

# WERC Sheet®

## Metrics: A Roadmap to Success

*Developing a metrics program is important for measuring internal processes, but it involves more than just recording data. Unless the measurements are being used to drive change throughout the supply chain, the program will be hard-pressed for success.*

**D**eveloping a good metrics program is one of the best ways to bring production levels under control and to improve a facility's efficiency. But a strong metrics program doesn't just rely on measuring internal processes; it must align with the corporate strategy and ensure that employees up and down the company hierarchy believe in the measurements. Those companies that are establishing programs without alignment and buy-in could be moving toward trouble.

“  
Metrics are much like the  
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If you don't have your  
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”

-Stephen Geary

“Over the course of the past decade, we have seen that warehousing is clearly a critical part of the whole fulfillment activity of the supply chain,” says Stephen Geary, vice president of supply chain solutions for Tilion, Inc., based in Maynard, Mass. “Everything is moving at a much higher velocity and metrics are much like the headlights of a car. They tell you when you are getting into trouble and when you're not. If you don't have your headlights on and you're going 120 mph, sooner or later you're going to get hurt. Without a good, solid, well thought out metrics program, there is no way to monitor the effectiveness of your supply chain.”

But even as more and more companies realize the importance of a metrics program, many still have been unable to establish a successful one in the warehouse.

“There is a difference between doing metrics and being successful at it,” says Kate Vitasek, vice president and general manager, global accounts, for Modus Media International (MMI), a third-party provider of supply chain management processes based in Westwood, Mass. And Vitasek should know. The Council of Logistics Management recently cited MMI as one of the top three best-in-class companies, along with Motorola and 3M, when it comes to metrics. “I see a lot of companies putting in metrics but not using them as a change agent to get where they want to go. They are just measuring things without actually using them to drive a positive, significant impact.”

So how can a warehouse get the most out of its measuring techniques? A good starting point is to determine exactly what internal processes should be measured and why.

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## Steps toward effective measurements

"You must get your house in order before measuring customer expectations and supply chain partners, so start by putting internal measures in place," says Vitasek. In order to figure out internal metrics, Vitasek says companies need to first look at corporate goals. With that in mind, metrics can be put in place to help map out a direction and determine whether the organization is moving toward those goals.

For example, when MMI decided to incorporate a metrics program back in 1996, it knew it had to address quality and shipment issues in order to increase one of the company's many long-term strategic goals of making more money.

"We wanted to have a quality product that was shipped on time," Vitasek explains. Thus the company established its global metrics program. They created 99 metrics that each of its 22 warehouse/manufacturing plants around the world had to follow. The staff did this by putting together a task force from their different facilities in order to get some benchmarking data for measurements.

"We asked ourselves what was important to us," explains Vitasek. For example, the company knew it had to address defective parts per million and fill rates. In fact, she adds, most of the metrics put in place at that time fell under quality issues such as these.

## Balancing the metrics scale

But even when MMI decided it was doing well in terms of shipping on time and providing quality products, those measurements were still not making the company as profitable as it wanted to be. So MMI expanded the process to incorporate a holistic view of the company. Metrics were revisited to include service-oriented measurements, such as on-time rates, as well as productivity measurements, such as lines-per-hour picked. Instead of adding more metrics, the company refined the existing ones to take a more balanced approach. It wanted to integrate and emphasize what was important without overwhelming the process.

"We knew we needed to balance quality, service and productivity. While quality will get you in the door, service is what keeps the customers, and productivity is what keeps your company afloat," says Vitasek.

MMI isn't the only company that realizes the importance of a holistic view when it comes to establishing a successful metrics program. According to Conrad Ross, vice president for Herbert W. Davis & Co./Establish Inc., their company takes a holistic approach with clients by focusing on two types of measurements under which all metrics fall: service performance and operations performance. Companies need to establish their metrics programs around these dimensions and then link measures to what's being done in the warehouse, he says.

Tilion, explains Geary, breaks these two categories down another notch into four dimensions: reliability and flexibility fall under service-oriented measures, and cost and asset utilization fall under operating metrics (See Figure 1). After establishing these types of metrics, companies can

**“When all is said and done, if you're able to get the shop floor worker to be a believer in the established metrics, that is the most powerful tool you can have.”**

**”**

**-Kate Vitasek**

continue to "peel down the onion," says Geary, "to measure days of inventory on hand, fill rates, stockouts, etc.

"Everything you do is anchored by both the context of your business and the context of the four dimensions. These dimensions should link to the measures you are using in your warehouse and the warehouse should link to the higher level measures within the corporate strategy," says Geary.

The overriding goal behind the holistic philosophy is to develop a well thought out program around the issues that are pertinent to your business. According to Conrad, most companies should have between three to five key measurements under these dimensions that will really make a difference to the success of the company. These key measurements should then be linked back to specific measurements for each employee in order to leverage a metrics program.

