Rethinking the use of data and information in modern policing

DODS

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SIR THOMAS WINSOR,
HM Chief Inspector of Constabulary

Since my appointment in 2012, I have been struck by the way in which the administrative boundaries of police force areas play such a significant part in the way operational data is held, used and disseminated. The tragedy of the Soham murders in 2002 highlighted the terrible consequences when public authorities fail to know what they already know and, despite many individual force improvements, the police service still has a way to go to become truly borderless in the way in which information and intelligence is placed in the right hands at the right time.

In my State of Policing report in 2015, I emphasised that HMICFRS continued to find too many instances where forces had failed to keep up with technological advances and that there were only isolated examples of improving practices. Things have improved with a national introduction of body-worn videos, better mobile technology and improved systems. However, there are 97 contiguous land boundaries between the 43 forces of England and Wales, with some having five neighbouring police forces and one having as many as eight. The public needs and expects a seamlessly efficient and effective police service, what in other public services is usually called a network. Bringing forces together in ensuring interoperability and advancement in information technology which facilitates simple and immediate communications between officers and their headquarters, and between forces, is the very least that is required.

It is time for the police to have a network code: a service-wide decision-making mechanism by which police and crime commissioners and chief constables pool their sovereignties in order to maximise the effective use of technology, through the timely establishment of sound common standards with the overriding purpose of affordable interoperability at its heart. Until we have dissolved to nothing the remaining technological and human barriers that prevent law enforcement agencies from efficiently obtaining and using information and intelligence, lives could yet be shattered or even lost.

IMRAN RAZZAQ,
Public Sector Lead for UK, Ireland and European Union at MarkLogic

As the challenges facing policing and law enforcement agencies grow in volume and complexity, the need to transform and meet these challenges head-on has never been greater. The recognition of the role and importance of data and the necessity to unlock insights and deliver actionable intelligence is evident. Likewise the need to manage, search, analyse and present data quickly, efficiently and securely is central to the transformation that is taking place in Digital Policing. The findings and insights uncovered by Dods through their research from interviewing and surveying frontline police officers in the UK only reinforce this.

As Sir Thomas Winsor has rightly pointed out, the sharing of data insights in a seamless, timely and efficient way is equally crucial to protecting the vulnerable. Effective data sharing between police forces and other agencies is essential where criminals operate beyond the geographic boundaries that exist across UK law enforcement. The need to share this sensitive data securely is a must.

MarkLogic is at the forefront of assisting police forces with managing their most complex of data challenges. We are enabling the gathering of insight from multiple silos of operational data, which police forces can share with other partners securely and in real time. This in turn is helping to reduce crime, save lives and keep our citizens safe.

Finally, I would like to thank the many respondents who gave up some of their valuable time to take part in this research project and share such valuable insights.

Helmets and handcuffs are enduring symbols of the police force, but laptops and spreadsheets are increasingly doing the heavy lifting.

Police have unprecedented access to data that they draw upon daily to facilitate their duties to promote the safety and security of local communities. It would hardly be an exaggeration to say that police today are just as much data analysts as they are street patrols.

And as data becomes more prevalent, so too do the police become more reliant on it. Just one of the findings from our research highlights that 89% of respondents rely on gathering data to do their job efficiently. Collecting and analysing data is therefore inextricably tied up with their work.
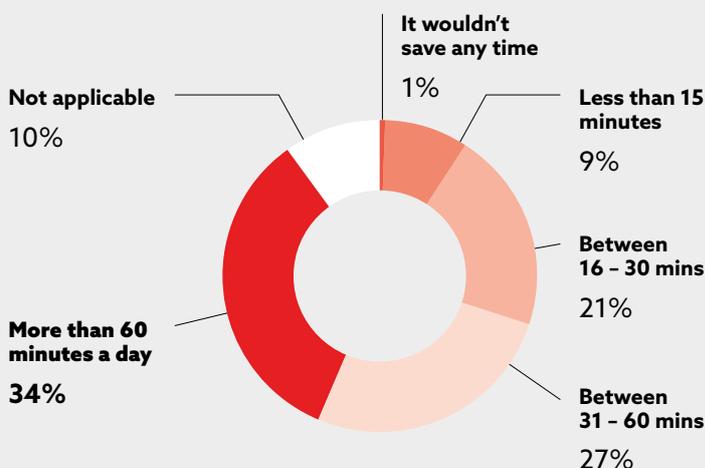
But how easy is it to access that data? Do the police have the right tools to get the information they need in a timely fashion? Our research provides answers to these questions and sheds light on some of the obstacles men and women in law enforcement face on a daily basis.

