

Cut through the complexities of utility operations

Cloud migration and modernisation are essential for energy companies to build growth and respond to rapidly changing conditions >

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Conflict, climate change and shifting consumer behaviour

Rarely has an industry faced such a confluence of change as that confronting energy companies today. The need to decarbonise and deliver net zero; geopolitical events, and decentralisation of power networks are among the drivers of unprecedented upheaval in energy markets.

Each link in the energy value chain will be impacted differently, requiring new assets and physical infrastructure, innovative business models, operational efficiencies, additional network capacity and changes to customer service.

To meet the challenges, energy and utility companies are transforming how they operate. Digitalisation is essential for them to manage growing supply and demand complexity, as well as boost operational efficiency to cut costs and deliver better services for their customers and communities.

Companies that modernise and move their operations into the cloud will be better placed to cope with transforming markets. How well they do that in 2023 and the following few years may determine their long-term growth.

Change delivered by regulatory evolution will deliver innovation within the market. Innovation can only be met by fully utilising cloud.



Data efficiency is critical

Data is the facilitator of growth. Creating and managing integrated data flows across the energy industry enables everything from enhanced agility to better customer responsiveness. In networks, data insights help to optimise supply and demand and identify potential issues earlier.

Managing large-scale data is vital for customer retention and churn prevention. Customer services driven by data insights, automation and employee experiences are essential for growth.

“ We are promoting more effective use of data, including increasing its openness, providing this complies with data privacy requirements. We are also promoting different data sets being made interoperable with one another to lower the barrier to insight being created between parts of the market. ”

Ofgem report: Energy data and digitalisation



Data efficiency is critical

UK Energy Data Taskforce – five recommendations for a digitalised energy system

1. **Digitalisation of the energy system** through legislative and regulatory measures and in line with the principles of new data needs, continuous improvement and digitalisation strategies.
2. **Maximising the value of data** - energy system data should be 'Presumed Open', as well as discoverable, searchable, understandable, secure and resilient and with common structures, interfaces and standards.
3. **Visibility of data** through a data catalogue using standardised metadata of energy data systems.
4. **Coordination of asset registration** to simplify the experiences of consumers through a user-friendly interface.
5. **Visibility of infrastructure and assets** through a unified digital system to enable optimisation of investment and inform the creation of new markets.

Source: [Catapult](#)



Data efficiency is critical



Cloud is the most efficient way to take advantage of data

Cloud enables the collection, analysis and storage of huge volumes of data with increased speed and efficiency and without upfront installation costs.

Yet, cloud offers far more than data management and efficient delivery of applications. Cloud is vital to enable businesses to innovate and grow. So, it's little surprise that more than 85% of organisations are expected to embrace the cloud-first principle by 2025¹. The adoption of cloud-native principles and practices is the best way to execute effective digital strategies and embrace advanced technologies such as Artificial Intelligence (AI), Machine Learning (ML) Augmented Reality (AR), automation, digital twins and blockchain.

¹ [Source: Gartner](#)

By 2025, cloud-native platforms will serve as the foundation for more than

95%

of new digital workloads

[Source: Gartner](#)

Cloud-based operations help deliver better services

Energy companies that achieve large-scale migration to the cloud are better placed to take advantage of the new open-data environment supporting the transition to net zero. Furthermore, evolving to cloud-native architecture principles and capabilities is essential to achieve the automation and agility needed to innovate and operate flexibly.

The application of advanced analytics, AI and ML can take advantage of vast amounts of data to provide insights that can support:



Greater control over local supply and demand to bring low carbon services onto the network

The development of better applications for metering, billing and peak load management

The development of better customer services by moving beyond the bill into assisting customers to manage demand and costs

Efficient and effective asset management and predictive maintenance

Automating processes such as settlement and invoicing, payments, customer services, claims

Application of AI and ML for enhanced agility to deal with changes in the market

Reducing the need for reinforcement, leading to lower bills

Avoiding disruption by increasing performance in local networks

What's holding up migration & modernisation?

Most, if not all, energy companies have moved workloads into the cloud, although few have done so across the business in a way that encompasses the largest, business-critical applications.

