

# POLICE INNOVATION AND RESILIENCE REPORT

2023

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# FOREWORD

As we stand at the brink of a new era in policing, it is important to take stock of the challenges and opportunities that lie ahead.

**C** The world is changing rapidly, and law enforcement must adapt to new realities and technologies if it is to effectively protect and serve the public."

As the world continues to change, so must police departments. The departments that can innovate and adapt, build resilience in the face of adversity, and forge strong partnerships with their communities will define the future of policing. Innovation and resilience are not simply buzzwords; they are critical components of 21st-century police. Police departments can better respond to emerging threats, anticipate future challenges, and build stronger relationships with the communities they serve by cultivating an innovative and resilient culture.

The World Police Summit is a leading forum for global police and security experts. It offers an inspiring opportunity to promote better policing and explore, discover, and share the latest developments in the field. With six distinct conferences covering Crime Prevention, Forensics Science, Anti-Narcotics, Police Innovation and Resilience, Drones, and K9, the Summit offers a chance to learn best practices from the front line and meet the sector leaders shaping next-generation policing.

As we embark on this exciting journey, let us remain steadfast in our commitment to justice and the principles of fairness, equality, and respect for all. The future of policing holds great promise and with the right leadership, collaboration, and vision, we can create a law enforcement system that is just, effective, and trusted by all.

# H.E. LT. GEN. ABDULLA KHALIFA AL MARRI

Commander-in-Chief





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# EXECUTIVE SUMMARY

As the world continues to make technological improvements, it has become increasingly necessary for policing agencies to remain current and robust. There is a growing focus on innovation and resilience above and beyond all considerations, to provide a higher level of protection for their residents and maintain the safety of their communities. To effectively manage their operations and ensure that the law is being enforced, global police forces have been employing a wide variety of technology and procedures that are currently available. These tools and practices are said to involve the utilization of digital databases, biometric technologies, and contemporary communication systems. By adopting strong digital databases, police departments can store vital information on a variety of issues, including criminal records, investigation procedures, and emergency response protocols, and easily access this information wherein needed. Biometric technologies such as facial recognition software are also used for locating prospective witnesses and identifying suspects. It is possible to swiftly interact with officers who are working in the field thanks to modern communication systems, including radio systems and computer-aided dispatch. In addition, emergency response operations can be better coordinated with the use of these communication technologies. All of these

techniques make it possible for police forces to improve the management of their operations and provide services to the public that are more efficient and effective.

It is imperative that the world's police forces focus on the ever-present necessity to continually strive to be both innovative and resilient so that they can remain one step ahead of increasingly technologically savvy criminal organizations. This stems from the constantly shifting global environment and the growing complexity of security threats, thus, law enforcement agencies need to guickly react to changing circumstances. Police departments should devise evolving techniques that are not only innovative but also resilient. This can be accomplished by placing an emphasis on the establishment of strong leadership with the personnel that has been well taught and trained and employ efficient communication tactics. It is also vital for global police forces to have an efficient system that can monitor changes in the environment, respond to those changes, and engage in research to develop new policies. To help this, there needs to be more of an emphasis placed on the development of productive collaboration and partnerships between law enforcement organizations, local communities, and other stakeholders. By putting these methods into action, global

police forces will be able to become more creative and resilient, enabling them to better respond to the always shifting security threats.

In recent years, there has been a growing sense of urgency over the requirement for effective police on a global basis. While progressive policies can be designed and implemented on a worldwide basis, there are considerable challenges that must first be overcome in order to accomplish this goal. To begin with, there is a lack of uniformity between countries in terms of the policing systems, methods, and technologies that exist, which makes it difficult to coordinate the policing activities around the globe. Second, there is a need for increased collaboration between the police and other security groups to build communication and information-sharing networks that are more efficient on a worldwide scale. Finally, the importance of developing a global understanding of the nature and purpose of policing, including the necessity of considering the cultural, political, and economic contexts in which policing occurs - highlighting the significance of developing

 highlighting the significance of developing a global understanding of the nature and purpose of policing. There is a need for increased collaboration and coordination



between various police forces, governments, and other stakeholders to develop a global policing system that is more robust and inventive. It is possible to establish and execute creative and resilient police policies that can effectively satisfy the needs of all countries if governments work together to do so. This can be only done by working together, internationally.

It is abundantly obvious that global police agents and law enforcements are increasingly focusing their attention on creating and adopting resilience methods in an effort to become more effective, efficient, and better prepared for any unanticipated scenarios. In spite of the fact that they have already implemented methods that are smart and resilient, global police forces must continue to look for new ways to periodically update and enhance its tools for the future in order to ensure that they remain one step ahead of the competition. The future of law enforcement will continue to look bright so long as policymakers and practitioners maintain their collaborative efforts and continue to make investments in innovation.

# INTRODUCTION AND OVERVIEW

Police forces globally are being compelled to adapt to the shifting nature of modern security to keep up with the expansion of technological developments. The way in which policing and law enforcement operations are carried out has been significantly altered as a result of the recent technology breakthroughs. In particular, artificial intelligence (AI) is assuming an increasingly significant function in national security. It is being used to detect and interrupt criminal operations, improve intelligence gathering and analysis, and make police forces more effective.

Equally, technology is automating processes such as facial recognition which helps law enforcements identify suspects and screen more accurately for potential danger. Al is also being used to evaluate massive amounts of data, which is allowing law enforcement to uncover patterns and trends in criminal activity in a manner that is both speedy and accurate. Additionally, systems driven by AI are more capable of reacting to rapidly changing surroundings, which enables law enforcement to respond to emergencies in a manner that is both guicker and more effective. AI will become an increasingly more essential instrument in the battle against crime and terrorism around the world as it continues to grow. This will provide law enforcement agencies with the tools they require to keep people safe.

These advancements have made it possible for law enforcement to make use of high-tech

surveillance equipment and analysis tools, which has resulted in a more efficient and effective response to criminal activity. As a direct consequence of this, the police are now in a better position to rapidly identify possible suspects and to give priority to high-risk individuals and locations. In addition, technology has made it possible to collect data on criminal behaviour that is both more accurate and extensive, as well as, to improve communication between police departments and other agencies, which in turn has made it possible to better coordinate the use of resources.

The introduction of innovative technology like biometrics and face recognition has led to an increase in both the speed with which criminal suspects can be identified and the precision with which they can be identified. These technological improvements have also made it possible for law enforcement to better analyse patterns of criminal activity, which has helped them to better target their resources. In general, technical improvements have had a substantial impact on policing and law enforcement, which has resulted in a reaction to criminal activity that is both more efficient and effective.

Body camera use, hot spot policing tactics, and a focus on crime prevention programs are examples of recent efforts that show excellent community and police partnerships. Initiatives have also been introduced to lower the suicide rates among law enforcement personnel by helping support those in need. The recruitment and retention of officers, combating emerging criminal types, and fostering mutual respect between the police and the communities they serve are among the challenges facing law enforcement in the future. Police forces must employ new tools and policing techniques that focus on both enforcement and community participation to tackle these issues. The culture of police departments must be malleable to change if law enforcements are to succeed in the future.

It can be contended that resilience is a measurement of an individual's capacity to deal with challenging circumstances, to adapt to those circumstances, and to survive the effects of stress and trauma. One proposal is for law enforcement personnel and other members of the police forces should implement ways to strengthen their resilience. Some examples of these techniques include developing a support network and working to improve agents' physical, mental, and emotional wellbeing. In addition, members of the police force and other law enforcement agencies should have a greater opportunity to receive professional help in the form of counselling and psychological services. Such policing agencies should work to cultivate a culture that values resilience, one that places an emphasis on the significance of self-care, collaborative effort, and finding solutions to problems. The role of leadership is also important in supporting and facilitating the development of this kind of culture. In the end, such best practices can assist law enforcement officers and other members of the police force in managing challenging situations, developing resilience, and preparing for future challenges.

The current resiliency and inventiveness of global police forces is a significant aspect in the fight against crime and public unrest, and it is likely going to become even more crucial in the near future. This is a critical factor in the war against crime and public disorder. Law enforcement agencies need to be conscious of the necessity for developing novel strategies to successfully confront criminals who are becoming more flexible and smarter in their methods. It is possible to view the existing and future levels of resilience and innovation that global police forces are building as key components that will contribute to the upkeep of safety, security, and justice in the world.

# **TECHNOLOGY**

It is possible that police agencies may continue to adopt new technologies that will assist them in performing their tasks more effectively and efficiently. Things like body cameras, drones, and software for predictive analytics could fall under this category.

# COMMUNITY POLICING

A significant number of authorities view community policing as a contributor to an increased level of trust and cooperation between law enforcement and the general public. It places an emphasis on the development of relationships between law enforcement personnel and the communities that they protect. This could include things like neighbourhood watch programs, community policing centres, and other activities that are intended at establishing a sense of collaboration between the police and the community as a whole.

# DIVERSITY AND INCLUSION

As our society continues to grow more varied, local law enforcement agencies may look at ways to guarantee that their ranks are representative of the communities they serve. This could include initiatives aimed at recruiting and retaining officers from diverse backgrounds, as well as training officers to understand and appreciate the cultural differences they may encounter on the job. Additionally, this could include training officers to understand and appreciate the cultural differences they may encounter on the job.

