Remote Level Monitoring, (RLM)

Robertshaw Industrial Products



Goals



Use Technology in Delivery Operations to:

- Maximize asset utilization trucks/fleet, more efficient use of drivers
- Reduce overhead costs & improve margin on gallons delivered
- Predict product demand & manage inventories better
- Improve customer service & retention prevent "run-outs" and emergency deliveries

Existing Situation



Many distributors using outdated methods to run their delivery operations as costs continue to rise & margins shrink:

- Vehicle Expenses
 - Fuel, Insurance, Maintenance, Replacement Cost
- Personnel Expenses
 - Driver wages and benefits
 - Dispatching & administrative
- Operational Inefficiency
 - Lost sales and customer dissatisfaction due to product "run-outs"
 - Emergency deliveries
- Other
 - Driver shortages & retention issues
 - Driver training and compliance
 - Product pump-backs & inefficient inventory management

Invensys

isbecoming

Solution



<u>A Remote Level Monitoring, (RLM) program can be a foundational</u> technology to improve delivery efficiency:

• Installation of stand alone monitors in customer tanks

- Report inventory level on a scheduled basis via cellular network or other means
- Additional reports and notifications for exception conditions like low level or excessive usage.
- Email and/or text alerts for exception conditions highlight action needed.

• Data Center

- Central place for level information, delivery planning tools and management reports. Accessible via Internet.
- Controlled access to information by user role and hierarchy

Financial Analysis



- Key Performance measure is percentage of tank capacity filled at each delivery
 - The greater fill percentage the fewer number of deliveries over time.



Financial Analysis



• Impact from moving from a 40% average fill to a 75% average fill*



• ROI

- Investment payback approximately 1 year
- 25% reduction in overhead costs by improved tank fills and reduced deliveries
- Better use of resources for dispatch and fleet management
- Fewer invoices to process
- Win new customers with more reliable delivery and service

* 500 gallon tank \$75 cost per delivery

Schneider Electric - Centeron

Invensys

Implementation



• Starts at the top

• Senior management focus and direction

Internal Customers

- Notification and training of dispatch, service & admin personnel
- Culture change dispatch to the fill percentage goal vs. "milk runs" Use the data for decision making!
- Process change resist "topping off" tanks
- Reassurance technology to help do the job better, not eliminate jobs

• External Customers

- Announcement new program with customer service benefits
- Convert scheduled and will call customers to "keep-fill"

• Tank Selection Criteria

- Unpredictable usage and distant locations
- High throughput "keep fill"
- Critical strategic customers
- Cluster for synergy

Schneider Electric - Centeron

Invensys

Management

Goal Setting

- Set tank fill percentage performance goals
- Establish roll out program with quarterly goals for monitor installations
- Evaluation and Analysis
 - Use data center tools to evaluate performance on regular basis

Additional Tools

- Tank fill optimization software
- Vehicle dispatching and routing software
- Back office software integration for order automation



Centeron

Schneider Electric - Centeron

Invensys

isbecoming

Schneider

Summary

Centeron Schneider

- Costs to run delivery operations are many and continue to rise.
- An RLM program is a fundamental technology to help reduce costs associated with bulk product delivery.
 - Reduce direct costs and overhead
 - Better asset utilization
 - ROI can be rapid
 - Improved customer service
 - Better demand forecasting and inventory management
- Successful implementation requires top down support and attention
 - Culture and process change
 - Reinforcement of goals and data analysis
 - Marketing to external customers advantages of "keep-fill" business model
- Additional technology tools can be used in conjunction with RLM
 - Tank Fill optimization software & vehicle routing software
 - Back office software integration

Remote Level Monitoring, (RLM)

