

# **Technologies to implement OMAC PackML Standard and improve business value**

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# OMAC



*“... Previously, it was cheaper for a food company to purposely overfill some bottled beverages than to spend money on machinery, computer systems and staffing necessary to ensure that a 16-ounce bottle was filled precisely. Rising sugar, cocoa and other food prices have convinced the company to wage a war on waste and make those investments....”*

*- Jeff Kurtenbach , Nestle USA's Vice President of Supply Chain*

- Packaging is what the customer sees and is how brand is recognized
- Consumer needs vary therefore packaging is a prime candidate for supply chain optimization and scheduling
- By the time the process hits packaging, the majority of the direct costs are sunk – product defects and product give-away translates into pure profit loss



# Business Drivers

## Business Drivers vs. Packaging Requirements

		Business Drivers						
		Time to market	Short product lifecycle	Increased product variety	Rapidly satisfy demand	Maintain quality	Reduce costs	Reduce assets
<b>Packaging Requirements</b>	<b>Reduce by 50%</b>							
	Delivery time	•	•	•	•		•	
	Start-up time	•	•	•	•		•	•
	Changeover time	•	•	•	•		•	•
	Material loss	•	•		•	•	•	•
	Overhaul time	•					•	•
	Downtime	•			•		•	•
	<b>Increase by 50%</b>							
	Throughput		•	•	•		•	•
	MTBF		•	•			•	
Flexibility	•	•	•	•		•	•	

# Market Watch...

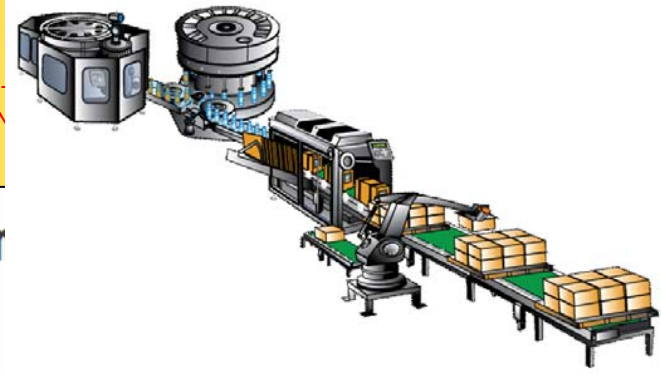
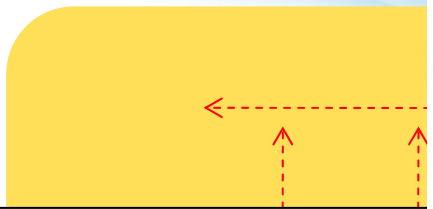
- According to Packaging World Magazine Survey
  - 50%+ of Packaging lines are not Networked
  - 50%+ of Packaging lines have 2-4 control vendors
  - 50%+ of Packaging lines have between 2-7 machines
  - 50%+ of Packaging lines don't use standards
- Many Packaging lines have no data collection
  - Heavy reliance on manual collection
- Less than 25% of machines are designed for Supervisory systems
  - Data for Supervisory systems is mostly production-related
  - Machine reliability data is available but under-exploited
  - It's 'difficult/costly' for Machine builders to use different control vendors



