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THE CONNECTED OFFICER IN AN AGE OF DISRUPTION

AGE OF DISRUPTION

We are currently living in an age of disruption affecting every aspect of society. Change is being driven by two key factors: a reduction in the cost of new technologies and the impact of different technologies coming together (see Figure 1).

The pace of technological change is one of many significant challenges facing policing and public safety. Other challenges faced by public safety institutions include:

Greater Global Connectivity

Threats, information and news move faster

Increased Expectations

Demand for rapid-response, personalised, 24/7 police service

Populism and Political Uncertainly

Creating an environment of instability

Loss of Talent

Public safety talent increasingly targeted by and attracted to other sectors

Increased Level and Changing Types of Threat

Terrorism in new forms including cyber and digital attacks, growth of 'hidden' crime e.g. domestic violence

Convergence of Sectors

Growing collaboration between policing and city sectors

Breakdown of Trust

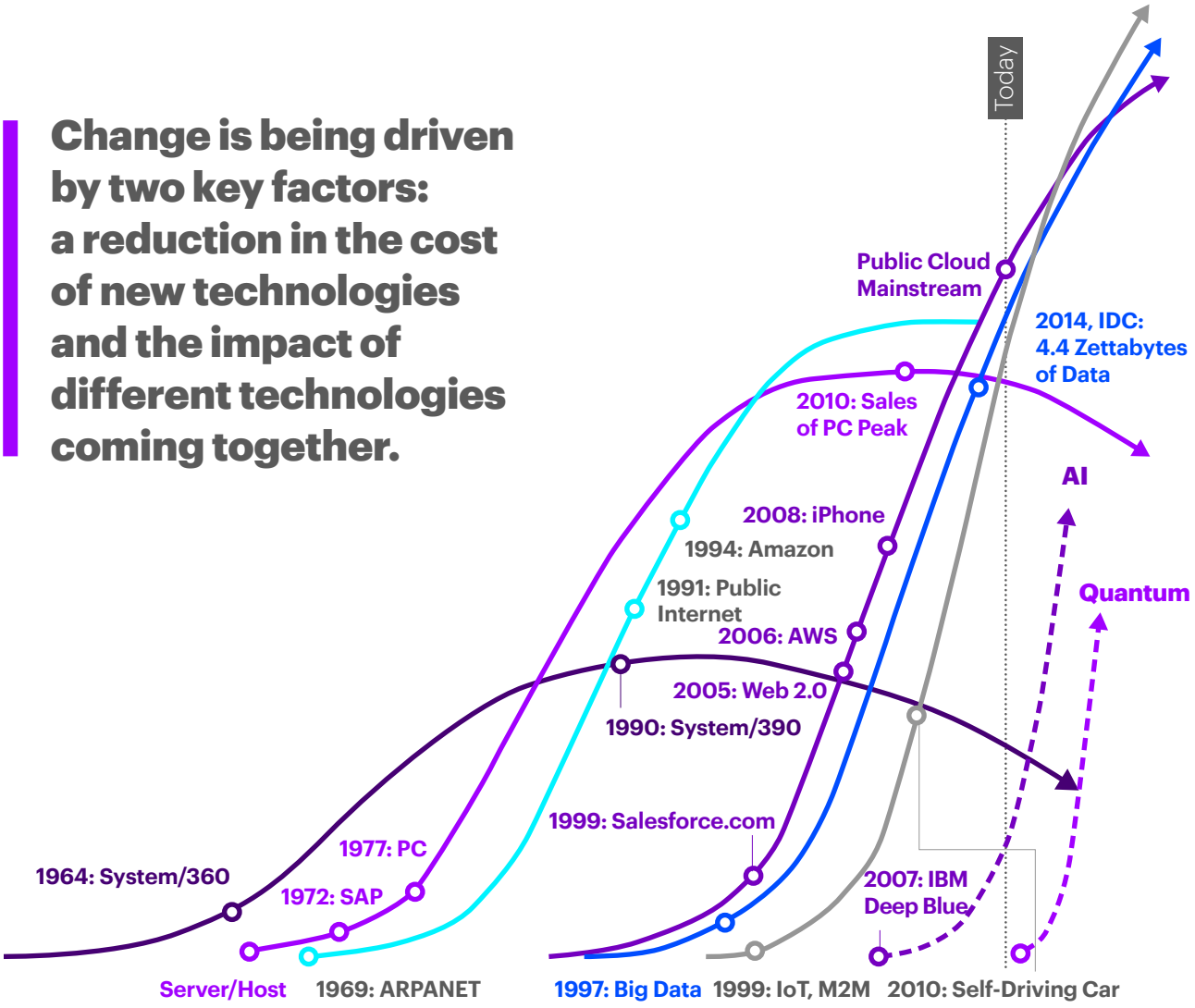
Loss of public confidence in policing and the need to reconnect with the public

