



Industry 4.0

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



Addverb Technologies Pvt Ltd.



Addverb Technologies provide intra-logistics automation solutions based on industry 4.0 technologies & is a leading player in Robotics, Warehouse Automation, Industrial IoT & Software solutions for Warehouses and factories. A detailed solutions suite includes mother-child shuttle, pallet shuttle, carton shuttle, AS/RS; material movement solutions like AGVs, conveyors; advanced picking technologies like pick to light, pick by voice; warehouse softwares like WCS, WMS & various other Industrial IoT solutions that enable asset tracking, predictive maintenance and higher efficiencies.



ONE OF THE LARGEST INDIAN FMCG COMPANY

Client is one of the largest FMCG players in India operating across multiple business segments like home care, personal care, beverages, packaged foods, refreshments and is a part of everyday life of millions of consumers across India. The company has a large distribution network covering millions of consumers across the rural & urban areas of the country. Company reaches the retailers through multiple sub points in between like wholesalers, distributors, stockists and company depots. It works on the vision of making people lives better by making them feel good, look good and get more out of life through their products.

The Problem/Existing Situation

Earlier client used to operate through distribution model, where registered distributors used to get stock from client's warehouse and then they will distribute to the retail outlets. Now, client wants to replace the distributor model by directly serving the retail outlets from its own warehouse. However the challenge here is, their DC handles only cases whereas retailers order in eaches. In the distributor model, breaking the cases into eaches is done by distributor and with the new system, they intend to do this at their DC. Before panning this project at a large scale, they decided to do a pilot project at one of their warehouses. This is where Addverb stepped in.



CHALLENGES

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



ADDVERB SOLUTION



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

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

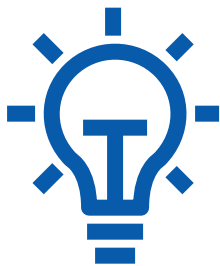
Manpower adoption to the technology

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.



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.

WHY ADDVERB?

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

01

Our design withstands wide temperature variations and other contaminations

02

World class products with highest quality standards

03

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

04

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

05

