



Urbanization, Innovation and Governance: The Quest for Sustainable Development

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Abstract

The article discusses the interrelated issues of urbanisation, innovation and governance in the quest for sustainable development. Given present trends in urbanisation, cities are playing an ever more important role in the world's development and globalisation process. Cities must innovate to achieve sustainability. The technologies of the Fourth Industrial Revolution enable cities to innovate in multiple ways. Innovation turns ideas into value and generates new products, services and processes, driven by multiple stakeholders. Likewise, there is a focus on innovative means for governance. Given divergences between cities, regions and countries, strategies for urban and regional development tend to differ, affecting the quality of life of residents and the prospects for attaining the SDGs. Cities invest increasingly in new technologies to improve infrastructure delivery, thereby increasing GDP growth. Economic values must however be balanced with societal values. The use of emerging and disruptive technologies based on digitalisation will create new opportunities and generate services and employment, driven by Artificial Intelligence (AI), 5G technologies, Internet of Things, big data, blockchain and robots. These new technologies have stimulated the growth of smart and innovative cities, accompanied by the transformation of urban public services responding to citizens' needs. AI can be a driving force to help advance SDGs. Improved connectivity and broadband access are key to the development of a digital economy. Urban governance is affected by many factors influencing sustainable development. Urbanisation and its traffic congestion and environmental degradation must be tackled through investment in efficient and novel systems. There is also the goal of abandoning fossil-fuel power plants through renewable energy sources. China has focused on strengthening its innovation capacity and can offer examples for other countries, in particular Africa. Beyond city infrastructure, technological innovation is also transforming education delivery and the distribution of educational content: building future-ready education systems, including recourse to virtual reality and machine learning. Demands on governments are diversifying, deepening and quickening, and hence governments must harness new tools to govern better and create and enforce new norms, rules and policies. The G-20 has established the Global Smart Cities Alliance as a new partnership to advance the responsible and ethical use of smart city technology. It will seek to minimize the risks and maximize the benefits of rapid urbanization. The Alliance is complemented by a Centre for the Fourth Industrial Revolution, which shall serve as a focal point for multi-stakeholder dialogue and concrete cooperation on governance challenges and opportunities presented by advanced technologies.

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Urbanization continues to spread all over the world, with more than 70% of the global population expected to live in cities by 2050. Today, already more than half of the world's population lives in cities, and one in eight urbanites resides in one of 33 “megacities”—that is cities with over 10 million inhabitants.

According to the United Nations, the number of megacities has risen from 14 in 1995 to 29 in 2016. And it is growing. Delhi is predicted to be the largest city on the planet in 2050 with 40 million inhabitants.

In many urban centers there is already a shortage of space and expanding outwards is not always an option. As a result, like never before, cities are going vertical. The concept of the ‘vertical city’ initially received wide attention with the construction of the Burj Khalifa in Dubai. It was one of the first to be conceived as a mixed-use skyscraper. Not surprisingly, China has taken a page out of Dubai's book as part of its rapid urban growth which saw almost 500 million people move from rural areas into cities in the last 35 years. Five of the ten tallest buildings in the world can be found in ‘megalopolises’ such as Shanghai, Guangzhou, Shenzhen and Hong Kong.

With so many people crammed into our cities, individually owned cars are likely to become a relative rarity: the future of transport is likely to belong to mass rapid transit systems or recourse to innovative means of transportation, like shared motorcycle or bicycles or scooters/*trottinettes*. But here is the challenge: many of the world's fastest growing cities are countries in Asia and Africa, where little or no metro rail infrastructure currently exists. While more developed countries will need to upgrade and expand their existing systems, newer cities will often be starting from scratch.

In the age of globalization, cities are playing a more and more important role in both their countries' and the world's development. Urbanisation is changing countries, and intercity connections and cross-country relationships have become new dynamic features of geopolitics. In order to solve the burgeoning problems of urban development and governance, the quest for sustainable development and inclusive growth has become a new paramount objective.

The cities stand at a crossroads. Rapid urbanization—if not effectively managed—threatens to paralyze local economies and undermine recent advances in the quality of life. Cities must innovate, in order to achieve sustainability, advance social well-being, and boost economic competitiveness. Innovation of city construction and governance is of great significance to transform the mode of economic development and to promote sound and rapid development of a regional economy.

The technologies fueling the Fourth Industrial Revolution can multiply the ways in which cities can innovate. Yet, while the possibilities have multiplied, so have the perils. Technologies can be misused to disrupt economies and splinter societies. Jobs can be eliminated, and socio-economic differences can be amplified.