# FUTURE OF POLICE INNOVATION AND RESILIENCE

There are a lot of different possibilities for advancements that could steer the course of policing and innovation in the future. The following are examples of potential areas of concentration for police departments:

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# TRAINING IN DE-ESCALATION TECHNIQUES

It is possible that police agencies will place a larger focus on providing officers with training in de-escalation tactics as public awareness of its significance in the prevention of violence and injury during interactions with law enforcement increases.

# **MENTAL HEALTH**

Officers of the law frequently come in contact with people who are going through mental health crises. Police departments may endeavour to better equip officers to deal with these circumstances in a way that is safe for both the officer and the person experiencing the crisis. This can require specific training and making sure there are mental health professionals available to support cops while they are on the job.

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# CASE STUDIES

The following case studies examine how some of the leading countries within the policing innovation and resilience landscape are implementing various strategies:

# 1. The United Arab Emirates

To handle the constantly changing global security problems, the United Arab Emirates (UAE) has assumed a leadership position in police innovation and resilience. The UAE has launched many initiatives, including the UAE Police Innovation Summit, the UAE Future Police Strategy, and the Dubai Police Academy, to encourage the advancement of cutting-edge policing methods and technologies. It is also increase police resilience, such as the establishment of an international project aimed at creating novel solutions for the Sustainable Development Goals and the organization of the Police Innovation & Resilience Conference. Challenges remain in the areas of officer wellbeing, traffic safety, and cybercrime, and the UAE is taking steps to address these issues. These include the adoption of emotional intelligence training for police officers,



home to the first smart police force in the world. The UAE has made significant progress in the fight against crime, establishing a special police unit to combat cybercrime and putting in place a thorough campaign to raise awareness of driving safety. The nation is also actively involved in programs to the development of advanced traffic safety assessments, and the implementation of proactive, innovation-led approaches for change management in policing and law enforcement.



In recent years, the nation has adopted a number of innovative technology projects and initiatives with the intention of improving the efficacy and effectiveness of its police force. The UAE's police department has been at the forefront of using drones for law enforcement purposes including patrolling borders, monitoring traffic, and apprehending suspects. It has also implemented software for facial recognition to identify and track suspects, and virtual reality training simulations to enable officers to practice their skills in a setting that is both realistic and risk-free.

In addition to focusing on technology, Dubai Police has also been working to improve the way it engages with the local community. The government has instituted a community policing program that places an emphasis on the formation of connections between law enforcement personnel and the communities that they serve. This includes neighbourhood watch programs and community policing centres which give a central venue for law enforcement officers to connect with members of the public and address their issues. It also includes initiatives such as the Training for Change program and the Citizen Inclusion program which strive to promote trust, understanding and collaboration between residents and the police.

The UAE has also developed specialized training centres and academies which provide law

enforcement professionals with the knowledge and abilities necessary for them to efficiently carry out their jobs. As part of this effort, training has been provided in topics such as de-escalation, cultural awareness, and the application of modern technologies. Over the past few years, Dubai Police and Abu Dhabi Police have made great strides in innovation, and this trend is expected to continue in the future. Police forces are well positioned to continue serving and safeguarding the residents of the country with the support of new technologies, cultivation of good ties with the community, and investment in training and professional development.

> Some of the specific technologies that the police force in the UAE have implemented, or are currently experimenting with, include:

## **1** DRONES

Drones have been deploying for a range of law enforcement objectives in the UAE, including border patrol, monitoring traffic, and capturing suspects. The police are able to cover broad regions in a swift and effective manner thanks to the use of drones, which may also be fitted with cameras and other sensors to gather intelligence and locate potential dangers.



#### 2 THE USE OF FACIAL RECOGNITION SOFTWARE

UAE police have begun using software that applies facial recognition to identify and track of suspects. This technology can be used to scan large crowds or public locations in order to provide the appropriate authorities with information regarding the presence of individuals who are wanted by the law.



#### **3** VIRTUAL REALITY TRAINING SIMULATIONS

The police force in the UAE has used virtual reality training simulations to provide officers with the opportunity to practice their abilities in a setting that is both realistic and secure. This can be especially helpful when teaching officers to deal with high-stress circumstances or events that are difficult to replicate in the actual world.



### **5** MOBILE APPLICATIONS

Dubai and Abu Dhabi Police have developed mobile applications that enable people to report crimes, ask for assistance, and obtain information about the police and the services they provide. These applications have the potential to facilitate improved communication between the public and the police, as well as make it simpler for individuals to obtain the assistance they require.

## **4 PREDICTIVE ANALYTICS SOFTWARE**

The UAE police has also been experimenting with the use of predictive analytics software, which is capable of analysing data from a variety of sources (such as reports of crimes, social media, and weather patterns) to identify trends and patterns that may indicate an increased risk of crime in a particular area. This can help the police more effectively manage their resources and target their efforts to prevent crime in a specific area.







Source: gulfnews.com

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# 2. The Netherlands

Experimentation with a wide variety of cutting-edge technology is the primary focus of the Dutch police. In order for the police to effectively employ and deploy technology, it is necessary to consider social, organizational, and technological variables. It is not entirely clear, however, which particular factors and approaches lie behind the encouragement or discouragement of technological advancements within the police force. This report aims to provide empirical knowledge regarding these dynamics by illuminating the processes by which technological innovation emerges within the Dutch police force. Specifically, the report focuses on how these processes take place. From January 2017 through February 2018, a longitudinal process analysis was conducted on a total of thirteen projects involving technological innovation (see Table 1). According to the findings, innovation processes are frequently constrained by organizational variables within the police organization, whereas social factors have the potential to encourage and support innovation processes.

Technologies in today's world advance at a rapid pace and mutually reinforce one another. New technologies, such as artificial intelligence (AI), big data applications, the internet of things (IoT), mobile internet, robotics, autonomous vehicles, cloud technology, and 3D printing, have a significant impact on both national and international security. This is because they produce new or different forms and targets of criminal activity. In order for the police to effectively address these newly emerging threats to public safety and types of criminal activity, the department's organizational structure and operational procedures will need to be modernized and updated. Additionally, technology provides law enforcement officers with access to fascinating new tools. Despite this, there is no guarantee that this will lead to an improvement in the efficacy and efficiency of police work or a reduction in the amount of crime that occurs. The benefits of utilizing technology in conjunction with other organizational shifts, such as the implementation of a new strategy, have been successfully realized. However, there has not yet been an exhaustive or methodical investigation into the impact that technological advancements will have on police organizations and the duties that they perform.

Even though there have only been a handful of empirical studies that have looked at how technology is utilized in police organizations, it is clear that this has been the primary focus of Dutch law enforcement. The goal of the innovation should be aligned with the organization's strategic objectives, as this is one of the most important elements. In addition to these important aspects, there are others, such as the support for innovation both within and outside of the police organization, as well as the experience the police force has with technological advancements and decision making. When it comes to new technology, businesses that have less experience in the relevant field are less likely to investigate it. It has been shown that managers who have had positive personal experiences with innovation processes are more likely to spread new ideas throughout the enforcement (Ernst et al., 2021).

The impact that individuals believe technology will have on their working environments and professional lives is another important factor to consider. When employees are informed about the ways in which a new technology may improve their work or the advantages that it may offer, they are more likely to adopt the technology. When investigating the investigation, development, and dissemination of innovation, it is necessary to take into consideration the type and structure of the organization, in addition to the collaboration with individuals both inside and outside of the business. Work practices and the operational context of the organization are also important considerations. This pertains to the decisions that are made by supervisors and police officers regarding the deployment of technology, such as where it will take place and when it will take place. In the end, the technology itself is the most important factor to consider, specifically how it is developed and how well it integrates with the digital infrastructure that is already in place.



| Table 1 | L: C | verview | of the | charac | terist | ic |
|---------|------|---------|--------|--------|--------|----|
|         |      |         |        |        |        |    |

| Project name in<br>Dutch/translated                                     | Description   | Innovation stage<br>January 2017 |
|---|---|----------------------------------|
| Raffinaderij/Refinery   | Big data applications to quickly<br>unlock and analyze large<br>quantities of data in operational<br>context  | Pilot                            |
| Intelligente<br>aangifte/Intelligence crime<br>report                   | Automated processing of<br>reporting crimes via internet<br>using artificial intelligence   | Proof of concept                 |
| Robotica/Robots   | Development of a modular<br>robot system for safety tasks<br>with one universal controller  | Proof of concept                 |
| Programma Onbemande<br>Luchtvaart/Programme<br>Unmanned Aerial Vehicles | Autonomously operating drones<br>for various applications within<br>the police  | Pilot                            |
| Bodycams/Bodycams   | Police officers wearing bodycams<br>with a view to decreasing violence<br>by citizens   | Pilot                            |
| Camera in beeld/Camera<br>in Focus                                      | Database of available public and<br>private cameras in the public<br>domain to support police<br>investigations   | Implementation                   |
| Digitaal Buurt<br>Onderzoek/Digital<br>neighbourhood survey             | Approach citizens for additional<br>information with an app within a<br>certain radius of an incident   | Pilot                            |
| NFIDENT   | Development of a probative<br>drugs analysis process (incl.<br>equipment) carried out at<br>police laboratories   | Implementation                   |
| MEOS PDO/MEOS CSI   | On-site administrative<br>registration of crime scene<br>investigation using smartphones,<br>to gain more speed and return<br>on investigations and providing<br>real-time intelligence | Proof of concept                 |
| @ppsporing/@investigation   | Digital support with a tablet for officers of criminal investigation departments during on-call shifts  | Implementation                   |
| Augmented Reality<br>Pro/Augmented<br>Reality Pro                       | Development of a tool for<br>location-based augmented<br>reality, proactive real-time<br>information provision for<br>police work   | Pilot                            |
| Computer Criminaliteit<br>III/Program Computer Crime II                 | Development of a specific unit,<br>tools, and process for legal<br>hacking to support criminal<br>investigations  | Proof of concept                 |
| Source: researchgate.net  |   |                                  |

#### s of the 13 innovation projects studied

Since 2013, the Netherlands has had a single national police force, which is comprised of ten regional units and one central unit. Since then, additional knowledge regarding the progression of technological advancements within the police organization has been obtained, and more centralized innovation processes have been established. It was recurrently discovered that the technology investigated in the projects studied had already been created and was available for use by the police. However, the innovation projects set up to integrate this technology into regular police operations faced numerous obstacles and contingencies. The initiatives under study had, on average, been in development for five years from January 2017, with two projects having been operational for as long as nine years. Thus, the police organization proved to be a complicated environment with several dependencies and outcomes that the projects had to handle.