Transparency and Value for Money

Pressure on budgets and demand for a clear link between investment and outcome

Figure 1 – Combinatorial Impact of Technology

Change is being driven by two key factors: a reduction in the cost of new technologies and the impact of different technologies coming together.



- Mainframe
- Client-Server and PCs
- Web 1.0 eCommerce
- Web 2.0, Cloud, Mobile
- Big Data, Analytics, Visualization
- IoT and Smart Machines
- Artificial Intelligence
- Quantum Computing

THE CONNECTED OFFICER

The concept of the 'connected officer' continues to develop. Police officers have always been connected to the public and communities they serve, in many different ways. They have also been connected to their colleagues both out on the street, in the control room and while performing investigative or intelligence activities.

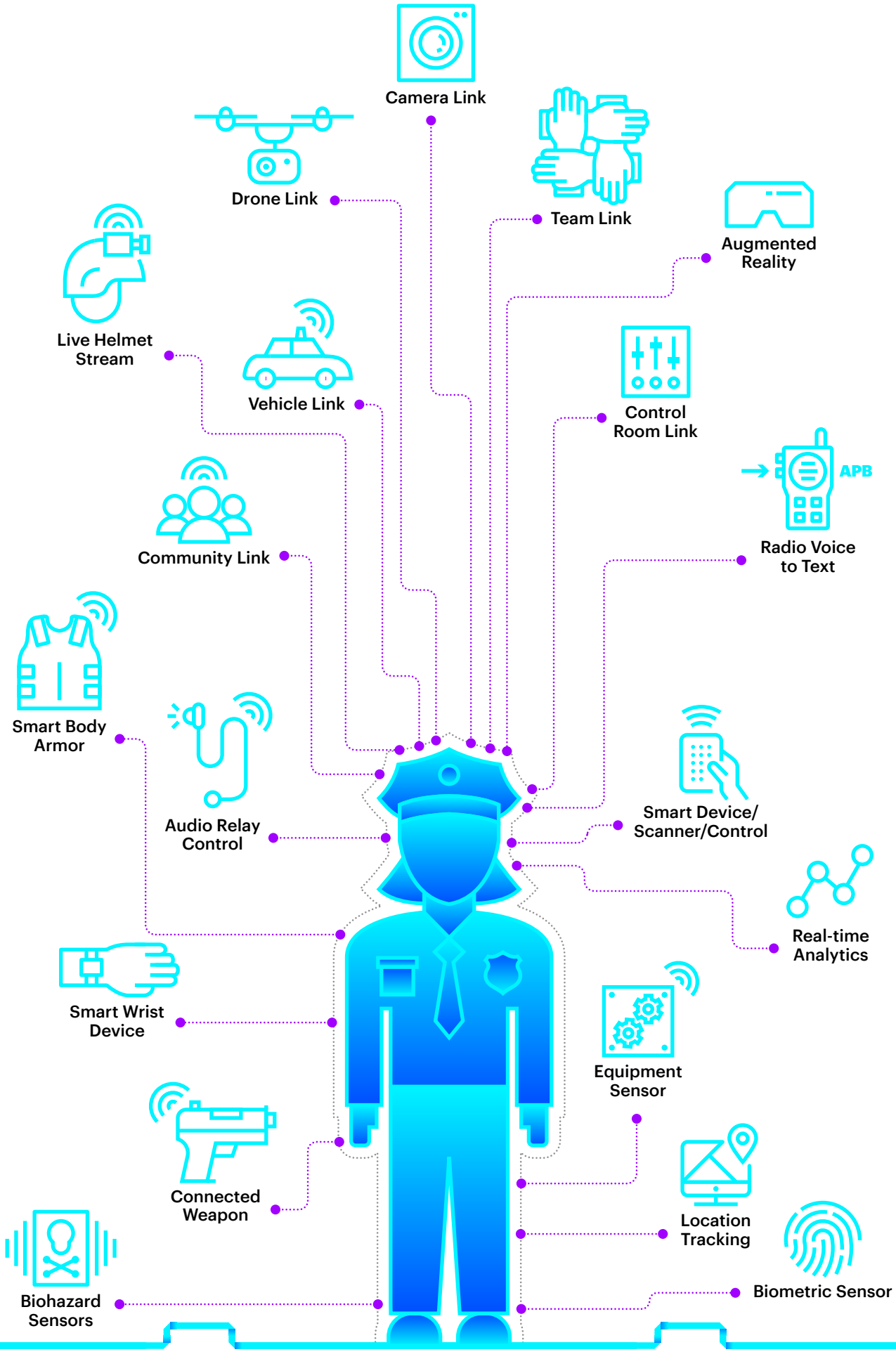
In many countries they have also been connected to people in other agencies, functions or organisations to help information sharing and generate insight to help address common problems or protect those with common vulnerabilities.

