

West Midlands Police

Serving and protecting with cloud



Call for change

Building new data intelligence capabilities

Among the 43 police forces in England and Wales, the West Midlands Police (WMP) stands out. One reason is its size.

WMP is the second largest force in England outside of London, with approximately 11,000 officers and staff serving nearly 2.8 million people. The organization's real differentiator, however, is an unmatched commitment to using data to improve service and better protect its people.

WMP's leaders recognize the need for data-driven insights and analytics to improve every aspect of policing—from making internal operations more efficient to aiding in criminal investigations and patrols. Yet, without a single, easily accessible repository of accurate data, WMP found it tough to analyze trends and set up preventative policing initiatives.

To build its new data intelligence capabilities, WMP wanted to team with an established and trusted partner that could bring together the range of technology, analytics

and insight skills, combined with an understanding of WMP's challenges and priorities, to co-create a strategy and then implement it. They needed to be able to build a new technical infrastructure, as well as have a keen understanding of policing and the significance of responsible use of data and analytics. WMP knew the transformation effort required more than a systems integrator and selected Accenture to be their technology and innovation partner.





When tech meets human ingenuity

Creating an enhanced cloud-first solution

From the outset the team included WMP officers and staff from across the entire organization and technology, analytics and data science experts from Accenture.

This team quickly got to work to re-imagine WMP's analytics, intelligence and operational capabilities. Together, this team started by defining the cloud-first strategy and business case for change. Design Thinking and innovation workshops helped the team identify and prioritize potential use cases.

The team was able to identify how data and analytics could help achieve specific objectives. For example, in the area of force intelligence, how might they bring data together to provide quick, accurate insights into gang

affiliations? What data was most valuable? How should it be accessed? And by whom? How would they make sure the data would be used in a responsible way? The answers to these questions provided the foundation for a roadmap to creating an enhanced cloud-first solution with Amazon Web Services (AWS).

WMP is no stranger to cloud environments, having previously moved a number of its back-office processes to cloud. For the data transformation project, the team assessed its options and ultimately decided that AWS offered the reliability, security and scalability that was needed for the new solution. The team drew on specialists from the Accenture AWS Business Group and the strong alliance with AWS, to manage the complex cloud implementation.

The goal in establishing this first-of-its-kind cloud solution was, first and foremost, to provide a single version of data veracity. Eliminating the burden and time associated with searching through multiple systems for useful information was key. But the team also needed to customize the infrastructure to enable advanced analytics, customizable reports and dashboards, incorporate next-generation tooling and integrate AWS with other WMP systems to provide easy access to data and insights for users including 7,000 WMP officers, data scientists and other personnel. They also needed to make sure that the data would be used in a responsible way, which is a priority for all of the work that we do with public safety agencies.

When tech meets human ingenuity

Together, the joint WMP and Accenture team built development, testing and production environments in AWS, and securely connected them with other WMP systems. They used advanced machine learning and algorithms to match and scrub WMP's terabytes of data, consolidating ten million duplicated people records from eleven core systems to one million. And they built new machine learning models and customized software tools to enable the simple addition of new data sources in the future as well as fast data processing and advanced analytics.

Because it was essential that the new solution was easy for police officers and staff to access and use, the team developed custom, yet uncomplicated web and mobile applications.

Searching for information was so easy, in fact, that the 7,000 WMP users needed limited training. Similarly, the team developed automated, user-friendly dashboards to deliver results quickly and in a meaningful format. WMP and Accenture encourage users to provide feedback on the functionality and features of the new system and, based on those insights, continually improve its usability.



A valuable difference

Delivering data-driven insights

With Accenture's help, WMP became one of the first UK police forces to enable data-driven policing.

Today, a modern, scalable solution utilizing AWS enables 7,000 officers, staff and intelligence analysts to find the information they need and retrieve meaningful insights in a matter of minutes. The solution, which WMP is now managing, is expected to deliver millions of pounds in efficiency gains over the next five years.

Officers are embracing data-driven insights to better patrol and serve communities. Within just three months of deployment, 4,000 officers had adopted the new solution.

Accurate information on people, gangs, crime trends and more is easily accessible via their smart phones. Furthermore, officers have data they can trust, at their fingertips. The solution was designed to automatically reload fresh data from legacy systems into AWS every few hours. To support the officers in the field, WMP has established a Data Science Lab, which uses data to answer difficult and complex problems in a responsible way that support preventative actions.

A valuable difference

With great technological ability comes great responsibility

The data-driven insights project includes an ethics panel whose role is to monitor and provide direction on the use of machine learning and automation and that their principles are based on best practice.

WMP is the first police force in the UK to hire its own data scientists, data engineers and visualisation specialists to develop this capability in house. Our hope is that WMP becomes a pathfinder for other forces.

By making it easier for officers to do their jobs and enabling data scientists to identify trends, the data-driven solution is helping WMP make people in the West Midlands safer and more secure. Previously, officers spent considerable time managing data and searching for insights. Now, they can spend more time policing and interacting with the public. **In fact, with the solution's productivity gains, it's as if WMP has more than 150 additional officers patrolling the streets.**

Further, with detailed analyses guiding their policing efforts, WMP can help ensure that its officers are deployed to the right locations at the right time. Officers are not only in a better position to prevent crime from occurring but are also better informed and can respond to crimes that do occur more effectively.





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