Data Center Screen Capture Examples



Example Data & Analysis

Centeron

 (\leftarrow) http://webview.centeron.net/Master.aspx P - B C × G Centeron Webview 2.0 File Edit View Favorites Tools Help 🐴 💌 🔝 👻 🚍 🖶 💌 Page 💌 Safety 🕶 Tools 🕶 🔞 🕶 🔊 🔊 Centeron Wireless Tank Monitoring System 1ew Folders 💌 🔞 🕤 & 🕼 📢 🕼 🖉 << Current Path: \Demo\Fuel Distributor\Knoxville\East Knoxville • Support Center Online Help Information SProducts Custom Alerts East Knoxville **Current View:** Setup 3 Users Billing Users Information Demo 0 Hardware 🗄 🛎 Users 🗉 🗐 CellSite Tanks Controllers Assets: 🗉 🎚 Fuel Distributor Total: 38 Total: 11 Total: 0 🗄 🚨 Users Late: 1 Late: 1 □ ØKnoxville 🗉 🥩 East Knoxville Yellow: 4 🗉 📁 Atoka Station Red: 0 Brooks Station Errors: 0 🗉 🕼 Chicago Station Low Batteries: 0 Current: 0 Cooper Station Cornelia Station Garfield Station Generation Mcmurray Station Mcnutt Station Shipetown Station 🗉 🕬 Watauga Station ■ ØNorth Knoxville 🗉 💋 South Knoxville 🗷 🥬 West Knoxville ■ ØMaryville Remote Cities GPS Demo 🔍 100% 🔻

