Just how smart is your city? Chances are it's getting smarter by the year.

Many governments around the globe are racing to infuse technology into just about every

aspect of its city’s operations. And I mean every part. Including public transportation, IT connectivity, water and power supply, sanitation and solid waste management, efficient urban mobility, e-governance and citizen participation. And it does this using every buzz word imaginable, from big data to the internet of things. So how does a smart city work? Let's look at three examples.

Here in Singapore, the city-state might be the gold standard of the most extensive effort

to collect data on daily living. The government is now deploying systems that can tell when people are smoking in prohibited zones or littering from high-rise housing. Singapore launched its own smart nation program in 2014 and will add more cameras like these so the government can effectively monitor crowd density, cleanliness of public spaces and even the exact movement of every locally registered vehicle.

Much of the data its collecting will be fed into an online platform called Virtual Singapore that gives the government access to how the city is functioning in real time. It could help the government predict how crowds might react to an explosion in a shopping mall or how infectious disease might spread.

Over in Dubai, more than 50 smart services from 22 government entities have been rolled out as part of the government's 'Smart Dubai Initiative'. Using the government-provided app, Dubai Now, you can do things like pay a speeding ticket which likely captured you on a public camera and was then emailed you the ticket directly. You can also use the same app to pay your electric bill, call a taxi, track a package you sent your friend, find the nearest ATM, renew your vehicle registration, track the visa status of a relative and report a violation to the Dubai police.

Now head over to Barcelona where one research firm estimates the city will save a billions of dollars a year in energy costs just by installing smart systems like these.

Number one: smart street lights. Public lighting that adapts and dims when there's no activity but brightens up when sensors detect motion.

The second - parking sensors. Instead of driving in circles looking for a spot to park, drivers can get real-time information on an app which locates free parking spots. Sensors on the street curb use lighting and metal detectors to know if a parking spot or loading area is occupied.

And finally, garbage sensors which are actually compact drop-off containers which have a vacuum network through pipes which sucks up trash below ground. The automated waste collection not only lowers noise pollution from garbage trucks, but also lowers costs and keeps bad odor away. Juniper research estimates that by 2021 cities will save nearly 19-billion dollars by making their city smart.

But of course to save money, sometimes you have to first spend it first. The global smart city market is estimated to attract 15 billion dollars by 2021, and that's just for software. So now companies from Microsoft to Cisco are aiming for a piece of it. In Singapore, Uptin Saiidi, CNBC.

littering from high-rise housing – выбрасывает мусор с высоскоэтажного дома

crowd density - плотность населения

government entities - государственные органы

head over – проследовать