Ever since the concept of smart cities was first created, the Internet of Things has been the most discussed technology in its development. As this concept grows further and more countries begin to adapt to next-generation creativity, IoT technology will continually grow and have bigger impact on our lives.

IoT has a lot of potential across a wide range of sectors, including security, urban mobility, maintenance, sustainability, healthcare, and more. It is important for cities to recognize these opportunities and understand how they can benefit in developing themselves into smart cities. One of the key fundamentals to next-generation smart cities is sophisticated [interconnectivity](http://www.cardzgroup.com/SmartTokenBands.html). IoT will provide huge opportunities and connectivity to governments and citizens, though it will not be free of its own set of challenges. The term IoT or Internet of Things in general refers to the increasingly growing communication and interaction between digital devices, that can be controlled and remotely monitored.

**Role of IoT in Building Smart Cities**

Though IoT has its applications in many areas, we discuss how it can revolutionize the concept of smart cities. The world’s largest cities in terms of population are Tokyo, Delhi, Jakarta, Shanghai, and Sao Paolo. Their population continues to grow and so are the problems they face. These include environment-friendly and efficient transportation, water access, waste management, and clean air, to name a few. By efficiently deploying IoT technology, these future smart cities will be able to meet the needs of their citizens effectively.

Let’s look at some of the ways IoT can help build and sustain smart cities.

1. **Traffic Monitoring and Management**

One of the biggest challenges for smart cities is managing traffic flow. IoT provides a number of solutions, such as pavement integrated sensors that transmit real-time traffic updates to a central traffic management center. This helps adjust timings of traffic signals according to the influx and optimizes traffic flow within seconds. It also utilizes historical data to predict the traffic load according to time, without any human intervention.

1. **Parking**

A smart parking solution can identify the free parking spaces in a parking area and inform drivers looking for a parking area through sensors in the ground. It can also help provide information to waiting vehicles about the path with less traffic and least resistance.

1. **Smart Waste Management**

Smart waste management can help optimize the process of efficiently collecting waste and reducing related operational costs. This helps to better address environmental problems related to inefficient waste collection.

The process works by using waste containers that have level sensors. When they reache a certain threshold, the truck driver receives notification from the waste management platform on their smartphone. It asks the driver to empty a full container, to avoid drains that are half-empty.

1. **Connected Public Transport**

In 2016, the Lublin city in Poland introduced an innovative system for passenger information that facilitated connected public transport. This system helped revolutionize the bus transit system of the city.

This was done by installing GPRS and GSM devices on vehicles, which transmitted data in real-time to a software running at a dispatch center. This center relayed vehicle information to online portal and electronic display screens at bus stops. This helped in running the public transport efficiently by reducing waiting time and facilitating the passengers.

1. **Monitoring Water Levels**

For cities where flooding is a major problem, IoT-enabled sensors can help detect water levels and carry out flood monitoring by using technologies such as [Sigfox](https://www.sigfox.com/en). This can directly help control water levels, detect flood threats and allow city governments to take proactive measures.

1. **Video Surveillance**

Smart cameras and video surveillance is not entirely a new concept. It has been around for a long time now and has common applications in monitoring highways, roads and public places. Law enforcement uses Automatic Number Plate Recognition (ANPR) cameras for identifying stolen cars, collect tolls, control traffic, and monitor street crimes.

However, what makes smart video surveillance more interesting is the possibility for it to detect crimes before they actually happen in future. Smart cameras will also be able to know the identity of pedestrians and track their movements. However, this concept is still not widely popular due to citizens raising concerns over their privacy invasion.

1. **Connected Streetlights**

Smart streetlight solutions can help reduce maintenance and energy costs, safer traffic, and better public safety. Smart streetlights can also have multipurpose applications as emission monitors, EV chargers, and wireless broadbands.

**The Future of IoT Enabled SMART Cities**

The future of smart cities depends widely on the future of IoT. As governments start to explore the full potential of smart devices, artificial intelligence, and urban data platforms, the need for IoT technologies will grow at an exponential level. With unlimited potential that IoT holds and its implementation at a larger scale, cities can achieve smart mobility, efficient problem solving, and sustainability. However, all the sectors from manufacturing to healthcare, and education to transportation, can achieve success through shared use of information.