

Dispelling Myths: The Truth About ATGs, Fuel Industry Profit Margins and Managing Wet-Stock Inventory

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ARTICLE

Abstract

As the price of oil tops \$80 per barrel, leaders in the fuel industry are looking for ways to optimize inventory management to help offset deteriorating profits.

Tank monitoring companies are starting to realize that automatic tank gauging (ATG) equipment can do more than just monitor tank levels, but haven't yet embraced the idea of a "whole product"—a solution that includes tank data collection, centralized aggregation, powerful data analysis and the execution of better decisions, all of which lead to improved inventory management.

By investing in a "whole product" of enabling technologies, companies can better manage inventory so as to have enough on hand to meet customer demand (thereby avoiding run-outs) while not keeping excess inventory in tanks. In doing so, companies can vastly improve their bottom line, along with that of their shareholders.

Introduction

The goal in any fuel management scenario is to ensure quality decisions which result in [improved wet stock inventory management](#). This goal is simple to understand: replace inventory with available cash while decreasing exposure to market volatility. Understanding how to achieve this goal is the hard part.

Companies need a "whole product" comprised of data collection, aggregation, analytics and execution. They need timely, accurate data through automated data collection. They need visibility and centralization of information through data aggregation. Most importantly, they need to ensure the best inventory management decision is made every time by utilizing an integrated analytics engine. In other words, companies need to be automated starting with the execution engine (ERP system, etc.) all the way out to the edge of the tank network.

WorldTelemetry, Inc. (WTI) has been advocating the "whole product" philosophy [for some time](#). A recent [article in NPN Magazine](#) suggests that while others in the marketplace are beginning to see that ATG equipment should be utilized far beyond simple tank level monitoring, they have not yet embraced the "whole product".

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Augmenting Your ATG System

Tom Nielson of Warren Rogers Associates (WRA) is quoted in the article as saying "...today, if your ATG is a standalone device, then it's the most underutilized piece of equipment on your site." The article goes on to suggest that augmenting an existing ATG system with data collection, integration and [analytics](#) creates enormous potential for improving operating efficiencies.

Nielson makes an important point—an ATG system needs to be augmented by the other pieces of the "whole product" to bring value to an organization. However, according to a [white-paper posted on WRA's Web site](#), the company defines better utilization of ATGs as focusing more on leak detection, tank erosion, dispenser calibration and monitoring and other environmental compliance needs rather than focusing on better inventory management. Of course, the rare tank leak or dispenser malfunction does deserve consideration. At this point in time, though, environmental compliance should be a given-- one that is included with a solution that makes a positive impact on the company's bottom line through improved inventory management.

The Future Is Now

Tony Mills of OPW Fuel Management Systems asserts in the article that "convergence between ... tank gauge products and fuel management products is what we see coming in the future." Perhaps in an attempt to move toward

this convergence, OPW [launched their SiteSentinel® "iSite" system](#) in February of 2007, which displays inventory, delivery and compliance information through a web-based interface. OPW will now be able to compete with the data aggregation offerings of companies like WTI, who for years have recognized the need for visibility of centralized data through a web-based interface. And while this development in OPW's offering is encouraging, it should be stated that, in this case, the "future" Mills refers to has already happened.

At WTI, the real convergence between tank gauging and fuel management took place when Business Intelligence analytics software was created. Analytics go beyond the traditional view of tank data to bring the user forecasts of demand and supply needs based on historical and statistical algorithms. A recent [article published by Global Logistics & Supply Chain Strategies](#) discusses the academic development of such algorithms in a move towards better inventory optimization (meeting customer demand at the least possible cost).

"These optimization engines are very highly sophisticated — almost rocket science — with algorithms that look at consumption, at supply, at various lead-times, and then figure out what amount of inventory needs to be kept on hand at any point," says Mary Haigis of Clarkston Consulting in the article. "It's a myth to think anyone will ever get to zero inventory, but inventory optimization engines are the next step in that direction."



Questions

It is encouraging to see industry leaders begin to adopt the same ideas that WTI has embraced; however, the article left a few questions unanswered.

