Factors Impacting the Successful Implementation of IOT on Industrial Scale

Shobhna Chandra[1], Neeru Kumar[2]

[1]Department of Electronics, Sri Aurobindo College, University of Delhi, India

[2]Department of Electronics, Sri Venkateswara College, University of Delhi, India

This paper describes the key challenges in going from IoT point solutions to large scale smart cities and IIoT (Industrial IoT) use cases. The concept of the Internet of Things (IoT), refers to a network of physical devices that are embedded with sensors and software, enabling them to connect to the internet and share data with other devices or platforms.

The five challenges in the adoption and implementation of IoT are:

1. Security: When a large number of devices collect and transmit data, security is a major concern. There are risks of data breaches and cyber-attacks that can compromise sensitive information. As more critical infrastructure and industrial processes become connected to the internet, the risks of cyber threats increase.

2. Interoperability: There are many different types of devices, sensors, and platforms in the IoT ecosystem. For them to work together, there must be standardization and interoperability. Without this, it can be difficult to connect devices and share data between them.

3. Scalability: IoT systems need to be able to handle large volumes of data and scale to accommodate growing numbers of connected devices. This requires robust and flexible infrastructure that can handle the demands of IoT.

4. Cost: The cost of implementing IoT can be high, particularly for small and medium-sized enterprises. The cost of devices, infrastructure, and personnel can be prohibitive, making it difficult for organizations to justify the investment.

5. Data Management: IoT generates enormous amounts of data, and it needs to be managed effectively. This includes collecting, storing, and analyzing the data to extract insights and make informed decisions. Organizations need to have the right tools and processes in place to manage this data effectively.

Addressing these challenges are critical to the successful adoption and implementation of IoT. As the number of connected devices continues to grow, it will be important to develop solutions that can overcome these challenges and enable the full potential of IoT to be realized.

Keywords: IOT, security, and scalability