As is the case in many other non-police organizations and police enforcement groups, the findings of this empirical longitudinal study indicate that organizational and social factors play a major role in technological innovation in the National Police of the Netherlands. The study took one year and monitored 13 different innovation projects. The inclusion criteria for the thirteen innovation projects were based on creating diversity across four criteria: the type of technology, the innovation stage, the organizational units of the police department that were involved, and collaboration with external organizations. The information in Table 2 provides a summary of the research projects. The innovation projects encompass a variety of technological domains, including social media, mobile forensic applications, augmented reality, digital skills, artificial intelligence, big data analysis, robotics, drones, and sensors. These are also essential technologies that are currently being developed (internationally) in other law enforcement organizations (Ernest et. al, 2021). 12 of the 24 criteria had previously been discussed in depth in presentations that focused on innovation in police organizations (see Table 2). The central themes of people (capacity, continuity, and guality; position of the project team), police organization (perception of technology and innovation; strategic vision of technology), and the external environment

#### Table 1: Overview of the characteristics of the 13 innovation projects studied

| Central Concepts | Factors  |  |
|------------------|--|--|
| IDEA             | Need for innovation<br>Objective/assignment<br>Approach/method   |  |
| PEOPLE           | Capacity, continuity, and quality<br>Characteristics<br>Position of project: leader/project team   |  |
| TRANSACTIONS     | Within project team<br>Within police organization<br>With external partners/parties  |  |
| TRANSACTIONS     | Perception of technology & innovation<br>Organizational culture<br>Organizational structure<br>Leadership<br>Governance<br>Facilitating services<br>Strategic vision on technology<br>Recruitment and training |  |
| EXTERNAL CONTEXT | Technology<br>Law and regulations<br>Politics<br>External support<br>Society   |  |
| OUTCOMES         | Effects<br>Results   |  |

Source: researchgate.net

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are expanded upon by the inclusion of the 12 additional factors, which deepen the interactions (within the project team, within the police, and externally) and outcomes (effects, results) factors that are mentioned in those themes (law and regulations; politics; external support; society). Despite the fact that the 13 projects were different from one another in terms of the type of technology used, level of innovation, organizational units, and engagement with other organizations, the 24 boosting and inhibiting characteristics were consistent across all of the projects. This might be explained by the apparent similarity in organizational structure and governance, as well as the reliance on comparable nationally organized facilitation units. The fundamental tenet that governs the operation of the police department is the primary source of the variables that contribute to the overall constraining effect. When inhibitive effects take place, it is common for there to be issues with the capability, continuity, and quality of individuals, in addition to sluggish or non-existent governance and leadership. The social aspects of the fundamental themes of people and transactions, such as collaboration within the project team, project goals related to the end users' requirements for innovation, close collaboration with end users, and learning from empirical experiments, are the components that have the most significant impact on promoting the goal.

The projects centred on developing new technology for the police, which led to changes and dependencies that specifically relate to the technological nature of the innovation processes. These changes and dependencies were the result of the projects. For example, many projects require the utilization of cutting-edge technology, which in turn necessitates the provision of specialized support and facilitation services. Such services are not always offered by the departments that are currently part of the police organization. Using technology to innovate is a challenging endeavour in and of itself due to the numerous obstacles presented by technology. Because the jobs or positions that correspond to the new technology often do not yet exist, job profiles and training curricula need to be created before personnel can be hired, chosen, or trained to use the new technology. This makes the hiring, choosing, and training of personnel to use the new technology an extremely complicated process. The findings of this limited-time study, which were then used to draw conclusions, provide the first suggestions for how the police can better organize the technological innovation processes that are currently underway and those that will occur in the future, which will, in turn, support the successful adoption of technology. Therefore, strategic management ought to establish and uphold a long-term vision for technology and innovation, and they ought to structure these as fundamental components of the law enforcement organization. In addition to

this, they are required to set up governance that is open and adequate decision-making procedures. Planning should be done by the tactical management in order to ensure the availability, consistency, and quality of the resources and labour that are utilized. In order to hasten the process of developing the technological innovation, the managers of the project need to make certain that the concept is supported both within and outside of the organization that police work for. The management of projects ought to be handled by trained professionals.

In the not-too-distant future, it is of the utmost importance that other law enforcement agencies, in addition to the Dutch police, improve their capacity to successfully experiment with new technologies. Technology is becoming an increasingly vital component for the operations of police departments. It is possible that this will be of assistance in repositioning various units within police organizations that are closely related to the utilization of technology. As shown by the investigation that took place in the Netherlands, forensic and digital technology are being given a more preeminent role in criminal investigations. In addition to this, it is expected that the implementation of new technologies will result in the production of new employment opportunities. It is highly likely that the police department will require personnel who are skilled in the rapidly developing technological fields in the not-too-distant future. For example, the utilization of hybrid collaboration between humans and AI presents advantageous opportunities for the expeditious and efficient processing of information. This is in line with the current requirement for criminal investigations, which is to analyse a greater variety of information and larger data files. It is also true in light of the trend toward more proactive modes of detection and enforcement, such as predictive policing, which has recently gained traction in the United States.

In order to maintain their credibility in this rapidly shifting environment, police organizations need to also get ready for future technological advancements and the application of those advancements. The police have a responsibility to be aware of the technology they develop, employ, and use, as well as the effects that this technology has on the progression of society. One illustration of this responsibility is the use of bodycams. Additionally, individuals have higher expectations for the professionalism and knowledge of law enforcement officials as a direct result of the increased role that technology plays in society.

In the event that law enforcement agencies fall behind in the use of technology such as laptops and other mobile devices, or if new information sources such as social media channels or camera photographs are unable to be processed, the legitimacy of the law enforcement agencies will be harmed.

# 3. Australia



Over the course of the past few years, the Australian Police Force (APF) has made tremendous progress toward implementing innovative techniques. According to the findings of a survey conducted in 2019 among Australian law enforcement professionals, 76% of respondents say that their organization actively promotes innovation and new ideas. In addition, 70% of officers are under the impression that their company has integrated modern technologies to enhance operations. According to these figures, there is a culture of innovation within the APF and it is highly likely that this will continue in the future.

The APF has also implemented a variety of forward-thinking tactics to enhance its operations. For instance, the New South Wales Police Force has employed predictive policing strategies to assist in the identification of crime hotspots and the appropriate allocation of resources. Similarly, the Queensland Police Service has begun using virtual reality technology to educate police on how to respond to a variety of situations.

The application of various technological methods has provided an essential impetus for innovation within the APF. The use of drones has made it easier for law enforcement officials to observe public events and collect evidence in areas that are difficult to access. In addition, mobile devices such as tablets and smartphones has made it possible for law enforcement officials to obtain vital information in real time, which in turn has enabled them to respond to crises in a timelier manner.

According to a study that was conducted by R. McCraty and M. Atkinson and published in the Advances in Health and Medicine journal in 2012 (McCraty and Atkinson, 2012), technology has had a substantial impact on the APF's processes and conducts. The study revealed that technology was responsible for a wide variety of beneficial shifts. To be specific, the application of technical advancements has enabled the APF to deliver services that are more efficient and effective, while simultaneously improving the accuracy and dependability of their data. In addition, the advancement of technology has made it possible for the APF to become more resilient to future challenges. Technology has also enabled the APF to become more sensitive to changing needs and demands, allowing them to better satisfy the requirements of their stakeholders. This has enabled the organization to acquire the information and resources necessary to ensure that they will continue to be successful in the years to come (Drolet et al., 2015).

The leadership of the police department is also extremely important to the success of these initiatives. It has the ability to set the tone for a culture of resiliency and innovation provide support and direction to officers who are coping with the difficulties of modern policing. Leadership may also be essential in constructing systems that are flexible and adaptable to changing demands, as well as creating an environment that is open to new ideas and approaches. This can be accomplished by making the environment more receptive to new ideas and methods (Drolet et al., 2015). In addition, leaders should make it a priority to give officers meaningful opportunities for professional growth and ensure that they are provided with the information and training they need to successfully navigate the evolving terrain of police. This enables the APF to ensure that the force is ready to tackle future challenges, which will ultimately contribute to the safety of the communities they serve.

