International Journal of Contemporary Research in Computer Science and Technology (IJCRCST) e-ISSN: 2395-5325
Volume 4, Issue 1 (January '2018)

A STUDY ON INTERNET OF THINGS

S.Mathumitha,
B.Sc (Computer Technology),
Department of Computer Science,
Sri Krishna Adithya College of Arts and Science,
Coimbatore-641042 , Tamil Nadu,India.

P.Manjupriya,
B.Sc (Computer Technology),
Department of Computer Science,
Sri Krishna Adithya College of Arts and Science,
Coimbatore-641042 , Tamil Nadu,India.

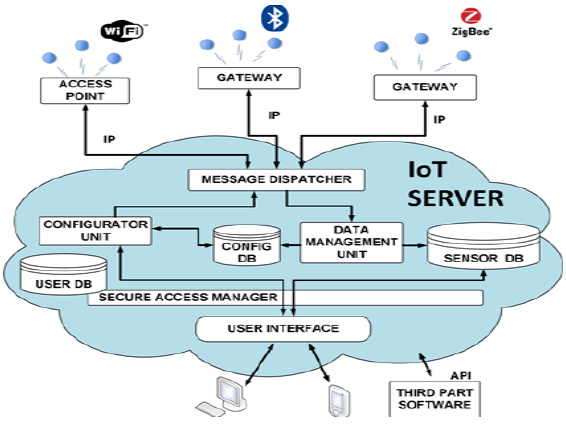
V. Akshara.
B.Sc (Computer Technology),
Department of Computer Science,
Sri Krishna Adithya College of Arts and Science,
Coimbatore-641042 , Tamil Nadu,India.

Abstract: Internet of Things (IOT) has provided an opportunity to build powerful industrial system and applications by leveraging the growing ubiquity of RFID, wireless, mobile and sensor devices. Many industrial IOT applications have been increasingly developed and deployed inrecent years. Now-a-days, controlling and monitoring plays a main role in our day to day life. Everything we can monitor and control using advanced technologies. Remote access is a wonderful feature that came because of high speed internet. The main objective of proposed system is to provide a technology oriented and low cost system to make an advanced industry for those who away from their industry and want to control devices.

***Keywords:* Biochip, Embedded systems, Blue ray disc, E- infochips**

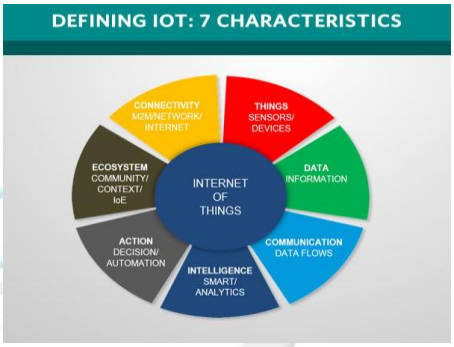
I.INTRODUCTION

The **Internet of things** (IOT) is the network of physical devices, vehicles, home appliances and other items embedded with electronics, software, sensors, actuators, and network connectivity which enables these objects to connect and exchange data in the IOT sense, can refer to a wide variety of devices such as heart monitoring implants,biochiptransponders on farm animals, cameras streaming live feeds of wild animals in coastal waters,automobiles with built-in sensors, DNA analysis devices for environmental/food/pathogen monitoring,or field operation devices that assist firefighters in search and rescueoperations.Legal scholars suggest regarding "things" as an "inextricable mixture of hardware, software, data and service".



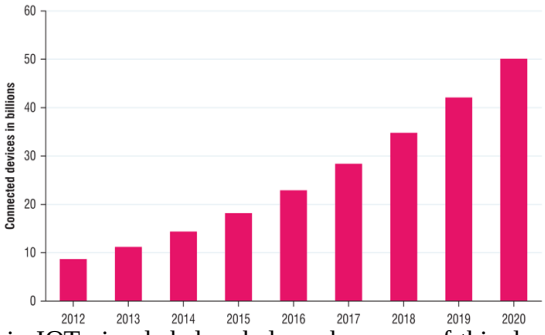
These devices collect useful data with the help of various existing technologies and then autonomously flow the data between other devices.

