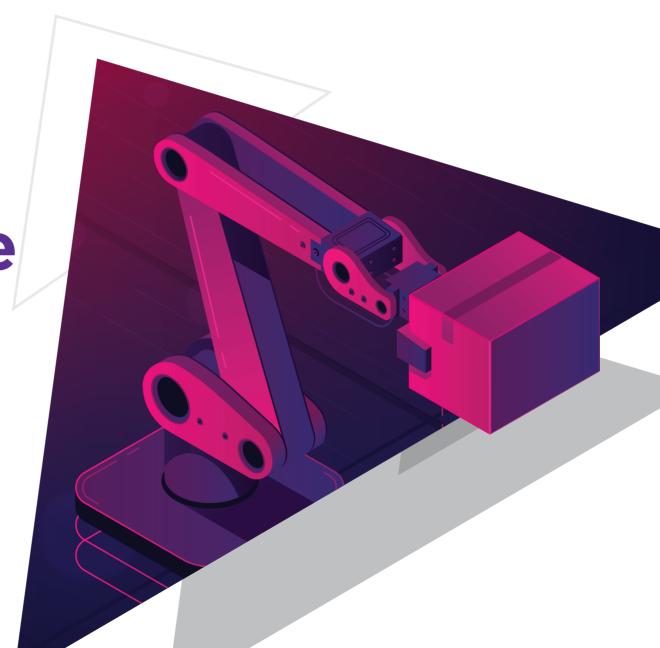


Warehouse of the **Future**

Creating a Digital Workforce, Turning Vision into Reality



www.hcltech.com

Thanks to e-commerce driven challenges, retail customers are demanding speed, innovation, and delivery of non-traditional service lines (click-to-carry and same-day-delivery expectations) while industrial shippers are demanding seamless and cost-effective supply chain solutions. Logistics companies are responding with value-added, flexible services to maximize opportunity and monetize

information.



Labor Costs comprise 50% of warehouse costs and workers are difficult to find



Transport Optimization to improve speed of order fulfilment

Business Challenges



Storage Efficiency maximize usage of cube space



Inventory Management for availability and critical order fulfilment



Picking Efficiency to improve speed of order fulfilment

Industry 4.0 Framework-based Warehouse of the Future

Warehouse automation is key in meeting these customer expectations. The warehouse automation market currently stands at \$14B and is expected to grow approximately 12% through 2025 (source: www.thelogisticsig.com).

HCL's Warehouse of the Future solution enables customers to reduce their warehouse operational costs by leveraging comprehensive automation across all part of the warehouse operations. It brings together investments in automated storage and retrieval systems, automated guided vehicles, autonomous mechanical robots, and other digital infrastructure assets for seamless flow of information enabling real-time, exception-based decision making. The solution also leverages HCL's omni-channel conversational platform, OmniVerse™ and several process patents for improving productivity across the value chain.

Solution highlights

Customer Experience

- Real-time inventory updates
- Proactive updates on shipments
- · Technology agnostic solution
- Proven excellence in through leadership capabilities

Operational Efficiency

- Enhanced stock turnaround ratio
- Optimized utillization of resources
- · Improved order to ship cycle time
- State-of-the art warehouse

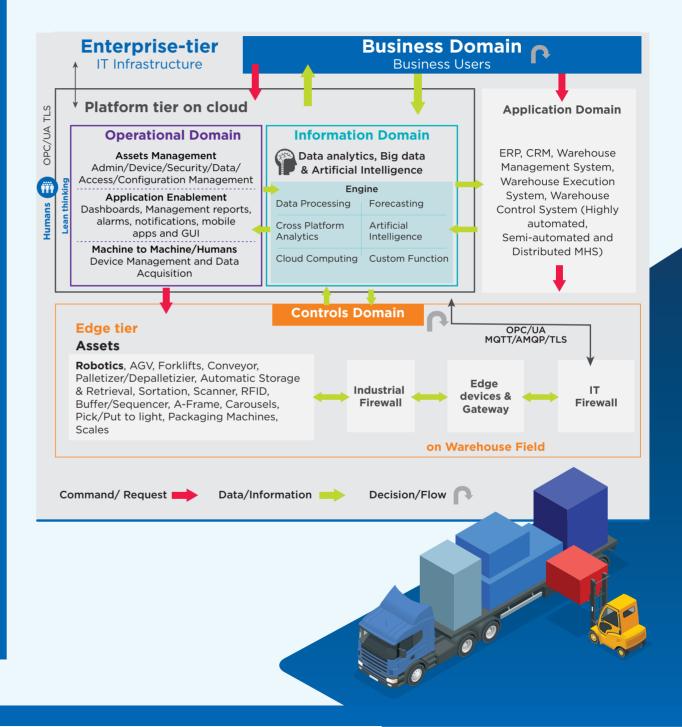
Enterprise Visibility

- Complete end-to-end transparent process
- Proactive updates and effective decision making
- Automated and system-driven process
- Reliable, accurate and real-time inventory updates

New Business Model

- Holistic and innovative business ideas
- High focus on business encirclements
- Strategic services and partnership
- Collaboration ideas and best-in-class solutions

Reference architecture: Warehouse 4.0



Impact of Process Patents

Goods on pallets or All pallets received Goods placed on a Slotting is a process Half pallets/cases roller cages to be need to get conveyor are of sorting the are moved to unloaded. wrapping removed automatically placed prioritization of a buffer for in a AS/RS- solution cargo based on SKU easier picking Unloading Dewrapping Put MH to Slotting goods pallets away case buffer Case picking Warehouse Roller Cage/ & palletizing **Picking** Pallet Loading optimization Pallets or roller cages Goods are picked Single SKU kitted Goods on a conveyor placed on a to be picked and according to together to create a temporary platform standard/mixed released sales second SKU stored and loaded on truck. palletized order again and finally picked

Patents

(1) Slotting(2) Optimization

(3) AR - Loading / Unloading(4) AR - Storage / Retrieval

(5) AR - Inventory Management

For more details please write a mail to amit.nagar@hcl.com



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Case Study



Implemented a new state-of-the-art warehouse management system for improved tracking, storage, and shipment of goods across **300+** global locations that led to improved customer experience. Cost reduced by **25%.**