# DRIVING SMART CITY
# INNOVATION

WHEN IT COMES TO RUNNING A MODERN CITY, CONNECTIVITY AND COLLABORATION BETWEEN ORGANISATIONS OF ALL TYPES IS A NECESSITY. BUT WITH SO MANY DATA SOURCES, THE TASK CAN SEEM OVERWHELMING. HOWEVER, HELP IS AT HAND, AS HEXAGON'S **PETER PRATER** EXPLAINS

As the complexity of city operations increases, it is crucial that city departments, public service providers, other governmental bodies and NGOs can seamlessly work together towards a shared goal: the welfare of citizens. Shared awareness and coordination enable greater efficiency, understanding, and visibility of live operations. This, in turn, empowers a city to withstand adversity or even mitigate it before it happens, which ultimately saves lives, as services such as emergency response can quickly adapt and respond to rapidly changing situations.

Collaboration between different organisations that make up the fabric of city governance depends on one key factor: technology. Smart cities are those that have embraced technology to be more connected, responsive, and adaptable.

**Collecting and processing data**
Data is the lifeblood of smart cities. Regardless of the situation or jurisdiction, authorities require correct and up-to-date information to make decisions and act effectively and efficiently. For example, public transportation services can be modified and made more efficient-based, not only on data about public transport utilisation, but also information about passenger actions before and after the use of services, as well as transport alternatives and the connectivity between public transport and walking, cycling, and shared mobility.

This data can come from numerous digital sources, whether infrastructure sensors, surveillance cameras, GPS signals or social media posts. Vast amounts of data from these different providers must then be gathered, managed, analysed and interpreted.



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With so many data sources, this can seem like an overwhelmingly large task, however, there are ways to streamline this. Artificial intelligence (AI) technology can augment human judgement by interpreting vast pools of data. For example,

AI can identify anomalies in the data sets that can guide human decision-making for those providing services and can 'nudge' behaviour for those using them.

## Assistive artificial intelligence

Advancements in AI have greatly increased the safety of our communities over recent years. For example, AI has helped emergency managers predict and mitigate flooding, wildfires, and other natural disasters. It also improves image and video analysis, saving investigators valuable time and reducing errors. Crime analysts can use it to sort through vast amounts of data and make connections that can assist policing hugely.

However, organisations can still face major challenges with extracting intelligence from data before it becomes obsolete. In today's fast-paced digital economy, data can become irrelevant in the blink of an eye. Progressively, this is being addressed by solutions that receive and leverage vast amounts of data behind the scenes. Assistive AI can mine an organisation's operational data to detect patterns and anomalies that require immediate action. It can help government agencies take full advantage of real-time data before the information becomes irrelevant.

In the public safety arena, assistive AI can help police, fire and ambulance services detect and respond to complex emergencies sooner. For example, it allows emergency services dispatchers to see patterns and determine if public safety events are connected. Because it is assistive, it can work in the background to sift through data alerting dispatchers of the anomalies, while leaving the decision-making about resource deployment up to humans. This autonomous initial assessment is much more efficient, effective and scalable than the manual monitoring of disparate calls for service, video feeds, and alarms alone. So ultimately, it helps public safety agencies
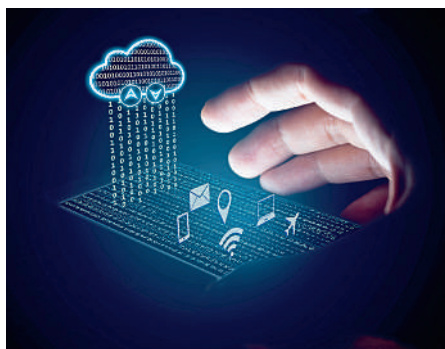

Cloud technology: bridging the gap between operational and back office functions and city streets

make connections and respond more rapidly to a developing crisis with greater intelligence.

## Cloud adoption in smart cities

Another major development when it comes to the creation of smart cities has been the acceleration, adoption, and acceptance of cloud-hosted services. With cloud adoption facilitating the storage, processing and flow of data within and between organisations, these services have enabled the barriers to be lowered or even removed when it comes to connectivity. This has meant access has become more mobile for those on the go.

An important benefit of cloud technology is that it bridges the gap between back offices and city streets, as well as between operational functions, as different organisations and sectors react to issues of governance and administration. Examples of this include the vast deployment of IoT sensor-based monitoring systems, apps for citizen services, and placing core business systems in the cloud.

Being able to more easily share and act on data collaboratively is one of the most powerful capabilities that cloud computing simplifies. Technologically speaking, this can mean replacing legacy systems with new cloud-based versions or even complementing existing systems with more agile capabilities,

such as cloud-connected collaboration spaces that can extract data from original sources, such as traffic cameras or public call centres, and coordinate work tasks between different organisations. This permits organisations to use their own specialised service while also drawing upon shared data to communicate with other city departments.

## Data privacy considerations

Of course, when the topic of smart cities is raised, the question of privacy concerns is often raised. There is certainly a valid debate about how much data is being collected and how it being used, and it is the responsibility of authorities to address these fears.

At the heart of any smart city project, there must be a comprehensive and easily understood policy for how data is stored and how it is shared. When considering the advances in data management technology that can enhance smart cities, it's paramount that governments consider the purpose of collecting, using and sharing each data set. Policies should include rigidly defined parameters, human-led processes, and accountability for policy makers.

Organisations must be thoughtful with the data they share, especially as city operations become more collaborative. The sharing of data must be a transparent process with records of what is shared and with whom. It is also crucial that these data processes are communicated with the citizens, who must then be given the opportunity to voice any feedback or concerns surrounding the use of their data. Once the feedback has been listened to and remedied, the process can begin.

## Smart city transformation

Smart cities bring a whole host of benefits to the lives of citizens. They promise faster and more collaborative emergency response times, safer and more efficient public transport, and many other benefits to services that are connected to the public's everyday lives.

Many cities are only just beginning to scratch the surface when it comes to the benefits that technology can provide. Over the next few years, we are likely to see even more innovation, and it will be technologies such as AI-powered information and incident analysis and management that we will increasingly rely on to help save time, money, and, most importantly, lives.


How data is stored and how it is shared must be at the heart of any smart city project

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