"I've been overwhelmed and under whelmed by what mobile data is actually doing for police officers on the ground."

Getting IT right – exclusive interview with Pauline Smith MBE, Nottinghamshire Police.

Information management for civil contingency responders

BAPCO

Volume 16 Issue No 5 • September 2010 • £3.50

Delivering mobile data

Spending extravaganza – two years on

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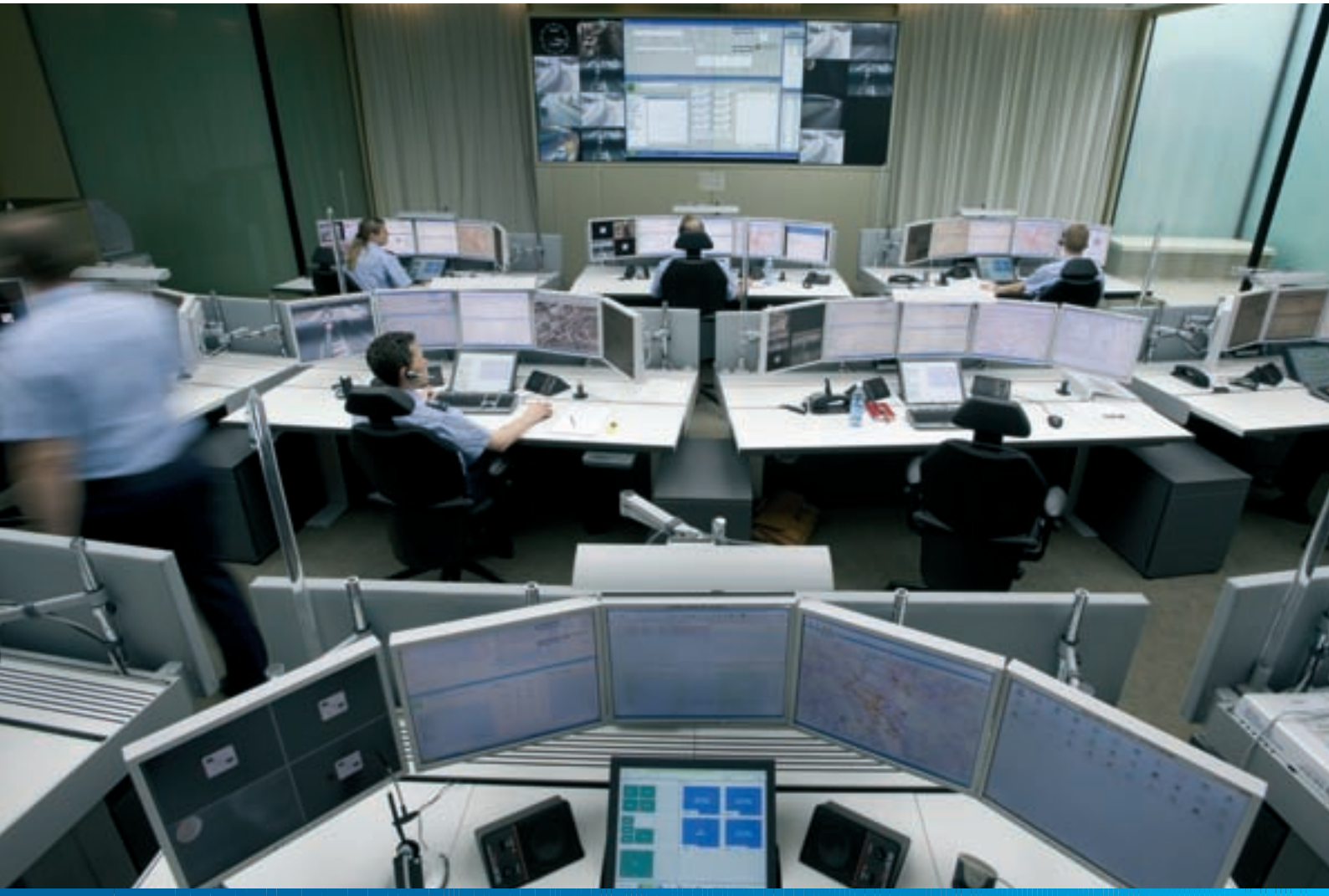

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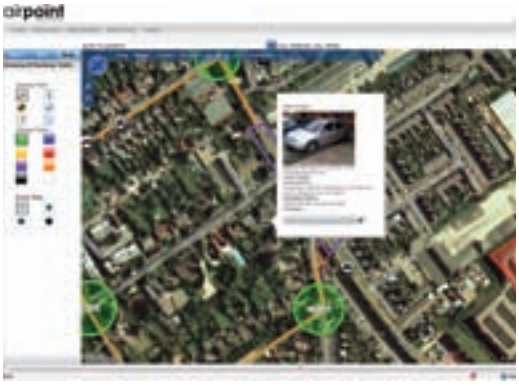
Contents



Front cover artwork by www.blackcoffee project.com.

NEWS

05 Motorola Solutions and Ericsson form alliance to offer "unprecedented" situational collaboration and awareness

06 Community messaging in Norfolk

07 Salford reaps benefits of crime project

FEATURES

12 Delivering mobile data in the police
Highlights of a packed programme provide a meaningful snapshot of where we are today with mobile data.

20 Handheld devices – the lowdown
Millions of pounds will be wasted on handsets and systems that may no longer be supported by manufacturers.

22 Your "eyes on the ground"
Focus on a niche surveillance application that provides detailed situational awareness on the front line.

24 Nottinghamshire Police – interview
Since Pauline Smith MBE's appointment Nottinghamshire Police has embraced technology and reaped the rewards.

COST CUTTING AND EFFICIENCIES:

26 Driving automation in telephony
How self-service telephony and automation can connect with business process.

28 Infrastructure solutions
Casting a fresh pair of eyes on your data/voice network could be quite revealing.

30 Fraud-busting tools
Data analytics tools used in the financial sector can be harnessed in the public sector.

33 Take control of your mobile fleet
Why embracing a mobile policy is crucial.

34 Conferencing during crises
Why voice conferencing is beneficial for first and second responders.

REGULARS

04 Editor's comment, President's address, and CAG column

11 BAPCO News

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Editor's comment

In this issue we have a real treat for you – extensive coverage of the conference that took place in June, *Delivering Mobile Data in the Police*.
The upshot is a mixture of the good, the bad and the ugly. Jan Berry, an advisor on reduction of unnecessary bureaucracy in the police service, has been both overwhelmed and under whelmed by the current situation in mobile data. The financial crisis, she said, will focus minds on the funds tied up with 43 chief officers and 43 IT departments – not to mention a multitude of criminal justice partners. Mandation, she believes, is an absolute imperative.
Past history has shown that mandation is not necessarily a recipe for success – think ID cards and regional control centres.
Meanwhile, the news that Sir Philip Green has been appointed to look at Government spending has arrived, with murmurs about central procurement. This leaves me with a sense of déjà vu – isn't that what Firebuy (for example) was meant to be about?
One thing is beginning to be clear, however, and that is until business process in all emergency services is properly – and perhaps to a mandated national model – streamlined, then the vast majority of localised IT projects will continue to be ephemeral and a waste of money.

Jose Sanchez de Muniain

President's address

I hope you have picked up from our newsletter that following our extra ordinary meeting in July, Tony Antoniou has been appointed as the new Executive Director of BAPCO. I am sure you will join me in offering Tony a very warm welcome to this organisation and I know he is planning to meet as many key stakeholders as possible over the next few months.
The Executive Committee have also collated the views from commercial members and delegates regarding last year's annual exhibition and conference and are reviewing these as planning for next year's event starts to take place. The Executive Committee are very mindful of the financial pressure facing public, private and third sector organisations and will endeavour to ensure that the exhibition and conference for 2011 offers excellent value for money.

Hayden Newton, President

The CAG column

Welcome to the September edition of the CAG Column.
I can't believe it's September already and that we are on the countdown to Christmas! I hope those who have been on their Summer holidays enjoyed them and now feel refreshed and ready to face the future with renewed vigour, both on their own behalf and that of BAPCO.
You will, by now, have probably realised that are to be no Autumn Roadshows this year due, mainly, to the economic situation, both with our Blue Light members and our suppliers: we can take advantage of this situation, however, by supporting, with extra enthusiasm, our Regional seminars and mini exhibitions. These will hold particular significance this year as there will be no need, or very little need, to travel far or for overnight accommodation – a situation which will, hopefully, encourage a higher attendance and interesting presentations, possibly of the interactive variety.
Dave King, our CAG Chairman, is hoping to hold a meeting of as many of the Commercial Group (not just CAG Committee) as possible at the end of September to discuss the way forward and how to encourage more involvement of our suppliers so that decisions do not simply rest with a committee, but will gain the support of everyone. I hope this meeting will be well supported as it deserves to generate input from all concerned. In this way, CAG will become an influential group and appreciated by all our active membership for its independent advice and guidance.
Until next time,

Colin Evans, CAG Secretary

Motorola Solutions and Ericsson in alliance

The industry leading LTE-based (long term evolution) solution for public safety mobile broadband will interoperate with mission critical voice and data to unify the delivery of high-performing voice and broadband multimedia applications.

LTE mobile broadband technology will allow Motorola's unified next generation platform to provide the advanced communications capabilities demanded by public safety with real-time information sharing between an integrated multimedia command centre and a collaborative portfolio of rugged radios, in-vehicle terminals, and handheld LTE data devices.

Ericsson will provide the benefit of global scale economies and proven performance across a large, globally deployed LTE base.

Combined with Motorola's public safety optimised LTE core and interoperability platform, Ericsson will provide its industry leading LTE access equipment as well as parts of its packet core and related services to deliver broadband multimedia services to public safety. Motorola's advanced devices, video security and command and control solutions will leverage these platforms to offer public safety unprecedented situational collaboration and situational awareness.

"Motorola is committed to innovating where it matters most for public safety to ensure that the end-to-end public safety solution is tailored and hardened to meet the strictest requirements of public safety missions," said Bob Schassler, senior vice president worldwide radio solutions. "As we implement our comprehensive next generation solutions, Ericsson will be a valuable partner for the delivery of LTE technology to our public safety customers."

Motorola is focusing extensive investment in resources and development to drive the critical innovations in the core applications and devices necessary to serve the unique requirements of a public safety LTE broadband solution.

Additionally, Motorola will deliver the full spectrum of advanced services to design, implement, support, secure, and manage these broadband networks. As part of Motorola's broader next generation public safety platform, LTE represents a necessary component for transforming the end-to-end public safety workflow, supplementing mission critical voice and data communications with advanced multimedia applications delivered to innovative public safety devices. "High speed mobile broadband and LTE based technology provide new opportunities for the public safety sector," said Ulf Ewaldsson, Vice President and Head of Radio networks, Ericsson. "4G enables a number of new applications and video communication from the site of accident to the communication central. Improved situation awareness empowers efficient decisions, secure assets and property and may in the end, save lives."

1,000th Barnsley officer issued with BlackBerry

Frontline officers and police community support officers (PCSO) in Barnsley now have access to police records on the move, meaning less time at the station and more time in the community.

PC Jason Pearson, from Wombwell police station, recently became the 1,000th officer to be trained and issued with a BlackBerry Smartphone and by February 2011 all frontline officers and PCSOs in South Yorkshire will have a device.

The BlackBerry allows officers to access real-time police information and records to identify a person and vehicle and will eventually allow officers to complete certain forms.

Sergeant Simon Davies, Project Manager at South Yorkshire Police, said: "Enabling our officers to access key information on the move is a major step forward and we're expecting to see the community benefit from a more visible force continually patrolling the neighbourhoods."

Work is currently underway to add further functionalities to the device, which officers currently have to do back at the station, such as submitting intelligence reports regarding offenders and gaining key information about incidents.

SAFEcommand to take place in Newcastle

Astrium Services' wholly owned subsidiary Infoterra will host its annual SAFEcommand Conference & Forum on Tuesday 5-6 October at St James' Park, Newcastle United Football Club.

The SAFEcommand free event (previously known as iMass) is open to Emergency Service Sector decision-makers who need to keep up to speed with the latest product and service developments in the blue light and homeland security sectors.

Attendees will also be able to enjoy a stadium tour and benefit from a range of networking opportunities.

SunGard is awarded framework

Buying Solutions, the national procurement partner for the UK public sector, has awarded SunGard Public Sector a position on its IT Managed Services framework agreement.

The new agreement provides the public sector with a wide range of IT services, from desktop support to fully managed IT, and is awarded to suppliers based on a range of criteria including sustainability, pricing and service delivery.

Lee Hendricks, sales and marketing director for SunGard Public Sector, commented: "We are pleased that SunGard has been awarded one of the 12 positions on the IT Managed Services framework agreement. We look forward to bringing our public sector services to a wider audience and helping public sector organizations respond to the unprecedented cuts in public spending."

Norfolk encourages public to engage with the police via IT

Norfolk residents are getting the latest news from their local policing team direct to their email inbox, mobile phone, landline and fax thanks to a newly-launched community messaging system. For the first time people can sign up for information about crime, safety and crime prevention advice, police meetings and convictions relevant to their town or village in a format they so wish.

The system, called Police Direct, was launched in July to increase the ways in which the Constabulary communicates with the public, encouraging the public to engage with the police. The technology for the Police Direct service is provided by HTK Limited, who also provide the Police Direct service to neighbouring Suffolk Constabulary and other police forces across the UK.

In the first few weeks in excess of 3,000 members of the public have signed up to receive police information, including co-ordinators and members of Norfolk Home Watch. The public can also sign up for information according to different areas of interest including retail and business, tourism and leisure, agriculture and Airport Watch.

All messages residents receive are free. Registration is simple via a link on the Norfolk Constabulary website, through the Constabulary's switchboard or by filling in a form at one of Norfolk's Public Enquiry Offices.

Residents are automatically sent information from their Safer Neighbourhood Team according to their postcode. At the click of a mouse it is also possible to receive information from other areas of the county. Members can opt to receive an e-newsletter highlighting the work being carried-out by their local Safer Neighbourhood Team. It is also hoped the system can be rolled out to instantly inform people of major road accidents and diversions.

Kent FRS's online performance plan

Kent Fire is the first FRS to design its annual service performance plan specifically for the internet.

The plan, which has been published on its website, aims is to reach a wider audience with information on performance and plans for the future, as well helping reduce costs and the environmental impact of printing. The plan is also being promoted via social media such as Twitter.