The term "the Internet of things" was coined by Kevin Ashtonof Procter & Gamble, later MIT's Auto-ID Center, in 1999.



II.HISTORY AND OVERVIEW OF IOT

As of 2016, the vision of the Internet of things has evolved due to a convergence of multiple technologies, including ubiquitous wireless communication, real-time analytics, machine learning, commodity sensors, and embedded systems. This means that the traditional fields of embedded systems, wireless sensor networks, control systems, automation (including home and building automation), and others all contribute to enabling the Internet of things.

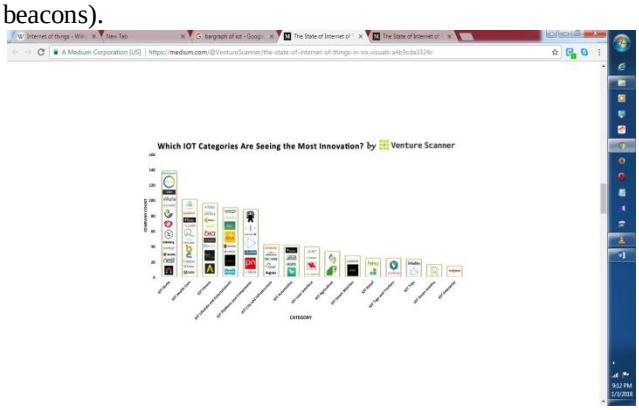


The six IOT visuals below help make sense of this dynamic market:

1. **Market Overview**: Breakdown of IOT into categories.

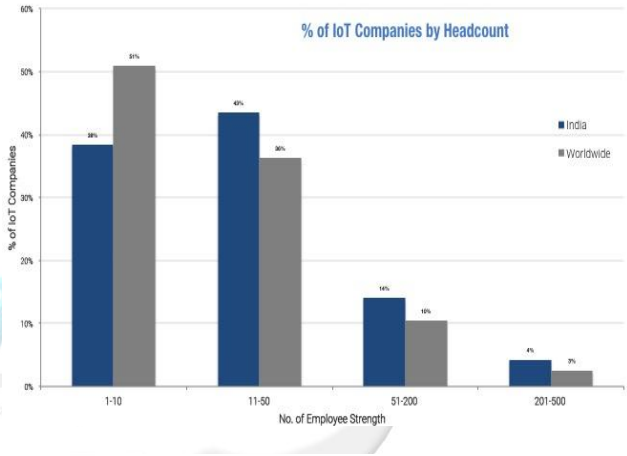
2. **Number of Companies Per Category**: Bar graph summarizing the number of companies in each IOT category.
3. **Average Funding By Category**: Bar graph summarizing average company funding per IOT category.
4. **Venture Funding in IoT**: Graph comparing total venture funding in IOT to the number of companies in each category.
5. **Global Breakdown of IOT**: Heat map indicating where IOT exist.
6. **Median Age of IOT Categories**: Bar graph of each IOT category by median age.
7. In order to organize IOT we broke it down into 16 distinct categories listed below. The logos in the above image do not show all 813 logos.

Home: Internet of Things focused on residential segment. Solutions include home security, automation, energy management, etc.
User Interface: Hardware that offers new ways to view and/or control digital devices and applications.
Lifestyle and Entertainment: Hobby and lifestyle segments such as music, gardening, cooking, pet care, etc.
City and Infrastructure: Smart City and Infrastructure verticals.
Platforms and Components: Platforms that enable machine to machine (M2M) communication.
Fitness: Personal fitness and wellness solutions.
Health Care: Consumer and/or at-home health care solutions.
Automotive: M2M in the automotive industry.
Toys: Products aimed at the kids market.
Agriculture: Companies that enhance productivity of the agricultural and farming industries.
Enterprise: IOT focusing on enterprise applications.
Smart Watches: Devices in wristwatch form that include built-in sensors and connectivity.
Tags and Trackers: Small wireless tags used to locate and find things by attaching them to smart phones and personal items.
Jewelry: IOT that puts fashion first. These devices offer features such as notifications for calls and messages, personal security, etc.
Retail: Physical devices that have retail applications (e.g. beacons).



