
SMART CITY OPPORTUNITIES AND RISKS FOR LAW ENFORCEMENT

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Abstract *The popular concept of smart cities corresponds to the advancement of information and communication technology. This new platform enables profound interaction between government and private sector and affects law enforcement as well, especially as operational, quick and efficient source of data. This paper presents key opportunities and major risks within the area of the smart city concept and explores the challenges related to data collection, crime prevention, IoT deployment and cooperation between authorities and public. In addition, there is also discussed the European point of view, specifically regarding to the new Europol mandate. As the EU agency for law enforcement cooperation will be entitled to process large and complex datasets and to develop new technologies, there is a need to assess new legal possibilities in the term of security and further technical development. The whole network of connected devices and interaction between authorities, law enforcement and public may improve the efficiency of fighting crime and enhance possibilities to prevent and investigate crime. The main areas touched by smart city concept from the law enforcement point of view may be categorised as infrastructure, investigation and cooperation. The interconnected smart city system may be used in (predictive) policing, surveillance, crowd control, or public sentiment monitoring. Police departments can become more effective by saving staff hours and costs which means better use of police capacities and capabilities and law enforcement may engage in community discussions to collaboratively identify what are the top crime issues that should be addressed. The concept of smart city may be considered as one of the solution for problems related to physical and virtual criminality and may increase opportunities for law enforcement. On the other hand, the main associated risks include privacy concerns, increased occurrence of new crimes targeting smart city systems with potentially higher impact, possibly slower regulation done by legislators, risks related to private parties involved in smart city policing or insufficient education of public leading to citizens' distrust.*

Keywords: *Smart city, data collection, crime prevention, law enforcement.*

Introduction

The concept of smart cities has become an important part of many cities within the European Union. This development corresponds to the advancement of information and communication technology and it also represents a new platform for interaction between government and private sector. This new form of governance however affects law enforcement and public engagement as well. The aim of the paper is to define key opportunities and major risks within the area of the smart city concept.

Frequent discussions relate to the topics of data collection, crime prevention, IoT deployment and cooperation between authorities and public. It is nowadays indeed important to inform the public about data collection and associated risks as well as to inform about new benefits, which may be accompanied with new ways of policing a city. Given the big amount of data processed within the framework of smart city it seems only natural that the interconnection of this concept includes not only public and private cooperation, but also broader cooperation between authorities and cities and thus the European point of view is also discussed. As an example of the use of new methods and big data analysis the author therefore includes topic to the new Europol mandate, newly established as the answer for current risk and crime detection and punishment at the regional and Union level.

As the EU agency for law enforcement cooperation is entitled to process large and complex datasets and to develop new technologies, there is a need to assess new legal possibilities in the term of security and further technical development. The whole network of connected devices and interaction between authorities, law enforcement and public may improve the efficiency of fighting crime and enhance possibilities to prevent and investigate crime. The concept of smart city may be considered as one of the solutions for problems related to physical and virtual criminality and may increase opportunities for law enforcement.

The concept of smart city may be defined as a system of systems (Cavalcante et al., 2016) where different areas are combined (such as city services, citizens, business, transport, communication, water, energy etc.). Smart city may be defined also as a process, with regard to financial, technological and political questions. Within the context of law enforcement, smart city represents an operational, quick and efficient source of data. The advantages of this area may be seen in networked communications in city's infrastructure, real-time collection and assessment of data and increased surveillance capacity. Introducing new methods of policing also relies on privately created technologies which means that policing the smart city will be a hybrid model (Joh, 2019). It is important to emphasize that collection and analysis of data is common in policing (as an example we may use DNA); however, different important aspect in this area is the factor of quantity.

Regarding the methods for this paper, the author used different types of legal research, mainly doctrinal research in terms of studies of the relevant textbooks and laws. Within the scope of this article the author compared different existing literature and research articles, focused on this topic. These methods consisting of comparison, analysis and descriptive legal research have been used in order to describe the background, development, and current issues related to the concept of smart city. The author tried to identify the useful smart city examples accessible within on-line open sources. As the topic is constantly developing, relying on technologies and research of these technology used within the smart city concept, the literature examining this problem is still so far limited and there is a need for frequent update. The topic has been discussed mainly within the research papers and when it comes to law, general principles may be studied from legal textbooks. At the European level however, it may be seen as a topic discussed often within the on-line discussions or website articles created by private parties and public authorities as well. As an example, the topic of collaboration and the topic of data processing is frequently analysed.