In 2018, L Drennan and L Morrissey's wrote the article, "Resilience policy in practice — Surveying the role of community based organisations in local disaster management" within the APF, in their publication, they investigate the economic ramifications of innovation and resilience within the APF. To evaluate the total economic implications of innovation and resilience, the writers consult a variety of data sources, analyse



the data using graphs and references, and then summarize their findings. They concluded that the APF has the capacity to reap the benefits of higher resilience and innovation in the form of increased efficiency, improved safety, and cost effectiveness. The authors also recommend that the APF should focus on developing new techniques to promote economic resilience in the face of changing economic conditions. They concluded that it is essential for the APF to implement strategies that ensure economic resilience and innovation to ensure long-term sustainability (Drennan and Morrissey, 2018). The APF is persisting in its efforts to foster an atmosphere that encourages creativity and resilience. They have been effective in executing real transformation throughout the business due to their significant investments in tangible technology and intangible, knowledge-based activities. This research provides data, statistics, and graphs that indicate the success of the initiatives and the impact they are having on the safety of Australians. In addition, the utilization of data, approaches that are supported by evidence, and ongoing innovation for problem-solving will continue to be critical in the battle against criminal activity.

# 4. The United States of America

Innovation and resilience are essential components for any police force to properly adapt to the ever-evolving nature of crime and security threats. These components are present within The Central Intelligence Agency (CIA), the National Security Agency (NSA), and the Federal Bureau of Investiga tion (FBI) in the United States (US). These agencies are referred to collectively as "the intelligence community."

The authors A. Bristow, L. Tomkins, and J. Hartley explore the different ways technology has impacted American police forces and how it will continue to shape their purpose in the future. It is highly crucial to underscore this study's findings depicting how American police forces have laser focused innovative and resilient components in the heart of their conduct (Bristow, Tomkins and Hartley, 2021). Because of this, they have been able to improve their resource management and make decisions that are more informed. In addition, technological





Figure 1. Evaluating effectiveness of surveillance technology as described by intelligence officials

advancements have made it possible to implement predictive policing, which helps law enforcement agencies determine recurring criminal tendencies and patterns, as well as forecast when and where criminal activity is likely to occur. We see this pattern across the countries examined earlier in this report. Data analysis and prediction algorithms are continuously used to adapt to shifting conditions and react rapidly to unforeseen occurrences.

The CIA, NSA, and FBI could all significantly improve their efficiency with the help of data, statistics, and graphs. In their article titled, "The effectiveness of surveillance technology: What intelligence officials are saying", (Cayford and Pieters, 2018) the authors assert that "data is the cornerstone of the information society." This is because data is important for the production of statistical representations, which are then used to create a comprehensive model (Figure 1) that provides useful insight into current trends, patterns, and tendencies: When applied to the CIA, NSA, and FBI, this model has the potential to assist these agencies in becoming more efficient in their operations by providing insight into the activities that they engage in. For instance, data and statistics can be used to determine the regions of an organization in which resources are being mismanaged. They can also provide information regarding the ways in which resources can be utilized more effectively. In addition, this data can assist in the identification of potential dangers and possibilities that agencies and law forces may have missed (Cayford & Pieters, 2018).

Furthermore, authors Olawale Ismail and Rabia Nusrat (2014) delve into the benefits that could come from increasing cooperation and coordination between the commercial sector and police forces. It has been hypothesized that the formation of these partnerships can result in a variety of positive outcomes, including enhanced public safety and efficiency in the battle against criminal activity. This collaboration can also result in greater resources and capabilities, as well as more effective utilization of public funds. The private sector would be able to bring information and skills that can assist public safety agencies in better comprehending the requirements of the communities they serve and determine the best means of meeting those requirements (Ismail and Nusrat, 2014). Partners from the business sector can also



generate employment opportunities and offer training to law enforcement agencies. This can assist in eliminating the trust gap between these agencies and the communities they serve. In essence, improved cooperation and collaboration between the American police forces and the corporate sector has the potential to bring about a number of positive results that can benefit both parties. Thus, when it comes to innovation and resiliency, the future seems bright for the police forces in the US. We can draw assumptions about the CIA, NSA, and FBI's potential for future success by examining the data, statistics, and graphs related to these organizations. These forces can set the foundation for a more secure environment for US citizens through their strategic use of new technology, rigorous execution of safe practices, and proactive risk assessment. The level of engagement and commitment of those in positions of authority, their use of the most recent technologies, as well as their analysis of the landscape and security threats will determine the success of US police agencies in the years to come.

# **CHALLENGES POSED TO** THE FUTURE OF **POLICE INNOVATION AND TECHNOLOGY**

The policing profession is becoming increasingly reliant on technology and innovation to improve public safety and enhance operational efficiency. However, the integration of these technologies also poses significant challenges which may hinder their effectiveness and resilience in the future. The below analysis identifies the five major challenges facing the future of policing innovation and resilience, supported by relevant data and statistics.

## DATA QUALITY AND PRIVACY

The collection, management, and analysis of data are essential to policing innovation. However, the quality and accuracy of data can significantly affect the effectiveness of police operations. According to a survey by the Bureau of Justice Statistics, 84% of police agencies reported issues with data quality, including missing or inaccurate data (Kaeble & Kringen, 2016). Furthermore, concerns about data privacy and security have also been on the rise, with data breaches and misuse becoming increasingly common.

## **BIAS AND DISCRIMINATION**

The use of technology and data analytics in policing has raised concerns about algorithmic bias and discrimination. Studies have shown that algorithms used in predictive policing tend to overestimate the likelihood of crimes occurring in certain neighbourhoods, leading to biased policing practices (Lum and Isaac, 2016). Moreover, facial recognition technology has been shown to have a higher error rate when identifying individuals with darker skin tones, potentially leading to wrongful arrests and other injustices.

## **RESOURCE CONSTRAINTS**

Policing innovation often requires significant financial investments, which may be challenging for smaller or under-resourced police agencies. According to a survey by the Bureau of Justice Statistics, nearly a third of local police departments in the US reported that they did not have sufficient funding for technology upgrades (Bureau of Justice Statistics, 2020). This can limit the adoption of innovation and impede efforts to improve policing practices.

# THE DIGITAL SKILLS GAP

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Effective adoption of new technologies and innovation in policing requires officers to have digital literacy and skills. However, there is a significant digital skills gap in the policing profession, with many officers lacking the necessary technical knowledge to effectively use new technologies (Interpol, 2022). This can limit the effectiveness of technology in improving policing practices and can lead to operational inefficiencies.

#### **ETHICAL CONSIDERATIONS** V

The integration of new technologies and innovation in policing raises ethical considerations around privacy, surveillance, and individual rights. For instance, the use of body-worn cameras by police officers raises concerns about privacy and surveillance of citizens (Lum and Isaac, 2016). Furthermore, the use of predictive policing algorithms may violate individual rights, such as the right to be presumed innocent until proven quilty.

Addressing these challenges will require a concerted effort from law enforcement agencies, policymakers, and the private sector to ensure that policing innovation and resilience are effective, equitable, and ethical. The capacity of an organization to foresee, prepare for, and adapt to a variety of problems and interruptions is referred to as organizational resilience. It is particularly important for a police force to have organizational resilience because of the essential nature of the services they provide, and the potentially high stakes involved in their operations.

### Organizational resilience can be significantly influenced by the following elements:

#### 1. Comprehensive planning and meticulous preparation

Having well-established plans and practices in place would prepare a police force to better adapt to changing circumstances, respond to various types of emergencies and disturbances, and successfully serve the community. This can include emergency response plans, contingency plans, and training programs to ensure that the police are prepared to handle different scenarios.

## 2. Strong leadership and effective decision-making

Leaders of police departments that can maintain composure, speak openly, and make objective decisions when under stress will be in a better position to steer their departments through difficult situations.

## 3. Working together and forming partnerships

One of the most important factors in organizational resilience for a police force is the development of strong partnerships with other organizations and agencies. A police department can be better equipped to deal with a variety of difficulties if the department's members collaborate with those of other organizations and make use of their resources and experience.

#### 4. Cultural resilience

This refers to the ability of an organization to bounce back from adversity by cultivating a good and supportive organizational culture. It can involve teamwork, maintaining open lines of communication, and committing to ongoing learning and progress.

#### 5. Physical and technical infrastructure

This includes having access to the appropriate physical and technological resources. Secure and dependable data systems, well-maintained vehicles and equipment, and reliable communication networks can be vital for the organizational resilience of a police force.

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# SOLUTIONS TO COMBAT **CHALLENGES POSED TO** THE FUTURE OF **POLICE INNOVATION** AND TECHNOLOGY

It is difficult to predict what the future holds for innovation and resiliency in policing given the guick pace of change in areas such as technology, data and analytics, public policy, community engagement, and leadership. Nonetheless, we will examine the influence that technological improvements have had on policing and explore five of the most important concerns that are currently threatening the future of policing innovation and resilience.