The concept of the Internet of things became popular in 1999, through the Auto-ID Center at MIT and related market-analysis publications. Radio-frequency identification (RFID) was seen by Kevin Ashton (one of the founders of the original Auto-ID Center) as a prerequisite for the Internet of things at that point. Ashtonprefers the phrase "Internet *for* things. If all objects and people in daily life were equipped with identifiers, computers could manage and inventory them.Besides using RFID, the tagging of things may be achieved through such technologies as near field communication, barcodes, QR codes and digital watermarking. one of the first consequences of implementing the Internet of things by equipping all objects in the world with minuscule identifying devices or machine-readable identifiers would be to transform daily life

For example: such technology could grant motion-picture publishers much more control over end-user private devices by remotely enforcing copyright restrictions and digital rights management, so the ability of a customer who bosystems, Blu-ray disc to watch the movie could become dependent on the copyright holder's decision, similar to Circuit City's failed DIVX. This thought model envisioned the development trend of the Internet of things.



Canary: *Canary*, headquartered in New York City, is a fast-growing startup that makes the *Canary* in-home security system. The wireless device—about the size of a tall coffee mug—contains an HD video camera and multiple sensors that measure temperature, humidity, air quality.
Product Description:Canary is a complete home security system packed into a single device – a modern approach to security that lets you protect the people and places you care about most. It's built to learn and adapts to your home over time; whenever it detects something out of the ordinary in your house or apartment, Canary sends intelligent notifications with HD video and audio directly to your smart phone. That way, you can make smart decisions when something's wrong and feel connected when everything's right
Smart Home Security for Everyone:

We believe anyone should be able to go anywhere, do anything, and still know what's happening at home. The

problem is, traditional security systems are hard to install and harder to use. And what if you rent? It's nearly impossible to take conventional systems with you when you move.

That's why we designed Canary, a complete security system packed into a single device you control from your smart phone. Canary is a modern approach to home security, and since it doesn't need additional sensors, setup takes minutes, not days. Plug in Canary , connect it to the internet, download the free iPhone or Android app, and you're ready to go.

With no contracts or required monthly fees and free cloud storage of recent events, Canary works right out of the box to protect the people and places you care about most. And since Canary's intelligent notifications only alert you when something unusual happens, you'll make smart decisions when something wrong and feel connected when everything right.

Simple Setup: There's no installation. Put Canary on a shelf or table in a central area of your home, plug it in, connect it to the internet, and download the app. That's it. Generally, we recommend one Canary per entryway and one per floor. It's easy to start with one and add more as needed.

Smart Home Monitoring

Want to check on your pets or make sure the kids got home safe? See and hear what's happening at home from anywhere. Live-stream HD video and high-quality audio through the free Canary app for iPhone or Android.

Video Notifications: Coming home shouldn't be alarming. When Canary senses anything out of the ordinary, it sends a notification to your smart phone with HD video of exactly what happened.

Your Home, Your Call: Whether you're on a different continent or around the block, Canary puts you in control. Easy options allow you to respond to incidents before they turn into emergencies.

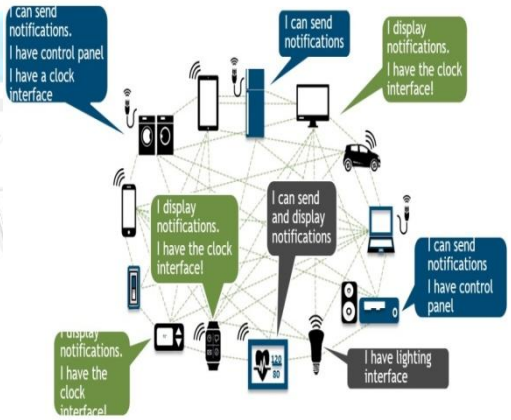
Home Health Technology: There are more ways than ever to track our weight, heart rate, and fitness, but surprisingly few ways to find out how our homes affect our overall well-being. That's why Canary has built-in Home Health Technology to monitor air quality, temperature, and humidity.

