
APPENDIX A13

IT & TELECOMS STRATEGY

11th December 2024

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1. Our IT and Telecoms Strategy

This strategy sets out how we intend to meet our IT and Technology commitments in our business plan. It should be read with our Digitalisation Strategy and Action Plan, and our Cyber Resilience Strategy.

Our IT and Telecoms Strategy forms a key pillar of our business wide Resilience Framework. Our Resilience Framework (as described in Chapter 5 of our RIIO-GD3 business plan, and as summarised in Figure A13-1) embeds what we have naturally done for many years to ensure we have an integrated approach to resilience. This approach ensures we can meet whatever demands we face during RIIO-GD3 and beyond.

1.1. Background

Our technology strategy has put data at the heart of our business by transforming our technology systems, processes, data, and support arrangements. At the same time, we have focused on improving the resilience, security and supportability of our IT, whilst ensuring we have a standard, simple, well-understood data model which enables the delivery of our Digitalisation Strategy in RIIO-GD2 and RIIO-GD3.

We have:

- Moved our IT support services and project delivery to our in-house IT team, 3iG (Innovation, Improvement, and Information Group). This reduces our operating costs and ensures that knowledge of our systems and data stays within NGN.
- Migrated all our systems to a public cloud infrastructure. We are the first company in the UK to deploy a supervisory control and data acquisition (SCADA) system to the cloud. Our cloud infrastructure is managed by our in-house team.
- Implemented SAP S/4HANA and Microsoft Dynamics 365 to update our enterprise resource planning (ERP) and customer relationship management (CRM) technology. Our core work and data processes are managed in a simplified standard system, supported by our new data model.
- Built our own apps to support our field operations, which fully integrate into SAP S/4 HANA
- Used analytics, predictive analytics, and artificial intelligence (AI) to help us to be safer, more efficient and deliver better customer service.
- Established our Open Data Portal and core data management function.

Figure A13-1 : NGN Resilience Framework



1.2. Customer priorities

Stakeholder insight 1: Keeping bills as low as possible continues to be domestic and SME customers top priority, however stakeholders are supportive of investment to respond to significant challenges of climate resilience and decarbonisation.

Stakeholder insight 8: NGN's focus should be on keeping customers' lives running by providing reliable and uninterrupted supplies and minimising disruption to their daily activities. Current performance is great and NGN can play a role in driving up industry standards.

Our customers consistently rank providing a reliable gas supply in their top two priorities for NGN, second only to keeping bills low¹. They tell us that resilience means their gas supply is available to use whenever they need it, whatever the present and future conditions. Gas networks should prepare for this so that customer service performance doesn't diminish. Through specific conversations about resilience with our Citizens' Panel during 2024, customers told us that they consider NGN to be a resilient business.

We have used the insight gained above to inform the development of this strategy.

The stakeholder insights referenced in this document can be seen in full in Appendix A3 of our RIIO-GD3 business plan.

1.3. IT and telecoms resilience RIIO-GD3 risk reductions through IT and telecoms

Our IT and telecoms are designed to operate in a high-availability (HA) configuration. Systems and data are securely backed up and robust recovery processes are in place if there is a loss of systems. This is a key enabler to the safe and reliable operations of business and data processes across NGN.

We use cloud technologies, diverse networking and, where appropriate, roaming mobile SIMS, to ensure NGN's essential services are resilient.

We try to avoid single points of expertise within our team or in our supply chain, reducing our reliance on one colleague or supplier to conduct a specific activity.

This resilience enables our IT and telecoms to operate at an availability level of 99.85%, with an RTO (maximum time for restoring normal operations after an outage or data loss) of 8 hours and an RPO (maximum amount of data loss we can tolerate) of 24 hours. Our systems are supported and monitored 24/7.

During RIIO-GD3, we will maintain these levels of availability, continuing to operate secure and resilient IT and telecoms and support arrangements. We will also continue to explore new and emergent technologies to improve how we operate.