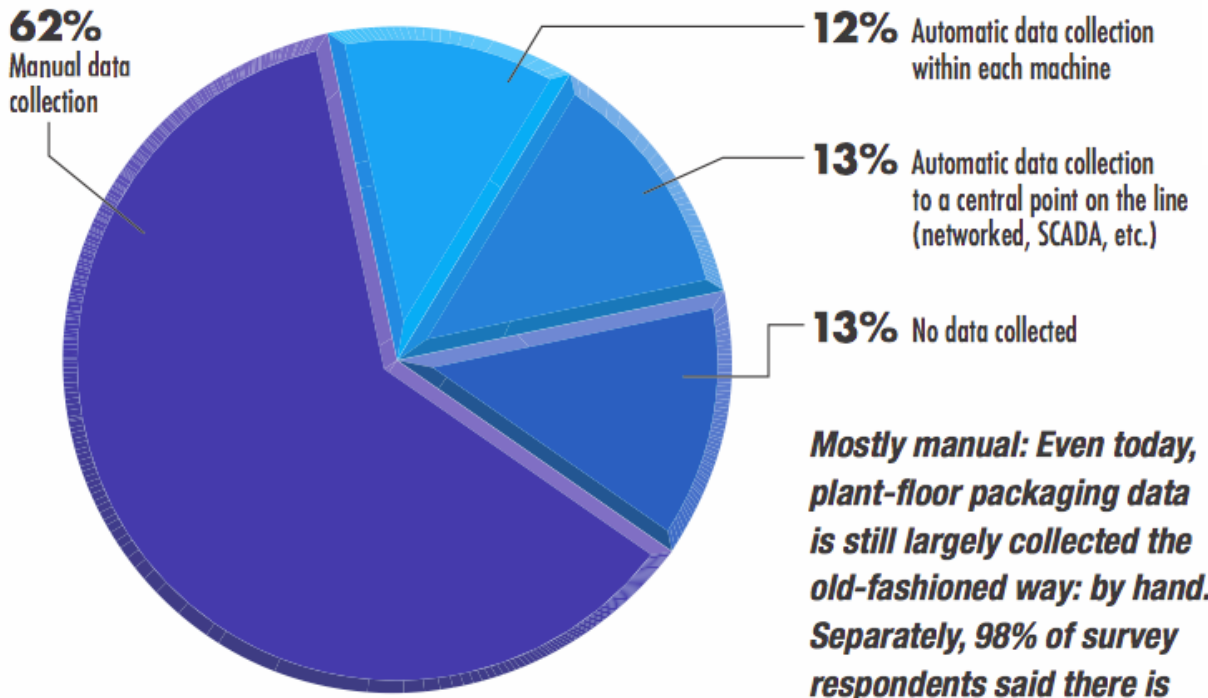
# Market Watch...

## Number of lines networked

14%      9%      4%

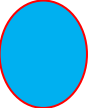
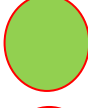
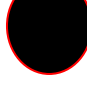


## Manual vs. automatic packaging line data collector



*Mostly manual: Even today, plant-floor packaging data is still largely collected the old-fashioned way: by hand. Separately, 98% of survey respondents said there is value in collecting plant-floor packaging data.*