For instance, Kent Reid, VP of strategic development for Veeder-Root, commented on ATGs. "By pushing the data out to your central office, you take the burden off your site managers so they spend less time in the back office," Reid said. "We're moving ATGs beyond their traditional functions and watching them evolve from simple standalone tank gauges into site controllers."

It is necessary to take a few moments to look closely and reflect on his statements, because they give an indication of how many competitors view the market. Obviously, Veeder-Root agrees that there is tremendous value in tank data collection—after all, it is their core business and they do it well. Reid says companies should be "pushing the data" to a central office. Here WTI is in agreement as well. Once data is collected, it certainly needs to be aggregated for centralized visibility.

Push vs. Poll

This link connects to the page of Veeder-Root's Web site that explains their "automated" data collection methods: <http://www.veeder.com/object/AutomatedDataCollection.html>

With Veeder-Root, ATG data can be gathered in four ways: polling the ATG on a timed interval, a telephone-based voice recognition system, a web-based data entry tool, and by fax. Obviously,

voice recognition systems, web-based data entry and fax all require human intervention—someone has to speak, type or fax that information to the appropriate place, so data is not really "pushed" at all. Plus, each time human intervention takes place in order to move the data from the console to a centralized location, the opportunity exists for loss of data accuracy (not to mention timeliness). Relying on human intervention as "technology" not only wastes resources, it creates an unexpected opportunity for data to be corrupted. In addition, simply adding technological components to a still very much human-driven process may lead managers to believe that they have relieved or solved the problem when, in fact, the problem may have been compounded by this addition.

Machine-to-machine data transfers, however, offer little to no chance for the data to be negatively affected by human error or delay. The machine-to-machine option Veeder-Root offers for data gathering is by polling the ATG at automated intervals. The difference between "pushing" and "polling" data is subtle, but important. Polling essentially means a phone call is placed to a modem inside the console that sends back the latest data to a centralized location. The central office basically calls to "check in" every X number of hours, days or weeks.

When data is pushed, however, the on-site equipment places an outgoing call at scheduled intervals. More importantly, it is also able to make supplemental calls when necessary—during run-outs, emergency situations, etc. This feature is not available when data is "polled", so if a problem occurs five minutes after



the last poll was taken, the information about a critical situation could remain unaddressed on the console for hours or even days, until the next polling call occurs.

of fuel management is through centralized purchasing rather than autonomous site management, and turning ATGs into individual “site controllers” doesn’t change the process sufficiently to allow this to happen.

Centralized vs. Autonomous

Reid then says that by moving this data to a central office, you “take the burden off your site managers” and they in turn spend “less time in the back office.” This is a notable concept, but in an optimal situation, shouldn’t these site managers be spending ZERO time in the back office? If a company is going to go to the trouble of implementing an ATG system and have the data aggregated in a central office, then there ought to be just a few analysts dealing with fuel purchasing at an enterprise-wide level. Why leave the site managers to be autonomous at all when the decisions can be made in a coordinated way, at a broader level, using more data from all remote sites? If individual site managers are just referring to a centralized repository of data from which to make their inventory management decisions, then sites are still being managed locally—and the opportunity for real improvement in operating efficiencies is minimal.

While enabling technologies can save time and effort, if they are only used at the localized level rather than enterprise-wide, then there is no real change in the inventory management process. Reid reinforces this idea by saying that ATGs are going beyond their usual tank gauging functions and becoming “site controllers”. The most effective method

Analytics?

Being limited by the technology that Veeder-Root has to offer, Reid does not address the previously mentioned [need for analytic software](#) in the article.

Analytics software [has become critically important](#) to any organization looking to [optimize its inventory levels](#) and create a [smooth supply chain](#). As Tony Mills of OPW asserts in the NPN article, “You want fuel to be constantly available so that you never run out. But with the volatility of fuel prices today, you might not want to completely fill the tank every time you get a delivery. When prices are high, you can have a lot of dead money sitting in a full storage tank of gasoline or diesel.”

This is a constant concern of fuel managers. It may be helpful for a manager to know how much fuel is in his tanks at the touch of a button, assuming he is on-site and able to do so. But how much more valuable would it be to have an [extremely tight forecast of what your fuel usage will be](#) over the next 24, 48 or 72 hours?