We will do this in RIIO-GD3 by ensuring the following:

- We design for resilient and secure communications, with high availability infrastructure.
- We apply a standard, simple and well-understood data model to enable efficient and effective business operations.
- We deliver world-leading technology that keeps us at the frontier of efficiency, safety, resilience, customer and integrity.
- We keep our support and knowledge in house at NGN.

and delivering these projects:

- Cloud Infrastructure Development
- SCADA Version Upgrades
- SAP HANA Developments
- SD WAN, WIFI and Telephony upgrade

1.4. Enabling operational efficiency through IT and telecoms

We have enhanced NGN's operational efficiency through investments in our data and technology, such as:

- Our SAP S/4 HANA transformation;
- A suite of work management applications;
- Work scheduling systems;
- Process automation;
- Data model development and enhancements;
- Customer engagement management (CEM) systems; and
- Analytics, predictive analytics and AI.

Our service insourcing, software-defined wide area network (SD-WAN) deployment, and cloud technology adoption have also delivered significant IT operational efficiencies.

We will continue to focus on efficiency in RIIO-GD3 via a suite of projects that use process automation, machine learning and advanced analytics to optimise workflows and decision-making. Many of these projects will enable commitments across our business plan, including in Leakage Detection, Process Efficiency, Digitalisation and Customer Service.

In RIIO-GD3, we will improve our CEM technologies to increase the quality and efficiency of our customer services. We will continue to improve our data model and invest in data quality, data assurance and data best practice.

We will do this in RIIO-GD3 by ensuring the following:

- We design for resilient and secure communications, with high availability infrastructure.
- We apply a standard, simple and well-understood data model to enable efficient and effective business operations.
- We deliver world-leading technology that keeps us at the frontier of efficiency, safety, resilience, customer and integrity.
- We keep our support and knowledge in house at NGN.

and delivering these projects:

- SD WAN, WIFI and Telephony upgrade
- Mobile Phone refreshes
- Field Device Refresh
- Digitalised Field Works
- Digital Processes

2. IT and telecoms strategic themes

2.1. Our people

Information technology (including data and digitalisation) in NGN starts with our people. Our 3iG team includes 83 IT professionals delivering activities that include a 24/7 service desk, applications support and development (including SAP), project management, business analysis, architecture, infrastructure (Amazon Web Services and Azure) support and development, and cyber security. Our Data and Information Centre of Excellence (DICE) and Insight and Analytics Centre of Excellence (ICE) focus on developing our data and its maturity, and providing valuable, actionable insight from it.

Having an in-house team means that our IT governance and architecture is managed and understood by our colleagues, rather than relying on these services being delivered by third parties. This focus on developing our in-house team provides career progression for staff, which supports HR sustainability and resilience, and creates opportunities for social mobility in the communities that we serve.

During RIIO-GD3, the 3iG team will continue to increase our capabilities in data, analytics, cloud and software development. This is core to our RIIO-GD3 strategy and our ambitions for data and digitalisation.

CASE STUDY

Our Colleague Care Team supports all our core business applications and infrastructure. This team is also an entry point for many of our colleagues who have progressed from first- and second-line support roles into a range of leadership roles in architecture, infrastructure management, cyber security, and project management.

2.2. Our resilient supply chain

While 3iG delivers many of our services and projects, we also work closely with third-party suppliers that play a key role in our operations.

To ensure security and resilience, we operate several commercial frameworks (covering professional services, projects and consumables) so that a competitive supply chain is ready to support our work.

These frameworks allow engagements as small as a single expert for a day or as large as a system support contract for a specific application or system.

Each framework contains multiple supplier partners, with competitive rates that are regularly tested through formal tenders.

¹ See pages 15 and 18: <https://together.northerngasnetworks.co.uk/wp-content/uploads/2024/03/Consumer-Perceptions-2024-Wave-4.pdf>

These frameworks will be retendered in RIIO-GD3 and will continue to be key to our operations and engagement with our supply chain, in line with our Supply Chain Strategy.

Our procurement and commercial activities are managed in line with NGN's Sustainable Procurement Strategy.

