IoT WoRKS™ by HCL Technologies

HCL

Unbox efficiency with intelligent warehouse operations

Smart Warehouse powered by IATM

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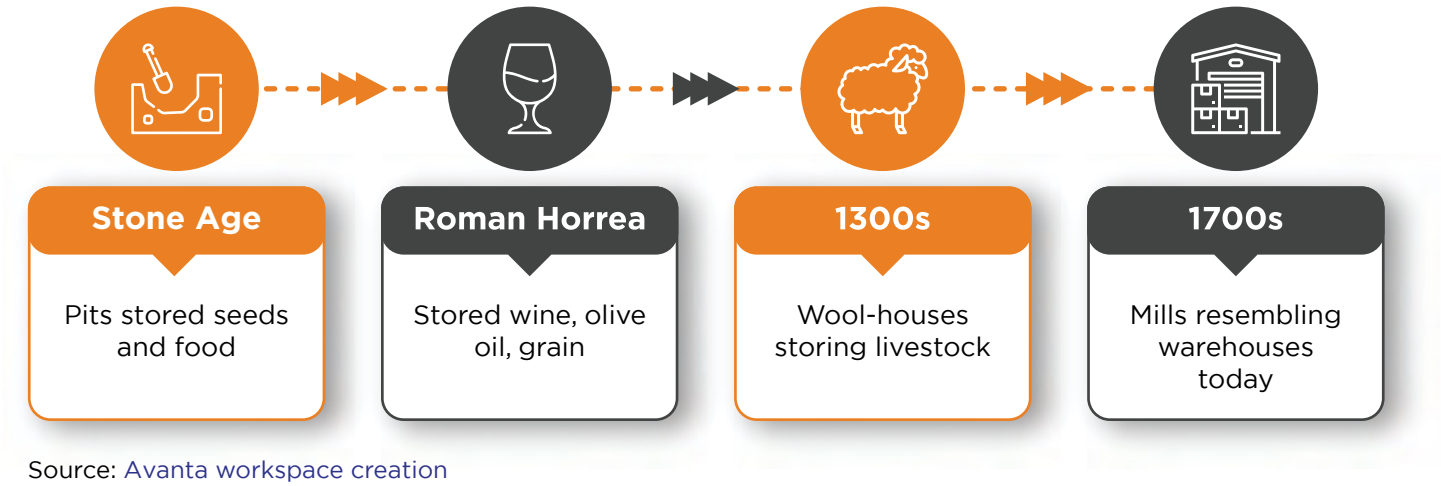
Evolution of warehouses