## Employee buy-in

Part of ensuring a successful metrics program is making sure all employees believe in the process. "I think a lot of companies, including Modus Media, started off by having management measure processes in the warehouse. They failed to get the warehouse worker involved by not allowing all employees to have access to that information," says Vitasek. "The people with the most power



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Figure 1:

## Performance Measures by Category

Reliability	Flexibility	Cost	Asset Utilization
<b>Time Expectancy</b> <ul style="list-style-type: none"> <li>On Time Delivery Percent</li> <li>Available for Pick-up Percent</li> </ul>	<b>Total Order Cycle Time</b> Longer = Inflexible Shorter = Flexible	<b>Productivity</b> <ul style="list-style-type: none"> <li>Number of orders/lines completed per labor hour and cost per order/line by function and total, i.e.: Returns; Picking; Receiving Put away; Shipping; Total</li> </ul>	<b>Utilization</b> <ul style="list-style-type: none"> <li>Space</li> <li>Storage Equipment</li> <li>Handling Equipment</li> </ul>
<b>Product Availability</b> <ul style="list-style-type: none"> <li>Fill Rates</li> <li>Line Item Promise Date</li> <li>Changes</li> </ul>	<b>Time Expectancy</b> <ul style="list-style-type: none"> <li>Internal Order Cycle Time</li> <li>Backlog</li> </ul>	<b>Logistics Measures</b> <ul style="list-style-type: none"> <li>Freight on sales percentage</li> <li>\$/CWT</li> <li>\$ per pound by mode</li> <li>Warehousing &amp; Distribution as a percent of sales</li> </ul>	<b>Activity Ratios</b> <ul style="list-style-type: none"> <li>Days of Inventory</li> <li>Inventory Turns</li> <li>Fixed Asset Turnover</li> <li>Asset Turnover</li> </ul>
<b>Accuracy</b> Errors as a percent of functional order/lines by reason code		Perfect Order Fulfillment Percent	<b>Financial Metric</b> Cash to Cash Cycle Time
Deliveries per Order			

to drive change are the people on the floor.”

Once the company took a holistic view, they were able to create VVAs, or Validating the Value Add, which are employee-developed metrics for the company. “We challenged all the employees to come up with how they, as line workers or warehouse pickers, add value to the company,” explains Vitasek.

The employees went through a class to learn and talk about the company’s strategic goals and then they each had to come up with at least one metric. They were challenged to think about what they weren’t doing as well as they could and what they would like to do to improve. Based on that information they developed a quality, service or productivity metric for the department.

Every week, the teams meet to review and determine whether the company is reaching that particular goal. If they aren’t, the employees must come up with an action plan as to what they will do the following week to improve. If the team is meeting all the goals, says Vitasek, it is time to come up with something new. “There is always something you can be working on; you can always drive cost down,” she says. “And you need to con-

stantly revisit all the metrics in order to continue driving improvement.”

All of the goals are posted at VVA information stations so that when an employee walks through one of the warehouses/manufacturing plants, he can determine how he is adding value to the company.

However, Vitasek warns that companies should not fall into the trap of believing that by simply posting graphs of metrics on warehouse walls, the metric program is working.

“The real leap isn’t going from being a collector of data to a ‘poster’ of data,” she says. “The leap occurs when you go from being a poster to a believer. When employees believe those metrics and understand the impact they have on the entire company, then that is the real difference between having a metrics program and using that program to drive change.”

### B2B metrics

The experts agree that a metrics program cannot just exist as an internal measurement process but rather must provide visibility across the entire supply chain. As such, an organization must aggregate and synchronize information

from a variety of sources so that it is driving metrics off of common information.

The focus should be across companies as well as within the company, agrees Mike Barnett, from Gensym Corporation, Burlington, Mass. According to Barnett, metrics programs have moved beyond focusing on a specific company or enterprise to focusing on how a company exchanges information among different enterprises. The real focus, he says, should be on collaboration and synchronization.

Barnet suggests that companies take a look at the Pittsburgh-based Supply-Chain Council’s S.C.O.R. (supply chain operations reference) model, which allows companies to link measurements across the supply chain. Using the model, companies can define common processes, a glossary of terms and standard metrics in the organization. Overlay that with best practices and you have “a very powerful way to analyze warehouse productivity.”

While there is no such thing as a homogenous supply chain—everybody does things a little differently—there are core measures that a company can look at, such as on-time delivery, fill rates, order fulfillment and cycle times, which are very relevant in the context of any organization. “So while there is no such thing as a Holy Grail for measurement,” says Geary, “when you peel through that hypothetical onion in any particular trading community, there will always be certain things that all folks are interested in.”

### Customer-focused metrics

In addition to measuring supply chain partners, according to Vitasek, companies must develop customer-oriented metrics. A company needs to determine what customers care about and customer metrics should reflect those goals. As with internal goals, those metrics must be driven down to the shop floor so the warehouse workers understand how their job affects the ultimate goal.

“It is so important to talk to the customer,” stresses Vitasek. “In many cases, for our company, the customer thought

*continued on page 4*

something was important but we didn't have a metric for that. We needed to take what the customer considered important and measure it."

Geary agrees: "The voice of the customer has to permeate everything you're doing. You can't operate a business or supply chain without thinking about the impact of your actions on the customer. Everything is about delivering value to the customer, whether it is a manufacturer or end consumer. This goes back to the point about measuring the collective competencies of a supply web rather than the individual competencies of a company."

