**AN IMPRESSION OF INTERNET OF THINGS WITHIN INDUSTRY CLAIMS**

**Abstract**

The internet of things (IoT) which is a system for interrelated computing devices, mechanical and digital machines, objects that are provided with unique identifiers ([UIDs](https://internetofthingsagenda.techtarget.com/definition/unique-identifier-UID). The advantage is to transfer data over a network without requiring human-to-human or human-to-computer interaction.

A [thing](https://internetofthingsagenda.techtarget.com/definition/thing-in-the-Internet-of-Things) in the internet of things can be a person with a heart monitor implantation, a farm animal with a [biochip transponder](https://internetofthingsagenda.techtarget.com/definition/injectable-ID-chip-biochip-transponder), built-in [sensors](https://www.techtarget.com/whatis/definition/sensor) in automobile to alert the driver when tire pressure is low or any object that can be assigned an Internet Protocol (IP) address data transferred over a network.

Organizations in a various industries are using Internet of Things to operate more efficiently, and understanding customer to deliver customer service for improving decision-making and increase the value of the business.

Keywords: IOT, Manufacturing

**Functions of IOT**

IoT system working with real-time collection and exchange of data. The three components of IOT are:

### Smart devices

It is used for collectingdata from its environment, user inputs and communicates data over the internet to and from its IoT application.

### IoT application

It is a collection of services and software that integrating data from various IoT devices. For analyzing data we using machine learning or artificial intelligence to analyze this The decisions are communicated back to the IoT device and then responds to inputs.

## Industrial IOT

[Industrial IoT](https://aws.amazon.com/iot/solutions/industrial-iot/?pg=whatisioti&cta=industrialiot) (IIoT) refers to smart devices used in manufacturing, retail, health, and other enterprises to create business efficiencies. Industrial devices, from sensors to equipment, give business owners detailed, real-time data that can be used to improving business process. They provide insights on supply chain management, logistics, human resource, and production – decreasing costs and increasing revenue streams.

### Manufacturing

IoT in [manufacturing](https://aws.amazon.com/manufacturing/?pg=whatisioti&cta=manufacturing) uses predictive maintenance to reduce unplanned downtime and wearable technology to improve safety of the worker. IoT applications will predict machine failure before it happens, reducing production downtime. Warning about potential hazards to the workers by providing helmets and wristbands as well as computer vision cameras.

### Automobile

In automobile manufacturing IOT used to increase efficiency of Sensor-driven analytics. For example, industrial sensors are used to provide 3D real-time images of internal vehicle components. Diagnostics and troubleshooting can be done much faster.

### Logistics and transport

Commercial and lIoT devices can help with [supply chain management](https://aws.amazon.com/industrial/supply-chain-management/?pg=whatisioti&cta=supplychnmngt), including inventory management, vendor relationships, fleet management, and scheduled maintenance. Shipping companies use Industrial IoT applications for tracking the assets and optimizing fuel consumption on shipping routes. The technology is especially useful for tight temperature control especially refrigerated containers.

### Retail

For retail purpose, Amazon is driving innovation in automation and human-machine collaboration. It is used for tracking, locating, sorting, and moving products.

### A graphical user interface

The IoT device or fleet of devices can be managed through a graphical user interface. Common examples include a mobile application or website that can be used to register and control smart devices.

**Main components used in IoT:**

* **Low-power embedded systems:**For the design of electronic systems the inverse factors play a significant role which are Less battery consumption, high performance systems.
* **Sensors:**Sensors in IOT measures and detects certain physical quantities and converts into signal which is given as an input to processing or control unit for the analysis
* **Control Units:** It is a unit of small computer contains microprocessor or processing core, memory and programmable input/output devices/peripherals. The function of control unit is to process IoT devices and all logical operations.
* **Cloud computing:**Data collected through IoT devices is massive, and it will be stored on a reliable storage server. The data is processed and help us to discover electrical errors of the system.
* **Availability of big data:**We know that IoT relies heavily on sensors, especially in real-time. As these electronic devices spread throughout every field, their usage is going to trigger a massive flux of big data.
* **Networking connection:**The IP address of physical object is represented by internet connectivity. However, there are only a limited number of addresses available according to the IP naming. Due to the growing number of devices, this naming system will not be feasible anymore.

**There are two ways of building IoT:**

1. Form a separate internet work for physical objects.
2. For making internet more expensive we require hard-core technologies such as rigorous cloud computing and rapid big data storage .

## Advantages of IOT

Advantage of Internet of things in day to day life especially in the business sector are given below

* **Efficient resource utilization:** For monitoring natural resources we have to increase efficient resource utilization..
* **Minimize human effort:**  For minimizing the human effort we have to interact and communicate IoT devices with each other.
* **Save time:** By minimizing human effort then definitely the time will be saved.
* **Improve security and Enhance Data Collection:** For making the system more secure and efficient all these things are to be interconnected.

## Disadvantages of IOT

Apart from benefits of IOT, it also creates some set of challenges. Some of the IoT challenges are given below:

* **Security:** Because of IoT systems are being interconnected and communicating over networks, it will offers little control despite any security measures, and it will lead to various kinds of network attacks.
* **Privacy:** Even without the active participation on the user, the IoT system will provide substantial personal data in maximum detail.
* **Complexity:** The designing, developing, and maintaining and enabling the large technology to IoT system is complicated.

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