

Study on Internet of Things

N. Sanseedha¹, M. S. Simrin Fathima², M. Y. Mohamed Haris³, A. Mohammed Apsal⁴

^{1,2,3,4}Student, Department of Architecture, Sri Krishna Adithya College of Arts and Science, Coimbatore, India

Abstract—The INTERNET OF THINGS (IoT) is a hot topic in the industry but its not a new concept. In the early 2000's the term "Internet of Things" was likely coined by Kevin Ashton of Procter and Gamble, later MIT's Auto-ID center. Internet of things (IoT) is a computing concept that the ideas of everyday physical object being connected to the internet and being able to identify themselves to other devices. A simple IoT prototyper was implemented using the current inexpensive hardware and cloud efficient software. Resulting in efficiency improvements, economic benefits and reduced human energy.

Index Terms— Internet of Things

I. INTRODUCTION

The Internet of Things, commonly shortened as IoT, refers to the connection of devices to the Internet. Any stand-alone internet-connected devices that can be monitored and controlled from remote location is considered an IoT device. All the components that enable businesses, governments, and consumers to connect to their IoT devices, including remotes, dashboards, networks, gateways, analytics, data storage, and security is part of the Internet of Things ecosystem.



Fig. 1. Overview of IoT

How IoT Works?

Internet of Things is not the result of a one novel technology; instead, several opposite technical developments provide capabilities that taken together help to bridge the gap between the virtual and physical world.

These capabilities include:

- Communication and cooperation
- Addressability
- Identification
- Sensing
- Localization
- Embedded information processing
- User interfaces

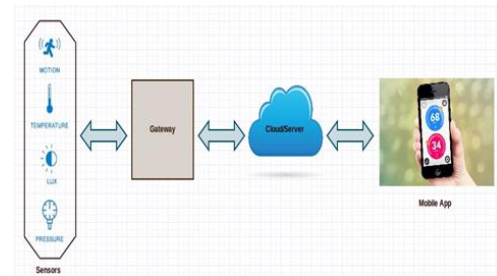


Fig. 2. Working of IoT

Advantages:

- **Data:** The easier it is to make the right decision. Knowing what to get from the grocery while you are out, without having to check on your own, not only saves time but is useful as well.
- **Tracking:** The computers keep a track both on the quality and the capability of things at home. Knowing the expiration date of products before one consumes them improves safety and quality of life.
- **Time:** The amount of time saved in observing and the number of trips done otherwise would be fantastic.
- **Money:** The economic aspect is the best advantage. This technology could replace humans who are in charge of monitoring and retaining supplies.

Disadvantages:

- **Compatibility:** There is no standard for labeling and observing with sensors. A uniform concept like the USB or Bluetooth is required which should not be that hard to do.
- **Complexity:** There are several chances for failure with complex systems. There is a software bug causing the printer to order ink multiple times when it requires a single cartridge.
- **Privacy/Security:** Privacy is a big issue with IoT. All the data must be encrypted so that data about your financial status.
- **Safety:** There is a chance that the software can be hacked and your personal information misused. The possibilities are limitless. Your account details being hacked could put you at risk. Hence, all the safety risks become the consumer's concern.

What are the major IoT companies?

There are literally many companies linked to Internet of

Things, the list should be expand only in coming years. They are listed below:

- Microsoft (MSFT)
- Amazon (AMZN)
- Google (GOOGL)
- IBM (IBM)
- Cisco (CSCO) and so on.

IoT Applications:



Fig. 3. Application of IoT

II. CONCLUSION

Although IoT has reasonably a few disadvantages, its benefits of saving the consumer time and money can't be disregarded. So the time isn't far when the Internet of Things will be commonly seen in both households and companies. Efforts will have to be made to find ways to conflict its disadvantages.

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