

Avon and Somerset Police – Written evidence (NTL0052)

Introduction

Avon and Somerset Constabulary (ASC) believe that data is a critical organisational asset and, like our staff, is at the core of delivering efficient and effective local policing services. ASC have invested in being in a strong position to use data to best support both tactical and strategic decision making – as part of its mission to becoming an outstanding police force.

ASC have used advanced analytics along with data visualisation dashboards to democratise data insights to all levels of the organisation. The approach has been to place better insights in to the hands of those delivering the business to help empower and support more effective decision making. This has enabled greater visibility and understanding around demand, risk and threat. The force achieved an 'Outstanding' grading from HMICFRS in terms of 'understanding demand', which was strongly linked to the visualisation capability the force now has.

The organisation now has over 4000+ users of our analytics tools, ranging from frontline police officers through to back office and specialist functions. Insights can be easily gained from the Boardroom through to the individual officer. Whether a chief officer or a response police officer – there are analytics tools supporting decision making. At the time of early implementation of the tools, the Chief Constable provided a clear mandate – and that was for every part of the organisation to be driven by data.

More recently, our work with local authorities continue to evolve the power of insights that can be derived from data. We are now sharing data across agencies to use insights to collectively be better at identifying risk and vulnerability to support early intervention initiatives.

Business Need

Prior to the investment in new data tools and approaches, ASC had reached a point where the volume of data being collected against people and places was vast and the full nature of demand, risk, threat and harm was difficult to keep pace with. We had reached a limit on the extent to which analysts and researchers could deliver the variety and depth of insight across the organisation in the context of the incoming 'blizzard of data'.

ASC were previously using excel spreadsheets to deliver data reports to officers and teams. These spreadsheets were not close to real time, were not interactive and didn't engage operational officers very well.

As an innovative and progressive police force, and as part of our wider digital transformation, we progressed in the procurement and deployment of key tools that would take our use of data beyond the typical performance and audit function, to helping staff from all areas make better decisions.

Analytics Tools

ASC use a number of tools to enable insights to be drawn from data. The primary data visualisation tool is called **Qlik Sense**, which enables the wider

workforce to access and interact with data in order to drive better decision making. Qlik Sense draws on near real time data feeds and provides interactive dashboards for users. This allows the user the ability to make selections and ask questions of the data to help support decision making. For example, a neighbourhood officer can see an increasing crime trend in their area, identify what crime types are driving that increase and see which suspects have been linked to those offences and what property has been stolen. This enables the neighbourhood officer to be best informed in what decisions to make next in their response to the increasing crime.

In addition to Qlik Sense, ASC use the following analytics tools:

- **SPSS Modeler:** This is an advanced analytics workbench that enables the development and deployment of machine learning models.
- **ESRI Mapping:** This is a geographic information system (GIS) that enables ASP to view, create and interact with spatial data
- **BusinessObjects:** This is a production reporting tool that provides 'static' reports and supports ad hoc querying of databases

ASC elected to procure Qlik Sense in August 2016 following a review and evaluation of a number of similar products. Qlik Sense was the preferred tool, largely based on the end user experience and ease of development.

User Feedback and Engagement

ASC have an agile development team that work closely with business practitioners to build and deploy data dashboards. The development team are situated very close to the business environment and have a very strong working relationship. Analytics products are built iteratively, with close feedback loops from those requesting support.

ASP regularly survey users of the data visualisation platform. The workforce generally has high satisfaction rates with the use of the tool. Supervisors in particular have the highest rates of satisfaction. There are mechanisms for staff to feedback and request changes to products.

We also monitor the usage of tools to track engagement levels. We have relatively strong levels of engagement across both operational and non-operational teams. Additionally, as part of our annual People Survey, we ask staff a number of data themed questions to assess current confidence in using and understanding data to inform decisions.

Data Privacy / Ethics / Information Governance

The development of analytics tools in ASC is underpinned by Data Privacy Impact Assessments (DPIA), where each dashboard has a DPIA that is subject to governance oversight.

