

# IRIS Warehouse Optimization

Optimize. Observe. Orchestrate.

## Typical Operational Challenges in Warehouses

- ⚠ Labour cost
- ⚠ Customer service level agreements (SLA)
- ⚠ Price competitiveness
- ⚠ Fulfilment complexity
- ⚠ Legacy solutions



Picking operations in warehousing:  
**55%** of total operations cost



Dead-time or travelling time  
in operations: **35%**

## IRIS Warehouse Optimization Supercharge Warehouses

Use A.I./M.L. to increase  
operations productivity, enable scale & reduce costs  
in warehousing

### Key Benefits

-  Increase picker efficiency & warehouse velocity
-  Zero structural/operational changes
-  Simulate operations effectively before implementing change
-  Improve price competitiveness
-  Increase business expansion with minimal capital investment



### Business Outcomes

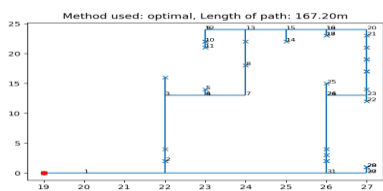
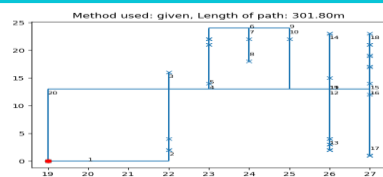
**Up to 60%**  
Increase in lines per hour

**Up to 30%**  
Reduction in labour

**Over 40%**  
Average productivity gains



## IRIS Router



## ACHIEVE THE SHORTEST PATH ACROSS ALL JOBS

IRIS Router re-sequences an existing pick-list to achieve the shortest picking path across all jobs in the pick-list. Unlike existing solutions, IRIS Router provides global optimization of all jobs as opposed to 'greedy' approaches.

### Key Benefits

- ✓ Optimize up to 1,000 aisles
- ✓ **Average travelling distance reduction of 40%** vs Global Top 5 WMS systems.

## IRIS Batch



Total: **573 picklists**



Total: **144 picklists**

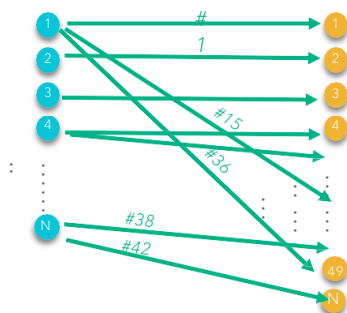
## ACHIEVE THE BEST COMBINATION OF JOBS FOR ALL PICK-LISTS

IRIS Batch intelligently selects existing jobs to obtain the best batch of jobs. IRIS Batch reduces redundant travelling by allowing pickers to pick multiple items from multiple orders in an optimal combination.

### Key Benefits

- ✓ Very effective for short pick-list operations, e.g. e-commerce
- ✓ Optimal productivity specific to operational requirements e.g. parameters such as product dispatch time and item dimensions
- ✓ **Average distance reduction of 60%** for short-picklists vs Global Top 5 WMS systems.

## IRIS Pax



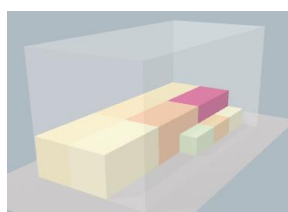
## ACHIEVE THE BEST ALLOCATION OF HUMAN RESOURCE

IRIS Pax dynamically allocates human resources to tasks by identifying task and manpower requirements.

### Key Benefits

- ✓ Predict optimal manpower requirements to achieve balanced workloads at all levels.
- ✓ Dynamic labour allocation based on business priorities
- ✓ **Average efficiency gain of 30%** vs traditional manpower planning techniques and systems.

## IRIS Slot



## ACHIEVE THE BEST PUT-AWAY STRATEGIES

IRIS Slot optimizes item placement and put-away strategies based on current and forecasted demand patterns.