Innovation is the process of turning new ideas into value, in the form of new products, services, or ways of doing things. Innovation is a deceptively complex activity that goes beyond creativity and invention to include the practical steps necessary for adoption. New

innovations tend to build on earlier versions and, in turn, lay a foundation for others to be built on top of them. It is now widely accepted that innovation fuels the majority of the world's long-term productivity and economic growth, and that innovative firms significantly outperform non-innovators, in terms of both revenue and employment growth.

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Innovation tends to involve a lot of players. Innovation systems are composed of all public and private institutions engaged in the production, diffusion, and use of new ideas. The density of cities enables innovation, readily providing testbeds to gauge the effectiveness of solutions. Through the collective efforts of governments, the private sector, non-governmental organizations, and the public, and through the harnessing of transformative technologies and enlightened urban policies, the true potential of the cities of the future can be demonstrated. This entails also the focus on innovative means for governance, drawing on new digital tools.

Clearly, different countries have different stages and paths in their urbanization development—and so strategies or plans for urban or regional development are bound to differ as well. In the process of large-scale urbanization, the formation of smart communities shapes the social and spatial structure of the city and affects the living experience and quality of life of residents. Driving social change and sustainable growth is the core of smart city development. Above all, smart cities are crucial to building a future-proof and people-centric society.

The development of cities has demonstrably a major impact on the overall development of regions and countries. National governments alone cannot achieve the ambitious goals of the UN Agenda 2030 and its 17 Sustainable Development Goals (SDGs). Here, cities have a crucial role to play.

In many countries, cities and regions have core competencies for policy areas underlying the SDGs such as water, housing, transport, infrastructure, land use or climate change. They have begun investing in technology to improve infrastructure delivery. Sensors, data analytics, and internet of things software are turning dumb infrastructure smart and improving water sanitation and conservation along the way. With respect to SDG 11 which focuses on cities and communities, an estimated 65% of the 169 targets behind the 17 SDGs will not be reached without engagement of local and regional governments. OECD data suggest that subnational governments were responsible for almost 60% of total public investment in 2016 in the OECD area, and for almost 40% worldwide.

According to the global consultants PwC, annual global spending on infrastructure is set to reach \$9 trillion by 2025, a figure more than double the \$4 trillion annual investment

recorded in 2012. Asia, led by China, will absorb at least 60% of this investment, spending heavily on sectors like transport and energy.

“Artificial intelligence (AI) is a general purpose technology that has the potential to promote inclusive economic growth, increase innovation and productivity, in the process bringing benefits to society and empowering individuals. It is deployed in many sectors ranging from production, finance and transport.”

The IMF estimates a 1% increase in infrastructure spending will produce a 1.4% increase in GDP within 4 years. Successful growth depends on developing economies creating a balance of economic, social and environmental factors to create an “enabling environment”.

To manage inherent risks, cities are experimenting with regulatory sandboxes, participatory design, innovation ecosystems, and public-private-people partnerships. To support governments in localizing the SDGs, the OECD for example launched a dedicated programme called “A Territorial Approach to the SDGs”. The European Commission introduced its own Digital Cities Challenge. China’s Xiongan New Area aspires to transform a barren landscape into a digital city powered by blockchain and artificial intelligence. Global Digital Seoul 2020 aims at developing e-government in South Korea’s capital, while India’s Smart Cities Mission is at the forefront of promoting the country’s urban transformation and is committed to ensuring that cities develop in a way that is smart and sustainable. The advancement of smart cities and communities is critical to realizing Japan’s vision for Society 5.0. For its part, the “Be Smart KOBE” programme seeks to establish standards for data utilization with a view to stimulating the growth of Kobe city.

But cities must also reckon with a potential clash between economic value and societal values. The ability to forward technological advancements and smart city solutions is directly related to the responsible and ethical use of data and technology. DeepMind, the artificial intelligence company acquired by Google, formed an Ethics and Society unit in 2017, to help insert ethics in the work of scientists in the field of Artificial Intelligence (AI). Singapore has established an Advisory Council on the Ethical Use of AI and Data. Japan’s “Society 5.0” envisions a “human-centric” society.

Industrialization has promoted the pace of urban construction, but also brought some damage to the liveable environment of cities. It is imperative to promote scientific and technological progress, implement the strategy of independent innovation, build a modern urban ecological system, and enable the construction and development of innovative cities with a science and technology base.

