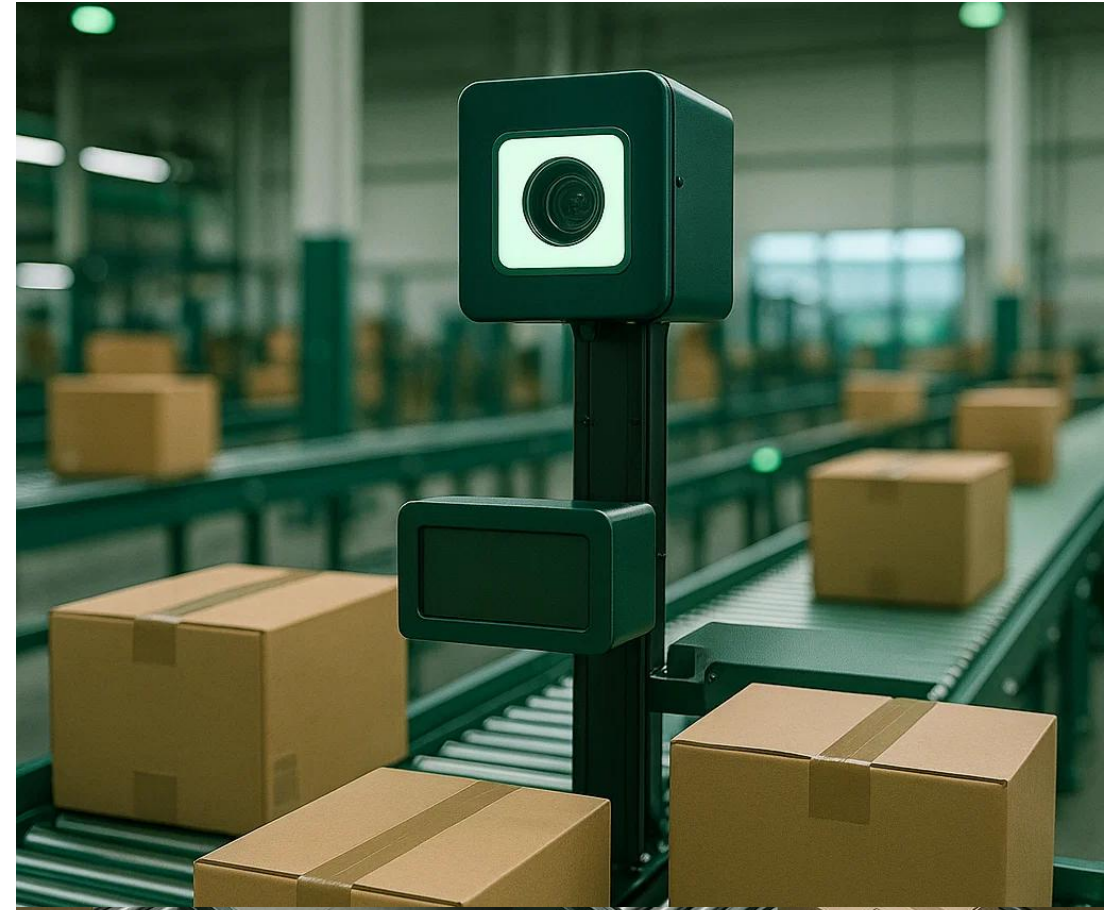**AssociatedEngineers**

DWS Sorting System

Industry: E-commerce, 3PL warehousing, parcel hubs, fulfillment centers

Solution: Automated parcel routing based on integrated dimensioning, weighing, and barcode/QR scanning.
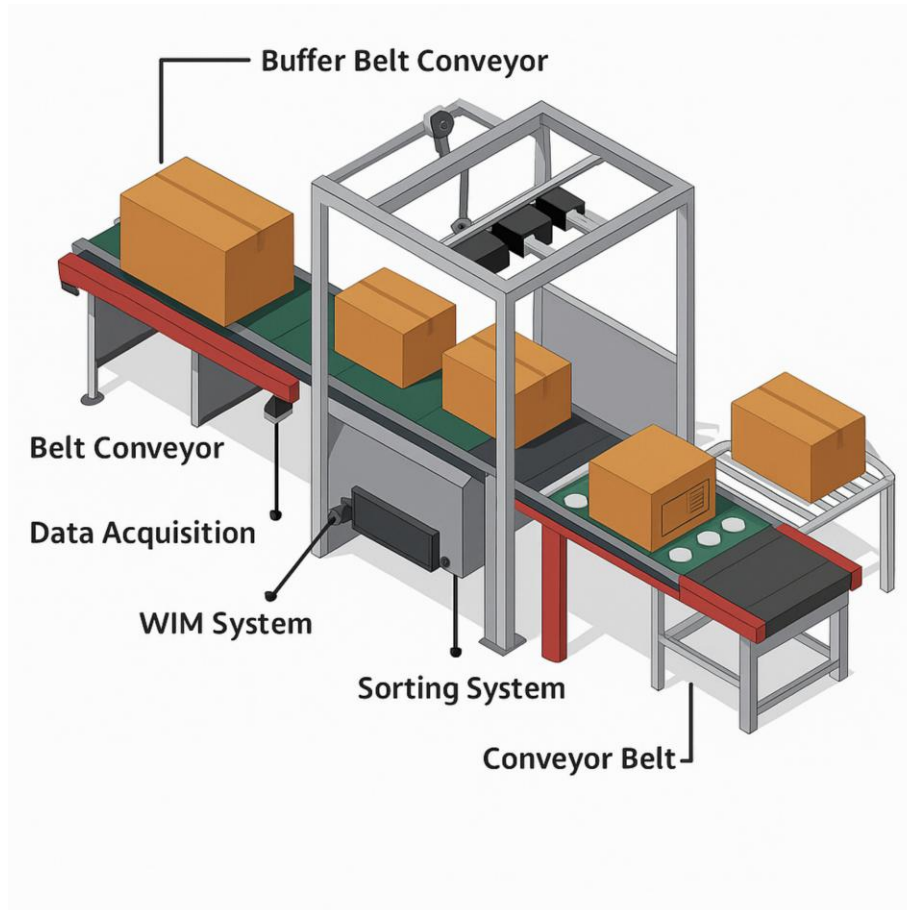
Where It Fits – Industry Applications

