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TELECOMS AND NETWORK TRANSFORMATION AND SOURCING

GCloud Service Description Document

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TELECOMS AND NETWORK TRANSFORMATION AND SOURCING

1.1 Short Service Description

We deliver network transformation: legacy telecom services and networks to modernised cloud architectures. We bring deep network technical expertise (IP, SD-WAN, wireless 4G / 5G, IoT) for IT, OT, CNI networks with public sector commercial (investment and economic cases) and operational knowledge supporting full network strategy, design, sourcing, programmes.

1.2 Key Service Features

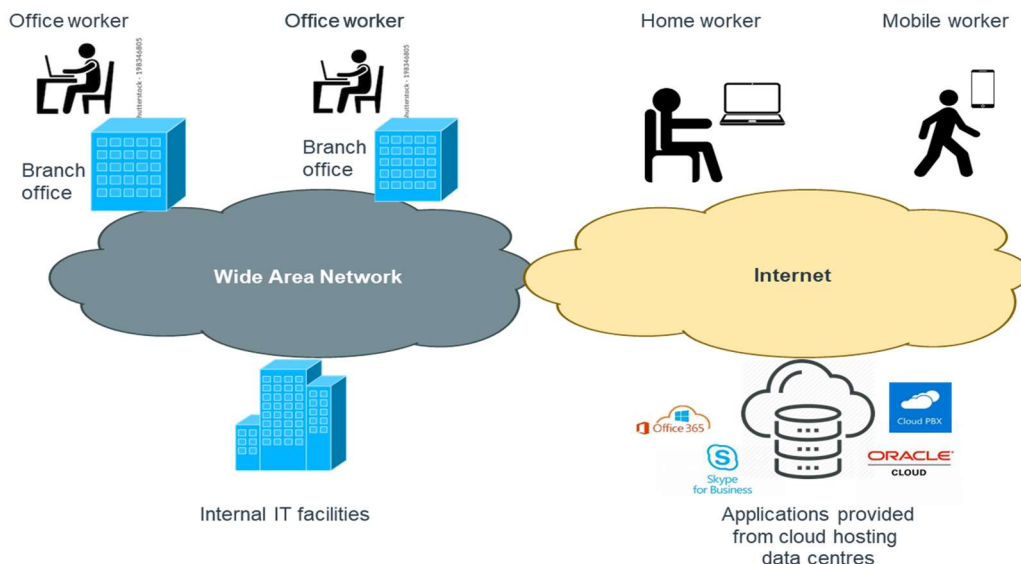
1. Strategy for fixed and wireless networks
2. Business cases for networks (SOBC, OBC, FBC)
3. Requirements (IP, SD-WAN, 4G, 5G, IoT, telephony, IPT)
4. New user services: smarter working/ home working, Unified Communications
5. Procurement of networks and network components
6. Commercialisation of assets for telecom services
7. Target operating model and service delivery performance improvement
8. Network and resilience audit and performance improvement
9. Network re-design, architecture, RF modelling
10. Network cost analysis and reduction

1.3 Key Service Benefits

1. Network transformation to accommodate distributed cloud service / security models
2. Rapid definition and execution of appropriate network transformation programs
3. Avoid common pitfalls based on network-specific experience and insight
4. Ensure successful commercial outcomes based on commercial telecoms expertise
5. Deliver total cost of ownership reductions
6. Improve service delivery and service performance
7. Pragmatic and clear steps that work in government
8. Understanding of government specific requirements
9. Collaborative working style and knowledge transfer to inhouse staff
10. Working procedures to align with health and safety

1.4 Service Definition

Our services are designed to help public sector entities transform their existing telecom services and networks into new infrastructure which is designed to meet the requirements of applications in the cloud and of massive remote and distributed working in the wake of COVID-19 via the Internet. This is shown in the following diagram with both users and applications moving to the right. We understand how to accommodate distributed cloud architectures and service provision, as well as distributed network security models. We have delivered leading edge large change programmes in public, private, and shared access networks and cloud solutions.