The plan sets out KFRS's ambitions for the next 10 years and, following consultation through the last integrated risk management plan, it details plans for the future. There are sections for each of the new KFRS corporate objectives, as well as supporting information such as – the role of KFRS, a summary of incidents, and performance Information.

For the record

Recording provider Cybertech has launched CyberTech MAX, an unlimited scalability recording platform that can support above 40,000 recording channels.

The new open-software solution is designed to address the growing needs of mission-critical environments, said the company.

Cybertech MAX will allow organisations to centralise their call recording operations in both IP and traditional telephony environments by linking multiple recording servers.

Correction

On page 22 of the July/August issue the Information Commissioner was referred to as Richard Thomas (*Public sector could lead the way to cloud computing*).

Richard was the previous Information Commissioner – the new Commissioner is now Christopher Graham.

Flatbook makes debut in UK

German company Bormann has launched the Flatbook C09 mobile wireless PC for use in any police vehicle following what it calls "a very successful launch across Europe".

Already in operational use by police forces in Germany, Poland, Slovenia as well as several others the Flatbook C09 offers a flexible solution to the need for police mobile data without having a PC fitted in every vehicle. The C09 can be used in-car indefinitely but can also be removed for use outside the vehicle for typically up to 3 hours.

Deploying the C09 widely significantly reduces fitting costs of fixed PC's and since 20% of cars are typically out of circulation, for service, tyres, etc at any point in time having a flexible solution, where the hard disk is easily removable for security and multiple users, already represents a significant financial saving.

Together with the approved accessories, finger print reader, passport reader and digital tacho-graph chip card reader, the Flatbook C09 provides a fully integrated solution for most police operations. Since the Flatbook C09 can also be easily removed from the vehicle it is simple and efficient to set up a temporary incident room and network several C09's together.

Salford addresses crime

Salford Crime and Disorder Reduction Partnership is reaping the benefits of a multi award winning crime prevention project.

Using state of the art technology and up to date information provided by the National Land and Property Gazetteer (NLPG), the system has already resulted in a reduction in crime rates and a reduction in the fear of crime.

"What we needed was a map based solution with an incident pinpointing tool that enabled us to quickly and accurately locate an incident, identify possible high quality CCTV coverage and the means to request coverage from any camera owner." commented Paul Coward, Corporate GIS Consultant at Salford City Council.

As part of the project, Salford developed an online service, accessible via the Council's public facing website, which enabled visitors to identify and record CCTV camera locations on a map before adding contact and camera information.

"The NLPG is in effect the glue that holds the whole thing together enabling us to accurately locate an incident, identify cameras in the vicinity and secure footage for crime detection. The system has also led to better liaison between partner organisations and agencies resulting in proactive monitoring and increased use of existing resources for applications such as emergency planning, insurance claim investigation and targeting benefit fraud."

Hampshire first with OpenWINGS

Hampshire Fire & Rescue Service (HFRS) has become the first UK brigade to implement OS OnDemand, the Web Map Service (WMS) offered by Ordnance Survey.

HFRS is accessing the service using specialist functionality available in OpenWINGS, the brigade's GIS solution supplied by Bristol based software developer, Innogistic.

OS OnDemand is a national web map service that serves raster images, including OS MasterMap Topography Layer, directly into a customer's geospatial application using Open Geospatial Consortium (OGC) WMS standards.

Jersey Police improves clarity

Speech clarity has been improved at the States of Jersey Police HQ following human factors work undertaken in the force's custody suites and the intox room.

During a recent visit to the Island's Police HQ, ergonomics specialists HAM Associates were able to suggest improvements to help make CCTV recordings as clear as possible. The work has provided great immediate benefit to all concerned.

HAM Associates worked closely with SoJP staff looking in detail at a booking on procedure to help identify strategies for dealing with excessive background noise.

It was not possible to make large scale changes to the existing areas, due to the nature of the building, so the SoJP needed practical solutions that could be easily applied in the current situation.

One of the key recommendations was to consider the microphone specification and reposition to ensure that conversations between those in custody and Police officers were captured as clearly as possible.

John Hargreaves from HAM Associates commented: "Clarity while listening to conversational speech is very important to staff who need to work with care and accuracy."

Speaking about the successful outcome, Ian Robins, Communications Infrastructure Manager for the States of Jersey Police said: "We found HAM Associates easy to work with. They quickly engaged with us to capture all the ergonomic information they needed and ran a solid process to identify the issues. It helped the Comms team to consider the integration of people, their work systems and environment, and define the issues which needed resolving."

Helping the acutelly ill

Patients and healthcare providers are benefiting from a new approach to training which encourages active learning based on real-life scenarios.

The bespoke, web-based training platform has been developed by Airwave as part of the company's portfolio of mission critical communications services for public safety organisations. Airwave collaborated with the Norfolk, Suffolk and Cambridgeshire Critical Care Network and the solution is set to transform the care of acutely ill patients in general hospital wards.

Aimed at doctors, general ward nurses, student nurses and healthcare assistants, the e-learning platform helps to minimise the risk of unsafe care and ensure fewer patients are transferred or readmitted to high dependency or intensive therapy units by raising the skill levels of healthcare staff. In addition, patients should be able to leave hospital sooner and, importantly, Trusts can meet their duty of care requirements for providing adequate training and guidelines for staff.

USB drive receives CESG approval

A new device from MXI Security protects confidential data through 256-bit encryption and is the first of its type to be certified.

The loss of confidential data by government departments and across the public sector is a well-publicised and growing trend. Portable devices, such as USB drives are amongst the worst culprits – whether left on trains, in taxis or stolen, they act as a real threat to government security.

The UK government has now acted to tackle this issue. CESG, the UK's National Technical Authority for Information Assurance, has just certified MXI Security's Stealth M600 USB drive with official CAPS certification. This means it is formally approved to be used by the UK public sector, including both central and local government.

This is the first device of its type certified and protects confidential data through:

- on board AES 256-bit encryption
- hardware protection against malware
- digital identity and cryptographic services
- durable, waterproof and dustproof casing
- unique device recycling features

MXI Security is already a major supplier to the US and other governments, as well as UK organisations such as the City of London Police.

NLPG Awards

Intelligent Addressing and Local Government Information House have announced the release of the 2010 NLPG and NSG Exemplar Awards. The awards recognise the innovation and achievement of local authorities, police and fire services in the creation and utilisation of the National Land & Property Gazetteer and the National Street Gazetteer. The awards will be presented at a one-day conference and exhibition in Sheffield on 20th October 2010.

Northgate purchase CARM

Northgate Public Services has purchased CARM Police Duty Management System from Concorde Informatics.

CARM is a market-leading resource management system used by more forces than any other in the country, including the Metropolitan Police and West Yorkshire Police.

CARM enables forces to manage their complex shift patterns, allowing them to ensure the right staff coverage to deliver responsive policing to the public at the right time. It allows forces to search for available officers with a specific set of skills at any time. It equips them to better plan their human resources through daily, weekly, monthly and annual rosters. They can also analyse the use of overtime budgets and quickly record and monitor absence.

The Emergency Services Show 2010 – register now

Relevant to all communications and IT roles from operations, buyers and specifiers, this unique event brings together your colleagues, contemporaries and suppliers – in fact everyone in the UK involved in an emergency.

The Emergency Services Show 2010 (24-25 November, Stoneleigh Park, Coventry) promotes multiagency collaboration that is assisted by the important role played by communications officers and their equipment – vital in any emergency incident. The free-to-attend exhibition includes a range of IT, communications and interoperability specialists, alongside other suppliers providing access to the latest technology, ideas and initiatives focused on improving public safety and protecting the Critical National Infrastructure all in one place.

Exhibitors include Excelerate, Primetech, 802 Global, Radio Telecom Services, Mix Telematics, Audio Visual Machines, Envitia, Steatite, Blazepoint, South Midlands Comms, Getac, Twinhead, Servicom, Terrafix, Tempus and APB Mobile.

Following budget restraints, recent national and global emergencies and as the country look forward to the Olympics 2012, the annual show is proving more relevant than ever facilitating opportunities to speak to contemporaries and exhibitors to help with framework agreements, income generation, outsourcing and equipment requirement.

The two-day supporting conference (CPD-accredited) will provide delegates with the opportunity to hear the latest news, developments and strategic advances from a range of high profile speakers. A 25% "early bird" discount is available for all registrations before 1st October (see www.ess2010.com).

Modernising Policing: reform and social responsibility

The Fourth Modernising Policing Conference (CPD certified) will take place at The Barbican, London, 7th December 2010.

At the fourth annual Modernising Policing conference the following subjects will be discussed: how to manage workforce change, implement lean strategies, safeguard community trust, and showcase the latest technologies and innovative solution providers.

Proposed key speakers include: Simon Reed, Vice Chairman, Police Federation of England and Wales; Theresa May, Home Secretary, HM Government; Rob Coleman OBE, Director, Home Office Scientific Development Branch.

Places are limited to 250. Visit www.publicserviceevents.co.uk for more information.

bott in frame

Manufacturer of in-vehicle storage solutions bott has been awarded two framework agreements for car and van conversions from Buying Solutions, the national procurement partner for UK public services.

The company said that an approved supplier status from Buying Solutions meant that customers could be confident bott would deliver to the highest standards while benefitting from an efficient procurement process.

Kevin Woodward, MD of the Vehicle Enhancement Division at Bott said: "These awards really help to elevate our position as a one-stop solutions provider to the public sector and government departments. Having worked with organisations up and down the UK, we are finding that more and more of them are outsourcing responsibilities with a strong focus on safety to meet best practice guidelines."

BAPCO

British Association of Public Safety Communications Officers

MEMBERSHIP APPLICATION

1. PERSONAL DETAILS

TITLE	
FORENAME(S)	
SURNAME	
POSITION HELD	
ORGANISATION	
MAILING ADDRESS	
POSTCODE	
BUSINESS TELEPHONE	
FAX	
HOME ADDRESS (If different from above)	
POSTCODE	
EMAIL	

I agree to BAPCO sending information to me regarding its events, products and services. BAPCO will not pass on any information to other companies or third parties ❑

2. CATEGORY OF MEMBERSHIP APPLIED FOR

ACTIVE ☐ ASSOCIATE ☐ COMMERCIAL ☐ INTERNATIONAL ASSOCIATE ☐

OFFICIAL ORDER NO

Please send further details of Corporate Membership ❑

3. ORGANISATION TYPE

Please tick one item that best describes *your* organisation

PUBLIC SECTOR AREA SERVED		ORGANISATION TYPE		COMMERCIAL	
Parish	☐	Law Enforcement	☐	Manufacturer	☐
District	☐	Fire / Rescue	☐	Distributor	☐
County	☐	Ambulance / Medical	☐	Dealer	☐
Regional	☐	Emergency Management	☐	Maintenance	☐
National	☐	Local Authority	☐	Consultant	☐
Private	☐	Central Government	☐	Network Provider	☐
Other	☐	Public Utility	☐	Training	☐
		Other	☐	Personnel	☐
				Other	☐

BAPCO MEMBERSHIP APPLICATION

BAPCO
British Association of Public Safety Communications Officers

4. POSITION RESPONSIBILITIES

Please tick the item that best describes *your* responsibilities in each area:

POLICY & PROCEDURE

- ❑ I approve/develop policies and procedures
- ❑ I oversee implementation
- ❑ I have a limited role in implementation
- ❑ I do not have a role in implementation

PURCHASING

- ❑ I approve purchases of products and services
- ❑ I select specify products and services
- ❑ I recommend products and services
- ❑ I do not have a role in purchasing

PERSONAL TRAINING

- ❑ I approve training programs
- ❑ I develop/purchase training programs
- ❑ I implement/teach training programs
- ❑ I do not have a role in training

5. MEMBERSHIP CATEGORY & FEES (Select One)

☐ **ACTIVE MEMBER**

Persons employed or contracted by a public safety agency or a department of central or local government responsible for the provision of public safety services, or are retired from such a position, who are directly responsible for, or retired from, the management, specification, design, installation, maintenance, operation and use of public safety communications and information systems, are eligible for this category of Membership

£40.00 per annum

☐ **COMMERCIAL MEMBER**

Those persons, in business or industry, who receive compensation in any form for services rendered or products sold, are eligible for this category of membership.

£40.00 per annum

☐ **ASSOCIATE MEMBER**

Those persons, who otherwise meet the requirements of Active Membership, may, at the applicant's discretion, select this category of membership, and, those persons not meeting the requirements of any other category of membership that share the Purpose and aims of the Association, are eligible for this category.

£28.00 per annum

☐ **INTERNATIONAL ASSOCIATE MEMBER**

Persons who are not citizens of the United Kingdom that share the purpose and aims of the Association are eligible for this category of membership.

£50.00 per annum

Details of Corporate Membership can be obtained from: ExecD@bapco.org.uk

6. PAYMENT INFORMATION

Total amount due £ _____

- ❑ Individual or
- ❑ Organisation is paying for Membership.
- ❑ Personal cheque enclosed.
- ❑ Official purchase order No. _____ enclosed.

7. OPTIONAL INFORMATION

How did you hear about BAPCO?

❑ Co-worker ❑ BAPCO Journal ❑ Sponsor

❑ Other _____

Gender: ❑ Male ❑ Female

Date of Birth: Day_____ Month_____ Year ____

8. APPLICANT'S STATEMENT

I hereby apply for membership in the appropriate class of **BAPCO,** and agree to abide by the Constitution and Bylaws of the Association. I understand that by joining I also become a member of the BAPCO region serving my area and that my subscriptions are payable annually, based on my first day of membership.

SIGNATURE _____ **DATE** _____

TEL: 01522 575542	WHEN COMPLETED PLEASE FORWARD THE WHOLE FORM (WITH APPROPRIATE ENCLOSURE) TO: BAPCO, PO BOX 374, LINCOLN LN1 1FY	FAX: 01522 575542 (Remember to fax both sides of the form)

FOR OFFICE USE ONLY

RECIEVED
REGION
MEMBERSHIP No.

CERTIFICATE SENT
RENEWAL DATE

BAPCO

THE BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATION OFFICERS

Changes as BAPCO looks to future

At the BAPCO annual general meeting held on 27th July 2010 Hayden Newton was elected as President with Alan House and Sue Lampard being confirmed as President Elect and Vice President respectively.

There had been reports that Hayden was due to resign as a result of work pressures and expanding national ambulance commitments.

In view of this Past President Ian Readhead volunteered his support to help with the day to day running of the Association pending the appointment of a new Executive Director in order to enable Hayden to concentrate on his Presidential duties.

