

The Internet of Things (IOT) and How it Applies to Distribution



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Executive Summary

The term Internet of Things (IoT) has become increasingly more common in the distribution space. But what does it actually mean, and is this something that distributors should pay attention to?

IoT is about collecting data that was not previously available from machines that you interact with every day. This additional data provides unique insights into your business and allows you to make decisions and take actions to achieve growth.

Introduction

There is a lot of buzz around the Internet of Things (IoT), but what does it really mean, and what difference does it make to you? Is this just another fad that large companies buy into and then a few years later abandon because it was too costly and didn't deliver any tangible benefits?

IoT is one component of a wider conversation around digitalization and leveraging technology to increase not only the efficiency of operations—including manufacturing, warehousing, delivery etc.—but also the levels of customer support to drive growth and profit.



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What is IOT?

The Internet of Things is a method of collecting data without requiring people to get involved. It's machine to machine data collection at its most basic level. It means that information can be collected by a device or sensor and passed over a network—including the Internet—to a computer for storage or processing. IoT also allows you to access data from places that traditionally have been inaccessible or too costly to obtain, thus providing an entirely new set of data to utilize.

By itself, a sensor or piece of equipment is typically limited in its ability to process any kind of data that it collects. IoT supports bidirectional communication that allows for a necessary hand-off of data collected in order to make sense of it. The result of the data analysis can drive an action by a piece of equipment—from anything as simple as tripping an actuator, to something as complex as initiating a robot to pick and deliver stock from a bulk storage location.

How does it apply?

IoT can provide you with exciting new data about your business that you have not previously had before. It allows you to use this data to make real-time decisions and even communicate back to your machine. However, the real benefit does not come from the collection of data in and of itself, but the analysis of it and the actions taken after such analysis.

Where might it be applied?

IoT can be deployed anywhere there is a condition that can be measured. However, it is important that you measure data that will make a difference to your organization. For example, humidity can be measured, but will measuring it have an impact on you or your client's business?

If you are in the lumber or produce industry—where humidity can cause warping of wood planks or food spoiling, respectively—then something like humidity may be a consideration for replenishment of inventory levels.

What does it take to make it work?

The requirements for using IoT from a component perspective are simple. You just need three things. See below. The requirements for using IoT from a component perspective are simple. You just need three things:

1. A sensor or device for registering a measurement

This can be anything from an RFID tag and reader that collects the information as the tag is passed by, to a temperature sensor connected to an enterprise asset management system, to a GPS.

2. A connection to the Internet

This can be anywhere from the internal network—the sensor can be connected to the Internet if the device can access the Internet. Connections can be made either tethered, connected with a wire, or untethered with a wireless connection. How the connection is made is dependent on your circumstances, the device support, and location. If, for example, the device is collecting temperature readings from the top of Mount Everest, it is unlikely to be connected to a wire and will in all probability use a wireless Internet connection to pass information to the processing point.

3. A computer system for processing the information

Once the data is collected and dispatched, it needs to be analyzed and acted upon. All the heavy lifting of data analysis, trending, and actioning can be done by the processing system—reducing the need for complex processing resources in each IoT sensor and significantly lowering their cost and complexity.

The prerequisite for the computer system is the ability to integrate with the sensors and process the amounts of data that will be received. As use of IoT devices becomes accepted and more prevalent, the system needs to be able to scale to accept the additional burden, as well as stay current with the latest technologies to accept new types of devices.

Putting the computer system in the cloud is a great way to focus the business on using the tools—rather than maintaining the software. The connectivity, high availability, and scalability of the cloud means that the solution is going to be constantly available to connect to—and not run out of—resources as more data and processing is required. Cloud provides for constant replication and backups of data, so in the event of interruption by a disaster, the risk of losing data is minimized.

What are the returns?

There are several benefits that revolve around increased productivity, improved business decisions, and better customer experience—all of which may lead to lower costs, higher margins, and increased growth.

Being able to collect data without dedicating human labor to the effort is the obvious immediate benefit. This means that those resources can be utilized to do something more productive.

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Being able to align business resources based on circumstances is an even more powerful outcome. Knowing where materials are outside the confines of your immediate environment allows you to plan for receipt, picking, and shipment of outgoing orders. Tracking information on dispatch of a shipment to receipt by the client allows feedback to the client on request, in the event of issues.

Consider IoT applied to your ERP system. Modern ERP systems provide rules-based logic to be applied to data and workflows so that the data received can trigger events and notifications. For example, a temperature drop or increase in humidity can trigger the generation of a service order to check equipment. Speeding notification of an issue increases responsiveness and reduces the potential for damage to or loss of your inventory.

Another example of how IoT can impact your business is determining inventory reductions—via an RFID notification—of items passing a check point level that triggers a replenishment order to be created or released. Triggering customer demand without interacting with you via phone or email shortens the order or replenishment cycle and helps meet their demand sooner—all while potentially carrying less inventory to do so.

Categorization of potential benefit of IoT combined with your ERP

Category	Benefit	
Productivity	Real-time data visibility	<ul style="list-style-type: none"> ▶ Know every measured condition, real-time. Alerts and automation provide immediate notification of a condition, guide action and correct a condition without human intervention
Customer Experience	Improved coordination	<ul style="list-style-type: none"> ▶ Align the supply chain from supplier to client through improved visibility ▶ Lower inventory holdings, increase response
Productivity	Seamless supply chain	<ul style="list-style-type: none"> ▶ Visibility across the supply chain enables correction of issues and confirmation of plans ▶ Lower inventory holdings, increase response
Productivity/ Business Alignment	Reduced inventory loss/ damage/ spoilage	<ul style="list-style-type: none"> ▶ Visibility and automation reduce inventory loss, and wastage from measured negative conditions such as damage or spoilage ▶ Lower inventory holdings, increase response
Customer Experience	Increased efficiency	<ul style="list-style-type: none"> ▶ Actions can be taken faster
Customer Experience	Inventory pin pointing speed	<ul style="list-style-type: none"> ▶ Less time finding inventory speeds pick and movement of stock
Business Alignment	Reduction in data reporting errors	<ul style="list-style-type: none"> ▶ Less data errors means less unfilled orders or excess stock ▶ Lower inventory holdings, increase response
Productivity	Faster decision-making processes	<ul style="list-style-type: none"> ▶ With better data, decisions can be made both more quickly and at lower levels of the organization; closer to decision requirement
Business Alignment	Asset management utilization	<ul style="list-style-type: none"> ▶ Managing assets more effectively reduces asset requirement through increased utilization
Business Alignment	Forecasting Improvements	<ul style="list-style-type: none"> ▶ Ensures assets (time/ inventory/ capital) are appropriately planned, avoiding shortage or excess ▶ Lower inventory holdings, increase response

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Conclusion

While there is some upfront investment required in order to leverage Internet of Things technology—including the deployment of sensors and systems—there can be a significant return when done correctly. IoT is just one part of a digitalization strategy that—when combined with a cloud ERP solution—can provide your distribution business with the tools you need to compete in the digital age.

The improvements experienced in operational alignment, business process automation, and increases in customer experience can be differentiators that give you the advantage you need in this competitive business environment. The experts at Epicor can help you understand the best way to utilize IoT—where it makes sense for you and where you can get the best return for your business.

To learn more, visit epicor.com.

About Epicor

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