The Fourth Industrial Revolution represents a fundamental change in the way we will live, work, and relate to one another. It is a new chapter in human development, enabled by technology advances that are commensurate with those of the first, second and third

industrial revolutions, and which are merging the physical, digital, and biological worlds in ways that create both promise and peril. Digitalization has tremendous potential to deliver benefits for economies and societies as a whole. The benefits brought by increased productivity through the use of emerging technologies such as artificial intelligence (AI), fifth-generation mobile telecommunication technologies (5G), the Internet of Things (IoT), Distributed Ledger Technologies (e.g. block chain) will empower all individuals and firms by creating new opportunities, and generate new services and employment.

Robots and artificial intelligence were once used only for dull and difficult work on factory floors. Today, automation is everywhere—powering drones, cars, surprisingly realistic humanoids and also agricultural production and yields.

The speed, breadth and depth of this revolution are forcing us to rethink how countries should develop, how organizations create value, and even what it means to be human; it is an opportunity to help everyone—leaders, policy-makers and people from all income groups and nations—harness technologies in order to create an inclusive, human-centered future.

Emerging technologies have promoted the systematic integration of a smart and innovative city, healthy city, safe city and ecological city into the urban and regional framework. They are stimulating the innovation and transformation of urban public service.

Information technology is at the core of innovation, and advances in the industry are having an impact on all continents and in every business. Shifts in digital policy and governance must be closely observed.

Faster 5G networks are making digital communication more ubiquitous, while increasing processing power and storage capacity are boosting the scope of knowledge immediately available to any computer user. This has the potential to fundamentally reshape public services so that they can respond more directly to citizen needs.

But there is also a dark side to be managed. According to Cisco's 2018 Annual Cybersecurity Report, cyber attackers targeting governments have developed increasingly sophisticated and threatening malware. They can cover their tracks with encryption while exploiting new vulnerabilities in cloud computing, the Internet of Things and even political elections. Rules such as the European Union's General Data Protection Regulation, which came into effect in 2018, are critical for managing the consequences of such threats, but will also introduce new complexity to governance arrangements.

The internet can continue to broadly aid social progress and businesses, drive innovation, and help governments address policy concerns. Responsible governance of the internet, however, is no simple task. Oversight of a key internet framework has shifted in 2016 from the US Department of Commerce to an international group, the global, multi-stakeholder community made up of the non-profit Internet Corporation for Assigned Names and Numbers (ICANN) and international organizations. ICANN's job has become more complicated in recent years, as there were 332.4 million domain name registrations across all top-level domains as of the end of 2017.

Innovation is pushing the boundaries of information technology as we know it. Digital disruptions are rapidly changing the socioeconomic landscape. Many innovations will generate disruptive technologies which will bring fundamental change to business, work and society as a whole.

Artificial intelligence (AI) is a general purpose technology that has the potential to promote inclusive economic growth, increase innovation and productivity, in the process bringing benefits to society and empowering individuals. It is deployed in many sectors ranging from production, finance and transport to healthcare, education and security.

The development and use of AI can be a driving force to help advance the SDGs and to realize a sustainable and inclusive society. A responsible stewardship of AI includes improving the welfare of people, augmenting human capabilities and enhancing creativity, advancing inclusion of underrepresented populations, reducing economic, social, gender and other inequalities, and protecting natural environments, thereby invigorating inclusive growth and attaining sustainable development.

When it comes to the Internet of Things (IoT), exciting breakthroughs have been made that enable communication between devices, like a phone talking to a washing machine. As these devices process larger amounts of data in order to maximize their performance, it will in turn require greater data processing capabilities. The use of big data analytics will enable businesses and governments to provide efficient, real-time support for everything from customer service to filing taxes.

The integrated application of IoT, cloud computing and artificial intelligence technology at the city level generates a “digital city” that can respond intelligently to specific needs like environmental protection, public safety, urban services and industrial and commercial activities. Digital cities also promote the development of a low-carbon economy by using resources efficiently, saving costs and improving the quality of life. Digital industrialization, industrial digitalization and urban digitalization constitute the basis and conditions for the development of digital cities.

Improved connectivity and broadband access are necessary for the development of the digital economy. They are also a powerful enabler of inclusive growth and sustainable development. This necessitates the promotion of investment in domestic and international digital connectivity infrastructure, including fiber optic cables, 5G networks and other ultra-high-speed connectivity technologies, scaling-up the fiber optics infrastructure in order to provide connectivity to a greater number of individuals as well as increasing overall processing power and storage capacity. The G-20 has stipulated that there ought to be universal and affordable access to the Internet to all people by 2025, including in rural areas with a particular focus on poverty eradication and distance learning. This has the potential to fundamentally reshape public services so that they can respond more directly to citizen needs.

