

Accelerating change: From smart city to smart society

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The COVID-19 pandemic has revealed some of the shortcomings of major cities in times of crisis. As the world searches for ways to make urban areas more resilient, smart city initiatives offer some of the answers. Partners **Oliver Brettle, Nicholas Greenacre, Tim Hickman, Andres Liivak, Daren Orzechowski** and **Adam Pierson** of global law firm White & Case explain.

Outbreaks of communicable disease have a long history of changing cities for the better. London's sewer network was constructed following the cholera epidemic in the 1850s, and building ventilation standards improved after the Spanish flu in 1918.

The current COVID-19 pandemic presents a similar whiteboard moment to accelerate the adoption of the best technology and infrastructure for modern cities. The smart city, a catch-all term used to describe how technology and data analytics can be harnessed to make cities more sustainable and efficient, is likely to have a profound influence on how policymakers and inhabitants reimagine urban spaces.

A smart city approach has long been seen as a crucial tool for managing explosive population growth in cities. According to the United Nations Department for Economic and Social Affairs, more than half of the world's population lives in towns and cities, a figure that could climb to close to 68 percent by 2050. As city populations have swelled, so have their economic clout. By 2025, the world's top 600 cities are expected to account for 60 percent of global GDP, according to McKinsey.

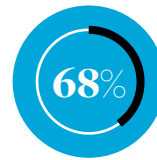
Smart city developments—such as the giga projects under construction

in Saudi Arabia and Masdar in Abu Dhabi—have shown that the technology is available to reduce city running costs, cut resource consumption and improve service delivery. But retrofitting existing urban infrastructure—as opposed to building new smart cities from the ground up—has been a long-term challenge. Hefty price tags and the complexity of these undertakings have slowed the pace of implementation.

The impact of COVID-19 on economies, communities and public health, however, may yet prove to be the spark that galvanizes cities to overcome these barriers and find creative, multi-disciplinary approaches to make smart city principles the foundation of all long-term urban planning. The pandemic may also provide useful data and support for the implementation of specific technologies.



The current COVID-19 pandemic presents a whiteboard moment to accelerate the adoption of the best technology and infrastructure for modern cities



of the world's population could live in urban centers by 2050

Source:
United Nations
Department for
Economic and
Social Affairs

The data deal

For any city or organization that plans to put smart city ideas at the center of its wider planning strategy, the collection of data, and regulation of its use, is the foundation upon which any plans must be built.

Data collection and analytics sit at the heart of smart city planning and are essential if smart cities are to deliver on their promise. In greenfield smart cities, such as those in Saudi Arabia and the UAE, data collection devices may be built into the fabric of buildings from the outset, helping to minimize costs and maximize efficiency.

In some parts of the world, privacy laws and rights make it more difficult to track people and collect and use their data without implementing compliance measures. Although some governments have been given more power to collect and process personal

data in order to fight COVID-19 (the European Data Protection Board, for example, has given guidance to this effect), there are nevertheless limitations on how long this data can be held, and the purposes for which it can be used. Indeed, there is an argument that many western countries have lagged behind Asia-Pacific and may lag behind the Middle East in smart city development precisely because of these restrictions, especially in Europe, where GDPR rules place significant emphasis on the rights of individuals to privacy and respect for family life.

Inevitably, there are trade-offs to be made between the privacy rights of individuals and the rapid development of new technologies in the context of smart cities. In many western legal structures, these rights make it more complex and expensive to collect data concerning individuals, and to process that data for purposes including the operation and development of smart cities.



6.7bn

people are expected to be living in urban centers by 2050

Source: United Nations Department for Economic and Social Affairs

The collection of data also comes with commercial and intellectual property challenges. If smart cities are to work, especially those adopting artificial intelligence, they need data sets that are accurate and up-to-date. In addition, competing businesses and platforms need to be able to access that data in different ways and for different purposes. But if data are to be centralized and then shared, and leveraged by many people in a scalable way, we must ask who owns the data and what are the rules governing its commercial use?

The urgency of the response to COVID-19 could well be a game changer for how people, companies and states in the west see personal data, and where the balance sits between personal privacy and public health and safety. The impact of the virus may also focus minds and speed up cooperation between private companies and government when it comes to sharing data and putting it on an appropriately controlled open-source platform. Government could have a key role to play here in setting up and controlling such a platform, and making sure that all citizens, irrespective of socio-economics, have the tools to contribute to and benefit from data-driven knowledge of infection rates, healthcare, digital health and telemedicine provision.