Hayden's position as President of BAPCO was unanimously backed by the annual general meeting.

Ken Mott at the meeting confirmed that he wished to cease his employment with BAPCO from the 31st August 2010. It was with regret that his resignation was accepted at the meeting. Following this decision Hayden Newton commented: "We would like to thank Ken for all of his hard work and commitment in setting up BAPCO and for playing such a major part in this organisation."I would also like to take this opportunity to congratulate both Sue and Alan on their appointments, the future for the Association will be very challenging but I am sure both Sue and Alan will use their experience, skills and knowledge to help the Association grow from strength to strength.

"I am also delighted to announce that since the Extraordinary Meeting, Tony Antoniou has been appointed as the new Executive Director of BAPCO following a competitive selection process which attracted a lot of high calibre candidates from wide and varied backgrounds. Tony will be taking up his duties as soon as possible relieving Ray Trotter from the post. The Executive have every confidence in his ability to secure the future of the Association."

As part of the new regime, the Association has implemented enhanced arrangements for the BAPCO Exhibition and Conference based on feedback from its commercial members and delegates. Letters have been sent to all the exhibitors who have attended the conference for the last two years seeking their continued support.

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Delivering mobile data in the police – a snapshot

Organised by Capita Conferences, Delivering Mobile Data in the Police took place in central London 15th June and was chaired by Mark Burns-Williamson, the Chairman of West Yorkshire Police Authority and Board Member of the Association of Police Authorities. Here are some of the highlights of a packed programme that embodied a good number of the mobile data challenges, lessons learned, and on-going projects taking place in the UK today.

An informal approach to the day was encouraged by Chair Mark Burns-Williamson who kicked off the conference by pointing out that it was the first conference to assess the benefits and challenges of mobile technology since delivering mobile data in the police was nationally funded in 2008 by the former Government. "With the fiscal challenges ahead it is state-of-the-art policing that is important in delivering value options. Mobile technology has been a real business change for the police and they are fully behind this technology."

Future efficiencies in the police – the role of mobile data: Jan Berry, Independent Reducing Bureaucracy Advocate

Jan began her presentation by giving an outline of where she stood as regards mobile data. "The top line is that mobile data has got the potential to reduce bureaucracy and increase efficiency. In saying that I've been overwhelmed and under whelmed by what mobile data is actually doing for police officers on the ground. Some are very well served and others are not being served to

any large extent."Mobile data is no panacea, continued Jan, as at times officers have to have their hands on things other than their mobile data devices in order to be efficient and effective – but it is an important part of the solution.

"Mobile data has to be business-led and not technology-led," which means getting the processes right first – and not applying technology to inefficient and ineffective processes.

Police forces rely on reliable information being input accurately as quickly as possible and at the first opportunity removing the necessity for correction work downstream. Information should be input once and used as many times as is necessary. Most forces are re-keying the same information into different databases.

"Not only have we to make sure mobile data and broader frameworks are integrated within the force, but across 43 forces and community and criminal justice partners. The overall goal has to be integration of systems so information can be shared in an effective way. Individually and collectively we are a long way from that."

Jan raised her concerns that forces will be in the same position in five years' time should the Government not take the opportunity to mandate an operating platform – at the very least – and a series of specifications. The financial crisis will have the effect of focussing minds on the fact that a lot of funds are tied with 43 chief officers, 43 IT departments, a number of community partners and criminal justice partners. "I do believe mandation will be an absolute imperative. My assessment is that 43 forces are at different places. Some are more advanced than others, some have greater capability. But what we don't necessarily have is a good forum for the wider IT and mobile data part of it for lessons to be learned, and good practice to be shared.

Norman Dixon, MBE, Senior Consultant, Kelvin Connect

Norman agreed with Jan in that business process should be the base line from which every force should work – understanding and improving them first and applying the technology second all with management approval. "Mobile data is in reality just a better way to manage information."

Norman's main message related to real change and benefits achieved through improving business processes using "systems thinking" principles, then having the new "end to end" business processes supported by the relevant technology. He pointed out that he had visited many forces that were claiming great operational successes after three years of mobile data implementation. Many had looked at exactly what organisational benefits they had achieved after all this money had gone in, and really it had not been an awful lot. "Nothing has changed in the back office or in the way that information is managed or shared."

Norman encouraged the audience to challenge the status quo when looking to improve business processes. "Don't try to replicate the paper work flow in an electronic world. Don't accept what managers tell you to redesign business processes. It is not their fault but because managers don't work in the business processes day in, day out, they are not aware of all the operational issues and if to them it looks like the system is working then as far as they are concerned everything is fine. Engage with the operational users in their workplace throughout every part of the 'end to end' business process and use their skill and knowledge of how the system could be improved in any redesign. Use their requirements to design any new process, then add the technological solution. This will deliver sustainable change and real business benefits."

Mobile data in the police – the East Midlands Collaboration: Martin Hansen, Director of Information, Notts Police, and representative of East Midlands Collaboration

Prior to 2007 each force in East Midlands was at a different place as regards mobile data, explained Martin. Leicestershire and Notts were the most advanced – but moving in different directions, with Leicestershire having invested in a tough book for their vehicles and Notts going down the portable device route for officers on the street. Northamptonshire had experienced some usability issues with a previous tough book project and did not want to follow that route again; and while Lincolnshire had carried out some work with Airwave, Derbyshire had no plans at all.

Then came the announcement by Gordon Brown of the plan to provide every officer on the beat with a mobile device. "The view was that unless there was a project already up and running then a force would struggle to hit the targets to get some of the money. It was very much a target-driven type of project."

As a result the collective decision was taken to bid as a region and bring in Derbyshire and Lincolnshire too. "So we made a bid for 4,000 devices for 6,000 officers, equalling around two thirds of the total number of officers."

The bid, which was for a mixture of solutions, was successful and Martin believes it was the highest award, at £8.3m.

After mentioning some of the benefits that a successful bid was predicted to bring East Midlands (eg eliminate yo-yo policing, increasing visibility etc), he went into the governance side of the collective approach. This consisted of the East Midlands Collaboration team, a board of directors, and above them all the Police Authorities and

"I've been overwhelmed and under whelmed by what mobile data is actually doing for police officers on the ground. Some are very well served and others are not being served to any large extent."

Jan Berry, Independent Reducing Bureaucracy Advocate.

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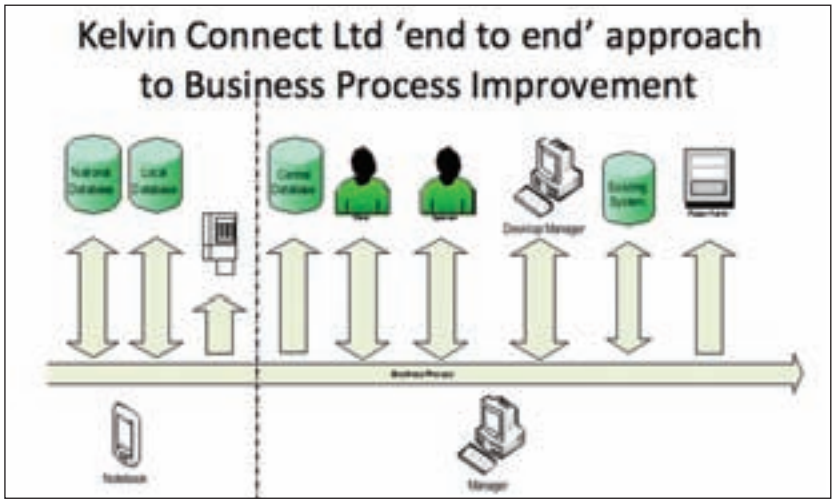

"The view was that unless there was a project already up and running then a force would struggle to hit the targets to get some of the money. It was very much a target-driven type of project."

Martin Hanson, Director of Information, Nottinghamshire Police.

programme directors. "There was also a mobile data board which I sat on, and each force had a project team that reported to the board."

After going into some detail on the training side of mobile data devices, Martin pointed out that the amount of the award meant that over 1,000 more devices were purchased following team negotiations: "Interestingly we found substantial differences in prices and tariffs, which we wouldn't have become aware of if we hadn't all come together."

An important lesson learned regarded email, which hadn't been regarded by the NPIA as a "bona fide" accountable business use. But it turns out that email is probably the thing that is most useful in mobile data. "It's the one thing that delivers the most benefits and has delivered the most benefits to officers."

Without email, explained Martin, it was impossible to drive officers to the next line of business applications where data is sent from the front line into business processes.

Today, a record is kept of which devices are not being used and those devices are chased up: "It could be someone has put in the wrong password and they've been locked out and don't want to take it back; or they've lost it. And there's the issue of fingers, 'I'll never get my fingers around this.' But the same thing was said about radios."

New and innovative ways of using the technology are popping out. In one case an officer attended a serious domestic dispute where a young lady had been stabbed and rushed to hospital. The officer took a picture so that it could be emailed to the hospital so the doctor would see what to expect. The picture was then used as evidence. When a knife is removed only a small scar is left, and what happened in this case is that when the offender was interviewed with his solicitor, and shown the picture, the solicitor had a quiet word with the client, who realised it was much more serious than assault."

The East Midlands Collaboration team held a conference in November last year, where some feedback was obtained:

- 47% of officers thought the devices made them more visible
- 43% weren't sure
- 36% said the devices were useful
- 68% said email was the most useful
- 82% said that the devices made no difference to the amount of paperwork, as it had not changed how they worked.

A cost benefits analysis carried out by East Midlands has revealed that the devices are saving around four minutes per shift. "Which is not an awful lot…. But if we looked at for instance PNC checks of all vehicles being carried out with the devices, and if crimes were recorded by mobile data, the potential benefits would be around 14-15 minutes per shift. So we are a long way from (NPIA's target of) 30 minutes."

As regards driving business change, Martin identified crime recording as key. The aim for the future is to integrate command and control, crime recording and mobile data in one process, to replace having to rekey information (see page 24 for more information) that has already been taken in by the control centre.

Summarising, Martin said that the Team had delivered what was expected, and reaped the benefits of email and PNC, although some of the applications of mobile data had not been expected: "There were cultural issues and not everyone will want to let go. It's a new world and we have to be there – you don't want to be in the dark ages."

The real test was still to come, however, once the budgets are released: "Can we afford them? Do we want people to have them or not?"

Schematic of Met police mobile data gateway solution supplied by Arqiva in partnership with Detica.

Mobile data case study – major UK roll out: Peter Harris, Head of Public Safety, Arqiva

Peter began by explaining what Arqiva does as a company: as well as being in the emergency services sector (including RNLI), Arqiva provides the transmission for all BBC and ITV in the UK, and is currently busy with the digital switchover.

Part of the business involves secure data solutions; outsourcing for police/fire/ambulance; and private radio for the private sector such as power generating companies. Peter then outlined how Arqiva started working in partnership with Detica. "We have both been in mobile data for over 10 years. Arqiva started providing solutions to the ambulance services and our partners, Detica, provided services to the AA and British Gas. We came together five years ago to deliver police mobile data solutions, and currently have a major deployment with the Met involving in-car devices and PDAs."

Peter then identified the big question in mobile data handheld devices: commercial PDAs vs enterprise PDAs. He held up to the audience a device, the HTC 6500. "Everyone thought this was the nirvana when it came out. Then came the iPhone and devices are changing all the time." After outlining some changes – different batteries, touch screen/stylus, etc – Peter remarked: "This type of device has a short market life and it will probably last two years before moving on. And there are also problems with operating systems – this is windows 6.5 and now we have windows seven, which means platforms need continued development for such evolving models."

Accessories are an issue too with all kinds of handsets. "Forces use charging cabinets so they don't take handsets home with them, rather they dock them so they are ready for the next shift. Change in devices would also mean

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"Forces we work with including the Met and Strathclyde rejected them [BlackBerry devices] on the basis of screen size – they were not big enough for the information they wanted and they didn't want to scroll down."

Peter Harris, Head of Public Safety, Arqiva.

change in charging cabinets. So there is a lot of complication surrounding device change.

"So are we going back down the enterprise route?"

Peter highlighted that other sectors were moving towards more robust devices that stay in production for five years with support functions: "Food for thought – cost in the future: lifetime cost vs initial cost of devices will change things."

BlackBerry devices were mentioned briefly. "Forces we work with including the Met and Strathclyde rejected them on the basis of screen size – they were not big enough for the information they wanted and they didn't want to scroll down."

As for network choice, while using the public network was the obvious choice this meant no quality of service guarantee and variable coverage. "You might need Vodafone and Orange to get full coverage. Tetra on the other hand provides good coverage but there are no devices and the data rates are low, so there is compromise."

While public networks were winning, problems are being foreseen as a result of congestion driven by use of the iPhone. The carriers need more infrastructures to cope with the data rates consumed by iPhones: "And of course iPad sales are now outstripping iPhone sales so the problem is not going away."

The final question was whether to buy a device and airtime together, in the same way commercial devices are. "The problem is getting around device obsolescence… you can end up not having the right device to move on to, with compatible components."

So there is an argument for splitting device delivery and airtime, added Peter, but at the moment those packages are more expensive.

Getting the right interface is crucial, said Peter, and Arqiva has spent a lot of time designing interfaces with police officers: "It is important that user interface designs work before any recording starts. You don't want to be drilling down through lots of menus and you want to scroll around the screen as little as possible."

To conclude, Peter advised forces not to rush in and duplicate forms onto devices, but rather to review the processes in parallel: "For example, why use a signature to sign a form, when the fact that the officer has logged into the device should be enough authentication?"

Mike Gibbons, IPL, explained that the CRASH programme replaces the 43 separate systems used for recording collision information.

Andrew Hawkins, Solutions Architect, Detica

Detica implements the gateway part of the partnership with Arqiva, explained Andrew, who presented on some of the challenges experienced with the Met police roll out, including the security aspect.

Detica implemented a multiple bearer gateway for the Met police for two reasons. Firstly, it allowed different devices on different networks to access the same gateway with the same security model – crucial as devices other than MDTs and PDAs are brought into use by the Met.

"The second reason is to provide resilience. The MDT solution for the Met has three bearers, 3G; Airwave; and BT Transcomm, a private mobile data network. The device can fall back form one to the other, if 3G is out etc. And in the future they are looking to support secure wifi and Internet as well."

A challenge for multiple bearers is creating a seamless interaction for a user who is not necessarily concerned with which network they are on. The second challenge is the security of the networks – while Airwave is restricted the other bearers are unencrypted so communications on Airwave have to be kept separate from the other networks to avoid cross contamination.

