Eliminate your spreadsheets and use a LMS to optimize your warehouse staffing

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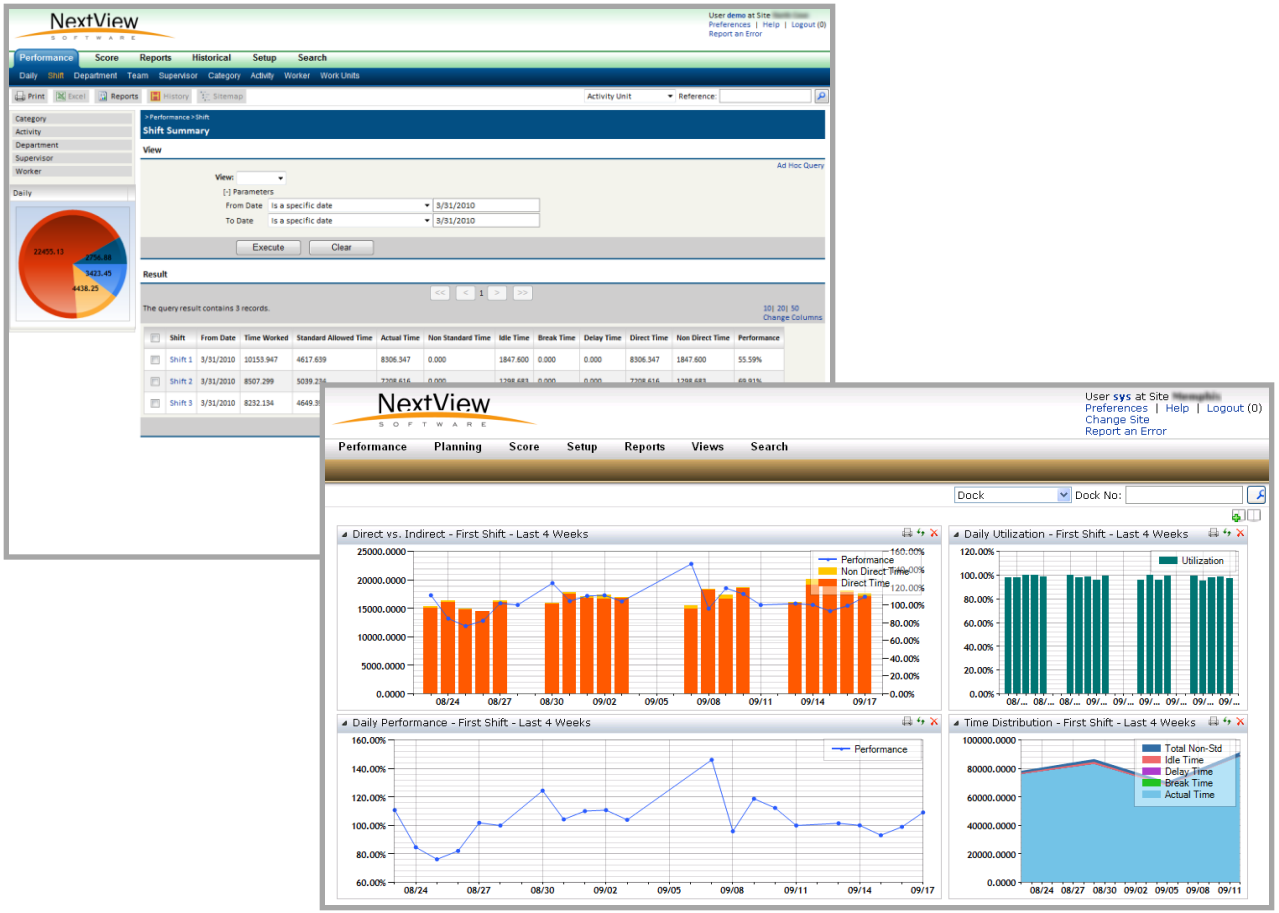
- Engineered Labor Standards
  - PF&D
  - Frequencies
  - MOST
  - MTM
  - MSD
- XYZ & Travel Calculations
- Productivity & Utilization Reporting
- Real-time Dashboards & Charts
- Direct & Indirect Labor Tracking
- Workforce Planning & Scheduling
- Coaching & Mentoring
- Observation Management
- Single & Multi-variable Standards
- On-Demand/SaaS Platform



"Labor Management Systems need to plan tomorrow and manage today and not just report on yesterday."

