

Saving Energy Usage and lowering Costs in the Workplace Using Wireless Sensor Networks



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INTRODUCTION

The purpose of this poster is to give a brief overview in to a project that will be researching into the Internet of Things and the experimenting the use of a wireless sensor network to control the utility within an office space i.e. lighting and temperature. A wireless sensor network utilises a number of wireless sensors to gather data that will be relayed to a central computer or hub, this device will analyse the data to change the environment of the office in real time.

INTERNET OF THINGS (IOT)

The Internet of Things is the concept of connecting any device that has internet capabilities to other devices with the same capabilities [2]. The communication through the connections of these devices and the users allow for the creation of an intelligent network, with the purpose of making aspects of everyday life easier. These aspects cover a wide range and include controlling of utility as well as the communication of schedules to the device's user.

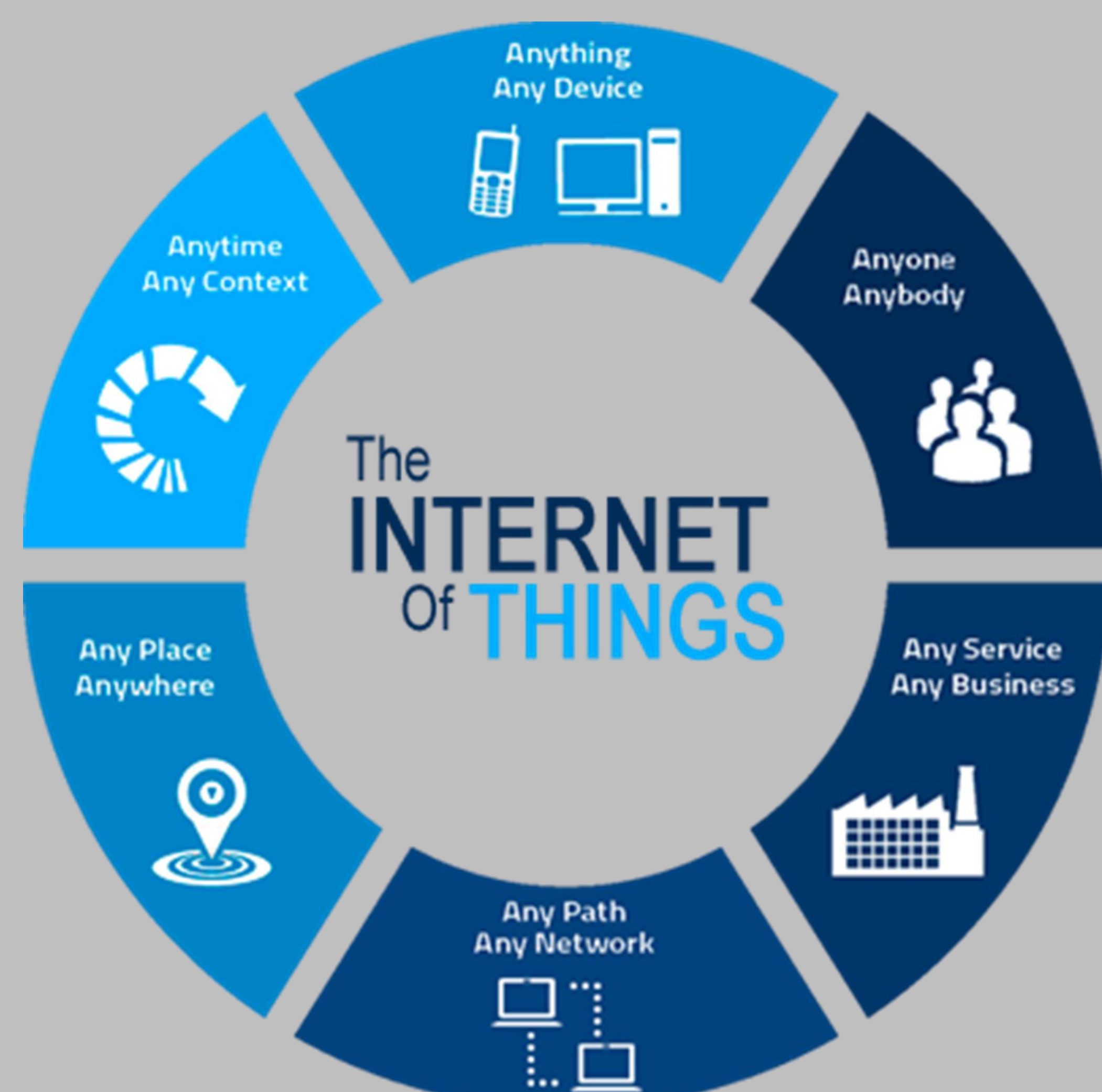


Figure 1 – infographic of what Internet of Things is [2].