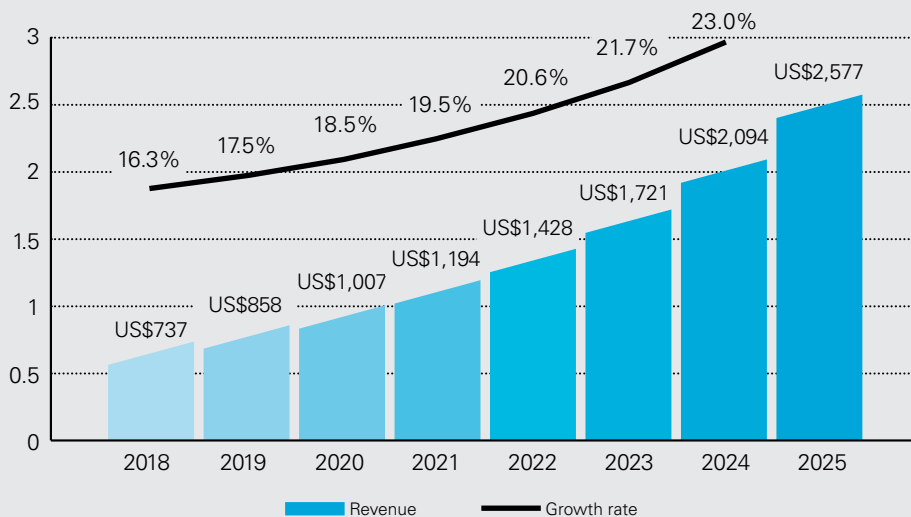
The urgency of the battle against COVID-19 has necessitated crossover between traditional public and private sector siloes

Embracing change

When the data is available, the application of smart city tools in the fight against COVID-19 has served as a blueprint for how technology can optimize all aspects of urban living.

Some cities—Chicago, for example, have used anonymized cellphone data to analyze travel patterns and track whether people are staying at home and self-isolating. In China, South Korea and the Middle East, governments have gone a step further, using smartphone data to track individuals who have picked up the virus and map who else they have come into contact with. South Korea’s government also launched a “self-health check” app to keep tabs on the health status of overseas visitors, and installed thermal imaging sensors and disinfectant sprays in shopping centers to stop the virus from spreading and identify people who may be at risk.

Global smart city market (US\$ billion), 2018 – 2025



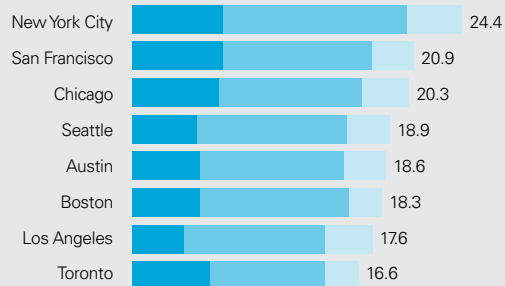
Source: PwC and “Smart Cities Market Analysis & Segment Forecasts to 2015,” Grand View Research, 2018

Cities in Europe, North America, China and East Asia have the most developed technology bases, while those in Latin America, Africa and India lag behind

