

# Digital Strategy Consultation 2020

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# Introducing UK Power Networks

UK Power Networks delivers electricity to London, the east and south east of England. We have a clear objective to be the UK's best performing network operator, supported by our vision to be an employer of choice, a respected and trusted corporate citizen and to be sustainably cost-efficient.

Measure	Data	% of industry
Customers (homes and businesses)	8.3m	28%
Population served	c.19m	29%
Distributed generation connected	9.29GW	31%
ED1 totex allowance (2012/13 prices)	£6,029m	25%
Energy distributed	79.2TWh	28%
Peak demand	14.4GW	N/A
Total length of network	188,476km	N/A
Area served	29,250km <sup>2</sup>	N/A

## An Employer of Choice

- The safest – with an exemplary safety record
- A place where people love to come to work
- Embracing diversity
- An appropriately skilled workforce for both today and the long term

## A Respected and Trusted Corporate Citizen

- The most reliable networks
- The most satisfied customers
- The most innovative
- The most socially and environmentally responsible
- Ensure we meet the needs of our vulnerable customers, both now and in the future
- Enabling the net-zero transition for all
- The leading UK Distribution System Operator

## Sustainably Cost-efficient

- Be the lowest cost electricity distributor for our customers
- Deliver on our commitments in a collaborative way
- Deliver profitable growth in our Services and Connections businesses

## East

### Eastern Power Networks (EPN)

We deliver power to north London and East Anglia, encompassing a diverse range of urban and rural areas as well as a huge coastline.

## London

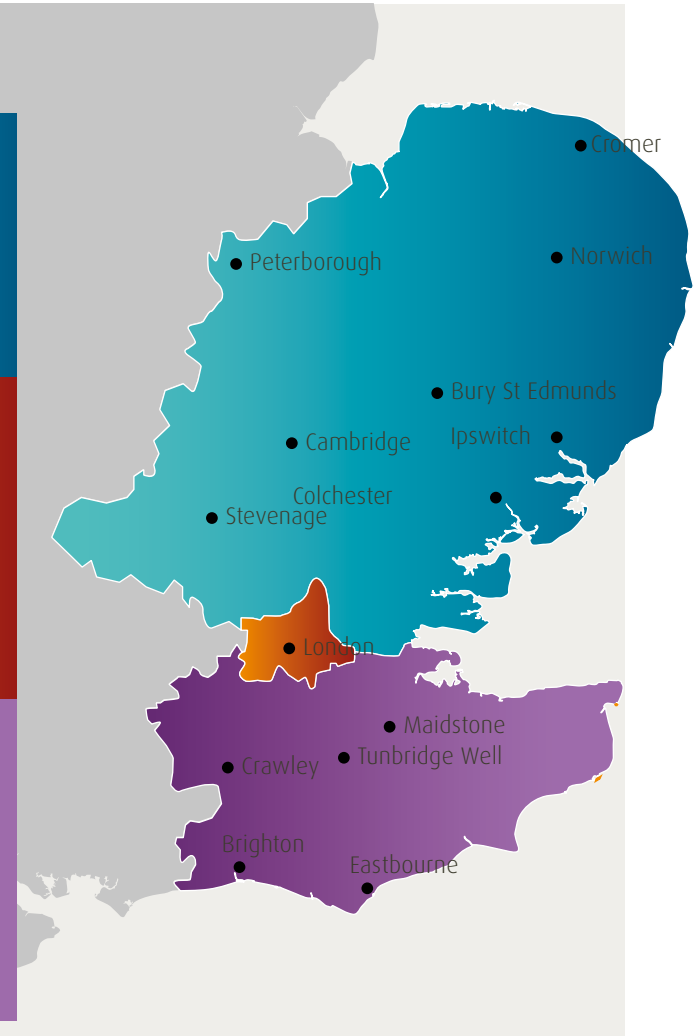
### London Power Networks (LPN)

We look after the electricity network for inner London, with responsibility for delivering power to iconic buildings and businesses as well as high profile international events throughout the year.

## South East

### South Eastern Power Networks (SPN)

We serve south London, Kent, East Sussex, and parts of Surrey and West Sussex, covering a rich variety of customers and locations.



# Thank you for your interest in our Digital Strategy

## We would love your help to shape and inform what we do

### Why are we asking for your input?

Thank you for taking the time to read this consultation document.

Digital technologies are rapidly becoming embedded in our daily lives, generally making things easier, faster and more effective.

The energy sector is no exception to this change and we embrace digital to:

1. Benefit our customers' experience when they engage with us, and enhance the services we offer them.
2. Improve what we do as a Distribution Network Operator (DNO), and enable the capabilities that we need as a Distribution System Operator (DSO).
3. Align our employees' digital experience at work, to their experience outside work when using digital technologies and platforms.

We plan to publish our Digital Strategy in June 2020 and have engaged with colleagues to understand what their digital aspirations are.

**Digital capabilities will allow us to do what we do, only better, making our services more accessible, efficient, effective and reliable.**

**This document explains the 'why, how and what' of our digital future.**

To ensure that the strategy we develop is relevant to all our stakeholders, we would like to understand whether our ambitions meet your aspirations and needs.

At the end of this document we ask you for feedback.

Your views and opinions are important to us and will genuinely impact our approach, ensuring that our Digital Strategy can best serve your current and future needs.