AIM

The aim of this project is to create a Wireless Sensor Network that will be able to perform monitor attributes and control the environment based on data inputs. Ultimately the aim is to monitor the utility usage within a work environment and use the generated information to determine the ideal usage to save energy and cost.

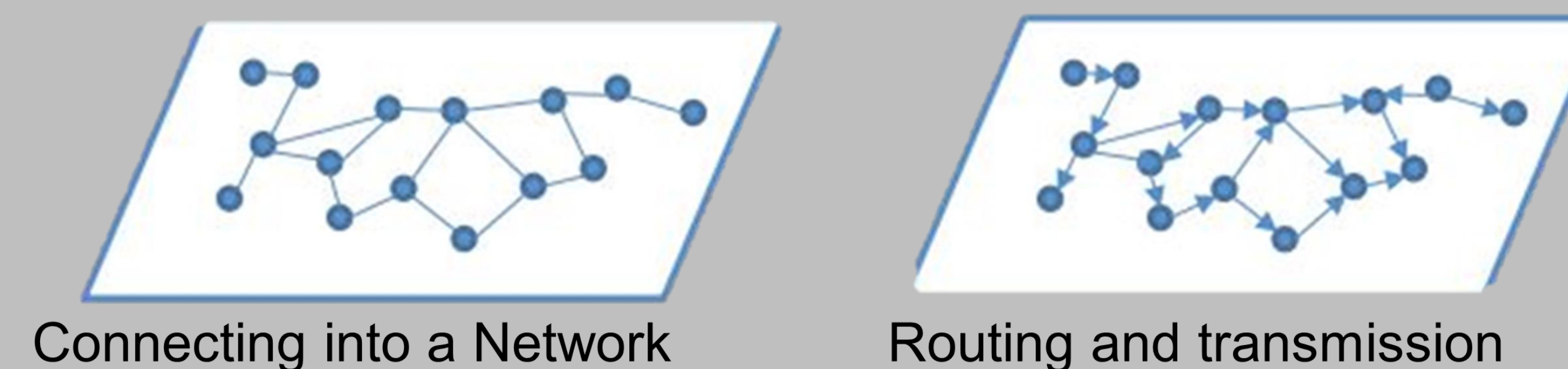
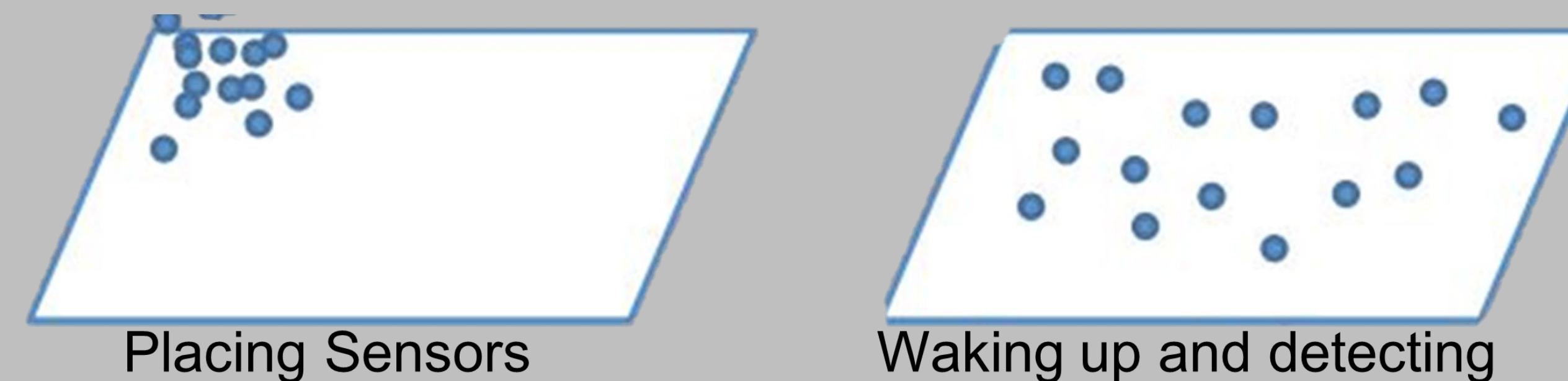


Figure 2 – Diagram showing the deployment of a Wireless Sensor Network [3].

OBJECTIVES

1. Investigate Wireless Sensor Networks and Internet of Things.
2. Design and construct the Wireless Sensor Network to predetermined requirements.
3. Implement and test the Wireless Sensor Network in the environment.
4. Analyse and evaluate the Wireless Sensor network and recommend future improvements and implementations.

