

Singapore: The World's First (and Only) Smart Nation?

Singapore has established itself as a standard bearer for smart city development. As a highly technologically and economically advanced sovereign city-state, Singapore has the greatest chance of becoming the world's first Smart Nation—which is also the name of their [government-sponsored initiative](#). This initiative helped earn Singapore the title of [Smart City of 2018](#) at the Smart City World Congress, as well as the #1 spot in the 2019 [IMD Smart City Index](#).

Having achieved independence in 1965, Singapore is a relatively young country. Geographically, it is a densely populated island (over 5.6 million residents within 280 square miles), with few natural resources, and an aging population. Its citizens enjoy a range of technological advantages, including the world's fastest Internet speed, a fiber-optic network that stretches the length and width of the island, and near universal mobile phone ownership, averaging 3 mobile phones for every 2 inhabitants.

Singapore's smart city initiatives are quite varied. They include projects such as improving public transportation through dynamic bus routing algorithms and establishing a secure, yet open data marketplace. Its [Virtual Singapore](#) data platform, based on a dynamic 3D city model, encourages users from different sectors to develop tools and applications for test-bedding concepts and services, planning and decision-making, and research.

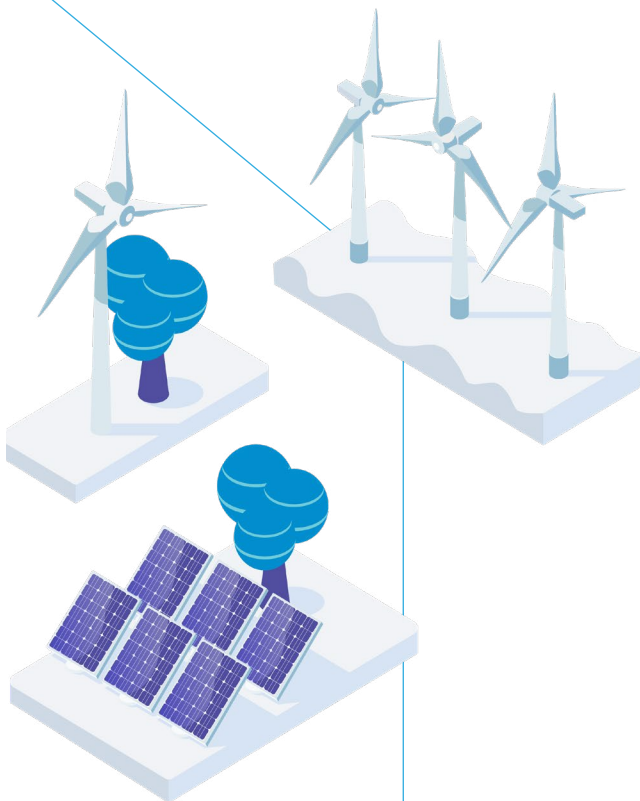


The Smart Nation Sensor Platform (SNSP) records and analyzes data on housing, amenities, and public infrastructure. This includes an interconnected network of over 110,000 smart lamp-posts with wireless sensors that collate data for urban and operational planning, maintenance, and incident response. Singapore is also launching its [National Digital Identity](#) project, a mobile, crypto-based identity that will allow residents to use a centralized set of credentials for transactions in both public and private sectors.

In a recent study exploring smart city expectations, conducted by The Economist Intelligence Unit and sponsored by Nutanix, citizens reported that the benefits they'd most like their city's smart city initiatives to deliver are greater affordability (Singapore's [cost of living](#) is among the highest in Asia) and more efficient and reliable public services. Business executives also prioritized more efficient and reliable public services, as well as greater market opportunities. Both citizens and executives have a fairly positive view of smart city initiatives--significant majorities report that they make the city a more appealing place to live (76 percent) and to do business (86 percent).

Citizen Priorities: Affordability and Improved Public Services

Singapore's citizens hope smart city projects will help make Singapore more **affordable**.



44%

Specifically, 44% believe a top priority should be improving the ability of energy and water utilities to vary pricing according to usage.

72%

To this end, 72% would agree to the city using their personal data to reduce energy costs by personalizing energy tariffs.

39%

39% of respondents also believe that encouraging the growth of low-cost transport options should be a priority for improving Singapore's affordability.