### Who do we want to hear from?

- Electricity consumers/prosumers/generators in London, the east or south east of England.
- Service providers within the DNO/DSO industries.
- Professionals working with Distributed Energy Resources (DER).
- Representatives from any organisation in the electricity industry, including DNO, Independent Distribution Network Operator (IDNO), Independent Connection Provider (ICP) or others.
- Future users of our electricity network and services.
- Experts in digital best practice, as applicable to the energy sector.
- Anyone else with an interest in the subject.



To provide your feedback please email:  
[digital@ukpowernetworks.co.uk](mailto:digital@ukpowernetworks.co.uk)




# What does digital mean to UK Power Networks?

As a subject, digital is often broad and complex. However, having assessed a wide range of industry-leading Digital Strategies, we believe that a Digital Strategy must meet the definition of ‘applying the culture, processes, business models and technologies of the information era to respond to people’s raised expectations’.<sup>1</sup>

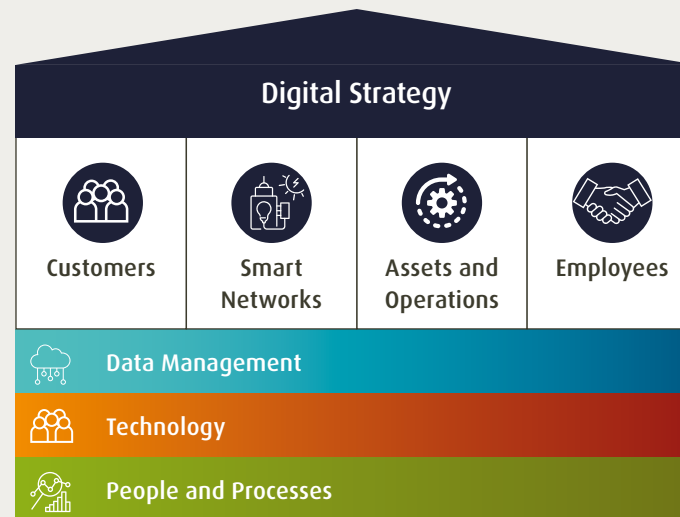
## Digital improvements will significantly benefit four key groups:

- **Customers** – people outside of our organisation who wish to engage with us.
- **Smart Networks** – DSO functions which require capabilities beyond those of a DNO as they enable new commercial markets and facilitate dynamic real-time network management.
- **Assets and Operations** – as a DNO we manage a large, diverse range of assets to ensure that electricity can be reliably and safely delivered to our customers.
- **Employees** – across all areas of our business, irrespective of their role.



 Listen to our Director of Safety, Strategy and Support Services and Head of Analytics discussing what digital means to UK Power Networks.

### UK Power Networks’ Vision and Purpose



**Customers:** Transformed customer experience and interaction via online services so good that most people need nothing else

**Smart Networks:** Delivery of capabilities that ensure we are the leading DSO and achieve net-zero carbon by 2050

**Assets and Operations:** Embedded digital practices driving efficiency, collaborative innovation, insight driven decision making

**Employees:** Staff able to work any time, anywhere, from any device, matching our digital experiences outside of work

### Data Management

Data is understandable, reliable, accessible and available to the right people at the right time

### Technology

Exploiting technology that is sustainable, adaptable, resilient and continuously improved

### People and Processes

Ensuring the right skillsets for the modern environment, automating and expediting processes

<sup>1</sup> Tom Loosemore, Public Digital

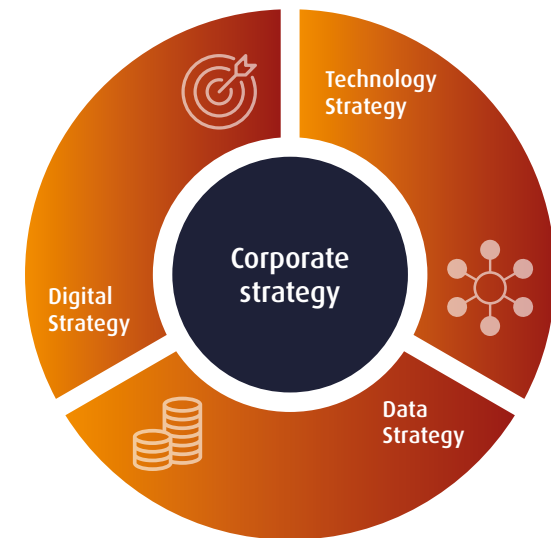
# How the Digital Strategy aligns with our other strategies

Our Digital Strategy must reinforce our company's vision and purpose to be an employer of choice, a respected and trusted corporate citizen and sustainably cost-efficient.

It must allow us to manage our digital projects in a holistic, cohesive manner and enable us to integrate with our energy sector peers, helping facilitate the UK's transition to a net-zero economy.

The specifics of how these aspirations will be delivered will come from other UK Power Networks strategies notably, but not exclusively, the Data and Technology strategies.

The purpose of the Digital Strategy will be to provide the direction to develop digital capabilities aligned with the aspirations of our four core user groups.



# Our journey so far

We embraced digital long before today's technology giants even existed and we are proud of our track record as an early adopter of innovation.