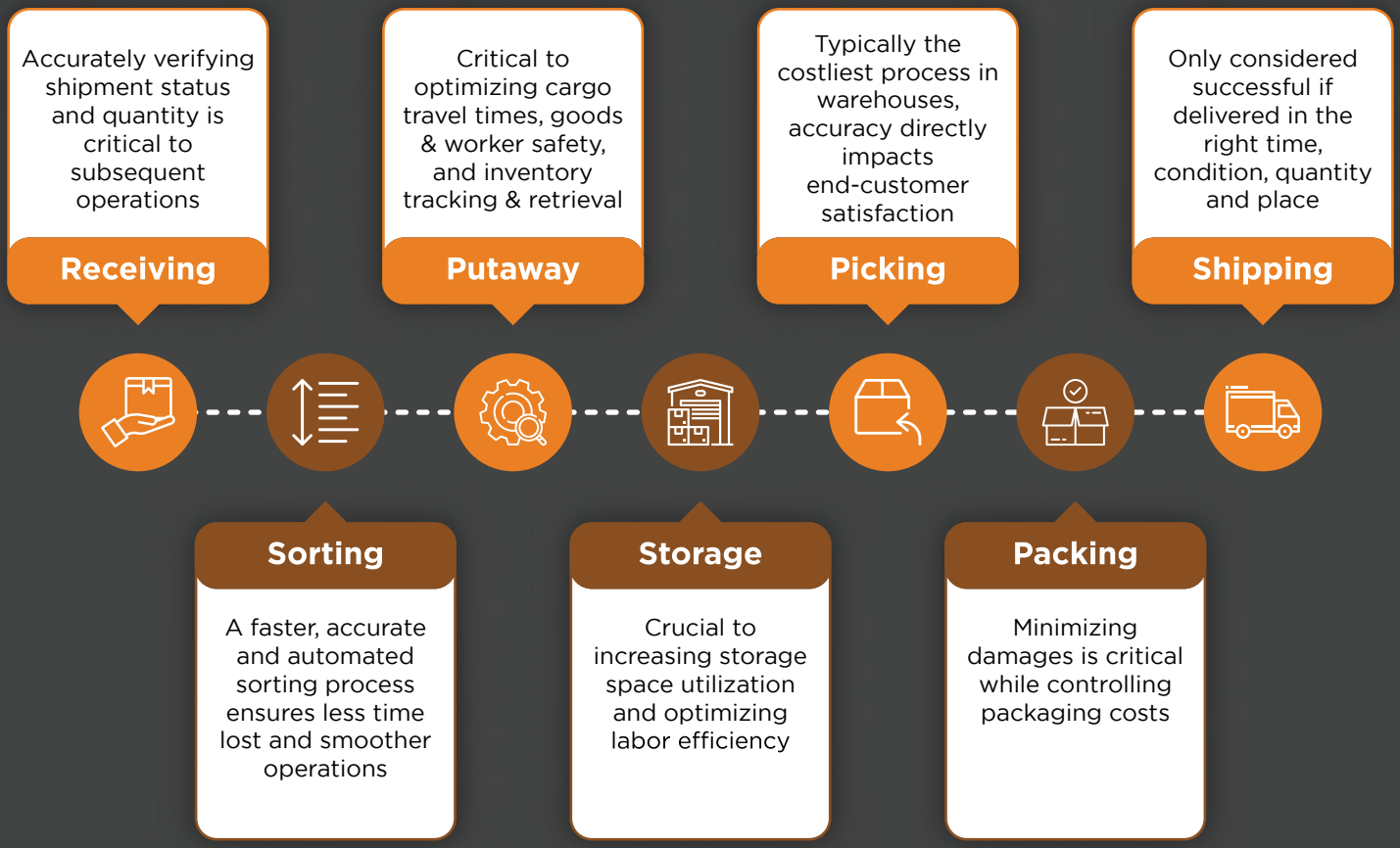


Source: Avanta workspace creation

Warehouses today are almost 3x larger that they were in 2006 – covering 33% more floor space, resulting from an increase in SKUs due to shortening product lifecycles, rapid innovation and rising end customer demands. 2015 saw an 18.5% increase in the number of SKUs handled in order fulfilment operations. Warehouse rents – as a result are almost 30% higher than in 2010s – driving technologies that can enable optimal space utilization. On the other hand, retail inventory has been historically accurate approximately 60% of the time – making it crucial for the adoption of warehouse management systems using technologies like RFID, BLE, Wi-Fi that can enable real-time inventory visibility and improved accuracy in movement and status of inventory. 2016 saw a workplace injury rate of almost 5% - underlining the importance of implementing geofencing and designating zones for workforce and equipment movement.

As same day delivery becomes more of a basic qualifier than a differentiator, modern warehouses need to have IoT-led, end-to-end, real-time visibility right from the point shipments are received to the point when they are shipped out downstream. Technologies like RFID, BLE, Wi-Fi are making it possible to track inventory movement, status, prevent obsolescence (based on the FEFO principle), monitor inventory condition, optimize safe warehouse operations, and ensure maximum efficiencies.

Warehouse operations typically comprise 7 steps



Challenges of modern warehouses

- Ensuring accuracy in inventory management: tracking pallet journey
- Optimizing space utilization for increasing efficiencies
- Maximizing resource productivity: manpower, equipment, docks
- Optimizing picking – automating sorting, putaway
- Controlling costs: keeping distribution overheads down to ensure competitiveness
- Ensuring visibility and secure workplace with minimal hazards

Smart warehouse – Drivers

Walking, manual picking can account for more than 50% of picking times

Increased adoption of Goods to People technologies is driving IoT in warehouse market to reach 19.06 Bn USD (2025E)

Costs of leveraging manual processes and systems is 31x than that of digital systems

Labor costs constitute 65% of facilities operating budgets (2016)