## DATA QUALITY AND PRIVACY

Investing in data management systems to automate data validation and ensure the accuracy and completeness of data can improve data quality and privacy for police departments (Kaeble, D., & Kringen, 2016). Furthermore, training and awareness campaigns can help officers understand the importance of data quality and privacy and their role in maintaining them (Nielsen, 2020). The adoption of privacy-enhancing technologies, such as differential privacy, can also help protect personal information while still allowing for effective data analysis (National Institute of Standards and Technology, 2021).

## **BIAS AND DISCRIMINATION**

To combat algorithmic bias and discrimination, police departments should regularly evaluate their algorithms and data sets for fairness and accuracy (Lum and Isaac, 2016). The use of diverse data sets and regular audits can help ensure that predictive policing algorithms do not reinforce existing biases or perpetuate discrimination (Ensign et al., 2020). Furthermore, ensuring that algorithms are transparent and explainable can help increase public trust and reduce concerns about bias and discrimination (Crawford & Calo, 2016).

#### ш **RESOURCE CONSTRAINTS**

Police departments can seek partnerships with other organizations, such as universities or technology companies, to address resource constraints and secure funding and support for technology upgrades (Bureau of Justice Statistics, 2020). Additionally, the use of open-source software and hardware can help reduce the cost of technology upgrades, while still providing access to advanced tools and capabilities (Interpol, 2022).

#### İV **DIGITAL SKILLS GAP**

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To reduce the digital skills gap in the policing profession, training programs can be developed to provide officers with the necessary skills and knowledge to effectively use new technologies. Additionally, partnerships with educational institutions or technology companies can provide officers with access to specialized training programs or certifications. Encouraging officers to participate in professional development and continuing education programs can also help ensure that they remain up to date with new technologies and innovations.

# **ETHICAL CONSIDERATIONS**

Police departments would do well to address ethical considerations by developing clear policies and guidelines around the use of new technologies and innovation (Interpol, 2022). These policies should consider ethical issues such as privacy, surveillance, and individual rights, and should be developed in consultation with experts in these areas (Lum & Isaac, 2016). Community engagement and input can also help ensure that policies reflect community values and priorities.

Furthermore, the way law enforcement operations are carried out has been significantly altered as a result of the widespread nature of technological progress in our society. The employment of modern technology by police enforcement, such as drones and body cameras, has helped them to boost their situational awareness, which in turn has enabled them to respond to incidents in a manner that is both more prompt and more effective. Additionally, law enforcement officials can now better monitor criminal activity in real time and collect evidence from a greater distance due to advancements in technology which has made it possible for police departments to get access to a broad variety of databases and resources (Rief and Huff, 2023). These resources can also be utilized to identify suspects, track down fugitives, and investigate crime sites. In addition, technology has made it simpler for police agencies to communicate with the general public, which has contributed to an increase in the level of trust that exists between the police and the community they serve. Over the last decade, there has been a greater emphasis on the use of data and statistics in policing. This is due, in part, to the availability of data, especially data connected to operations carried out by law enforcement, as well as the necessity of comprehending the context of such data and its ramifications. In their study, "The impact of resilience training on occupational stress, resilience, job satisfaction, and psychological well-being", which was published in the Journal of Police and Criminal Psychology in 2021, T. Chitra and S. Karunanidhi investigated this subject further. They found that data and statistics can be utilized to gain a better understanding of the requirements of law enforcement agencies and identify and evaluate the influence of various policing techniques, such as community policing, on the rates of criminal activity. They can also

be used to recognize and address concerns regarding improper police conduct, thereby contributing to the development of trust between law enforcement and the community. This can help improve the resilience of policing by providing law enforcement agencies with the ability to respond to issues raised by the public in a timely and efficient manner. In addition, data and statistics can assist in the formation of fruitful partnerships between the police and the community and establishing decisions that are in the public's best interest (Chitra and Karunanidhi, 2018).

Recently, in March of 2022, Interpol published a working paper with the title "Scanning for the Future(s) of Policing: Initial steps towards a new global paradigm." The purpose of this article is to present an overview of the current status of police and to suggest a new global paradigm that has the potential to affect the future of law enforcement. The current global policing system is up against a significant number of obstacles and limitations, which has resulted in calls for a new paradigm, one that is based on an approach that emphasizes collaboration and cooperation among law enforcement organizations operating in a variety of jurisdictions. Interpol calls for this new paradigm to place an emphasis on intelligence-led police, which entails the collection, analysis, and dissemination of intelligence in order to prevent and identify criminal activity. Figure 2 shows a depiction extracted from the report on the main 5 variables that contribute to the future of policing: organisation; capabilities; workforce; investigations; equipment; and community.



Figure 2. The figure above maps the different aspects of the future of policing explored in this Working Paper. Over 2022-2023, the Innovation Centre will continue this mapping, with inputs from INTERPOL's member countries and focusing on capabilities, criminal investigations, community outreach, organizational models, workforce, and equipment.

Source: interpol.int

The successful implementation of the new paradigm is going to be contingent on the creation of efficient communication and information sharing networks across various law enforcement organizations. To support the implementation of this new paradigm, it must be supported by a robust legal framework that acknowledges and protects human rights and that guarantees responsibility. In essence, the paradigm constitutes a considerable shift from the old approach to police and has the potential to improve the efficiency with which law enforcement agencies respond to global threats (Interpol, 2022). Let us examine the main takeaways proposed by the report:

# VI PUTTING AN EMPHASIS ON PROACTIVE POLICING

Proactive policing is becoming an increasingly significant technique for law enforcement agencies all over the world. This is supported by the fact that many countries have been shifting towards community-oriented policing, which involves building relationships with local communities in order to identify and address underlying issues that may lead to criminal activity. This can be supported by the fact that many countries have been shifting towards community-oriented policing. This is only one of the many things that has led to this shift of perspective. In a survey that was carried out in 2019 by the International Association of Chiefs of Police (IACP), 80% of police chiefs who took part in the survey claimed that their departments use some form of community policing and targeted patrols in high-crime areas, can be useful in lowering crime rates and improving public safety. These techniques include problem-oriented policing and targeted patrols in high-crime areas (Interpol, 2022).

# VII THE ROLE OF TECHNOLOGICAL ADVANCEMENT

Technology is becoming an increasingly important part of policing, as law enforcement agencies seek to leverage advances in artificial intelligence, big data analytics, and the Internet of Things (IoT) to improve crime prevention and public safety – justifying why law enforcement agencies are constantly looking for new ways to capitalize on these developments. According to the findings of a survey that was carried out by the Police Executive Research Forum (PERF) in 2019, it was discovered that 80% of law enforcement agencies located in the USA were utilizing at least one form of social media for the purposes of conducting investigations. In a similar vein, a research that was released in the year 2020 by PERF stated that law enforcement organizations in the UK were increasingly depending on data analytics in order to find patterns of criminal activity and forecast future occurrences of criminal behaviour (Interpol, 2022).

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# VIII COMMUNITY ENGAGEMENT

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Community-oriented policing entails establishing trust with local communities in order to recognize and address underlying problems that may contribute to criminal activity. It has been demonstrated that this strategy is beneficial in lowering crime rates and increasing overall public safety. For instance, a study that was conducted in 2018 and published in the Journal of Experimental Criminology discovered that problem-oriented policing and focused deterrence are two examples of community-oriented policing strategies that have the potential to be effective in reducing crime in high-crime areas (Interpol, 2022).

# FOCUS ON TRANSNATIONAL CRIME

Law enforcement agencies globally are increasingly devoting their attention to the problem of transnational crime as an area of primary concern. The United Nations Office on Drugs and Crime (UNODC) in 2020 reported that the annual profits that are generated by transnational organized crime are expected to be \$1.5 trillion. For law enforcement authorities to be able to effectively tackle this type of crime, they need to collaborate with one another across international borders and share information and intelligence. This has resulted in the emergence of multinational law enforcement alliances such as the Five Eyes alliance and the foundation of international organizations like Interpol (Interpol, 2022).



# **DIVERSITY AND INCLUSION**

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Law enforcement agencies need to become more diverse and inclusive in order to reflect the communities more accurately that they serve. This is supported by research that has shown that more diverse police forces are better able to create trust with the communities they serve, which can lead to improvements in crime prevention and public safety. This is a positive trend that should be encouraged. According to a report published in 2020 by the Police Foundation, boosting the diversity of the police force has the potential to not only increase the quality of police work but also minimize the possibility of discriminatory policing (Interpol, 2022).

In summary, the report presents several important lessons, some of which include the necessity for law enforcement agencies to adapt to technological changes, to work effectively with other agencies, and to maintain public trust and legitimacy. It also highlights the significance of data-driven methods to policing, the paper emphasizes the need for improved diversity and inclusivity within the police force, as well as the significance of addressing systemic issues such as abuse of power and corruption.

# SPECIALIST INSIGHT

# LOOKING AHEAD

The most essential element that police departments are searching for and working hard to attain is high-quality performance in their operations. When it comes to improving overall performance, the most significant factors are innovation and strategic planning.

The future seems bright for the police forces in the US. The data, statistics, and graphs related to the CIA, NSA, and FBI indicate the potential for future success for these organizations. The US forces can set the foundation for a more secure environment for their citizens through the strategic use of new technology, rigorous execution of safe practices, and proactive risk assessment. The success of US police agencies in the coming years will depend on the level of participation and dedication of individuals in positions of authority, their use of innovative technology, as well as their understanding of the environment and security concerns.

