



# **SNS COLLEGE OF TECHNOLOGY**

**Coimbatore-35**

**An Autonomous Institution**

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Chennai



## **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

### **19ECE306- SMART IoT APPLICATIONS**

III ECE / V SEMESTER

UNIT 4 – IOT LEGAL PERSPECTIVES AND STANDARDIZATION

**TOPIC 5 –Tackling Environmental Concerns.**



# Sustainable Environment Policies



- IoT technologies present opportunities for addressing environmental concerns by improving data collection and analysis, which can be crucial in the fight against climate change.
- The use of IoT enables the management of both current and historical data, offering public and private sectors a more structured and reliable database to inform decisions about improving environmental performance.
- This data can help create strategies for a more sustainable economy, as opposed to the inconsistent data currently available.



# Sustainable Environment Policies



- However, for this improvement to be effective, it is essential that the data, and possibly forecasts based on it, be made publicly available.
- Sensors within the IoT ecosystem can play a significant role in monitoring environments, warning of potential natural disasters like floods or volcanic eruptions, and enabling proactive measures to save lives by evacuating residents in at-risk areas.
- Additionally, IoT sensors could prevent accidental environmental damage by detecting pollutants and stopping emissions before they spread, such as through the closure of valves in sewer systems.



# Sustainable Environment Policies



- In former conflict zones, specialized robots equipped with sensors can also detect landmines, helping to reduce the risk to human life.
- At a global level, an international agreement that mandates the use of environmentally friendly processes may be necessary to drive substantial changes.
- Such an agreement could take inspiration from the Kyoto Protocol, which sets mandatory limits on emissions. Ratified by member states, this agreement would encourage companies to improve their environmental practices and adhere to energy consumption limits.



# Sustainable Environment Policies



- Fines could be imposed on companies that exceed these limits, while those that do not fully use their quota could profit by selling the excess to other companies.
- However, the pricing and regulation of such quotas would need to be carefully managed to ensure a balance between environmental goals and economic interests.



# Sustainable Environment Policies



- While IoT offers benefits in reducing environmental impacts, it is crucial to ensure that its own use does not exacerbate energy consumption, particularly as IoT devices require constant connectivity.
- Businesses already using networks like the Internet are less likely to experience significant increases in energy usage, but for individuals, the introduction of connected devices could raise overall energy demands.
- Thus, the development of energy-efficient IoT tags is essential to minimizing these concerns.



# Waste Management



- IoT could revolutionize waste management by enabling the tagging of objects with information about their recyclability.
- For instance, the European Union (EU) is planning to study how such tags might enhance the recycling process.
- Tags could provide detailed information on how and where to dispose of each object, leading to improved recycling practices.



# Waste Management



- However, for a system like this to work effectively, individuals would need to actively participate in waste disposal, "signing in" every item they dispose of.
- This control system could warn users if they fail to properly dispose of objects and offer guidance on appropriate disposal methods.
- While such a comprehensive system might seem ideal, it would require significant technological infrastructure, which is not likely to be realized in the near future.





# Waste Management



- Regulations could be introduced specifically for commercial and industrial waste management, obliging businesses to follow the disposal guidelines provided by IoT tags.
- This would be particularly important for handling industrial hazardous waste, which poses significant threats to human health and the environment.
- These regulations could ensure safer and more efficient waste management in industries.



# Waste Management



- One potential challenge is the disposal of the IoT tags themselves. To prevent environmental harm, tags should be made from biodegradable or environmentally neutral materials.
- However, given the potential long lifespan of many objects, biodegradable tags might not always be suitable. As such, further innovation is needed to develop tags that are both durable and environmentally friendly.



# Waste Management



- In conclusion, while IoT offers significant potential for tackling environmental issues through improved monitoring, waste management, and energy consumption, careful planning is needed to ensure the technology itself does not contribute to the problems it seeks to solve.
- International cooperation, robust regulations, and ongoing technological innovation are key to realizing IoT's environmental benefits.



# Waste Management



## 1.1 Introduction to Internet of things



# Sustainable Environment Policies



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# Sustainable Environment Policies



## 1.1 Introduction to Internet of things



# Module 1- Basics of IoT



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