foundations and generative AI at scale while keeping advice independent and outcome-led.
- **Responsible AI you can trust.** Our Responsible AI framework, governance toolkits, and risk policy make AI adoption transparent, auditable, and compliant, embedding lifecycle controls, model documentation, and human-in-the-loop safeguards aligned to evolving regulation.
- **Impact beyond pilots.** We help organisations become *intelligent enterprises*, using data and agentic AI to create and protect value, with pragmatic roadmaps from use-case selection to scaled operations.
- **Proof through delivery.** Our client stories span enterprise data platforms, IoT and analytics (e.g., Rentokil Initial), and product innovation at scale (e.g., Unilever) where PA has put data and AI at the heart of continuous, market-leading improvement.

1.5.2 Cloud capability (assess, design, build, assure, run)

PA applies an assured cloud delivery approach to complex government and regulated environments, blending client-side delivery assurance, multi-cloud architecture, and resilient operations:

- **Strategy & readiness.** Maturity assessments, target operating models for hybrid/multi-cloud, and cost/benefit modelling; proportionate GDS compliance and ISO 27001 controls embedded upfront.
- **Design & architecture.** Secure, well-architected patterns across Azure, AWS, and Google Cloud; data platforms, identity and access, and cross-domain solutions for sensitive estates.
- **Build & deploy.** Cloud-native engineering, DevSecOps (CALMR), CI/CD, infrastructure-as-code; automated testing and quality assurance to accelerate safe release.
- **Migration & modernisation.** Legacy transformation, platform reviews, and workload migration tuned to resilience and cost; pragmatic FinOps to keep spend predictable and efficient.
- **Operate & optimise.** Observability, incident management, performance tuning, backup/restore, and change management, maintaining business continuity and reducing total cost.
- **Client-side delivery assurance.** Forward-looking, risk-based assurance that keeps complex programmes on track, covering governance, architecture, testing, migration, service readiness and cutover. See our *IT Delivery Assurance* service.

1.5.3 AI, ML and data (from strategy to scale)

- **Strategy & governance.** AI blueprints, operating models, and policy; enterprise data governance; regulatory readiness; centre-of-excellence setup and change adoption.
- **Engineering & MLOps.** Data platforms on Azure/AWS/GCP, pipelines and feature stores; robust ML lifecycle with monitoring, drift detection and auditability.
- **Generative & agentic AI.** Secure integration of LLMs (including Copilot) into workflows for measurable productivity and quality gains, using guardrails, system cards and ROI framing.
- **Responsible AI.** Lifecycle controls and assurance tooling to manage bias, security and transparency.

1.5.3.1 Quantum and emerging technologies

PA's applied physics and quantum engineering teams help clients unlock near-term value, combining quantum techniques with classical systems for decision support, advanced sensing and secure communications:

- **Decision support & optimisation.** Hybrid quantum/classical algorithms to accelerate complex planning, routing and resource allocation where speed and quality of decisions matter.
- **Quantum sensing & RF.** Novel quantum radio and Rydberg-based sensing to enhance spectrum use, detection sensitivity and resilience in contested environments.
- **Commercialisation insight.** Advisory at the "whole-stack" level, hardware, supply chain, interfaces, and ethics, to move from lab to market within national strategies.

These capabilities are industrialised at our Cambridge centre, turning concepts into robust prototypes and pre-production systems across sectors like defence, energy and transport.

1.5.4 Cyber security and digital trust

Digital trust is central to PA's approach. We design security into architecture, operations and culture, aligning to NCSC CAF and GovAssure, and delivering testing, red-team, SOC design and OT/IoT security:

- **Transformation & architecture.** Secure-by-design patterns, cloud security, identity, and cross-domain data protection (including NCSC-approved Oakdoor data diode products).
- **Assurance & regulation.** CAF/GovAssure alignment and pragmatic remediation plans for government organisations.
- **Testing & resilience.** CREST-aligned penetration testing, red-teaming, incident readiness, and operational resilience.

1.5.5 What PA will bring

Ideation & Strategy

- Cloud strategy and advisory services
- Cloud readiness assessments
- Cost/benefit and ROI modelling
- Security and compliance by design.
- AI/ML and data strategy (blueprints, operating model, governance) with Responsible AI policy and guardrails.
- Quantum opportunity framing and whole-stack commercialisation roadmaps.

Design & Architecture

- Bespoke enterprise and cloud architectures
- Integration with existing IT infrastructures
- Hybrid/multi-cloud design
- Continuity and disaster recovery
- Data platforms and MLOps patterns
- Security, privacy and resilience embedded by design in technical designs
- User-centred-design
- Secure cross-domain solutions and high-side/low-side integration where required.

Development & Deployment

- Cloud-native engineering
- Containerisation, microservices and serverless

- DevSecOps (CALMR) with CI/CD and automated testing
- Generative AI and Copilot enablement with measurable productivity outcomes and run-controls.