## **A technology spectrum**

While a company doesn't have to have the most sophisticated technology in place to measure performance, "it all goes back to crawl, walk or run," says Geary. "If you aren't yet measuring anything, you can start with an excel spreadsheet. However, sooner or later, if you are going to be pursuing best-in-class performance, you'll have to apply some sophistication."

It all depends upon the evolution in the company. If a company is operating a DC with no metrics framework in place, the place to begin is at the basic level. This company must figure out how much it costs per pick or per case, for example. However, those companies operating multiple DCs with incomplete metrics programs in place need to roll up their sleeves to dig deeper. Their metrics program needs to synchronize and be anchored to the corporate strategy as well as expanded across the extended supply chain. They can't just look at individual activities. That is where more sophisticated technology comes into play.

According to Vitasek, Modus Media has taken advantage of technology in order to develop its "perfect order index (POI), which is basically one single metric that is comprised of a bunch of little metrics." The POI acts as a multiplier and allows executive management to see a one metric snapshot that balances out quality,

service and productivity measures without the necessity of executive management having to look at each individual measurement.

"While the individual guys on the shop floor still depend on the VVAs to drive change, the CEO often doesn't have time to look across all facilities," explains Vitasek. "So in order to provide good visibility and a quick metric snapshot of each facility, the company is using the POI."

Still, Vitasek stresses, while the company spent a lot of development time and dollars to develop the POI and establish hardware to get real-time data, companies should not invest such time or money until the people on the shop floor are truly believers in their data.

"The biggest bang for your buck doesn't need anything more than a piece of graph paper on a bulletin board," says Vitasek. "When all is said and done, if you're able to get the shop floor worker to be a believer in the established metrics, that is the most powerful tool you can have. That needs to come first and there is no technology involved in that."


## **Benchmark for the big picture**

Technology can also help a company benchmark against best-in-breed companies.

While internally focused measurement programs are excellent at providing companies with relative performance within an organization, they don't establish absolute performance over time. "If you are trying to compete in today's market," says Geary, "absolute performance is vital."

"You need to know the larger context [for a certain measurement] so that when you reach out to compare outside your four walls, you understand how competitive you are and how effectively you deliver value," he stresses. "Benchmarking programs establish a fixed framework from which to compare and understand whether you are getting it done. Today's economy is no longer forgiving. No one cares if you are trying hard; nobody cares if you are getting better. People want you to deliver and companies absolutely have to look outside their four walls to understand this."

Companies must also recognize that metrics programs have to be flexible because strategic imperatives for companies change. If measurements don't change, then a disconnect occurs. Metrics programs must be living, breathing programs that are actively managed, monitored and communicated.

The bottom line, says the experts: If you aren't measuring, you won't improve. 

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*Explore different ways to cut costs and improve your overall operations*

June 3-4, 2002 • Chicago, IL

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- Registrations must be made together to qualify.
- Make copies of this registration form and complete one for each registrant.
- If a cancellation is made without a replacement, the registrants' fees will be adjusted accordingly.



**Name:** Jim Bierfeldt

**Date of birth:** November 5

**Resides in:** Torrington, CT

**Job title and duties:**

Vice President of Marketing and Sales; Responsible for the overall marketing and sales strategy for USCO Logistics, a subsidiary of Kuehne & Nagel—a \$5 billion global logistics company with 600 locations in 90 countries.

Also currently serves as WERC's 2002 Annual Conference Director.

**Career highlights:**

- Taught marketing and communications at the University of North Carolina at Greensboro.
- Executive at a marketing agency that advised many large business-to-business clients, including USCO Logistics
- Moved from agency to USCO in 1996 and rose from marketing manager to my current role.

**Career mentor:** My dad

**Why?** He had a blue collar, lunch box mentality. His approach was straightforward, characterized by dedication, honesty and hard work.

**Biggest career challenge?**

Making the move from helping customers with tactical domestic logistics solutions to advising customers on how to implement their global supply chain strategy.

**Future plans:**

**Career:** Expanding from domestic 3PL capability to global 4PL capability in order to drive strategic advantage for the customer. That's a different challenge as it requires expertise not just in execution but in strategic oversight and knowledge management.

**Personal:** Trekking in Alaska this year and then hopefully visiting the Amazon the following year.



## ON THE MOVE

This year's conference director keeps moving forward to push new limits.

**J**im Bierfeldt is not afraid of challenges. This coming summer, the vice president of sales and marketing for USCO Logistics, plans to tackle a big one—trekking through the untamed territory of Alaska. The following year, he hopes to follow that up with a journey through the Amazon. Both trips will likely be completed without a guide and with just his brother-in-law for company.

Such grit has benefited Bierfeldt throughout his career as well. He began his career in the field of marketing, serving both as an academic and an executive. Beginning in 1996, however, Bierfeldt took on the challenge of a new career path, entering the world of logistics. In just a few short years, he's been able to prove himself in his new field, moving up to the position of vice president of marketing and sales for the Connecticut-based 3PL.

These days Bierfeldt faces new challenges, as he looks to help guide USCO and its clients into the realm of global logistics. The task has changed, thanks to a shift in how clients think about outsourcing, he says. "It used to be that we'd sell the value of outsourcing," he says. "But now clients see the logic in it and are focused on how to choose the right partner and manage that relationship."