Labor Management System

What does a LMS do?

- Yesterday
- Tomorrow
- Today

Labor Management System

Yesterday

- Captures Performance Data
  - Efficiency (% of standard)
  - Utilization (direct vs indirect)

- Calculate data for incentive based pay
- Essential tool for worker review
- Maintain historical data (Costing, KVI)

Labor Management System

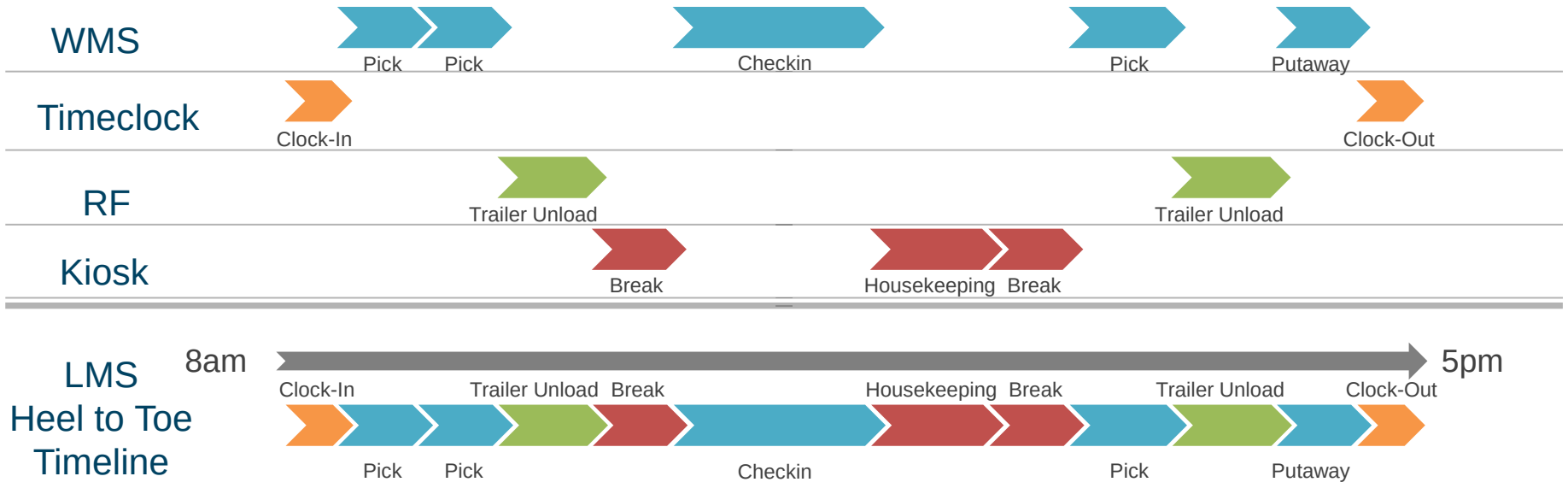
Fair Standard

- Single Variable Standard – units or lines/hour
- Engineered Standard – discrete steps including travel