A lot of attention has been paid to the security architecture of devices coming onto the gateway. Just implementing a single sign on to enter the system and have access to all systems, has been challenging, involving suppliers in removing the need for password authentication for individual systems.

Another aspect Andrew presented on was the management of multiple systems within the Met, relating to thousands of users and devices. A way round this was to divide the devices and the users into groups within a management system, meaning that a set of user permissions could be assigned to different groups en masse eg to give access to a particular system. "The other key point is that this method allows devices to be administered on a geographical basis or operational basis, so allowing things like phased roll outs or software updates to different groups. You don't want to do all devices on the same date."

Still on the theme of roll out, Andrew touched upon performance testing and how it was notoriously difficult to do with a mobile data system. There is no such thing as an end-to-end full test solution, other than having users at different locations using their devices at the same time. "What we've done is break the problem down into components: the network; the fixed links between the network and the secure gateway; and the gateway itself. What we've found is that the best way to address this is to pick out the things you can test and monitor the ones you cannot."

Gateway server load can be tested and Detica has a model of expected traffic, which can be injected into the server to obtain results and optimise accordingly. "We found with the Met when we first started that they had a lot of capacity on the front end of the system but the back end was struggling to keep up. As a result – simply put – we took resource from the front end and added it to the back."

Peter Harris, Head of Public Safety, Arqiva

Peter carried on the Met case study, highlighting that training was critical in roll out and it was important to get the timing right – in many cases a big gap occurs between training and roll out, resulting in a loss of knowledge. "We trained officers directly; we trained their trainers; provided online training; and identified 'super users' – key officers that can be consulted if there is a problem. It is fundamental to link the training to the go-live day. The devices that the Met trained with were authenticated at the same time so that they could walk out with them and use them for real."

Some end user comment was then outlined by Peter, who explained that Strathclyde and the Met had two different drivers for the rollouts.

The Met's business case for mobile data revolved around efficiency – carrying out more checks than was possible

before. Strathclyde was looking for savings and the University of Leeds had carried out a study demonstrating a 32 minute saving per shift, ascribed to officers not having to return to a station to verify a person's identity. "They said that it has improved their safety, because they can find out straightaway how dangerous a person is, through their record of violence."

Forces have also experienced a massive increase in input accuracy, as a result of having a number of electronic forms on the device with in-built checks.

Emerging technologies: Andy Gill, Chief Executive, Radio Tactics

Apollo is a self-contained mobile data terminal – an out of the box tool – that allows the user to access databases and in particular the National Mobile Property Register (the national police database of registered property ownership and stolen property records).

The unit enables officers to scan IMEI numbers or bar-coded property and interrogate the database in real time to ascertain if it has been lost, locked or stolen.

The unit is currently in use with 18 forces in the UK, explained Andy, with the Met and West Midlands Police being the biggest users. "Since the beginning of last year it has been used to carry out 40,000 checks by law enforcement. What the unit has achieved is improved usage of a system that already existed, and made the value of that database more immediately available and useful."

CRASH: programme drivers and overview: Mike Gibbons, CRASH Programme Manager, IPL

IPL is the prime contractor for the NPIA's CRASH program, which stands for "collision reporting and sharing".

It consists of a central database with a centrally hosted web system that is available to all 43 forces. It replaces the 43 separate systems used for recording collision information.

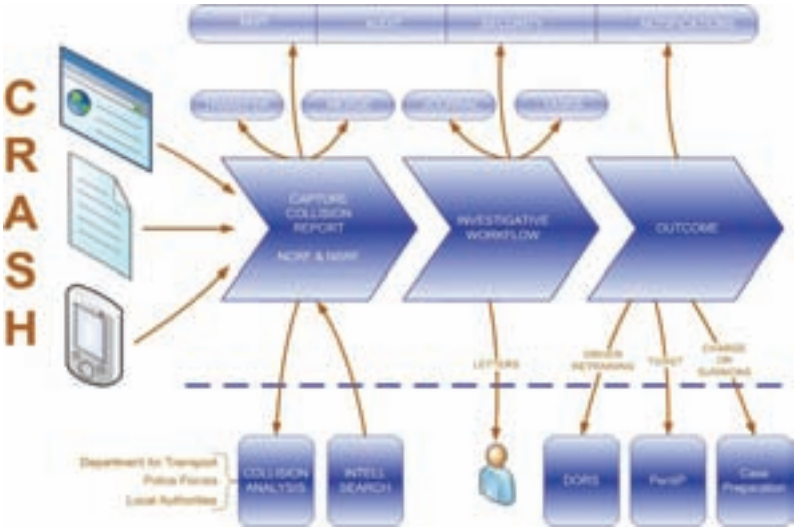
Development work started at the beginning of 2009 and the system will go live in spring 2011 in three pilot forces, with roll out elsewhere happening later in the year.

The idea of CRASH is to have a single repository of information gathered from a number of channels – the web front end would support forces that want to carry on using paper, and there will also be a mobile client for forces with mobile deployment. "And so as not to be inventing another silo we've implemented an interface so that other suppliers or forces with their own collision recording systems can interface with it."

Great effort is being made to improve data quality at the front end via the use of intelligent forms so that, once captured, data can be reused. "We are doing that by using business rules at the interface, and use external system tools like GPS, gazetteers and PNC to make sure we are improving data quality, reducing data input load on staff, and getting timely information to them."

Mike went on to explain how a big problem with collision recording was identifying where a collision had taken place, even though grid references were easy to get: "So we are using GPS and mapping to improve the accuracy of collision location data."

He concluded by explaining that CRASH was not responsible for analysis, but rather it was a system of dissemination to pass on information to local authorities and police officers for further analytical purposes on making roads and vehicles safer.



Schematic of CRASH system overview.

Emerging technologies: Vincent Kennedy, Sales Director UK and Ireland, Motorola Solutions

Vincent sought to stimulate debate by first providing a broad picture of mobile data around the world. Prior to 18 months ago when iPad was launched consumers had email – which BlackBerry dominated at first – but then other devices got it too. The iPhone revolutionised mobile data and in the last 18 months the market has widened to include Microsoft OS and Android. "With this thing I can download thousands of applications for free, use sat nav, share GPS positions, download an application to do fingerprints, share pictures, and use twitter to talk to millions of people instantly. It has exploded mobile data."

Seismic change is taking place in the consumer market and it is expected to drive change in the police sectors – but it will take time.

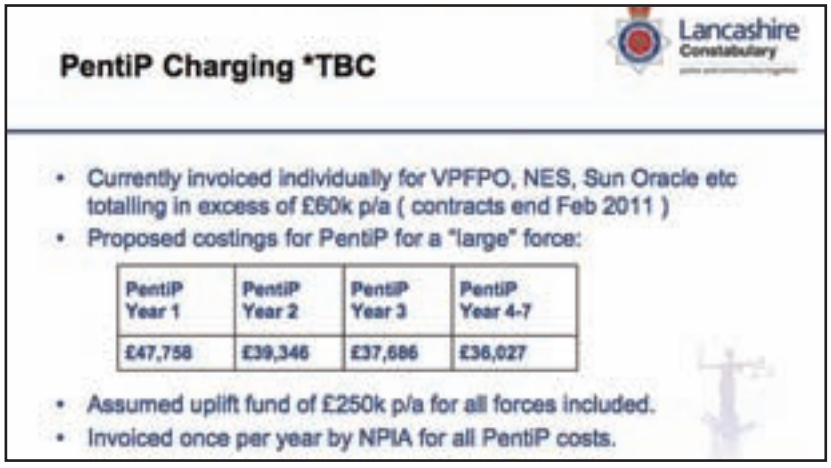
In terms of the enterprise sector there are huge leaps taking place and networks are selling mobile data to people who use them a lot, such as logistics companies and engineering organisations. "Over there they're not saying, 'does this save me so many minutes per shift?'. That argument is gone – it happened five years ago."

The commercial world would not use mobile data without a business case and today it is standard for each operative to have a PDA. "Five years ago it might have been a BlackBerry, something small. But as they come to refresh they've gone back to robust systems. Big companies like UPS don't want to change their device holsters etc every year. They want five years to go by, accepting a platform and device for that time, and then take a giant leap forward five years later."

This is something that Vincent sees happening in the police sector too; driven in particular by the impact that mobile data has had on command and control. "When you think how the police operate, the command and control function is all through voice. You drop mobile data in there and you fundamentally change how command and control works.

"When you think how the police operate, the command and control function is all through voice. You drop mobile data in there and you fundamentally change how command and control works."

Vincent Kennedy, Sales Director UK and Ireland, Motorola Solutions.



PentiP will result in savings on local budgets.

"The processes are reversing, coming in the other way, which will have lots of impact on the command and control function. The guys on the front line have more data than the operators – and faster."

PentiP case study – penalty notice processing: Chris Southwell, System and Project Coordinator, Lancashire Constabulary

PentiP is a national replacement for the Vehicle Procedures/Fixed Penalty Office (VP/FPO) System and the Northgate Enforcement System (NES). Nearly every force in England and Wales has them and as a result there are many different versions. The aim is to bring them all together and link them so there is one database for the whole country.

There is a lot of intelligence out there – in Lancashire alone there are 100,000 offences each year (including penalty notices for disorder). "Imagine taking six years of data for all forces, and combining it all into one. There are many interesting benefits."

The system will be web based which will allow all officers access to the information for the first time. All offenders will have their offences tagged to them as a person; as opposed to the current system of each penalty having a unique reference number and not linking to any other offences. "We have found from some preliminary reporting that up to 40% of people who offended in Lancashire may also have some record of an offence in Manchester or Merseyside, something that we wouldn't have been able to find out with the current system."

Chris outlined some of the benefits of PentiP:

- Savings on local budgets through a national service
- Intelligence sharing; in terms of motoring offences alone Lancashire loses 7,000 offences a year due to not having DOBs (these are required by the CPS in most areas)
- Benefits in electronic recordings of Home Office Road Traffic (HORT) stop forms. It will cut down on the paper trail being sent to the offender's local force.
- Electronic fine registration; if an offender chooses not to pay, they are automatically registered with their local enforcement agency.
- Live transfer of information to and from PNC, DVLA and other national systems.

Lancashire volunteered to be one of the four business assurance sites for PentiP, the others being Leicestershire, Met, and Kent. "We each got selected because we all work very differently and use different third party suppliers, so it should provide a good review."

The fact that Lancashire has 3,500 officers with PDAs was also a factor.

The bulk of the work to transfer information will fall on CTOs and their supervisors and managers, and Chris recommended mobile data should also be involved as well as ground-level IT. One of the big challenges is to ensure the data that is uploaded is as clean as possible, ready to go into the new format in the next few months. "We are now at the stage of finalising project sponsors, managers, CTO lead, back office expertise etc. This is a major system change, and you will need to be ready to receive and structure training."

Some issues to consider were outlined. How much bandwidth will be necessary was as of yet unclear, and consideration will have to be given towards upgrading should bandwidth be too slow. "We are planning to use some network monitoring equipment to keep an eye on that."

The interface to local systems was another – custody, collisions, all need to be integrated too, although national databases such as DVLA would be handled by the NPIA.

As regards business process change, Chris said that Lancashire was probably moving to a single ticket book for all offences, which would bring cost savings. "We are also going to restrict the number of paper tickets, and they should only be used as back-up to PDAs. So information is recorded once only electronically."

Lancashire has a solution from Kelvin Connect that will connect PDAs to back office systems, which will cut the equivalent of three or four permanent members of staff.

PentiP notices for disorder were also touched upon. "We are looking at an automated process within PentiP where it will take a PND filled in electronically by an officer on the street, and from there populate Pentip, our local intelligence systems as well as PNC without the need to ever retype or double key the data."

So where is Lancashire with PentiP? An initial business assurance consultation meeting has resulted in a better outline of time scales, which are due to be confirmed with Northgate and NPIA. In terms of other forces, the main action will be one huge upload of all force data into PentiP: "The system will mark up any notices that haven't been taken across, and following that some smaller regular updates will also take place so when it goes live your force will have the most up to date database."

Chris finished by saying that Lancashire was creating an onsite training and testing room within their CTO, and that it would be open to any force that wanted to visit to find out what was coming.

Update: since the presentation most forces should have completed their "bulk" data upload to NPIA ready for it to be combined and placed into PentiP. "We are correcting any data that has been identified as containing errors so that it too can then be taken into PentiP. We are looking at our business processes and beginning to prepare for the move to PentiP in the New Year. It has given us an excellent opportunity to take a clean slate approach to some of the work we do and revise our operating methods to be more efficient when PentiP arrives."

MIDAS – mobile fingerprinting case study: Nick Deyes, Deputy SRO for the NPIA, ISIS Programme Director

The concept of MIDAS is very simple: authenticating that someone in front of an officer is who they say they are. This is done by taking a fingerprint and comparing it to the national fingerprint database – simple at face value but complex in terms of ensuring the system integrates with mobile devices.

MIDAS started in 2006 when it was realised that a similar concept being used with vehicles and ANPR could be used for individuals. "So we had 10 forces that received the Lantern devices back then, which was the size of a brick. These chunky devices would not fit in pockets and they were delivered as part of a contract with Northrop Grumman."

The trial went on for longer than anticipated and by end of March 2010, 29 forces were using them, resulting in 33,000 searches made in 2009. 49% of encounters with Lantern resulted in a hit.

It was that trial that convinced ACPO to commission the NPIA to roll out a national capability: "The killer fact and one benefit that emerged from the trial was that when the Lantern device was used to ID someone, there was a 56 minutes saving in terms of time – ie the time spent taking someone to the station to authenticate their details."

The Lantern contract has been extended from March to end of September this year to ensure a seamless handover for those forces taking part in the MIDAS programme.

The mobile ID devices used by MIDAS will range from all-singing all-dancing devices to those that only do ID checks. There are fingerprint readers the size of a matchbox that can be added to existing to PDAs which carry back results from the fingerprint database but also a consolidated view of PNC information.

The procurement process began in 2008 and the final contract with Cogent has been signed. "It is quite a complicated arrangement because we have Ident1 managed by Northrop Grumman and they need to link with Cogent who are the provider of the MIDAS capability which in turn will link with various front end mobile suppliers."

24 forces have committed to MIDAS and the first single function capability will start to appear in autumn this year.

The key benefits are to help policing and ensure that encounters are resolved as quickly as possible without unduly delaying people.

The signal from the device travels by 3G over the Internet to Cogent, who holds a copy of Ident1, and carries out a comparison. The result is presented back to the device, and no fingerprint details are stored.

