

Enabling Operators with Real-Time Data

For this project, INS3 sends data to a Data Lake in the Cloud where they do Predictive Analytics and create Prescriptive Models - we then deliver Reports, Dashboards, Scoreboards, Alerts and KPI's!



10-20%

Increased capacity



10-20%

Efficiency gains



10-20%

decrease in waste & giveaway

Technologies Involved:

SCADA, Historian, and MES.

We also interface with WMS and ERP (SAP)

HIGHLIGHTS

Challenge

As their business grew, they needed to get an **increase in the capacity of their current production.**

Engineers were working on the machines, but they needed to enable the operators.

Solution

To be able to optimize their processes, they needed to understand it - operators needed **visibility of their performance**. To give them that, we designed for the key metrics, connected to the PLC for automatic data and gathered manual data.

Results

Double Digit increase of **10-20% in overall line** efficiencies across all lines as natural competitiveness took place.

The Challenge

A cheese processor (INS3 Customer) sliced, shred, cut, and cubed cheese along with other product and then packaged it. Demand meant it was critical to have the lines (equipment and people) running at optimal efficiency to meet their needs. In their case, it was by increasing capacity an extra 10-20%. However, it was not just about getting more product out the door, it was also about profitability by limiting waste and giveaway 10-20%. Since the brand image was associated with quality, these efficiencies could not be achieved in lieu of quality.

Standard processing challenges were magnified when Walmart asked for their commitment to meet the increased demand if they were to be positioned in their stores. As a completely new opportunity for them, there was uncertainty if this demand could be met.

While the option to purchase capacity by adding a line or two, or developing a new facility were viable for this customer, they knew there was opportunity through making better use of their data for operational execution. For instance, if they could improved their control of unplanned downtime, then the capacity needed may very well exist.

SAP Product Download

☐ Approved

Dept	KIEL-Shred	Code	10000003	Desc	500/75 OZ GRGZL CRMB					
Package Cost	0.01408	Pkg Per Case	500		L.Gross	L.Ctrl	L.Alarm	Target	U.Alarm	U.Ctrl
Max T	190	L115	245	Plan	23.9976	19.14	20.44	21.3	23.7	

☐ Approved

Dept	KIEL-Shred	Code	10000036	Desc	6/5 LB PARM RBN SHVD					
Package Cost	0.14827	Pkg Per Case	6		L.Gross	L.Ctrl	L.Alarm	Target	U.Alarm	U.Ctrl
Max T	25	L115	25	Plan	32	2205	2248	2258	2268	2279

☐ Approved

Dept	KIEL-Shred	Code	10000043	Desc	6/5 LB 3/8" PPRJK DCD					
Package Cost	0.14826	Pkg Per Case	6		L.Gross	L.Ctrl	L.Alarm	Target	U.Alarm	U.Ctrl
Max T	20	L115	20	Plan	68	2205	2248	2258	2268	2279

☐ Approved

Dept	KIEL-Shred	Code	10000050	Desc	10/2 LB FY PARMT CHP					
Package Cost	0.1112	Pkg Per Case	10		L.Gross	L.Ctrl	L.Alarm	Target	U.Alarm	U.Ctrl
Max T	38	L115	38	Plan	153.6	876	890	899	907.2	916

☐ Approved

Dept	KIEL-Shred	Code	10000063	Desc	6/5 LB 1/2" PPRJK CUBE				
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Effective Date (Used only for new SKUs)

03/04/2019 00:00:00-

Complete

The Solution

Rather than investing capital for equipment, the focus first became about looking at their data and finding ways to communicate the data in a different way.

With that objective in mind, INS3 assisted in identifying the right data for their initiative. It was in their production and quality systems. The key was accessing the data and proving analytics for it. However, this was not just about delivering the data to a supervisor or manager for decision making. They decided to bring visibility of that performance data right to the employees that could make the biggest business impact. Recognizing that to have the biggest impact, they needed that real-time information in the hands of the people that could more immediately act on the information; their operators. They installed large flat panel screens displaying the key metrics they were interested in affecting. These displays were placed in various locations across the plant, including in this example...their break room.