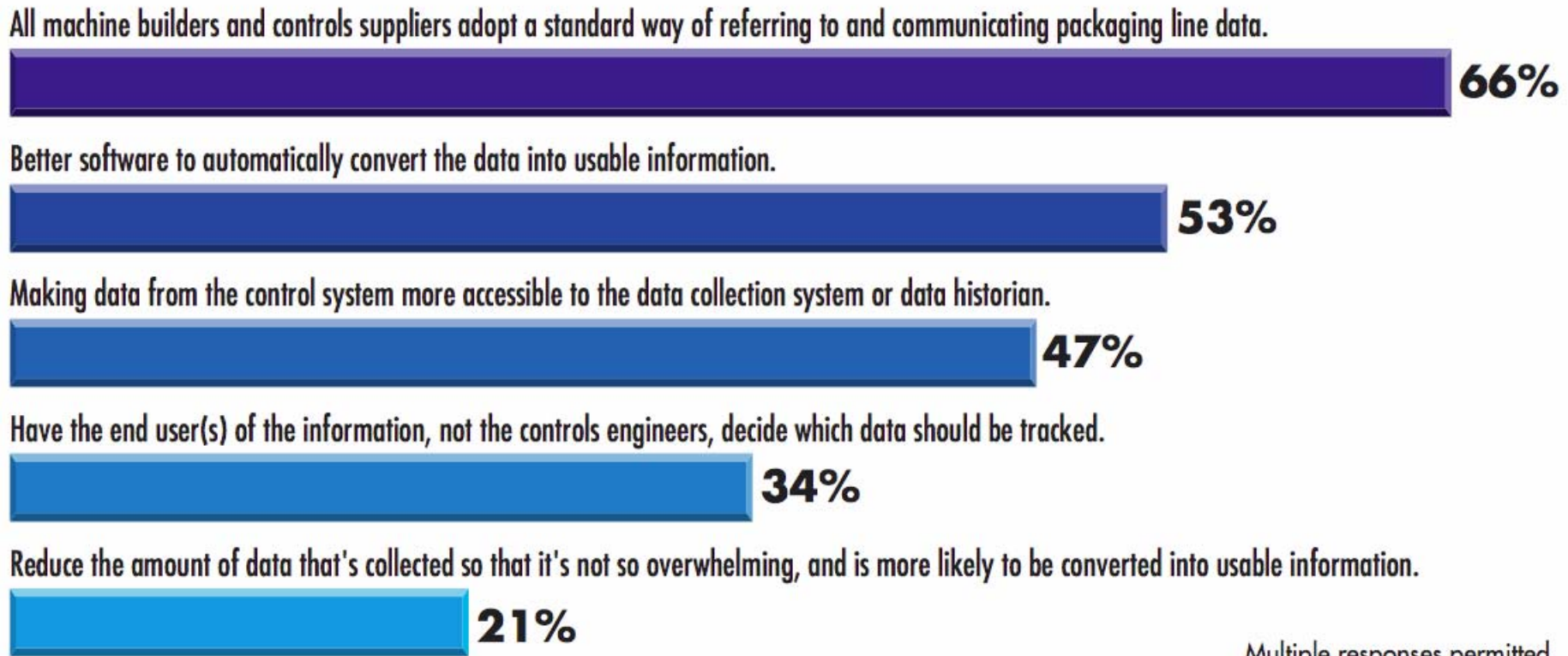
OEM OEM  
 3 4

-  SCADA/HMI
-  Control A
-  Control B

Sample: 2,492 packaging lines represented by 182 survey respondents.