Automation is crucial where volume meets complexity:

- E-Commerce fulfillment centers with SKU diversity

- Logistics companies handling multi-destination dispatch

- Parcel hubs requiring real-time dimensioning & routing

- B2B and B2C mix operations

- Sites with high daily order fluctuations

What is DWS Sorting?

Buffer Belt Conveyor

Belt Conveyor

Data Acquisition

WIM System

Sorting System

Conveyor Belt

DWS sorting is a rule-based automation process where the barcode is identified using a scanner.

The identified code data is transferred to the Warehouse Control System (WCS), which returns the sorting location.

The PLC then initiates the sorting process automatically.

What Is DWS Sorting?

DWS = Dimension + Weight + Scan

Dimension: L × W × H of every carton captured in motion

Weight: Dynamic weighing with accuracy ±50g

Scan: Barcode / QR / Text (OCR) read using vision system

Logic: Decides destination lane using WCS or internal PLC

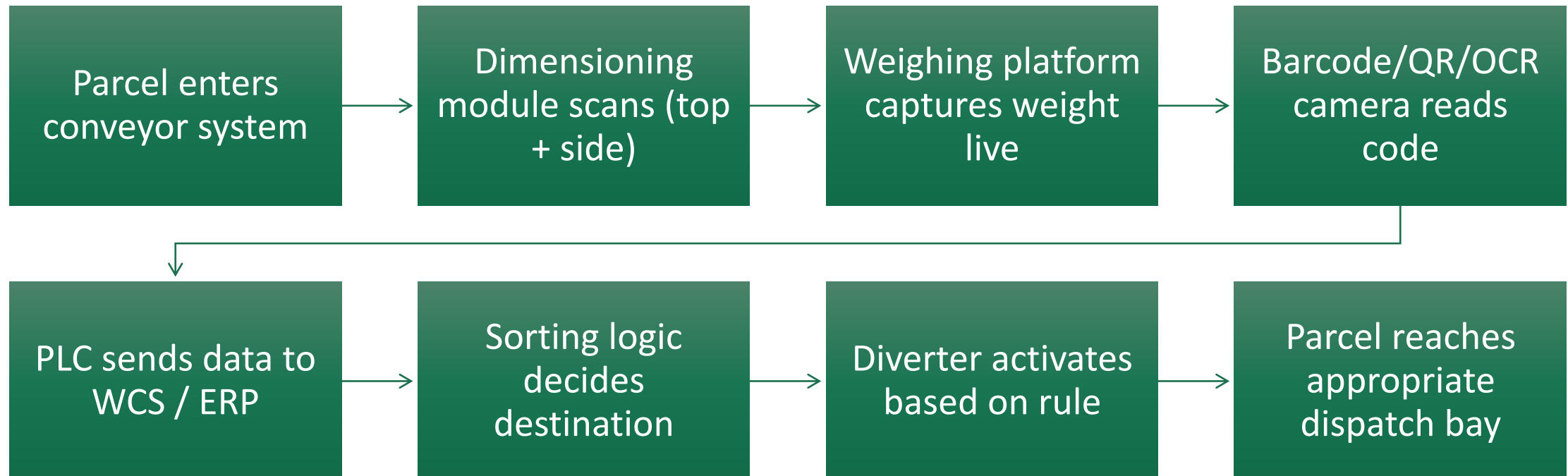Sort: Routed to correct bin/lane for shipping

Why It Matters

Traditional systems rely heavily on manual sorting or one-factor routing.