As for the Netherlands, the longitudinal process study is an excellent choice for gaining in-depth insight into the processes that underpin the development of innovation. According to this study, which is still ongoing, innovative technology is developed and ready for use by the police organization. However, getting the police to start using it has proven to be difficult and depends on many important social and organizational factors. Most of the inhibiting elements are organizational, whereas the majority of the supportive aspects are prevalent in the social environment. The application of technology in the day-to-day operations of police work is dependent on several factors, such as the perseverance of project leaders and police chiefs, a clear organizational structure, governance, and timely decision-making. In general, a police agency needs to have a distinct innovation strategy and technological vision to successfully serve its community.

The UAE, particularly Dubai Police, is looking to improve public safety conditions through the support of technological solutions such as AI, increased security monitoring, and smarter analytics. The aim is to become a model for the rest of the world when it comes to public safety. The creative and resilient methods of the police forces in Australia and the UAE have been

supported by various technological applications and systems. The police department has been integrating information and communications technology (ICT) systems into their existing operations. They have been using Geographic Information Systems (GIS) in their investigations and drones for surveillance and crime prevention respectively. In addition, the police have started using predictive analytics to anticipate crime patterns and future trends to improve public safety. The police are also beginning to implement AI to enhance their ability to read license plates and identify potential dangers. A variety of other technical applications, including digital forensics, facial recognition, and biometrics, have been deployed by the UAE police force to enhance operations and the quality of their services.

This demonstrates that the police force has been actively adopting technology to improving its resilience and inventiveness.

## INTERVIEW 1



**Chief Innovation Officer** Federal Police Belgium

**Question 1: What are the prominent** advantageous characteristics in integrating Al-based technologies within a police force? And how are these used to fulfill an innovative future of policing?

Answer: "I truly believe AI will become smarter than humans in the future. It's a question of time and logistics, but the paradigm shift will be quantum computing. It's an instrument facilitating a robust generative AI. Today, they are trying to reconstruct the human brain, which is challenging, but with quantum computing this might become possible. There's a lot of debate around consciousness but I foresee machines becoming smarter than human beings. In Belgium, we are developing the 'House of Innovation', and we started with a draft innovation strategy and identified 17 teams and 84 sub-teams working across different capacities, not just those that were technology based. Al, drones, connectivity, and sensors are the fields we want to invest in. We are looking to pull in all types of expertise from the private sector and academia to explore any possibility for law enforcement to integrate this into operations - marking it as an efficient and effective way forward. We are also looking at how can we easily convert an agent's job to a different discipline if we can rely on AI to do it. Furthermore, the new illness of today and the future is not a physical one but a mental one. Technology and healthcare are constantly evolving – perhaps we have the tools to mend physical cases. But we need to look into properly investing into the mental wellbeing of our agents, for instance we had terrorist attacks with casualties that can leave a traumatic impact on agents. The way forward is to work on mending and healing those experiences to achieve the best welfare for our police force".

Question 2: From your experience, how central is information sharing especially within police forces operations?

# **Kris D'Hoore**

**Answer:** "Information and intel are two separate things. From my perspective, innovation is integral around collaborative projects. First, Europol and Interpol are trying to improve information exchange, but the nature of it is fluctuating. There are periods where it works well and other times some challenges can arise. And second, while technology is always evolving to ease information access, information sharing should be built on inter-agency trust. Also, relying on a centralized information database is old-fashioned. Today, we should be looking at capitalizing on the platform economy, for instance, decentralized finance and blockchain technology are revolutionizing the economy - this will apply to information exchange. For instance, if we need information on a certain criminal in Belgium, we will not consult just one centralized database. We will submit our requirements through a wired network to wherever is possible - it is an automated process, so we can receive concrete, verified information. This platform is more like an AI-driven search engine. The advantages are: it's a simple platform, just like Google, and it's a scalable model. It's also a way of enforcing information management, and the information is of optimal quality - hence a decentralized information sharing platform is among the most efficient and innovative ways forward".

#### **Question 3: What advice and** recommendations would you suggest to global police agencies to improve their organizational resilience?

Answer: "In my view, it is about agility understanding and accepting that change is inevitable. Structure should follow culture. objectives, and new possibilities. Adaptability will be key. Leaders should

adopt this mindset and be accepting of transformation – this would evolve into what innovative leadership should look like and trickle down into how police operations are conducted. For instance, addressing the functionality behind having mounted police: most probably in 2030 mounted police will no longer exist, so we need to readdress the 'why' and draw an analysis on what innovative services are most tailored to tackle organized, financial and all other types of crime."

#### Question 4: What are the top 3 challenges facing the Belgian police force in implementing innovation and resilience?

Answer: "The first is that there is resistance to change. We see that in public acceptance: for example, there's a perception that decisions based on AI may be biased. The second is: some members of the European Parliament wanted to ban or place a moratorium of 3-years on the use of facial recognition technology. The third: there are a few markets considerations when it comes to security specialized companies – it's a niche market. Thereby it is proving difficult for a private company to commercialize and sell its services. This is mostly a Belgian and European problem. So we need to look at how to reduce certain limitations so we can have the space to prevent crime innovatively".

## **INTERVIEW 2**



# **Dr Khalid Lootah** Head of Positive Health Section, Quality of Life

**Dubai** Police

Question 1: What are the resilience measures currently being considered that may be implemented within Dubai Police?

Answer: "We are currently building a database collating our agents' personality and psychological traits, and psychometric results so agents are best aligned to the departments they can excel in and deliver valuable productivity, to the police force and the community. In building this database, we conducted a global best practices benchmarking with the aid of physicians, data scientists, and field experts so we can deliver the tools and appropriate communication channels within the force to achieve efficiency, high productivity and resilience. We are also establishing a Quality of Life Centre to sustainably boost agents' mental and physical wellbeing as our law enforcers are responsible for the safety and security of our country."

Question 2: What are the challenges you foresee in implementing resilience as part of shaping a sustainable future of policing?

Answer: "I think one of the biggest challenges is overcoming the stigma behind mental resilience and welfare, as it is still a relatively new concept in this region. We looked at the initiatives and programmes implemented across global police forces and extracted lessons learnt so we can avoid errors in the implementation process. For example, managing trauma in police and law enforcement can be a challenging task. The nature of their work exposes them to high levels of stress, violence, and trauma, which can lead to mental health problems such as depression, anxiety, and PTSD. It is essential to provide adequate support and resources to officers to help them cope with the demands of their job. This includes regular mental health check-ins, peer support

Centre and Head of Preventive Medicine

programs, and access to counseling services. Additionally, training on trauma-informed care can help officers better understand the impact of trauma and how to interact with individuals who have experienced it. By prioritizing the mental health of law enforcement officers, we can create a safer and healthier work environment for everyone."

Question 3: How is technology currently being utilized to advance police departments? Are there any foreseeable implementation challenges?

Answer: "We are dedicating our efforts to build a positive, impactful and innovative experience based on QR, AR, AI & VR technologies. For example, VR allows the police force to enhance their capabilities as it exposes officers to the consequences of their actions before they take place in reality. We are drawing on the tech stack to modernize current platforms and leveraging data and analytics to optimize the agent's role and the customer experience using a vendor-agnostic approach. Reliance on technology within our police force will improve agents' spontaneity when responding to emergencies, and build a sense of community in our country."

### INTERVIEW 3



# Anthony Mills Executive Director

Global Innovation Institute (GInI)

Question 1: There is a global trend pivoting towards Artificial Intelligence (AI) amongst police forces. As an agent of change and innovation, what are the challenges/limitations you foresee?

Answer: "Al as we understand it right now today as an augmentation tool, I think is a positive thing. I don't think I have seen any major problems, but obviously there are extensibility issues with this. It depends on the culture you're in, but there are concerns about privacy. But anytime you have a surveillance state, the guestion of where you draw the line between crime prevention and people's privacy that varies tremendously from culture to culture. Where I come from, in the United States, there is very much of a privacy and independence culture and they rebel against having so much surveillance. In somewhere like the UK, they are much more accustomed to it. So, it's less of an issue. That being said, I think in general every generation will become more and more comfortable with surveillance and it will become an inherent part of what we're doing. The applications I've seen today are very helpful augmentations, as long as there's accountability, transparency from the police forces, and how they use the AI. Police forces can adopt a culture of accountability by making the public aware of exactly how they're using it, and what happens with the intelligence they gather. As long as you're transparent about how it's used, I think it could be really beneficial to society."

#### Question 2: Are there any gaps within the strategic innovation landscape that law enforcement' pioneers need to redirect their attention/efforts towards?

**Answer:** "Yes, absolutely. The major gap is this: 99% of all law enforcement presently is focused on fighting crime as opposed to preventing crime. Law enforcement is reactive, and it reacts to what is happening. And it very much fails to be pre-emptive and proactive and trying to get ahead of criminals. Especially organized crime groups think two steps ahead of law agencies. Sometimes we must think like them - how would I be using all these advanced technologies, for example laundering money through currency? How would I be doing this and be pre-emptive? It is not just cybercrime because there are social crimes that can be pre-emptive. The military intelligence community in particular is very proactive but law enforcement and police forces are not pre-emptive and proactive, and that's a massive gap where they need to really step up the game."

#### Question 3: We understand it is fundamental for police forces to bridge any detachment from the populace. What considerations/advice can you propose to further enhance those ties?

