

The Future of Operational Meteorology at the UK Met Office

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Abstract

The UK Met Office's Future of Operational Meteorology (FoOM) programme aims to transform Operational Meteorology through a focused investment in skills, new ways of working, tools, data, new products & services and customer experience. This investment will ensure that UK Met Office people are the very best they can be and continue to deliver exceptional service and advice to their customers.

Introduction

In 2019 the UK Met Office launched its' new strategy. One of its key activities, is the Future of Operational Meteorology (FoOM) programme which aims to transform Operational Meteorology. This is an investment in new skills, capabilities and ways of working; the tools and data that Op Mets have access to and the way that science, technology and observations capabilities are pulled through to Operational Meteorology. In doing so, we will improve customer experience, support the delivery of HPC investments and ensure that our Op Mets have fulfilling careers in a thriving culture.

Understanding the Future

As FoOM was established to deliver long-term solutions the first step for the team was to understand what sort of future the Met Office will be operating in. Whilst you might think, in an ever-changing environment this is hard to do, by carrying out a global trend analysis, the team determined 4 different scenarios that might exist in the future.

Although some of these scenarios are less likely than others, and the future could consist of a combination of several scenarios, they have played a key role in conversations about how the Operational Meteorology profession might look in the future: the kind of jobs, people, and technology that may be needed, and any new working practices.

To expand the range of our thinking, the FoOM team has engaged with Operational Meteorologists and other members of staff from across the business, through workshops and online discussion tools such as Yammer. By bringing together all the responses the team has been able to understand common themes across the 4 scenarios.

Scenario 1 – What's in it for me

- Users are making business critical decisions based on a variety of data, including natural hazard and environmental information;
- This data is insufficiently accurate to be used directly by the customer for decision-making

Scenario 2 – OFWeather

- Weather and environmental data are commodities available from a variety of sources;
- Safety critical services and users require assurance on the quality of data sources through an independent system of regulation

Scenario 3 – Smart City

- Machines are making business critical decisions based primarily upon integrated data from a variety of sources;
- Most weather forecast data are at a sufficient standard that they require no further intervention before being used in these automated systems

Scenario 4 – Metopoly





- There are very few global producers of weather observations and forecast data
- Governments and other users acquire data from these producers through a single data platform (or marketplace), with any differentiation in services happening downstream.

The changing role of the meteorologist

One of the emerging themes is the changing role of the Operational Meteorologist. We have articulated these through the development of personas, and by applying these to each of the four scenarios, the FoOM team has been able to identify a set of common skills that might be required in the future.

Some key decisions about future tools may also be shaped by our teams' experiences working remotely.

Whilst much work still needs to be done on building the foundations of the future, which like other National Met Services will also be influenced by the global CV-19 pandemic, we also have some pieces of work in delivery. This includes developing new warnings software for some of our

'Expert Emma'	'Advisor Adam'	'R&D Rob'	'Data Dawn'
<ul style="list-style-type: none"> • Excellent met knowledge and experience • Science knowledge • Leadership skills • Authoritative voice 	<ul style="list-style-type: none"> • Practical met knowledge • Able to translate weather impacts to all audiences • Expert in customer needs • Excellent relationships and rapport building 	<ul style="list-style-type: none"> • Theoretical met understanding • Problem solver • Innovative and creative • Coding skills • Able to link R&D activities through to customer needs 	<ul style="list-style-type: none"> • Understands NWP • Expert analytical skills • Ability to make links between complex data trends to inform decisions • Attention to detail
			

Moving into the future

An understanding of the common skills and requirements of each persona will inform the development of new capabilities – such as visualisation tools, new types of training for Operational Meteorologists and the structure of the teams in which they will work.

teams in the Defence sector, understanding what visualisation tools we may need in the future, and progressing our nowcasting capability. It's not just about building new 'stuff' though, we are also working on plans for recruitment and skills development, as well as understanding the role of our culture in the successful delivery of services and the wellbeing of our staff and their careers.

As Covid-19 pushes us into a 'new normal' the changes in how we've been working over the last 3 months will also be key in mapping out our future evolution. We've adapted our processes, and our idea of what is possible, with the majority of work being conducted from team's homes, has significantly shifted. This increased flexibility has brought many benefits, as well as some negatives, and we are looking at what we can bring forward into our future normal. In particular, increased location flexibility will have many benefits for an operational team spread across the globe, as well as helping those with, for example, caring responsibilities to remain in an operational role.