However, digital technology has the capacity to enhance and extend these connections. Investing in the necessary infrastructure to enable such connectivity allows the police workforce to become:

- Enabled
- Empowered
- Supported

The 'Internet of Things' (IoT) or 'Internet of Life Saving Things' as it is starting to be called in public safety, is introducing a new wave of opportunity for officers to better connect to, and share with each other. These opportunities are enabled by the development of a wide range of tools and devices fed by sensor and data streams, and increase further when countries invest in the necessary infrastructure to enable this connectivity. – Examples include the FirstNet Programme in the US and the ESN programme in the UK.

The connected officer of the future is fast becoming a reality, as these new technologies become mainstream and police agencies develop greater confidence in implementing them.


Camera Link
Drone Link
Team Link
Augmented Reality
Live Helmet Stream
Vehicle Link
Control Room Link
APB
Radio Voice to Text
Community Link
Smart Body Armor
Audio Relay Control
Smart Device/ Scanner/Control
Real-time Analytics
Smart Wrist Device
Equipment Sensor
Connected Weapon
Location Tracking
Biohazard Sensors
Biometric Sensor

ENABLING THE OFFICER

Police officers in the field have the potential to work more effectively than ever before through the use of new technology. They are now connected, not only to colleagues in the control room, but also to a vast array of information and data.

Mobility

allows officers to access a range of information via commercial and police-specific apps. In the US, the recently launched FirstNet developer programme provides an opportunity for developers to create apps for the Public Safety community and scale them for first responses. Figure 2 shows some of the apps being developed for police use.

Police use of mobile apps is growing rapidly and the vision of officers accessing operational systems and external information from handheld devices will be a reality within the next 1-2 years.

Mobile apps enable and empower officers to make crucial decisions quicker, share information, intelligence and insight, and capture information and, such as witness statements, more efficiently. They enable the workforce to deliver a better service to the public. It is important to note though, that as technology advances, these apps are likely to disappear, being replaced by wearables and voice activated systems.

Figure 2 - Mobile Enabled Workflow

1 Workbasket

these productivity apps allow officers to plan and schedule their day and can be linked to record management or command and control systems.

2 Crime Records

accesses recording systems to enable updating of data and records on crimes, suspect, victims or witnesses or activities related to the ongoing investigation of a crime.

3 Crime Evidence

enables officers to document evidence from crime scenes and use the camera on a mobile device to take photos and embed them in the record. Such apps can be linked to a tracking system using a bar code scanner. The reduction in the cost of RFID tags makes these an increasingly viable alternative to bar codes.

4 Incident Update

records incident details in the field. The app also provides tailored guidance and helps ensure important procedural steps are observed.

5 Entity Search

provides real time data access e.g. information on people, organisations, vehicles etc. Often supported by an image, this can include alerts and warnings e.g. if a person is a known drug user or a property contains a registered firearm.

6 MyStats

tracks officers' movements and activities. Can be combined with Workbasket for a detailed record of productivity. Should be introduced carefully and in close consultation with staff so that it is not seen as a 'spying' tool.