34%

In order to bring about greater **environmental sustainability**, 34% of Singapore's citizens want smart city projects to make public transportation more efficient.

78%

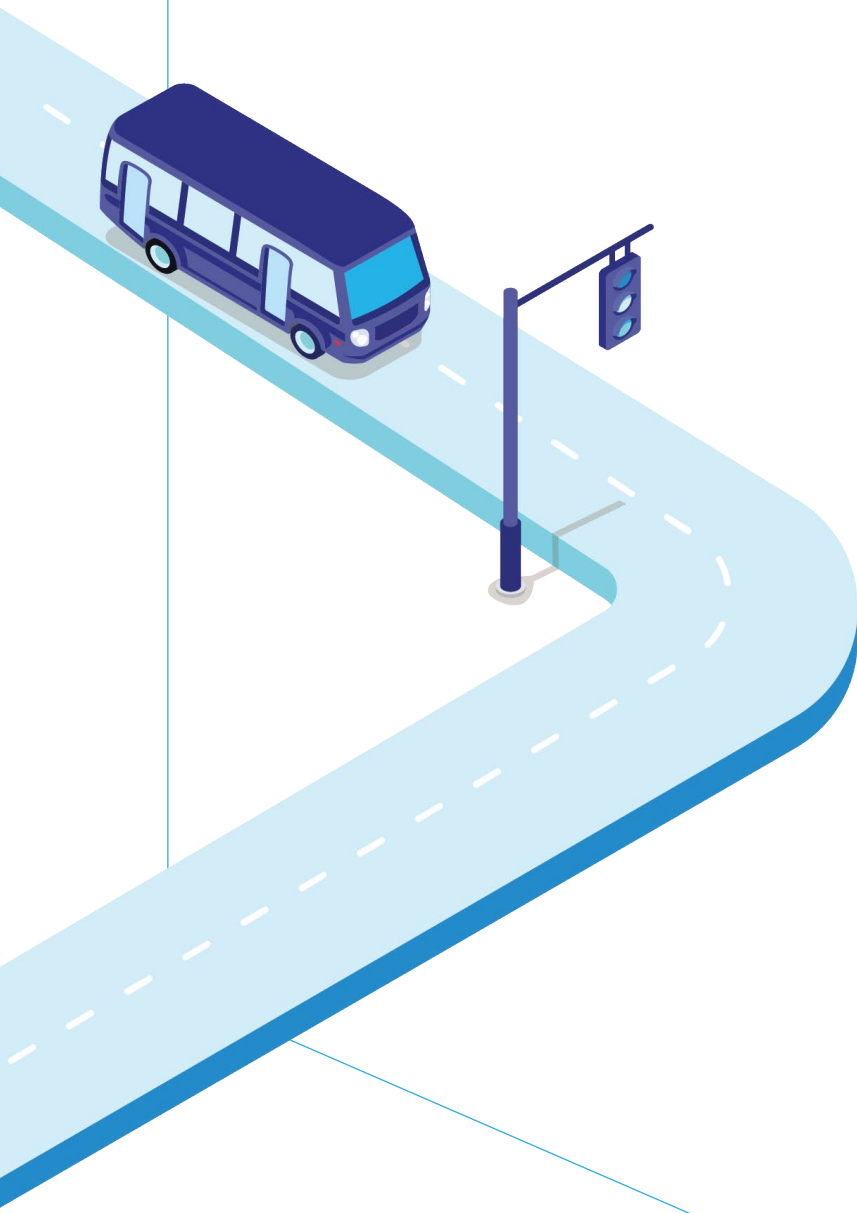
Traffic congestion is one of Singapore's biggest challenges. It negatively impacts the city's environment (they ranked 67th in the 2019 [Cities in Motion Index](#) for Mobility and Transportation). This likely accounts for why 78% of respondents said they'd be willing to share their personal data to reduce road and transport congestion.

37%

The other top smart city priority for "greenify-ing" Singapore is improving the efficiency of waste recovery (such as recycling)--chosen by 37% of respondents. 1 in 3 also want to prioritize expanding the availability of renewable energy sources (such as wind and solar power).

