NGN Digitalisation Action Plan

December 2023

Welcome to our Digitalisation Action Plan

This is the December 2023 edition of our Action Plan…

The consistent theme that has run through our Digitalisation Strategy is Integrated Information Management, a philosophy centred on data, designed to maximise the value, governance and control of our data assets through a simplified enterprise architecture that balances people, process and technology.

The work that we have done in RIIO-GD1: implementing S/4HANA; mastering our data in a single, consistent schema; building our own mobile applications for work management and field data capture; and embedding an in-house digital capability, means that we are uniquely placed to deliver new digital products and services throughout RIIO-GD2 and beyond.

In this Digitalisation Action Plan, we will demonstrate our ability to deliver digital projects at scale that strengthen our compliance with Data Best Practice, enhance the experience of data users, and provide real value to end consumers and stakeholders.

Process Optimisation Programme

Optimising our processes through automation

Stakeholders

- NGN Colleagues
- Local Authorities

Tags

- Efficiency
- Data Quality

What is it?

This year we ran the Automate+ programme, which focussed on implementing Robotic Process Automation to replace manual, repetitive tasks. However, what we learnt quickly was that RPA is just the tip of the iceberg when it comes to the exciting possibilities the technology we have at our fingertips can bring.

Building on the solid digital foundations we have put in place with S/4HANA and other complementary technologies, we will optimise solutions across all our back office processes, whilst also introducing innovative, bot-based solutions to solve problems around quality assurance, material logistics,

Why are we doing it?

Optimising processes will free up time, allowing our colleagues to concentrate on value-adding activities. It will also mitigate the risk of human error as our data is processed, increasing data quality and enhancing the value of our data.

"Giving our colleagues the time and space to do amazing things…"

"Working to ensure our data is right first time, every time…"

Project Milestones:

Phase One: Requirements gathering and introducing programme governance & controls. **(Nov '23 – Jun '24)**

To Start | **In Progress** | Complete

Phase Two: Delivery of solutions. **(Feb '24 – Dec '24)**

To Start | In Progress | Complete

Phase Three: Embed as a 'Business As Usual' capability. **(Jan '25 – May '25)**

To Start | In Progress | Complete

What's happening in the next 6 months:

As we rebrand from Automate+ and widen the scope of the programme, we're making sure all the lessons learnt are built into the structure, governance and ethos of POP. This will put us in the best position to start delivering amazing solutions early in the new year.

Northern Gas Networks

we are the network

Information Lifecycle Management

Northern Gas Networks

Looking after our data

Stakeholders

- Data Users
- NGN Colleagues

Tags

- Open Data
- Data Quality
- Data Best Practice
- Efficiency

What is it?

SAP Information Lifecycle Management
We will implement SAP Lifecycle Management (ILM) across our SAP estate, providing us with the ability to manage complex data assets at scale.

Automated Data Retention & Archiving
ILM automatically archives data assets based on retention policies that are built in to the solution. Workflow ensures that data owners are kept informed on the status of all the data assets they own.

Optimised Real-time data access
By maintaining robust archiving we ensure that the right data is available at the right level of accessibility, be that real-time access or batch upload. ILM provides us with the facility to access archived data assets should they be required.

Enhancing our GDPR services
ILM provides the ability to tag and search personal data assets to assist with Data Subject Access Request and other Individual Rights.

Why are we doing it?

Automated data retention and access management not only increases the efficiency and effectiveness of the internal processes that run on the data, they also support compliance with Data Best Practice guidelines and help to ensure an optimised open data experience for Data Users.