7 Crime update

similar to the Crime Record app but offers a separate "update" function to keep the workforce informed of developments with crimes and incidents relevant to them.

8 Traffic Fines

records basic details of an offence and generates physical or e-tickets. Traffic apps also enable scanning of driving licence or ID cards and the use of digital signatures. Additional apps are being developed to cover other offences for which fines can be issued.

9 Custody Management

allows the checking in and out of prisoners, monitoring of their wellbeing and tracking of movement around the custody suite. Mobile apps can also flag the availability of prison cells to officers in the field and allow them to enter prisoner details prior to arrival - significantly reducing processing time.

10 Property Management

operates in a similar way to the Crime Evidence app using bar codes or RFID tags to track items in the property store, reducing effort spent checking in property (in custody for example).

Platforms

are having a huge impact on the connected officer, as they provide a mechanism to give the workforce (regardless of where they are) access to a vast array of information - no longer limiting them to only a particular database or information store. By public safety agencies adopting a platform-based approach to data and information management, the connected officer can launch a query or search from the field and pull back a wide range of information. This type of capability increases the level of insight dramatically. It is no longer about the officer running a simple name or address search, but rather an ability to merge historic records with other data sources to present, for example, risk flags for an address or images of a suspect. Further, when speaking to a victim following a street robbery, the officer can gather detail of the suspects appearance, their modus operandi and when combined with the location and time of the offence, potential active suspects from the local intelligence units can be returned in near real-time for the officer to create an e-photo parade.

Figure 3 – Platform Enabled Information Sharing

Wearables

are already widely used by public safety agencies and look set to become a significant asset in the field. Despite the limitations of screen size, they can be activated via voice recognition, record tracking and biometric data and, crucially, allow the wearer freedom of movement.

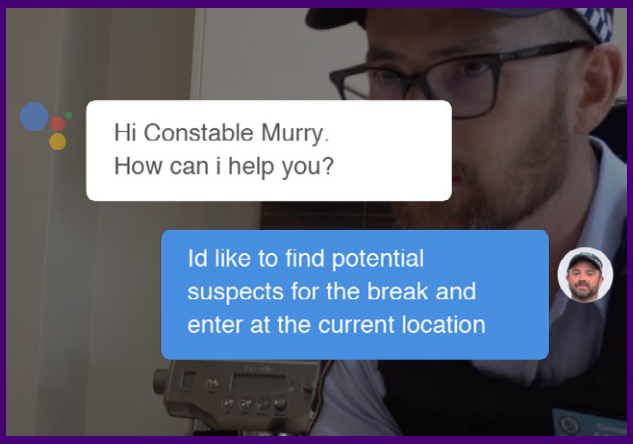
Voice

as microphones replace keyboards as a way of interacting with computers, it is no longer necessary to type to share or access information. Officers are free to interact with victims or suspects and statement taking will become faster and - with the advent of voice signature technology - more secure, through for example, the use of voice signatures and identification.

With the commercialisation and increased sophistication of voice-activated devices, such as the Echo or Alexa, the use of voice activation systems could become mainstream for public safety organisations within the next 2-3 years.

Figure 4 – Wearable Public Safety device Accenture Proof of Concept (Australia)

Figure 5 – Voice Enabled Support Accenture Proof of Concept (Australia)



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Social Media

officers, especially those who police a regular community, are increasingly connecting to the public through social media.[1] These channels can be used to disseminate information or alerts – e.g. to warn residents of road closures or increased police presence. Social Media also reinforces the notion of an accessible police force and provides an opportunity to monitor public mood.

EMPOWERING THE OFFICER

Many of the features described as enabling the officer also contribute to empowering them. Officers are able to operate more autonomously in the field and have real-time access to a wide range of information; when, where and how they want it. However, as technology advances, the officer is being increasingly proactively altered to information and actions – empowering them to take decisions more confidently and quickly.

Situational Awareness

Based on factors such as their location, skill set, or current threat, officers can now receive regular alerts and information. For example, an officer entering a crime scene can be sent a location-specific intelligence briefing. This is effectively providing real-time intelligence briefings to the officer, specific to their current location, rather than relying on a static briefing provided only at the start of their shift.