The challenges for the project mainly revolve around the supplier chain, which involves Northrop Grumman and 10 mobile suppliers who need to deliver an end-to-end solution. But there are other hurdles. "We are aware that the coalition Government is looking at stop and search and stop and account, and we are working through how MIDAS would work in that environment and whether there are any additional laws and constraints."

Deyes concluded by saying that it was up to each force to decide how many devices – and what kind – to deploy, and in which areas. "We also expect significant interest from other parts of Government once it hits the streets."

Final thoughts and closing remarks

Chairman Mark Burns-Williamson summarised the Conference by highlighting that the main focus should not be on technology but on business process: "We all know the challenges ahead and in this fiscal climate we are going to be asked more about value for money.

"I will be asking my Chief some hard questions on how technology is used and how we collaborate to achieved those efficiencies. A theme that has been underlined today is about evidence of analysis and evaluation, and how we need to demonstrate that in order to secure any investment that is going round – not that there is going to be much. So in terms of technology and new processes we need to be able to demonstrate the case to secure the funding that is available."

Mark ended by touching upon cutting bureaucracy: "How we prove that the technology is fighting against bureaucracy is something that is always mentioned in the media and the press. All the political parties have the same mantra about reducing bureaucracy, and today we have heard some great examples of doing just that – and there is potential to do more."

Mark-Burns-Williamson, Chairman of West Yorkshire Police, chaired the thought-provoking conference.

We need to talk about handhelds

Government departments are facing crucial decisions this year – ones that are critical to future IT strategy – and there will be dire consequences if they make the wrong choices. Millions of pounds will be wasted on handsets and systems that may no longer be supported by manufacturers, software developers and operators, which will lead to even more millions to be spent on replacement infrastructure. So what exactly are the problems? Mobile telecom journalist and CTO of Condico, Tim Belfall, writes.

Tim Belfall has worked in mobile telecoms and security for over 20 years for organisations including Reuters, Nokia and Thus. He founded Condico, a mobile device management consultancy and service provider, after seeing the problems government and companies had in maintaining and supporting mobile devices. Prior to that he was the Product Manager for WAP and SMS at Nokia, and COO of OpenHand Software – one of the original mobile app developers.

Six years ago significant decisions were being made in government as to how NHS and Police IT could be improved and unified, including mobility. Historically senior staff in most organisations insisted that they have the latest mobile handset which practically became a corporate fashion item. Smartphones were still a relatively new concept and were typified by the Nokia 9300, RIM's BlackBerry 7230 and O2's XDAii, all with their supporters. The BlackBerry soon dominated business and central government. Invariably this trend caught on.

Very few IT personnel understand, or want to understand, the peculiarities of mobile operating systems, nor do they particularly want to support mobile access into record systems. This creates a whole new level of infrastructure and user support, effectively doubling the potential support calls, either from the use of the application, hardware issues or from network problems. With little increase in budget, IT then needs to bring in – and pay for – a whole new layer of specialist staff.

Typically the mobile operators are relied upon to provide handsets, airtime and services. Mobile operators are there to make money, mainly from selling airtime but also text messaging and data. They will recommend the technology that will return them the best margin and the quickest sale, which unfortunately may be incompatible with the needs of the business. Whilst the finance director would typically expect a five-year return on investment on equipment, mobile operators will supply devices that will barely last two years and will be supported for even less.

The resulting issues of repair and replacement become an ever constant support problem. One particular issue is that applications developed for a particular handset may not work with the replacement device due to incompatible screen sizes, memory restrictions, operating system incompatibilities, device drivers and feature differences. Even the same model may suffer changes in chips, such as WiFi modules, making it unusable without modifications.

Much can be learnt from the logistics and retail industries. Both operate extremely large numbers of mobile devices either in their warehouses, in delivery trucks, or shops. As an industry they require that all their mobile devices have to be supported for a minimum five years and that they should be as reliable and impervious to damage and abuse as feasible. This ensures continuity of support and reduces downtime of a user to a minimum.

Motorola, Intermec and Honeywell are the major handset vendors in this area. Their devices are tested in extremis against physical damage, drop, water and dust, to last in excess of five years; with components warehoused in numbers to ensure continuity of repair for the life of the device. This ensures the ROI requirements of their customers. Users also have the reassurance that the devices do not have to be treated with kid gloves; features such as handstraps and tethered styli vastly improve real world handling in often challenging environments. Some police forces have even been known to charge officers for losing a stylus so a tether really helps.

Apple's iPhone iOS and Google's Android operating systems have attracted analysts to decry the old guard Symbian and Windows Mobile (Embedded Handheld) platforms. This is quite a mistake, as both are true multi-tasking operating systems with unmatched maturity from the newcomers. Whilst Symbian is being targeted by Nokia at low end devices, Windows Embedded is aimed at the sophisticated enterprise market. Neither iOS4 nor Android has the existing ability to handle sophisticated in-field management, especially when it comes to remote control, security and managed software updates.

New handsets such as Intermec's CS40 and Motorola's ES400 re-emphasise both organisations' commitment to Microsoft. Both are aimed at the gap between high end consumer handsets and the existing range of larger, but more expensive devices such as Motorola's MC75 and Intermec's CN50. Both are cheaper and smaller as their siblings yet are just as sophisticated. Both take different market approaches but either way they are the better approach for Government upgrading their handsets.

3G or not 3G is a question being asked by some organisations. The unreliability and coverage of certain operators' 3G networks has left procurement managers to

question whether 3G is actually required. But then this is the difference between ISDN and broadband. GPRS and EDGE data throughput is poor and latency is high. The newer 3G services such as HSPA in various flavours permits far more sophisticated applications, particularly where high volume of data is incurred such as image transfers. Procuring GSM-only devices appears to take little account of their limited future usability whether rugged or not – a price pairing too far.

Accessing data from the Government connect secure extranet (GCSX) requires enhanced security; in particular CoCo (code of connection) requirements appear to be causing some confusion. Security of data in transit and at rest is complicated by a lack of approved products especially in the mobile environment. Whilst RIM's BlackBerry is CESG-approved for certain uses, suppliers are positively discouraged from submitting their products for approval due to the extreme cost and complexity of engaging with CESG. As a backdoor approach US approved product can be accepted, particularly FIPS 140-2 validated encryption software, giving an advantage to US security organisations over UK businesses.

Systems will require VPNs (virtual private network), private APNs (access point name) two-factor authentication, handset and memory card encryption, software tracking, device wipe and potentially location awareness. Annual CoCo compliance assessments can therefore be expensive and time consuming, requiring external approved consultants (in particular Siemens) to perform the analysis.

Pre-deployment configuration is a messy and also time consuming business, so major retail and distribution companies farm this out to third parties. Typically Government organisations plough through this in-house, tying up a considerable amount of IT resource.

Post-deployment requires a method of controlling and diagnosing devices in the field to enable updates to security policies, software and remote assistance. This radically reduces the time spent by end users returning to IT departments with device problems or usage issues. Some local authority employees are paid on piece work so the ability to remotely analyse and repair handsets in the field is critical to them. Remotely viewing and controlling the device screen becomes a particularly useful feature if a user is having trouble understanding a software application.

Fashionable cloud solutions are now a real feature of the mobile industry. They have particular advantages for organisations who do not want to host their own infrastructure or provide direct support. This is usually due to lack of time and personnel, but also because it enables a better service to end users from mobility specialists.

This leads to training, which typically can be too brief depending on the experience or skill level of the employee. Usually if an application doesn't respond immediately a user will randomly start pressing buttons, or the screen, until something happens, invariably leading to an annoyed user and a frozen handset. Applications are created by engineers but the user interface is rarely designed for usability, so training and on-line reinforcement needs to be thoroughly considered and managed to reduce support calls.

The Intermec CS40, due to be launched this month, is aimed at police services that have been using consumer handsets. Opposite: the CS40 scanning a car serial number for theft.

The golden rules

1. Choose your application vendor with care. Will they support their app for five years on your chosen platform?
2. Don't expect an application to work first time.
3. Always expect software problems. It will take at least twice as long to iron out issues than you thought.
4. Consider the lifespan of the devices and choose accordingly.
   a. Will the manufacturer support the device over five years?
   b. Will they guarantee supply of the device over five years?
   c. Will they maintain the same operating system over five years?
5. Try several devices.
6. Don't underestimate the need for program and working memory. Storage memory is not the same.
7. Ensure the device can be used in all areas of your territory.
8. Ensure the device can cope with future needs such as camera, flash, memory, scanner, GPS, compass.
9. Don't select a GSM device because of cost. You will need 3G.
10. Trials take three times longer than expected.
11. QWERTY keyboards look good but Numeric may be better.
12. Think how the device will be handled.
13. Don't forget to budget for accessories.
14. Ensure that all the accessories are available.
15. All devices break. Ensure you budget for maintenance and repair.
16. Handsets will be abused so ensure they can stand up to rough treatment.
17. Do you need devices to be water or dust proof? If so understand IP ratings.
18. Don't let the network operator choose the device for you.
19. Don't expect to support 1,000 users with your existing support team.
20. Don't expect to find a ready supply of mobile technicians in your area.
21. Budget for extra support staff, and ensure you train them.
22. Security is expensive, budget for it.
23. Ask your colleagues' opinions who have deployed devices.
24. Ensure your management platform can support your selected device. Test before you buy.
25. Do consider cloud mobility services, it may provide a quicker and professional route.
26. Don't try to deploy 1,000 handsets yourself. It's boring and other companies can do it cheaper.
27. Do expect a high number of support calls after deploying the handsets.
28. Don't deploy them all at once – do it in batches.
29. Don't expect end users to be able to use devices/software or even charge a handset.
30. Do provide adequate training courses and reinforcement material both written and on an intranet.
31. Do provide a feedback forum.
32. Don't allow users access to any features other than the ones they need.
33. Do lock the device down.
34. Don't allow users to transfer their own information to or from the handset.
35. If you are going to track the handsets don't forget to get union and individual user's consent.
36. Don't be a fashion victim. Apple iPhone and Android are fantastic products but not suited yet for secure use.

Your "eyes on the ground"

Much of the debate regarding mobile data revolves around day-to-day policing and how to integrate the two in a truly efficient manner. However, niche applications that – amongst other benefits – greatly enhance the operational safety of police officers whilst providing detailed situational awareness at the front line are in common use in some forces. Jose Sanchez de Muniain talks to Andy Symons of Airpoint about the Mobile Operational Suite – a product that has been especially designed for use with the BlackBerry.

"About half of the police forces that have mobilised use PDAs but we think there will be pressure to focus on the BlackBerry device. If PDAs could provide the same level of security and receive Government approval then we would definitely use them. But at the moment that's not the case."

Andy Symons, Airpoint.

Airpoint was first approached by a national policing agency in 2008. The challenge was to produce operational management software that could plot a particular suspect's movements over a period of time – where they went, known associates, etc – in order to build a comprehensive picture of their day-to-day routines.

The requirements and features have evolved over time to make better use of the technology available in the BlackBerry and to better reflect operational needs. These include the ability to track individual surveillance officers (sometimes above 30 on one operation) in a live scenario, via the device's GPS signal. The officer's GPS signals are shown on an interactive map with the facility to "zoom" to the location of an individual officer from a drop-down list.

The end result is that when the "eyes on the ground" are being handed over to the next shift's operation commander, it is straightforward to ascertain where each officer has been and where they currently are on the map.

More recently the software, known as the Mobile Operational Suite, has been developed further so that image data (geo-coded images of a suspect or vehicle) taken on the field can be sent back to command, and from there pushed out again to the rest of the surveillance team as a briefing document – or easily disseminated to the next shift in a process known as "image exchange".

This means that everyone is sharing the same information and Andy acknowledges that much of this functionality has been prompted to some extent by the Stockwell enquiry. "An agency in England has been trialing the Suite for 18 months and during the trial we have further enhanced the audit trail so we know who's been sent an image briefing, when it was sent, and exactly what image and text was recieved. All this audit trail information is only accessible to a 'super-user' in the back end system and so provides a secure evidential trail for the protection of operational officers." Further functionality enables a particular officer to be nominated as the centre of the command interface map, which means no scrolling around the screen is necessary and it allows the commander to quickly see where the others are in relation to the nominated centre.

Andy has seen the Mobile Operational Suite in action and the feedback from end users has been encouraging: "It is about having the same image data as everyone else at the same time, and being able to have the confidence that everyone is looking at the same person. There is also the personal security aspect of following dangerous people, and the system makes officers permanently visible."

Airpoint is currently waiting for a final decision to be made regarding official take-up of the trialled software Mobile Operational Suite, and in the meantime it is adding it as part of a package to its day-to-day policing solution – Mobile Policing Suite 2.

The software has been trialed successfully at large events. During the British Grand Prix this year it was used for monitoring stewards; taking photos of damage to facilities; and maintaining surveillance of ticket touts. "At a rock concert in Knebworth the image exchange functionality was used to brief officers while they were on patrol. On a site that could require them to walk as much as four miles from one end of the festival to another for a briefing, the advantages of the solution are obvious."

This solution enables the access of back office systems remotely (person, vehicle, address and incident data) whilst on patrol, thereby facilitating ID of suspects. It also allows officers to complete reports and intelligence logs whilst on the street, and more: "Every morning or shift change there is a briefing component and with this software it is possible to download into the device all that briefing information; text, images and even video, while travelling to your beat."

At the moment there are no plans to make the software compatible with non-BlackBerry devices, which Andy ascribes to security issues with PDAs. "BlackBerry devices have their own network so the data we send out is sent via a secure data tunnel that encrypts every two kilobytes of data with its own security key. The BlackBerry is currently the only CESG-accredited device, a situation that is unlikely to change in the mid-term."

As an aside, Andy believes that as far as mobile data is concerned there will – in the future – be a contraction in PDA-use by police forces for this very reason.

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Getting IT right

Since Pauline Smith MBE's appointment as Head of Contact Centre Operations, Nottinghamshire Police has received a number of accolades including European Call Centre Award for Best Contact Management Improvement Strategy, and Emergency Services Team Manager of the Year Award by the Call Centre Management Association. Moreover, the force's speed of answer rate for 999 calls has gone from 39th (out of 43) to 3rd – in addition to an estimated £1.25m in cost savings; 90% increase in speed of answer; and customer satisfaction rise of 12%. So what is the secret of Pauline Smith and Nottinghamshire Police's success? Jose Maria Sanchez de Muniain tries to find out.

What is your strategy for improvement?

