

Managed ICT in the emergency services

The challenges facing the Blue Light technological landscape and the potential benefits of Managed ICT Services.



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1 Introduction

Providers of emergency services in the UK are facing a significant Information Communications Technology (ICT) challenge. They need to embrace digital transformation and take advantage of new ICT services, manage all the risks involved and achieve it on increasingly tight budgets. Between 2015 and 2019, emergency fire and rescue services face - on average - a 22% reduction in their budgets¹ due to government funding cuts, whilst demand for their services continues to rise. In addition, the Home Office has mandated the introduction of the Emergency Services Network (ESN) which will move the Services' traditionally radio-based communications to 4G.

Faced with growing pressure to increase inter-service collaboration and share information and services with other emergency service providers, whilst enabling operational effectiveness and focussing on their core businesses, Blue Light services need to harness every technological tool available to them and use them to deliver leaner, smarter and safer services to the community. But is it too much to ask these services to undertake digital transformation, manage government-led technology reform and save lives?

This paper explores the digital challenges that emergency services are facing as well as the potential benefits of using managed ICT services to support their transition into digital maturity.

2 Key Trends

There are a number of factors affecting digital transformation across the Blue Light services. Some factors are internal and some are external but they are all driving change and necessitating the adoption of cutting edge technology, which requires expertise across the ICT sphere. This section explores some of the drivers of change from politics and economics, to social and legal.

2.1 Political

In 2013, the Home Office announced the Emergency Services Mobile Communications Programme (ESMCP), with a new strategic direction update provided in November 2018. It outlined plans for a dedicated emergency services network (ESN), which it said would "provide the next generation integrated critical voice and broadband data services for the 3ES (police, fire and rescue, and ambulance)."² The plan means the migration of emergency communications services from TETRA two-way radio networks to a cellular 4G service.



Implementing this change requires alterations at a fundamental level within the network and control room infrastructure of each service. Whilst support is readily available during implementation where third parties are involved, budgetary constraints, new equipment and infrastructure requires many emergency services' support staff to undergo training, learn new systems and become involved with technology support at a detailed level.

In addition, there is pressure from government for inter-service collaboration, bringing together data and knowledge across all three Blue Light services, which adds pressure on ICT staff across each sector.

2.2 Economic

The current economic pressures and budgetary cuts have led to consolidation of roles across the services. This has encouraged each service to do more with less funding and demonstrate value for money as individual businesses. With a focus on reducing costs, there is increasing pressure to spend the available money on frontline services, rather than back office functions.

Whilst this focus on the frontline is prudent, it raises problems for in-house ICT support, as OPEX must be kept to a minimum but internal technology still requires maintenance, upgrading and daily support. In 2016, the total number of support and control staff within the fire service in England was about 8,000 FTE³. This figure is 3% lower than the previous year and 18% lower than five years beforehand. In the police force, the number of police staff fell 21%, from 77,071 in 2010 to 61,063 in 2017.⁴

One trend has been to buy in managed ICT services on fixed-price contracts to help the emergency services manage budgets predictably without increasing staff numbers internally. Placing contracts with ICT companies managing other Blue Light services means they have the concentrated knowledge and expertise on hand, as well as economies of scale to efficiently manage CAPEX and OPEX whilst delivering the ICT services.

2.3 Social

The use of social media websites is a common part of life in the United Kingdom. At the beginning of 2017, the total number of social media users in the UK had reached over 39 million users, with estimates going up to 42 million users⁵ in the future. This translates to a penetration rate of over 58% and 62% respectively. With 67% of online adults reached by Facebook in November 2016, the website took the number one spot of recently visited social networks in Great Britain, closely followed by YouTube.

- police-workforce.pdf

http://www.cfoa.org.uk/20634

http://telecoms.com/424831/o2-out-of-uk-emergency-services-lte-tender-ee-lone-runner/

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/563118/fire-rescueoperational-statistics-201516-hosb1216.pdf

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/630471/hosb1017-

⁵ https://www.statista.com/topics/3236/social-media-usage-in-the-uk/



Given these statistics, it is clear why the police, fire and ambulance services are engaging with the community via social media. Examples of usage include raising awareness of service-wide campaigns, asking for feedback and answering questions from the community. In some cases, social media footage has also proved useful in capturing fires in their early stages, detecting and preventing crime, and providing evidence where crimes have been committed.