Implementation & Migration

- Data migration and legacy modernisation
- Vendor selection and management
- Infrastructure-as-code with progressive, low-risk cutover.

Operations & Management

- Observability, incident management, SIEM/SOC design
- Performance optimisation and cost management (FinOps)
- Backup/restore
- User training and change adoption.

Innovation & Scaling

- Scalable cloud infrastructure to support growth
- AI/ML implementation and scaling
- IoT integration
- Ongoing innovation sprints and R&D, supported by our Cambridge engineering labs for rapid prototyping and pre-production.

1.5.6 PA is fully equipped to manage any challenges or requirements you may present

Across strategy, design, build and run, PA blends independent advice with hands-on engineering, operating to ISO 27001 and UK government standards, and backed by hyperscaler partnership depth. Whether the brief is modernising a sensitive cloud estate, industrialising AI responsibly, or de-risking a quantum-adjacent programme, we bring the multidisciplinary team to get from idea to reality, safely, quickly, and at scale.

1.6 A Genuine commitment to Social Value

At PA, we believe in the power of ingenuity to create a positive human future. Central to this ambition is our commitment to developing high-quality opportunities that enable individuals to acquire leading-edge skills, all within an environment that supports personal wellbeing and growth. We invest in our people through comprehensive training and development, ensuring they are fully prepared to tackle our clients' most complex challenges and advance their own careers.

We recognise that diversity drives innovation. Therefore, our recruitment practices are inclusive, welcoming individuals from all backgrounds. Every member of our team is empowered to reach their full potential through inclusive policies, processes, and a culture that is continuously improved using robust data.

We are passionate about creating genuine opportunities for those facing significant barriers to employment. Since 2023, our Digital Apprenticeship Programme has offered a Digital and Technology Solutions Degree through the University of Roehampton or Northumbria University. Our apprentices typically include first-generation professionals, college leavers, and individuals from ethnic minority backgrounds, many living in deprived areas. Additionally, we offer summer internships for undergraduates entering their final year, hosted at both our central London office and the Global Innovation and Technology Centre in Cambridge.

Economic responsibility is integral to our purpose. PA is accredited as a Living Wage employer, and where relevant, we ensure that our suppliers and subcontractors are paid at least the minimum living wage. We are also a signatory to the Prompt Payment Code, demonstrating our commitment to fair and responsible payments to suppliers.

Our carbon reduction targets have been validated by the Science Based Targets initiative (SBTi). We have a published carbon reduction plan and are committed to achieving carbon net zero by 2040, in alignment with PPN 06/21 criteria for UK public sector contracts exceeding £5 million. In 2024, we achieved a silver EcoVadis rating, reflecting our ongoing progress in sustainability.

We are dedicated to delivering targeted social value and will collaborate with you to determine the most effective approach for you, ensuring our efforts have the greatest possible impact.

1.7 Security Clearance

PA are fully compliant with industry best practices for information security, which includes compliance with the UK MOD Industry Personnel Security Assurance (IPSA) standard, against which we are independently audited every three years. PA also has multiple sites with FSC (previously List X) where our dedicated in-house Security Vetting team are based. This allows PA to achieve security vetting of its employees in a time effective manner ensuring the correct processes are always followed (In accordance with the Security Policy Framework/GS007). As a matter of standard process, PA puts all its eligible employees through the Baseline Personnel Security Standard (BPSS), set out by the Cabinet Office. Those employees working on, or planning to work on, government projects are automatically put forward for SC clearance which are processed via UK-SV (formally the Defence Business Services – National Security Vetting). PA also process DV vetting through the UK-SV and other agencies, these are generally client sponsored.

PA currently have a large pool of cleared individuals (80% of UK Staff). Should a resource be identified where clearance is needed, the PA Security Vetting team will then process the individual through the relevant clearance procedure. The team will also be able to validate all existing clearances held by PA employees when requested.

1.8 Next Steps

This service is intended to help customers develop and deliver successful outcomes regardless of the life cycle stage they are at. PA prides itself on working with clients and helping them to deliver outcomes whilst also providing them the ability to 'stand on their own' so that they can move their solutions forward without future involvement. Please contact us on

GCloudFramework@paconsulting.com to discuss your needs further



About PA.

We believe in the power of ingenuity to build a positive human future.

As strategies, technologies, and innovation collide, we create opportunity from complexity.

Our diverse teams of experts combine innovative thinking and breakthrough technologies to progress further, faster. Our clients adapt and transform, and together we achieve enduring results.

We are over 4,000 strategists, innovators, designers, consultants, digital experts, scientists, engineers, and technologists. And we have deep expertise in consumer and manufacturing, defence and security, energy and utilities, financial services, government and public services, health and life sciences, and transport.

Our teams operate globally from offices across the UK, Ireland, US, Nordics, and Netherlands.

PA. Bringing Ingenuity to Life.

Discover more at paconsulting.com and connect with PA on [LinkedIn](#) and [X](#).

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