2 in 3

A majority of Singapore's citizens are willing to give up personal privacy for greater physical safety. 2 out of 3 respondents agree that using facial recognition to fight crime does more good than harm.

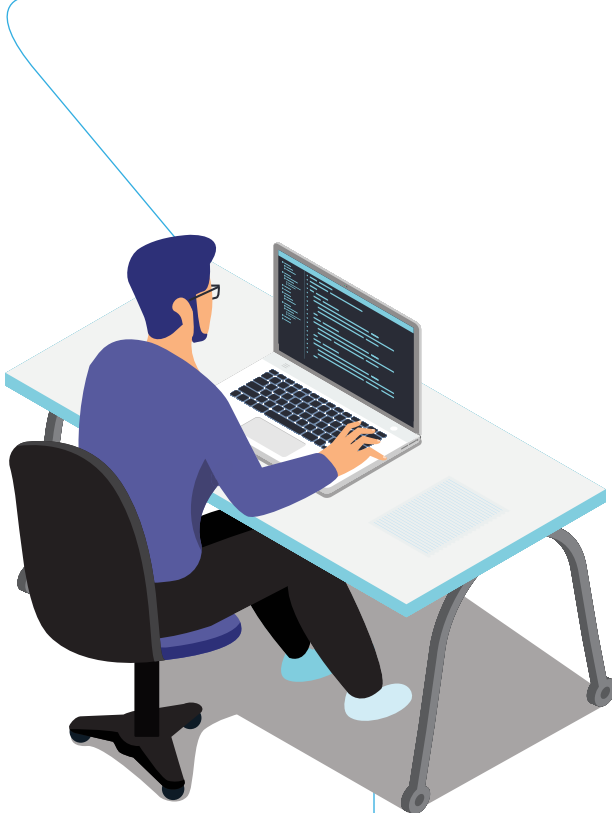
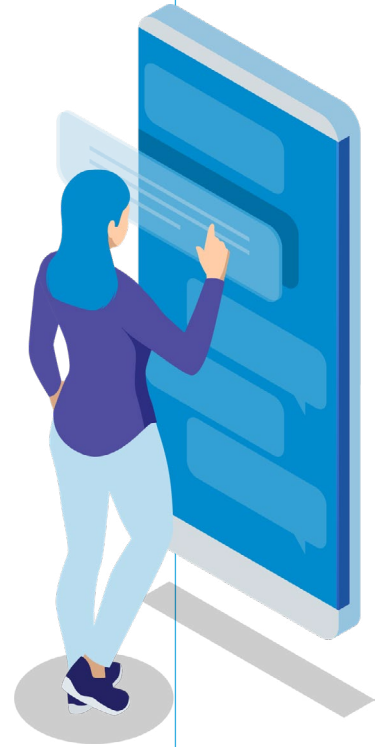


1/3

In terms of improving **personal health and safety**, 1/3 of respondents named safeguarding against terrorism a key priority--14 points higher than the global average. 30% also cited improving air and water quality.

3 in 4

Nearly 3 out of 4 respondents were comfortable with using technologies that capture personal identification to prevent or solve crime.



27%

The top priorities for creating more **job opportunities** via smart city projects were expanding training on advanced technologies in higher education, (27%) and attracting large technology companies to establish operations in Singapore, (26%).

Business Priorities: More Efficient and Reliable Public Services and Greater Market Opportunities

39%

While 39% of business executives named improving the efficiency and reliability of services (such as transport and utilities) as a top priority for smart city initiatives, 37% hoped for greater market opportunities.

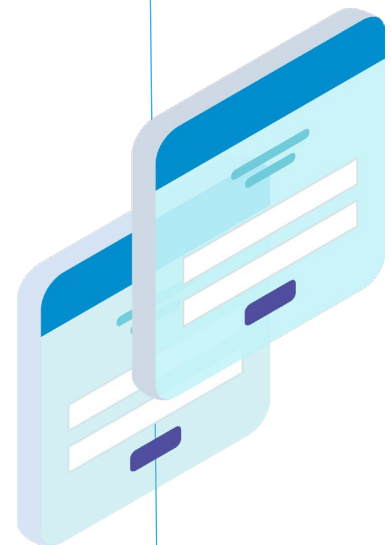
When asked to specify the types of **market opportunities** they hoped these projects would deliver, nearly 1/2 cited developing new marketing strategies through the use of open-government data, the highest percentage globally.

