



# K2 Data Systems, Inc.



## Case Study Web-Based Manufacturing Execution System (MES) ERP Interface / Product Tracking

**Industry:** Food Manufacturing (cheese)

**Software:** Wonderware ArchestrA/Intouch, .Net Web Development, Microsoft SQL Server, ERP Integration

**Description:** A food manufacturer selected Microsoft's NAV as its new ERP system. An MES application was needed to integrate the new ERP system with plant floor operations, the existing reporting system, and additional business systems. K2 was hired to design and develop the MES system.



**Project:** A custom web-based application was chosen for its flexibility, low-cost, and extensibility. K2 designed and built a web application using the latest technologies, including ASP .Net, MVC, Java, and SQL Server. The application was integrated into Wonderware's powerful ArchestrA framework and deployed to the plant floor via Intouch. The application communicates with Microsoft's NAV ERP system as well as other business systems, allowing the application to take full advantage of all available data.

The application tracks product consumption and routing, and manages inventory creation, movement, and inventory – all tied to orders. Input to the system is via barcode scanners, manual input, and automated processes. It also facilitates QA data input and links to reports.

**Ice Cream Mixing**

Work Order: XY2123    Batch Qty: 8,000.00 GAL    WO Qty: 8,000.00 GAL    Qty Prod: 8,000.00 GAL

Item Code: FLAV01 - WHITE MIX    Fat Content: 11.0%

Item Code	Quantity	UOM	LotID	Consumables	Item Code	Quantity
ABC Product Ingredient 01	15.00	LB	X001	ABC Product Ingredient 01	15.00	
ABC Product Ingredient 02	133.00	LB	X002	ABC Product Ingredient 02	133.00	
ABC Product Ingredient 03	78.00	LB	X003	ABC Product Ingredient 03	78.00	
ABC Product Ingredient 04	91.00	LB	X004	ABC Product Ingredient 04	91.00	
ABC Product Ingredient 05	11.00	LB	X005	ABC Product Ingredient 05	11.00	
ABC Product Ingredient 06	15.00	LB				
ABC Product Ingredient 07	195.00	LB				
ABC Product Ingredient 08	53.00	LB				

Available Loss: 001    Qty: 480    Exp Date: 12/16/13

LotID: \_\_\_\_\_

Start Batch    Verify Batch    QA Test Entry

Complete Batch

**Cheese Make History**

Batch #	Order #	Color	Station	Station	Station	Temp at	Cooked	Drip	12.24%	12.24%	12.24%	12.24%	12.24%	12.24%	12.24%	12.24%	12.24%	12.24%	12.24%
1	A12	9000	3400	115700	45.00	6.00	6.31	20.00	0	30.00	4.00	3300	✓	75.00					
2	A12	9000	3400	123000	45.00	6.00	6.30	21.00	0	30.00	4.20	4050	✓	75.00					
3	A12	9000	3400	111400	45.00	6.00	6.42	6.33	21.00	0	30.00	3.00	4400	✓	75.00				
4	A12	9000	3400	146000	45.00	6.00	6.31	20.00	0	30.00	3.90	5200	✓	75.00					
5	A12	9000	3400	120000	45.00	6.00	6.31	20.00	0	30.00	3.90	5200	✓	75.00					
6	A12	9000	3400	123000	45.00	6.00	6.32	21.00	0	30.00	3.80	5000	✓	75.00					
7	A12	9000	3400	135000	45.00	6.00	6.44	6.35	20.00	0	47.00	4.00	7100	✓	75.00				
8	A12	9000	3400	223000	45.00	6.00	6.43	6.26	21.00	0	30.00	3.80	5500	✓	75.00				
9	A12	9000	3400	226000	45.00	6.00	6.43	6.26	21.00	0	30.00	3.80	5500	✓	75.00				
10	A12	9000	3400	302000	45.00	6.00	6.43	6.26	21.00	0	30.00	3.80	5500	✓	75.00				
11	A12	9000	3400	312000	45.00	6.00	6.43	6.26	21.00	0	30.00	3.80	5500	✓	75.00				
12	A12	9000	3400	317000	45.00	6.00	6.43	6.26	21.00	0	45.00	3.80	7300	✓	75.00				
13	A12	9000	3400	335000	45.00	6.00	6.44	6.35	20.00	0	47.00	4.00	7100	✓	75.00				
14	A12	9000	3400	334000	45.00	6.00	6.39	6.31	20.00	0	35.00	3.80	7400	✓	75.00				
15	A12	9000	3400	431000	45.00	6.00	6.39	6.31	20.00	0	45.00	4.00	8200	✓	75.00				

**Whey Packaging**

Work Order: COR1246789    Pallet Qty: 48.00 BAG    WO Qty: 15443.75 BAG    Qty Prod: 80.00 BAG

Item Code: 0000 - 2# DRIED WHEY    Variant: 1000000000

Item Code	Quantity	UOM	LotID	Consumables	Item Code	Quantity
MP0007 - SKIM WHEY - KOSHER	4567.89	LB	X001	XM00101 - SKIM WHEY POUCH (BAG BLUE)	50.00	
MP0008 - WHEY POUCH (UNPACKAGED)	17.89	LB	X002	XM00101 - SKIM WHEY POUCH (BAG BLUE)	50.00	
NCA1204 - LACTOSE	56.78	EA	X003	XM00101 - SKIM WHEY POUCH (BAG BLUE)	50.00	
NCA1204 - LACTOSE	6.78	EA	X004	XM00101 - SKIM WHEY POUCH (BAG BLUE)	50.00	
KCASE78 - PLAIN BAGS	1.00	EA	X005	XM00101 - SKIM WHEY POUCH (BAG BLUE)	50.00	

Available Loss: \_\_\_\_\_

LotID: COR12468789

Create Pallet    Verify Pallet    QA Test Entry

### Specialties

- Manufacturing Intelligence
- Reporting Systems
- HMI's
- Control Systems

### Oregon

222 1<sup>st</sup> Avenue West, Suite 200  
Albany, OR 97321  
541-223-2905

### Washington

2442 NW Market Street #216  
Seattle, WA 98107  
206-316-7165