It is important to bridge the present digital divide and in particular the digital gender divide. This should also help enhance women and girls’ participation in STEM (Science, Technology, Engineering and Mathematics), support women’s entrepreneurship in digital

business and work within existing partnerships and frameworks. As a principle, the new technologies should be accessible for all.

Urban governance is affected by many uncertain factors, which pose great challenges to the sustainable development of cities. As urban populations grow, smart city technologies become more and more essential not only to improve the quality of life of citizens but also to keep cities livable.

Data and technology can radically transform how cities design and deliver services to their populations. They help identify the most pressing needs that residents have and provide tailored solutions to address them. By upgrading hardware and software, massive data across regions can be integrated to build an urban brain similar to the human brain ultimately facilitating intelligent urban governance. The combination of big data and small data can effectively identify and forecast residents' demands and provide needs for public services.

The concentration of growing populations in urban areas stemming from economic development and migration is leading to serious traffic congestion and environmental degradation. As a means for resolving these issues, large cities are extending subway lines and expanding other public transportation systems, including free public transportation, which was just introduced in Luxembourg. The increased economic burden involved in the construction and operation of these systems, however, has heightened the need for a transport network in megacities that can be built and operated at lower costs—or for free. As an alternative to conventional trains and buses, monorail and tram systems have emerged as new urban transportation systems.

The Automated Guideway Transit (AGT) which runs on rubber tires on elevated tracks constructed over existing roads offers a variable passenger carrying capacity, ranging from a small number of people per day to mass transport exceeding 100,000 people per day. The system boasts superior environmental performance as no exhaust gases are emitted and electrical power consumption is low, while use of rubber tires reduces noise and vibration. Moreover, the small size of the fully automated cars will allow freedom in route planning and economic operations, enabling the system to be both scalable and extendable.

Investment in efficient public transport systems allows people to travel around a city in an easier manner. Asia has some of the most densely populated cities in the world and some governments have invested heavily in transport systems to accommodate both current and future passenger levels. For example, the Singapore government has commissioned Mitsubishi Heavy Industries (MHI) Group to supply a driverless train system as well as the light rail network that transports people to, from and around the island state's suburban neighborhoods.

More sophisticated intelligent transportation systems (ITS) use sensors along roadsides to communicate traffic conditions to a central command center for more effective road management. Cities in China, South Korea and Japan are using sophisticated big data and AI to make sense of all sensor data in real time. These data have real potential with respect to reducing pollution, congestion and carbon emissions.

Another tool is congestion charging or electronic road pricing (ERP). New York is planning the ERP for 2021. In 1975, Singapore became the first city to charge drivers a flat fee. In 1998, it was the first to install an ERP system, containing traffic volumes. In the next few years, Singapore will upgrade again, this time to a satellite-based ERP system. There is also the option of a daily congestion charge, applied in central London since 2003. An additional “toxicity charge” has been slapped on older, more-polluting vehicles in many countries, like Spain or France.

One solution may lie in self-driving cars. Though still a long way off, the technology will allow much higher capacity on existing roadways with such vehicles able to go faster and drive more closely together, all while reducing accidents. Autonomous vehicles may be the futuristic face of congestion’s most viable solution: shared transportation. Studies from Lisbon and Helsinki show that all of today’s car trips could be done with less than 10% of the current number of private cars through a combination of on-demand shared taxis with door-to-door service and taxi-buses that, rather than follow a schedule and route, are booked half an hour ahead.

Whether it is ITS, self-driving cars or some combination of other systems, next-generation traffic technology is pushing ahead, in hot pursuit of a transport solution to effectively tackle congestion and get people to their destinations, quickly and efficiently.

While the ultimate goal is a world powered entirely by renewable energy, power generation in the near future will require stable fuel sources which are versatile and able to operate in a way that respects the environment. Currently, fossil-fueled power plants are a leading source of global CO₂ emissions. Many countries have taken the decision to reduce the number of fossil-driven plants in the spirit of the 2015 Paris Agreement, but sadly some countries like China, Japan or the United States are receding their commitment.

Transport infrastructure also continues to play a central role in China’s development. Heavy spending on new roads, railways, airports and communications networks has boosted rural economies, expanding trade by connecting them to domestic and international markets. Such investment has played a pivotal role throughout China’s development, building capacity for future growth.