## 1992–2001

- **Email: 1992** –  
First use of enterprise-wide email
- **Remote Switching: 1992** –  
First remote switching capability
- **Digitised GIS asset records: 1998** –  
Paper-based records digitised
- **Automated network restoration: LPN 2001** –  
Automated network switching to restore customer supplies



1992–2001

2002–2010

2011–2015

2015–2016

2017–2018

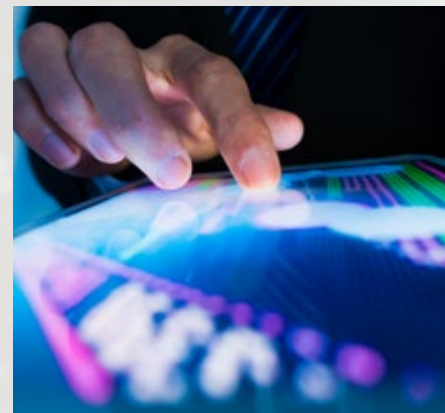
2019

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## 2002–2010

- **Automated network restoration: EPN 2002, SPN 2007** – Automated network switching to restore customer supplies
- **GIS asset record vectorisation: SPN 2002** – Digitalisation of our previously digitised records
- **Central Document Library (CDL): 2005** – Central digital store for business documents



1992–2001

2002–2010

2011–2015

2015–2016

2017–2018

2019

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## 2011–2015

- **Flexible Plug & Play (FPP): EPN 2014** – Network management platform enabling significant generation to connect to an area of constrained network with minimal restriction on generation output
- **Kent Active System Management: SPN 2014** – Contingency analysis capability, considering how to reconfigure the network following a series of simulated faults
- **Wayleave digitisation: 2015** – Digitisation of our asset wayleave and easement records



1992–2001

2002–2010

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2017–2018

2019



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## 2015–2016

- **Mobile enablement: 2015** – Digital hardware for the operational workforce
- **SAP Implementation: 2015** – Rationalisation and integration of core enterprise applications onto the SAP ERP platform
- **Rant and Rave platform: 2015** – Voice of the Customer (VoC) program providing enhanced insight from real-time customer feedback
- **Automated Power Restoration System (APRS): LPN 2015, SPN/EPN 2016** – Advanced automated network switching to restore customer supplies



1992–2001

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2017–2018

2019

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## 2017-2018

- **Flexible Distributed Generation (FDG):**  
**EPN 2017** – Business as usual equivalent of FPP
- **Domestic smart meters: 2018** – Remote access to consumer electricity meters, beginning to give enhanced visibility of low voltage network
- **Track your power cut: 2018** – Live platform for customers to track the progress of their supply restoration activities



1992-2001

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2011-2015

2015-2016

2017-2018

2019

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## 2019

- **Power Potential: SPN 2019** – Collaborative platform between National Grid ESO and UK Power Networks giving holistic visibility and improved coordination of both networks
- **Active Network Management: 2019** – A new intelligent software platform delivering advanced automated control of our network
- **Piclo: 2019** – Ground-breaking online capability for customers to bid for flexibility service provision
- **Next best action tool: 2019** – Predictive Broad Measure of Customer Satisfaction (BMoCS) scoring tool



1992-2001

2002-2010

2011-2015

2015-2016

2017-2018

2019

# Our changing environment and the role of digital

This is a time of unprecedented change within the electricity industry and many aspects of what we do, and how we do it, are evolving to keep pace with increased expectations of our customers and employees.

## Political and Environmental



### Current scene:

- Increasing political and community awareness of the environmental impact of CO<sub>2</sub> emissions.
- Pressure on the energy sector to help facilitate a net-zero carbon economy.
- Creation of DSOs.

### Changes observed:

- Increasing pressure from regulators.
- Shift from traditional practices to dynamic and proactive ways of working.
- Expectation of legislative changes.
- Accelerating shift from a small number of large fossil fuel-powered stations to hundreds of thousands of smaller embedded generators.

### How the Digital Strategy will support:

- Focus on sector-wide integration of systems and data.
- New approaches and technologies to transform at lowest cost.

## Economic



### Current scene:

- Requirement to accommodate the rapid uptake in low carbon technologies needed to meet the Government's 'net-zero' target at the lowest possible cost to customers. This includes enabling generators to connect quicker and cheaper, and maximise use of the existing network.

### Changes observed:

- Continually evolving technologies create an increasingly dynamic electricity network.

### How the Digital Strategy will support:

- Manage complex inter-operability and interfaces with other utilities and infrastructure providers.
- New technical platforms to enable the emergence of new commercial markets.

## Social and Technology



### Current scene:

- Society has an increasing dependence on the internet and associated digital technologies.
- Digital expectations of stakeholders are rising.
- Increasing awareness of sustainability is changing behaviours, with more people and communities generating, storing and trading their own energy.

### Changes observed:

- People's minimum expectations are often based on their last best experience, which sets the benchmark that we must strive to meet.

### How the Digital Strategy will support:

- Integration with sector peers to create 'whole system' capabilities relevant to stakeholders' requirements.
- Embrace new technologies and rapidly adapt to new trends and requirements.
- Offer a user experience aligned with increasing expectations.
- Improved choice, responsiveness and accessibility for all.

## Legal and Transparency



### Current scene:

- A growing data centric agenda, supported by the publication of the Energy Data Taskforce's "Strategy for a Modern Digitalised Energy System".