Investment in the first place then you can get the cost savings. If you don't do it at the right level then you get people moving jobs or sickness levels increasing. This pattern means you are firefighting rather than investing, and not realising any improvements.

What role has technology taken in your strategy?

The strategy we have here is to use technology for "simple", and people for "complex". Also important is to design the technology around the job we want it to do. When I first came here the technology department thought it was very refreshing to receive clearly defined requirements: "This is what I want the technology to do." And most technology now can actually do it.

I keep up with the technology by doing a lot of environmental scanning. I do work with industry; I advise ACPO on contact management; and I'm a director of the Call Centre Managers Association, which keeps me in touch with what is happening. And I read publications and put them in context of how technology could fit in with policing, so I will see for example how the private sector approaches contact management.

Can you give some examples of how you've harnessed technology for efficiency and cost reduction purposes?

One of the first things we did is put in a new command and control system which we used in a different way. This system had been used in Ambulance Trusts, and it is based on a CRM system – although it isn't one. We've designed it to deliver our services locally. Previously you had to come out of the command and control system and into the intranet to see what action plans – for example – were in place in an area. We've done it all in command and control, so if someone rings about a shed break, I can see there and then if there is an action plan already for shed breaks in the area, which PC is handling it, and inform the caller of any surgeries taking place.

We've also integrated a short crime report into command and control, which means a police officer doesn't have to call back a victim and take the same details again, and double key them. We take the information at first point of contact: and where the process used to take half an hour to complete (by the time a police officer has called back – plus a phone call) – it now takes eight minutes.

We are about to take it a step further with mobile data. Currently an officer attends a scene and fills in a C1 form, and many of these details have already been taken by the command and control system. Once the officer returns to the station, the form is scanned and the information keyed in again into the crime system. This is really bureaucratic. In September we will reconfigure it so at the touch of a button the officer at the scene will have all the information we have, on the electronic form in their device. So at the scene they don't have to take as many details and they can concentrate on investigating. The officers are really pleased with what we are doing.

We are pretty good at the moment, but we have some way to go. In another 12 months' time we will also be dealing with real time intelligence at the first point of contact.

Can you put figures on technology savings?

Around £1.25m! Dealing with incidents at the first point of contact has meant savings in time and has increased customer satisfaction. The average handling time – although our responsibilities have increased – has reduced by 6%. The speed of answering calls has increased by 90%. We have been able to reduce staff, leading to support officers being returned to divisional policing.

What technology has impressed you the most?

We had an application for a customer service desk role from Carmen Glover, who is registered as blind. We talked to a company called Blazie about JAWS [job access with speech] software. Carmen was the first blind person in the UK to take 999 calls, and her ability is unquestionable with

quality checks showing 90% performance, compared with an average of around 80%.

It is amazing to see Carmen in action: as someone is talking to her she is typing, and JAWS is simultaneously telling her what she is typing – that's no mean feat.

If money were no object, what IT would you deploy?

I'd like to explore voice analytics – in the finance sector it has got to the stage where a bank can call the customer even before they make an official complaint. It is so sophisticated that it doesn't just pick upon words, but also tone.

I know it is possible to do this with command and control, but it is quicker on voice analytics and it could lead to having customer satisfaction feedback in real time, rather than six months down the line.

We've done a lot of work in the past around 999 call abuse campaigns. Most 999 call abuse is carried out in the summer by kids messing around with telephones. Finding out how to make an impact with a campaign is not easy and involves call takers noting certain things. With voice analytics I could set the parameters to identify the type of abuse.

And the current financial situation?

I'm used to tight budgets and I'm serious about using people for "complex" – and paying them rightly – and adopting technology for less complex; this will help us in the future times of uncertainty and austerity.

Carmen Glover blazes a trail in Notts

Carmen Glover became the first fully blind person in England and Wales to take 999 calls this year, thanks to a combination of her own hard work, determination, and JAWS – sophisticated speech software that reads out text on a computer system.

The final barrier, which was to use the touch screen technology, was finally arrived at jointly by Carmen and her mentor Steve Anderson: a piece of laminate with cut-outs indicating where to enter required information onto the screen. "I hope this shows employers that employing someone with a disability doesn't have to be complicated or daunting. I also hope this opens doors to other blind people who might want to do this job," said Carmen.

Driving automation in telephony

The implementation of self-service telephony and automation is one way for organisations to realise savings and improve their interactions with the public. Jose Maria Sanchez de Muniain speaks to Joakim Hult, Senior Account Manager of automation specialist Telephonetics VIP, about a technology that could – given the opportunity – take a leading role in driving efficiencies by connecting with business processes.

Self-service telephony is part of everyone's lives both in the public and private sector – banks, mobile phone providers, utilities, government agencies – in each case the principle is the same: routing calls efficiently to the right person or department with as little human involvement as possible, and preferably none. Whether we like them or not virtual switchboards – where a set of options are read out, or the caller is invited to say the name of the individual or department they wish to speak to – are here to stay.

Unlike the case with much technology in the emergency services the cost benefit analysis for virtual switchboards is fairly straightforward to outline: call automation takes X number of calls away from the manned switchboard, which equates to so many hours of calls, which relates to a concrete value in terms of staff.

This type of solution is not new to UK emergency services. Telephonetics VIP alone has 14 forces using various solutions in the UK, but the questions remain why isn't every force using this type of technology, and how much further can it be taken?

Joakim Hult points out that there are other providers using this type of technology, but he adds that not all have been successful in delivering a workable service – which may have discouraged take-up at a later date. Self-service telephony, in other words, is not as simple as it looks: "Some solutions involve just speech recognition tools but our approach is to integrate names and directories. All new names are added via a recording artist, so before we deploy a system we record all names manually and play them back to the system to ensure they will be recognised."

Today's automated telephony solutions are both practical and varied. Virtual Personal Assistant, for example, automatically re-routes calls to where a person is actually located, whether at home, office, or street: "Many forces already have voice mail that can deliver messages to officers' TETRA radios. This kind of functionality has been around for ages and it's often a matter of people realising the potential of the tools already at their disposal," explains Joakim.

The issue of dealing with unanswered calls is just one area that – in Joakim's view – still needs to be addressed in most if not all forces. "The technology available now allows messages to be escalated after a set time into a centralised box so that service levels can be achieved. Rather than ringing out and going back to switchboard, having a strong

Hertfordshire Constabulary – automated solutions

- Automated Crime Recording: interactive voice response form that asks 25 questions that exactly match the fields on the crime system. Officers can record crime details automatically, allowing the crime desk to better manage demand.
- Virtual Switchboard Operator for internal calls: barring internal calls to switchboard reduced the number of internal calls by approx. 600 per day, leading to improved response to the public.
- Virtual Personal Assistant: if an Airwave radio is busy, callers are transferred to voicemail. The system emails the officer with a hyperlink to the voice message next time email is accessed. Messages not received can be escalated automatically after a set period of time.
- Automated Intelligence Gathering: a telephone number set up to help Major Crime Task Force members identify the nationality of potential victims.
- Automated Call Steering: automated advice for solicitors, friends and relatives of a detainee, with various options. The result is a 75% reduction in calls to the custody unit.

voicemail policy is crucial for effective call handling. Updating your greeting daily and using message escalation avoids the situation where messages sit in somebody's voicemail while they are on holiday or on sick leave. If you want to get people to begin trusting that their messages are of value, then calls have to be returned."

The whole issue of automation is particularly relevant in view of the National Contact Management Strategy published in June this year, with its emphasis on: "making every contact count: delivering services that meet individual needs, reassuring our communities and increasing public confidence in policing". Indeed the report recognises that effective contact management requires forces to use and develop IT systems and associated processes to provide better access and reduce inefficiencies.

Self-service telephony is not just about dealing with the public but also about smoothing out internal business processes. Hertfordshire police officers, points out Joakim, used to call the crime bureau at the end of their shift, all at the same time to register their crime reports – and would be left hanging at the end of a line waiting for an answer. "Now they just record their reports in voice form, and the operator at the crime desk downloads the messages and inputs them into the system when they have time."

Taking this a step further would involve automatically inputting crime report information via voice straight into the crime system – something that wouldn't actually be that difficult, practically speaking. "Voice recognition coupled with a well-designed set of options would enable the system to recognise crime types, ethnicity, names and addresses as well as yes and no questions and turn it into data. It hasn't been trialled yet but it is something that everyone wants but nobody wants to be the first, mainly because crime systems have traditionally been hard to interface with," says Joakim.

One cutting edge innovation that is underway will remind members of the public of their appointments with police officers, using outbound messages. Another concerns automated updates for victims of crime. Joakim explains more: "It is often hard to get hold of someone who has requested a regular update, be it on a weekly or monthly basis. We suggest a voice messaging tool that reminds the officer when the updates are due. The officer can then record the update, and notification is sent via SMS to the victim with a telephone number to dial. The victim then listens at their convenience and – if they want – responds with another message. It means that officers on a night shift can still do their job rather than wait until daytime, not to mention the fact that they will have a full record and proof of the update."

In order to get the most out of the technology however, organisations have to do their bit and think long and hard about what they are trying to achieve with their business processes. Not thinking it through can result in yet another IT investment that is quietly dropped six months down the line, ending up in the graveyard of missed opportunity.

"Now they just record their reports in voice form, and the operator at the crime desk downloads the messages and inputs them into the system when they have time."

Joakim Hult
Senior Account Manager, Telephonetics VIP.

Solutions in infrastructure: food for thought

Can cost savings be found by casting a fresh pair of eyes on your data/voice wide area network? Jose Maria Sanchez de Muniain speaks with George Windsor, technical sales account manager at Fibre Technologies, about the solutions that are available when it comes down to either an emergency service's own network or a network leased from a traditional carrier.

Picture the scenario: a hospital acquires or builds a new wing across the road and due to capacity requirements needs a high-speed 1Gb/s data circuit to provide the required voice and data communications between the two sites. Unfortunately, existing fibre/copper circuits do not link the two buildings, nor can a direct link be created by the local carrier without major site works (and associated costs). So what are the options?

George Windsor of Berkshire-based Fibre Technologies, who faced this real-life scenario, says that the traditional solution of going down to the local exchange was not viable. It would have meant communications travelling two miles to the exchange and back again: "And that reduces your bandwidth considerably and as you still have to pay for that circuit under contract – it is a year-on-year cost."

One of the options was to create a wireless LAN link – distance permitting – but this is not always a popular choice due to data security and interference worries.

Another option would be a so-called "free space optical link" – in effect a laser beam between the two:

It was necessary to create a high speed Data circuit between the main building and a newly acquired building across the road. Existing fibre/copper circuits did not extend across the main site to the new unit building and the local carrier couldn't provide a direct link without major site works and associated costs.

"This isn't dangerous in any way but this type of technology can suffer from fog and rain to a greater degree, as well as alignment issues over time."

A superior option was Millimetric wave radio, where both 60GHz and 80GHz (greater range) bands are used and licencing involves a simple, low cost, one off process.

The link is line of sight, and the frequency and modulation scheme employed create a very narrow beam spreading out to an angle of just one degree. Covert reception of this beam is virtually impossible without upsetting the receiver and transmitter back to the far end. Even so there is a 256bit AES encryption option available at extra cost should maximum possible security be desired.

"This type of solution does not suffer from fog or rain to the same extent as free space laser links, and a sensible range could be as much as five miles using the long range model."

The benefit of this type of installation is that the outlay is restricted to the original installation and an annual service – still lower than leasing a circuit and the result is a 1Gb/s per second link. George adds that this type of technology is not new and is popular in the USA and the Middle East, in particular in countries where infrastructure is poor and the cost of installing fibre prohibitive. "Some UK universities and police forces do use it, and today the units can be smaller than home satellite dishes."

The big IP Network migration

What about organisations that haven't moved to voice-over-IP, and have existing PABXs (private automatic branch exchange, an in-house telephone switching system) that are not IP-ready, or do not want to upgrade because of the prohibitive costs?

For some years now most voice communications in the UK have been going over an E1 network, a 2Mb/s connection that has served as a standard for the likes of Affiniti, BT, Cable and Wireless, Virgin Media and other network carriers. E1 is just one of the many different networks that are operated by such carriers (eg SDH, PDH, ATM) – and which all carriers intend to decommission to lower data centre running costs (ie air conditioning, racks, power consumption, floor space etc): "So what they have been doing is trying to persuade companies to move away from E1 links and use an IP network through Ethernet. The idea is to get everything onto IP, and if you can get your voice PABX to go across IP then an E1 service can be decommissioned."

Readers will in all likelihood have noticed recently that the cost of IP telephony compares highly favourably with E1 telephony – in fact it is now cheaper to get 10Mb and 100Mb comms for less than the usual 2Mb/s via E1. "So it is a natural thing to want to convert voice PABX and let it run over the IP networks. The trouble is there's an awful lot of equipment out there that runs on 2Mb/s E1 or copper, including PABXs," adds George. As a result, many public sector buildings are often connected to each other over two lines – an E1 service for voice, and another circuit for data.

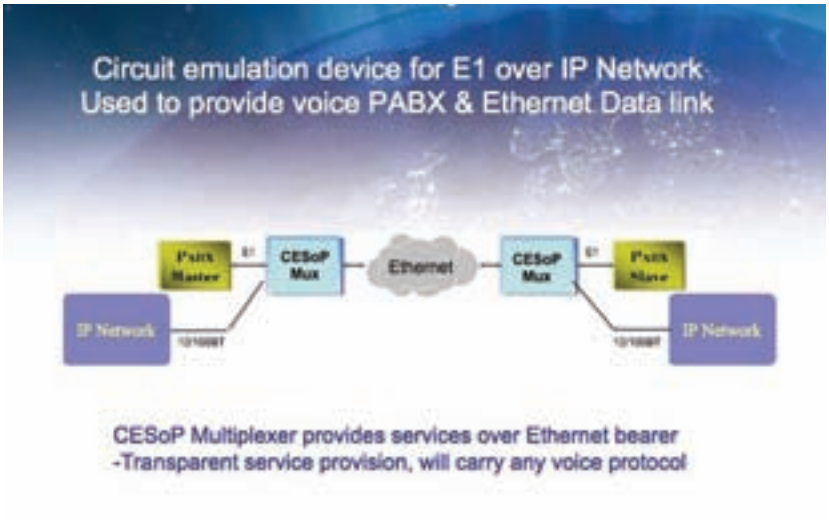
If you use the right equipment however, you can disconnect the E1 service and use a circuit emulation device (CESoP multiplexer) that allows legacy E1-type voice traffic to go over the IP network. "In effect you are providing an E1 service over IP, and pretending to be an E1 2Mb/s service." Except the "pretend" E1 communications will now run over a 10 or 100Mb/s bandwidth.