"Making sure the right data is available in the right way…"

"Helping us to manage all our data assets in a consistent and governed way…"

Project Milestones:

Phase One: Preparation, analysis, stakeholder engagement and strategic planning. **(May '23 – Sept '23)**

| To Start | In Progress | Complete |

Phase Two: Configuration of SAP Information Lifecycle Management. **(Oct '23 – Feb '24)**

| To Start | In Progress | Complete |

Phase Three: Monitoring & Improvement. **(Mar '24 – May '24)**

| To Start | In Progress | Complete |

What's happening in the next 6 months:

Now that we have upgraded our archive content management solution (OpenText), we will finalise the configuration of SAP ILM based in the business rules we have catalogued.

we are the network

Escape Forecasting Tool

Northern Gas Networks

Making informed decisions based on data analytics

Stakeholders

- Network Companies
- Customers
- NGN Colleagues

Tags

- Efficiency
- Reliability
- Safety

What is it?

Our 24/7/365 Emergency Service protects customers lives and property in the North of England, with our First Call Engineers responding to around 65,000 public reported emergencies each year.

We are using data to forecast when and where emergency calls will be received, based on the weather, the geography and the location of our pipes. We'll use predictive models to come up with the forecast, machine-learning to continuously improve the accuracy of the models, and our world-class visualisation tools to produce the information our operational colleagues need in the best format for them, be that interactive dashboards or automated email notifications.

This is building on the work on water ingress we published in our June 2023 Action Plan.

"Helping to maintain our emergency response..."

Why are we doing it?

If we have a better idea of when and where emergencies are likely to be reported, we can make sure that we have engineers in the right place at the right time to respond. This means they could get there quicker, reducing their carbon footprint by minimising travel. It also means we will be more confident that we have resilience going into winter.

"Using analytics to make better decisions for our customers..."

Project Milestones:

Phase One: Data mapping, model design, creation and training. **(Dec '23 – Mar '24)**

To Start	In Progress	Complete

Phase Two: Operational MVP in all of our 9 geographic areas. **(Apr '24 – Jun '24)**

To Start	In Progress	Complete

Phase Three: Assessment and next steps. **(Jun '24 – Sep '24)**

To Start	In Progress	Complete

What's happening in the next 6 months:

We're working on the 1.25m historical records we have, mining all the data they contain and enriching it with weather data, asset data and geospatial attrbutes. With all this we can model what happened in the past and use that as the basis for future forecasts.

we are the network

National Energy Research Village

Encouraging Innovation in the Energy Sector

Stakeholders

- Data Users
- Customers
- Start Ups
- Academia

Tags

- Open Data
- Reliability
- Data Best Practice
- Net Zero

What is it?

The National Energy Research Village is a unique research and development facility located in our Low Thornley site just west of Newcastle. We're building nine homes from different building eras to research different technologies for decarbonising home energy use.

The village consists of three 1910 terraced homes, two semi-detached 1930s houses, a 1950s bungalow, two flats from the 1970s and a detached home from the 1990s, to represent millions of UK homes. They will be used as a test bed for different technologies to understand which energy solutions are best suited to decarbonise different housing stock and how energy use can be reduced.

The homes will be packed full of sensors, with the data available on a data-sharing platform for partners to use.

"Providing vital real-world testing capabilities…"

"A world class facility for R&D of energy innovations…"

Why are we doing it?

The data generated by the NERV could be of extreme importance as we move to a Net Zero society, and we need to make sure that we can get that data to the right people at the right time. Some of the data may be completely open, some of it may be shared through agreement, all of it will be maintained and managed.

Project Milestones:

Phase One: Stakeholder engagement and requirements gathering. **(Aug '22 – Sep '23)**

| To Start | In Progress | Complete |

Phase Two: Fitting the sensors and linking them to a data management system. **(Oct '23 – Nov '23)**

| To Start | In Progress | Complete |

Phase Three: Build a data historian and connect to Analytics Platform. **(Dec '23 – Mar '24)**

| To Start | In Progress | Complete |

What's happening in the next 6 months:

We're building a HANA database to act as an historian, and a connector to allow data from the data-sharing platform to flow into it. As soon as that is done we'll start to build the analytic models and visualisations.