SHRED LINE OVERVIEW SCREEN						
LINE STATUS	ORDER OEE	SHIFT OEE	SHIFT DOWNTIME	RUN RATE	MAX RATE	ORDER CASE COUNT
Line 48	47.5	46.2	01:47	60	60	511
Line 52	88.6	95.5	00:06	67	66	1,999
Line 56	96.3	96.2	00:12	66	63	439
Line 60	75.1	71.4	00:57	66	66	2,891
Line 64	82.1	65	01:03	63	55	2,616
Line 68	51.7	53.9	01:00	59	60	93
Line 72	91.4	91.2	00:05	66	66	3,545
Line 76	94.9	94.8	00:05	67	66	261
Line 80	86.5	86.5	00:17	0	66	3,329
Line 84	71	48.3	01:43	66	66	2,928
Line 88	.9	52.5	01:28	0	60	2
Line 92	0	0	03:46	0	0	0

EQUIPMENT		DOWNTIME		WASTE	
		D/T ACTUAL	D/T %	RUN RATE	FPQ
●	Schiwa	00:45:00	0.3 %	89	89.2 %
●	Flow Wrapper	00:32:00	1.2 %	91	Giveaway (Schiwa)
●	Case Packer	00:17:00	0.1 %	87	40.1 %
●	Metal Detector	00:43:00	0.1 %		Empty Bags (Flow Wrapper)
●	Label Applicator	01:00:00	0.1 %		21

ORDER CASE COUNT	TOTAL PACKAGES	TOTAL REJECTS
1,234	2,345	17

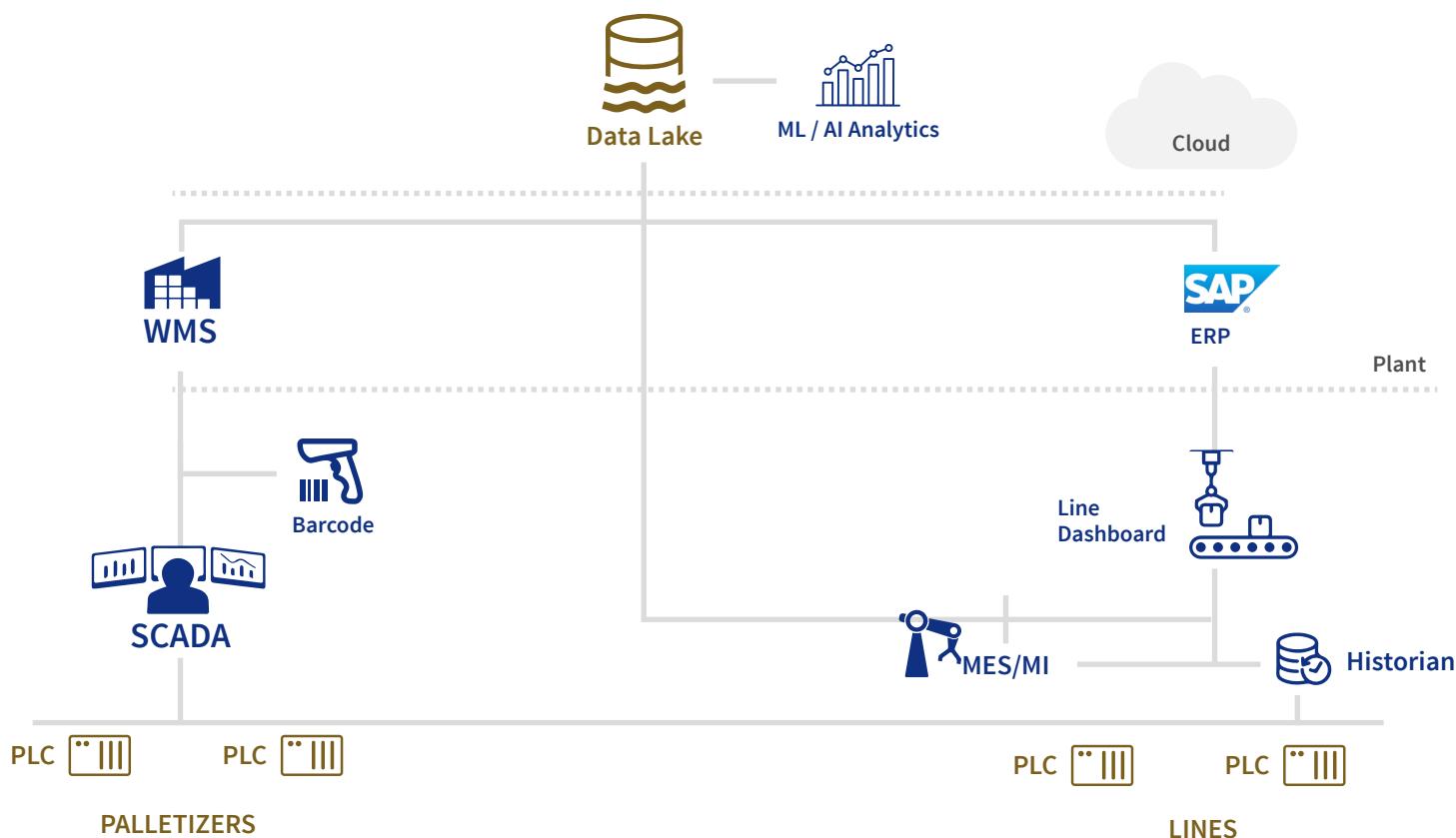
SHIFT CASE COUNT	PERCENT TO PLAN	LINE 12 OEE
1,234	↑ 97 %	↓ 73 %