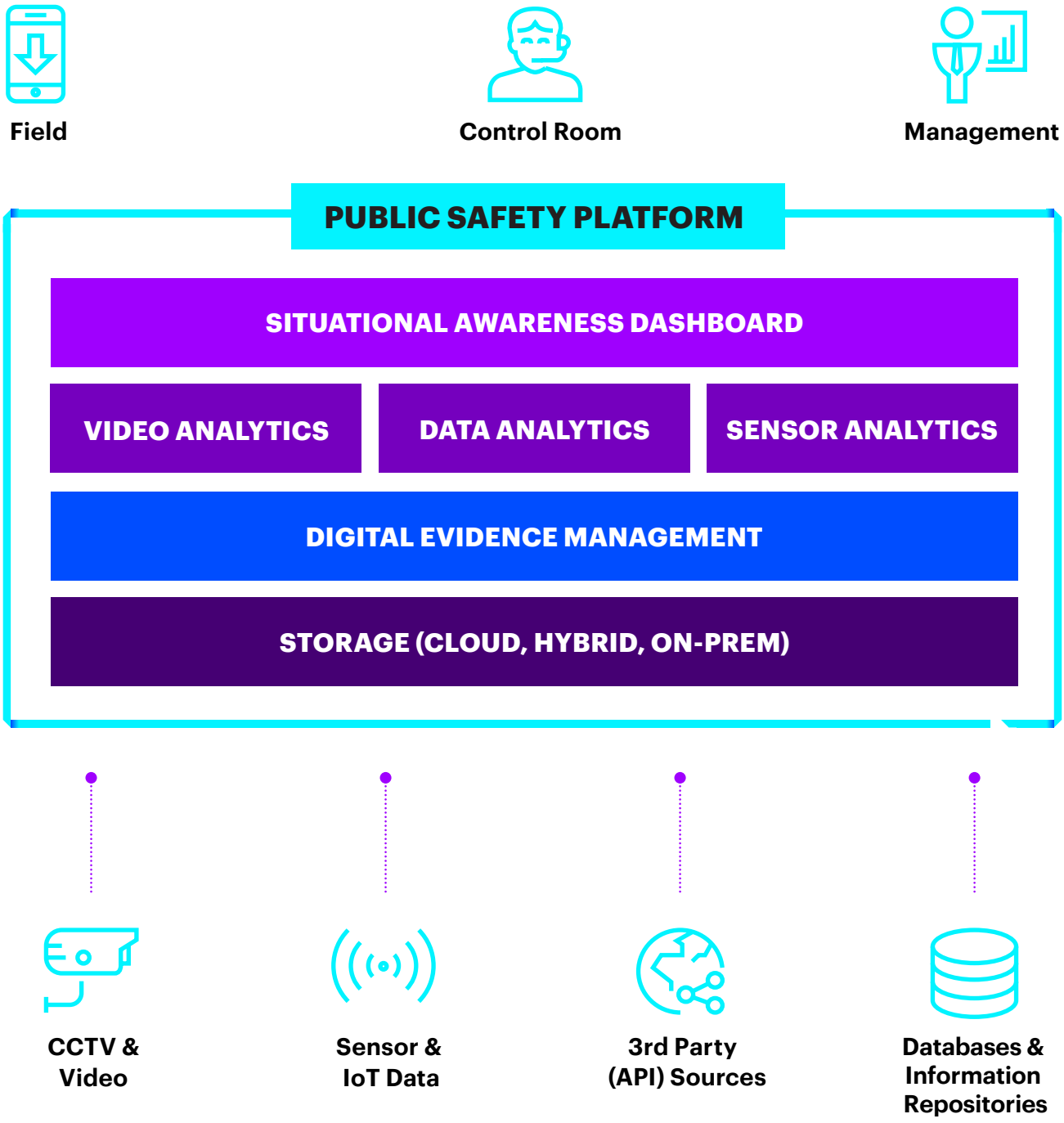
Figure 6 – Connected Officer Situational Awareness Accenture Proof of Concept (Australia)

Instant data analysis can also be used to predict threats, alter an officer's patrol route and provide real-time tasking for them. This type of directed patrol can ensure police resources are in the right place at the right time and help provide both reassurance to the public and act as a physical deterrent to potential offenders.