- Cart A
  - 20 lines
  - 28.30 minutes
- Cart B
  - 35 lines
  - 24.32 minutes

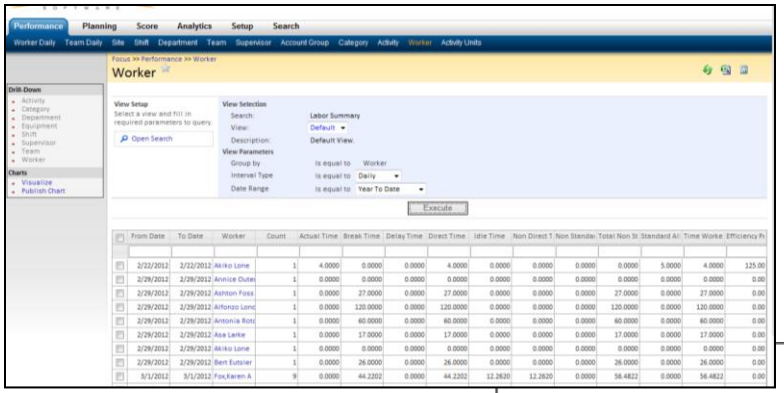
Labor Management System

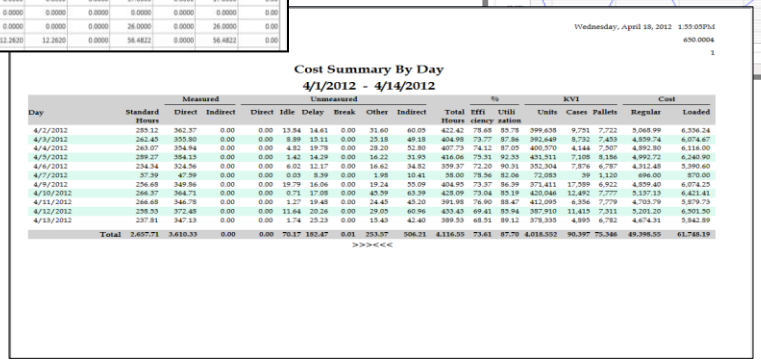
Heel to toe timeline for each worker



Labor Management System

Business Intelligence: query, chart, and report





Cost Summary By Day
4/1/2012 - 4/14/2012

Day	Standard Hours	Measured Direct	Measured Indirect	Unmeasured Direct	Unmeasured Idle	Unmeasured Delay	Unmeasured Break	Unmeasured Other	Unmeasured Indirect	Total Hours	% Effi ciency	% Utili zation	KVI Units	KVI Cases	KVI Pallets	Cost Regular	Cost Loaded
4/2/2012	285.12	362.37	0.00	0.00	13.54	14.61	0.00	31.60	60.05	422.42	78.65	85.78	399,638	9,731	7,722	5,068.99	6,336.24
4/3/2012	262.45	355.80	0.00	0.00	8.89	15.11	0.00	25.18	49.18	404.98	73.77	87.86	392,649	8,732	7,453	4,859.74	6,074.67
4/4/2012	263.07	354.94	0.00	0.00	4.82	19.78	0.00	28.20	52.80	407.79	74.12	87.05	400,570	4,144	7,567	4,892.80	6,116.00
4/5/2012	289.27	384.13	0.00	0.00	1.42	14.29	0.00	16.22	31.93	416.06	75.31	92.33	431,511	7,108	8,186	4,992.72	6,240.90
4/6/2012	234.34	324.56	0.00	0.00	6.02	12.17	0.00	16.62	34.82	359.37	72.20	90.31	352,304	7,876	6,787	4,312.48	5,390.60
4/7/2012	37.39	47.59	0.00	0.00	0.03	8.39	0.00	1.98	10.41	58.00	78.56	82.06	72,083	99	1,120	696.00	870.00
4/9/2012	256.68	349.86	0.00	0.00	19.79	16.06	0.00	19.24	55.09	404.95	73.37	86.39	371,411	17,589	6,922	4,859.40	6,074.25
4/10/2012	266.37	364.71	0.00	0.00	0.71	17.08	0.00	45.59	63.39	428.09	73.04	85.19	420,046	12,492	7,777	5,137.13	6,421.41
4/11/2012	266.68	346.78	0.00	0.00	1.27	19.48	0.00	24.45	45.20	391.98	76.90	88.47	412,093	6,356	7,779	4,703.79	5,879.73
4/12/2012	288.53	372.48	0.00	0.00	11.64	20.26	0.00	29.05	60.96	433.43	69.41	85.94	387,910	11,415	7,311	5,201.20	6,501.50
4/13/2012	237.81	347.13	0.00	0.00	1.74	25.23	0.00	15.43	42.40	389.53	68.31	89.12	378,335	4,895	6,782	4,674.31	5,842.89
Total	2,657.71	3,610.33	0.00	0.00	70.17	182.47	0.01	253.57	506.21	4,116.55	73.61	87.70	4,018,552	90,397	75,346	49,398.55	61,748.19

Labor Management System

Requirements to Capture Yesterday's Data

- Real-time interface not important
- Data can be download every 5 minutes or once a day
- Engineered standards create more accurate data but not a requirement
- Requires maintenance to keep engineered standards accurate

- But what about tomorrow and today?