Our team includes senior industry experts, many bringing decades of industry experience, who know and recognise the unique set of challenges that exist in government networks, such as operating critical national infrastructure, stringent requirements for availability and resilience, requirements for the appropriate level of security to utmost safety levels, stringent operational requirements, and the limitations of heterogeneous estates with upgrade cycles. We work on national programmes, as well as local implementation projects.

We provide highly experienced specialists, with teams properly scaled to meet requirements, in telecoms and cloud strategy and policy, network procurement and transformation in all forms with experience and track record in working in complex government environments. Our experts help government clients to initiate network change and work collaboratively with wide groups of stakeholders to achieve lasting change. We have helped governments review and change critical national infrastructure and regulators develop leading edge founding regulations inclusive of the most leading-edge principles in the telecoms industry. We contribute to the procurement process, from strategy, business case development, RFP development, transition, and transformation to operational improvement. We are proven in working with governments and regulators, to develop solutions and the sector environment, enabling innovative and commercially relevant solutions for our clients.

Our project delivery approach

PA has a proven and tested framework for telecom and network transformation to the cloud that considers every aspect on this cycle, from business case to network design and the activities required to ensure that a wide set of stakeholders are positively engaged.

Our framework considers every stage on the transformation cycle, including:

- Acting throughout with integrity and independence, as trusted advisors, with our clients' interests put first
- Ensuring that design solutions are carefully mapped to policy and regulatory environments

- Ensuring readiness for network change, with robust cases for change and stakeholder influencing
- Preparing organisations and teams for change across both technical and commercial domains
- Procuring services and equipment, with effective vendor management and solution diligence
- Executing and implementing transformation programmes, and
- Continued in-life service improvements, design and programme assurance, and cut-over to BAU.

Our entire end-to-end approach covers every aspect of the transformation:

- Build and communicate a compelling investment case for a new telecom network according to HMG Greenbook 5 Cases standards, updating it through the different stages from SOBC, to OBC, to FBC, to benefits realisation and communication
- Advise on and develop new commercial models (e.g. joint investment, PPP, shared access)
- Leverage commercially feasible emerging technologies, to bring effective solutions to clients' needs
- Investigate and document the legacy estate split over many sites with various heterogeneous combinations of existing legacy technology
- Design of the new cloud-ready network with requirements gathering, network architecture, implementation, and performance improvement by embedding KPIs
- Procure the new network from the market, including:
 - Ensure solutions are delivered to our clients best interests, not suppliers' interests
 - Network procurement strategy: "What are the options available to provide new or replace existing networks to meet the organisation strategy?" Insourcing or outsourcing, make or buy, availability of market offerings, existing government frameworks for network and telecom services, Target Operating Model analysis
 - Development of the network solution: "What network services do we need to buy, what are the best network solutions to meet these needs?" Requirements management, network architecture options and their respective costs, design-to-cost, design of the retained organisation
 - Finalise the solution: "How do we get the best possible deal?" Supplier engagement, support of a transparent evaluation, dialogue and negotiation, contracts and commercials with technology
- Design and drive the network transformation programme, including:
 - Management of the entire transformation program from the initial agreement on scope and governance, to detailed planning, delivery against milestones, and final transitioning into BAU
 - Transition and migration of networks, services, and users with minimal business disruption. This also includes any transition into a new service provider and exit management of an outgoing service
 - In-life improvement of network services, both in terms of operational KPIs, as well as in terms of cost and supply chain management
 - Enable change leadership and engage a wide range of affected stakeholders, ensuring training and knowledge exchange for lasting long-term impact

For each specific project we provide a tailored approach based on specific requirement and stakeholder environment. We can offer an entire programme with many workstreams as shown above or alternatively more tactical interventions for one stage and one aspect only.

We will tailor our approach to meet the size and complexity of the underlying infrastructure, taking advantage of existing government framework contracts for networks as and when this is appropriate.

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.

1.5.4 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.

1.5.5 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.

1.5.6 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.

1.5.7 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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