The Internet of Things devices is expected to grow to almost 31 billion worldwide by 2020.[2] This presents a huge but critical challenge with the need to both analyse the information, and just as critically visualise and display the information to the officer so that it is meaningful. The ability to take a platform approach (see figure 7) to manage this vast amount of information, to store it, manage and analyse it and then present it as actionable situational awareness information to officers in the field, control room or making management decisions is critical. Capabilities such as these also help public safety agencies move increasingly toward a more data driven model of policing, and one which emphasises prevention over reaction.

It will be critical for police and public safety organisations to collect, process and analyse relevant data before presenting it to officers in a way which is understandable and actionable. Once again, such measures should be introduced with care and in collaboration with officers who may feel that their autonomy is being undermined.

Figure 7 – Accenture Public Safety Platform



Body-worn Cameras

are already providing significant operational benefits to those forces using them. Film footage from crime scenes has evidential value and the potential to increase guilty pleas whilst reducing case and court time. Cameras can de-escalate incidents, help reduce false claims against police officers and save time. Body worn or helmet mounted cameras can also be triggered by physical cues such as an officer leaving a car, drawing a weapon or starting to run. To extract true value from the use of this type of functionality, it is critical that clear guidelines are provided for the use of body worn cameras e.g. when the camera should or should not be activated. Furthermore, careful consideration needs to be given to how the footage will be uploaded, stored and managed.

Assisted, Augmented and Virtual Reality

will equip officers with new capabilities and insights. Google Glasses have been superseded by lightweight models that can potentially be built in to a police helmet. These devices can provide features ranging from alerts and situational information to sophisticated AI-driven data such as facial recognition of ANPR. Police in the Chinese city of Zhengzhou[3] use sunglasses with built-in facial recognition to help manage large volumes of travellers. The ability to identify an individual also allows officers to access background information in the field; preventing harm while saving time and investigation resources.

Connected Weapons

are also being developed to allow the automatic triggering of devices, - e.g. a body-worn camera - when the weapon is drawn.[4] Real-time camera footage could be relayed to a control room while the connected weapon would record the trajectory of bullets, number of shots fired and other relevant data in real-time. This technology can also be used to help support training activities.

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SUPPORTING THE OFFICER

Further to directly improving police outcomes, technological advances also support the officer more broadly – for example, helping to increase welfare, engagement and health.

Biometric Wearables

can be used to help monitor officers' wellbeing providing details of their movement, heart rate and stress levels. They may also serve to alert control room colleagues to an officer at risk and provide data for decisions around deployment.

Hazard Sensors

are now highly sophisticated and small enough to be included as part of an officer's kit or even incorporated into their uniform.

Drones

provide a platform for a range of devices and sensors such as cameras, heat imaging and video analytics. They can also be deployed at distance, in or outside vehicles[5] or to monitor hostile situations. When linked to virtual or augmented reality, they allow officers to access information unavailable to the naked eye, such as heat imaging.

Smart Armour

is currently at an experimental stage but promises a range of features based around a protective exoskeleton. These include enhanced mobility and load carrying.[6]
A note of caution should be raised however, as with the increase in weaponry carried by police officers in response to the terrorist threat, use of this technology raises the issue of the "militarisation" of the police. It is important that connected officers continue to look approachable and remain part of the communities they police.

CONCLUSION

Embracing the opportunities of a disruptive world is a vital part of the public safety mission. New technology brings significant challenges and increased risk. But the digital age also provides the tools to transform policing by increasing efficiency, enhancing communication and above all, reducing crime.

REFERENCES

1. https://www.accenture.com/us-en/insight-harnessing-power-social-media-fight-crime-summary

2. https://www.statista.com/statistics/471264/iot-number-of-connected-devices-worldwide/

3. https://www.theverge.com/2018/2/8/16990030/china-facial-recognition-sunglasses-surveillance

4. http://www.yardarmtech.com/

5. https://www.dallasnews.com/business/business/2015/09/18/drones-dont-lie-firm-puts-eyes-in-the-sky-for-traffic-stops

6. http://www.businessinsider.com/army-testing-super-soldier-exoskeleton-2017-11?IR=T

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