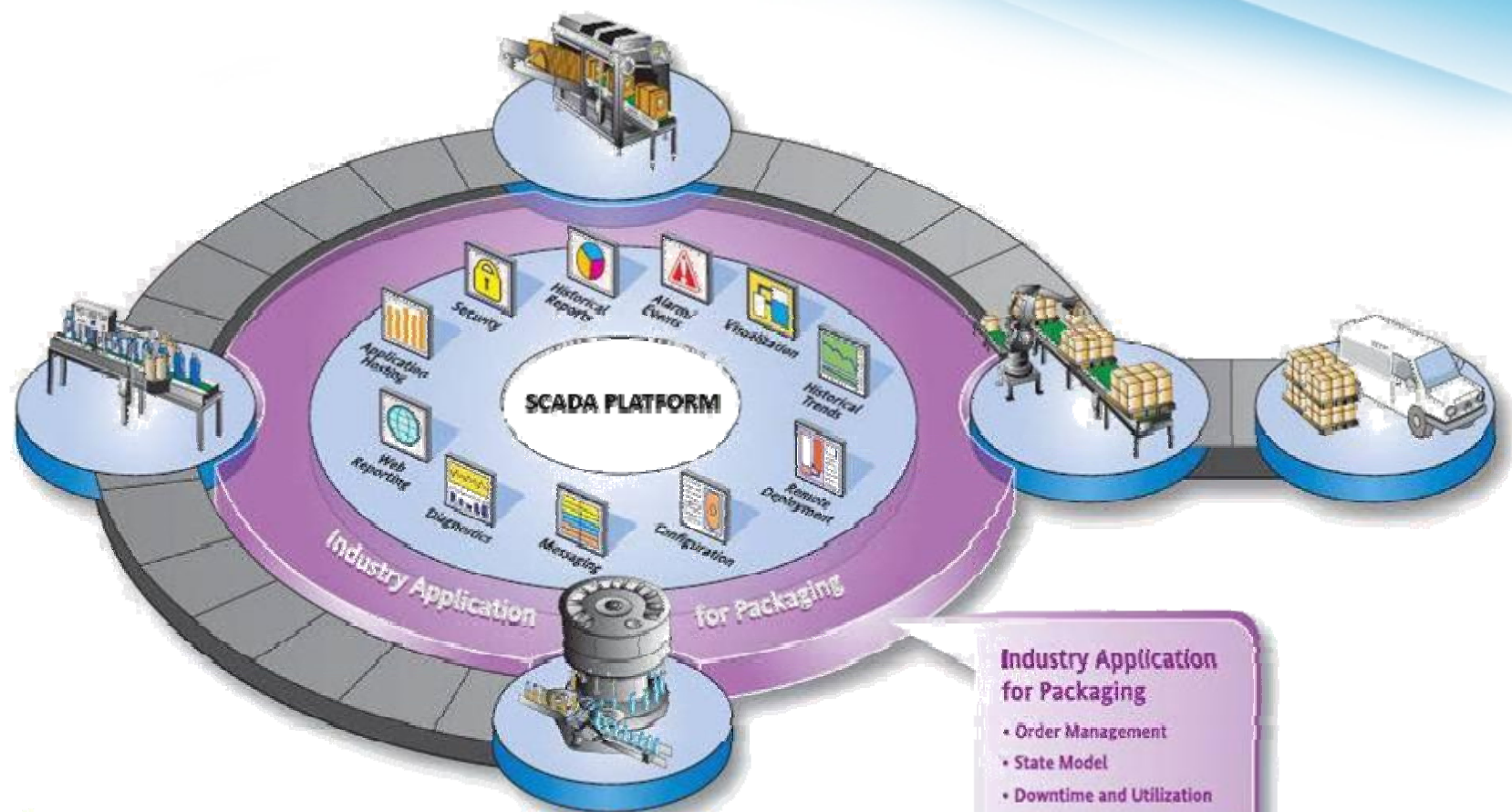
# Market Watch

## How can information integration be made easier?



Multiple responses permitted.

# Industry Solution for Packaging



**Delivering Industry- Specific Solutions Through  
Advanced Software and Modular Components**

- Industry Application  
for Packaging**
- Order Management
  - State Model
  - Downtime and Utilization
  - Overall Equipment Efficiency
  - Job Status

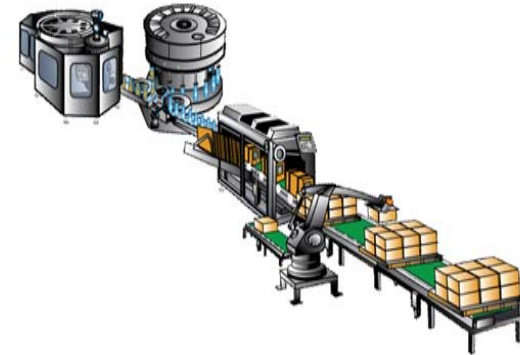
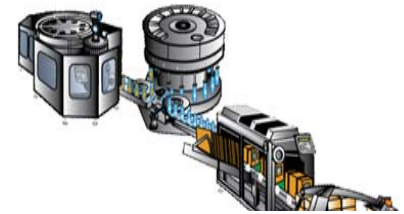
# Customer/OEM Perspectives

	OEM Rank	Buyer Rank
Ability for <b>maintenance to maintain/diagnose</b> any controls	1	1
Ability to access <b>machine diagnostic data</b> Ability to have a <b>consistent software structure</b> in all	2	2
Ability to connect all sensors actuators/controllers within machines regardless of the OEM	3	4
Ability to create applications from a <b>library of reusable software modules</b>	4	5
Ability to access <b>product performance data</b> Having a <b>standard/consistent machine state</b> operating model for any/all machinery OEM	5	9
	6	3
	8	6

\*\*\* Packaging World Magazine/OMAC Survey

# Standardization

- Basic State Model of Packaging Equipment
  - Based on OMAC PackML standard
- Downtime and Utilization Monitoring
- Order Management:
  - Create, Sequence and Dispatch Orders
- Calculate OEE(Overall Equipment Effectiveness)



