SNS COLLEGE OF TECHNOLOGY

Coimbatore-35

An Autonomous Institution

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Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECT213- IoT SYSTEM ARCHITECTURE

II ECE / IV SEMESTER

UNIT 1 – OVERVIEW OF INTERNET OF THINGS

TOPIC 1 –Impact of IoT on society

Benefits of IoT in society

- **Improved efficiency:** The IoT has made it possible to automate processes and connect devices, leading to increased efficiency in industries such as manufacturing, logistics, and healthcare.

- **Enhanced convenience:** IoT has made it possible for people to remotely control devices such as thermostats, lighting, and security systems, making their lives more convenient.

- **Better health outcomes:** IoT has enabled the creation of wearable devices that monitor vital signs and provide real-time data to healthcare professionals, helping them to provide better care.

Benefits of IoT in society

- **Enhanced safety and security**: IoT can help monitor and respond to emergency situations more quickly and effectively, improving public safety. For example, smart home security systems.

- **Environmental benefits**: IoT can help reduce waste and conserve energy by optimizing resource utilization and reducing emissions. For example, smart home technology can reduce energy usage and smart city technology can optimize public transportation, reducing traffic and air pollution.

- **New business opportunities**: IoT has created new business opportunities in areas such as smart homes, wearable technology, and industrial automation, leading to job creation and economic growth

Impact of IoT on the economy

- **Job creation** - The development and deployment of IoT technology is expected to create new job opportunities in areas such as software development, data analysis, and engineering.

- **Increased productivity -** IoT can help businesses optimize their operations and reduce waste, leading to increased productivity and profitability.

- **New business models -** IoT can enable businesses to develop new products and services, such as smart home devices, wearable technology, and connected cars.

Impact of IoT on the economy

- **Improved customer experience -** IoT can help businesses improve their customer experience by providing personalized and convenient services, such as remote monitoring and control of devices

- **Cost savings -** IoT can help businesses reduce their costs by improving their supply chain management, reducing downtime, and optimizing their energy usage.

- **New revenue streams -** IoT can create new revenue streams for businesses by enabling them to sell data collected from connected devices to other businesses, such as insurance companies.

IoT Applications in Different Sectors

- Smart cities: intelligent transportation, energy management, waste management

- Smart homes: automation, connected appliances, security

- Smart healthcare: remote monitoring, personalized medicine

- Smart agriculture: precision farming, environmental monitoring

- Industrial IoT: predictive maintenance, supply chain optimization

AGRICULTURE

- IoT applications monitor crop growth, weather patterns, and soil conditions. Sensors measure the soil's moisture content to ensure optimal irrigation of crops.

- IoT device management includes monitoring livestock health, managing supply chains, and tracking equipment.

- Solar-powered or low-powered devices can be used in remote locations with minimal oversight.

Healthcare

- Internet of Things devices monitor patients remotely and collect real-time data on vital signs like oxygen saturation, blood pressure, and heart rate.

- Analyze sensor data, detect patterns, and identify possible issues before becoming serious. The devices also monitor medication compliance, inventory management, and track medical equipment.

Manufacturing

- Industrial IoT applications optimize production processes, detect equipment failure, and monitor machine learning performance.

- Sensors monitor the humidity and temperature in a manufacturing environment to ensure optimal conditions for sensitive product production.

- Industrial IoT monitors the quality of finished products, manages supply chains, and tracks inventory.

Retail

- IoT applications in the retail industry optimize store layouts, monitor inventory levels, and track customer behavior, which allows retailers to improve the customer experience and optimize product placement. They also track shipments and monitor supply chains.

Transportation

- The Internet of Things tracks shipments, optimizes routes, and monitors vehicle performance in the transportation industry. Sensors that monitor fuel efficiency reduce fuel costs and improve sustainability. IoT devices can monitor cargo conditions to ensure it arrives in optimum condition.