35%

Moreover, 35% named making use of open-government data to develop new products or services as top priorities. This focus is striking, and perhaps a sign of Singapore's success in promoting its open-government data platforms, such as data.gov.sg.

41%

In another sign that Singapore has effectively communicated the value of its data platforms, when asked about how smart city projects could help improve the **availability of talent** for their organizations, 41% of business executives cited encouraging the growth of digital platforms for on-demand work. This was the highest percentage globally.





29%

29% also believe smart city projects should prioritize improving environmental quality (such as air and water quality) to attract talent to the city.

37%

37% pointed to deploying ultra-high-speed broadband networks (for example, fibre and 5G mobile). This focus may stem from the benefits they've already experienced from the ubiquity of fiber optic networks on the island and world-class internet speeds.

41%

Singapore is internationally known for fostering a highly innovative environment (it ranked 3rd globally in the 2020 [Bloomberg Innovation Index](#)). When asked about how smart city projects could spur innovation in Singapore, 41% of business executives recommended supporting the growth of technology start-ups.

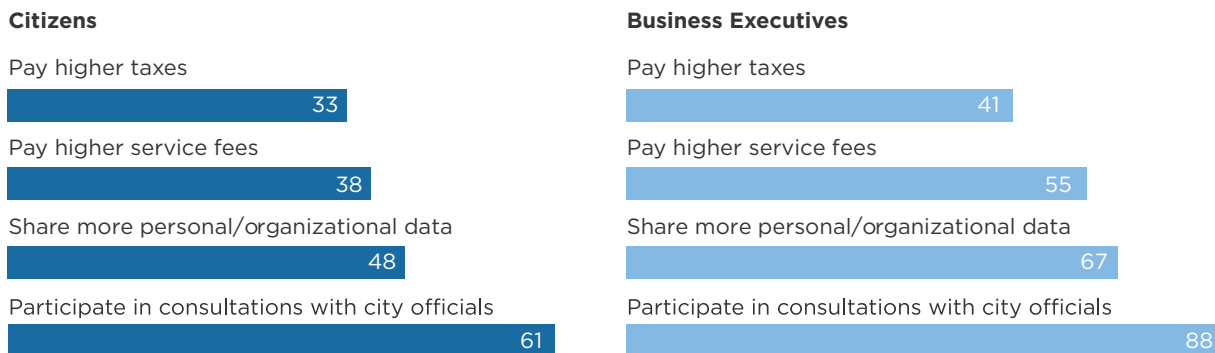
43%

Executives believe that smart city initiatives can help make Singapore more **affordable** by improving the commercial planning capabilities of city authorities through better data collection and analysis (43%), and by improving the energy efficiency of buildings (39%).

Trade Offs: Citizens and Business Executives are Unwilling to Pay More

Despite boasting one of the world's smartest cities, Singapore's citizens and business executives are actually less willing than their global counterparts to pay higher taxes and fees for the benefits of smart city initiatives (they are far less willing than their regional counterparts in this regard). They are, however, on par with global averages in terms of sharing their data. This reluctance to pay more in taxes and fees may stem from Singapore's status as a [tax haven](#), due to its relatively low personal and corporate tax rates. Singapore attracts quite a bit of international investment and commerce due to low tax rates, and residents and executives may be wary about losing this appeal.

In exchange for benefits of smart city initiatives, are you or your organization willing to . . .
(% of respondents)



Key Takeaway: Singapore is a global leader in smart city technology, with a wide array of successful initiatives that are bolstered by unwavering commitment from city officials. The government appears to have successfully communicated current and upcoming projects, as evidenced by the higher-than-average familiarity of its citizens and executives with their city's programs. 86% of business executives agree (3rd highest globally) that the city has taken a proactive role in including the business community when developing initiatives. Familiarity with Singapore's advanced open-government data platform may account for why 80% of executives agree that accessing Singapore's open-government data is vital to their organization (10 points higher than the global average). However, the unwillingness of citizens and business executives to pay more in taxes and fees for the benefits of smart city initiatives may suggest that Singapore's officials need to do a better job communicating the value of these initiatives to its residents.