Rather than guessing at the next few days’ usage, he should use concrete data and automated suggestions to coordinate his fuel dispatching so as to not order too much or too little, too early or too late. How much more in-

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formed would all of his P & L actions be with the decision support of an analytics engine? In other words, how much value could he create by keeping cash in the bank and not in the tank? At a large enterprise level, reducing excess inventory in each location's tanks by just a half-day's worth of fuel usage can save a company millions of dollars in working capital, interest and decreased exposure to market volatility. When managers have the visibility and analytics to know how much fuel they will use and how fast they will use it, reducing excess inventory in their tanks is no longer a risk—it is a conscious decision. And, by taking these actions to reduce operating expenses, companies can greatly increase market capitalization for shareholders.

From a customer service standpoint, with analytics, how much better would a manager be able to meet customer demand while doing so at the least cost? For instance, in a c-store environment, managers take great care to track dry goods inventory. They use enabling technologies such as UPC scanners and ERP systems to effectively manage their in-store inventory by tracking sales levels and patterns to forecast inventory needs. Many use these systems to enable [vendor-managed inventory](#), which allows the product supplier to track inventory levels and make delivery decisions to best serve the c-store.

Retail locations can [make the same advances in managing their wet-stock inventory](#). With analytics and visibility, advance notice of an impending run-out situation allows managers to avoid not only wet-stock sales losses, but

also a big drop in dry sales caused by a gasoline run-out.

The Whole Product

The “whole product”—data collection, aggregation, analysis and execution—carries a huge amount of potential for companies to optimize fuel management by reducing inventory while increasing available cash. Many competitors, however, don't appear to have entirely embraced the concept of utilizing data aggregation and analysis with the goal of improved inventory management. Some tout data collection as the most important investment for their customers, with no consideration for what will be done with the data after it is collected. Others are beginning to see the value in aggregation and analysis, but focus on environmental compliance and dispenser monitoring—selling on fear rather than by the huge amount of value that inventory optimization can bring to an organization.

If a company does not recognize the need for a “whole product”, there is no way they will be able to achieve the enormous potential it can bring.

Protecting Your Investments

WorldTelemetry has powerful, wireless data collection hardware that is [intrinsically safe](#). A lot of time and money was spent to make sure it is extremely reliable. It's easy to install, simple to move if necessary and it doesn't require any on-site downtime due to digging and trenching.



WTI's managed services include a leading-edge datacenter that aggregates collected tank information securely combined with a web interface that allows users to access tank information from anywhere in the world with a connection to the Internet.

The Business Intelligence application, WorldTelemetry's analytics software, is top-of-the-line and is continuously improved to give our customers the absolute best decision support tools for fuel management.

However, if a company has already invested in data collection, aggregation or analysis, WTI works to integrate these pieces into a "whole product" solution, so that the most possible value is derived from existing investments.

This is not a business of selling a widget and walking away. As such, WorldTelemetry's approach is to explore the current fuel management situation of a company with respect to the "whole product" and see where gaps can be filled. In this way, WTI brings value to the organization by protecting its existing investments and making them work harder for the company.

Separately, the pieces of the "whole product" are simply time-savers that sometimes remove instances of human error. It is faster to read a console than to manually stick multiple tanks. It is faster to automatically aggregate the data than it is to manually enter data into a spreadsheet. But do these pieces really help optimize inventory? Only as part of the "whole product"—machine-to-machine data transfer from the edge of the network through an aggregation

hub into an analytics engine—can these technologies deliver the support for quality decisions leading to optimized wet stock management.

Conclusion

Companies need data collection. They need timely, accurate data about their assets. Companies need data aggregation for visibility, but it should be managed at a centralized location, with a few enterprise-level decision-makers rather than many autonomous decisions being executed at remote locations. Most importantly, companies need analytics software in order to have premium decision support and to create rules at a micro level—managing each remote location (even each tank) based on its individual needs.

Add it all together—data collection, aggregation, analysis and execution—and the result is the "whole product", with huge potential for turning excess inventory into cash. In short, by implementing a "whole product" solution, companies optimize inventory management and help maximize both company and shareholder value.

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