As a result, 3PLs need to work smarter than in the past. And that's where education through an organization like WERC comes into play, says Bierfeldt. "Logistics is a different business now than in the past—it's not just arms and legs moving things around," he explains. "It's also brainpower. When people outsource, they want someone

to show them a different way to do things." Because of that, ongoing education for logistics professionals is critical, he says.

Bierfeldt also looks to use his involvement in WERC as an opportunity for networking, a tool that all members can benefit from. "We all live in our own little worlds. If you're not exposed to others, you're limited in how effective you can be," he says. "By getting involved in an organization like WERC, you have the ability to network and interact with people who can teach you new ideas."

### Conference for the times

Bierfeldt's current involvement with WERC includes serving as director of this year's annual conference. He says that, as in other years, attendees can expect the conference to deliver practical answers to practical problems. "You go to the WERC conference to get information you can take home and use tomorrow," he says.

While the conference will offer practical, actionable information, a lot has changed in the world since the last annual conference. Those changes will be reflected in the conference presentations. "While the conference won't focus on the state of the economy, many presentations will have the undertone of doing

more with less," Bierfeldt says.

Another issue that will rear its head during this year's conference is leadership. "As an industry, we're starting to realize that we have a higher profile in our companies than

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- Jim Bierfeldt

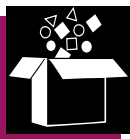
in the past," says Bierfeldt. "Companies are looking for us to drive change." As such, the conference will offer several topic sessions, and even a feature presentation, geared toward leadership.

"As an industry, we're doing a better

job of getting people ready to lead," says Bierfeldt. "You'll see more of that at this year's conference, and in the future."

Bierfeldt has proven his leadership on all fronts—in his personal pursuits, in his career and now with the 25th Annual

Conference. Before Bierfeldt explores uncharted Alaskan territory, he and the conference committee have mapped out an excellent 2002 annual conference program. ■



## SHORT PICKS

### SIMULATION

#### Try Before you Buy

Everyone wishes they could try before they buy, but that opportunity rarely comes about when you're talking about warehousing equipment and systems. Now, however, Tompkins Associates has developed a first-of-its-kind testing lab that lets you do just that. Located in Orlando, Fla., the lab is over 11,000 square feet and is filled with different warehouse equipment and IT systems for the trying. Conveyor and sortation systems, automated inventory carousels, wireless RF devices and web-based order receipt programs are among the equipment available for you to test. In addition, the \$5 million facility includes meeting rooms, training space and round-the-clock support.

To schedule a tour or to receive more information, contact Tompkins at (407) 362-0362, or email [lab@tompkinsinc.com](mailto:lab@tompkinsinc.com).

*Source: O&F Weekly Update, February 2002; [www.primediabusiness.com](http://www.primediabusiness.com)*

### EXPENSES

#### The Cost of Logistics is Rising

While there are some indications that the economy may be on the verge of recovery, analysts have tallied the cost of doing business post-Sept. 11, and the picture isn't pretty. In fact, according to Fortune Magazine, of the total \$151 billion that Fortune 100 companies will spend on workplace security, insurance, employees and other costs, logistics costs topped the

list, coming in at a whopping \$65 billion expenditure. Travel and transportation also made its contribution, adding up to a \$12 billion expenditure.

Fortune says that the reason for the heavy price tag in logistics and other services is simple: conducting business in this new era is a riskier proposition. Companies, the magazine says, "have little choice but to swallow the additional risk in the bitter form of surging premiums."

Logistical costs stem from a variety of changes after Sept. 11. Inventory, for instance, is now at a higher level as companies keep safety stock in case of an emergency. Michigan State University experts predict that American businesses will likely hold 1.43 months of inventory this year, compared to 1.36 months in 2001.

Cargo is often being held longer in airports, both domestically and internationally, and border crossings are slower than in the past. The cost of air freight has risen 3 percent since January, and small parcel shippers like FedEx and UPS have increased their shipping charges by 3 percent to 4 percent since the beginning of the year.

Other expenditures that Fortune 100 companies will face include \$35 billion for insurance and liability, \$18 billion for workplace security, \$15 billion for information technology and \$6 billion in employee costs.

If all of these costs seem overwhelming, Fortune points out that history has shown that the American economy is very adaptable. The new costs could provide

companies with new incentive to improve efficiencies in other areas. Ultimately, says the magazine, companies may rebound and even begin to turn new efficiencies into savings.

*Source: Fortune Magazine, February 18, 2002; [www.fortune.com](http://www.fortune.com)*

### PALLETS

#### RFID Pilot

Retailing giant Wal-Mart has set many logistics trends in the past, and if a new pilot program turns up positive results, the trend will likely continue. Working with supplier partners like Procter & Gamble (P&G), International Paper, The Gillette Company, and Johnson and Johnson, Wal-Mart is testing the feasibility of using RFID tags on pallets to track consumer packaged goods and food items throughout the supply chain.

In the first phase of the pilot, the tags will be embedded in plastic lead boards placed on two sides of wooden pallets supplied by CHEP. As the pallets travel throughout the supply chain, they'll pass wireless readers that will give constant updates on the pallets' location. Forklifts, warehouse walls and conveyor belts are just some of the potential reader locations.

