

Centralising Data for NWFRS using Microsoft 365 and Power BI

Butterfly Data enabled smarter decision-making using Microsoft 365, open source data, and geospatial insights for NWFRS.

Challenge

North Wales Fire and Rescue Service (NWFRS) faced several data-related challenges that hindered effective decision-making. Limited data sharing, the lack of an intranet or central storage, and manual reporting meant that critical insights were often delayed or unavailable. These challenges were compounded by the organisation's recent adoption of Microsoft 365, which was rolled out alongside the project, adding complexity to both system integration and staff onboarding.

Specific challenges included:

- Handling sensitive operational data required the creation of bespoke synthetic datasets to simulate realistic scenarios while preserving confidentiality.
- Enabling more comprehensive insights, open-source datasets, such as meteorological data, geographic information, and external fire response records, needed to be consolidated and harmonised.
- Visualising national fire-response territories and station locations demanded the development of an interactive map that could support strategic planning and operational analysis.
- With a small data team in place, it was essential to reduce manual workload by automating data flows and ensuring that timely, accurate information reached key decision-makers.

Solution

Butterfly Data conducted a thorough investigation into the user stories, needs, and challenges of NWFRS' leadership and data team. Recognising the need to deliver the right data to key decision-makers and reduce the workload of a small data team, a Power BI dashboard was developed, leveraging their existing Microsoft licence.

Drawing on design principles from the open-source dashboards of other UK fire departments, Butterfly Data designed a self-service dashboard. Datasets from the corporate planning team were supplemented with open-source data to enrich the dashboard's capabilities. Geographical data was used to illustrate the territories of local authorities, and meteorological data was used to enhance wildfire trend research.

The result was a dashboard providing succinct insights on important day-to-day operations such as incident data, road traffic collisions, and fire service appliances.



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Impact

The final deliverable was a Power BI dashboard that incorporated data from various streams, including incidents, casualties, road traffic incidents, vehicle data, and staff fitness data. Excel was used for analysis, alongside Power Query for data manipulation and quality control.

The dashboard acted as a proof of concept, demonstrating the potential for NWFRS to use it as a centralised point of information, collating data from across the service to be accessed at all levels. The success of the dashboard's implementation has demonstrated its capability to support NWFRS' evidence-based decision-making in incident response, resource allocation, and performance monitoring.



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