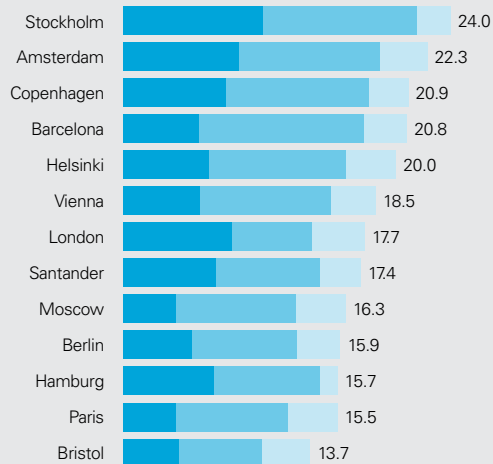
Strength of smart city technology base

Maximum of 37 points

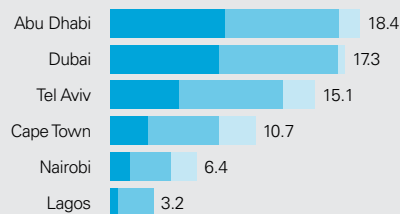
North America



Europe



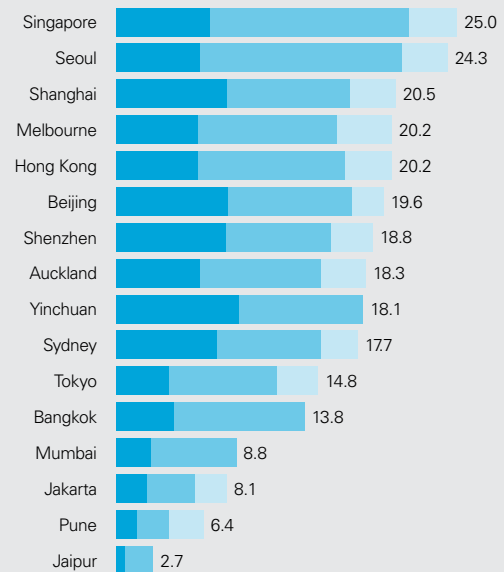
Middle East and Africa



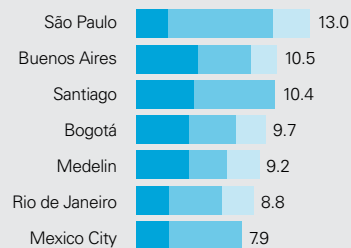
Components of technology base

■ Sensor ■ Communication ■ Open data portal

Asia-Pacific



Latin America



Source: McKinsey Global Institute analysis

Note: Based on smart city deployment in 50 cities globally, assessed in three areas: the strength of technology base; the number and extent of applications implemented; and public awareness, usage and satisfaction with the applications

Telemedicine pilots are under way around the globe, and more than half of the cities examined have infectious disease surveillance

Rollout status of healthcare applications

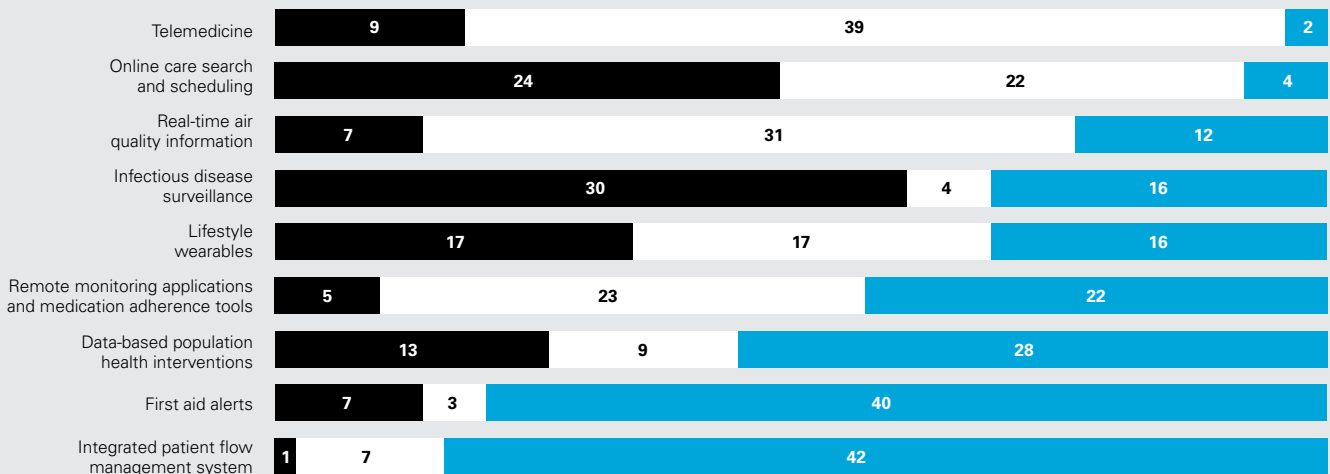
Number of cities (out of 50)

■ Scaled

□ Piloted/Moderate rollout

■ Very low rollout or not available

Healthcare applications



Source: McKinsey Global Institute analysis

The successful use of data and tracking personal devices for healthcare provision could be a turning point for the wider adoption of healthcare technology at scale. Applications of technology to manage COVID-19 demonstrate only a small picture of its potential. Expanding the use of wearable technology that tracks respiration, heart rate and temperature, for example, can enable early and personalized intervention for thousands of patients and improve resource allocation beyond times of crisis. Healthcare agencies, insurance companies and city authorities have seen how technology can be used to facilitate early intervention and improve service delivery, and may be ready to expand its adoption in day-to-day healthcare provision for the long-term.

Urban mobility is another area where the benefits of smart city

approaches, adopted in direct response to containing COVID-19, could see a longer-term shift in city policy. In New Zealand, authorities have put funding in place to widen pavements and lay down “pop-up” bike lanes so that people can keep social distancing when walking around towns and cities; while in Oakland, California, 74 miles of roads have been closed off to vehicles so that people can use streets to walk farther apart. Such initiatives have pointed to ways in which urban mobility could change in the future, with potential to reduce congestion and improve air quality.