Of late, the coronavirus epidemic has paradoxically introduced a new, unanticipated feature to the pollution picture in Northern China. The closure of factories and manufacturing plants and the massively reduced traffic have reduced the extent of emissions and their impact. Are we facing here a trade-off between a health crisis and ecological deterioration?

African countries can learn some valuable lessons from China’s experience. At the current expansion rate, the continent’s population is set to double by 2050, creating an urgent need for private and public infrastructure investment. Managed properly, the emerging and developing economies of Africa and Asia have a unique opportunity to use inward investments so as to drive their economies towards sustainable development.

In 2015, China launched the Belt and Road Initiative, a globally ambitious infrastructure investment project that touches more than 60 different countries and economies. Cities are

an important node in this initiative, where more and more of them will integrate into the regional connectivity cooperation network. In the era of intelligent economy, high-quality connectivity will promote the establishment of a new pattern of interconnected and mutually beneficial cooperation.

The demand for interconnection between cities has been strengthened. Cities innovate in order to compete with one other, but they innovate better when they connect and cooperate in an organized way. The most successful cities will not be those that solely focus on innovation at the expense of other needs; they will be those that manage to recognize and adapt to specific local challenges, while pushing innovation forward.

The connectivity of cities can help build an open economic system that includes policy communication, connectivity of facilities, smooth trade and people-to-people exchanges. Regional economic integration, especially in the increasingly prosperous Asia-Pacific region, needs the support of a network of international cities. Inter-regional and intra-regional cooperation among cities inspired by emerging technologies has become particularly important. The application of artificial intelligence technology and big data will bring about an intelligent economy driven by data and computing, which is providing a new engine for the construction of urban networks.

Realizing the full benefit of the Fourth Industrial Revolution may take time and require new organizational forms, skills and mindsets. It is also possible that the impact of the Revolution on productivity has not yet become fully apparent because it is increasing efficiency in ways that cannot be accurately measured by traditional means. Beyond that, the Revolution has not yet reached many of the two billion people still disconnected from the global economy, who ultimately ought to benefit the most from it.

To shape a digital future that will deliver positive outcomes for all stakeholders in line with the 17 SDGs, numerous challenges must be addressed. In future, investment, innovation and technological advancement are hoped to empower citizens to lead better lives.

After four decades of reform and opening up, China has been deeply involved in the process of globalization in all its aspects. The national innovation capacity has become a strategic core capability to enhance international competitiveness, adjust the development model and maintain sustainable economic development. Building an innovation-originated city has become an important part of implementing the innovation-driven strategy and building an innovation-originated nation. China's "new normal" growth model is consumption-led, rather than investment-driven. Rising wages and competitive pressures are changing the world's second-largest economy from a low-cost manufacturer to a value-added developer of cutting-edge products and services. Re-balancing China's economy, improving its services and manufacturing, and promoting its companies on the international stage are all goals included in the government's 13th Five-Year Plan, as are the ambitious "Belt and Road" and "Made in China 2025" initiatives focused on revamping and expanding infrastructure and industry.

Furthermore, technological innovation is fundamentally transforming education delivery. Technology presents opportunities to deliver learning in new, gamified, and personalized ways, which could change the traditional role of teachers and facilitate a blended learning

experience. Technological innovation is changing the way educational materials are generated, the manner in which educational content is distributed, the way learners engage with materials, and the processes used to evaluate educational outcomes. Companies such as Coursera, edX, and Khan Academy are revolutionizing education delivery through the so-called Massive Open Online Courses (MOOCs). Unfortunately, some education systems, especially at the primary and secondary level, have been slow to incorporate even the most basic, widely available learning technologies.

Building future-ready education systems requires designing curricula fit for the 21st century, coupled with the consistent delivery of a basic education for everyone that builds a solid foundation for a lifetime of adapting and developing new abilities. Technological innovation also helps updating the skills required for the contemporary workplace.

Virtual reality was dreamed up in science fiction and began to emerge in concrete form via an immersive film-viewing cabinet created in the 1950s. Now, commercial applications for virtual and augmented reality (VR and AR) are fundamentally altering the way individuals interact with each other and their environments. While technological barriers and a lack of content have prevented mass adoption, VR may soon become the next generation platform for communication, displacing our need for physical travel and impacting related energy consumption. VR and AR are poised to make a global impact with applications in education, health, business, retail, social media and communication. It will still take years until technologies for scalable content creation will become accessible for end consumers, but recent advances in computer graphics and machine learning are promising.

