

Case Study: Technology and performance management in UK policing.

Simon Williams, Research Fellow, and Dr Nicky Shaw, Senior Lecturer in Operations Management

Introduction

As organisations adapt to the seemingly ever-increasing pace of technological change, it is reasonable to query the role and impact this has on operational performance. This case study explores this theme.

Methodology

Using two UK police forces, fifteen face-to-face, semi-structured interviews were undertaken including a range of front-line and senior operational staff. This provided a total of nearly 12 hours of interviewing time, which was digitally recorded for transcription and analysis. The interviews were guided by two key research questions:

RQ1: How does technology assist the police in delivering better service performance outcomes?

RQ2: How can technology best support service performance improvements in future?

All aspects of operations policing performance, including both back office and front-line policing functions, were considered. Interview transcriptions were thematically analysed using first cycle coding (Saldana, 2016).

What they did

Analysis of the results identified ten overarching performance themes which ranged from day to day operations (e.g. officer visibility, decision making, and information sharing), future technology development (e.g. maximising data visualisation and analytics), and cross-cutting themes (e.g. missed opportunities with technology and the resourcing of IT).

Of all the themes identified, perhaps the most interesting finding was that the concept of operational performance in policing is changing to encompass a much broader focus to include factors outside traditional policing concerns such as safeguarding, harm reduction, and mental health, alongside new technologies such as predictive analytics which are beginning to enable *proactive* rather than *reactive* policing. Such aspects are challenging traditional approaches of performance measurement and management as services adapt to new and changing demands. Technology is firmly integrated as part of these ongoing and future changes, and will play an influential and critical role to future forms of policing practice.

What works?

Theme 1 – Improving the performance of officers: One of the most cited reasons for using mobile technology was to enable officers to be more visible to communities and the public, and also to stay out longer - essentially supporting greater levels of accessibility. Another perspective on performance in this theme became apparent in the positive benefit of technology to audit

processes, whereby technology helped foster higher standards of audit processes and operational transparency than traditionally seen.

Theme 2 – Improving the speed of information to support decision making: Technology improving the speed of decision making was noted, alongside benefits of convenience, because “*a lot of the conversations can be done digitally*”. Improved accessibility to information and improved quality of data (described further below) supported and ultimately led to improved decision making – a critical part of effective policing.

Theme 3 - Improving data quality: There were numerous examples of processes which had improved data quality when technology was introduced. This included moving forms from paper-based form-filling processes to processes using technology thus:

enabling access through smartphones, tablets or computers,

providing a much richer picture of information, and

ensuring data fields on forms were mandatory, thereby ensuring greater consistency of information captured.

What is promising?

Theme 4 - Aspirations of working with other agencies: This was discussed by a number of interviewees, with much made of the link with mental health and how the nature of policing increasingly focused upon safeguarding. This finding supported the conclusions of the Delphi Study (Shaw et al 2017) which found that whilst the biggest opportunity for transformational change in policing was multi-agency working, this was also cited as the biggest barrier.

Theme 5 - Using technology for predictive analytics: One of the Forces studied was beginning to explore the use of predictive analytics. This was perceived as a key area for how technology could best support service performance improvements in future. Interestingly, the predictive analytics pilot challenged existing ways of working by bringing additional focus on the work of officers through patrol plans and questioned whether the most effective ways of working were being used. Ultimately, predictive analytics was seen as improving performance by using data to facilitate “*achieving more with less*”.

Theme 6 – Changing nature of performance: This presented one of the most interesting findings from the case study, that the very nature of performance in policing is changing. This is focusing upon a shift away from purely crime and crime figures to safeguarding related issues, including mental health, missing persons and child sexual exploitation. This means that the information, nature of reporting, and business for the police is therefore changing, presenting challenges for technology and performance alongside challenges for wider resources and the interactions with other non-policing organisations.

What does not work?

Theme 7 – Improving the speed of information to support decision making: Data storage and access is critical for timely decision making, yet this has been historically recorded in multiple ways using different databases. The way data is collected and recorded means performance information can often be stored in silos, thereby making it difficult for staff to bring multiple sources of data together. This is beginning to change, but arguably not quick enough (e.g. “*it’s only recently that we’ve been able to connect, say, command and control data with our crime data*”).

Theme 8 - Challenge of using new forms of technology in new environments: The issue of new technologies being introduced into policing was not always compatible with the ability to use this in other environments, such as using video evidence in court. Whilst being more to do with hardware compatibility issues, this illustrates the need for other criminal justice systems to keep pace with new uses of technology in policing.

Theme 9 - Data visualisation: With vast quantities of data being gathered, there is a challenge to interpret and present information in practical formats. Some forces have found that whilst data visualisation is important, uptake by officers can be slow. The move to introduce such software can sometimes be seen to coincide with reductions in data analyst staff, underpinned by expectations that officers will access data visualisation tools through self-service apps (e.g. for stop and search, crime, etc). However, for one of the Forces participating in this study, adoption had been surprisingly slow. When asked why this might be, operational culture seemed to play a role, with officers seeing senior leaders accessing data in more traditional ways, and limits to data access resulting from licencing issues and the costs associated with these creating barriers. This presented a dilemma as to whether to invest in more licences or to adapt the existing licenses in other ways (e.g. for back office functions), and highlights a wider issue of technology adoption and benefits realisation.

Theme 9 - Missed opportunities with technology: It was encouraging that all interviewees in this study saw the potential for significant benefits resulting from the use of technology, including increased productivity and officer protection. However, whilst significant investment and technological changes have occurred over recent years, it became clear that opportunities for improving operational efficiency and effectiveness are still very much available, but not yet implemented. Examples of processes were shown which required duplicate and triplicate processing of tasks, and these could offer potential quick win opportunities.

Theme 10 - Resourcing and expertise of IT: The resourcing of the IT capability within the forces could be seen as a concern – staff can see the power of IT but want more from the IT function. Realising the benefits from IT implementation is a key part of this. The earlier example of implementing data visualisation software in one of the Forces studied in this research is relevant here, with their dilemma of not knowing if the lack of take-up was due to the software design or just the result of a limited roll out. Trying to establish the drivers of the lack of software usage to underpin decisions on whether to further invest or disinvest is challenging and potentially very costly. Having the appropriate expertise in such scenarios could prove beneficial both operationally and financially. As identified within Shaw et al (2017), considerable pressure upon police ICT staffing and resources can potentially limit the operational benefits of technology for police.

What do we need to know more about?

Throughout the interviews, it was clear that technology facilitated and enhanced performance measurement and management in numerous ways. Examples included improved speed of decision making, data quality, and enabling improved information sharing, analysis and insight. It could also be arguable that a ‘push and pull’ effect could be observed in the relationship between technology and performance, whereby technology is pushed to fit into new data forms or performance reporting categories, whilst technology is also pulling policing forwards into new directions of proactive rather reactive policing (e.g. through predictive analytics).

References:

Saldana, J. (2016) *The Coding Manual for Qualitative Researchers*. Sage Publications Ltd, UK.

Shaw, N., Williams, S.C., Allen, D.K., Norman, A., Gritt, E., Forsgren, E. (2017) *Delphi Study: Technology and Transformational Reform in Policing - Barriers and Enablers*. Leeds University Business School, University of Leeds, UK.