The testing will eventually expand to include tagging individual cases of product. Should the technology ever become affordable enough, tags may eventually make their way to individual items for tracking all the way to the consumer.

*Source: Food Logistics magazine, February 2002; [www.foodlogistics.com](http://www.foodlogistics.com)* ■

# A Well-Kept Yard

New tools can turn your yard into a well-oiled machine.

**D**o you know what trailers are in your yard? If you do, then do you know their status and precisely where they're located? If those questions leave you scratching your head, perhaps you're still managing your yard with a manual system. And if that's the case, it's time for spring cleaning in your yard! To help you out, there are several tools that can make a big difference in how efficiently you manage your yard.

Most companies still haven't tapped into the newer crop of yard management tools. "Yard management is a very murky area," says Ben Cubitt, principal, Tompkins Associates, Atlanta, Ga. "There are a lot of unfulfilled needs. Many people know what they'd like to have in a yard management system, but don't have it."

In other words, many companies still manage their yards manually or with very basic in-house software tools. Such inefficient systems are very simple, at best and subject to a great deal of human error, at worst. Oftentimes, says Cubitt, companies stop using these systems after a short period of time because of the time and effort they require, yet without significant payoff.

There's a better way. The new best-of-breed yard management systems can do for your yard what your WMS (warehouse management system) has done within your four walls. In fact, several WMS and TMS (transportation management system) packages are beginning to add on efficient yard management

modules that can make a big difference in how smoothly your yard runs.

## Success at AFS

One company that's reaping the benefits of a new top-notch management system is Associated Food Stores, Inc. (AFS). As the nation's eighth largest food co-op, the company services approximately 500 grocery retailers in the western half of the country. On average, AFS manages some 400 pieces of yard equipment—trailers, tractors and dollies—on a regular basis at its one-million-square-foot DC in Farr West, Utah.

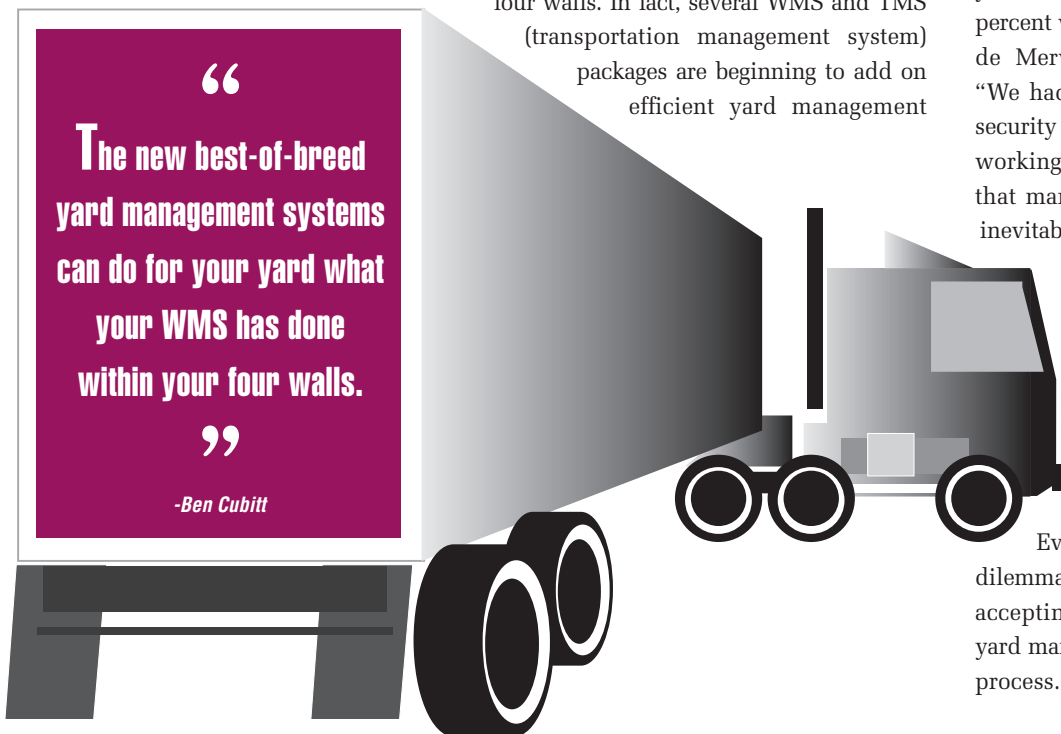
The yard, which makes up a mile-wide perimeter around the DC, averages 400 pieces of equipment and sometimes holds as much as 700 pieces. It has 149 shipping and receiving doors and moves between 700,000 and 750,000 cases each week.

Today, AFS has a state-of-the-art yard management system in place to help track the location, movement and status of all that equipment in real time. While the company's yard is thriving with the new system, that wasn't always the case.

Before installing its automated system, AFS was dependent on a manually-based yard management system. Accuracy of yard inventory was only 70 percent to 80 percent with the old system, says Tim Van de Merwe, internal logistics manager. "We had 127 people each day—drivers, security guards and receiving personnel—working on the system," he says. "With that many people involved, errors were inevitable."

Another problem with the old system was that it wasn't maintained in real time. "This is a dynamic business and things change very quickly," explains Van de Merwe. "By the time we had input information, things had already changed."