Labor Management System

Tomorrow

- Plan future labor requirements
  - Maintain historical labor rates
  - Input forecast and actual demand
  - Estimate planned labor activities

- Plan FTE by work center
- Estimate temps and overtime

Labor Management System

Requires Multi-Level Planning

- Model Data
  - Historical orders
  - ERP Level Data
    - Orders scheduled
  - Actual Demand Orders
    - Customer orders
- Continuous Planning Process

Labor Management System

Fill In Missing Activities

- Create additional activities
  - Replenishment, Putaway, Loading
- Estimate sub-activity type
  - RF vs Fluid Receiving, Pick by Light vs Paper
- LMS can provide historical data

Labor Management System

Determine Planning Rates

- What is the rate for receiving, putaway, picking loading?
- LMS can determine based on historical data
  - Performance
  - Utilization

Labor Management System

Requirements to Plan Tomorrow's Data

- Real-time interface not important
- Can use non-engineered standards
- Based on aggregate FTE per department
- Don't need employee roster

- But what about today?

Labor Management System

Today

- Manage today's labor requirements
  - Monitor real-time work center performance
  - Assign workers based on demand
  - Estimate goal time
  - Show percentage of completion

- Manage budget for temps and overtime

Labor Management System

Goal Time

- Based on actual demand data
  - inbound PO
  - pick list
- Utilize engineered standard
  - multi-variable (volume, weight)
  - travel
- Very accurate estimate of future activities

Labor Management System

Assign Workers to Activities

- Workers assigned to actual labor activities based on goal time estimate
- Activities can be discrete or aggregated by time
- Show percentage of completion
- Need for workers in different work centers

Labor Management System

Challenge: Different Assignment Models

- Discrete labor activities
  - Assign to inbound/outbound load, pick list
  - Case/pallet warehouse
- Time based activities
  - Aggregate by time and work center
  - Assign worker to center for fixed time period (10-11am)
  - E-commerce warehouse
- Hybrid facility
  - Some areas are discrete and some are time based
  - Retail warehouse

Labor Management System

Requirements to Track Today's Data

- Real-time interface is essential for both actual demand and performance data
- Need engineered standards to accurately calculate goal time

Most Important!

- Need to integrate into workforce scheduling to manage workers

What is the state of the art technology used to schedule workers in warehouses?

We asked our customers

Labor Management System

Spreadsheets

Insert Ship Date in Cell A3

Wednesday	Case Volume	
10/15/2014	Receiving	Shipping
PLAN	40,000	45,000
ACTUAL	35,000	6,100

Production (Direct Hrs) Business Plan	300
Production (Direct Hrs)	247
Production (Direct Hrs) ACTUAL	329
All Hours Business Plan	250
All Hours	212
All Hours ACTUAL	856
INDIRECT HOURS PLAN	16%
INDIRECT HOURS ACTUAL	-68%

Receiving Information-Plan

	# of Trailers	Regular Pallets	Slipsheet	Breakdown
Dry	2	15	5	10
Cooler	1	50	10	5
Freezer	2	10	5	5
TOTAL	5	75	20	20

Receiving Information-Actual

	# of Trailers	Regular Pallets	Slipsheet	Breakdov
Dry	2	15	5	10
Cooler	1	50	10	5
Freezer	2	10	5	5
TOTAL	5	75	20	20

Putaway

	Amb. Pallets	Cooler Pallets	Freezer Pallets
PLAN	30	65	20
ACTUAL	30	65	20

Picking

	Ambient	Cooler	Freezer
PLAN	20,000	15,000	10,000
ACTUAL	2,000	3,100	1,000

Replenishment

	Amb. Pallets	Cooler Pallets	Freezer Pallets
PLAN	290	190	319
ACTUAL	39	25	43

Loading

	Total Routes	Avg. Plts / Route	Pallets
PLAN	50	25	1,250
SPECIALS	10		
ACTUAL	60	21	1,250

BUILDING TOTALS	HOURS	STAFFING

3rd Shift Total	19	15	18	20	20		
Same Day)	46	46	47	48	53		
1st Shift Total	56	56	56	56	56		
2nd Shift Total	135	135	135	135	135		
3rd Shift Total	155	155	155	155	155		
2nd-3rd Prior Day)	346	346	346	346	346		