There is also a social trend away from procuring services from distant suppliers towards local providers. Off-shore contracts appeared attractive from an initial price perspective, but the perceived quality of service was poor. Providing the commercial terms are competitive, using local people for local services offers many benefits. In addition to the commitment of hiring people to help protect and serve the community in which they live, they also have a greater knowledge of local issues, attitudes and priorities when it comes to serving that community.

Staff data shows that over half of support staff within the fire and police services are aged 40 and above. In 2015, 54% of support and fire control staff were aged 46 or over⁶ and in 2017, 62% of police support staff were over 40, with 19% over 55.7 Whilst most over 40's are perfectly comfortable embracing the latest technology, they are not digital natives - those born during or after the digital age and "native speakers" of the digital language of computers, videos, video games, social media and the internet.

In addition to the low levels of digital natives in Blue Light ICT services, there are growing recruitment problems due to the current age demographic of staff. With high proportions of ICT staff approaching retirement age, can the Blue Light services recruit the talent needed to replace them? In a competitive market place, where ICT staff are in demand by every company, finding and retaining good employees is challenging and time consuming. It is understandable that younger staff looking for a career in ICT may be more attracted towards working for an ICT company rather than the ICT function of public sector organisations, such as the Blue Light services.

2.4 Technological

In 2012, Her Majesty's Inspectorate of Constabulary (HMIC) undertook a study of how police officers in six forces used technology in the field. They found that of the 19 basic technology operating systems now required by a constable carrying out frontline roles away from police stations, only one - mobile telephony - was consistently available and even that was not always effective⁸.

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past two centuries, the context in which it operates has latterly been transformed as a result of the digital revolution. The spread of technology into virtually every sphere of modern life means that digital evidence is now available at almost any conceivable crime scene.

This could include smartphone footage of an assault in a public place, a social media trail relating to a missing person, or a record of devices connected to the Wi-Fi router at a property that has been burgled. These are all at the volume end of the spectrum, and the potential for sophisticated data analytics tools to link previously unconnected offenders and crimes, and even to predict where and when offending will occur, offers huge benefits.

Almost nine in ten (86%) of UK adults now have internet access at home⁹. UK smartphone ownership is over 76%¹⁰ and they are the most widelyused device by UK adults for accessing the internet. This means that new information is being added constantly through text, photos and videos, instantly, at any time and from any location. The web provides a powerful way of keeping in touch with what is happening.

This is both an opportunity and a challenge for Blue Light ICT teams. On the positive side, there is a huge amount of warning and evidence collecting capability available. However, the ever-changing technology and the huge breadth of software and applications make decisions difficult. In addition, a suitable digital asset management system must be implemented in order to manage digital evidence, body worn video evidence and crowd sourced video assets, in order to make these useful. The rate of technological change is not slowing so the level of expertise needed by Blue Light ICT teams will continue to increase.

2.5 Environmental

Environmental and climate change issues are of increasing concern in today's society and addressing these issues is of growing importance to the Public Sector. All the Blue Light sectors have introduced environmental strategies and policies to minimise the environmental impact of their operational activities.

When considering the impact of ICT functions on the environment, the most obvious effect is made by the running of equipment and infrastructure. The consolidation of emergency services county-wide does not always lead to a consolidation of ICT infrastructure, which means inefficiencies of data storage or data duplication across data centres.

The trend towards sharing ICT infrastructure increases efficiency and has a positive environmental impact too. Computers and communications systems consume electricity both for power and cooling. Running shared systems means that data can be kept on a smaller number of systems and can be accessed from anywhere by any member of the

9 Ofcom http://bit.ly/2eo077y

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/563118/fire-rescueoperational-statistics-201516-hosb1216.pdf

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/630471/hosb1017police-workforce.pdf

Taking Time for Crime http://bit.ly/2fw1tLx



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emergency service. Cloud based or hosted services can also be used as a convenient and carbon-friendly repository for consolidated systems. The use of unified infrastructure reduces the carbon footprint of the Blue Light ICT function.

2.6 Legal

Keeping abreast of the ever-changing legal environment surrounding ICT is time consuming and requires constant training and updating. Where in-house staff are involved, this knowledge is frequently possessed by a single individual and only updated at times of major change.

The General Data Protection Regulations (GDPR), a regulation in EU law on data protection and privacy for all individuals within the European Union which came into effect in May 2018, addresses the export of personal data outside the EU. The GDPR aimed primarily to give control back to citizens and residents over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU. This regulation requires that organisations that deal with public data appoint a Data Protection Officer (DPO) and Data Controller to monitor and implement measures that meet the principles of data protection by design and data protection by default¹¹.