The overall picture is not just that there's significant room for improvement, and that respondents are frustrated with the status quo, but also that they are largely unaware of any comprehensive plans to make changes within their departments.

Searching high and low

A common issue faced by police forces is poor search functionality. Since time is of the essence in the field, police rely on search tools not only to find accurate information but to find it quickly. But current search tools leave much to be desired. One respondent complained that the search engine they use on the job is cumbersome: "For me, searching should be as easy as Google."

"If you could access all operational data through one search, rather than multiple searches, how much time, on average, do you think this would save you on a daily basis?"

It wouldn't save any time
1%

Less than 15 minutes
9%

Between 16 – 30 mins
21%

Between 31 – 60 mins
27%

More than 60 minutes a day
34%

Not applicable
10%

Numbers may not sum to total due to rounding.

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The most significant impediment to quick and easy searches is not so much the speed with which data is retrieved in a single search, but rather that data must be retrieved through multiple searches.

Respondents were asked to quantify this wasted time by estimating how many hours they would save daily if they could access all operational data through one search.

Respondents were near-unanimous (91%) in stating that they would save time on a daily basis if they could access all operational data through one single search rather than multiple searches as is currently the case. Over half (57%) of those surveyed said they would save between 15-60 minutes a day, while more than a third (34%) stated that they would save over an hour every working day.

"By sharing all relevant information, managers are able to understand the bigger picture. We can see what interventions are in place, what's working, what's failed, who's supporting a person, who isn't. Almost every single serious case review I've sat on has highlighted the need to improve information sharing."
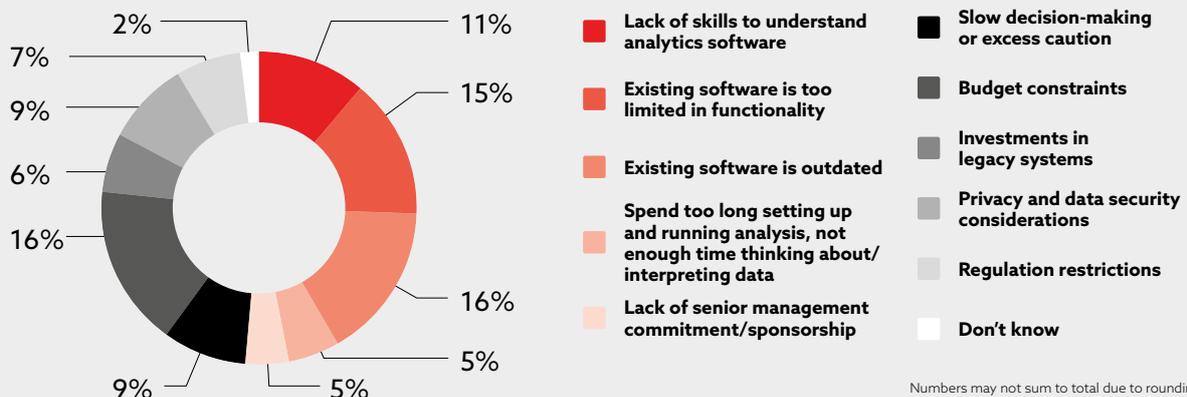
Police Officer, 4-7 years

Tools of the trade

Poor search tools are just one of a number of difficulties faced by law enforcement officials on the job. Better understanding these challenges begins with identifying the most common obstacles that are faced on a daily basis. Respondents were therefore asked about the barriers within their organisations to using data analysis techniques more efficiently, yielding an illuminating mix of responses.

