Reducing crime with better visualisation of data

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<html> <div class=„cell small-12 medium-12 large-8“> Effective policing relies on good data. The prevention and reduction of crime, particularly serious and organised crime, depends on law enforcement agencies being able to gain swift insights from the huge and increasing amount of information at their disposal. The problem, given the sheer volume and variety of that data, is where to look first. So much of the data available to law enforcement data analysts and senior staff is unstructured. In other words, it doesn’t line up in an orderly fashion in a relational database or spreadsheet. Police forces collect data of many different types – images from CCTV, phone records, social media conversations and images, and so on. Tying that variety of sources together to achieve valuable insights is difficult. It demands the very latest in data integration tools, able to aggregate all information of possible relevance and present it so that it delivers insights via a single, easy-to-use platform and allows correlations between datasets to be discovered. With today’s data visualisation techniques, a picture emerges from different data sets without time being wasted on wading through information. Organised criminals work fast and change tactics regularly. Time lost in elaborate and complex manual data searches can give them the chance they need to move on and evade detection. Data visualisation is critical to today’s law enforcement efforts. It complements data analytics, converting information collected from various sources into a clear picture, displayed using familiar elements such as graphs, charts, and maps. By using natural language processing as well as artificial intelligence and machine learning capabilities, otherwise invisible patterns emerge. An easily digestible view of data can help in several ways. Here are a few of them: Interpreting visual data: The human brain can process visual data 60,000 times faster than it does text. Data visualisation gives law enforcement professionals a crucial edge because smart visual tools amplify human abilities and allow them to more easily spot anomalies or patterns in the data. They can also better understand operations, identify areas for improvement, and uncover missing evidence links for faster case resolution. Deploying predictive analytics: Having access to predictive and prescriptive analytics means that law enforcement professionals can build and deploy statistical models that provide alerts when new incidents are likely to happen, with context on circumstances that require pro-active investigation. Data visualisation is core to this because it provides an easy-to-understand translation of machine learning models and presents actionable intelligence. Patterns can be spotted, giving law enforcers a critical head start. Simple visual techniques such as assigning a range of amber to red colours to areas of concern on a map are highly effective. Sharing critical data: Data visualisation is not just of academic use to data scientists. It is useful for everyone in the law enforcement team, from officers on the street to supervisors and analysts in the office. Detectives investigating organised crime can use the visual output of these tools to see the connections between people, property and financial transactions within a crime syndicate without needing data science qualifications. Anyone can see what the data is saying. Different teams, indeed different police forces, can share information seamlessly without fear of system incompatibilities. More than that, today’s tools can aggregate all the relevant information within and outside an agency and analyse it to deliver insights via a single platform. Crucially here, data can be handled in a secure manner so only those with the appropriate clearance can see it. Managing tight resources: Law enforcers are always looking for more efficient resource allocation and better ways to juggle limited amounts of personnel and equipment. Badly organised resources can impact everything from crime clearance, departmental morale, and perception in the community. With a data visualisation platform,

they can spot areas that need immediate and long-term attention. They can also see which crimes have the biggest community impact and therefore need the most resources. Improving community relations: Data visualisation gives police a chance to connect with their communities, demonstrating the results of their work in a digestible and interactive form. They can showcase incident-rate trends, initiate awareness about emerging security concerns and foster community engagement. Sharing data builds trust and cooperation, making it easier in the longer term to gather evidence and solve cases. The right platforms are available today to allow law enforcers to make faster and more accurate decisions. The insights derived from visual analytics are already helping keep law enforcement personnel and civilians safe, reduce operational costs and improve investigation outcomes. The police are not in a position to share all of the successes they have enjoyed with data visualisation, but others can. For example, how the Scottish Environment Protection Agency (SEPA) uses data to address the threat of illegal polluters offers a close and relevant comparison. SEPA has a vital role in working with government, industry and the public to ensure regulatory compliance with environmental rules. It has a range of enforcement powers which it can apply to ensure that regulations are complied with. However, enforcement relies on the ability to intelligently analyse data from multiple sources, on air, water and soil quality for example. SEPA has millions of records dating back decades in a huge variety of formats and used to rely on manual collection, analysis and reporting of its testing samples to set alongside historic data to help spot pollution trends. With an analytics platform supplemented by data science and visualisation, SEPA has built a range of customisable solutions to address a wide variety of data-related tasks. Staff members carry visual analytics on a tablet wherever they go. No longer needing to write code or carry physical binders of data analyses, they can run data analytics on the spot and answer questions in the moment. Use cases can involve looking at pollutants, ecology and lab measurements, while others have covered industry compliance, laws and licences. Just as it has done for SEPA, data visualisation can help law enforcers to identify never-before-seen patterns in data to make better decisions now and help steer future direction to resolve hidden challenges in their effort to reduce crime. (Photo by Scott Rodgerson on Unsplash) Tags: analytics, crime, data, policing
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