### Changes observed:

- Increasing need to manage risks associated with how data is managed and used, ensuring compliance with associated legislation.
- Increasing demand and opportunity that open data offers to the development of an integrated, whole system energy network required to meet net-zero ambitions.

### How the Digital Strategy will support:

- Frictionless exchange of data between sector participants.
- Establish digitally enabled distributed trust models such as Blockchain.

# Our approach is to take action and realise the value of digital

## What we need

## What we will do

### WHY

Understanding the opportunities

- A clear understanding of what digital means to UK Power Networks and how this relates to the changing world around us.
- To meet the requirements of new drivers such as the Energy Data Taskforce, the Government's net-zero ambitions and rapid uptake of low carbon technology.
- Simple and accessible explanations of how digital and related ways of working will benefit our stakeholders and employees now and in the future.

- Research aspirations and requirements of our stakeholders, evaluate our current digital capabilities and consider how to use digital to close the gap.
- Immediate focus on improving existing, and developing new capabilities across our four stakeholder groups.

### HOW

A way to think about digital

- Address any digital opportunity or new way of working with data, through a single approach.
- Clear boundaries for what we will do, and not do, so we make decisions that reflect our principles and deliver positive outcomes for our business, customers and stakeholders.

- Convert promises to structured delivery across our business, by designing a framework to determine how we will react to, and embrace, potential digital opportunity or innovation.
- Deliver a holistic view of digital implementation.

### WHAT

A future-proof way to deliver

- Understand the full breadth of our digital progression and long-term impact, and develop an evidence-base to continuously drive improvement.
- Consider how UK Power Networks' digital portfolio meets the aspirations of the wider energy sector in addition to our own organisation.

- Develop clear focus areas across four stakeholder groups, which drive outcomes to meet our aspirations.
- Establish portfolio governance to ensure that outputs offer company-wide benefits rather than at an individual project or team level.
- Deliver prioritised outcomes rather than specific project targets.

# Why we must deliver a Digital Strategy



## Today

UK Power Networks employs information-enabled digital technologies in agile and innovative ways to help our business deliver for customers, and continuously improve. By developing efficient and effective digital capabilities, we are improving our customers' experience and addressing problems that are experienced by our workforce.



## Tomorrow

In the future, we will be required to use disruptive technology for the benefit of all, allowing us to provide new, radically enhanced services to our customers and stakeholders. Open data will enable cross-sector integration in ways we cannot yet imagine and as a result we will become a key facilitator in the net-zero economy.

**Evolution across our industry is fast, complex and multi-faceted, but underpinned by three clear requirements. Every single outcome that the Digital Strategy delivers, must achieve at least one of these.**

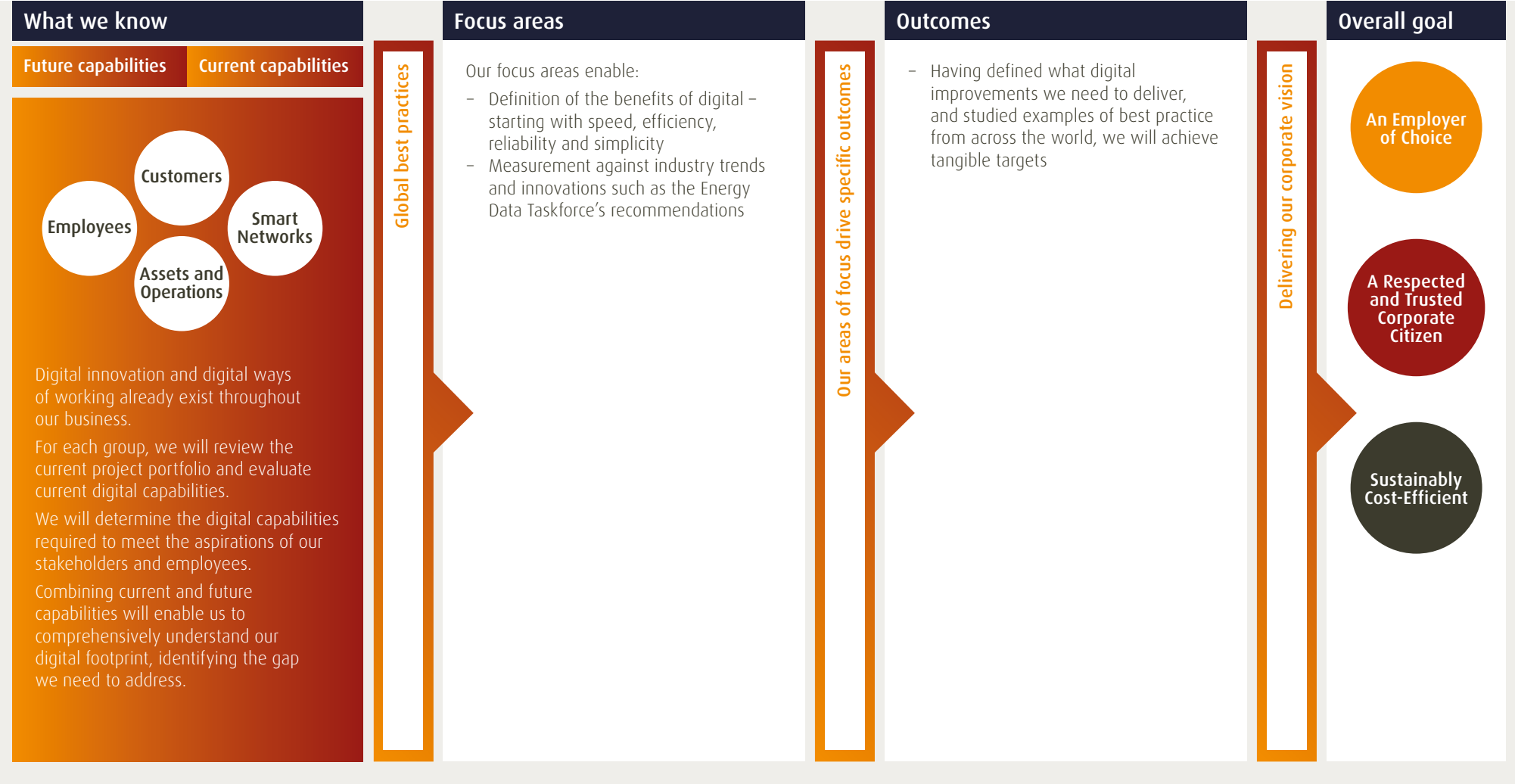
1. Digital capabilities must benefit our customers in terms of the experience they have when they engage with us, the services that we are able to offer them and the support that they receive. Ultimately, customers will drive the net-zero transition and we will facilitate it – and we must make that journey as easy for them as possible.
2. The role of a DNO is a broad and complex one. We expect digital to make us more efficient, and more effective, at what we currently do. We recognise that to operate as a world-leading DSO we must further refine and develop these capabilities. We have already shown that we can excel in the international DSO arena – we now anticipate a step change in our capabilities when we are able to implement scalable, digital solutions.
3. Our employees' digital experience at work must align with examples of best practice outside of work, for us to meet our vision of being an employer of choice. A digitally enabled workforce will have the capability, and the motivation, to deliver an industry-leading service.