"Do your existing tools and technologies provide you with the information / data and functionality necessary to do your job effectively?"

Yes
55%

No
38%

Don't know/
not applicable
7%
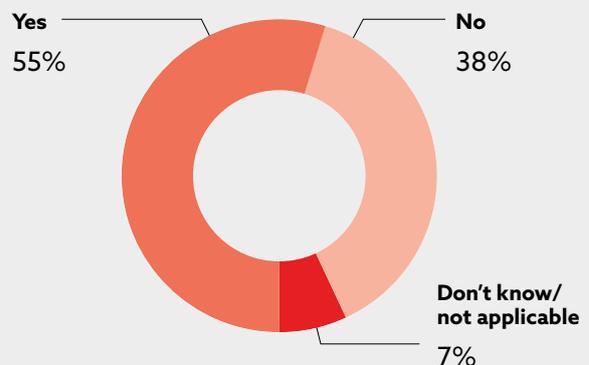
"What do you see as the barriers in your organisation to using information and data analysis techniques more effectively?"

11%
15%
2%
7%
9%
6%
16%
16%
9%
5%
5%

- ■ Lack of skills to understand analytics software
- ■ Existing software is too limited in functionality
- ■ Existing software is outdated
- ■ Spend too long setting up and running analysis, not enough time thinking about/ interpreting data
- ■ Lack of senior management commitment/sponsorship
- ■ Slow decision-making or excess caution
- ■ Budget constraints
- ■ Investments in legacy systems
- ■ Privacy and data security considerations
- ■ Regulation restrictions
- □ Don't know

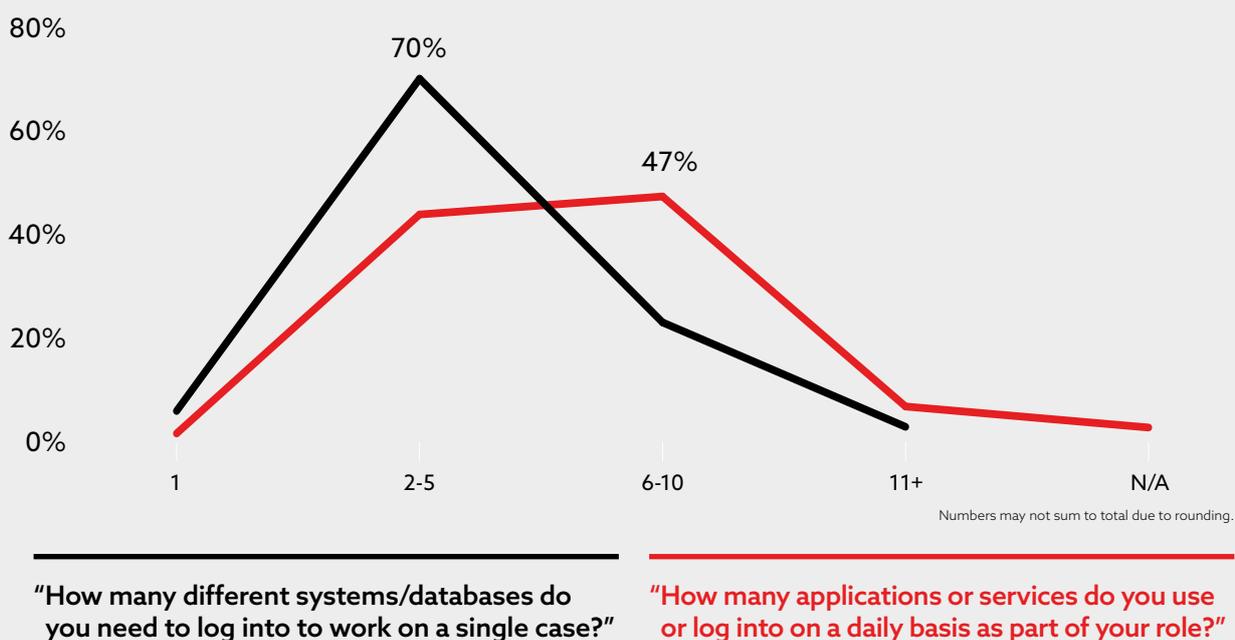Numbers may not sum to total due to rounding.

