Addverb Technologies Pvt Ltd.

Addverb Technologies provides Robotic Integration, Warehouse Automation & Industrial IoT solutions by leveraging Industry 4.0 technologies. Our extensive experience in the field of intralogistics automation enables us to design the best solution based on the requirement of our customers. We provide customizable, modular, robust and innovative solutions to cater to the needs of an increasingly digital supply chain. We deliver the modern warehouses of the future, Today.
Inclusion of eaches picking in the DC

The DC should serve around 4K-5.5K customer orders every day, that comes down to 18K-25K cases which in turn comprise 8L eaches. In addition, the system should sustain a demand surge of up to 11L eaches on a peak day.

To ensure timely delivery to the customers
As overnight the orders need to be fulfilled & dispatched with absolute accuracy.

To keep bare minimum manpower intervention
To fulfil the stated objectives by client, a team of passionate engineers were assigned & they analyzed the warehouse layout, data, previous practices..etc & solved the problem step by step as noted down below:

1. **SKU Profiling:** SKU profiling is done through analysis of past 6 months data provided by the client. Accordingly, the SKUs are divided into A class, B class, and C class on the basis of their velocity & volume & a different storage mechanism has been proposed for each of the class.

2. **Optimal Storage Solution:**
   - ‘A’ class SKUs which are fast moving with large quantities have been picked through case picking and are stored in pallet racks. Client DC had around 50 SKUs under ‘A’ class category.
   - ‘B’ class storage area has approx. 350 SKUs, which are stored in pallet racks as well as flow racks. Flow racks have pick faces from where picking will happen on the broken cases.
   - ‘C’ class items are stored in carton shuttle shelving area and output from here will flow to the picking zone of ‘C’ class items.

3. **Picking Strategy with Optimal Material Flow:**
   Customer order crates which consists of A, B and C class items will travel through first C class, then A class and then B class area to the order storage area.
   Orders that consists of only A class & B class items, customer order crates induction happens at a separate junction and they travel from A class & B class area to the order storage area.

4. **Order Sequencing & dispatching:**
   At the Order Storage Area, orders will be sequenced on the basis of route planning & truck availability. Orders will be retrieved from the shuttle storage area based on the priority and they will be dispatched.
Overall the solution consists of:

- **Overhead Conveyor**: 180 units
- **Vertical Lift**: 11 units
- **Carton Shuttles**: 51 units
- **Pick to Light**: 654 units
- **Pick by Voice**: Replenishment for A&B class items
- **Diff types of Conveyors**: MDR rollers, Idle rollers, Gravity, Telescopic conveyor, Overhead
- **Pop-ups**: 47 units
**RESULTS**

- **Case Opening Time:** 14 sec average to open a case. A & B class would need additional manpower to open cases.

- **Move Time:** From A class to B class it is 7.49 sec per SKU; for B class it is 2.14 sec per SKU, and for C class it is 0 sec.

- **Picking Rate:** Average Pick is 2.87 eaches per sec.

- Near the C class storage shelving - the system ensured no blockage at its full working load.

- Overall a picker could achieve a pick rate of 9.5K eaches per hour, hence the objective of 7,50,000 eaches could be achieved everyday.

- **Load distribution reduces the order process time at any particular station by distributing 1 customer order to 2,3 picking stations.**

- Overall a picker could achieve a pick rate of 9.5K eaches per hour which is x% higher than the conventional paper-based picking.

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**The key constraints & the solutions in the entire process are:**

- **Maintain Speed & Accuracy with reg to customer orders**
  - Quality Check which checks the weight & any physical distortion of the product.

- **Frequent changes in goods classification**
  - Goods classification changes often due to seasonality, demand surges.. etc, however our WMS & WCS are well equipped to handle dynamic allocation.

- **Manpower adoption to the technology**
  - Training was provided to the workforce who are going to work with our automation systems & ensured a smooth transition.

- **Need to have high uptime of > 98%**

- **To ensure fool-proofness of the system & to eliminate possible bottlenecks**
  - To gain customer confidence we ran the random orders in our simulation system which is close to the peak demand & we infeeded variables based on the physical study (Time Motion study) performed at our facility.
WHY ADDVERB?

End-to-End solution orient approach - We study your entire factory/warehouse layout before proposing a solution for best operational efficiency

World class products with highest quality standards

Our design withstands wide temperature variations and other contaminations

Dedicated team of quality & experienced engineers & experts for client through-out & after-implementation

Highest Quality Standards - Procurement of finest quality of raw materials & modern machines

WMS

Conveyors

AGVs

AddLight

Pallet Shuttle

Sorters

Turn Tables

AS/RS