



**Open Source Communications
Analytics Research (OSCAR)
Development Centre:
FINAL REPORT**

Open Source Communications Analytics Research [OSCAR] Development Centre

FINAL REPORT
EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

Commissioned under the Police Knowledge Fund, the OSCAR (Open Source Communications Analytics Research) Development Centre was designed to deliver independent research evidence and insights about how the information age and big data are having a transformative impact upon the investigative, intelligence and engagement functions of the police. Premised upon a co-production methodology that blends academic and practitioner expertise, OSCAR has made a significant contribution to policy and practice development relating to digital policing.

'Open source communications' are defined as publically available data, often (although not exclusively) derived from social media. Police, along with many other public service agencies and commercial organisations, are increasingly looking at how collecting, analysing and interpreting such materials can inform their organisational strategies and behaviours. Included within such development work are how these new forms of data are inducing new legal, ethical and regulatory challenges in terms of appropriate use. There is, it is argued, a unique police position on the role and value of open source communications data that needs to be worked out, reflecting the particular institutional mission of the police and the operational principles associated with the UK police tradition. As such, how police seek to engage with and use open source differs in important respect from the approaches of intelligence agencies. Open source also has the potential to reduce police reliance upon the use of covert and intrusive forms of intelligence collection.

The OSCAR approach possessed several innovative attributes affording advantages when compared with previous contributions in this space. Specifically:

- OSCAR adopted a holistic view of open source communications data across a range of policing disciplines including Neighbourhood Policing, public order, major crime, organised crime and

counter-terrorism. It also explored how open source materials were informing intelligence work, crime investigations and public engagement strategies. This differs from previous police approaches which tend to be framed by a particular policing discipline or problem focus.

- The independence afforded by having academics experienced in working with police steering the programme, was attributed high value by practitioners. Open source is an area where a large number of commercial suppliers are claiming to be able to provide 'solutions' to policing needs. However, because these are 'black box' products robustly evaluating such claims is difficult.
 - A lot of research and development work in this domain has focused upon technologies. OSCAR included these issues within its remit, but also invested significantly in establishing a rigorous and fine-grained understanding of how and why police users perform their investigative, intelligence and engagement functions using particular methods and techniques.
 - Uniquely, a proportion of the research with police OS users was conducted in live operational contexts, yielding direct and tangible policing benefits.
 - The OSCAR team also undertook several experimental studies to investigate how emerging technologies might impact on OS intelligence systems in the relatively near term.
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National Lead for Open Source and Digital for Counter-Terrorism Policing

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Key findings and insights of the work conducted include:

- Realising the significant potential operational benefits to policing of systematically integrating the collection and analysis of publicly available open source communications data is being hindered by the lack of a comprehensive and panoramic national strategy. Multiple NPCC portfolios and working groups are engaging with open source as an issue, but the approach is fragmented and cluttered.
- Current organisational approaches tend to separate out how the police service deals with open source communications data for intelligence/investigative purposes and to inform public engagement. This is a legacy of how police intelligence processes and systems were organised in the past, rather than recognising the particular affordances of open source data. There is a case that an open source communications unit should blend both analysis and communications functions.
- Important findings were identified by conducting detailed ethnographic observations of open source work in practice. This found that only a relatively small proportion of police workers possessed high levels of investigative and technological / methodological competency.
- Evidence collected suggests a need for policing to develop a different workforce skill mix, and to move towards team based models of OS working as opposed to current 'sole' analysts.
- The analysis defined 8 open source analysis methods: event detection; enrichment; lifestyling; mosaicing; tracking & tracing; risk profiling; decision support; atmospheric. With subsequent development these insights could inform the development of a de facto open source methodology for policing.
- Related to the above, there are implications for how UK policing procurs technology for this domain. The current situation is that most users do not have skills to match the functionality of the principal software packages supported by the service. There are two possible response pathways: (1) upskill the police user community; (2) simplify the user interfaces of the software platforms so they take up more of the 'effort'.
- Current police approaches are overly structured by tasking, tools and targeting. Developed for more orthodox intelligence management, these processes constrain OS based work.
- Nationally there is an 'R&D' gap in terms of how UK policing identifies, designs and delivers solutions to current challenges and needs in respect of OS exploitation. By developing a 'skunkworks' mode of operation with key partners, OSCAR plugged that gap effectively.

Key impacts of the OSCAR programme include:

- Very quickly OSCAR established international influence and reach. Over the 18 month funding period 5 invited international presentations were made to organisations including: US Army Defence Labs; US Dept. of Homeland Security; Nato; Europol.
- New relationships were brokered with domestic agencies such as DSTL.
- Providing spaces where practitioners could engage in guided thinking about future technological, social and policing issues, having some of their assumptions constructively challenged.
- Convening a network of 'thought leaders' from within policing on the subject of open source and investing in their skills and knowledge. Interestingly, building upon the first few formal programme events, these individuals organically started visiting each other to develop their own thinking and exchange effective practices.
- Testing some innovative approaches for police-academic collaboration to demonstrate how they can occasion dynamic learning environments for developing the skills and knowledge of police staff, without requiring extended absence from the workplace.