Many energy and utility companies are challenged by complexity, skills and investment needed to fully adopt cloud in the midst of so many business demands. This can result in cloud adoption failing to fully meet

the organisation's business and IT objectives. It can also lead to a lack of transparency about costs, with murky accountability for IT and cloud utilisation, whilst maintaining both legacy and cloud estates.

Each participant in the energy industry has different needs, which means they need different cloud solutions. There is no out-of-the-box solution that will suit every business.



Five business reasons to migrate and modernise

Control costs:

Gas and power companies typically run large IT legacy infrastructure with data centres that are often over-provisioned and costly to run. Migrating applications to cloud eliminates or reduces the costs of data centre support and shifts spending from capital budgets to operational expenditure matched to actual use.

Strengthen security:

Distributed power grids and the exponential deployment of Internet of Things (IoT) devices across networks creates new security vulnerabilities and is compounded by the increasing risks from the legacy Operational Technology. The public cloud benefits from a standardised environment for increased resilience, better access management and automated patching and log monitoring.

Accelerate agility:

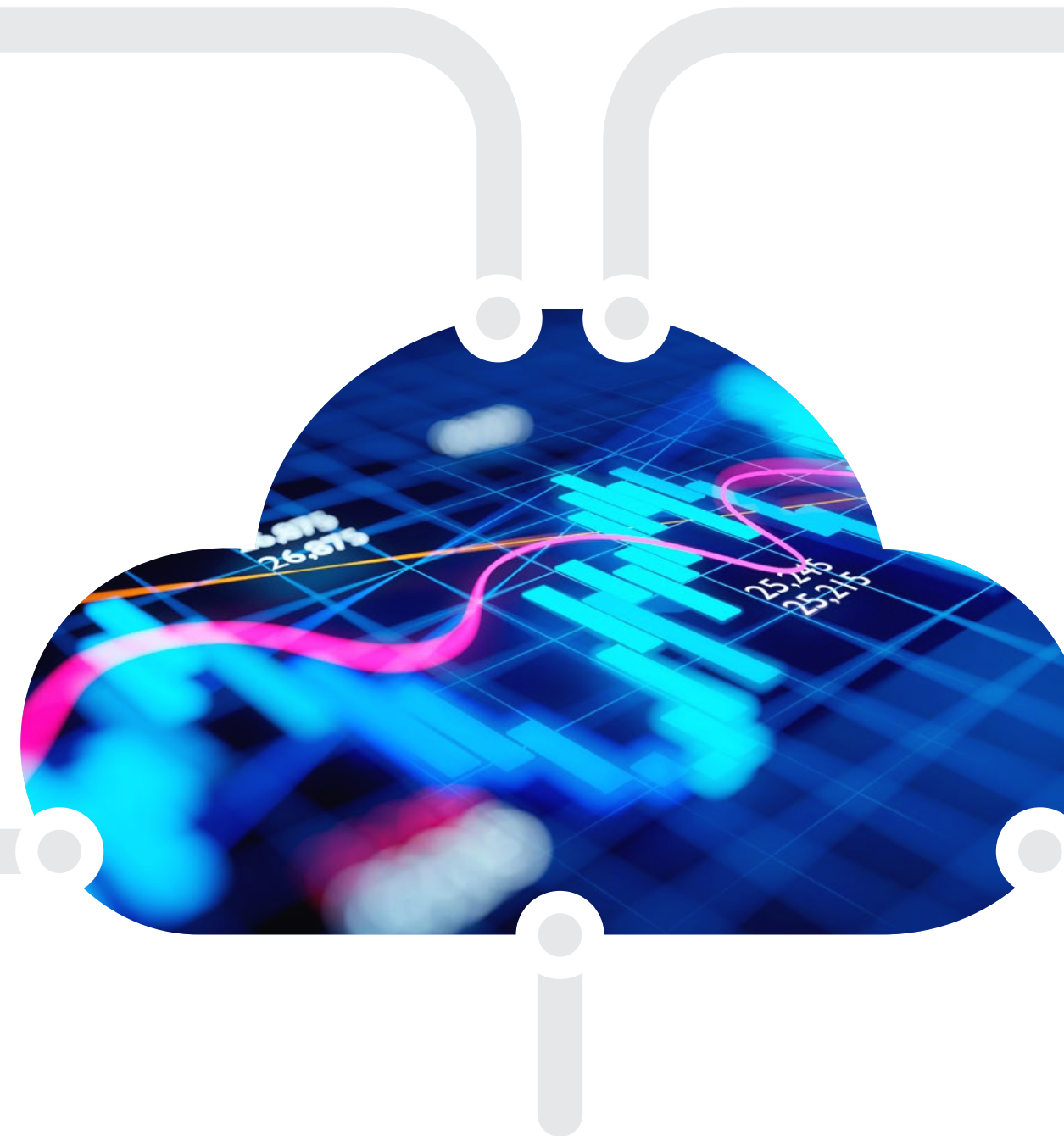
Legacy IT cannot scale up and down with demand and offers limited scope for innovation. Cloud deployments are scaled in minutes and business initiatives can be rolled out more rapidly with greater control.