Schneider Electric - Centeron

Invensys

isbecoming

Schneider

Area Snapshot

Centeron

Invensys is becoming

Schneider

e <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp																	
🝷 🛐 🝷 🖃 🖶 🝷 Page 👻 Safety	▼ Tools ▼ @ ▼	<u>N</u> N															
WEBView			۶ (Centeron Wireless Tank Mo	nitoring Syster	m								L	ogout	Fol	lders 💌
& 🗟 🖬 🛍 🖏 A	Current Pat	h: \Demo\Fuel Distri	butor\Knoxv	ille\East Knoxville\		•								Suppo	rt Cente	r 📀 0)nline F
														- Suppo	it benie	Current	View:
															* Tank	5	•
sers	Max Results:	25 R	Status	Tank Name	Product	Amt Full	Units	% Full	Illiage	Ullage %	Last undate	Mon Status	Days Left	Controller S/N	Avg (MLE)	Eull (incl	ies) I
mo	East Knoxville	Atoka Station	•	Diesel Tank 1	Diesel	10800	Gal	54%	9200.0	46%	2/24/2014 7:00 AM	0	4.0	D20M000212	2616.3	0.5	1
Jsers	East Knoxville	Atoka Station	0	Diesel Tank 2	Diesel	15180	Gal	76%	4820.0	24%	2/24/2014 7:00 AM	0	5.7	D20M000212	2570.9	0.8	1
CellSite	East Knoxville	Brooks Station	0	Diesel Tank 1	Diesel	6963	Gal	85%	1200.0	15%	2/24/2014 7:00 AM	4	6.3	D20M000561	1093.0	0.9	5
Fuel Distributor	East Knoxville	Brooks Station	0	Diesel Tank 2	Diesel	6955	Gal	58%	5140.4	43%	2/24/2014 7:00 AM	0	4.3	D20M000561	1550.4	0.6	7
Users	East Knoxville	Brooks Station	•	Diesel Tank 3	Diesel	2325	Gal	47%	2675.0	54%	2/24/2014 7:00 AM	0	3.4	D20M000561	656.6	0.5	3
Knoxville	East Knoxville	Brooks Station	0	Diesel Tank 4	Diesel	4298	Gal	61%	2702.0	39%	2/24/2014 7:00 AM	0	4.5	D20M000561	912.0	0.6	3
East Knoxville	Fast Knoxville	Brooks Station	•	Plus Tank 1	Plus	3008	Gal	75%	992.0	25%	2/24/2014 7:00 AM	n	9.3	D20M000561	319.1	0.8	5
Contraction	East Knoxville	Brooks Station	0	Regular Tank 1	Regular	6712	Gal	84%	1288.0	16%	2/24/2014 7:00 AM	0	6.3	D20M000561	1033.6	0.8	1
Generation	East Knoxville	Chicago Station	0	Diesel Tank 1	Diesel	3020	Gal	75%	990.7	25%	2/24/2014 7:00 AM	0	5.7	D20M000191	519.4	0.8	2
Chicago Station	East Knoxville	Chicago Station	0	Diesel Tank 2	Diesel	1717	Gal	43%	2294.3	57%	2/24/2014 7:00 AM	0	3.2	D20M000191	520.6	0.4	2
Cooper Station	East Knoxville	Chicago Station	0	Diesel Tank 3	Diesel	1872	Gal	31%	4128.0	69%	2/24/2014 7:00 AM	0	2.3	D20M000191	777.5	0.3	3
Cornelia Station	East Knoxville	Chicago Station	0	Regular Tank 1	Regular	3167	Gal	53%	2842.7	47%	2/24/2014 7:00 AM	0	4.0	D20M000191	758.8	0.5	3
Garfield Station	East Knoxville	Cooper Station	0	Diesel Tank 1	Diesel	612	Gal	31%	1388.0	69%	2/24/2014 7:00 AM	0	2.2	D20M000194	264.1	0.3	1
Hammer Station	East Knoxville	Cooper Station	0	Premium Tank 1	Premium	2076	Gal	35%	3924.0	65%	2/24/2014 7:00 AM	0	6.8	D20M000194	299.0	0.3	3
Mcmurray Station	East Knoxville	Cooper Station	•	Regular Tank 1	Regular	3550	Gal	36%	6450.0	65%	2/24/2014 7:00 AM	0	2.7	D20M000194	1264.5	0.4	5
Constant Station	East Knoxville	Cornelia Station	0	Plus Tank 1	Plus	2450	Gal	25%	7550.0	76%	2/24/2014 7:00 AM	0	2.9	D20M000211	803.1	0.2	6
Ghipetown Station	East Knoxville	Cornelia Station	0	Premium Tank 1	Premium	7100	Gal	71%	2900.0	29%	2/24/2014 7:00 AM	0	14.0	D20M000211	501.8	0.7	6
Watauga Station	East Knoxville	Cornelia Station	0	Regular Tank 1	Regular	2370	Gal	24%	7630.0	76%	2/24/2014 7:00 AM	0	1.7	D20M000211	1296.8	0.2	e
Worth Knoxville	East Knoxville	Cornelia Station	•	Regular Tank 2	Regular	8410	Gal	84%	1590.0	16%	2/24/2014 7:00 AM	4	6.3	D20M000211	1299.6	0.8	6
South Knoxville	East Knoxville	Garfield Station	0	Regular Tank 1	Regular	10188	Gal	85%	1812.0	15%	2/23/2014 9:00 PM	0	6.0	D20M000206	1566.5	0.8	7
West Knoxville	East Knoxville	Hammer Station	•	Diesel Tank 1	Diesel	5550	Gal	37%	9450.0	63%	2/24/2014 7:00 AM	0	2.7	D20M000208	1981.5	0.4	9
Maryville	East Knoxville	Hammer Station	0	Diesel Tank 2	Diesel	3400	Gal	43%	4600.0	58%	2/24/2014 7:00 AM	0	3.2	D20M000208	1018.0	0.4	4
Remote Cities	East Knoxville	Hammer Station	0	Plus Tank 1	Plus	3800	Gal	48%	4200.0	53%	2/24/2014 7:00 AM	0	5.8	D20M000208	647.3	0.5	5

