

Materials -Technology 2 – Smart scales and barcode scanning.

The smart scales and barcode scanning are two additional technologies that can be added to a digitised recipe system typically driven from the specification Master Data in the ERP through an MES system to the shop floor. Quality compliance checks can be integrated into the production workflow to prevent errors from occurring. In the DMC use case, each ingredient must be scanned to ensure it is correct and usable before the ingredient tipping process can progress to the next step. For each ingredient, the weight is also checked against the recipe to ensure the only the correct quantities can be added to the Batch tank.

| Pros | Cons |
|---|---|
| <ul style="list-style-type: none"> • Accurate ingredient type and quantity recorded against the batch. • Prevent the wrong ingredient and quantity being added. • Automated consumption of inventory can be delivered. | <ul style="list-style-type: none"> • Shop floor to ERP integration required. • Additional hardware required. • All ingredients used need to be included in the ERP system. |

Technology Cost range: \$30,000 - \$60,000, depending on how extensive and elaborate the business process and inputs are. Additional cost may be incurred in hardware, networking and designing forms.

DMC Technology Cost: \$30,000

DMC Cost Assumptions:

- Limited to single application.
- Existing ERP and MES systems.
- Internal costs for end user staff involvement have not been included.
- Single design and build iteration.

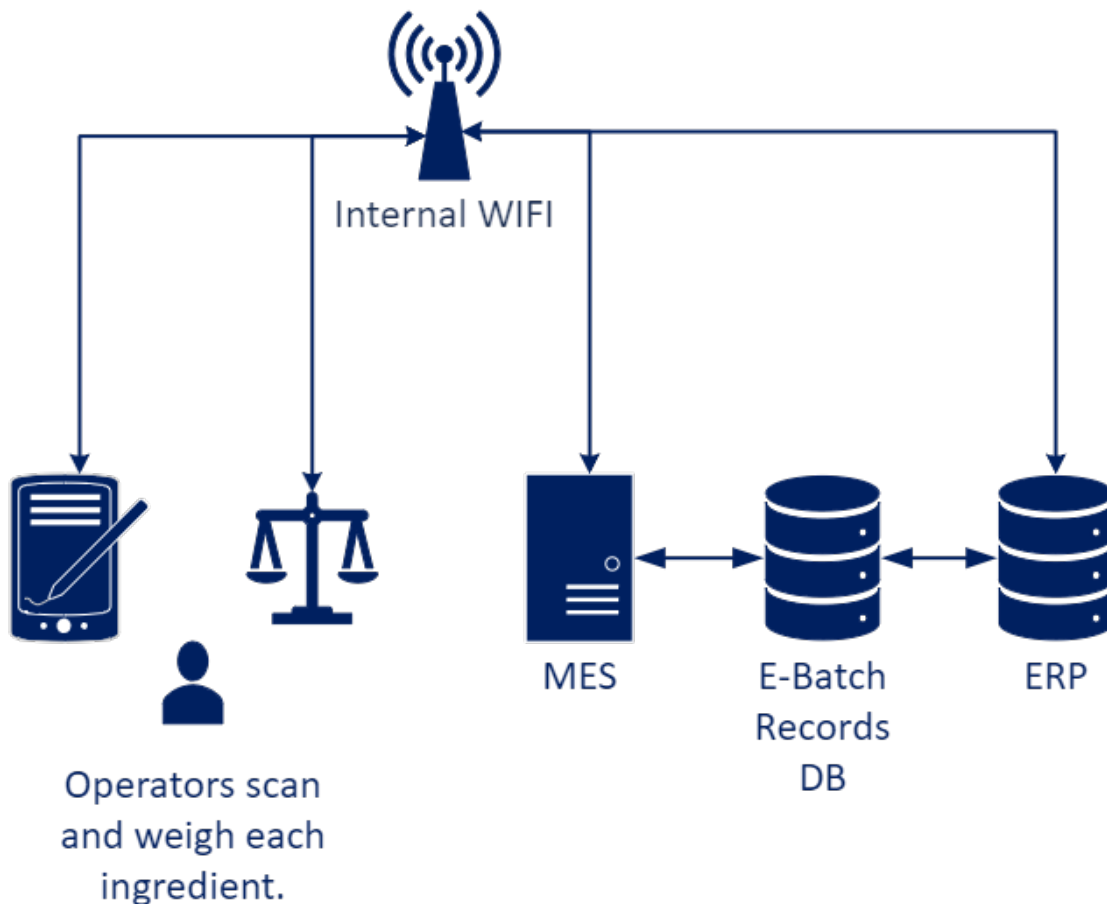
What situation would this technology usually be adopted in? Smart scales and barcode scanning systems validate input ingredients against predefined specifications, ensuring accuracy and consistency in product formulation. By automating ingredient verification processes, this technology reduces errors, enhances traceability, and improves product quality control.

RoI Considerations: Costs may include smart scale and barcode scanner procurement, integration, and training expenses. The benefits may include reduced formulation errors, improved product consistency, and enhanced traceability contribute to ROI. Smart scales and barcode scanning systems ensure accurate ingredient verification, leading to improved product quality control and reduced waste.

What skills are required to implement & run this tech? Staff should be trained in smart scale and barcode scanner operation, data entry accuracy, and quality control procedures. Calibration and troubleshooting skills may also be required.

Pre-requisites for successful adoption: Preparation involves assessing quality control needs, identifying ingredient verification requirements, and selecting suitable equipment solutions.

Typical Tech Stack



Who can help with this technology? Knowledge of the ERP system and Bill of Materials set up in master data. Integration with ERP systems and networking hardware where required.

What to google when researching this technology? Research topics include smart scale and barcode scanner technologies, integration options with manufacturing systems, and regulatory compliance requirements.