Northern Gas Networks

we are the network

Asbestos Management

Northern Gas Networks

Building resilience in critical processes

Stakeholders

- HSE
- Customers
- NGN Colleagues

Tags

- Efficiency
- Reliability
- Data Quality
- Safety

What is it?

We have a duty of care to monitor and manage any asbestos on our network. In the past this has been done through a stand-alone database, with associated manual processes to make sure the data is correct, and to calculate how often checks need to be made.

We have completely digitised this, migrating the data held in the stand-alone database into S/4HANA, and linking it with the site record already held there. This takes full advantage of the site hierarchy we have already built in S4, streamlining the data capture and update process, whilst ensuring that key data is mastered in one place.

On top of this we have built a new User Interface using an SAP Fiori app, to allow field data capture and automated update of the record in S4. All this is finished off with real-time, automated reporting.

Why are we doing it?

We are very serious about the safety of our customers and colleagues, and we're committed to managing and maintaining our data in a consistent way. By migrating the asbestos data into S4 we can now leverage the automated creation and scheduling of maintenance plans in S4. These plans will in turn automatically create, assign and dispatch work orders for site visits.

"Collecting and storing vital safety data…"

"Improving process through technology…"

Project Milestones:

Phase One: Data cleanse and refresh. Schema design. **(Jul '23 – Sep '23)**

| To Start | In Progress | Complete |

Phase Two: Data migration into S/4HANA. **(Oct '23)**

| To Start | In Progress | Complete |

Phase Three: Build User Interface, workflow and reporting. **(Nov '23 – Jan '24)**

| To Start | In Progress | Complete |

What's happening in the next 6 months:

With the build and data migration complete, we're sorting out access controls so that the right people can view the data and use the application.

we are the network

CRM Upgrade

Maximising the service to our Customers

Stakeholders

- Customers
- NGN Colleagues

Tags

- Efficiency
- Reliability

What is it?

To provide a world-class service to our customers, whilst remaining compliant with data protection legislation and the requirements of our Regulator, we must have a Customer Relationship Management (CRM) solution to be able to record, track and manage all direct interactions with our customers.

We are committed to using the best possible technology in the service of our customers, and we are moving to a new Microsoft Dynamics CRM. With this CRM we will manage all customer complaints, enquiries and accolades with multiple channels of communication so that no one is disadvantaged.

We can customise Dynamics to fit with unique requirements of our customers whilst making full use of the out-of-the-box functionality of a world-class CRM.

Why are we doing it?

Our customers are so important, and they deserve the best. We've worked hard over the past few years upgrading our asset and work management solutions, and it is now time that our CRM gets the same treatment.

"Helping to give our customers the best possible service…"

"Introducing more resilient technology…"

Project Milestones:

Phase One: Data mapping & cleansing. Requirements gathering & design. **(Aug '23 – Sep '23)**

| To Start | In Progress | Complete |

Phase Two: System build & configuration. Data schema build. **(Oct '23 – Nov '23)**

| To Start | In Progress | Complete |

Phase Three: Data Migration, Go Live and Hypercare. **(Dec '23 – Feb '24)**

| To Start | In Progress | Complete |

What's happening in the next 6 months:

Once live we will run hypercare to ensure a seamless experience for our colleagues and customers, whilst assessing how best to integrate Dynamics with all the other Microsoft tools at our disposal, plus out S/4HANA system.

Built Over Mains Analysis Tool

Northern Gas Networks

Making informed decisions based on data analytics

Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- HSE

Tags

- Efficiency
- Reliability
- Data Quality
- Safety

What is it?

We are partnering with Ordnance Survey to unlock the power of our geospatial asset data, and have been working on an analytical model to visualise where on our network there could be gas main pipes that have had buildings or other structures constructed over them. The model has been refined to ensure that we can identify false positives like bus-stops etc, giving us the ability to properly assess where a site visit may be required.

The modelling utilises our asset data and building data, characteristics and status from Ordnance Survey, producing a powerful, accurate and up-to date analytical tool to help us maintain the integrity of our network and the safety of our colleagues and customers.