In an already stretched in-house ICT department attempting to meet the daily IT needs of the business within budget and with fewer staff than ever before, assigning staff to the compliance of GDPR is an almost impossible task. Through the trend toward using managed ICT services, emergency services have access to a range of professionals who have been employed solely to deal with GDPR and data protection, without the overheads of employing, recruiting or training.

In addition, the UK government has created a legal requirement for all emergency services move from a TETRA based radio communications network to a 4G LTE mobile broadband network known as the Emergency Services Network (ESN). This new network technology will allow collaboration between officers, forces, other emergency services and the public and will arm the Blue Light services with access to email, online documentation, live streaming of video, advanced mapping and other GPS related services.

To move from TETRA to ESN it is predicted¹² that around 300,000 users will require new 4G devices, 45,000 vehicles and 115 aircraft will need to be fitted with new communications equipment, and some 230 control rooms will have to be upgraded.

ICT managed services can provide technology and network services including 'mission critical' operational systems in the Public Safety community and work alongside emergency services customers to help make the transition successful. This means emergency services can concentrate on protecting the public, whilst the ICT service provider delivers the enabling technology services.



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3 Using telent's Managed **ICT Services**

telent provides technology and network services to many of the UK and Ireland's largest and most 'mission critical' operational systems in the Public Safety community. The company designs, delivers and supports solutions and services which enable organisations to create, improve and operate the ICT and communication networks that their businesses depend on. Delivering to ever more exacting standards, telent helps drive the development of increasingly advanced communication solutions.

Beyond the design and integration of national networks and voice and data systems in critical environments, telent has the ability to factor in the unpredictable, responding to any circumstance at speed and in the correct manner. Security cleared and accredited engineers provide round-the-clock support, each with a unique understanding of specific safety and operational requirements.

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telent's current services for Emergency Services include:

- Radios (Airwave)
- Mobile Data Terminals

- ANPR Systems

- Applications Management
- As well as specific ESN Services:
- Vehicle Connectivity Services
- Coverage Assurance
- Transition Management Resource

In total, telent offers around 130 service catalogue items in its ICT Managed Service offering for emergency services and is able to support all aspects of mission-critical infrastructure as well as day-to-day ICT assistance. Benefits of using Managed ICT Services

Many Blue Light services are exploring the benefits of moving to managed ICT services. Some regional and county fire and police services have already procured managed ICT services either for specific functions

- Control Rooms (C&C/ICCS)
- Station End and Alerting
- Secure Networks inc. ITHC
- Vehicle Conversion Services
- Data Centres and Desktops
- Unified Communications
- Digital Asset Management Systems
- Control Room Upgrades
- Secure Networks inc ITHC

¹¹ https://en.wikipedia.org/wiki/General_Data_Protection_Regulation

¹² http://readvforesn.com/about-esn/



"it is important to select an ICT partner that specialises in the Blue Light Sector, with experience in Public Safety and Defence." (e.g. the control room) or for wider issues (e.g. command support systems). Each Blue Light service in each region may have different requirements, but the benefits can be summarised as follows.

3.1 Financial

Often the initial benefit sought is financial. Some are motivated by the need to predict their long-term costs and ICT managed services provide financial certainty. Others are looking primarily for cost savings in OPEX, CAPEX or both. Whether it is financial predictability or a shrinking budget, managed ICT services offer an attractive approach in Blue Light services with regular financial reporting and measurement.

Indeed, telent offers efficiency and value for money reviews as part of its ongoing appraisal process with its emergency services customers to ensure that it is constantly providing the best service at the best price, and meeting client needs as they evolve.

3.2 Expertise

The leading managed ICT services companies are constantly recruiting and training. In deciding to migrate some or all services to them, it means there are always highly trained, qualified experts on hand to help. The emergency services have specific challenges and needs, as discussed earlier (see Key Trends), so it is important to select an ICT partner that specialises in the Blue Light Sector, with experience in Public Safety and Defence.

telent provides engineers with knowledge in a breadth of specialist technologies and business analysis skills, who are security cleared and have been working with the emergency services for over a decade. This ensures both relevant ICT expertise and a 'cultural-fit' with the Blue Light sector.