		Sunday (S)	Monday (M)	Tuesday (T)	Wednesday (W)	Thursday (R)	Fric
DAYS	BID POS	11/1/13	11/2/13	11/3/13	11/4/13	11/5/13	11
M,T,W,R,F	RECV		8	8	8	8	
S,M,T,W,R	RECV	8	8	8	8	8	
T,W,R,F,Z	RECV			8	8	8	
S,M,T,W,Z	RECV	8	8	8	8		
S,M,R,F,Z	RECV	VD/8	8			8	
T,W,R,F,Z	FRZ OS			8	8	8	
T,W,R,F,Z	FRZ OS			8	8	8	
S,M,R,F,Z	FRZ OS	PD/8	8			8	
T,W,R,F,Z	AFRZ OS			8	8	8	
S,M,T,W,Z	AFRZ OS	8	8	8	8		
S,M,T,W,Z	AFRZ OS	PD/8	8	8	8		
S,M,R,F,Z	AFRZ OS	8	8			8	
S,M,T,W,R	OS	8	8	8	8	8	
S,M,T,W,R	OS	8	8	8	8	8	
M,R,F,Z	OS		8			10	
S,M,T,F	OS	10	10	10			
S,W,R,F,Z	OS	8			8	8	

4	1/27/1959	1	1000	Will Smith	7:00-15:00	
5	1/27/1959	1	1000	Bob Rosales	7:00-15:00	
6	1/27/1959	1	1000	Koby Bryant	7:00-15:00	
7	1/27/1959	1	1000	Jose Garcia	7:00-15:00	
8	1/27/1959	1	1000	Marc Jones	7:00-15:00	
9	1/27/1959	1	1000	Ken Lewis	7:00-15:00	
10	1/27/1959	1	1000	Jack Reed	7:00-15:00	
11	1/27/1959	1	1000	George Washington	7:00-15:00	
12	1/27/1959	1	1000	John Smith	7:00-15:00	
13	1/27/1959	1	1000	Will Smith	7:00-15:00	
14	1/27/1959	1	1000	Bob Rosales	7:00-15:00	
15	1/27/1959	1	1000	Koby Bryant	7:00-17:00	
16	1/27/1959	1	1000	Jose Garcia	7:00-17:00	
17	1/27/1959	1		Marc Jones	7:00-15:00	

Amazing use of spreadsheet technology

Labor Management System

Spreadsheet Scheduling

- Model work center labor rates and capacity
- Input future workload
- Breakdown future workload by work center
- Estimate FTE per work center
- Assign workers to schedule based on need
- Record actual labor and calculate daily costs

Labor Management System

Spreadsheet Limitations

- Not integrated to HR or ERP or WMS
- Manually maintain work roster including days off, etc
- Calculate historical labor rates
- Determine labor activity breakdown models
- Input actual demand
- Record time clock data

Huge clerical effort but also significant overlap with LMS functionality

Labor Management System

Additional Features in LMS for Workforce Scheduling

- Maintain worker roster with skills, department info
- Create weekly, daily shift schedule
- Store HR data such as wage, vacation, days offs
- Maintain both full and temp roster
- Interface to HR systems

- All labor planning features already built-in to LMS

Labor Management System

Integrated LMS/Workforce Scheduling

- Tomorrow's data
  - Model based on historical performance data
  - Input forecast and actual demand
  - Estimate FTE by work center
  - Assign workers to weekly/daily shift schedule
  - Continuous model as demand changes
  - Re-assign workers based on demand

Labor Management System

Integrated LMS/Workforce Scheduling

- Today's data
  - Manage real time worker levels per work center
  - Calculate goal time based on actual demand data
  - Aggregate demand by work center based on scheduled time
  - Assign workers to either discrete activities or work centers
  - Monitor percentage of completion
  - Move workers based on need

Labor Management System

Integrated LMS/Workforce Scheduling

- Yesterday's data
  - Record actual time clock data for each worker
  - Calculate worker performance data
  - Generate labor costs by work center
  - Compare to budgeted costs
  - Maintain historical data for future planning

Labor Management System

Benefits of Integrated LMS and Workforce Scheduling

- Workforce scheduling is currently done with spreadsheets
- Very time consuming for warehouse staff

- Accurate labor scheduling for tomorrow and today
- Reduce overtime and temp costs
- Manage labor costs in real-time

Labor Management System

Possible LMS Implementation Approaches

- Planning First

or

- Performance First

Labor Management System

For More Information:

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