Schneider Electric - Centeron

12

Tank Summary

\leftarrow http://webview.centeron.net/Master.asp P - B C × *6* Centeron Webview 2.0 File Edit View Favorites Tools Help 🐴 💌 🔝 👻 🚍 🖶 💌 Page 💌 Safety 🕶 Tools 🕶 🔞 🕶 🔊 🔊 Centeron Wireless Tank Monitoring System **View** Folders 💌 🔞 🚱 🏖 🕼 📢 🖆 🖉 👡 Current Path: \Demo\Fuel Distributor\Knoxville\East Knoxville\Atoka Station • Support Center Online Help 🗉 🚨 Users History 1) Information Diesel Tank 1 E CellSite Current View: Setup 🗉 🎚 Fuel Distributor Information 🗉 🗸 Users 0 0 Moni □ ØKnoxville 🗏 🥑 East Knoxville Controller S/N D20M000212 D20M000212 20.000 Monitor S/N: Atoka Station 16,000 Product: Diesel 12,000 Controllers 2/24/2014 7:00:00 AM Last Update: 8.000 🗆 🛐 Tanks Inches Full: 0.5 10800.0 Gallons 9200.0 Gallons 4.000 Amount Full: Amount Empty: Diesel Tank 1 Diesel Tank 2 Last 15 Days Level History Brooks Station 🗉 📁 Chicago Station Tank 0 Cooper Station 0 Usage Storage Tank 20000 Gallons Gornelia Station Tank Type: Average Usage: 2623.7 Gallons Capacity: Offset: Garfield Station Workday Usage: 2616.3 Gallons 🗉 📁 Hammer Station Weekend Usage: 2639.4 Gallons LastFillDate: 2/22/2014 7:00:00 AM GMcmurray Station LastFillAmount: 11980.0 Gallons 🗉 📁 Shipetown Station 🗉 🥬 Watauga Station Setpoints 0 Other Information 0 ■ ØNorth Knoxville ■ ØSouth Knoxville UserDefine1: Tank S/N: Setpoint1: 6000.0 Gallons UserDefine2: UserDefine3: Tank Model: Email: As Tank is Emptied 🗄 💋 West Knoxville 4000.0 Gallons 🗉 💋 Maryville Setpoint2: Email: Supplier Information: Name: AA Fuels AA Fuels As Tank is Emptied 🗄 💋 Remote Cities Phone: € 100% -

Schneider Electric - Centeron

Invensys is becoming

Schneider

Centeron

Fill Analysis

,O → 🗟 Centeron Webview 2.0 http://webview.centeron.net/Master.aspx 🏉 (\leftarrow) File Edit View Favorites Tools Help 🐴 💌 🔝 👻 🚍 🖶 💌 Page 💌 Safety 🕶 Tools 🕶 🔞 🕶 🔊 🔊 Centeron Wireless Tank Monitoring System 1ew Folders 💌 🔞 🚱 🏖 🕼 📢 🖆 🖉 👡 Current Path: \Demo\Fuel Distributor\Knoxville\East Knoxville\Atoka Station • Support Center Online Help Current View: Fill Analysis -³Users Email Report: Send weekly email report to: 🔊 🖙 Demo 🗉 🚨 Users 🗉 🗐 CellSite Goal Fill %: 80% Product Groups: ALL Tank Details Fuel Distributor Report Type: Standard Custom ۲ \bigcirc 🗉 ቖ Users Report Range: Refresh 7 Days 💌 🗏 🕼 Knoxville Recent Average: Annual Trend: 🗏 🥑 East Knoxville 🗉 📁 Atoka Station 100 90 80 70 60 50 40 30 20 10 0 Controllers 40 % 50 % 🗉 🗊 Tanks Weekly Fill % 30 % Brooks Station 80.9 20 % Chicago Station Cooper Station 10 % 90 9 Cornelia Station 100 ' Garfield Station March rier August cepteribe otober october noverber pereriber Januari Februari ■ Ø Hammer Station 7 day avg.: 67% Image: Memory Station 🔷 Real Values 😑 Avg. Values 🌑 Desired Fill Rate ØMCnutt Station Shipetown Station Show: Top 10 Fill rates by Product Group (10 Lowest) Fill rates by site Watauga Station Upper Folder Product Group ØNorth Knoxville Diesel 67% 36240 East Knoxville Atoka Station 67% 3 South Knoxville 🗉 🥬 West Knoxville 🗉 🥬 Maryville # CRamota Citiac € 100% -