But by far the greatest barrier to improving the efficacy of existing practices is software and applications that are outdated and limited in functionality. Close to a third (31%) of respondents say that their current software is either too limited in its functionality or obsolete. Irrespective of whether the software is good or bad, 11% of respondents say their organisation lacks the skills to understand it. That means that roughly 42% of the police force is not getting what they need from existing software, either because they can't interpret it or, far more likely, it's not fit for purpose.

These numbers tally with the significant 38% of respondents who say that their existing technology doesn't provide them with the functionality necessary to do their job. Respondents blame everything from "clunky and inefficient" systems to computers and applications that freeze and crash. One respondent noted his or her organisation still relies on USB sticks to transfer information between networks, while others highlighted that network firewalls, which are meant to protect organisations, actually block access to useful online tools.

It's complicated

One of the most significant drawbacks of existing police software, aside from poor search functionality, is the disconnected nature of the systems. This was tested by asking a simple question: how many different systems or databases do you need to log into to work on a single case? 95% use at least two systems, and 25% use anywhere between six and more than eleven.

When asked how many applications they are logging into in a single workday (rather than a single case), the numbers are even worse. Over half (53%) of respondents log into at least six different systems in a single workday, and every police officer surveyed logs into two or more.

Numbers may not sum to total due to rounding.

"How many different systems/databases do you need to log into to work on a single case?"

"How many applications or services do you use or log into on a daily basis as part of your role?"

Respondents called this "chair swivelling", it results in "duplication and is very time-consuming". One respondent mentioned having to collate data from databases and individually maintained spreadsheets. Many respondents highlighted that systems "don't link" and "don't talk to each other" or aren't "joined up". It is clear that respondents desire "a more integrated suite" where everything can be accessed in one place.

This frustration is hardly surprising in light of the fact that 89% of respondents rely on gathering data from computer applications to perform their job effectively. For these respondents especially, duplication would be much less of a problem if it were easy to collate data, but 41% of those surveyed say it is difficult or impossible to do so.

When it comes to collating data from other organisations such as Social Care, Welfare & Benefits, Education and Healthcare, virtually all respondents say this is critical to aiding public protection. The solution, many respondents agree, is to share data. **The words "share" and "sharing" appear in over 80% of open text responses. Clearly, there is recognition that efficient, timely and secure sharing of information that can support early intervention is critical to effective safeguarding.**

"Data used properly can help make better informed decisions, which provide better outcomes for a person or victim. If used properly it can also help spot early trends, which could lead to better detection rates and resource deployment."
Police Officer, 8-10 years

The scheme of things

The challenges faced by the police force, particularly relating to ineffective software and tools, do nothing if not highlight the need for an effective data transformation strategy. Even if the top items on respondents' wish lists – seamless data integration, easy searches, and up-to-date technology – are presently out of reach, police organisations should rest easy knowing they're taking steps to improve.

At least that should be the case. More than half (53%) of respondents are either unaware of their forces' data transformation strategy or don't even know what a data transformation strategy is. This is a sad indictment on what is one of the most critical aspects of digital transformation in the police.

"Do you have, or are you aware of, a data transformation strategy for your organisation?"