TIP OF THE DAY	
What famous actor played Jungle Boy on Gilligan's Island?	

To further enhance use of this data, INS3 helped them train their operators and line supervisors on understanding the importance of these key metrics. This included knowing that “red” is not a good outcome. The plant was empowered to act on real-time data provided by machines, systems, and people.

By communicating important messages on the bottom of the screens and holding trivia contests with drawings with prizes, they were able to ensure plant personnel paid attention to plant activity.

PLYMOUTH SHRED - MAINTENANCE OVERVIEW					
4:16:15 PM					
LINE 104		LINE 115		LINE 70	
SKU: 4610054749 BATCH: 127015		SKU: 4610032788 BATCH: 126193		SKU: 4610031081 BATCH: 126486	
225/1.1 OZ SHV PARM & ROM BLD		600/3 OZ FY SHR IT CH BLD (2292)		65 LB BIV SHR ML CHO	
Shift: 02 Order: 209		Shift: 02 Order: 87		Shift: 02 Order: 2115	
CASE COUNT: 82		CASE COUNT: 62		CASE COUNT: 588	
OVERPACKS: 1.55		OVERPACKS: 3.85		OVERPACKS: -06	
DOWNTIME: 00:00		DOWNTIME: 00:00		DOWNTIME: 00:12	
OEE: 89.3		OEE: 88.9		OEE: 76.9	
Run Rate: 0		Run Rate: 0		Run Rate: 0	
MaxT Rate: 153		MaxT Rate: 315		MaxT Rate: 34	
LINE 94		LINE 80K			
SKU: 4610054750 BATCH: 127014		SKU: 4610033630 BATCH: 126808			
500/3 OZ FY SHV PARM ROM & ME AGO BLD		65 LB FY SHR ML CHO & MJ			
Shift: 02 Order: 129		Shift: 02 Order: 514			
CASE COUNT: 47		CASE COUNT: 16			
OVERPACKS: 1.08		OVERPACKS: -.27			
DOWNTIME: 00:00		DOWNTIME: 00:20			
OEE: 96.7		OEE: 66.7			
Run Rate: 0		Run Rate: 0			
MaxT Rate: 180		MaxT Rate: 32			



Results

Soon line supervisors and associated operators were not only trying to avoid being in the red, but were also competing against each other for higher scores. This drove efficiency gains of an extra 10-20%. That double-digit improvement in efficiency gave them the capacity they needed to meet the demands of Walmart without having to purchase capacity. Additionally, they saw double digit gains in capacity, while reducing their waste and giveaways by 10-20%.

“ By focusing the operators on the key metrics they need to control, and keep at a high level, we are able to see continual gains in productivity across our lines, and established a culture of driving to be the best.

- Corey Joshcob, MES Administrator

About Us

30+ years in business helping our customers solve efficiency, quality and cost control problems.

450+ completed projects in different industries like Food and Beverage, Consumer Packaged Goods, Manufacturing and Industrial.

300+ years of combined experience in our Senior Staff, and hundreds more with our team of engineers.