RESOURCES

The resources needed for this project are;

- A laptop to run the simulation and experiment.
- Wireless sensors to collect data.
- An office space to set up and test the network.

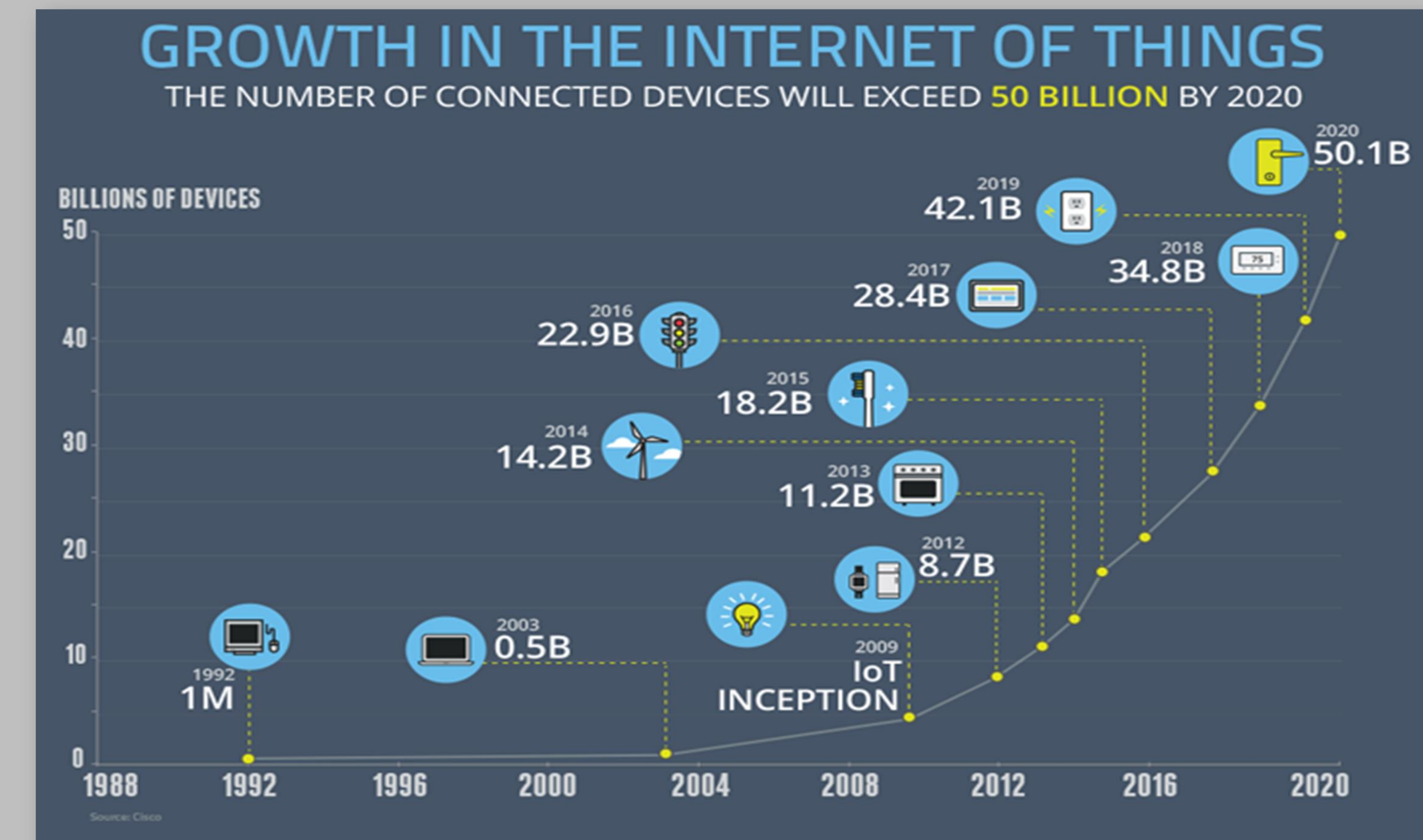


Figure 3 – Diagram showing growth of IOT devices [4].

KNOWN ISSUES

- Lack of management throughout the project
- Lack of finance for equipment purchases
- Selecting unsuitable/ incompatible hardware
- Selecting unsuitable/ incompatible software
- Devices being damaged or hacked
- Not being able to achieve the project requirements
- Limited access to test environments

WHAT'S NEXT

The next step that will be taken after this is the research that will be used to design and further more construct the wireless sensor network. The attributes for the research will include Internet of Things, wireless sensor technology and its use in the industry both commercial and business.

REFERENCES

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