Don't know
14%

No
27%

Yes
20%

I don't know what a data transformation strategy is
39%

No
71%

Yes
11%

Don't know
17%
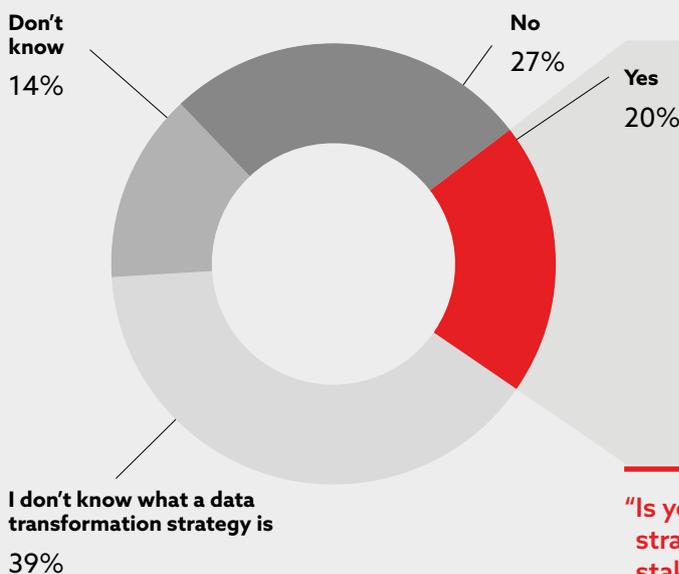
"Is your organisation's data transformation strategy understood well by staff and stakeholders?"

Numbers may not sum to total due to rounding.

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In Summary

Developments in new technology have seen traditional threats such as safeguarding, fraud and terrorism take on a new trajectory. Current funding requirements mean that police forces are being asked to deliver better outcomes and deliver more with less. It is clear that new technology can help counter these new and evolving threats. However, the findings from our research highlight the following:

- Current systems and processes result in a significant amount of time wasted in police investigations

- Current IT is not delivering the capabilities and functionality that police officers need to deal effectively and quickly with enquiries

- Data is critical to effective investigation, and there are numerous obstacles to the efficient gathering and analysis of data

- Part of the problem is the disconnected nature of systems and their inability to share data quickly and securely

- There is a lack of skills, experience and training in the use of new technologies and processes, including data science and analysis

A Call to Action

The actionable intelligence that saves lives and protects the vulnerable is essential to modern policing. As the people that perpetrate these crimes adopt increasingly advanced techniques to 'mask' their activities, police forces need to use cutting-edge technologies to identify and prevent crime. Data is at the heart of the challenge. Being able to collect, harvest, integrate, link, analyse and present data in an accurate, speedy and efficient way is how police forces will win the war against increasingly sophisticated techniques that criminals adopt.

There is a tidal wave of technologies that are now becoming mainstream that can help policing get on the front foot, including Machine Learning and Artificial Intelligence. All of these require databases that can manage structured and unstructured data, allowing relationships between information to be identified.

Advanced analytics and visualisation tools are increasingly being used by students at an early age. Natural language processing, advanced search technologies, virtualisation and cloud technologies are being adopted by enterprises, big and small. These technologies are all leading us to an inflexion point where we will see them deliver data, insights and intelligence that will radically reduce the time and cost to perform investigations while improving accuracy and delivering better outcomes.

To be more effective, police forces need to innovate and this means taking risks on new technologies that allow them to easily leverage all of their data. Police forces using the latest technological advances will be at the forefront of the charge – they will lead policing as we see collaborations and consolidations increase over time.

Dods Group PLC conducted this research in partnership with MarkLogic Corporation to explore how police forces today are using data, what the barriers are to using data more effectively, and the importance of being able to share data with other organisations.

The research collected responses from 34 different regional police forces across the United Kingdom between 15th September 2017 and 18th October 2017. Of the 173 respondents to the online survey, 79% have been serving in the police force for 11 years or more, with the majority (69%) of all respondents being police officers (59%) or police community support officers (10%). Other roles included management, analyst, IT, communications and operations.

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