

Automation benefits from IOT

Automation Benefits from IOT by Vaishnavi Ganji



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Blog written by Vaishnavi Ganji

Since the term “Internet of Things” was coined in 1999, there’s been a lot of noise around it and its impact on our personal and business lives.

From the way we shop and travel to the way manufacturers monitor and manage inventory to the way farmers keep track of their livestock, IoT has transformed life in many areas and gone from just a crazy vision to an essential reality.

All this can be attributed to drivers of development, such as the rise of universal computing, extensive use of the internet protocol (IP), continued advancement of data analytics, and more.

The term Internet of Things is 16 years old. But the actual idea of connected devices had been around longer, at least since the 70s. Back then, the idea was often called “embedded internet” or “pervasive computing”. But the actual term “Internet of Things” was coined by Kevin Ashton in 1999 during his work at Procter & Gamble.

What is IOT?

The internet of things is the network of smart devices like phones, computers, vehicles, home appliances, etc. which are embedded with sensors, software, actuators, and connectivity which makes communication possible between devices.

In simple terms, IoT is a giant, digitally connected universe of billions of physical devices around the world; “things” that collect and share data about how they’re used and the environment around them.

These objects are embedded with internet connectivity, software, sensors, and other hardware that enable them to connect and exchange data with other systems and

devices over the web.

IoT extends the power of the internet beyond smartphones and computers to ordinary household objects such as lightbulbs, locks, smart microwaves, wearable fitness devices, sophisticated industrial tools, and self-driving cars, affording them a higher degree of analytical and computing capabilities.



How automation is connecting the IoT devices

IoT has many uses; however, it depends on key technologies and components to connect devices to the internet, such as:

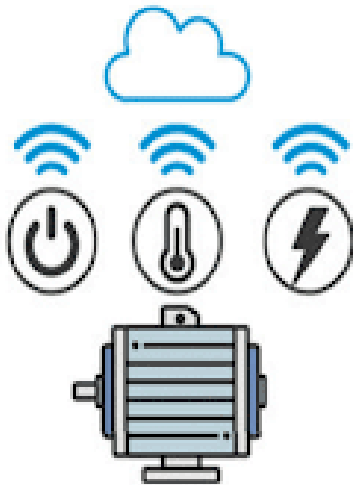
- **Sensors** to collect the data from the environment for the IoT system to process it
- **Connection and identification** from the device to the IoT system through an IP address
- **Actuators** that allow the devices to take action based on data from their own sensors and network feedback
- **IoT gateway** to bridge data from the different devices to reach the cloud. It also translates the devices' protocols into one standard protocol and filters out unnecessary data from the devices.
- The **Cloud**, where all data from the IoT devices is gathered and processed by software
- **User interface**, from where users get the data from the devices so that they can make the required commands that the devices need to execute

Automation ties all these components together and ensures that processes work smoothly without the involvement of a human being.

What are the benefits of automation from IoT

Automation offers many advantages to the business processes using IoT.

Get Key Equipment Status in Real Time



With sensing devices connected to the cloud, the status of equipment can be automatically returned to the cloud platform and control site for the real-time monitoring of operating status.

Manage Remote and Distributed Station

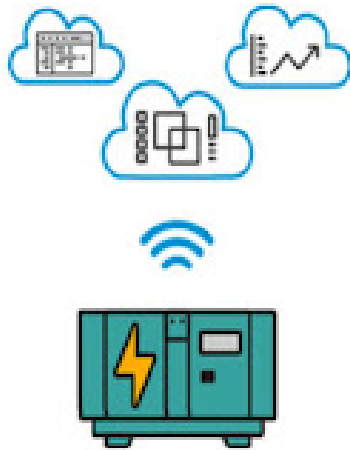


Constructing a sensing network allows for the central management of environmental and equipment information from unmanned and remote sites via a cloud platform.

Execute Predictive Maintenance Effectively

The models, curve comparisons and performance predictions tools in cloud platform can help with identifying problems early. So, we are achieving fault prevention and improving maintenance efficiency.

Increased uptime



Uptime refers to how long your business is open or running. Employees come in and leave at specific times, so unless their shifts overlap, your business will only be open for a specific number of hours every day.

When business processes are automated, there are no time restrictions, so your business can run around the clock. Your employees will not have to focus on repetitive, manual tasks, freeing them for higher-level work

In factories, where engineers fix faults in machinery or other devices, automation can save time and efficiency costs because software bots can pinpoint the exact source of the fault and notify engineers so that they can fix it quickly and get things back up and running.

Operational efficiency



In supply chain and asset management, automation and IoT bring intelligence through sensors and scanning technologies.