Eventually, AFS was faced with the dilemma of lowering its expectations and accepting that it couldn't be efficient at yard management, or looking into a better process. Because the company had high



“

The new best-of-breed yard management systems can do for your yard what your WMS has done within your four walls.

”

-Ben Cubitt

goals for efficiency—a desire to eke another five percent out of the process—AFS decided on the latter. “We wanted to run a tight ship,” says Van de Merwe.

In the process of searching for the right solution, AFS was approached by software vendor OMI to try a new combination of yard management tools. Partnering with WhereNet and its Real-time Locating System (RTLS) RFID tag technology, OMI offered AFS a unique, first-of-its-kind solution: The coupling of OMI’s Mobile Distribution System (MDS) with WhereNet’s RTLS.

As the alpha site for the unique system, AFS benefited from a custom-made system. The result has been an automatic yard inventory control system that provides 100 percent visibility, among a long list of other gains.

To make the system work, the vendors installed 19 antennas in the yard at the AFS facility. Each asset in the yard has an RFID tag on it that has been adjusted to “blink” at the rate desired by AFS. “The tags can blink anywhere from every second up to every four hours,” says Van de Merwe. “We have them blink every four minutes.”

In order to read the tags’ signal, the assets need to be between 12 inches and 12 feet of an antenna. Each signal translates information to AFS defining the status of its asset. “We defined 20 different status areas that are sent to us from the yard,” says Van de Merwe. These status areas include information like whether a trailer is empty, loaded, waiting to be loaded or in need of a cleaning or alteration.

The yard management system integrates seamlessly with the new WMS that AFS installed at the same time. In addition, a routing package was integrated into the mix.

With the information that the yard system provides, the WMS is that much more efficient. On the outbound side, for instance, AFS will have a time and date at which it needs to get a load to a retailer. From that information, the company determines a gate departure time and a time when the truck needs to be loaded. Then the staff can ensure that the right equipment makes it to the right door at the right time.

As for measurable results, the yard management system has boosted the efficiency rate at AFS. “We’re able to manage our yard with just five people, compared to 127 with our old system,” says Van de Merwe. “We’ve also re-allocated several salaries and redistributed our workforce. We have 100 percent accurate information so we’re able to turn our equipment more often. In our business, the only way to make money is to have our trucks on the road, and this allows us to do that much more often.”

## Stand-alone systems

The system in place at AFS is one of the emerging advanced yard management technologies. “There aren’t many players in this field yet,” says Randy Burgess, area vice president of fleet and commercial vehicle operations for Dallas-based TransCore. “The systems have really begun to spring up over the past five years.”

Cubitt says that the various dedicated yard management software systems range from simple to sophisticated. “If you’re looking into going with a stand-alone system, you need to consider whether or not the players offering it are stable,” he recommends. “Integration is getting better, but it’s always an issue and should be dealt with on a case-by-case basis.”

TransCore’s yard management system is designed to work with several different types of data capture, not just RFID. “The customer can choose the right configuration based on their needs,” explains Burgess. For instance, a yard supervisor and driver can communicate via handheld data terminals for information transfer and real-time status reports.

The product is also designed to seamlessly integrate with a variety of systems. “Our system integrates very easily with different systems, so it works well in conjunction with WMS,” says Burgess. “It’s also designed to work with an Internet browser so that users can access reporting and display capabilities.”

Like the OMI package, the TransCore package manages information, yard moves, equipment status and arrival and

departure times. “Our system will tell you how many trailers are full and where to find an empty trailer if you need one,” says Burgess. “It avoids mistakes like over-looking trailers so it builds value into the customer’s system.”

## Part of a bigger picture

While dedicated yard management systems like OMI’s and TransCore’s are state-of-the-art, they are still the exception rather than the rule at most DCs. Other avenues for implementing automated yard management include looking for WMS, TMS, or dock management systems with a yard management component.

If you check with many of the tier one WMS providers, you can probably find a good level of functionality for yard management, says Cubitt. Most TMS packages, on the other hand, tend to have less sophisticated modules. “They may provide screens that require manual entry, which is still open to error,” he explains. “But it looks like many TMS providers are considering adding a web-enabled version of yard management in the near future.”

Another emerging trend with strong potential is warehouse management systems that cover both dock and yard management, says Cubitt. “Dock management is really the twin brother of yard management,” he says. “Systems that cover both can take historical data and predict how long a truck will need to be at the door. They actually direct tasks and take the manual error rate out of the equation.”

No matter where you acquire a yard management system, there are some common features you should look for in a package, according to Cubitt:

- **Tracking**—The system should be able to track what equipment is in your yard and where it’s located.
- **Status**—The system should provide up-to-the-minute information on whether a trailer is ready for loading, whether it needs repairs or if it needs to be moved to another area of the yard.
- **Web-enabled**—While not a necessity, this is certainly a nice feature. With a web-enabled system, you gain visibility and can share the information with

your partners, such as carriers, to better manage your supply chain.

## Reaping the benefits

Regardless of the type of package you choose, begin your search with a “buyer beware” attitude, says Cubitt. “You definitely need to do your due diligence,” he says. “There are a lot of packages out there. If you do a web search, you’ll get a lot of information, but everyone is going to look good on their website. Find out how long the vendor has been in business, who their customers are and then talk to those cus-

tomers for testimonials.”