Transport agencies also used passenger data to monitor lockdown compliance and model contact between people as part of the response to COVID-19. This provides tangible evidence of how data analytics can be leveraged for multiple applications, from the provision of



100

In China alone, there are more than 100 cities with more than a million inhabitants

personalized transport information to traffic and parking. Capturing this potential will come with legal complications, as in many jurisdictions data collected for one purpose cannot be retained for other uses without the data subject’s consent.

These obstacles aside, there are nevertheless compelling arguments for a complete rethink of the way city transport networks are operated and designed post-COVID-19.

Collaboration

The urgency of the battle against COVID-19 has also necessitated crossover between traditional public, and private sector siloes. Chicago’s travel pattern tracking program, for example, was executed in partnership with BlueDot, a mobility data company, and there have been numerous examples of manufacturers overhauling production lines to make

medical equipment and buildings being repurposed as medical facilities.

The crisis may mark a mindset shift towards a multidisciplinary approach to finding the best solutions in urban management. Cross-sector cooperation between infrastructure, technology and mobility experts has long been viewed as key to smart city delivery. Technology, healthcare and automotive companies had already formed joint ventures in this spirit before COVID-19, but the strategic value of such partnerships has been underscored like never before. COVID-19 has fostered a renewed culture of collaboration and integration across industries, and the public and private sectors.

This represents a unique window for bringing together best practices from across a range of disciplines to build and run better cities.

Out of office

The nature and location of work has been another area where COVID-19 has pushed companies and workers into new ways of working.

Lockdowns around the world have forced people to work from home, accelerating the adoption and management of virtual meetings and remote working at an unprecedented scale. Early indications show that on the whole, the global work-from-home experiment has been successful and may change attitudes to how companies manage staff, recruit and use office space. Support teams have shown their ability to deliver support to workers remotely, making it possible to reduce desk space in expensive city center offices. Hot-desking and work weeks split between an office and home space may become more of the norm. Business travel could be profoundly impacted too now that workers have experienced the efficacy of videoconferencing software and various messaging and collaboration platforms, which may

also be a way to reduce business costs and carbon footprints.

This long-term shift will require significant investment in telecoms and broadband infrastructure. In the UK, for example, internet service providers have seen double-digit increases in traffic during the lockdown, and streaming services like Netflix and Disney+ have cut bandwidth usage to clear network congestion. The gaps between city internet connection speeds and those in rural and peri-urban areas have also come to the fore. In the US, for example, cities



US\$1.56tn

Projected market value of business opportunities created by smart cities by 2025

Source: Frost & Sullivan

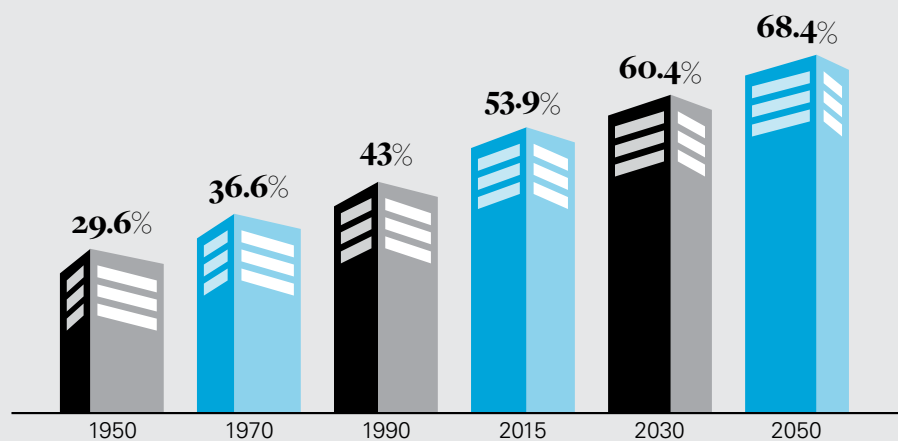
like New York and Washington, DC will typically enjoy connection speeds of up to 10 gigabits per second, whereas users in Mississippi will have speeds as low as 1.5 Mbps. Similar urban-rural connectivity divides are observed in the rest of the world too.