Schneider Electric - Centeron

Invensys is becoming

Schneider

Centeron

Suite of Devices

Centeron[®]

Invensys is becoming



Remote Level Monitoring, (RLM)

OptiFill & Dispatch Compass Screen Capture Examples



Cent	С)p	tiF	il	I								Invensys is becoming	
		<u>I</u>		15									Profile:	
Nev	v Or	lers)	Created O	rders	Exporte	d Orders								
Site Orea														
The foll Sho	The following orders will be generated. 82 Orders 126/tes Show Filters													
Edit		Order Amt.			Location	Container Name		% Full*	Days Left	DBF	Webview Folder	Part Num	CustNum1 IOF INOTILOTED and Scheduled Lanks	
<u>Edit</u>		510	5/6/2014	•	Cecil Station	5W20 Tank 1	51420	U	1.1	7	Cecil Station	5W20	based on selected delivery criteria	
<u>Edit</u>	✓	460	5/6/2014	0	Douson Station	5W30 Tank 1	5W30	75	8.4	8	Dodson Station	5W30	5/4/2014 12:47:00 Pus	
	✓	740	5/6/2014	•	Dodson Station	5W20 Tank 1	5W20	13	2.7	8	Dodson Station	5W20	956 12:47:00 Pm	
	✓	1540	5/6/2014	•	Dodson Station	10W30 Tank 1	10W30	18	5.3	8	Dodson Station	10W30	210 - 4/19/2014 12:47:00 PM	
<u>Edit</u>	✓	340	5/6/2014	0	Henrietta Station	5W20 Tank 1	5W20	21	3.3	7	Henrietta Station	5W20	428/2014 6:00:00 AM	
<u>Edit</u>	✓	410	5/6/2014	•	Highland Station	5W20 Tank 1	5W20	7	1.8	7	Highland Station	5W20		
<u>Edit</u>	✓	210	5/6/2014	•	Loma Station	5W20 Tank 1	5W20	13	2.4	7	Loma Station	5W20	webview Orders Configuration	
<u>Edit</u>	✓	350	5/6/2014	0	Lynnview Station	5W20 Tank 1	5W20	20	3.3	8	Lynnview Station	5W20		
<u>Edit</u>	√	230	5/6/2014	•	North	5W20 Tank 1	5W20	10	2.1	7	North	5W20	You can set conditions here that will select which sites will be selected as new orders. Only sites having tanks that match the following conditions will be selected	
<u>Edit</u>	✓	240	5/6/2014	•	Church Station	5W20 Tank 1	5W20	0	0.0	8	Church Station	5W20		
<u>Edit</u>	✓	120	5/6/2014	0	Station	5W30 Tank 1	5W30	44	5.5	8	Station	5W30		
		130	5/6/2014	•	Valleybrook Station	15W40 Tank 1	15W40	41	7.6	8	Valleybrook Station	15W40	Profile: Default V	
		320	5/6/2014	0	Valleybrook Station	5W20 Tank 1	5W20	22	3.6	8	Valleybrook Station	5W20	Name: Default Default	
	✓	100	10/14/2013	12	Alma Station	Alma Station - 10W30	10W30	0	0.0	0		10W30		
	✓	100	10/14/2013	12	Alma Station	Alma Station - ATF V	ATF V	0	0.0	0		ATF V	-Profile Conditions:	
	✓	100	10/21/2013	12	Alma Station	Alma Station - 10W30	10W30	0	0.0	0		10W30	Select tanks that match: Any Condition	
	Schr	eider F	lectric - Ce	entero	Alma Station	Alma Station - ATF V	ATF V	0	0.0	0		ATF V	Condition1: Days Left < 5 And Adj. Percent < 30 Add Condition	