# Each part of our business will have a digital portfolio mapped to a structured framework for performance-managed delivery

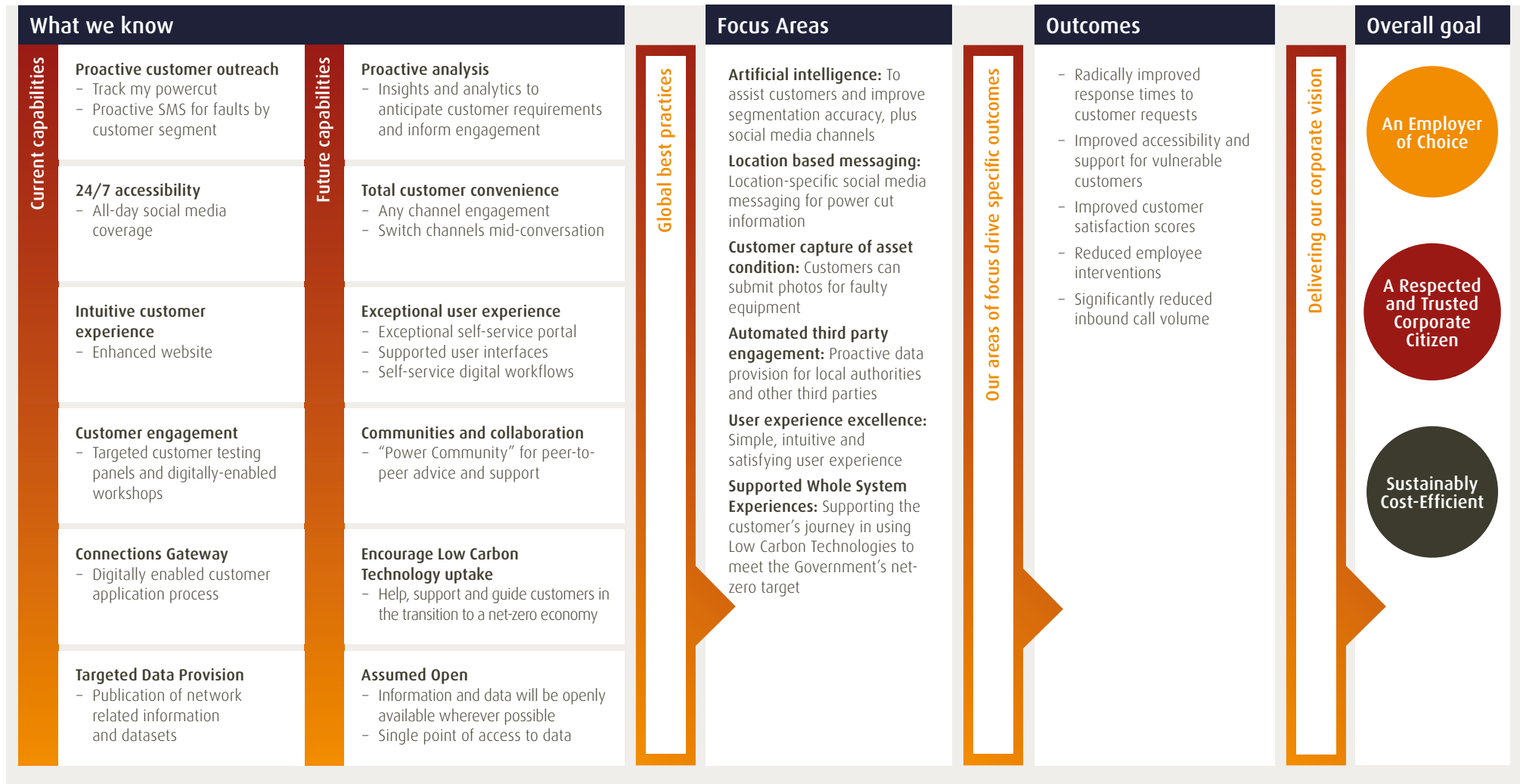
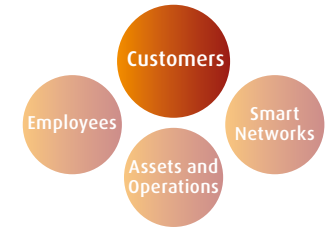
## Step 1

