


## Chapter 6

# Application of IoT–Based Infrastructure in the Automation of Smart Cities


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### ABSTRACT

*Application of internet of things has been frequently used in smart cities. It has been observed that people at different localities are showing interest in IoT applications for smart cities. Their interest, awareness, and significant consideration for IoT application varies according to their qualification, locality, and standard of living. But it is essential to know the interest; the awareness of public regarding such systems. Present research is focused of IoT automation in case of smart cities and considered IoT applications for commercial and healthcare. Present work is considering awareness, interest, and significance of consideration among males and females. Research is focusing whether there is awareness in people in IoT automation for healthcare and commercial applications. The interest of people for an IoT automation system of a smart city is also taken in account.*

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## **INTRODUCTION**

The “Internet of Things” refers to a business model that enables intelligent items to communicate with one another (Muthu et al., 2020). Digital and physical interactions may be combined through the use of numerous technologies from diverse applications. Sensors, hardware, and software systems, as well as computer platforms, all come together in smart homes, making it a popular IoT application.

### **IoT**

The word “Internet of Things” (IoT) was first used by Kevin Ashton in a presentation regarding the integration of radio-frequency identification for supply chain management at Procter & Gamble (RFID) (Atlam & Wills, 2020). IoT advances need the adoption of new technologies that link all smart items in a network without the need for human interaction. Alternatively, everything can be connected to the internet and utilized in a different way. An Internet of Things (IoT) gadget may collect and transmit data. The Internet of Things (IoT) has arisen as a new area of research interest in recent years considering healthcare, as well as a number of academic and commercial domains (Pavithran et al., 2020). Technology and social components are being integrated into current healthcare systems as part of the IoT revolution. Economic and social prospects its reshaping healthcare systems from the ground up, breaking with the status quo. Health care systems are more patient-centered, easier to treat, and more closely monitored. Internet of Things (IoT) is becoming more and more critical in healthcare systems, giving higher quality services at lower prices to the consumer and more enhanced user experiences. This technology may be used in a variety of ways (Al-Turjman & Alturjman, 2020).

The “Internet of Things” refers to a business model that enables intelligent items to communicate with one another. Digital and physical interactions may be combined through the use of numerous technologies from diverse applications. Sensors, hardware, and software systems, as well as computer platforms, all come together in smart homes, making it a popular IoT application. Many cutting-edge gadgets with some kind of artificial intelligence now fall under the umbrella label “smart,” and not just those found in the normal household. The internet of things (IoT) can aid in the automation, analysis, and integration of systems (Mabodi et al., 2020). They expand and fine-tune the scope of these areas by doing this. Sensors, networks, and robots all play a role in the IoT. New software advancements, cheaper hardware prices, and openness to technology all contribute to the Internet of Things’ growth. They have an enormous influence on the way products, commodities and services are provided. IoT monitoring of the environment is critical to conserving energy, water, and other important natural resources, all of which are being depleted at an alarming rate (Kaur et al., 2020).

### **Characteristics of IoT**

1. **Connection:** This doesn’t need a lot of expository text. Sensor-based IoT devices have been connected to the internet. They are part of the Internet of Things (IoT). Using IoT devices effectively requires a combination of hardware and software (Safara et al., 2020).
2. **Things:** Things are the items that can be linked together because they were designed to do so. Sensors and other household gadgets are commonly used to monitor animals. These are capable of perceiving and responding to changing conditions (Islam et al., 2020).

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