2.3. Our IT service resilience

Our technology is designed to operate in a high-availability (HA) configuration, operating at a service level availability (SLA) of 99.85%. We do this by ensuring that our systems operate at N or N-1 of the most recent versions from suppliers, by patching at 30 days in our Windows environment and 180 days in our Linux environment, and by refreshing our laptops, field devices and mobile phones every three years.

This focus on resilience maximises IT availability to staff and customers, and ensures our systems are better able to recover from an outage or withstand a cyber-attack.

In RIIO-GD3, we will maintain these availability levels and to continue to replace hardware every three years so that our services meet requirements for our business and security strategy and maintain the resilience of our business.

We will do this in RIIO-GD3 by ensuring the following:

- We design for resilient and secure communications, with high availability infrastructure.
- We ensure Systems operate within mainstream support.
- We embrace new and emergent technology.
- We keep our support and knowledge in house in NGN, and
- We never lose sight of the fact that it is our colleagues and stakeholders who will make this technology work.

and delivering these projects:

- Laptop/Desktop Refresh
- Mobile Phone Refresh
- Monitor Replacement
- Field Device Refresh
- Printing Enhancements

CASE STUDY

Moving our IT to modern cloud infrastructure, supported by our in-house team and using the application versions, has significantly reduced the disruption to our operations resulting from IT outages. For example, in 2020 there were 35 outages associated with SAP but only 7 in 2023.

2.4. Our IT and telecoms infrastructure

All our IT systems operate from either a public cloud infrastructure in an HA configuration or as software as a service (SaaS). We do not own or operate any servers on-premise. This migration to the cloud has enabled us to reduce the costs of operating our technology and supported the work of bringing services in house. All our cloud operations are managed by our in-house team, in line with Information Technology Infrastructure Library (ITIL) processes.

We have been asked by the National Cyber Security Centre (NCSC) to share our cloud migration successes with industry peers to help them with similar work.

In RIIO-GD3, we plan to continue to operate from cloud services while continually developing this platform as new technology, such as serverless technology, develops. This will allow us to continue to reduce our IT operational costs and to make the services we offer more resilient through increased availability and flexibility.

We will do this in RIIO-GD3 by ensuring the following:

- We design for resilient and secure communications, with high availability infrastructure.
- We apply a standard, simple and well-understood data model to enable efficient and effective business operations.
- We deliver world-leading technology that keeps us at the frontier of efficiency, safety, resilience, customer and integrity.

and delivering these projects:

- SD WAN, WIFI and Telephony upgrade
- Mobile Phone refreshes
- Field Device Refresh
- Field Mobile Data Upgrade
- Cloud Infrastructure Development

CASE STUDY

NGN is the first UK utility company to migrate its SCADA systems to a public cloud. This has made our systems more secure and resilient, reduced the costs of operating them and enabled more services to be managed by our in-house team.

2.5. Our resilient IT and telecoms network

We operate a software-defined wide area network (SD-WAN) for our business network and a combination of cellular communications and very small aperture terminal (VSAT) for our gas site communications. These are cost effective and resilient because they provide greater network availability and uptime for our business.

In RIIO-GD3, we plan to develop these and use long-range wide area network (LoRaWAN) and Star Link technology to replace old mobile communications technology. These options offer greater resilience and bandwidth, allowing more efficient business processes by giving field operational staff better access to data and systems, with better bandwidth for remote access to the technology at our operational locations. We will do this in RIIO-GD3 by ensuring the following:

- We design for resilient and secure communications, with high availability infrastructure.
- We apply a standard, simple and well-understood data model to enable efficient and effective business operations.
- We deliver world-leading technology that keeps us at the frontier of efficiency, safety, resilience, customer and integrity.

and delivering these projects:

- SD WAN, WIFI and Telephony upgrade
- Mobile Phone refreshes

CASE STUDY

Replacing our multiprotocol label switching (MPLS) communications network with a modern SD-WAN network and cloud-based telephony has increased the resilience of our technology and significantly reduced our operating costs.