Machine learning involves creating algorithms that can recognize patterns in large, evolving data sets, and drawing conclusions from past experience. When people refer to “artificial intelligence,” they often really mean machine learning. Examples of technologies that make use of it include internet search engines, spam filters, and self-driving cars. Recently, an aspect of machine learning dubbed “deep learning algorithms” has received a lot of attention. That is because advances in computing power and masses of large-scale data, referred to as big data, have led to deep learning-based algorithms that are faster and more accurate than the human eye.

The demands being made on governments for cities are diversifying, deepening, and quickening. Traditional governance structures and policy-making models have to become agile and responsive. Governments may have to reinvent themselves in order to keep pace with technology. Powerful digital tools like artificial intelligence are swiftly disintermediating entire markets. Governments are being challenged to move beyond simply understanding major technological advances, to harnessing them in order to govern better. Soon, governments will be forced to entirely change their approaches towards creating and enforcing regulation, to better stimulate rather than stymie innovation. Digital governance is an essential leverage of prosperity, social inclusion and environmental sustainability with measurable results.

Governance in the digital era needs to be not only innovation-friendly but also innovative. Interoperable standards, frameworks and regulatory cooperation can help in this regard.

International as well as national policy formulation with the involvement of all relevant stakeholders in their respective roles is instrumental to address a wide range of societal challenges and to facilitate discussion on how technology can be better and more accountably incorporated into policy tools. Establishing new norms of ethical behavior regarding digital technology, and attaining higher levels of customer trust, will be critical for a successful digital future. There is a need for innovative approaches that recognize the complexity of these challenges by joining computational sciences, social sciences and the humanities.

To contribute to sustainable and inclusive growth in urban areas, networking and experience-sharing among cities for the development of smart cities will be an attractive solution. Implementations of smart cities shall take into account transparency, resiliency, privacy, security, efficiency, and interoperability. Interested cities and networks of cities joined a Global Smart City Coalition which was discussed at the “Super City/Smart City Forum” held on the margin of the G-20 summit in Osaka on 29 June 2019. This then led in October 2019 to the formation of the Global Smart Cities Alliance (www.globalsmartcitiesalliance.org). The Alliance is a new partnership to advance the responsible and ethical use of smart city technology and will seek to create and pilot global norms and policy standards related to access and inclusion linked to the use of connected devices in public spaces. The Alliance will be critical to minimize the risks and maximize the benefits of rapid urbanization.

It is the largest and most ambitious undertaking to advance the responsible and ethical use of smart city technologies on a global level. Smart city technologies can help decrease traffic congestion, combat crime, improve resilience during natural disasters and reduce greenhouse emissions. Without proper governance, however, these technologies pose significant risks, notably to privacy, security and democracy.

The Alliance comprises fifteen of the world’s leading city networks and technology governance organizations. The institutional partners consist of municipal, regional and national governments, private-sector partners and city residents. They include the presidents and host nations of the Group of 20 (G20) in 2019 and 2020 (Japan and the Kingdom of Saudi Arabia); the Smart City Mission of India; Cities for All; Cities Today Institute; the Commonwealth Local Government Forum; the Commonwealth Sustainable Cities Network; Connected Places Catapult; the Digital Future Society; ICLEI—Local Governments for Sustainability; the International Telecommunication Union (ITU); Open and Agile Smart Cities; Smart City Expo World Congress, Barcelona; United Cities and Local Governments (UCLG); What Works Cities; the World Economic Forum; and World Enabled. They are committed to co-design and roll out a first-of-its-kind global policy framework on smart city technologies in advance of the 2020 G20 Summit in Riyadh, Saudi Arabia.

All partners together represent more than 200,000 cities and local governments, leading companies, start-ups, research institutions, and civil society organizations. The World Economic Forum serves as the secretariat.

Building an inclusive society is a vital mission. The new Alliance seeks to become an innovative platform for communities through cross-border, open collaboration of people and

cities focused on SDGs and social value creation in support of safety, security, efficiency and equality, as well as globally accepted technology governance.

In the wake of the Alliance's creation, the World Economic Forum has established the Centre for the Fourth Industrial Revolution. It is designed to serve as a focal point within the international community for multi-stakeholder dialogue and concrete cooperation on governance challenges and opportunities presented by advanced technologies. The Centre and its Network have brought together more than 100 governments, businesses, start-ups, international organizations, members of civil society and world experts to design and pilot innovative approaches for the policy and governance of technology.

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