

How IoT (Internet of Things) is Making Warehouses Smarter: a Guide



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Are you running a business? is ensuring accurate stock availability a struggle for you? Then you might have not yet adopted the correct strategies in your warehouse management processes.

With the advancement in technology, retailers/wholesalers no longer have to deal with time-taking tasks related to stocking and managing products across their multiple warehouses.

But the question, are you taking advantage of that technology?

If not, then in this article we will discuss various technologies that you can use in your warehouse and make it smarter.

One of the best technologies to use in warehouses for efficient warehousing is IoT (Internet of Things). So what is it?

What is IoT?

Internet of Things (IoT) simply put are various physical devices that are connected to the internet for collecting and sharing data.

The availability of wireless networks and small-sized computer chips have made it possible to make thousands of products that can help to stay connected. Beacons, Drones, RFID, sensors, etc are all Internet of Things devices that can scan, store, share, and retrieve data with the help of the internet.

IoT devices are able to detect and monitor their environment and report their status, receive directions, and act on the information they receive.

How to use IoT applications in Warehouse management

Now you must be wondering how all these IoTs can actually help in warehouse management so let's take a look at the breakdown and how technology can help you in increasing efficiency at your warehouse.

- **For easy product tracking**

Drones are the most convenient IOT to use in the warehouse especially for tracking the products in a safe manner. Considering the wide range of inventory layout in a huge warehouse, it is difficult for the staff to scan through it all, especially the items lying on the topmost shelf. This is where drones can hover over easily and navigate the entire warehouse quickly and easily scanning the items. Also, it avoids the risk of slip and fall amongst the staff members while scanning the top shelf.

- **For better inventory level visibility**

Now, you may experiment with shelf and rack arrangements as the visibility of your stock is no longer a problem using various IoT devices. You can easily put away and retrieve products for quick order fulfillment.

For instance, Rob Miller working at a UK subsidiary of [Balluff](#) commented on the usage of sensors. He said that,

“We automate the way we store our packaging materials such as cardboard boxes. We have an Ultrasonic sensor that measures the height of our stacked boxes. When the stack drops below a defined level the sensor will respond to this. The sensor sends a signal using io-link technology via the cloud to our SAP system. The system will then automatically re-order more boxes to arrive the next day. Creating this setup has meant we are a more lean company. We are using less floor space due to us not requiring surplus stock and do not require staff to consistently stock checking.”

- **For accurate Data analytics**

Warehouse data information is very crucial as it helps in taking decisions in supply chain management. The data helps in proceeding with purchases, inventory control, and shipping, and therefore, obtaining accurate data from a warehouse is very important.

Out of several functions that IoT performs, giving accurate information about the inventory and inventory count is the most important one. The data provided by sensors, RFID, drones are collected and analyzed on the computer system and hence, it helps in making informed decisions about inventory improving service quality and competitiveness.

The data obtained from sensors also help in improving safety around the warehouse. For instance, if the floor is wet then the sensors will alert the warehouse manager and thereby prevents any mishaps from occurring within that space.

Benefits of using IOT applications in warehouse



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Adopting IoT in the warehouse has several advantages and perhaps that's the reason why big giants like Amazon, Alibaba, DHL are already using it heavily in managing their inventory and logistics.

Today's supply chain managers and warehouse managers need to incorporate IoT into their warehouse for staying afloat in this competitive market. Let's look at some of the benefits here.

- **Serve your customer faster and accurately every time**

As mentioned earlier, IoT enables you to track the products in real-time and with the accuracy of its location. Hence, making it easily retrievable. IoT and robotics go hand in

hand so once the product is spotted on the rack, the robots can be used to access and transport them to the delivery station in your warehouse.

Now, wouldn't that be great while serving your customer orders!

- **Increase your employees' productivity**

IoT helps the staff in prioritizing tasks and identifying the right packages. More than this, IoT devices are intelligent and accurate hence a staff member spends less time accessing the products that are ordered.

This also gives a staff member more time to spend on finishing the manual tasks and process more orders in the time saved by using IoT and robots.

Another great way in which IoT and Robotics help the employees is giving them security against physical injury. Since most of the navigating and fetching of the products is done with the use of technology the employees feel safe and thereby it increases their productivity.

- **Helps in preventing damage and goods spoilage**

One of the biggest challenges of a warehouse manager is to store and transport the products safely and store them in the right place at the right temperature. With IoT devices, this task becomes very easy. The devices can track and automatically adjust the temperature, atmospheric pressure, moisture within a warehouse and hence, help in eliminating any chances of the products getting damaged or spoilt.

- **Effective asset management**

A warehouse manager is aware of every single item in the warehouse and its exact quantity with the help of sensors and data they save in the system. This awareness of

each item and its location, low-stock alerts, misplaced product notifications, etc. enable a warehouse manager to manage the inventory i.e. asset of the company, better.

Smart technologies assess and control the storage temperature within the warehouse and can also send alerts if there is any theft of products. All these factors enable effective management of inventory and improving the performance of warehouses.

- **Mitigate talent shortage in the warehouse**

One of the biggest advantages of using IoT or any technology for that matter, is that it can easily automate complex tasks effortlessly. Finding a skilled talent is always a challenge and training a new member of the staff is time consuming as well. In such times, smart technologies come in handy and they also eliminate the chances of human errors hence, improving the overall performance of the warehouse.

Wrapping up

According to Global IoT in Warehouse Market Research Report,

“ Global IoT in the Warehouse Market is expected to expand at a CAGR of 21.21% during the forecast period 2019–2025.”

That is a huge number and the warehouse managers must take this into consideration if they would like to walk hand in hand with the current trends. IoT boosts the efficiency and performance of the entire supply chain and hence it has become inevitable to incorporate it in your warehouse and thereby making it a smart place to work in.

Recommended Reading:

- What is the IoT? Everything you need to know about the Internet of Things right now

<https://www.zdnet.com/article/what-is-the-internet-of-things-everything-you-need-to-know-about-the-iot-right-now/>

- Study of Smart Warehouse Management System Based on the IOT

https://link.springer.com/chapter/10.1007/978-3-642-31656-2_30

- Impacts of the Internet of Things on Supply Chains: A Framework for Warehousing

https://www.researchgate.net/publication/331559475_Impacts_of_Internet_of_Things_on_Supply_Chains_A_Framework_for_Warehousing