2.6. Applications that put data at our colleagues' fingertips and the heart of our business

We design, build and operate applications that enable the operation of our business. These applications are built to support our simple standard data model and to follow the guiding principles in our Digitalisation Strategy, which are:

- Collect data at source, store it securely and use it wisely.
- Build applications and processes that are easy to use by our colleagues, our partners and our customers.
- Deliver world-leading technology that keeps us at the frontier of efficiency, safety, customer and integrity.
- Never lose sight of the fact that it is our colleagues and stakeholders who will make this technology work.

These apps are all designed, developed, and supported by our in-house IT team and align to our strategy to centralise data into our S4 HANA system. These applications drive better data accuracy and greater business efficiency.

CASE STUDY

NGN's operational work is underpinned by a series of custom (NGN) built and operated mobile applications that utilise the SAP BTP Platform, where the look and feel and functionality was designed by our operational colleagues and built by our 3iG Team.

These applications, built in the Future WoW Programme (see NGN RIIO-GD3 Digitalisation Strategy for further details) have helped streamline our operational processes and make our back office more efficient.

In RIIO-GD3, we will be delivering these projects to further enhance these areas:

- Application Upgrades
- Reporting and Insights Development
- GIS Maps Upgrade
- Business Applications replacement
- Logbook replacement
- CRM and customer facing applications development
- Project Management Systems Development
- Colleague Systems Enhancements

2.7. Open data and data best practice

The purpose of data best practice (DBP) is to drive open energy data in the sector. Ofgem's licence obligation for compliance with data best practice (DBP), and its principles-based guidance, means that networks have to classify all the data they hold as 'open' (i.e. available for anybody to access and use) unless there is a good reason why not, and to make all open data fully accessible to data users. After introducing robust data triage and classification processes, we launched our Open Data Portal. This is a success, with frequent visitors and data requests.

In RIIO-GD3, we plan to expand DBP by offering more data on the portal, and developing an open analytics platform so that data users can explore the data available using analytics tools. In addition, to the use of open data being a powerful tool in the decentralisation and decarbonisation of the energy sector, we see this portal as a way for people to learn about data, analytics and the gas industry, hopefully inspiring the next generation of our DICE.

CASE STUDY

In the year since it went live, the data available through our Open Data Portal has been used by external organisations to help develop products and services that will have a positive effect on society and the transition to net zero, including a national tool to monitor carbon monoxide events, a national vulnerability mapping tool and a whole-energy systems analytics engine.

There is a clear link between our Open Data Portal and our wider Innovation Strategy, especially the use of data generated by the National Energy Research Village. More detail on this can be found in Chapter 6 of our business plan.

2.8. Automation and analytics

As a result of our work to automate back-office processes and use analytics to improve operational decision-making and predict workload, we have over 90 real-time operational dashboards, providing business-critical information to optimise performance.

In RIIO-GD3, as we will use these technologies to support improved business efficiency, aid decision-making and move towards the energy transition and net zero by more closely integrating our work and asset data with gas demand analytics data.

We will do this in RIIO-GD3 by ensuring the following:

- We operate standard and simple processes across our business.
- We look for and embrace opportunities to simplify processes.
- We collect data at source, store it securely and use it wisely.
- We build applications and processes that are easy to use by our colleagues, our partners, and our customers.
- We deliver world-leading technology that keeps us at the frontier of efficiency, safety, resilience, customer and integrity.
- We never lose sight of the fact that it is our colleagues and stakeholders who will make this technology work.

and delivering these projects:

- Cloud Infrastructure Development
- SCADA Version Upgrades
- SAP HANA Developments
- SD WAN, WIFI and Telephony upgrade.

CASE STUDY

Taking advantage of the clean and consistent data generated through our work management systems and maintained by our data management processes, we have built a predictive model for public-reported emergencies, giving our operational colleagues the information they need to help them plan resources.

There is a clear link with our Digitalisation Strategy. More detail on this can be found in Chapter 6 of our business plan.

3. RIIO-GD3 IT and telecoms projects

Our data will be vital to a safe, secure and fair transition to a net zero energy sector. The profile of RIIO-GD3 projects shows our commitment to optimising our digital platforms and making our open data available for anyone to use, while never losing sight of our responsibilities around data security and integrity.