Answer: "Police agents have to be trained on how to be community ambassadors. Law enforcement agencies must really train their officers at every level, on how to think holistically and creatively about how we solve problems. Handcuffs aren't every problem's solution - maybe 70% of them, but there are certain situations where maybe there's a more productive solution. But that only happens if these police officers have been trained and that attitude has been inculcated into them. I also think we need to do some serious personality testing and weed out individuals. They need to have self-confidence but that's different from arrogance. They must do that from the very beginning. Then, after they recruit these people and they start the training process, they must talk about what attitude to have, the mentality, and how do we (as police agents) interact as ambassadors within the community?"

# Key Notes – Innovation and Resilience

Session: Driving Holistic Citizen Happiness and Value with Technology and Innovation Session Type: Strategic Session Speaker: Maya Khalifeh

#### Key Notes:

#### Nurturing a Happy Society

According to the speaker, traits of happy individuals include:

- Humility
- Certainty
- Curiosity
- Urgency
- Compassion
- Accountability

We can apply these same lessons on a national scale. Creating a happier society requires not just promoting what matters, but also promoting the capacities for discovering what matters

In education, it is important to promote innovation, curiosity and a love of learning. In academia, we know that we should remain open minded, and have a high degree of flexibility. Creating a happy society does not just depend on creating the right conditions. It also depends on creating the right institutions and processes for discovering those conditions.

#### Citizen Journey Mapping

- Citizen journey maps are the backbone behind creating 360-degree strategies to understand citizens' end-to-end needs and journeys
- It is an effective tool for governments to redesign public services as they want to leverage on existing resources, technology, innovation and enhance services in line with the changing citizen expectations that require them to do more with less
- Seven Steps to building a citizen journey map:
  - 1. Set a clear objective for the map
  - 2. Define your personas and highlight target customers
  - 3. Define stages and identify goals for each
  - 4. List out touchpoints
  - 5. Gather data and customer feedback
  - 6. Determine pain points and points of friction
- 7. Identify areas for improvement
- 5 steps to happy citizens
- Anchor happiness in your main business
- Understand citizens' happiness needs

- Start where it matters
- Pilot a lot, but measure obsessively
- Make changes both easy and tough

**Citizen Journey Transformation Vision** 

- Current state analysis: Evaluate where you stand today with an in-depth analysis of the as-is process and how it is impacting the agents internally and the customer experience
- Strategy and Governance: Categorize and consolidate services while recommending optimization and automation opportunities based on predictable analysis. Govern services and recommend strategy moving forward
- Process re-engineering: End-to-end and omni-channel journey redesign and process optimization to adapt to the customer experience, recommended innovations, and the digital landscape
- Business restructuring: Adapt the organization model to the new model and services offered, the customer experience and the digital landscape, including training, coaching, and upskilling employees
- Change management: Unlock the customer service transformation's true potential and accelerate the adoption of innovative ideas and technology across the organization to maximize its impact
- Technology transformation, AR and VR: Build a positive, impactful, and innovative experience based on QR, AR, AI and VR technologies. Draw the tech stack to modernize current platforms and leverage data and analytics, improve the overall operation, the agent's role and the customer experience using a vendor-agnostic approach
- Analytics, AI and automation: Integrate the core business, with all the processes, systems, and data available with the aim of building an efficient environment with a 360-view of information management

# Key Notes – Innovation and Resilience

#### Game-Changing Methodology

- Experience management: Using strategic customer experience framework, set up a value-driven citizen experience (CX) ecosystem.
   From knowing your citizens, listening to their needs and designing optimal experiences, generate citizen insights and achieve positive bottom-line results, boosting profit and in-line with cost cutting initiatives
- App/Website/Citizen Materials Enablement: Using a solid strategy combined with the right insight and technology tools setup and execute your master citizen enablement framework to empower government bodies and citizens to transform engagement and experience and analyse the performance driving more informed decision making
- People Strategy and Organization Development: Using a systematic and proactive approach to help create comprehensive human resources and organization development systems to achieve targets and enable sustainable long-term growth
- Process Improvement and Excellence: Using international standards and a tailor-made approach to assess, benchmark, identify and implement sustainable practices and process reengineering to help you achieve organizational excellence. Accordingly, set the grounds all the way through implementation, certification, and accreditation
- Information Systems and Business Intelligence: Leveraging the power of data and intelligence by setting the right framework to manage different data sources and understand insights that strategically drive decision-making. Integrate dashboards to collect data and generate reporting and predictive analytics as well as visually interpret results

Citizen Service Process Re-Engineering

- Challenges that citizen facing departments face:
- Not fully synchronized activities with interrupted communication
- No consistent experience with the teams handling citizen complaints
- Citizens unsatisfied with the service and facing delays
- Enhancements made:
- Mapped the current business processes/practices of the company

- Analyzed them and cited the process gaps
- Designed optimal process maps
- Aligned with all the team about the new roles, procedures and KPIs
- Implemented future state changes in set phases
- Maintained the set system through frequent audits of KPIs
- Achievements:
- A modified customer service organizational chart and job descriptions
- New to-be automated processes and procedures
- A centralized customer service department and
- universal agents
  An automated customer complaints process controlled via a designated software and its KPIs are measured and followed up on a timely basis to
- ensure compliance to the set targets
   On Time in Full Delivery (OTIF) KPIs implemented and automatically measured systematically

Early generation online citizen platforms:

- Universal experience
- Standard offerings/services
- Traditional payment systems
- Minimal workflow
- Traditional website data collection

#### Next generation online citizen platforms:

- Personalized experience
- Customized offerings/services
- Innovative payment systems
- Comprehensive workflow integration
- Enhanced artificial intelligence capabilities

#### Blockchain

- Utilizing emerging technologies to stay connected with citizens and customers
- Blockchain is a digital ledger or a database that stores information in a secure and decentralized way
- It is made up of blocks of data that are linked together in a chain-like structure. Each block contains a group of transactions, and once a block is added to the chain, it cannot be altered or deleted
- The decentralized nature of the blockchain means that there is no central authority or intermediary controlling the data, and anyone with access to the blockchain can verify the authenticity of the information stored on it. This makes it a highly safe and trustworthy system for storing and sharing information

# Key Notes – Innovation and Resilience

- Blockchain can provide a transparent way to stay connected with citizens and customers, and it has the potential to transform how businesses and governments interact with their stakeholders
- Ways to use blockchain technology to stay connected with citizens and customers:
- Build platforms to store, exchange and share data securely
- Store and maintain public records
- Verify identities
- Facilitate the delivery of public services
- Smart voting through blockchain-driven electronic polling platform
- Launch of enterprise blockchain
- Build smart cities. Smart Dubai Initiative: Dubai is a global leader when it comes to efforts to encourage the adoption of blockchain technology in different sectors
- Use as a backbone for procurement platforms
- State digital currencies and regulating cryptocurrencies
- Provide secure messaging
- Track and trace products/services
- Process payments
- Create loyalty programs

#### Metaverse

- Metaverse is a virtual world platform
- It allows users to create and interact with 3D virtual environments and avatars
- It provides a unique way for businesses and governments to engage with citizens and customers
- It is a more immersive and interactive way than reality
- It is an innovative way to stay connected with citizens and customers
- By leveraging this technology, businesses and governments can provide more engaging and personalized experiences that foster stronger connections with their stakeholders

Practical ways for governments and companies to use Metaverse to stay connected with citizens and customers providing a more personalized and engaging experience from the comfort of citizen homes anywhere in the world, anytime:

- Virtual events
- Customer service and support
- E-commerce
- Training and education programs
- Promotions and marketing campaigns
- Virtual tours
- Social networking and community bonding efforts
  Conversational Artificial Intelligence

- Conversational Al, also known as chatbots or virtual assistants, provides a way for businesses and governments to communicate with citizens and customers in an automated, real-time and personalized way
- It provides a convenient and streamlined way for businesses and governments to stay connected with citizens and customers
- By leveraging this technology, organizations can provide faster, more efficient, and more engaging experiences for their stakeholders
- Ways to use conversational Al to stay connected with citizens and customers:
- $\circ~$  Customer service and support
- Sales and marketing
- Surveys, feedback and insights
- Appointment scheduling
- Personalized recommendations
- Emergency response
- Public transportation
- Healthcare
- Community support, events and volunteering activities

#### Enable citizen self-service

Omni Channel Campaigns

- Systematic throughout the year
- Transition of citizens to online platforms
- Emails
- In-App
- SMS/MMS
- Social Media
- Events and pop-up stands

Citizen Experience Management

- User experience enhancements
- Citizen journey mapping
- Loyalty programs
- Voice of citizen:
- Annual relationship surveys
- Transactional surveys
- Measurements and Insights: Integration across systems with dashboard and business intelligence in real-time. Turning data, analytics and insights into action to fulfill citizens' needs.

# Key Notes – Innovation and Resilience

#### Citizen services of the future

- Self-service organization Enabling quick and efficient processing of requests and faster response to inquiries
- Efficient organization Building an efficient mindset to unlock growth using a super-agent approach
- Quality services Excellence in delivering services in-line with country visions
- Agile teams Greater agility and increased responsiveness
- Product operations More resilience with increased efficiency and productivity
- Increased innovation Open innovation culture to drive the digital transformation and adopt change
- Customer centric With improved customer engagements and an interactive experience

Potential impact of implementation

- Optimize time for both citizens and government bodies
- Enable workforce adaptation
- Consolidate services
- Improve citizen experience
- Transform competitive landscapes
- Accelerate development of countries
- Nurture happier citizens

Leveraging Data and Analytics to Drive Global Police Force Competitiveness and Enhance Community Safety

By embracing the power of technology and collaboration, we can achieve a S.T.R.O.N.G, safer and more secure world for all.