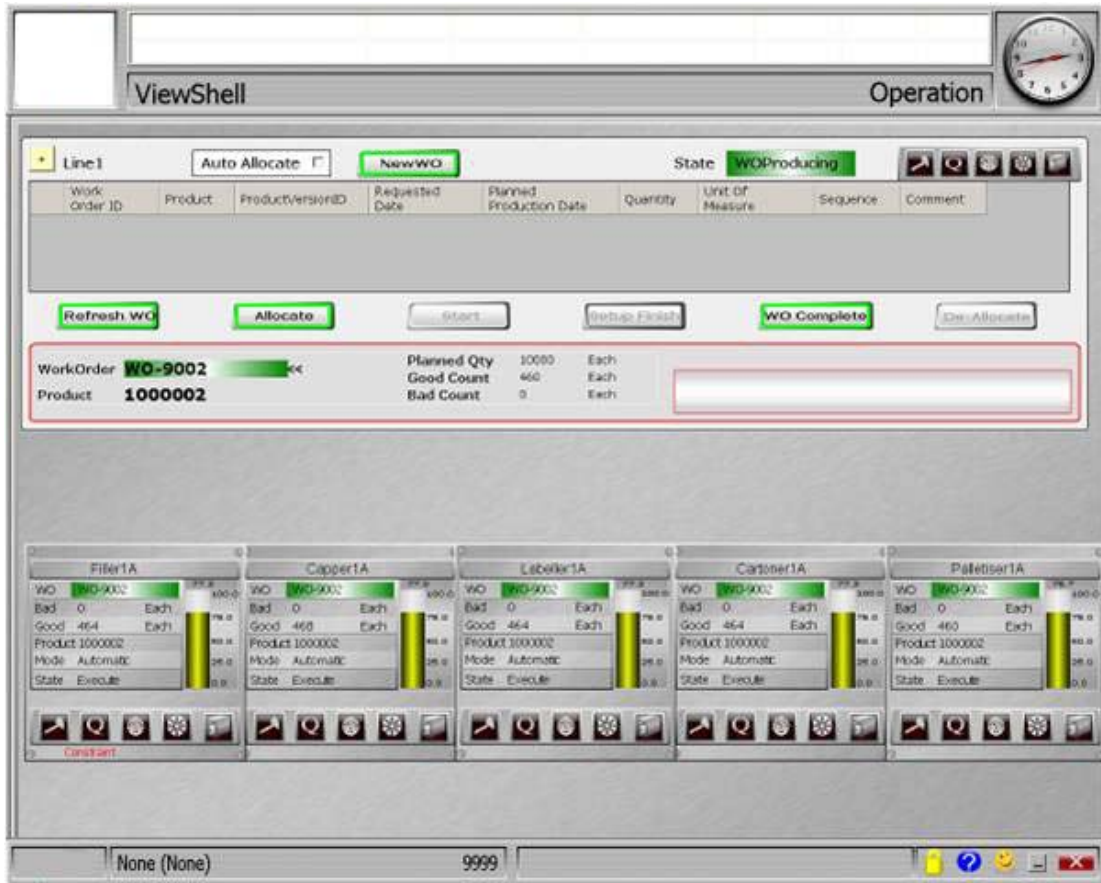
# User Interactivity....



## Packaging Area Summary

- View Overall Line Conditions
- See Real-time Line Statuses
- Line Performance At-a-Glance

# User Interactivity...



## Line Summary

- Create/ Dispatch Jobs to a line
- Manage Setup for Each Job Run
- Monitor Current Status of Each Piece of Equipment

# User Interactivity

The screenshot shows the 'Equipment Faceplate' window for 'Line1' and 'Copper1A'. It features a toolbar with icons for Home, Refresh, Stop, Help, and Recycle. Below the toolbar is a dropdown menu for 'Filler1A'. The main area contains a table with the following data:

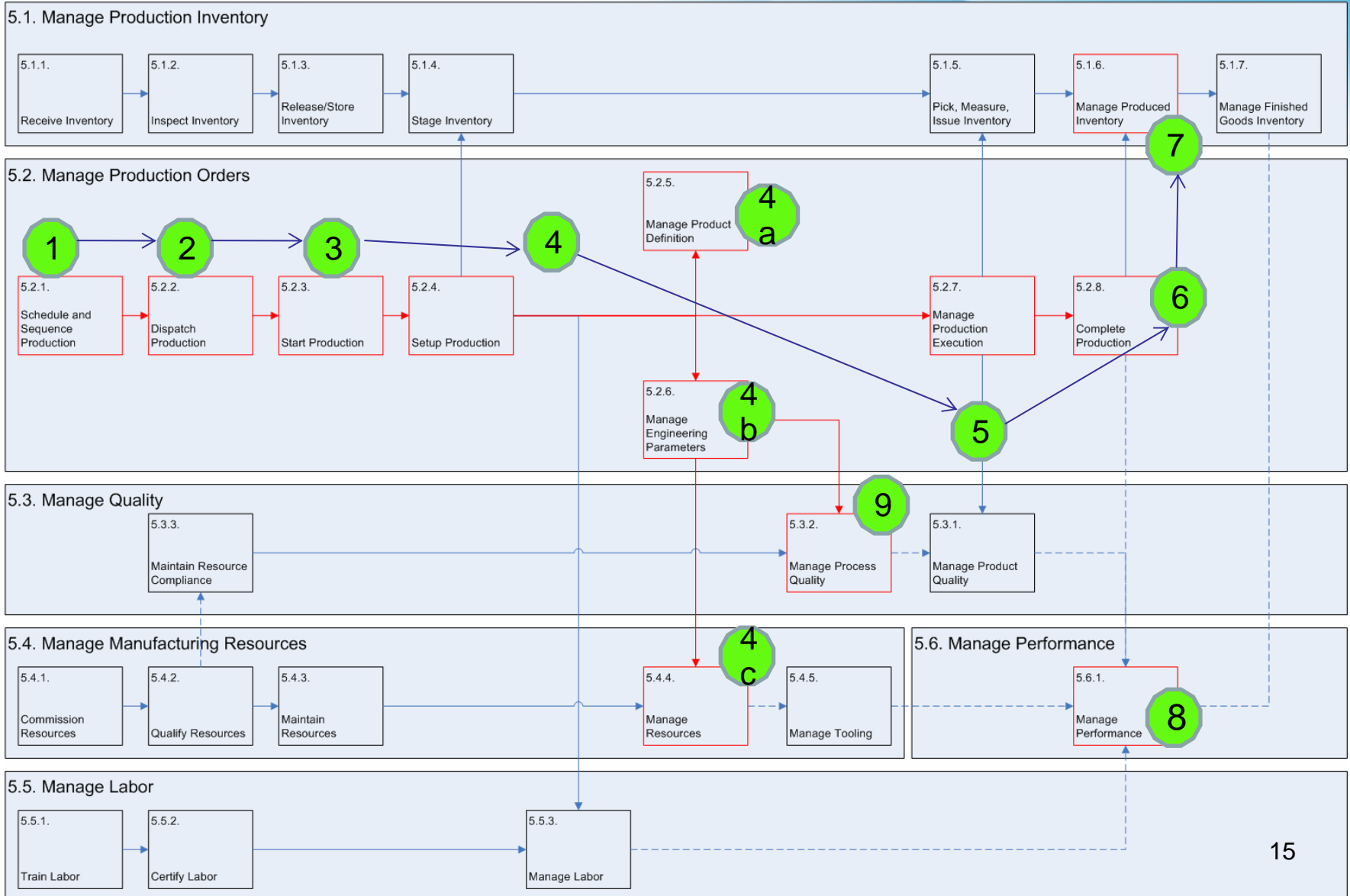
LN	Entry Name	State Desc	Reason Desc	Duration (hh:mm:ss)	Shift Desc
	Filler1A	EXECUTE	Execute	277:03:47	Afternoon
	Filler1A	EXECUTE	Execute	00:01:07	No Shift
	Filler1A	EXECUTE	Execute	01:33:42	Day
	Filler1A	IDLE	Idle	00:13:00	Day
	Filler1A	EXECUTE	Execute	76:03:24	Day
	Filler1A	EXECUTE	Execute	20:50:11	Afternoon
	Filler1A	EXECUTE	Execute	01:23:36	Day
	Filler1A	IDLE	Idle	00:12:38	Day
	Filler1A	EXECUTE	Execute	00:05:23	Day

Below the table, there are filter settings: 'Current Filter: Filter Type = None, Event State = Both, Minimum Duration = 0, Status = All'. The 'Current Status' section includes fields for 'Current Reason' (Execute), 'Start' (3/5/2009 2:42:55 PM), 'Duration (hh:mm:ss)' (00:02:31), 'Good Qty' (557), and 'Reject Qty' (0). It also shows 'Current State' (EXECUTE), 'Reason from IO' (Execute), 'Current OEE %' (3.05), and 'Target OEE %' (0.00). At the bottom, there are two sections: 'Work Order' with 'Start' and 'Complete' buttons, and 'Counts' with 'Good Qty' and 'Reject Qty' buttons.

## Equipment Detail

- View performance, OEE and Utilization of Machine
- View and Set the Current Machine State (Run, Hold, Stop)
- Manage Machine Setup

# Enterprise Integration with Workflow



# Value Proposition

- Increase in line efficiency
  - Faster changeovers
  - Greater visibility into performance, downtime problems and asset state
  - Higher throughput
- Reduce Costs
  - Less material value
  - Increased quality, product consistency
  - Greater flexibility (manage many SKUs)
- Fast time to value
  - Quick deployment
  - Meets needs of planners, operators, supervisors and reporters

# Benefits

- Integrate and manage existing packaging machines and systems
- Flexible, open scalable software architecture integrates with most packaging systems
- Visibility to packaging losses, variation, problems
- Reduce manual data collection and line operator interaction
- Plan and monitor packaging operations in one intuitive environment
- Lower implementation risk and total cost of ownership with world-class technical support and services

# USER EXPERIENCE!

*“What is not measured cannot be improved”*

*What is not measured in real time can never be improved “*