About the solution

Smart Warehouse powered by IATM (Intelligent asset tracking and management) by **IoT WoRKS**™ at HCL Technologies is an end-to-end offering that leverages a range of tracking technologies like RFID, BLE, Wi-Fi and cameras (among others), an (optional) on-prem IoT gateway, and Cloud & on-premise deployment options for the secure and scalable solution and can be integrated with industry leading WMSes (Warehouse Management Systems). Sensor-Reader infrastructure (Passive RFID, BLE, Wi-Fi) determines entry and exit movement and real-time location of inventory- including storage management and grouping. Capable of processing hundreds of tags simultaneously, they further enable automated end-to-end warehouse operations. API-driven out-of-the-box SAP EWM integration enable workflow automations. The solution uses a microservices based architecture and can send near real-time alerts, reminders, notifications to various stakeholders and personas.

Application areas

Smart inventory management

Sensors deployed can track all attributes of inventory storage. Inventory control: optimize inventory, automation, tracking, including smart storage and movement (driven by FEFO Logic). Proactive alerts, notifications, data-driven real-time decision making.

Smart capacity management

Automate warehouse occupancy monitoring to spot unoccupied slots in real-time. Gain insights into optimum location utilization, store similar products (brands, categories, SKUs) nearby for easy sorting & pick-up. Sensors are deployed to monitor sorting system asset usage and status. Proactive downtimes auto-alerts to warehouse manager(s) including identification of optimal capacity.

Critical asset tracking & utilization management

Gain real-time visibility into how consignments are stored & routed within the warehouse. Track goods & assets (including concentration of tagged resources). Automatically route incoming pallets to their designated storage area. Implement geo-fences to ensure secure premises.

Accident & injury prevention

Sensors combined with cameras attached to forklifts enable communication across equipment and scan the environment for hidden objects that could cause a collision. Forklifts can be programmed to slow automatically when they sense an oncoming forklift or pedestrian. Avoid accidents by using load cell/sensors to detect when a load has become too heavy or when an uneven load has been placed on the forklift.

Cross industry use cases

Shelf stock-level auto-updates and self-checkout at stores

Automate consumables, parts, tools issues & returns and faster stock checks in aftermarkets & MRO facilities

Inventory availability and automated replenishments in material stores and workstations

Features

User configurable

Warehouse inventory and asset planning across sites, storage, parts & tools

Warehouse operations lifecycle visibility

Receiving (tagging) to packing and shipping (tag-removal, if required)

Entry and exit detection

Inbound and outbound logistics

Heatmaps for dwell time & hot zone insights

can help auto-optimize expenses & time and better manage inventory storage & movement operations

Web and mobile apps

Enabling end-to-end visibility & control anytime, anywhere

Benefits

Locate critical assets & tooling equipment in 85% less search time

Automate stock & inventory management (Storage, movement, replenishment) processes – track at scale within seconds

Scalable, low-cost deployment ready solution

Track movement of assets & personnel between different zones to minimize asset loss, misplacement and accidents

Automate area-specific access control to prevent unauthorized breaches

Enhanced visibility across the entire supply chain for better planning

Who we are

IoT WoRKS™ is a dedicated IoT business unit of HCL Technologies. Our award winning, best-in-class, customer and industry specific, deployment ready solutions co-created with customers, enable them to maximize effectiveness and returns on their asset investments. Rated as a global leader in IoT consulting & services by top analysts, our solutions, enable IoT-led business transformation through creation of more efficient business processes, new revenue streams and business models that deliver measurable business outcomes. At HCL we believe that the transformative impact of IoT is realized by IoTizing the 'things', connecting the assets to a data platform and then using the data to derive business insights and taking business decisions which ultimately lead to change in enterprise's processes and people practices.

Analyst recognitions

LEADER

IDC
IDC Marketscape, IoT consulting and systems integration services, 2020

Zinnov
Zinnov Zones for connected assets & connected logistics, 2019

ISG
ISG Provider Lens™ for IoT managed services, USA 2019

ISG
ISG Provider Lens™ for IoT consulting and services, USA 2019

ISG
ISG Provider Lens™ for IoT in manufacturing, USA 2019

DDX
Accelerator for device IoT-ization

Pangea
Data Analytics platform

Idea gateway
Reference Design for an intelligent device

Platform acceleration suite
Build next generation cloud services

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