Canary's environmental sensors identify conditions that could lead to poor sleep, mold growth, respiratory issues, and more. Home Health Technology adds up to a smarter system and a safer, more comfortable home.

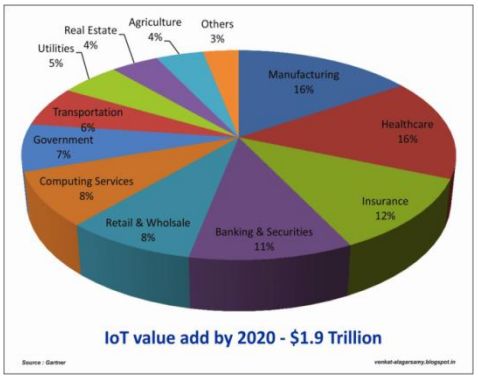
III.CYCLE OF IOT

Devices connected to a network generate a huge amount of data. Einfo chips' IOT Device Lifecycle Management framework helps companies to protect the data using a three layer security system:

- Data end–to–end encryption: Data encryption from device as well from the cloud which establishes a secure connection with no third party inclusion.
- Software security: System firmware security, application based alert system, connection authorisation, and verification.
- Hardware security: IoT device lifecycle management includes hardware security modules like TPM (Trusted Platform Module) and TEE (Trusted Execution Environment). It consist of FPGA for chip and board level protection.



PIE CHART OF IOT :



IV.CONCLUSION:

In conclusion, the Internet of Things is closer to being implemented than the average person would think. Most of the necessary technological advances needed for it have already been made, and some manufacturers and agencies

have already begun implementing a small-scale version of it. The main reasons why it has not truly been implemented is the impact it will have on the legal, ethical, security and social fields. Workers could potentially abuse it, hackers could potentially access it, corporations may not want to share their data, and individual people may not like the complete absence of privacy. For these reasons, the Internet of Things may very well be pushed back longer than it truly needs to be.

V.REFERENCES

.

[1]. Kemal Akkaya, Ismail Guvenc, Ramazan Aygun , Nezih Pala, Abdullah Kadri," IOT-based Occupancy Monitoring Techniques for Energy-Efficient Smart Buildings" ,2015 IEEE wireless communication and networking conference.

[2]. Andrea Zanella, Nicola Bui, Angelo Castellani,Lorenzo Vangelista, and Michele Zorzi, "Internet of Things for Smart Cities" IEEE Internet of things journal , Vol. 1 , No. 1 , FEBRUARY2014.

[3]. Ala Al-Fuqaha, Mohsen Guizani, Mehdi Mohammadi,Mohammed Aledhari, and Moussa Ayyash,"Internet of Things: A Survey on EnablingTechnologies, Protocols, and Applications",IEEE communication surveys & tutorials, vol. 17, no. 4, fourth quarter 2015.

[4]. Nagender Kumar Suryadevara, Subhas Chandra Mukhopadhyay, Sean Dieter Tebje Kelly, and Satinder Pal Singh Gill ,"WSN-Based Smart Sensors and Actuator for Power Management in Intelligent Buildings" IEEE/ASME transactions on mechatronics, vol. 20, no. 2, april 2015.

[5]. Dan D. Koo, John J. Lee, Aleksei Sebastiani, and Jonghoon Kim," An Internet-of-Things (IoT) system development and implementation for bathroom safety enhancement"International Conference on Sustainable Design, Engineering and Construction, Sciencedirect Procedia Engineering 145 (2016) 396 – 403.