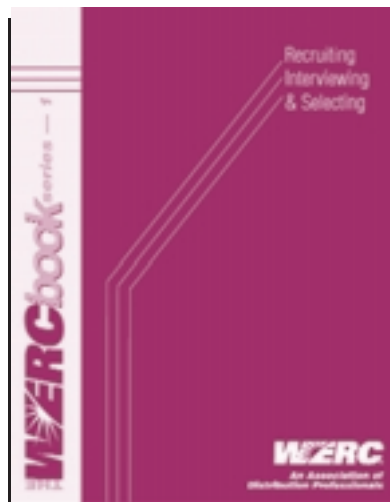
If you do find the right system for your operations, Van de Merwe says, you’ll never regret it. “I don’t think that people recognize what automation does for a system like this,” he says. “To be competitive today is to make incremental cost reductions. For us, the little things—like no longer needing a guard station for the yard—add up to significant savings.”

Expect real growth in yard management offerings over the next few years, Cubitt says “For many of the stand-alone yard management vendors, once they have

developed a solution for one application, they can easily do it for the next,” he says.

Van de Merwe is so pleased with his system that he’s looking at extending the yard management concept to an over-the-road system with the goal of improving on-time delivery performance. He sees these packages as nothing less than revolutionary: “This is a real leap for transportation and logistics, just as automating assembly lines was for the manufacturing environment.”

## Want an inexpensive way to educate your supervisors?



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The **WERCbook Series 1 – Recruiting, Interviewing & Selecting**, is scheduled to be mailed to members in early April. Additional copies can be purchased at a cost of \$14.95 for members and \$29.00 for non-members.

**HOT OFF THE PRESS!**



## OSHA Budget

Depending on who's doing the talking, OSHA will either be increasing inspections and spending for enforcement, or drastically cutting it in the near future.

According to a report in Warehousing Management magazine, the Bush administration is looking to cut OSHA's budget for 2003, part of an effort to reduce its regulatory actions by 25 percent. According to the report, Bush's budget states that OSHA "cannot keep up with the high number of factories and offices anyway," and that inspectors "can reach every workplace only once every 167 years."

Union supporters are crying foul at the idea of an OSHA spending reduction, which is reported to drop from \$442.9 million this year to \$437 million in 2003. Democrats also promise to challenge the move as they did when the President set aside the ergonomics standard.

OSHA press releases put a somewhat different spin on the budget plans, saying that the \$437 million budget includes a \$2.75 million increase in compliance assistance, outreach and training activities. The agency admits, however, to a one percent general decrease from the current appropriation, but cites a war-time budget as the reason behind the cuts.

Under the President's proposal, OSHA will receive \$60.3 million for expanded outreach activities and compliance assistance, which includes training, information exchanges and technical assistance for employers. \$250,000 will be appropriated to computer-based outreach products.

OSHA director John Henshaw points out that enforcement efforts will increase throughout fiscal year 2002, with more inspections planned for those workplaces with the highest injury and illness rates.

The agency plans to conduct a total of 36,400 inspections in 2002, up from 35,800 in 2001.

*Source: OSHA press releases, February 2002, [www.osha.gov](http://www.osha.gov); Warehousing Management magazine online, February 2002, [www.manufacturing.net/wm](http://www.manufacturing.net/wm)*

## Chemical Security Act

Yet another bill is up for deliberation as a result of the September terrorist attacks. The Chemical Security Act promises to add costs to the already high price tag of logistics by tightening regulations involving the handling of chemical shipments.

If passed, the Act would require companies to do more thorough inspections of chemical shipments, to provide detailed documentation of production and delivery systems, and to increase security at chemical plants. All of this adds up to slower delivery rates and higher costs—something opponents are working to leverage against the Act's passage.

*Source: Fortune Magazine, February 18, 2002; [www.fortune.com](http://www.fortune.com)*

## Transportation Bill

A House committee has approved a bill that will create a new team to study and formulate immediate and long-term measures and solutions to transportation issues. The new body, dubbed the Mass Transit Authority, will implement transport plans, policies and programs to regulate schedules, frequencies, routing and pricing.

*Source: Logistics Management, February 2002; [www.manufacturing.net/lm](http://www.manufacturing.net/lm)*

## U.S./Canadian Border Battles

U.S. and Canadian officials are struggling to come up with a mutually agreeable method for improving border security without hurting \$1.3 billion in daily trade. Although the two countries had formulated a plan back in December for a "secure and smart border," implementation of the plan has been another story.

The plan had called for both countries to devise methods to identify regular, non-threatening traffic while still being able to identify potentially threatening cargo and individuals. At issue is the fact that some parts of the U.S. government are apparently looking for ways to inspect every truck, a move Canada sees as inefficient. The Bush administration has also proposed spending \$380 million to establish a high-tech system to track people entering and exiting the United States by the year 2004. Canada has asked that the system not apply to Canadians. While the United States has officially agreed to those terms, some agencies are suggesting anonymously that the program eventually would indeed apply to Canadians.

Truckers, in the meantime, are reporting that little has improved in the border delay situations since Sept. 11. Some companies are reporting a decrease in hauling business by 20 percent to 30 percent, in part due to the lengthy delays at the borders.