3.3 Flexibility

Using managed services means that customers can reasonably expect changes in practise or technology to be accommodated quickly with minimal cost and disruption. Using the additional resource within the ICT service provider's organisation allows customers to undertake ICT transformations more quickly and efficiently. This means that the benefits of making changes are experienced earlier without the need for increased recruitment or distraction from day to day operations, providing consistently up to date ICT services with no spikes in cost.

telent undertakes continual benchmarking, ensuring service efficiency and value for money. By adopting industry best practice, telent offers its clients guaranteed efficiencies year on year, as well as continual service improvement which ensures that its service goes above and beyond customer expectations.



3.4 Partnership

Using managed services is about finding a trusted partner that supports your business objectives and provides a reliable service that will support your organisation's needs today, tomorrow and in the future. Through constant engagement, using a partnership-centric approach and enabling inter-organisation collaboration, the Blue Light services can get a great deal of value from their ICT providers.

telent provides local working for emergency services, ensuring that there are always staff on site to assist with any problem as it arises. The telent team holds regular meetings with its customers to share best practice, innovation and technology updates and ensure ICT strategy and delivery alignment with client needs.

Where possible, telent hires locally, ensuring knowledge of local issues, attitudes and priorities as well as industry expertise and relevant training. In addition, telent strives to play a constructive role in the local communities wherever it has an office base, by participating in raising awareness of engineering or health & safety issues in local schools, participating in local apprenticeship schemes, or sponsoring after-school sports clubs, for example.

3.5 Futureproofing

A fundamental clause of the terms and financial agreements implemented as part of employing a managed ICT services partner should be keeping customer technology and systems up to date. This 'future-proofing' of equipment and systems can be provided cost effectively by managed services providers who are working with a number of Blue Light organisations, and it is within both parties' interests to use up-to-date services as opposed to persistently maintaining and overlaying legacy systems. In addition, failure to provide clients with the most up-to-date technology could result in losing customers to competitors offering more relevant and current systems.

telent works with Merseyside FRS and East Sussex FRS, delivering quarterly innovation sessions to ensure that they are kept abreast of any upcoming issues or difficulties that may benefit from a technical resolution. In addition, telent updates the services with industry knowledge and makes them aware of any new threats or trends in the market. This means that telent can use the general information gathered at these meetings and feed them back to the wider industry, promoting awareness and collaboration, and increasing the potential for resolution on the largest possible scale. "Seek a company that you can rely upon to perform under pressure and 24/7, so that you can concentrate on your mission to help create safer communities, to rescue people and protect economic, environmental and community interests."

4 Conclusions and Recommendations

Key factors that ensure success in finding the right ICT managed services provider

4.1 Seek value for money

Choose the services that are right for you. Whether you want to use an external provider for all of your ICT needs, or just a few key areas, find a provider that has made the right investment in their own systems, expertise and resource levels so that they will be able to pass the benefits back to you. Make sure the company providing your IT service takes the trouble to understand your:

- Business goals
- Challenges
- Current processes
- Culture

Ensure they build stability and flexibility into their proposal and will continue to evolve their service offer as your needs progress.

4.2 Talk numbers

Ensure your service provider can show demonstrable benefits and ask what the benefits realisation looks like. Ensure guaranteed savings from day one that will allow reinvestment in frontline services, and then demand year on year cost savings as your relationship continues. Seek confirmation in terms of system uptime, internet availability, improvements in reliability and measureable improvements in efficiency.

Look for a provider with whom you can share knowledge and work together to find solutions. You want a partner that will share industry best practice and solutions to your pain points to help you continually evolve and improve your ICT services and provision.

4.3 Access expertise

Ensure your provider has a thorough understanding of the specific safety and operational requirements of the Public Safety sector, proven expertise in both contemporary and legacy systems and security cleared and appropriately accredited engineers providing round-the-clock support. ISO accreditation cannot be underestimated as a mark of quality and adherence to strict industry regulations.

Ensure your provider will keep their fingers on the industry pulse to make sure your equipment and systems are constantly modernised and you are provided with the most up-to-date software to protect against current and foreseeable threats signposted by the industry.



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Beyond the design and integration of national networks and voice and data systems in critical environments, telent has the ability to factor in the unpredictable, responding to any circumstance at speed and in the correct manner. Security cleared and accredited engineers provide round-the-clock support, each with a unique understanding of specific safety and operational requirements.

Building on its heritage of providing Public Safety solutions, telent has a range of services specifically designed to help emergency service organisations successfully transition to the new ESN environment.

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From Public Safety to Defence, Transport to Service Provider and Enterprise - when it matters most, telent delivers.

5 About telent

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