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## MIS 2016: THE LAUNCH PAD FOR MARITIME INVESTMENTS

# startups in shipping\*

\* ideas that could matter



# Intelligent warehousing

There are many warehouses that are still searching, picking, moving and processing the shipment either manually or semi-automatically. With IoT in picture, we can create a connected warehouse that operates 10X to 50X faster.

by Abhishek Porwal, *President & CTO, Dreamorbit*

Internet of Things is in for a surprise for Warehousing and 3PL companies. Imagine a warehouse, where only by scanning barcode of a particular shipment, machines and people can access the history and upcoming outbound & inbound delivery status, and other special instruction like “handle with care”. The warehouse workmen are warned on their smart watch of an incoming loaded forklift. In case the forklift senses a possible collision, it will apply emergency breaks and avoid the accident entirely. A warehouse where belt conveyor self-diagnoses itself and raises a maintenance request for servicing Belt Conveyor Idle automatically in the

system. A warehouse that auto-controls its energy consumption and waste management. And, imagine the amount of data that can be captured and analysed for new insights that could be applied to create better services for their customers. Here is how IoT is going to benefit warehousing and third-party logistics companies in unveiling proactive operations.

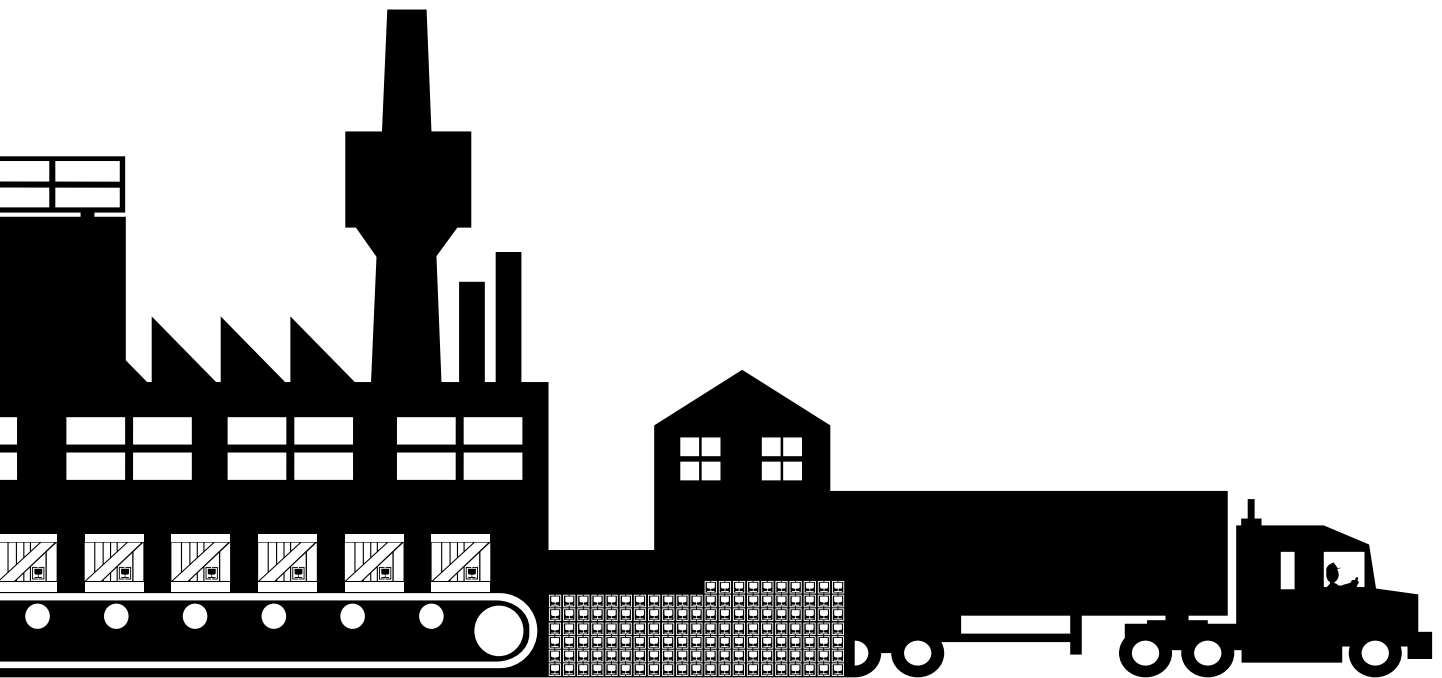
There are many warehouses that are still searching, picking, moving and processing the shipment either manually or semi-automatically. With internet of things in picture, we can create a connected warehouse that operates 10X to 50X faster.