During RIIO-GD1 and 2, we have delivered a strong and sustainable enterprise architecture that will provide the foundation for data and digitalisation work in RIIO-GD3. Our capital expenditure throughout RIIO-GD3 will focus on key enablers for the decarbonisation of the sector, such as the Data-Sharing Infrastructure and our Open Data Portal. We will continue to invest in our work management and data management solutions to optimise how we collect, store, and analyse operational data.

Using our experience of digital transformation, and framework rates that we have agreed with partners, we have calculated the costs of the current portfolio of RIIO-GD3 projects. These calculations are based on estimates of resource and/or software or infrastructure costs. The figures will be reviewed and updated as project scopes are refined.

3.1. Project and Programme Delivery

NGN Deliver our IT and Telecoms Projects through our specialist team of in-house project management professionals. The team utilise both Agile and Waterfall techniques to deliver projects. We have a proven track record of successful delivery, supported by a culture of learning and continuous improvements.

We regularly share lessons learnt from our projects with industry peers and stakeholders and will bring this expertise to deliver our portfolio of projects in RIIO-GD3.

3.2. RIIO-GD3 IT and telecoms projects summary Project management and deliverability

Our proposed IT and telecoms projects for RIIO-GD3 are summarised in Table A13-1.

Figure 1: Table A13-1 RIIO-GD3 proposed IT and telecoms investments

Investment	Details	NGN resilience control
Laptop and Desktop refresh	Replace end of life devices to maintain hardware support and effective operations. Devices are replaced on a 3-year cycle.	Reliability
Monitor replacement	Replace end of life devices to maintain hardware support and effective operations. Devices are replaced on a 3-year cycle.	Reliability
Field device refresh	Replace end of life devices to maintain hardware support and effective operations. Devices are replaced on a 3-year cycle.	Reliability
Mobile Phone refresh	Replace end of life devices to maintain hardware support and effective operations. Devices are replaced on a 3-year cycle.	Reliability
Cloud Infrastructure Development	Further develop our Cloud Infrastructure to ensure latest technologies are adopted to derive greater efficiency and resilience in our IT landscape.	Resistance and reliability
Centralised Printing upgrade	Modernise and upgrade our managed print services to utilise new technologies and increase efficiency.	Reliability
Card Access upgrade	Modernise and upgrade our centralised access management technology to improve our site security.	Resistance
Comms Room Upgrade and Development	Replace end of life hardware (e.g. UPS systems) in NGN's Comms rooms.	Reliability
SCADA Version upgrades	Upgrades to our SCADA system to ensure support is maintained in line with manufacturer's support.	Resistance and reliability
Application upgrades	Upgrades to our Business Applications to ensure support is maintained in line with manufacturer's support.	Reliability
Reporting and Insights Development	Continual development of our reporting and insights through new dashboards, reports and advanced analytics.	Reflection
GIS Maps upgrade	Upgrades to our GIS system to ensure support is maintained in line with manufacturer's support.	Reliability
SAP HANA Development	Upgrades to our SAP system to ensure support is maintained in line with manufacturer's support.	Reliability
Business Applications (BA) Replacement	Replacement of our System Control Business Applications with new applications that will deliver increased functionality to enhance our control system operations.	Resistance
Logbook replacement	Replacement of our System Control Logbook application with a new application that will deliver increased functionality to enhance our control system operations.	Resistance
Colleague System Enhancements	Development of our applications that support colleagues through Employee and Manager Self Service and Occupational Health.	Resistance
Project Management System Development	Development of our process and applications that support Project Management activities across NGN.	Resistance
Asset Data Enhancements	Development of our process and applications that support Data Capture, Processing and Analysis activities across NGN.	Reflection
Leakage Analysis Platform Development	Development of a cloud-based platform to support improved leakage analysis and visualisation.	Reliability and reflection
SD WAN, WIFI and Telephony upgrade	Modernisation and enhancements to NGN's SD WAN, WIFI and Telephony infrastructure to enable greater resilience and improved customer services.	Reliability
Field Mobile Data upgrade	Modernisation and enhancements to NGN's mobile data services that are used for data capture from our assets and to support our operational processes, including Emergency and Repair services.	Reliability