These help companies improve existing technologies such as barcodes by supplementing them with passive radio-

frequency identification (RFID) such as tracker tags to perform cycle counts or a global positioning system (GPS) for equipment and fleet management.

Efficient building functionality

Office buildings can also be made more efficient through automating their functionality in terms of environmental requirements such as lighting, humidity control, and more.

Once the bots learn the habits and preferences of the workers on each part of the building, there's no need to program the smart devices to work. Lights will turn on when needed, and the ideal temperature will be applied based on the environment, leading to significant cost savings on a utility bill.

Improve safety compliance

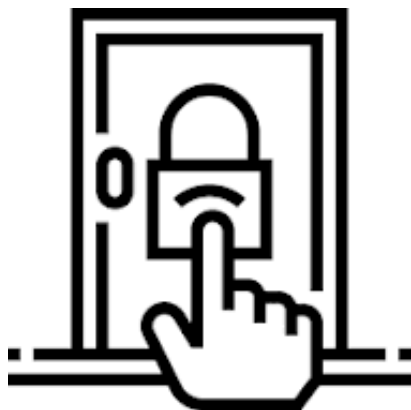


IoT facilitates workplace safety in many ways. There are several assets within the workplace that, if equipped with sensors, can detect impending part failures and alert maintenance personnel to avoid employee injury from preventable circumstances.

For businesses dealing in perishable goods — whether it's a production company or retail business — IoT and automation enable better compliance by ensuring refrigerated food products don't exceed or go below the FDA regulations on temperature thresholds. They can help ensure customers get products that are fit for human consumption and allow for timely response to any problems that arise to avoid recalls.

In factories where manufacturers automate maintenance reporting and diagnostics, the combined solution of automation and IoT can provide information on each aspect of the manufacturing process to reduce accidents and increase efficiency.

Strengthen access control



IoT and automation can work together to power security systems. A combined solution can recognize authorized employees and unlock and lock doors to high-risk facilities such as bank vaults. The technologies can also restrict or grant privileges for operating specific machinery.

This way, IoT and automation help tackle compliance, efficiency, safety, and other longstanding problems.

Enhance customer insights

For retail businesses, sensors and location beacons can yield valuable insights about customer behavior while assisting customers in a variety of ways, such as by providing directions to navigate the store or to find desired products.



Boost conversions

VectorStock



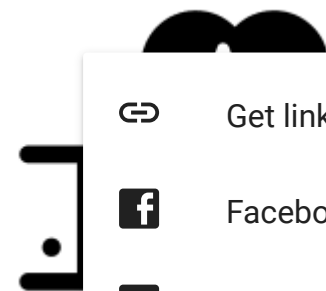
Geofencing and location technologies can deliver insights that businesses can use to see the areas with the most in-store traffic and make better decisions on inventory, layout, and in-store and digital product promotions. They can also reveal the types of customers visiting the location during different times of day, all year round.

Improve operations in the public sector

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For governments and service-related sectors, IoT and automation can offer myriad benefits. Public sector utilities can use IoT-enabled applications to help in handling traffic, city governance, public safety, and resource management.

Healthcare benefits



Benef

IoT devices can help doctors and other medical personnel monitor their patients remotely, especially if they're in hazardous conditions. They also help hospital administrators monitor assets, for example, determining availability of hospital beds.

Farmers — especially those with large scale operations — can apply smart farming solutions to monitor crop fields using sensors and automate irrigation systems from anywhere. Livestock owners can utilize wireless IoT apps to get data on the health and



well-being of their cattle, including when they're sick, to prevent the spread of disease, or when they're about to give birth and where they can be found.

Benefits for consumers

Consumers also have much to gain from automation and IoT.

From wearables, such as smartwatches or fitness trackers, which help users better understand their health, to smart speakers like Google Home that makes it easier to get information, set timers, or even play music.



Consumer

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In the kitchen, smart refrigerators send alerts about available stock, smart lightbulbs make it look like you are home when you're not, smart plugs conserve energy and cut costs, and smart thermostats heat the home before you arrive back.

These are just the tip of the iceberg because the potential uses of IoT and automation are almost unlimited.

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Unknown May 31, 2021 at 12:10 PM

Great...IoT is the next big thing... already 80% companies are migrated to IoT...it's really good topic to study... great work

[REPLY](#)



Unknown *May 31, 2021 at 7:12 PM*

Great

[REPLY](#)



Unknown *June 17, 2021 at 11:35 PM*

Good job vaishnavi...

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Rutik Katkamwar *June 17, 2021 at 11:36 PM*

Very helpful

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