PPE Vision
The Next Generation Met Office

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Our purpose and vision

Helping you *make better decisions* to *stay safe and thrive*

Recognised as global leaders in weather and climate science and services in our changing world
Our purpose: Why we exist

Our vision: What we will achieve by 2024

Strategic anchors: These are the areas we will focus on.
The three areas overlap and complement each other.

Strategic actions: Our priority activities which we’ll monitor & measure.

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**Excellent people and culture**
- Transforming our leadership capability for the future
- Enhancing equality, diversity and inclusion
- Enabling and developing our people
- Evolving our Future Normal

**Exceptional science, technology and operations**
- Delivering our future supercomputing capability
- Exploiting the future of data sciences
- Delivering our next-generation modelling capability
- Delivering a common Met Office data platform

**Extraordinary impact and benefit**
- The future of Operational Meteorology (including improving our 0-2 hour forecasting (Nowcasting))
- NetZero
- Product migration and disposal
- Leveraging our supercomputer partnership opportunities
Our strategy

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Recognised circa 2015 that we needed to untangle the ‘rats nest’
Evolved Infrastructure, exponentially growing infrastructure leading to slowing ability to 'pull-through' science
A threaded system to a capability platforms approach

- ~2015 Started with ‘Digital IT’ and now develop in ‘cloud native abstract and ephemeral’ tech
- Large productivity and cost savings, skills and cultural advances, experience and trust in cloud
- Very close and strategic relationship with AWS as they develop their service offering
A threaded system to a capability platforms approach

- Tender approach built upon our Cloud experience
- Many reasons to go for an ‘as a service’ model in favour of an ‘own and operate model’
Concept to structure
A part of wider transformation

Supercomputer + Next-Generation Modelling Systems

Observation:
- Surface
- Satellite
- IoT

Simulation:
- Global model
- Regional model
- DA
- Supercomputer

Analysis:
- Post processing
- Data platform
- AI and ML

Products & services:
- NC Research, Consultancy, Digital
- Products, Guidance Products

Product Transformation and Migration

Next-Generation Post Processing and Production
A part of wider transformation

Supercomputer + Next-Generation Modelling Systems

National Capability

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System vs platform
Highly scaled – highly complex
A platform / partner approach

Intent over time

10% of time

20% of time

50% of time

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A new strategic collaboration…
Microsoft Vision to support Weather and Climate Science

Chris Perkins
General Manager, Public Sector, Microsoft UK
Microsoft global sustainability commitments

- Carbon negative by 2030
- Water positive by 2030
- Zero waste by 2030
Support climate science organisations

Provide platforms, capabilities, and partnerships

Global scale with local delivery
A platform approach for the whole community: freeing scientists and consumers via availability + agility + scale

Working with science and supercomputing leaders to design the future of scientific computing
Thank you

Any questions?
Additional slides for reference
EUMETNET – Federated Data Coordination Mechanism (FDCM)

Met Office Response:

- Strategy to improve data sharing
- Long-term budget where delivery requirements can be refined over time
- MS shaping contribution but Met Office retains responsibility
• Changing over decades
• A result of scientific and technological advance
• Human role increasingly to interpret the forecast and its impacts over *making the forecast*
• Challenges in of data verbosity and complexity as science progresses from deterministic to probabilistic
• Always a place for advice and guidance
3rd party data and algorithms

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Internet-facing API's
3rd party data (and algorithms?)
Obs modernisation Programme (NGMS)

3rd party data (and algorithms?)

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Prism (Common Data Platform Programme)

3rd party data (and algorithms?)
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3rd party data and algorithms
Our Mission:
Helping you make better decisions to stay safe and thrive
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Helping you make better decisions to stay safe and thrive

Executive

Science Technology Services Programmes Markets Finance People
Our Mission:
Helping you make better decisions to stay safe and thrive

Corporate Capability

National Capability

Services
Our Mission:
Helping you make better decisions to stay safe and thrive

Corporate Capability

National Capability

Observations

Simulation

Analysis

Post processing / Big Data / unstructured data / 3rd party data / automated (data) production

Services
Our Mission:
Helping you make better decisions to stay safe and thrive

Professions

Communities
Our Mission:
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Application architecture tends towards smaller units of system; Platform tends towards resource sharing.

Value Chain:
- Data
- Operating System
- Physical Hardware
- System
- Platform

Bare Metal
- Managed Servers
- Virtualised
- Cloud
- Serverless

Degree of Cloudiness:
- Fewer services in Application Environment managed by System developer; System developer uses increasingly higher level Services.

NB: examples of Services only. Not a complete or precise value-chain depiction. For illustration of cloudiness only.

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Theme 1
Data and... More (shared) data

Theme 2
Forecasting and... forecasters

Theme 3
Demand and supply of services... Weather / Climate / Water / Environment intelligence driving decision making

Theme 4
Capacity gap - Alleviating inequality and advancing together

Theme 5
Roles, responsibilities, partnerships for common action
Run the machine
Grow the machine
Transform the machine
Our Values

We’re a force for good.
Our planet matters. The time is now, and we’re the people to make a difference. That’s why we take our environmental and social impact seriously.

We’re experts by nature.
It’s in our nature to be curious - always learning and developing to do things better. We trust in each other’s expertise and take pride in being the best in our field.

We live and breathe it.
Helping people make better decisions to stay safe and thrive is what we live for. Their lives guide our decisions and their trust guides our actions.

We’re better together.
Great minds don’t always think alike. And we like it that way. We believe partnerships, inclusivity and honesty make us far greater than the sum of our parts.

We keep evolving.
When we’re not looking up, we look ahead. We push the boundaries to make tomorrow better for our customers. Forecasting the future is one thing. Creating it is another.