



**Active is:  
Sharing insights**

# The Fantasy World of Intelligent Cities

June 2021

**Cars speeding in the sky, people in whimsical fashion, metallic skyscrapers – these are futuristic imaginations of cityscape in movies and theatres. Living in a metropolis yourself, have you wondered how cities will look like in the future?**

The global economy is made up of countless cities. Their development, however, comes with a wide array of problems. Crowds, traffic, factories operating non-stop – all these contribute to poor air quality. People who flock to cities for opportunities also push up the average costs of living. Not to mention that crime rates in cities tend to be higher than in rural areas.

Fortunately, new technologies are transforming cities at multiple levels. They are creating “intelligent cities” - cities that utilize cutting-edge technology and data to create efficiency, promote sustainable economic development, and in turn improve the quality of life for people living and working in the cities.

The concept of “intelligent cities” is closely linked with combating global warming and improving environmental protection. It is estimated that intelligent cities can reduce energy consumption by 30%<sup>2</sup>, water loss 20%<sup>2</sup>, and carbon emissions up to 15%<sup>2</sup>. Innovations may also effectively reduce the costs of living in cities and improve people’s health.

## Key takeaways

- Intelligent cities use the latest technology and data to improve efficiency. That may enable their economies to develop sustainably, resulting in higher living standards for their residents.
- Globally there are 443 cities integrating data-driven solutions and services into their infrastructure for a better future<sup>1</sup>.
- There are myriads of investment themes linked with intelligent cities, including 5G technology, smart construction and clean energy.

To build a better future, 443 cities around the world, mostly in Europe, North America and Asia, are currently pursuing "intelligent projects" of all kinds<sup>3</sup>. As at 2018, at least US\$81 billion had been ploughed into such projects<sup>4</sup>, encompassing infrastructure, building, education, energy, healthcare, accommodation, and transportation. Aside from helping to improve safety and efficiency of the cities and lower carbon emissions, these projects have also spawned a multitude of investment themes.

### Software and services

By offering better services, digital apps can improve the daily lives of citizens and visitors, as well as improve the efficiency of companies and governments.

### Safety and security

Video and surveillance systems at home and in public areas can help enhance personal safety, data security and property protection.

### Home

Equipped with an intelligent monitoring system, the Internet-of-Things network can automate everything at home, including computers, entertainment systems, electrical appliances, lighting, thermostats, and security devices.

### Sharing economy

Services such as carpooling and office sharing are reshaping traditional economic models while raising efficiency.

### Infrastructure

An intelligent information system connecting all infrastructure and transportation networks in the city, big and small, can help improve energy, transportation and logistics efficiency.

### Buildings

The latest smart building solutions can control and manage the operation of buildings automatically, which helps save energy.

### Clean energy

Smart grids can efficiently integrate new energy supply and distribute power.

### Transportation

Intelligent vehicles equipped with autonomous driving capability, together with multimodal transport system, can realize the future of low-carbon transportation.

## Investment themes



### 5G technology as the beating heart of an intelligent city

If an intelligent city runs like a human body that operates 24/7, then a 5G ecosystem works like the heart. It is estimated that there were 6 billion smart phones across the globe in 2020. A city with 1 million people will produce as much as 200 million GB of data every day. Urbanites and the internet have a symbiotic relationship, to which 5G technology, which is 100 times faster than 4G, is essential. Systems, on the other hand, helps effectively process and distribute water, and further improve a city's energy efficiency.

5G technology is expected to stimulate USD 700 billion in infrastructure spending, create 3 million jobs, and ultimately increase gross domestic product by US\$500 billion<sup>5</sup>. In the area of manufacturing, 5G makes smart factories possible by enabling automation, artificial intelligence, and Internet-of-Things. In terms of urban safety, millions of simultaneously connected sensors effectively monitor and manage the infrastructure of an intelligent city. For traffic, connecting the 5G network to sensors on roads, railways, airports and vehicles will greatly enhance the efficiency of transportation. For homes, 5G and the Internet-of-Things system can improve home safety and provide more entertainment.