Dispatch Compass

Truck: 01937			F	un Number: 1		Date: 9/5/2007
Pallets Used: 6			Т	otes Used: 4		Total Used: 10 / 12
Deliveries	Distance					
5:04:00 AM: Depart '40	0.00 Mi					
Immediately turn left int	1	0.02 Mi				
Take second right into		0.24 Mi				
Take left after 2.3 mile:	s into 'N Jean	Nicolet Rd [N Port Wash	nington Rd]'		2.31 Mi	
6100 N Port Washingto	on Rd' is on tr	ne left after U.6 miles	Area Del Mileo	and a state from the disconsistent of the state of the st	0.60 Mi	
ATTIVE GREAT LAKES	LUDE #012	- 6100 N Port Washing	jton ka Miliw	aukee, wi. Eta: Jan 1 1900 5:10AW	3.17 MI	
siteID Order Num	Tank Name	Product	Order Amt			
36084 379171		VAL SEMISYN 5.30 DR	1.00			
5:30:17 AM: Depart '6'	100 N Port Wa	ashington Rd' and turn le	eft onto N Jear	n Nicolet Rd (N Port Washington Rd)	0.00 Mi	
Make a U-turn after 0.2	2 miles	-			0.20 Mi	
Take first right into 'W	Silver Spring I	Dr'			0.79 Mi	
'1400 W Silver Spring [Or' is on the le	eft 148 yards after 'N 13	ith St'	1	0.58 Mi	
Arrive CONCOURS M	OTORS MER	CEDES - 1400 W. SILV	ER SPRING DI	R MILWAUKEE, WI. Eta: Jan 1 1900 5:33AM	1.57 Mi	
sitelD Order Num	Tank Name	Product	Order Amt			
36076 379101		HBY PM WASH SOL	125.00			
36076 379102		MOB 1 ESP 5.40 DR	3.00			
36076 379105		MOB 1 0.40 QUARTS	12.00			
36076 379105		MOB 1 ESP 5.40 QT/CS	12.00			
5:57:31 AM: Depart '14	400 W Silver :	Spring Dr' and turn left (onto W Silver S	Spring Dr	0.00 Mi	
1620 W Silver Spring I	Dr' is on the le	eft after 0.1 miles			0.12 Mi	
Arrive ANDREW TOY	OTA - 1620 V	V. SILVER SPRING DR	GLENDALE, W	/l. Eta: Jan 1 1900 5:57AM	0.12 Mi	
siteID Order Num	Tank Name	Product	Order Ar	nt		
36079 379117		MOB TOYOTA ATF T G	0.00 STS			
36079 379119		PEAK M/V 22" BLADE	1.00			
36079 379119		PYR 4053 DR	1.00			
36079 379193		MOB 1 5.30 QUARTS	1.00			
6:17:43 AM: Depart '11	320 W Silver 3	Spring Dr' and turn left (nto W Silver S	Spring Dr	0.00 Mi	
Take ramp to N Green	Bav Ave M-	571		spring bi	0.12 Mi	
'6100 N Green Bay Av	e (VM-57)' is a	on the right 0.1 miles afte	er W Florist A	ve'	0.61 Mi	
Arrive DAVID HOBBS	HONDA - 61	00 N GREEN BAY AVEN	IVE GLENDAL	E, WI. Eta: Jan 1 1900 6:19AM	0.73 Mi	
siteID Order Num	Tank Name	Product	Order Amt			
35164 379160		PC STB CLEANER 55G	L 1.00			
				1		

Centeron

Invensys is becoming

Schneider

With the printable Dispatch List, you never have to worry about new or replacement drivers - Dispatch Compass calculates the most efficient routes and provides driving directions to each tank

Remote Level Monitoring, (RLM)

Robertshaw Industrial Products