## Step 2

## Step 3

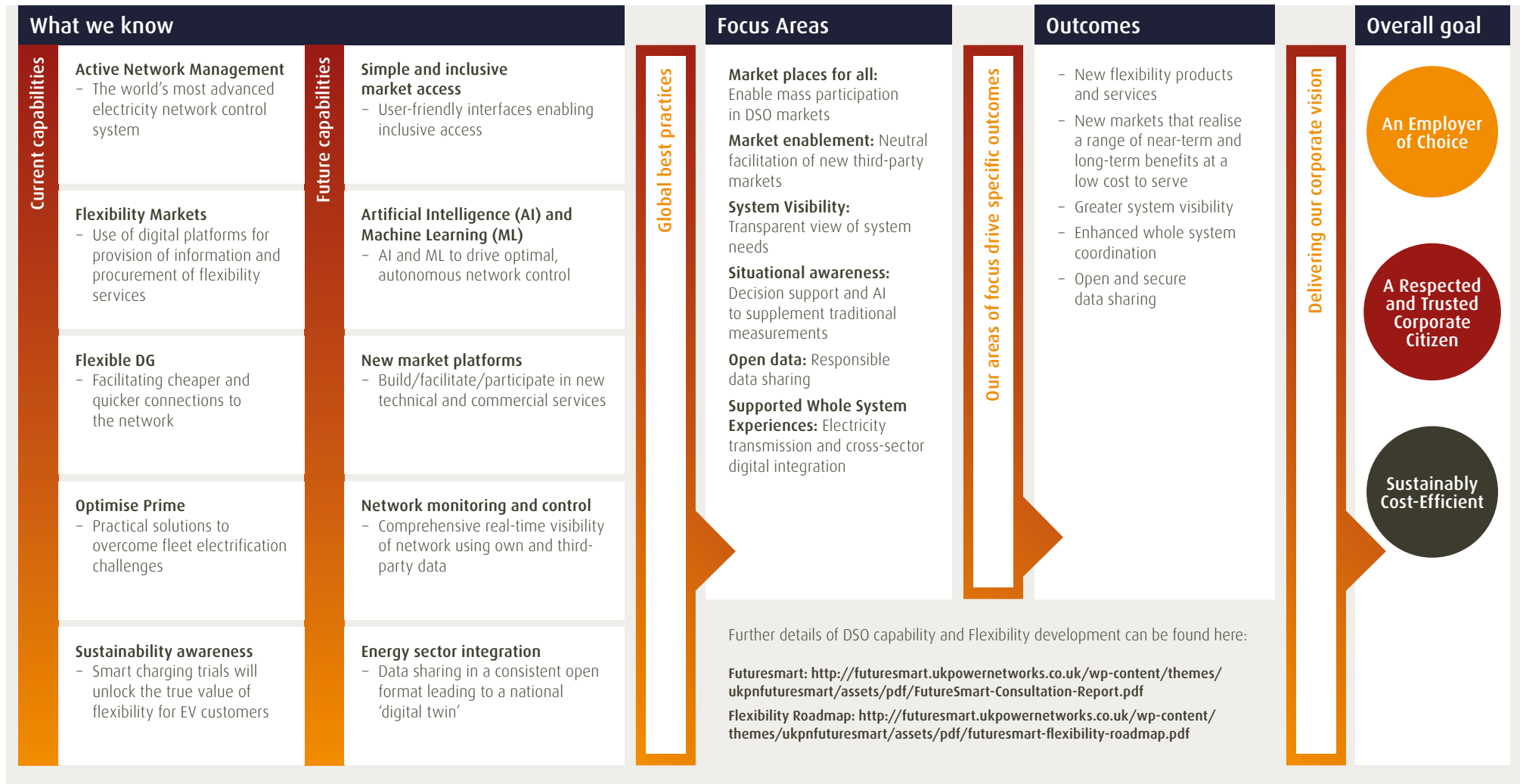
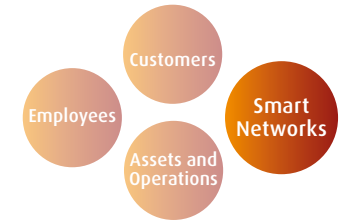