Why are we doing it?

We want to use data to make better decisions, accurate modelling can reduce the number of site visits we make, reducing both our carbon footprint and the cost to survey. It will allow us to target areas of focus, and as it is constantly updated with new OS data on new builds and changing statuses, it will remain accurate and relevant.

"Maintaining the integrity of our network ..."

"Introducing an innovative approach..."

Project Milestones:

Phase One: Proof of Concept developed in a defined geographic area. **(Aug '23 – Dec '23)**

| To Start | In Progress | Complete |

Phase Two: Rollout production model to cover whole network **(Jan '24 – Nov '24)**

| To Start | In Progress | Complete |

What's happening in the next 6 months:

Now that we have successfully proved the effectiveness of the model, we will scale it up to cover the whole network, whilst continuing to refine and train the model to further improve accuracy.

we are the network

Open Data Interoperability

Building the foundations of Open Energy Data

Stakeholders

- Network Companies
- Customers
- NGN Colleagues
- Data Users
- ESO/FSO

Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero
- Efficiency
- Reliability

What is it?

We're collaborating with the other Gas Distribution Networks to build consistent formatting and taxonomy into the data that we share with others.

We are taking an iterative approach to introduce benefits as soon as possible. As a group we will initially review the geospatial pipe data that we publish, agreeing a minimum set of requirements around format, content and naming conventions, that will ensure that a data user will be able to combine the datasets from different GDNs with little or no transformation required. Once this has been agreed, we will move on to the next dataset, building a data standards library that can be utilised by all networks to ensure consistency and interoperability in gas network data.

"Sharing best practice…"

"Working together to improve open data…"

Why are we doing it?

Data Interoperability is vital to the success of Open Energy, without it data sharing will be inefficient and ineffective, and a whole systems energy system will be impossible. The work on Open Data Interoperability is just the start of a long process, but it is an important step towards a net zero energy future.

Project Milestones:

Phase One: Scoping and resource management. (Nov '23 – Dec '23)

| To Start | In Progress | Complete |

Phase Two: Geospatial data review and recommendations report. (Dec '23 – Mar '24)

| To Start | In Progress | Complete |

What's happening in the next 6 months:

We will carry out our review of geospatial pipe data, and publish our findings and agreed standards. The methodology and findings will also be shared with our Electricity Distribution Network colleagues as one component to help ensure interoperability across the energy sector.

Northern Gas Networks

we are the network

Changes from our last Action Plan...

An update on initiatives featured in previous Action Plans

Initiative	What's happened…	Status
Automate+	Our Automation Programme has been redefined as the Process Optimisation Programme	Complete
Asset Data Intelligence	A fully automated AI solution to monitor the quality of our critical asset data is now integrated into our SAP system	Complete
Pressure Systems Database	All data cleansing and migration activities are complete, but we're assessing how best to upgrade the user interface	On Hold
Water Ingress Predictive Model	A predictive model using the latest graph analytics techniques is now available for our operational colleagues to use.	Complete
Load-Shedding Application	A fully digital solution for this critical process has been built and is in use.	Complete
Chatbots	We now have chatbots embedded into our internet and intranet sites to facilitate navigation and enquiries	Complete
Open Data Platform	Our Open Data Portal is now live and in use. Datasets including asset geospatial data, Public Reported Escapes, Biomethane volumes, Carbon Monoxide events and Customer Satisfaction survey results are available to download via our interactive portal.	Complete

You can find copies of previous Digitalisation Action Plans on our Open Data Portal… **Enter Here**

…or paste the following into your browser if you prefer - https://northerngasopendataportal.co.uk/

we are the network

Contact us...

We would really appreciate your feedback on our Digitalisation Action Plan

This Action Plan should inform and bring value to you. If there is any clarification, question or comment regarding this plan, we would love to hear from you. Please get in touch with us via one of the communication channels listed below.

Tom at tpollock@northerngas.co.uk

@NGNgas

northerngasnetworks