Benefits to the concept of smart city

Key opportunities arising from the concept of smart city may be defined into the three categories: 1. Infrastructure, 2. Investigation and 3. Cooperation. Within the first category defined as infrastructure, the concept of smart city may be considered as valuable mainly within the area of crime prevention and within the area of improved-community relations. This opportunity is useful especially for better collaboration and improved communication of law enforcement across different areas of city, different cities or even different regions. The interconnected smart city system may be used in (predictive) policing, surveillance, crowd control, or public sentiment monitoring in order to keep high level of crime prevention (Van Zoonen, 2016). Collaborative relationships may include different levels of the public authority and governance itself; it may also include collaboration between different authorities, e. g. between the law enforcement and municipality, but also other public authorities; it may also mean a collaboration between authorities and citizens, NGOs, civic groups or other representative parties formed within the private sector; it may also include collaboration

between authorities, law enforcement and private companies, mainly in the terms of technology provided by them. All this possible view illustrates a way how to quickly, effectively and according to law share all the information relevant to public security and crime prevention.

The second category defined as investigation may be connected to the smart city in the sense of police capabilities and improved response. By adopting smart city technology, police departments can become more effective by saving staff hours and costs which means better use of police capabilities (Calderwood, 2022). The use of robots, sensors and high-speed cameras allows police to detect suspects, weapons and other objects identified as evidence more quickly. As a good example of improved response may serve Next-generation 911 (NG911) services operating over internet-based networks where next to calling 911, citizens may send texts, photos, videos, and more, which dispatchers can review and send directly to responding officers (Sloly, 2018). This example of infrastructure exists in the United States of America and it shows new types of emergency communications and data transfer. In order to enhance the collaboration with the public as it was mentioned above it seems as an important way to stay on-line and to give the most precise information possible at the given time and location. The evolution of this emergency system is present in Canada as well, where the transition is called as a NG9-1-1 system. This system should enable provision of additional details about emergency situations. Canadians could send a video of an accident, as well as make medical information available to first responders which will lead to safer, faster and more informed emergency responses. In order to implement the system, all phone and cell service companies have obligations to update their networks from analog to digital so they are ready to provide NG9-1-1 voice and text messaging services. At the same time, provincial, territorial and municipal governments will need to ensure their emergency call centres are ready for the new service. (Canada.ca, 2022)

Regarding the third category, cooperation, it concerns both state authorities and private parties. This includes not only large technology corporations, but also small and medium-sized enterprises, investors, banks, researchers and many other. Law enforcement may engage in community discussions to collaboratively identify what the top crime issues are that should be addressed by smart city technology, since community policing is built on collaboration, respect and trust (Calderwood, 2022).

Risks related to the concept of smart city

Three categories defined above, such as the infrastructure, investigation and cooperation have also corresponding risks within the area of the concept of smart city. The infrastructure opens new ways of commission of crimes; thus, it is important to secure smart cities at high level. Certainly, cybersecurity is an integral part of smart city concept, especially regarding the data collection and information held by law enforcement. It is also a less visible environment; thus, education of public is needed. It also corresponds with the need of trust and involvement of citizens. Risks associated with investigation may be lack of qualified personnel and the need for outsourcing and also new structural needs when police capabilities will change significantly due to the use of smart city technologies. There are also privacy concerns. Cooperation may present risks due to the limitation of legislation and low willingness of private parties to cooperate. Also, technologies used within the smart city are developed primarily by private companies that may engage as well in the use and update; however, they have different objectives in comparison with law enforcement.

The new Europol Regulation¹ shows some of the above-mentioned aspects arising from smart city concept and its effect on law enforcement. In relation with private parties, the effort is to provide police authorities with better criminal intelligence picture, create EU criminal information hub, exchange data, support innovation lab and include counter-terrorism agenda. In order to support states in cooperating with private parties, Europol should be able to receive personal data from private parties holding information relevant for preventing and combating serious crime and terrorism and, in specific cases where necessary and proportionate, exchange personal data with private parties. This cooperation is a result of the increased use of online services by criminals, therefore private parties hold increasing amounts of personal data, including subscriber, traffic and content data, that is potentially relevant for criminal investigations. There are time limits for the storage of personal data by Europol to ensure that Europol does not keep the personal data received directly from private parties longer than necessary to identify the national units concerned.

Europol's regulation also specifies purposes of information processing activities. Information processing is a key issue also within the term of smart city concept and in both cases, public safety and crime prevention, detection and punishment is a key focus. These purposes defined for the Europol's mandate are cross-checking aimed at identifying connections or other relevant links between information related to suspects, analyses of a strategic or thematic nature; operational analyses, exchange of information between Member States, Europol, other Union bodies, third countries, international organisations and private parties, research and innovation projects and support of Member States, upon their request, in informing the public about suspects or convicted individuals who are wanted on the basis of a national judicial decision relating to a crime that falls within Europol's objectives.

Personal data processed by Europol for operational analyses should be for a specific purpose; however, as the regulation states, in order for Europol to fulfil its mission, it should be allowed to process all personal data received to identify links between multiple crime areas and investigations, and should not be limited to identifying connections only within one crime area. This may be important also within the concept of smart city. Smart city as the system of different systems also emphasizes the idea of different connections, different parties involved and multiple areas, all relevant for public safety, but from the different point of view (e. g. from the traffic, streets and pedestrians, different public areas and buildings etc.).