# Digital requirements of customers – an intuitive, seamless service and personalised experience



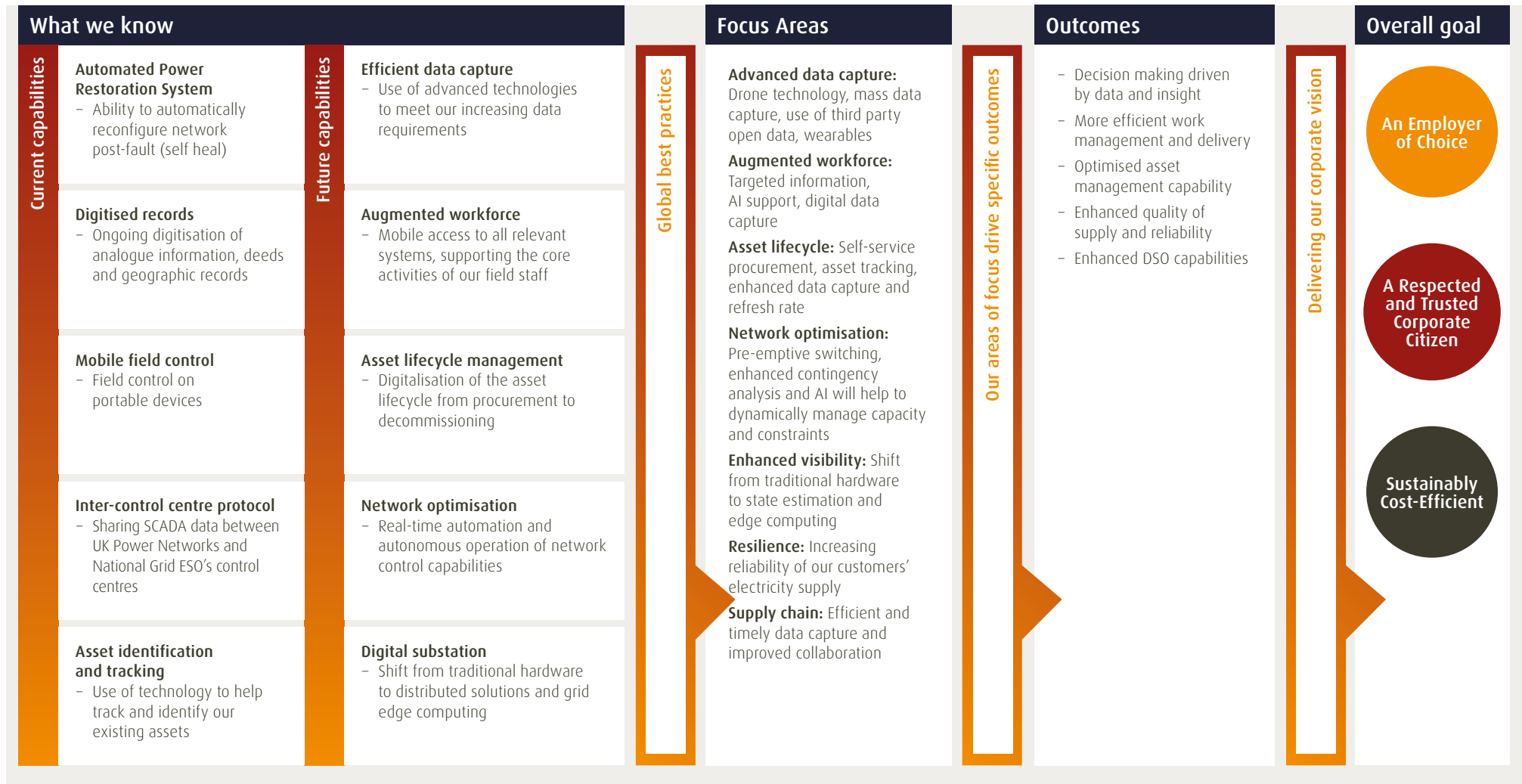
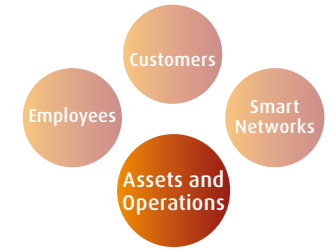


# Digital requirements of a DSO – developing digital platforms and capabilities to provide supported, dynamic network access