Overcome obsolescence:

The pace of technology development means that legacy infrastructure can quickly become outdated, leaving the business unable to meet the changing demands of modern power consumption and customer expectations.

Increase innovation:

Modernised, cloud-native apps and processes open innovation by taking advantage of advanced data analytics and other capabilities such as AI and third-party development to enable continuous product development.



Simplify cloud migration and modernisation

Maturity and Strategy

Successful large-scale migration depends on understanding where you are and defining where you need to go. Without a comprehensive cloud strategy, utilities risk becoming stuck mid-migration, not achieving the expected benefits of cloud and may suffer rising cloud costs without any clear indication of the causes.

By analysing your existing technology environment, people and processes, as well as business plans, NTT DATA defines the resources needed for cloud migration, security requirements, cloud structure and cost of transformation.

Migration and modernisation

NTT DATA defines the cloud journey including technological and business organisational changes. Organisational changes are needed to embrace the new platform. These can include the definition of a new operating model, an infrastructure and platform cost model, new ways of working and the adoption of new technologies to extract the best value from the platform.

Our methodology is well established and applies automation and other NTT DATA assets to speed up cloud migration and modernisation. Post-migration, NTT DATA's operationally experienced team assist with the transition to cloud-native best practices, including DevOps, DataOps and MLOps, embedding a cloud-centric culture into a BAU operations team.

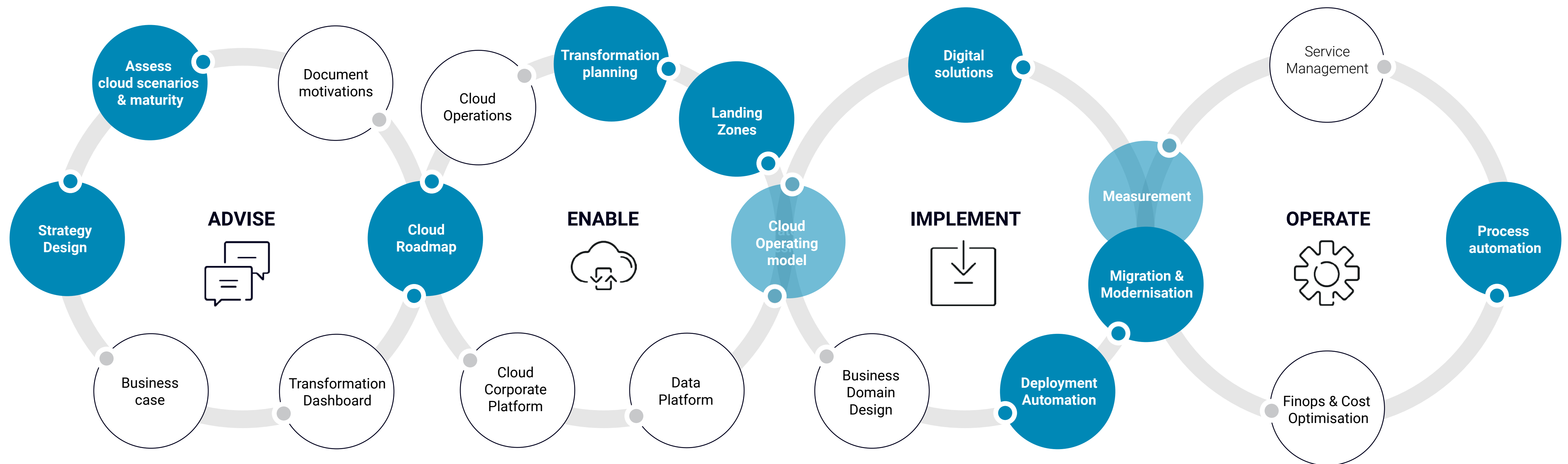
NTT DATA migration and modernisation services:

1. **Rapid assessment** to quickly understand existing applications and identify risks and complexity, including total cost of ownership analysis to the platform in the cloud.
2. **Modernisation design** to specify detailed roadmaps for each application including timetables, application design and landing zone design for any cloud provider's platform.
3. **Modernisation implementation** involves NTT DATA and partner experts using a wide range of hyperscaler tools and proprietary accelerators to achieve the required migration.

Simplify cloud adoption

Large-scale cloud modernisation is a complex undertaking that demands significant skills and resources. NTT DATA provides cloud application and infrastructure advisory services, system integration, architecture design and

deployment services which extend into transitioning to cloud operations. Migration and modernisation are part of an iterative journey to reach a fully optimised cloud that achieves business outcomes.



Securing cloud with a risk-based approach

Security is a vital aspect of cloud optimisation as energy companies face tightening regulatory compliance, such as ongoing updates of the Security of Network & Information Systems Regulations (NIS Regulations).

Yet, carrying out cyber risk management solely for compliance purposes can lead to risk being managed in a tick-box fashion. This can be a barrier that prevents organisations questioning whether they have taken all the measures

needed, leading to overconfidence in how well risks have been managed.

A risk-based approach to data protection and the security of processing systems and services is more effective. This calls for an assessment of risks and must include organisational measures to make effective risk-related decisions based on technology; cost of implementation; the nature, scope, context and purpose of processing; and the severity and likelihood of the risk being realised.



Securing cloud with a risk-based approach



60%

fewer security incidents in cloud deployments than in traditional data centres

Source Gartner

Four ways NTT DATA secures your cloud

1. As the world's second largest managed security services provider, (source: Gartner 2022) we provide a wide portfolio of security services built around an advisory approach that supports the highest standards of governance, quality, consistency and outcome.
2. As a trusted DevSecOps partner, we provide a tailored solution to an organisation's needs, from providing full DevSecOps-as-a-Service through to enhancing internal capabilities with knowledge and expertise.
3. NTT DATA designs a clear roadmap to effective Identity and Access Management (IdAM) to coordinate multiple teams and efficiently onboard applications and systems to the identity governance and/or access management systems.
4. Our Zero Trust services help create a modern corporate security strategy that optimises the IT vendor landscape, reduces security vulnerabilities and creates a standard zero trust architecture with automation to improve security operations.

Optimise costs and utilisation through a FinOps framework

To support day-to-day operations, NTT DATA applies monitoring, automation and advanced management methodologies to secure, maintain and optimise the cost of cloud environments. Our proactive approach minimises costs while meeting your performance needs.

We also support organisations in building the foundations for cross-team collaboration, skills and capability to deliver strong, well-governed FinOps. FinOps is a cloud financial management discipline and cultural practice that helps organisations to gain maximum business value through engineering, finance, technology and business teams who collaborate on data-driven spending decisions.