Monitoring of Europol's activities is done mainly by the Joint Parliamentary Scrutiny Group, Fundamental Rights Officer and European Data Protection Supervisor. Opportunities related to the new Europol mandate are mainly effective cooperation, key research themes identification, contact point at Union level and technological capacity strengthening. Concerns relate to data filtration, categorization of data, use of AI, legal basis or control of the activities (e. g. the EDPS Decision on the retention by Europol of datasets lacking Data Subject Categorisation issued 21. 12. 2021 and other).

There are many different levels of the concept of smart city, as well as the levels of involvement from the law enforcement side. The advancement of the technological services may cause gradual incorporation of elements of smart city within the security, public safety and law enforcement. Smart city may be seen as a way how to increase crime prevention and law enforcement efficiency. The vulnerabilities related with the use of technologies present important area of cyber security, prevention and education, not only for resident of the cities and businesses, but also for the authorities as well.

¹ Regulation (EU) 2022/991 of the European Parliament and of the Council of 8 June 2022 amending Regulation (EU) 2016/794, as regards Europol's cooperation with private parties, the processing of personal data by Europol in support of criminal investigations, and Europol's role in research and innovation

There are also specific recommendations for police officers why they should consider deployment of smart city technology, such as less human-to-human contact with victims and witnesses, quick detection of suspects and related objects, community engagement via surveys and discussions or engagement of expert for privacy issues (Calderwood, 2022).

Conclusions

As this paper discussed above, the main areas touched by smart city concept from the law enforcement point of view may be categorised as infrastructure, investigation and cooperation. The undoubted benefits and opportunities may be seen in following areas. An example of Europol's mandate has been chosen given the same objective which is public security and crime prevention and big data collection and analysis. In this century, it is without any doubt that data represent an important mean how to prevent crime and it will become more and more important (and visible as well) how these data may be processed and analysed. The concept of smart city consists mainly of big data and inclusion of more than just one party, it is therefore necessary to define the role of those data and possible limits, in regards with human rights and public interest. The other important factor is the need for public discussion, openly available information about the concept and communication between the authorities and citizens.

Firstly, it is the area of crime prevention, where the use of statistical data and its controls may show for instance the crime levels in an area on a colour map which can be modified based on historical data (Delgado, Toledo, 2020). Also, there is frequently discussed topic regarding predictive policing when the use and analyse of big data should predict when and where crimes and other forms of public disorder are likely to occur (Sloly, 2018). There are different benefits and disadvantages of predictive policing; however, it is important to say that there are different types of predictive policing and different methods, therefore there is higher need to keep use of methods transparent especially in order to gain public trust. (Meijer, 2019)

Secondly, it is the area of improved police-community relations, which may result also in the use of new ways how to communicate with citizens, e.g. via new platforms or portals. This form may also allow inclusion of citizens in the governance and increase awareness about public issues. In order to support this improved relation, not only engagement, empowerment and emancipation, but also certain institutional reforms need to be done as the governance needs to be open, flexible and transparent. (Leclercq, Rijshouwer, 2022)

Subsequently, police capabilities may change as a consequence of the smart city concept. The big amount of data processed by new technologies require specific consultants aware of the privacy matters and technological issues related to the infrastructure. For the investigation and crime prevention, there is another opportunity in the sense of improved response. This is related not only to predictive policing mentioned above, but also to new ways of receiving relevant information, e.g. from images.

In relation with cooperation, there is a need for this cooperation between law enforcement and other state actors (namely legislators, municipal authorities) and between law enforcement and private partners (for instance private companies developing and providing tools of smart city policing, academy, citizens).

Among the key risks there are new ways of crimes targeting smart cities, and in addition, complex interconnected system of smart city presents higher risk of bigger impact of attacks against it. Moreover, such system creates less visible environment from the point of view of citizens, which is also caused by hybrid model of city governance. It is demanding regarding the change of needs within the structure of law enforcement and possible way of outsourcing certain qualified personnel.

The aim of this article was to introduce main opportunities and risks rising from the smart city policing from the law enforcement point of view. The author divided the concept of smart city into the three categories as infrastructure, investigation and cooperation. Key benefits and risks have been identified for each of the category. The connected system of systems presents a valuable way of fast response to crime, crime prevention, communication with citizens, cooperation with private parties and state actors among themselves and provision of precise information within the large amount of data. On the other hand, there are risks that cannot be overseen, mainly privacy concerns, increased risks of new crimes targeting these systems with potentially higher impact, possibly slower regulation done by legislators, risks related to private parties involved in smart city policing or insufficient education of public and citizens' distrust. Keeping the risks in mind, smart city concept may become a benefit for the law enforcement, in the sense of efficient crime prevention and improved response, cooperation with public and private parties and improvement of police-community relations. In the end, it is up to the users of smart technologies to determine the extent of use and authorization, and hopefully it may show promising potential.

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