### Key Benefits

- ✓ Determine current bin utilization and slotting strategies within bins
- ✓ Predict and get recommendations for future item locations
- ✓ **Achieve average bin utilization of 90%**



Customer A



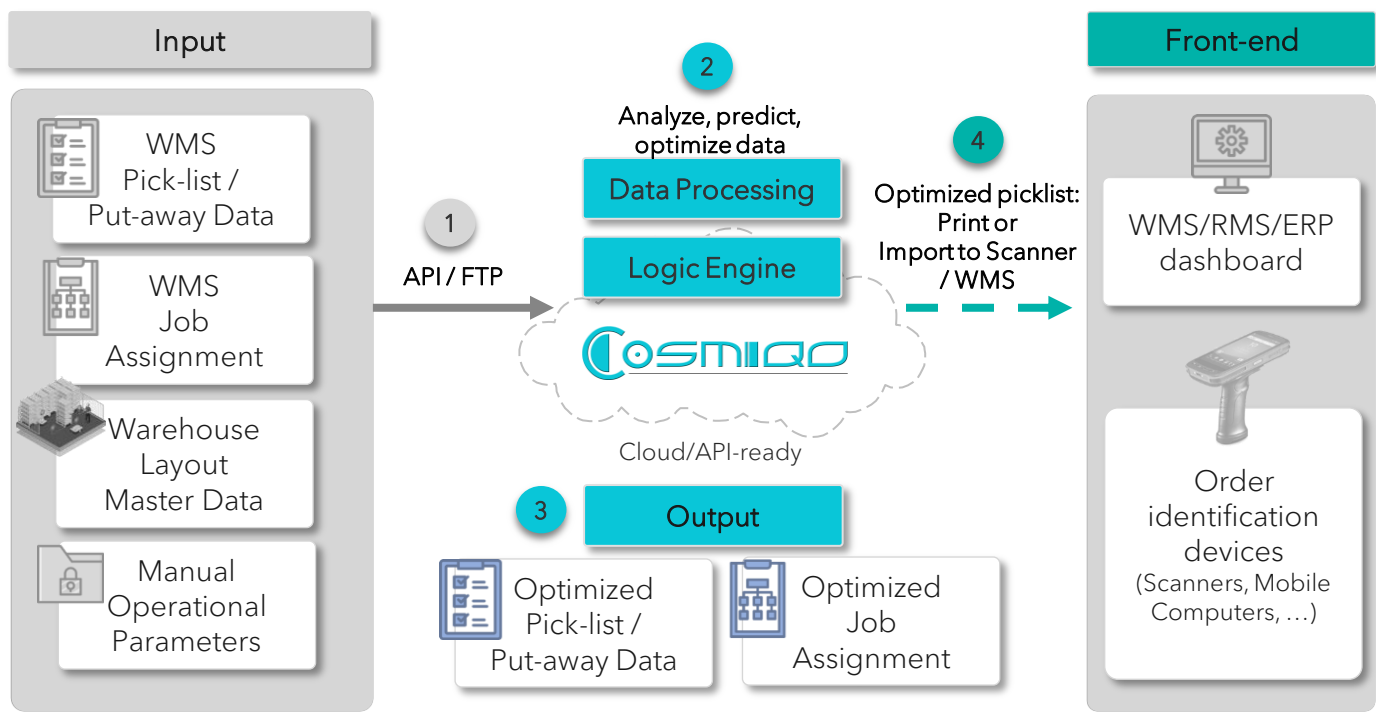
Customer B



Customer C

Nature of Industry	Fast-fashion/Apparel	Health & Beauty	Manufacturing/ Electronics
IRIS Module used	IRIS Router/IRIS Batch (B2B) IRIS Router (EC)	IRIS Router	IRIS Router
Productivity Gains (average reduction in walking distance per month)	60% (B2B) /40% (EC)	23% (B2B)	22% (B2B)
Type of Operations	B2B/B2C E-commerce	B2B	B2B/factory logistics
Country of Operations	Global enterprises with warehouse operations in Singapore		
Footprint of picking area (sqft)	135,000	35,000	24,000
Volume of Picks (per month)	~1,200,000	~1,000,000	~500,000
Current WMS System	In-house WMS built on AS400	SAP EWM	SAP EWM
Picked items (unit)	Eaches: loose packs into cartons/single-items		

Experience proven business transformation in a few simple steps



\*Productivity gains relative to current operations with optimization from existing WMS.  
Figures shown relate to past performance. Past performance is not a definitive indicator of future results