IoT-ised Warehouse Management system is able to accept and confirm e-orders from shopping portal post cross-checking the stock and reflects a tentative date depending upon historical data trends. Internally, the WMS collates all these orders and creates picking lists for robot-cars to automatically pick containers. Proximity experiences using Bluetooth LE beacons help in indoor location mapping and locating inventory. It is also being used for indoor navigations. With Apple working on iBeacon and Google introducing Eddystone, the technology is going to improve further.

Once the shipment is ready at shipping dock, the system can check various transportations options available and schedule a delivery. The delivery information and other related documents will also be shared with stakeholders. This whole system can be monitored on real-time basis by operation manager.

## Where is my stuff? In-transit visibility of shipment

One of the key services of warehousing and 3PL companies is to keep track of the shipment at all times and update their customers periodically. The connected warehouse solution with IoT can achieve just that. Attach an RFID chip to the pallet that can transmit data over internet to the server of its location using GPS. This way all the involved stakeholders will stay updated at all times about



their shipments.

#### **Reducing damage, errors and inaccuracy in inventory management**

Warehousing is all about constant movement and in between constant mayhem, an error is always brewing in some part. With IoT in picture, warehouses operations will always be in check by the system. Real-time information flow using IoT based Warehouse management solution will decrease the likelihood of errors. This IoT based solution would bring together RFID tag, barcode tags, temperature sensors, volume sensors, order and dispatch information all in one platform to give accurate stock and pallet location. This system now can avoid erroneous scenario of dispatching an expired product even if it is stacked in warehouse. At the same time, same system will alert the distribution manager for removing the expired goods from the warehouse.

#### **Safe, safer and safest warehouses for employees**

The warehouses have to meet OSHA (Occupational Safety and Health Administration) general guidelines and citations that instruct warehouse companies for on how to handle hazardous material, manage PPE (personal protective equipment) and indoor vehicles properly. Inability to meet these points leads to not only fatalities but heavy monetary losses. IoT can be a great help here:

1. Smart Ventilation Systems using

### **IOT BASED SOLUTION WOULD BRING TOGETHER RFID TAG, BARCODE TAGS, TEMPERATURE SENSORS, VOLUME SENSORS, ORDER AND DISPATCH INFORMATION ALL ON ONE PLATFORM TO GIVE ACCURATE STOCK AND PALLET LOCATION.**

temperature, humidity and special gases detection sensors can maintain better ventilation using less power.

2. Reed Contact sensor on the loading dock doors can warn the employee to close the door.
3. Warehouses will always be properly lit using smart lighting system.
4. Proximity sensors on forklifts can detect an incoming obstacle and slow down to avoid collision.
5. Equipment in the warehouse can self-diagnose itself and raise attention. No machine can malfunction using IoT based Self Servicing feature and accidents will be avoided completely.

Moreover, the warehouses now can meet even prerequisites for Green Sustainable Supply Chains and reduce energy consumption overall.

#### **Real-time visibility and endless optimisation**

The network of sensors, mobile devices, RFID tagging equipment and various machines will give operators real-time visibility in the operations. With readily available information, functions of reconciling incoming shipments, cross-docking and sorting, order fulfillment, return management etc. are executed instantly, leading to-reduced handling cost and time, and less dock-to-dock stock cycle time.

Manually, it is impossible to direct forklift for taking best route to reach a container or direct how the pallets move throughout the warehouse. But with IoT based WMS, this is possible. Added to this with smart lighting and venting system, cost saved on energy is tremendous. With more information with connected things (IoT), your warehouse system is better equipped to optimise for better performance at lower cost. The orders are coming in like a storm and warehouse need to operate like a cyclone. Including IoT in warehousing will not just give a “super-efficient” warehouse but also a self-improving supply chain being.

It is just a matter of time that IoT-based WMS will take the center of stage and the early adopters will be reaping most of the benefits in coming future. Embracing IoT now would only mean an organisation that enjoys transparent, proactive and highly intelligent future of supply chain. [IoT](#)