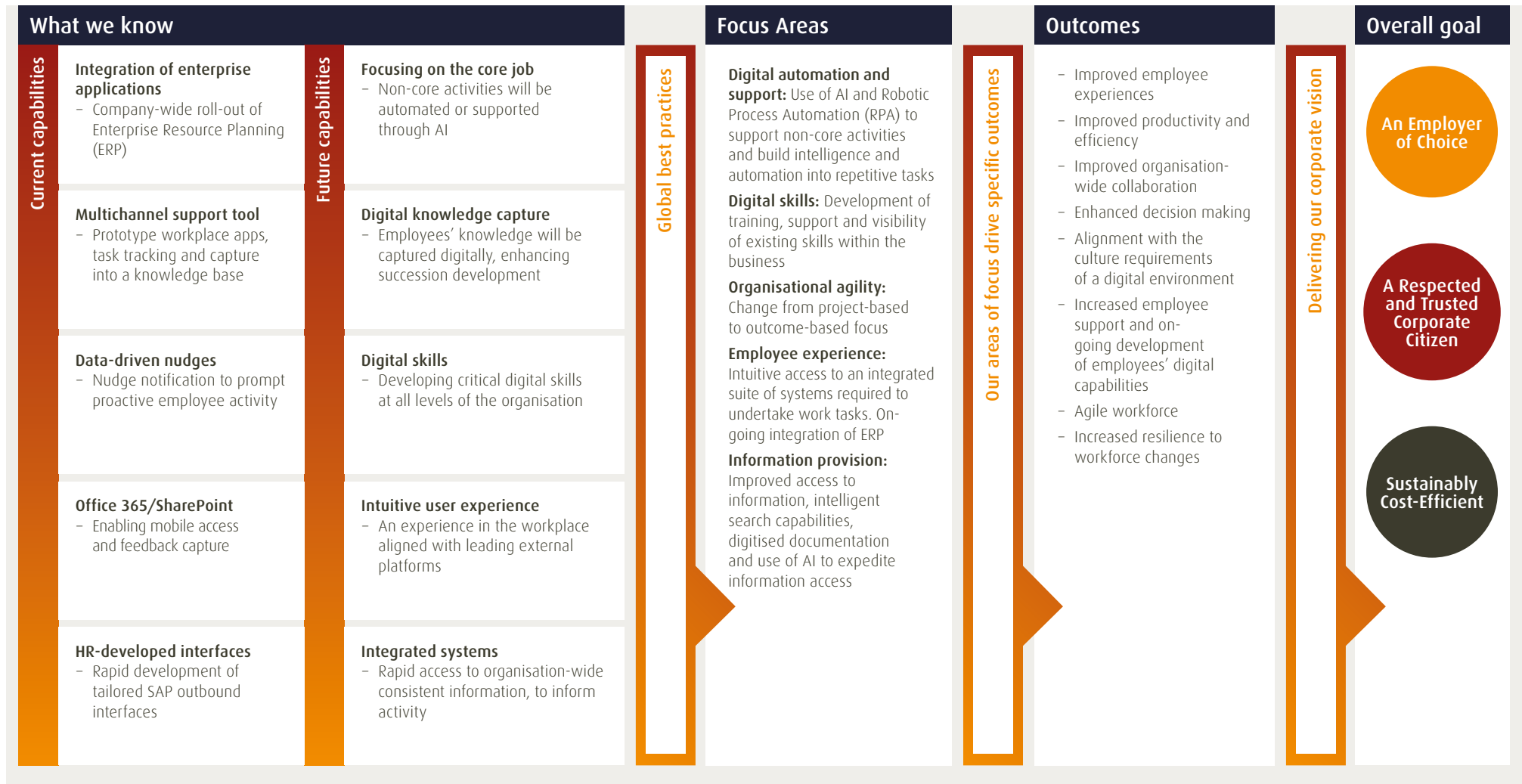
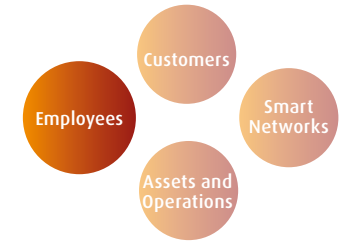


# Digital requirements of Assets and Operations

## – remote monitoring, automation, operational enablement and supply chain



# Digital requirements of employees – more supported, productive and intuitive systems



# Change is required on four dimensions to digitalise UK Power Networks

Digitalisation is not just about introducing new information-based technology. It is underpinned and enabled by the four components in the diagram below



# Next steps – what we will do next prior to publishing our Digital Strategy in June 2020

We will share our consultation findings, to coincide with a meeting of the Energy Networks Association's Data Working Group on 12 March 2020: <http://www.energynetworks.org/info/modernising-energy-data.html>



## Getting the basics right

### We will assess:

- 1. Outcomes** – Fully understand our consultation feedback to shape overall outcomes
- 2. Initiatives** – Develop a portfolio of digital initiatives to close the gap between current capabilities and project aspirations
- 3. Priorities** – Assign priorities to each initiative, based on the benefit delivered to each of the four stakeholder groups, and organisational and sector-wide requirements
- 4. Metrics** – Develop measures to check that digital systems remain relevant throughout their lifecycle. Use agile approaches to ensure that metrics apply to the output, not simply the project delivery
- 5. Delivery methods** – Outputs will be delivered by experts across the organisation, rather than individual teams. Outsource for specialist technical knowledge, with a clear understanding of activities which should remain in UK Power Networks
- 6. Best practice** – We are trying to use the most appropriate technology to deliver the maximum benefit to stakeholders, not re-invent the wheel. We will therefore study best practice where organisations have delivered great results.

# Are we on the right track?

**Thank you for reading our Digital Strategy consultation.**

From your perspective, please can we ask:

1. What does digital mean to you?
2. Which digital services and outcomes are most important to you and why?
3. What are the common blockers you have observed in digital delivery?
4. Which data types would you find most useful in the future and why?
5. Where could additional value be created for customers and stakeholders if we were working together more closely?
6. What methods have you found most, and least, successful in delivering digital transformation projects?
7. How would you like to be engaged with as we iterate and develop our strategy?

Your views and suggestions will help us shape our Digital Strategy.



Please complete our online survey [here](#) by 5pm Friday 17 January 2020 or email any comments to: [digital@ukpowernetworks.co.uk](mailto:digital@ukpowernetworks.co.uk)