A major piece of work was undertaken in partnership with West Midlands Police in relation to their policing of the Conservative Party Conference. By establishing a parallel OS unit, the OSCAR team provided enhanced OS collection and analysis capability, whilst simultaneously conducting experiments upon the potential impacts of several emerging technologies. The Intelligence Bronze for West Midlands Police concluded that:

"Ultimately the work conducted by the OSCAR researchers was of the very highest quality and eclipsed the Open Source work conducted by WMP. The level of detail and comprehensive coverage that they provided gave me a great deal of confidence as Intel Bronze and my only regret was that we couldn't have this level of support for every major event!"

In terms of evaluating its overall impact, OSCAR significantly exceeded its aims, objectives and specified deliverables. It identified a gap in knowledge and skills, and 'plugged' this, in the process contributing significant evidence for the development of digital policing and future operating models. Confirming the value of the OSCAR approach, the national lead for Open Source and Digital for counter-terrorism policing evaluated the project's impacts as:

"One of the most important pieces of work was reviewing the ways of working within open source practitioners. This insight has allowed us to improve training programmes and change our thinking about how we hire staff... OSCAR has saved the taxpayer significant money assisting us these areas."

On the basis of the evidence and insights collected by OSCAR the following recommendations are made:

- 01.** Open source communications conducted via the internet and social media platforms are the new public spaces of social life in the information age. As such, 'communications policing' is the new community policing and should be understood as equally central to the police mission. Currently, more value is assigned and attention paid to covert intelligence sources. However, as has been observed with a number of other organisations, this is rapidly changing. Consequently, consideration needs to be given to the appropriate balance between generalist and specialist functions, and the idea that OS collection and analysis should be routinely integrated into investigative, intelligence and engagement work performed by police.
- 02.** The UK police service's approach to developing open source capacity and capability to respond to the rapidly evolving information environment is fragmented and fractured. This partly reflects the pace of change in digital technologies and their disruptive influence on policing, but is amplified by a cluttered governance landscape. Multiple NPCC portfolios, working groups and national programmes are all claiming some interest in and responsibility for open source development, often from a particular standpoint. A more unified and strategic approach is urgently required, introducing a clear sense of who, at a national level, 'owns' 'open source communications'.
- 03.** In establishing this more strategic position, the police service needs to take seriously the idea that policing can and should apply open source communications data differently to 'pure' intelligence agencies. This involves developing new methodologies and approaches, as well as unique ethical considerations. The regulatory environment has not kept up with technological innovations and the implications for public safety of these. The police service would benefit from engaging proactively with these issues to develop an evidence-based position on where public permission lies in terms of their different possible approaches to using these new forms of public data.
- 04.** The implication of the above is that forces move to blend corporate communications and OS intelligence capabilities to meaningfully engage with the information age. Current organisational processes for managing open source communications are legacies of covert source intelligence systems, rather than being designed for the affordances of openly sourced data. Consequently, police are not routinely obtaining maximum value from open source. A truly open source communications unit would possess ability to monitor public data and engage with the public through these channels to gain more data when needed.
- 05.** Police should recruit or make arrangements to routinely access data scientists. This is not a skillset currently integrated into the police workforce. Many private and public sector organisations have already realised the importance of enhancing their abilities to collect and analyse big data. Similar imperatives apply to the police service if it is to adequately respond to the digital future. This involves a significant shift in understanding within police organisations about 'what an analyst is and what they do'.
- 06.** The OSCAR Program has demonstrated the police service can build highly effective and agile working partnerships with academia providing a 'knowledge accelerator' and 'skunkworks' R&D capacity and capability.
- 07.** A new organisational model for OS work is advocated. This is predicated upon establishing OS + all-source teams. Our evidence is that this is more likely to generate the blend of skills needed for effective

OS exploitation, and promote informal learning and problem-solving, than the current autonomous model of working. These teams would comprise an: advanced practitioner; researcher providing data science/network analysis skills; an investigator; and a data processor.

08. Police seem reluctant to engage in digital behavioural influence messaging. We know that much street policing relies upon effective persuasion when interacting with members of the public. Developing a digital equivalent to this has considerable potential to disrupt a range of crime problems, reduce harm and persuade people to adopt crime prevention measures.

09. Individually and collectively, UK police forces should examine their technological and data requirements. Currently, considerable sums are being spent on software licences for platforms that provide functionality far beyond that which the majority of users can harness. Likewise, forces are paying primarily to view data, which cannot be extracted or exploited. Following the present course the police will always be servants to the data providers. This model needs to be reversed.

10. Dynamic Learning - the OSCAR experience suggests wider implications for the development of evidence based policing approaches. Several components of OSCAR's work were undertaken in relation to 'live' policing operations, with both academic and practitioner expertise being utilised. Key findings were subsequently distilled via retrospective analyses of data collected and de-briefing exercises. Such activities added considerable value to the learning of participating individuals and act as a police knowledge accelerator and should become part of the police's repertoire for on-going development.



Want to find out more?

Our briefing papers and reports are available for free download from: upsi.org.uk/publications
Some of our recent publications include:

- 01** The Open Source Communications Analytics Research (OSCAR) Development Centre & the Challenges of Open Source
- 02** SENTINEL: Localised Situational Awareness via Social Media
- 03** Red Teaming: A Dynamic Methodology for Challenging, Critiquing & Posing Counterfactuals

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