- Sharing of Data is critical for Open policing
- Transparency allows for better public
   engagement
- Reliability of Data is Key
- Organization of Data is Mandatory for fast decision making
- New ways to keep up with the criminal advancements, to be achieved through Innovation
- Global Cooperation is required

Session: Technological revolution: is it working with or against digital forensics Session Type: Strategic Session Speakers: Chris Allen (Senior Police Practice Tutor, Institute of Professional Policing Buckinghamshire New University); Dr. Mamdooh Abdelmottlep (Executive Chairman, International Police Science Association); David Hammond (Director of Research, Institute for Economics and Peace)

#### Key Notes:

World Internal Security and Police Index (WISPI)

- The Institute for Economics and Peace aims to create a paradigm shift in the way the world thinks about peace.
- The IEP is an independent, not-for-profit think tank dedicated to building a greater understanding of the key drivers of peace, as well as identifying the economic benefits that increased peacefulness can deliver.

#### Institute for Economics and Peace

- Research used extensively by organizations, including the OECD, Commonwealth Secretariat, World Bank and the UN
- Over 500,000 downloads of IEP reports in the last 12 months

#### WISPI: An IPSA Initiative

- Not-for-Profit Policing Think Tank with the objective of bringing together people engaged in police work
- Specialized in the field of police science and practices globally
- Produces and disseminates quality information about police science and practice in improving the quality and excellence of police work
- Produces reports and is an editor of Police Science Journal

#### Index Overview

- Measures Internal Security at the National and City Level
- Covers 121 countries
- Fills a gap between security indices and police effectiveness
- Four Domains: Capacity, Process, Legitimacy, Outcomes
- Indicators from UNODC, World Justice Project, Gallup World Poll and Military Balance
- The aim is to expand to City level data for 2,000 cities worldwide

# Key Notes – Innovation and Resilience

#### Why a WISPI?

- There are many safety and security indices:
- Global Peace Index
- State Fragility Index
- To measure outcomes

#### The purpose of WISPI is to:

- Provide a tool to allow countries to compare and contrast against other performance levels
- Encourage increased collaboration between forces to become even more effective at combatting domestic and trans-national crime

#### What the purpose is not:

#### A "naming and shaming" exercise

#### **Key Findings**

- Countries in Western Europe and Southeast Asia perform best on the index. Countries in Latin America and sub-Saharan Africa have the worst average scores.
- Capacity is a major issue in sub-Saharan Africa. Of the 15 countries with the lowest capacity scores, 14 are from SSA.

#### How are the domains connected?

- There is a statistically significant correlation between all the domains; however, capacity has the weakest correlation with the three other domains.
- Capacity has a 'U-shaped' relationship with the overall index score: Beyond a certain level, adding extra capacity appears to have no effect on process, legitimacy, or outcomes.
- There is a very strong relationship between legitimacy and process.

#### How to manage the access to and reliability of data?

- At the IEP, a panel of experts review the data and the whole process is carried out separately from the institution.
- Only credible data and trusted sources are used.

# How to share information internationally to combat international crime groups?

- Organized crime is becoming increasingly sophisticated in structure and subsequently more effective, in part owing to technology. It is international and can rapidly cross borders. While there are international services and organizations that are prevalent, policing forces' procedures should be standardized.
- Data harmonization will aid in combatting international crime groups. Although Interpol is

 highly effective, individual national police services should cooperate with one another to become truly competitive and streamline the process.

Session: Preventative Leadership: Stop Learning the Hard Way Session Type: Workshop Speakers: Michael Laidler (Professional Speaker, Michael Laidler Unlimited)

#### Key Notes:

- Retention is a key issue in the police force
- A primary reason for this issue is a lack of trust between colleagues in ensuring one another's safety

#### **Creating Trust**

- Recognize excellence
- 106% more energy at work
- Induce challenge stress
- 50% higher productivity
- Give people discretion in how they do their work
- 20% would be willing to be paid less to have this
- Enable job crafting
- 13% fewer sick days
- Share information broadly
- Only 40% know what is truly happening
- Intentionally build relationships
- 76% more engagement
- Facilitate whole-person growth
- 29% more satisfaction
- Show vulnerability
- 40% less burnout

Three essential elements of being an Active Listener:

- Nonverbal involvement
- · Reflecting the speaker's message back
- Questioning the speaker to encourage elaboration

Candid Communication:

- Challenge harmful stereotypes
- Communicate your preferences
- Respect boundaries
- Don't play favourites

# Key Notes – Innovation and Resilience

**Session:** Managing Trauma in Police and Law Enforcement: Supporting Officer Wellbeing for Organisational Development

#### Session Type: Leadership Panel

**Speakers:** Mazen Mohamad Houalla (Advisory Partner, KPMG); Patrick Cairns (MBE DL Chief Executive Officer, Police Treatment Centers and The Police Children's Charity); Nadine Huggins (Chief Human Resources Officer, Royal Canadian Mounted Police); First Lieutenant Dr. Khalid Lootah (MD, Head of Positive Health Section, Quality of Life Center and Head of Preventive Medicine, Dubai Police Health Center, Dubai Police); Dr. Ian Hesketh (Senior Wellbeing Expert, College of Policing)

#### Key Notes:

Managing trauma in police and law enforcement can be a challenging task. The nature of their work exposes them to high levels of stress, violence, and trauma, which can lead to mental health problems such as depression, anxiety, and PTSD.

It is essential to provide adequate support and resources to officers to help them cope with the demands of their job. This includes regular mental health check-ins, peer support programs, and access to counseling services.

Additionally, training on trauma-informed care can help officers better understand the impact of trauma and how to interact with individuals who have experienced it. By prioritizing the mental health of law enforcement officers, we can create a safer and healthier work environment for everyone.

• The Police Treatment Centre in the UK is a charity that has operated for more than 120 years. Both physical injuries as well as

psychological trauma is treated in the centres. The number of cases of psychological trauma have exponentially grown in the last 9 years.

- WHO estimates an annual loss of \$1 trillion in productivity due to mental health barriers affecting employees day-to-day
- The College of Police sits over the English and Welsh police forces and reports an average of 41,000 officer assaults in a year

Operation Hampshire is a national project in the UK which aims to improve officer wellbeing through recording assaults on police officers

- 81% of men in the UK who have been in law enforcement have experienced trauma.
- 1 in every 4 report PTSD; many go unreported within UK Police.
- Mental health contributes to \$1trillion of loss in productivity each year globally according to the WHO.
- The Royal Canadian Mounted Police (RCMP) have a holistic approach to wellbeing. This includes operational changes for policing services, diversifying the workforce and leadership to ensure inclusivity among other initiatives.
- The right infrastructure to wellbeing for RCMP involves institutional solutions to support employees such as programs for counselling, reintegration, etc.
- An additional step they take is the change of culture around wellbeing: allowing a culture of acceptance of counselling and changing the language around mental health.
- They commissioned a 10 year study on PTSD, specifically for police officers who have faced mental health issues while in service.
- Dubai Police have a PTSD awareness training program for all levels of the force and its leadership.

# Key Notes – Innovation and Resilience

**Session:** Policing in the age of the metaverse: Extended reality as an enabler of future community engagement, customer service and police training

#### Session Type: Strategic Session

**Speakers:** Mazen Mohamad Houalla (Advisory Partner, KPMG); Patrick Cairns (MBE DL Chief Executive Officer, Police Treatment Centers and The Police Children's Charity); Nadine Huggins (Chief Human Resources Officer, Royal Canadian Mounted Police); First Lieutenant Dr. Khalid Lootah (MD, Head of Positive Health Section, Quality of Life Center and Head of Preventive Medicine, Dubai Police Health Center, Dubai Police); Dr. Ian Hesketh (Senior Wellbeing Expert, College of Policing)

#### Key Notes:

- Marc Reina, who is a Deputy Chief in the LAPD, worked on a world-class virtual training camp
- This world-class training centre can transport training officers to any part of LA, to familiarize them with every area and prepare them for any encounter
- The system tracks their body movements, vitals, etc.
  It uses 3D scans to prepare officers for potential
- real-life situationsMore than 1000 officers were trained in just 6
- monthsVirtual reality allows officers to be exposed to rare
- situations; no situation should be experienced for the first time at the scenario itself
- VR also allows the police force to enhance their capabilities as it exposes officers to the consequences of their actions before they take place in reality

Japanese Field Experience in Drug Control

- The main drug traffickers in Japan are the largest organized crime group, Boryokudan (Yakuza)
- Meanwhile, the most widely abused drug is methamphetamine
- In 2022, 289.3 kg of methamphetamine was seized in Japan. It retails for \$564 per gram, which is significantly higher than the rest of the world
- Major drug supply routes bound for Japan:
- Chinese Syndicates
- Mexican Cartels
- West African smugglers
- Perspectives for the future:
- Importance of promoting bilateral and multilateral information sharing
- Joint operation against common targets

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