We have previously taken the use of analytics and predictive analytics to Ethics Committees and Scrutiny panels to ensure transparency on the use of tools and techniques. Additionally, ASC have taken a proactive and transparent corporate communications approach to highlighting the use of data and techniques to support policing.

As part of the algorithmic products, we draw on the ALGOCARE (Advisory, Lawful, Granularity, Ownership, Challengeable, Accuracy, Responsible and

Explainable) ethical framework to support the deployment of risk models. We have contributed to the development of a national framework for policing by the NPCC and the Centre for Data Ethics and Innovation.

As part of model development we do not include variables that include ethnicity or geo-location and we do not use 'black box' algorithms. We use desktop evaluation techniques to ensure models are fit for purpose (accuracy, precision, recall, confusion matrix, bias testing). Additionally, we operational test model results (individual case reviews) to ensure models are adding value.

Critically, any risk models deployed are as part of a 'decision support tool', there is **no automated decision systems** in place within any ASC tool. Any algorithmic tools serve as a scanning tool to help sift through the vast quantities of data and sits alongside other traditional information feeds to support **professional judgement**. This is made clear to users within the tools and guidance. So for example, a model identifying a child at high risk of sexual exploitation would be validated through additional information such as referrals, social workers, analysts and other data held on systems before a practitioner makes a decision.

Data Literacy

To further support the use and engagement with data and analytics, ASC have invested and created data literacy training modules as part of its Leadership Academy offering. The Data literacy package is designed to support all members of staff.

The e-learning modules for police staff and officers at all levels aims to further develop an understanding of data and analytics in a policing context. The aim is for this package to support our vision to be a data driven force that makes data informed decisions within a policing context.

Key objectives of the data literacy modules are:

- Build a solid understanding of how data plays a key role in policing
- Develop a robust understanding of Data Literacy and analytics for all police officers and staff to be comfortable with data
- Understand the power of analysing data and what good quality data looks like
- See examples of how you can use data to make informed decisions within a policing context

Benefits

ASC have many use cases and examples regarding the benefits of our analytics deployment. Below are some key use case benefits to highlight:

- **Fleet Management:** A number of data dashboards were developed to better visualise fleet (police car) availability and workshop (repairs / servicing pipeline). The regularly updated dashboards help monitor fleet availability across the force and helps optimise/prioritise workshop jobs (there is a live dashboard in the workshops).

Benefit: Through better prioritisation and use of data the teams have increased fleet availability (the equivalent of 45 cars back on the streets

per day) and have also been able to rationalise the fleet to save considerable costs. Data has achieved this with no additional investment.

- **Officer 'My Work' App:** A developed data dashboard is tailored to each operational frontline officer. They go in to the dashboard and all metrics/visualisations link to their own productivity, workload and compliance with key standards. The app is used to support self-management around key performance issues. Officers are able to compare and contrast their measures to their peer group to support learning.

Benefit: On creation of the app we saw significant reductions in the volume of data quality issues generated by officers (45% reduction) as they could better visualise the errors they were not previous aware they were making in our core operational systems. The dashboard also told the officers how to correct them.

- **Call Handling:** Working collaboratively with our call handling teams a range of dashboards were developed aimed at leaders, supervisors and individual call handlers. The dashboards visualised call handler productivity, time status', downtime and also helped see hourly demand vs resource forecasts to support more effective resourcing. Visualisation was used to better understand outlier call handlers and teams and the visibility enabled more effective 1:1 meetings between call handlers and supervisors.

Benefit: Combined with strong leadership, the data visualisation helped to significantly improve how ASC answered calls, particularly our 101 (non-emergency) call line. Over a 3 year period our abandoned 101 call rate (key performance measure) reduced from 15% to a stable 3%. The Avon and Somerset call centre is now considered to be one of the top performing police call centres nationally – recently achieving an outstanding HMICFRS grading.

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