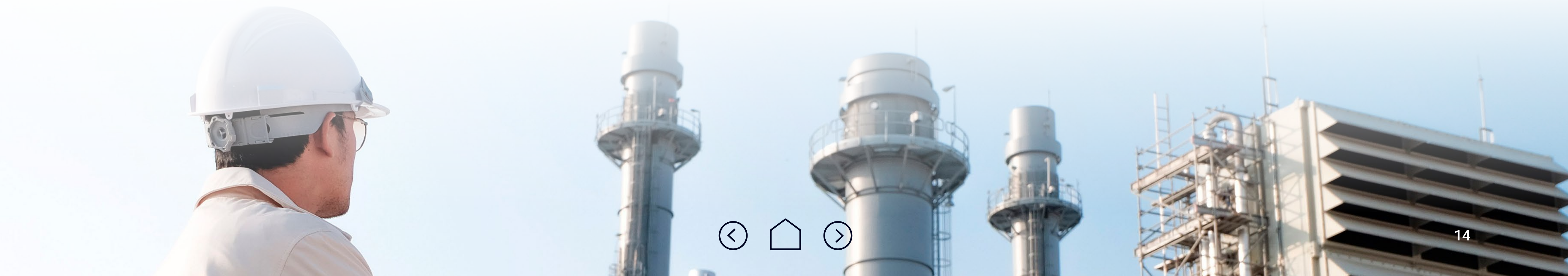
FinOps is defined through a framework that delivers business outcomes including cost and efficiency transparency, greater business accountability and increased cloud value from higher resource utilisation and cost efficiency.

Case study

Major UK telco deploys FinOps and reduces cloud costs by \$3.5m

NTT DATA delivered a FinOps framework and ongoing cost optimisation service to help a Tier 1 telco reduce its cloud costs. The FinOps framework included processes, policies and KPIs with measurable impact. Key to the project's success was for NTT DATA to provide leadership and drive culture change across the supplier ecosystem.

The initial target of \$3.5m per year savings was achieved within weeks, with a long-term plan for the next five years or longer being put into place. NTT DATA also helped to develop telco's internal capabilities.



Accelerating outcomes through partnership



NTT DATA helps energy companies analyse options, understand the best opportunities for their businesses and become agile enough to quickly exploit them. We support utilities in their digital transformation through consulting and advisory services, application infrastructure and business processes, IT modernisation and managed services, coupled with deep industry expertise that delivers measurable business impact.

In addition, NTT DATA has established partnerships with major UK telecommunications operators including Three, Virgin Media and Vodafone. We also work extensively in the public sector for large clients including the Met Office and University Hospitals of Leicester. Working in partnership with industry leading organisations, well advanced in their digital transformation, gives us unique experience with sustainable, long-term solutions that we bring to energy and utilities companies.

Accelerating outcomes through partnership

Outcomes delivered through NTT DATA cloud projects



Delivering success in energy and utilities

10 year

partnership between NTT DATA and a leading, multinational energy company with more than 30 million customers

41%

faster resolution of complaints because of an NTT DATA-developed cloud-based complaint management solution for a major energy supplier

36%

reduction in costs related to the procurement of equipment and third parties for one of the largest energy companies in Europe thanks to NTT DATA helping to develop a cloud strategy



Accelerate digitalisation at every stage of the cloud journey



Strategy & Transformation

Definition of a business-to-technology strategy to enable organisation wide transformation, and digital capabilities enablement

Migration & Modernisation

Migration & transformation of current workloads to the new platform through a strategy that maximises business objectives (costs, innovation, time to market)

Cloud Native Solutions

Accelerates the benefits of cloud adoption with cloud native architectures and digital integration of hybrid solutions, using platform capabilities to cover non-functional use cases

Cloud platforms

Adoption of cloud components, from the foundations to more composable capabilities to ensure cloud adoption is aligned with business needs

Operations & Cost Optimisation

Cost analysis and optimisation, and cloud operational services based on new paradigms of site reliability engineering and full observability

Partnership in action

Case study

Obsolescence and cloud migration planned for a power company

Lacking visibility of its increasingly obsolete infrastructure and complex application landscape, a UK gas and electricity company asked NTT DATA to analyse its situation and provide the best cloud migration strategy for each application.

NTT DATA provided the company with an in-depth analysis of its obsolescence position and associated business and technology risks. It also defined a migration strategy including a migration plan, roadmap and the required investment costs.