Employers will generally remain legally responsible for ensuring the health and safety of their employees at work, even when that work is carried out at home. It is unlikely that it will be practicable for them to visit all their employees' homes to carry out risk assessments, but



Early indications show that on the whole, the global work-from-home experiment has been successful and will change attitudes to how companies manage staff, recruit and use office space

Global urbanization rate, 1950 – 2050, percentage



Source: United Nations Department of Economic and Social Affairs

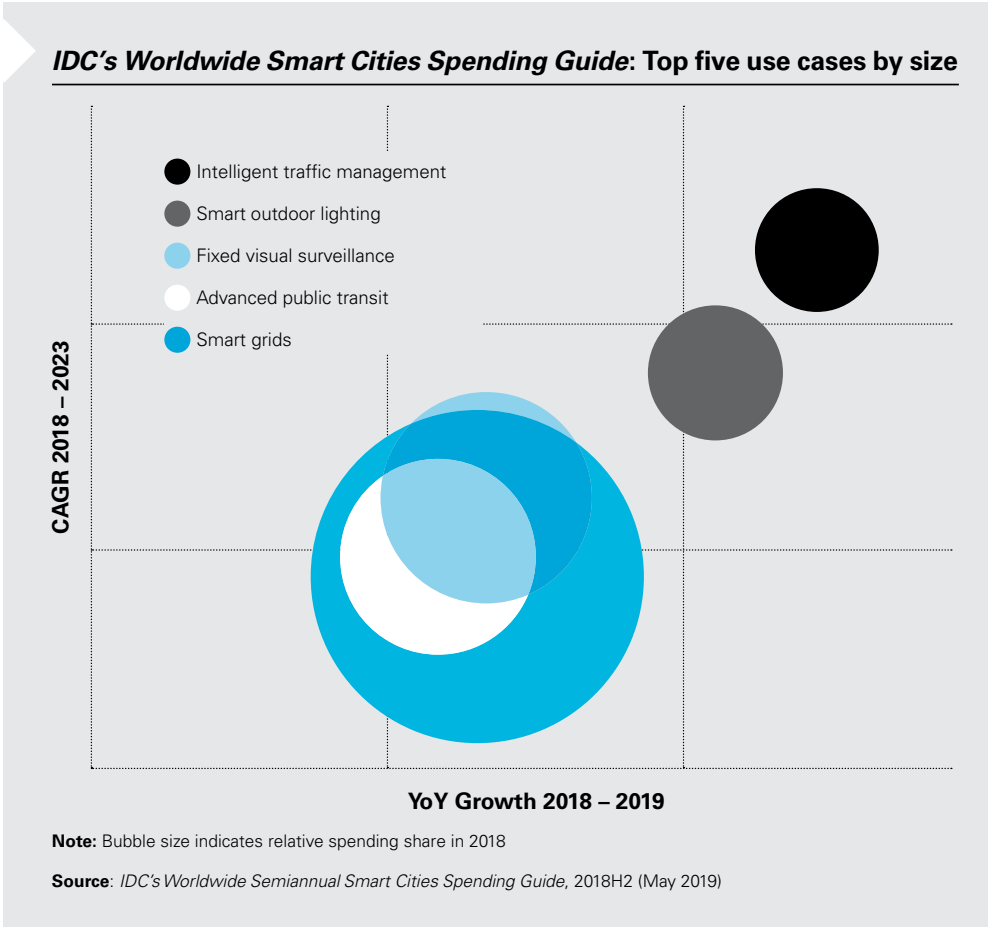
there are things pretty much any employer can reasonably do, and more employers have been doing these things during the COVID-19 pandemic. These include, in particular, providing employees with the information, instruction and training they need to be able to carry out their own risk assessments of their home working environments, so that they can maintain a safe working environment for themselves. Employers can also check in with their employees regularly to ensure that they are carrying out these assessments and that they feel safe and comfortable working from home.

English contract and employment law provides a robust platform for the governance of relationships between employers and their employees, which is sufficiently flexible to cope with the challenges of remote working for those in “white collar” work, when compared with the more rigid structures found in some other jurisdictions, which rely more on collective bargaining arrangements and labor protections that are suited to “blue collar” environments. The use of laws, which are largely based on English common law principles, has become widespread in free zones around the world and should particularly suit smart cities.

Remote working is likely to form a key pillar of the labor landscape long after the virus has come and gone, and will offer exciting commercial opportunities for workers, businesses and telecoms operators.

Redefining “business as usual”

The challenges and costs that come with turning old cities into smart ones have not changed over the past few months, but there is little doubt that COVID-19 has forced all stakeholders in society to reassess a “business as usual” approach to the running of urban areas. Leaders will be able to make



better data-driven decisions and there is increasing recognition that the data and technology tools are there to better execute all aspects of city management. Towns and cities just need to invest in them.

The human and economic impact of the virus has been immense, and the fallout has provided new impetus to overcome sticking points and vested interests that have hindered the uptake of digital tools to better run cities. Smart city methods have already shown their value in the immediate reaction to the fight against a global pandemic. Subsequent implementation will have benefits extending well beyond this, but proper design from the initial planning stage will be critical.



Smart city methods may provide new impetus to overcome sticking points that have hindered the uptake of digital tools to better run cities in the future

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