DWS solves:

- Overcharges due to under-dimensioned parcels

- Human errors in dispatch binning

- Delays from relabeling or rescanning

- Poor carrier compliance

- Rejections due to mismatched dimensions or weight

System Process – End-to-End Flow

Parcel enters conveyor system	→	Dimensioning module scans (top + side)	→	Weighing platform captures weight live	→	Barcode/QR/OCR camera reads code

PLC sends data to WCS / ERP	→	Sorting logic decides destination	→	Diverter activates based on rule	→	Parcel reaches appropriate dispatch bay

Technology Stack

Vision System: 20MP area scan camera + controlled lighting
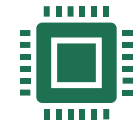
Weigh Scale: In-motion weighing up to 50 kg

Dimension Sensors: Infrared or laser-based

Control Unit: PLC with I/O expansion

Software: WCS / ERP link, dashboard, alerts

Interface: HMI touch panel or PC-based control

Vision Intelligence – OCR + Barcode

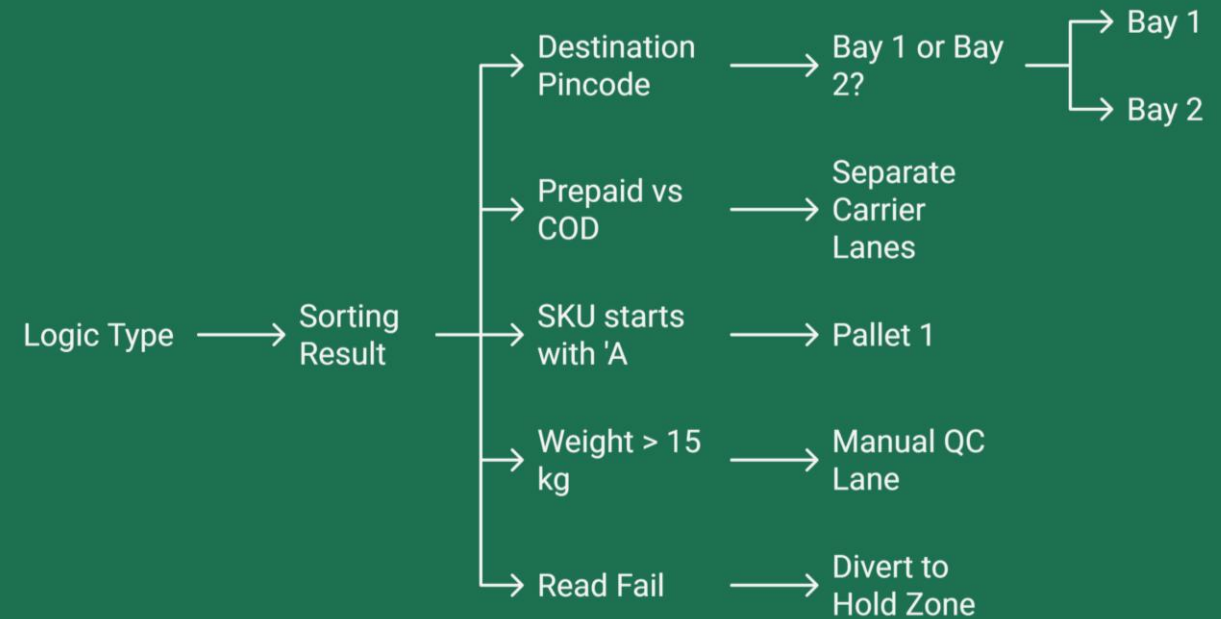Reads barcodes, QR, DataMatrix — even with poor print

OCR reads printed SKU or ID without needing barcodes

Handles faded, curved, or high-glare labels

Integrates AI-based correction for ambiguous characters

Allows multi-format code configuration

Example Sorting Rules

Output Architecture

Diverters: Paddle, push-arm, or air jet

Conveyors: Sync-belt with stop-start logic

Signal Flow: Camera → Logic → Diverter

Feedback: Dispatch confirmation sent to ERP

Logging: Image capture + sort event recorded per carton

Configuration Options

Single-lane, compact DWS modules

Multi-lane diverging conveyors

Retrofit kits for integration on existing lines

Telescopic conveyor interface

Manual override station with alerts

Supported Industries

Fashion & Apparel

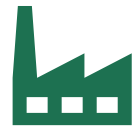Electronics & Parts

FMCG & Co-packers

Postal Parcel Hubs

Multi-vendor Fulfillment

Business Impact

Dispatch readiness time improvement

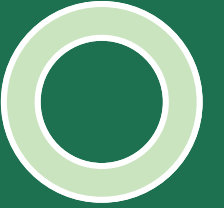Reduction in number of operators on production lines

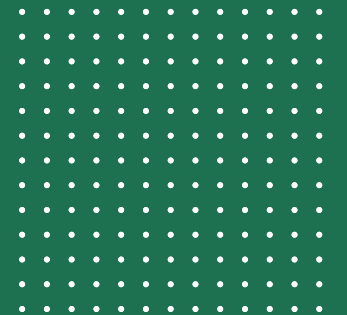SKU traceability across bays

Reduction in mis-sort losses

Carrier compliance improvement

Let's Build It Together

Book a demo or share your current dispatch process.

We'll design a system tailored to your line.

www.associatedengineers.co.in