### The rise of intelligent buildings

Traditional buildings involve different systems which are intricate and independent of one another. Such design consumes a lot of energy but yields little efficiency in managing the property. In contrast, intelligent buildings tend to come with advanced technology and an automation set-up that could potentially save up to 30% of energy in 10 years<sup>6</sup>. Global Internet-of-Things (IoT) devices designed for smart buildings are expected to reach USD 64 billion by 2029<sup>7</sup>. Globally, smart building as a market is forecasted to be worth USD127 billion by 2027<sup>8</sup>.

Smart buildings are supported by technology that can automatically adjust the heating, ventilation and air-conditioning systems in the building based on real-time conditions such that energy consumption and costs can be reduced. They also come with smart lighting systems that can schedule when to switch on or off the lights in the premise to improve efficiency and operation. Their smart sensor systems can identify who and when someone enters and exits the building, which improves security for its residents. In the event of an emergency, it will also be able to shut down facilities that may endanger residents and avoid disasters.



### Fight climate change with clean energy

Climate change is one of the defining challenges of our era. Shifting to a low-carbon economy by building intelligent cities is our best bet to win this battle. There are many cities committed to developing clean energy. For example, San Francisco has targeted to source 100% of its energy from renewables by 2030<sup>9</sup>.

With countries around the world committed to the development of new energy, investments in green energy are expected to hit US\$11 trillion globally by 2050<sup>10</sup>. That includes global smart grid (comprising digitisation of clean technologies and connected grid), which can monitor and manage all power transmissions to meet changing needs and reduce carbon emissions. Electric vehicles have also aggressively upended the transportation market, with the market for electric vehicle battery poised to reach USD152 billion by 2027<sup>11</sup>. Meanwhile, smart water resource systems, which can effectively process and distribute water, will further improve a city's energy efficiency.

Active is : Allianz Global Investors

Connect with Us

| [sg.allianzgi.com](https://sg.allianzgi.com)

| +65 6438 0828

| Search more



Allianz Global Investors



Subscribe to YouTube channel [Allianz Global Investors](#)



Connect on LinkedIn [Allianz Global Investors](#)

<sup>1</sup> Source: Navigant Research, Q3 2019.

<sup>2</sup> Source: United Nations, McKinsey Smart Cities 2018.

<sup>3</sup> Source: Navigant Research, Q3 2019.

<sup>4</sup> Source: IDC, July 2018.

<sup>5</sup> Source: IHS Markit; Nokia, Machina Research, 2017.

<sup>6</sup> Source: Bank of American Merrill Lynch, 2017.

<sup>7</sup> Source: Guidehouse Insights, 2020.

<sup>8</sup> Source: Precedence Research, 2020.

<sup>9</sup> Source: Allianz Global Investors, Bank of American Merrill Lynch, American Water, 2019.

<sup>10</sup> Source: BloombergNEF, 2020.

<sup>11</sup> Source: ResearchAndMarkets.com, 2020.

Information herein is based on sources we believe to be accurate and reliable as at the date it was made. We reserve the right to revise any information herein at any time without notice. No offer or solicitation to buy or sell securities and no investment advice or recommendation is made herein. In making investment decisions, investors should not rely solely on this advertisement but should seek independent professional advice. However, if you choose not to seek professional advice, you should consider the suitability of the product for yourself. Past performance of the fund manager(s) and the fund is not indicative of future performance. Prices of units in the Fund and the income from them, if any, may fall as well as rise and cannot be guaranteed. Distribution payments of the Fund, where applicable, may at the sole discretion of the Manager, be made out of either income and/or net capital gains or capital of the Fund. As a result, it may reduce the Fund's net asset value. The dividend yields and payouts are not guaranteed and might change depending on the market conditions or at the Manager's discretion. Investment involves risks including the possible loss of principal amount invested and risks associated with investment in emerging and less developed markets. The Fund may invest in financial derivative instruments and/or structured products and be subject to various risks (including counterparty, liquidity, credit and market risks etc.). Past performance, or any prediction, projection or forecast, is not indicative of future performance. Investors should read the Prospectus obtainable from Allianz Global Investors Singapore Limited or any of its appointed distributors for further details including the risk factors, before investing. This advertisement has not been reviewed by the Monetary Authority of Singapore (MAS). MAS authorization/recognition is not a recommendation or endorsement. The issuer of this advertisement is Allianz Global Investors Singapore Limited (79 Robinson Road, #09-03, Singapore 068897, Company Registration No. 199907169Z).