Over the last few years Fibre Technologies has supplied a number of these emulation devices/multiplexers to different constabularies and Health Authorities that have wanted to make some savings. George adds a word of warning, however, regarding using PABX VoIP gateway boxes: "Some PABX manufacturers have launched voice gateway products to migrate organisations onto IP – but there is a cost associated with adding them.

"If a PABX box is quite old then an upgrade could be required too. Additionally, a lot of configuration may be necessary and this takes time, effort and disruption. When you use a CESoP multiplexer you basically just unplug one port from one device and plug it to another, and make sure the line is running." An installation of two new emulation devices (multiplexers), estimates George, may cost in the region of £4,000, a sum that typically would be recouped in approximately two years.

Ethernet provision using existing E1 or copper circuit bearers

What happens if an Ethernet connection cannot be provided by a carrier without incurring major extra costs? This might easily be the case in remote areas or where distances are long – in a nutshell where it makes no commercial sense to install cable. As long as an E1 network is available there are options on the table, explains George.



A circuit emulation device such as the CESoP multiplexer allows legacy E1-type voice traffic to go over the IP network.

Using an inverse multiplexer that bonds – say – 4xE1 ports together can create up to 8Mb/s of bandwidth for an IP network, where only 2Mb/s was possible previously.

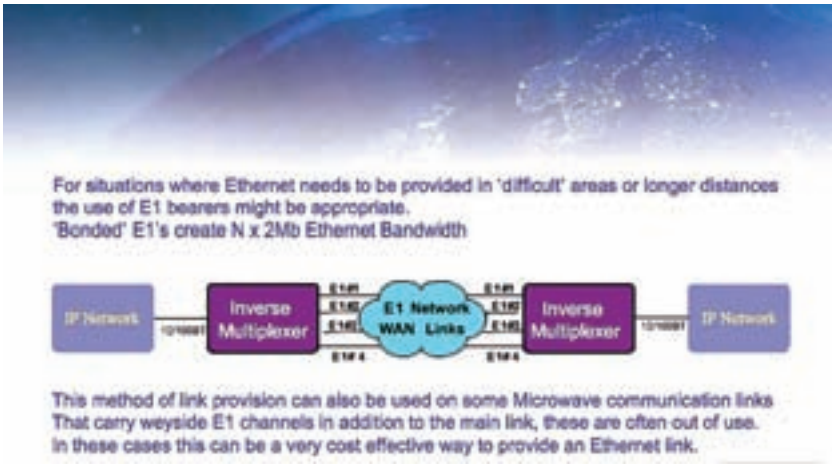
In some cases E1 circuits form an unused part of a continuing service contract for a separate network, eg for microwave radio data links. "A police force I was talking to recently had this same situation with extra resilience. As a result it purchased some Inverse multiplexers that could use multiple E1 bearers to create an IP connection between two locations so they could install IP cameras and have a surveillance system running.

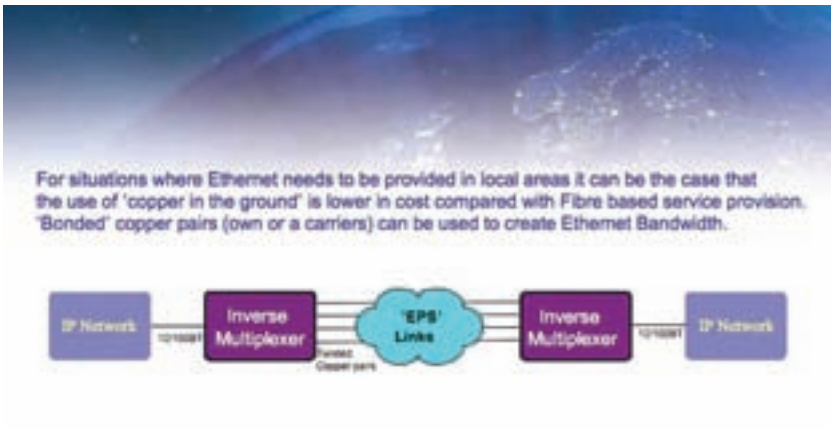
"The good think about it is they already had the E1 links as a resource that wasn't doing anything and was part of a service for two microwave links. So in effect all the force had to do was add equipment to mop up idle capacity to provide extra bandwidth for new applications."

Ethernet provision using existing copper circuit bearers

Where an IP network is required between local sites (a few miles) and E1, Ethernet or other network services

Where unused E1 circuits exist, inverse multiplexers can be used to create an IP connection between two locations.





Inverse multiplexers can be used with copper wire – and the connection might be good enough for video over IP as well as data and voice traffic.

expensive or time consuming to provide, then it might be more cost effective to consider the use of the twisted copper pairs that are in the ground – but with some additional technology that is not actively marketed.

A fixed data link from one building to another can be arranged by leasing from a carrier (such as BT) what is called an EPS 8 or 9 circuit – where EPS 9 constitutes a single pair of twisted copper cables, and EPS 8, two pairs.

In this case the carrier installs "jumpers" at the exchange, which permanently link two numbers together. "Once you've got that circuitry between two buildings you can start thinking about how to use it. If you use the right kind of technology you can use a low or high speed modem, and how fast it runs will depend on the distance involved and the quality of the copper."

Using the above mentioned inverse multiplexer, a 2Mb/s copper connection (modem and distance dependant) could provide an 8Mb/s service using 2x EPS8 circuits at a fraction of the price of leasing an 10Mb/s service.

"Of course, for these types of speeds it depends on the type of application you want to run over it. However, this kind of bandwidth might be good enough for a security camera and with video over IP being so good these days it might even be possible to also run data traffic and voice data over that link. It is food for thought, and the managers that deal with communications may need ideas on how to save money with what they already have or is at their disposal."

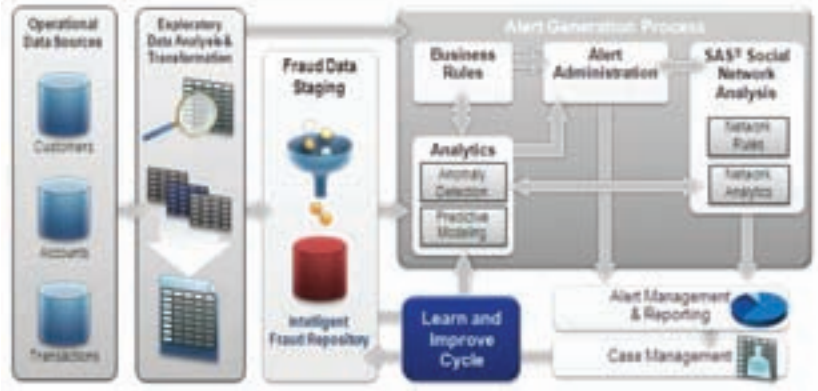
Fraud-busting tools

Public sector fraud hit the headlines recently when credit-checking company Experian was selected by the Government to crack down on benefits fraud. While cutting Britain's estimated £5.2 billion fraud bill is now more than ever an attractive idea, there are questions of privacy being raised by groups such as Big Brother Watch about directly involving the private sector. Jose Maria Sanchez de Muniain speaks with fraud specialist Paul Eagles of global analytics company SAS about some of the tools used by the finance sector, and finds out some of the challenges involved in placing these types of tools in the public sector.

Paul Eagles outlines how data analytics works in terms of managing the fraud data flow (below).

The concept of using data analytics to uncover public sector fraud is not as new as it might sound.

Across the Atlantic in Los Angeles County a 2008 data mining pilot program using such software resulted in an 85% accuracy rate in detecting collusive fraud rings within child care benefits fraud, resulting in annual savings of at least $6.8 million.



The pilot has resulted in global analytics being approved for use within the LA County's welfare assistance program for child care.

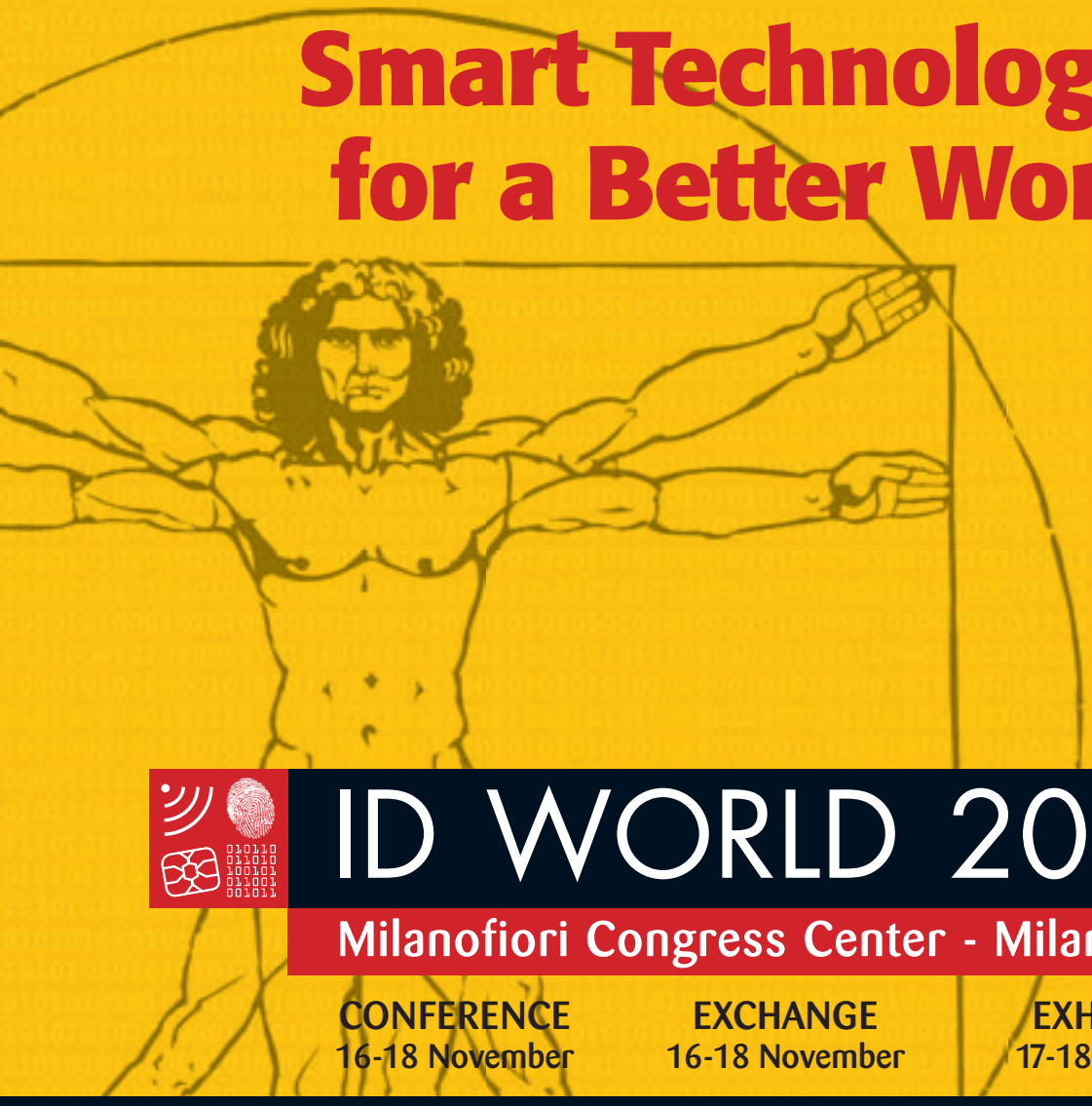
Closer to home, fraud identification software has been used in the public sector for some time now, but only in certain niche applications.

Since 2007 the NHS Counter Fraud Service (NHS CFS) has been using SAS's predictive data analysis techniques to highlight where NHS fraud is most likely to occur.

Here, the software identifies trends or anomalies in payment systems, allowing NHS counter fraud specialists to investigate whether some claims are false and fraud has taken place. All areas of potential NHS fraud are covered by the software, including patient and employee fraud.

In the modern environment, explains Paul Eagles, fraud management is as much an issue about data

Smart Technologies for a Better World



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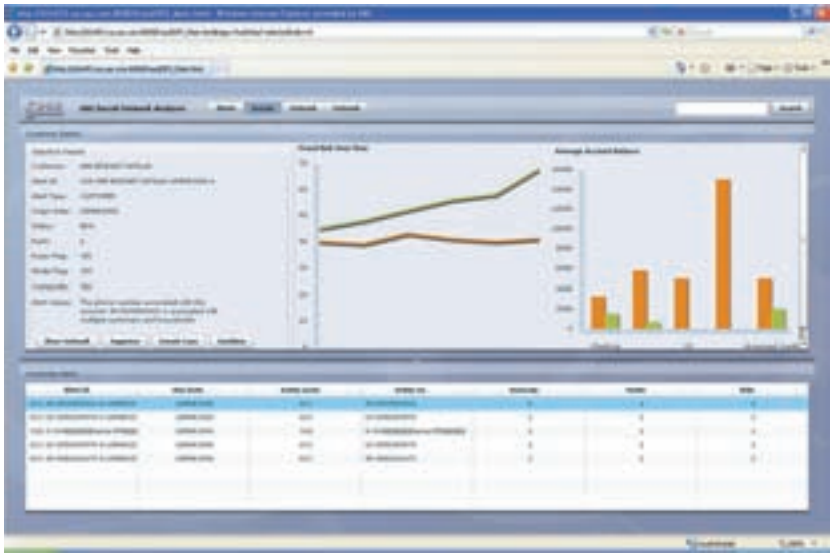
Investigator performance dashboard – loss mitigation. A financial sector fraud department typically works to a false positive rate of between 20:1 and 50:1 in terms of real fraud identified. Below: in the financial sector a behavioural profile is attached to users of all credit/debit cards in order to identify anomalous behaviour.

management as law enforcement. "We are living in a world where nearly every interaction with an organisation is recorded electronically, and data analytics is about leveraging that data in productive ways to find anomalies in transactions that indicate abnormal behaviour that may or may not be fraud."

A fraud system works by alerting the user of this behaviour and ultimately it is up to the user to verify it in some fashion. "Fraud detection systems will never be 100% right or wrong – that is not the nature of the solution," points out Paul.

