

# Future of IOT

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## Abstract

No matter which way you look at it, technology has been headed towards automation for a long time now. In fact, isn't the very basic principle of technology to make our lives easier by leaving fewer things to be explicitly done by us? It might be making us all lazier everyday, or one might argue that it is giving us far greater time to pursue whatever we desire. Whatever might be the effect, there is no doubt that automation is the future and place that it is happening the most significantly is right in our homes.

## Keywords

Automation System, Hub, Sensor, Iot, Big Data

## I. Introduction

It was not too long ago that we visualised houses of the future where things would be done on their own- lights coming on by themselves, coffee being brewed just the way you like as you are about to wake up and your shower knowing the weather outside and adjusting the water temperature accordingly. And now we are at a point where technology to achieve all that has been around for a while and has now become affordable. Hence, it is not a particularly big surprise that we are witnessing some amazing things happening in the world of automation.

## II. Home Automation System

It doesn't take a genius to figure out what home automation entails: it's pretty much just the usage of smartphones and other easily available computing devices to automate and control household items and devices-from electrical appliances to lights to doors-with the help of hardware that can be controlled remotely.

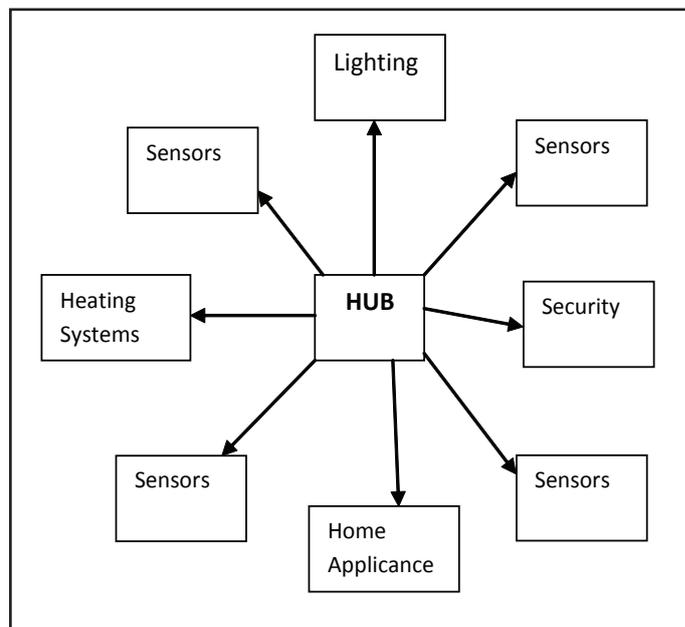
Most home automation begins small-people start with controlling simple binary devices, that could either be in an "on" or "off" state. But it's when these devices are hooked up to the internet that they become truly smart and enter the realm of the internet of things. In fact, most automation systems nowadays use their internet-enabled abilities to record and analyse usage patterns of devices, mostly lighting and heating systems, to reduce monthly electricity bills and overall energy expenditure.

While setting up a home automation system, the best place to start investing in is your personal nuisances, for many people, the most obvious problem is their electricity bill, so most people purchase a few smart lights as their first home automation product. Or if you are the kind of person who is constantly paranoid about whether they left the geyser on, smart switches would ease your paranoia. From there, you slowly build up a full lighting system that can be remotely controlled and would respond to human presence, or an automated home theatre comprising a smart TV with smart ambient lighting.

Any smart home automation system today is generally a central hub that can be configured to control a bunch of smart devices, sensors and switches, all of which communicate with the hub using certain communication protocols. The hub, in turn, is instructed through an app or the web. The main takeaway is the distribution of monitoring and computing functions between the hub and the

remote app. For example: in smart lighting system, a hub would act as the central interface between multiple smart devices, say, a bulb and a door contact sensor. The smart devices and hub communicate using certain common communication technologies, and an app would be used to control the lighting system.

If you are still unclear about the role of the Hub, you can draw close parallels between it and a standard Wi-Fi router. In simple terms, both are devices that route signals from multiple sources to one another. In a few products, the hub and router are integrated together, thus reducing the need for two devices. However, in the cases when they are separate, the hub, which needs to be internet enabled to function, is connected to the router, so basically, a smart hub provides a centralized method to control all your smart devices, as they can connect all your devices to the cloud and consolidate all apps into the one provided by the hub manufacturer.



## III. IOT in Future

The 5G will enable connected cars to send and receive messages 10 times faster. According to a recent report, the global connected car market is expected to grow from 5.1 Million units in 2015 to 37.7 million units by 2022. Adoption of telematics units and advances in tech with emphasis on driver and passenger experience along with safety and cyber security are ushering in a new era of growth for connected cars globally.

India is expected to emerge as a huge market for such vehicles. Currently, less than 2 percent of all vehicles sold in the country have some form of connectivity embedded in them. But our experience with smartphones has shown that mass adoption of technology can happen fast provided we are comfortable with the price tag.

## A. Safe Driving

With connected cars, insurance companies can offer incentives to drivers to drive well in return for lower premiums. This will make

our roads safer and improve the driving experience. Drivers can also use this information to evaluate and improve their driving skills. In a country where we constantly complain about traffic jams, thanks to big data, your car will someday soon wake you up early to remind you that if you don't reach office early, you will have to deal with more traffic. Big data will bring in more predictability in traffic management with data from each vehicle adding up.

### **B. Predictive Maintenance**

Drivers and fleet managers will now get inputs on vital vehicle diagnostics data leading to detection of issues before they turn into a major problem. This will reduce vehicle breakdowns and ensure hassle free driving as well as improved mileage. Well maintained vehicles also minimize emissions.

### **C. The Data Opportunity**

According to a recent research, a single connected vehicle has the potential to generate more revenue than 10 conventional non-connected vehicles. In the future, the market share of OEMs will not be based on units sold but on the data revenue generated per vehicle. Data monetization in an IoT context is still in its infancy and we will see plenty of actions on this front in the near future.

### **IV. Conclusion**

A connected car can dig into its database to come out with suggestions on your favourite number or best route available to pick up your child from her piano class every Friday. With the arrival of 5G, connectivity issues will be a thing of the past. 5G will enable connected cars to send and receive messages faster (up to 10 times a second). 5G will also enable more situational awareness and provide advance warning in case any roadblock or hindrance were to appear on the road you are driving on thereby giving you more time to react.

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