The NTT DATA methodology developed for the company enables it to manage obsolescence and achieve a 50% overall improvement with a high level of SaaS cloud options to reduce future costs.

Case study

Global cloud migration roadmap delivered for entertainment giant

Following a merger, a global entertainment and gaming organisation found itself operating in more than 100 markets globally, with 15+ brands serving 14 million customers. It needed to migrate 35 data centres to the cloud while complying with multiple countries' regulations.

To create a five-year roadmap for phased migration, the company engaged NTT DATA to:

- Define a cloud foundation and operating model
- Enable optimisation by applying DevOps principles
- Define a strategy to modernise mid-tier and monolith applications
- Provide discovery and assessment with TCO analysis
- Create a business case with investment analysis

Partnership in action

Case study

Migration delivered for car manufacturer

A European car manufacturer was looking to implement a new Software Development Centre to meet various goals including faster time to market, and increased competitiveness, productivity and quality. NTT DATA was engaged to help build a new cloud philosophy based on AWS services.

NTT DATA also provided modernisation and migration services to move the container platform from OpenShift to EKS Fargate. Modernisation encompassed the technology stack for DevOps, observability, security, integration and architecture framework. NTT DATA also trained the development teams and installed a DevOps culture.

As well as successfully migrating more than 20 applications, NTT DATA ran 20 projects in parallel and improved the company's time to market by 65%.

Case study

Global leader in energy storage solutions powers a new beginning

In May 2019, Johnson Controls sold its low-voltage advanced battery technology business to Brookfield Business Partners. The agreement gave the business unit, to be known as Clarios, 30 months to transition and transform its entire IT infrastructure.

Clarios chose to work with NTT DATA to create a future technology platform. The collaboration met the challenge of building all new infrastructure and security, migrating more than 800 applications, launching new services and moving thousands of e-mail accounts, PCs and phones. The transition was completed four months early and 8% under budget—a significant accomplishment for a project of its size.

[Read the full story](#)

Partnership in action

Case study

Breaking down internal system silos made it easier to serve end users

NTT DATA helped mobile network provider Three overhaul its digital infrastructure and better connect its IT and business functions. The results transformed both the employee and customer experience of 5G.

Many of Three's basic systems were the same as its first 3G networks when it began operations in 2003. As time went on, business areas such as billing, mediation and fraud, to credit and collection resulted in the company using over 100 different systems, making it difficult to serve customers quickly and efficiently in the 5G era.

NTT DATA operated a Cloud Optimisation managed service for Three, delivering targeted and ongoing optimisation of Cloud resources with associated major cost reductions. NTT DATA provided leadership, direction and guidance to Three and their suppliers. The outcome was greater operational efficiency, improved processes, and a highly optimised Cloud implementation with significantly reduced costs

[Read the full story](#)

“Setting up a DevOps cycle where you can deploy daily is a huge undertaking for a company.... The strong competency of having NTT DATA engineers in our team, educating our internal team, and delivering that capability is a core reason why we have them with us.”

Simon Gratton,
Chief Data Officer, Three UK

Agile, secure and optimised cloud

Energy companies are in various stages of cloud adoption.

Some have adopted cloud widely and are now looking at ways to control their costs and optimise utilisation. For others, their focus is on defining a strategy which aligns with business objectives and delivers outcomes. With security front of mind, many companies are migrating and modernising their business-critical applications and processes to leverage the benefits of cloud fully.

If you're an energy company looking to accelerate any stage of your cloud journey, speak with one of our NTT DATA experts, who will provide guidance, insight and solutions to overcome barriers and manage complexity.

[Book your 45-minute complimentary cloud consultation](#)

About NTT DATA

NTT DATA – a part of NTT Group – are a trusted global innovator of IT and business services headquartered in Tokyo. We help clients transform through consulting, industry solutions, business process services, IT modernisation and managed services. NTT DATA enables clients, as well as society, to move sustainably into the digital future. We are committed to our clients' long-term success and combine global reach with local expertise to serve clients in over 50 countries.



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