The data analytics approach is multi-layered and consists of many different pieces, explains Paul: "One example is the idea that when somebody is transacting with a public body, you want to know the probability of fraud being attached to a particular event. So that could be when someone changes their benefit claim in any number of ways. You need to be able to evaluate those transactional flows in real time to spot whether a particular action is anomalous. In a system setting this could mean a policy piece that puts the control at the point of transaction and says, 'we are not happy about this we need to look at it further.'"

Paul Eagles' background is in the financial sector, where a behavioural profile is attached to the user of, for example, a debit card – and when many accounts are involved, behaviour can be analysed more broadly: "Let's say the card holder is in a jewellery store in Manila. A predictive fraud model would say that there is a high probability of fraud here, because traditionally this type of transaction in Manila is high risk. So you would grade it as one in X chances of it being fraudulent. But if we also know that another card had just been used in a nearby restaurant, by the same user, then it no longer looks like fraud, but a holiday. So you are looking at both what constitutes potentially fraudulent behaviour and how that relates to other behaviour around it."



Last year the UK's first comprehensive fraud estimate, released by the National Fraud Authority, put the cost of fraud at over £30 billion a year. 58% of that figure was in the public sector, followed by 31% in the private sector, and fraud against individuals at 12%. "The key takeaway from this report was that a lot of best practice is in the private sector, which is more focussed on protection and detection, while in the public sector the emphasis is on investigation – when sums have already been lost."

A more intelligence-based approach that is based on analytics is therefore key: "I sometimes say that fraud is really easy to detect, but detecting when it is useful to do so – that is difficult."

Getting down to the nitty gritty, Paul admits that while the wider the data sample the better the results, it is better to start somewhere than wait for a big deployment. "I'd imagine a successful deployment at county level, or PCT level where there is already control of in-house data and where data is already shared between departments.

"While there are complexities involved in sharing data across public sector bodies I would say a significant number of private sector customers have faced similar issues with data governance."

So can a figure be put on potential public sector savings as regards fraud? "In terms of bank fraud, typically you would expect to see detection rates of 35-70%, depending on the fraud type and channel, but I'm not saying the same could be achieved in the public sector. And a lot of it depends on the value of transactions and the frequency."

Out of 100 fraud alerts generated by the technology, Paul clarifies that the financial sector typically works to a false positive rate of 20:1 to 50:1 in terms of real fraud identified.

As for the hurdles that Paul envisages in terms of wider acceptance of data analytics in the public sector, there are two big ones. First is the availability and cleanliness of the data. "Fraud is actually a vanishingly rare event and most transactions are genuine, so the problem is making sure the data available is clean and that any anomalies are understood by the users – and that's a major challenge.

"The other challenge revolves around organisational culture. There is a fundamental difference in mind-set between the benefits agency where people are rightfully entitled to money, and the private sector where it is about containing costs."

Mobile phones: take control of your fleet

Mobile phones are a key tool within most organisations but just how well are they managed? Laura Wilkie of ttMobiles, a company that specialises in wireless expense management, regularly finds companies where 2% of mobile phones are being used by ex-employees and 14% of devices have not been used in three months. Embracing a mobile phone policy and taking charge of a mobile phone fleet can cut costs by 30% – something not to be sniffed at during austere times. BAPCO Journal reports.

In the emergency services sector the management of mobile phones can be a function that falls between the gaps – after all it is not a mission-critical piece of kit like TETRA radios – and as the bill is often paid for without scrutiny it is rare for a user to take ownership of its usage. It is also probably fair to say that when it comes to personal usage they are sometimes regarded as a perk of the job.

Mobile phone fleet management means basically regaining control of the mobile phone fleet (who has what) and then looking at cost control, cost savings, and ultimately cost avoidance.

Laura Wilkie, Business Area Manager from ttMobiles reflects that while mobile phones have gone from being "nice-to-have" to business critical, this change in frontline status has often not been reflected in how they are managed in the back office. "Now that mobile data usage is growing exponentially the variable costs are also going through the roof, no matter how hard a contract is negotiated. Costs keep accumulating because it is especially hard to manage the behaviour of users."

Tariffs, device usage, shared or pool devices, bundled services – all these things can only be properly assessed by an independent party, adds Wilkie, because a network or reseller is intrinsically unable (or reluctant) to resolve conflicts of interest such as highlighting devices that are not being used and suggesting they be cut off.

The beginning of the process of regaining control of a mobile phone fleet starts with an audit, wich usually reveals some interesting facts, eg approximately 2% of all devices are still being used by personnel no longer working in a company – with the bills still being paid for by the ex-employer; "or the devices are sitting in drawers while the organisation is paying an exorbitant line rental fee."

If an audit is carried out prior to a tender, the benefits can be enormous. "It places an organisation in a position of strength, as it involves collecting addresses of users, which means if the decision is taken to move supplier the migration will be much easier."

The next part of ttMobiles' approach to regaining control revolves around monthly mobile phone bills. The company receives all the bills related to its customers and validates them, ie checks the rates are correct and that they fall within agreed parameters. If they are not, ttMobiles requests that credits be added for the next month. "In real life people just don't have the time to do this," highlights Wilkie. Once validated, the bills are placed online.

Personal usage

Personal usage of mobile phones is the biggest issue in mobile phone management, and the hard part, says Wilkie, is how companies can get a handle on it. "We tend to see huge environmentally-unfriendly piles of paper being sent out to employees along with highlighter pens. Basically this is an honesty policy and one which does not actually return much to an organisation. If they are lucky they might get 5-10% back."

The ttMobiles solution entails each employee validating their own bills and allocating numbers to personal usage. The process is simple, automated, and fast. "Rather than sending an unmanageable itemised bill, we group the calls and alert the users via text or email that their bill is ready to be validated by them online. It is a bit like doing expenses."

Users can pre-allocate numbers to either business or personal use, and the only numbers that require validation on a bill are the numbers that haven't been pre-allocated.

Once an individual has allocated his calls, the bill is submitted and the cost of these personal calls is then subtracted from his payroll. "Getting money back for personal calls needn't be seen as a bad thing in the current climate. Very few organisations can give an actual benefit in kind but this is a benefit to employees because they are making personal calls at a lower corporate rate – and without paying line rental. So it is a benefit but not a benefit in kind."

Interestingly, organisations that move to this service normally experience a dip of 15-20% in calls – both business and personal. "This is purely because users understand they are being monitored and now actually realise how much the calls cost. It is not like having a huge paper bill that doesn't get looked at closely by a manager. So there is a move to being more conservative as awareness grows. For cost centre managers, they find that suddenly having control means they also have ownership and time to do their real job, knowing that this is one area that is being professionally managed," concludes Wilkie.

Laura Wilkie (above) explains that ttMobile is launching a new product that allows the viewing of multiple networks under one umbrella. This will allow public sector organisations to compare networks with each other to see where the value is, in one place. Another product due for launch later in the year is a preparatory service to help organisations prepare for their contract negotiations and future mobile expenditure: "You shouldn't go into negotiations and be led by what the networks are saying."

Conferencing during crises

The UK government's budget statement announced a 25% cut in departmental public sector expenditure over a four-year period for all except health and overseas aid. For more than 12 months, the mantra of "more with less" has been rippling through the sector, as people prepared for the impending realignment. Nevertheless, innovative technology is vital in helping the public sector withstand cuts, writes Chris Jones, CEO, PageOne.

"Where voice conferencing technology is now extremely beneficial for first and second responders out in the field is in that it is now immediately available via an application on the iPhone – and will also be imminently available on Blackberry devices."

Chris Jones, CEO, PageOne.

Now that the scale of exactly how much "less" is evident, organisations are being put under increasing pressure to action instant budget cuts, especially in light of the measures laid out in the government's Operational Efficiency Programme, whilst still being expected to maintain a high level of efficiency.

Before deciding which areas of the business in which to slash spending or make cuts, organisations must properly decipher the business benefits of the various technologies they currently have to hand, and with budgets/cost savings high on the agenda, businesses must look at the most cost efficient solutions. Voice conferencing is one such technology that merits such a discussion as when used effectively it can deliver real business value.

Traditionally, access to conferencing facilities has seen many businesses having to commit a large proportion of their budgets to costly long-term contracts. Although voice conferencing presents many organisations with a great way to instantly communicate with a number of people at the same time, its cost has often out-weighed its benefits particularly for use in business continuity situations. Having been deemed as an expensive commodity, there is no escaping its ability to play a significant role when attempting to warn and inform during an emergency.

For those looking for an occasional voice conferencing solution, this technology no longer needs to be contract-based. There is an affordable and exciting new development available in the market which eliminates the need for companies to be tied to an expensive contract and customers now have the ability to subscribe to a pay-as-you-go service. However, organisations should look to consider contract-based solutions as the use of such technology could actually help to streamline business processes and ultimately save costs. By embedding this same technology into routine processes, it can also double up as an effective business continuity tool – an important requisite to protecting your organisation through this difficult climate.

In crisis situations, the faster that you can get the right people talking to each other, the quicker you can contain the damage and form a response. Should a worst-case scenario strike (be it fire, flood, pandemic etc) what is needed is instant real-time two-way communication, and this is exactly what voice conferencing delivers. Voice conferencing immediately enables organisations to quickly manage and co-ordinate incidents as they unfold, bringing in or excluding individual members of the organisation as and when they become relevant to the response. It also enables people to work together as soon as a problem first becomes apparent to a single member of the team, rather than when the repercussions begin to show, and enables the team to be flexible with assigning tasks according to how the situation evolves.

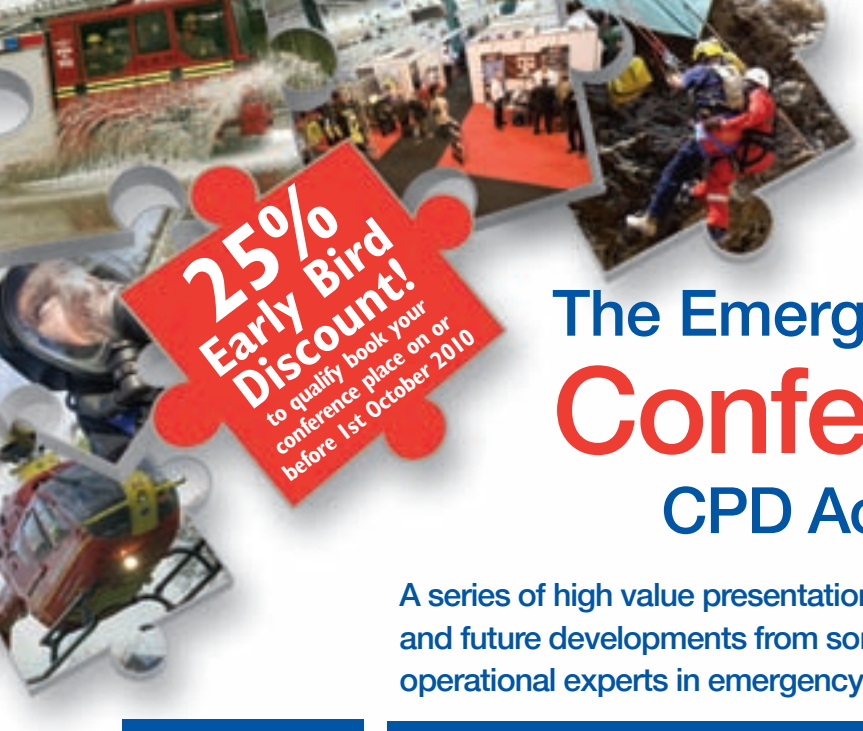
Where voice conferencing technology is now extremely beneficial for first and second responders out in the field is in that it is now immediately available via an application on the iPhone – and will also be imminently available on BlackBerry devices. Responders can easily and quickly communicate actions wherever they are based via their mobile phones. There are providers (like PageOne) who also provide free call recording as standard, which for business continuity situations is invaluable as it acts as an audit trail, playing a vital part post crisis in analysing what exactly happened. It confirms exactly what information people reported and who was deemed responsible for certain activities at each stage.

Another important innovation with voice conferencing is that this technology can also be used via a web-enabled account. In business continuity incidents, this may prove particularly useful for administrators who may not have access to their own telephones or comms system. Therefore, a stand-alone system means that they can take control wherever they are, and wherever their people are.

Voice is an extremely powerful addition to current messaging systems and should continue to play a key role within organisations' communication structure. SMS is ideal for quickly delivering short, timely bursts of information/instruction.

However, sometimes information is more effectively transferred by the spoken word, helping to personalise and enrich communication with staff, customers and the public both in day-to day operations and emergency situations.

Technology which helps organisations effectively and efficiently operate its business must be maintained and invested in. It is this investment that will enable future progression, protect current business and help further develop the UK economy.



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Opening Keynote Presentation: Christina Scott, Head of Civil Contingencies Secretariat

Overview from the Police, Fire & Ambulance on Multi Agency Collaboration in Challenging Times

- Presentations from West Midlands Fire & Rescue; West Midlands Ambulance Service; Police Service

Building Relationships Through Training and Interaction

- Exercise Orion - Testing the UK Response to Large Scale Disasters: CFO Roy Wilsher OBE C.Eng B.Eng (Hons), Hertfordshire Fire & Rescue
- Project Radiance - Steps Towards a Resilient, Integrated Approach to First Responder Communications and Interoperability: Dr Ben Weston, MOD in partnership wtih the CCS and NPIA
- Casualty Management - The Next Chapter: Derek Luff, Development Manager, Fire Service College & Dr Helen Higham, Consultant Anaesthetist, John Radcliffe Hospital

The National Challenge of the 2012 Olympics & Paralympics

- Organisations include Olympic Security Directorate; London Ambulance Service; London Fire Brigade; British Transport Police; British Red Cross

Day Two: Thursday 25th November

Opening Keynote Presentation: Perspectives on the International Security Landscape - The Enduring Threat from International Terrorism: Dr Dave Sloggett, Centre for Defence Studies, Kings College, London

Creating a Resilient Infrastructure

- Improving the Resilience of Critical Infrastructure: The Cabinet Office will be hosting a series of workshops to discuss the consultation on the draft National Resilience Plan for Critical Infrastructure co-ordinated by David Murphy, Assistant Director, Natural Hazards Team, Cabinet Office
- Integrated Agency Approach: Case Studies, Concepts & Developments: Mark Leigh, Course Director for Risk, Crisis & Emergency Management, Emergency Planning College
- Civil Contingency on a Budget: Mike Granatt CB FCIPR, Luther Pendragon, Advisors to Community Resilience

Natural & Manmade Disaster Management

- Humans as Heroes and Hazards: Phil Smith CRMI, Director of Critical Team Performance Programme, CTP
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