*Source: TransportTopics, February 11, 2002, [www.ttnews.com](http://www.ttnews.com); Logistics Management, February 2002, [www.manufacturing.net/lm](http://www.manufacturing.net/lm)* ■



## Wearable Computers

Artificial intelligence is on the rise in the warehouse environment.

*Wearable computers... “should be worn, much as eyeglasses or clothing are worn, and interact with the user based on the context of the situation.... The wearable computer can act as an intelligent assistant...” – MIT’s media website.*

**A**n intelligent assistant? Sounds like something we all want to sign up for—or perhaps it’s just too good to be true! Wearable computers are all the rage in the commercial segment, so what can the technology do in the warehousing/distribution environment?

Well, according to the experts—the actual users of the devices—wearable computers can significantly enhance productivity and increase accuracy in the warehouse, as testified below:

- *“After the company installed the wearable systems, the picking rate went from about 200 picks per hour to 450 picks per hour. The record gives Parfums deCoeur ammunition to refute claims of shortages by retailers.”*  
– Parfums de Coeur
- *“Errors reduced by over 50 percent. Each mispick costs us \$80 to \$100. We are using wearables in all applications within the distribution center.”*  
– McKesson Drug
- *“The industry goal is 10 errors per 10,000 cases. We have achieved eight errors and will soon hit four errors per 10,000 cases.”*  
– Associate Wholesale Grocers

While some early adopters and innovators have taken advantage of wearable technology, the warehousing industry has been slow in adopting the devices.



Photos courtesy of Vocollect

*Emerging voice recognition technology such as this, enables warehouse workers to communicate with their host computer system in actual, spoken words as they move about their tasks, wearing the unit on a belt.*

According to Ken Colenik, product marketing manager for Pittsburgh-based Vocollect, less than 5 percent of the potential market is taking advantage of wearable computers. But, he says, even though the technology, in terms of product adoption lifecycle, is still in the beginning of the curve, it is moving quickly into the mainstream.

### Product preview

Wearable computers act much like the more traditional gun-shaped scanner in the sense that they are wireless devices that communicate in the warehouse through radio frequency. They are hands-free, portable devices able to obtain information on command for its user. But, says Colenik, they serve a much better purpose. The newer, wearable devices, have more computing capability than traditional scanners. For example, the handheld scanner reads a barcode or some other identification and, depending on the sophistication of the device, transmits varying degrees of data back to the mainframe. Wearable computers, on the other hand, can process information, such as a digit, phrase or location number, convert it to a data element and then pass the information back to the host system via the local area network.

“The software can provide any number of tailor-made solutions, such as cycle counts or cross docking, based on customer parameters for inventory or picking operations,” adds Diana Melick, senior product manager for Symbol Technology based in Holtsville, N.Y.

Symbol’s computers “work much like an electronic shopping list for the workers in a warehouse situation,” Melick explains. Users receive their specific lists, which are optimized for workflow and efficiency parameters. They have the option of scrolling down the menu to determine the items and quantity to be picked, then through the scanning mechanism, the computer validates that the item has been retrieved.

Vocollect’s product goes one step further by providing voice recognition. Users receive instructions over a headset and can respond verbally to the system.

### Inaccuracy and inefficiency—SOLVED!

Because of the nature of the hardware, wearable computers are seen most often in the picking areas since this is the heart of accuracy issues in the warehouse. “Typically, warehouses find that picking is where they are losing the most money

---

with mispicks, mis-shipments, incorrect product or incomplete orders,” says Colenik.

Wearable computers, he says, can increase accuracy and enable productivity gains simply because they let pickers use both hands to pick a product. Vocollect reports that users have seen productivity improve by 10 percent or more as pickers’ hands and eyes are freed up and the need for trips back to the picking assignment desk are eliminated. In addition, pickers do not have to look down at a clipboard every five seconds to figure out where they are in the picking process or wait for instruction from someone else. These wearable devices enable users to be mobile and untethered.

Wearable computers also increase accuracy because verification occurs right on the spot. A feedback mechanism verifies in real-time the quantity and location of the product to the back-office system. But the picking area isn’t the only place that can benefit, say the vendors. The technology can be used anywhere a manual list or instruction sheet is used and can be replaced, including:

- **Receiving** – The computer can supply the order number or identifier that includes product content. The employee can then verify the information and get instruction on where to put away that product.
- **Replenishment** – As picking data is updated and a shortage is reported, the wearable computer can instruct where the product exists in reserve for restocking.
- **Loading** – Once a picker is finished configuring a pallet, case or tote, information can be sent to the loading dock via the local area network. The person in charge of loading can then determine which dock door to go to and which truck to load the product on. For example, FedEx Ground has supplied workers, who are often loading several trucks at once, with wearable devices that enable them to move along the

conveyor while scanning and loading packages on the trucks. The scanned data is sent to the back-office system so that customers and the company know exactly where a package is at all times.

- **Conveyor belt** – The wearable computer can allow for the simple tracking of goods as they pass through an area on a conveyor belt. The worker can scan the product and the information gets acknowledged into the system.

“Wearable computers are also helpful for workers that drive pallet trucks or forklifts. They eliminate the need to continuously find a scanning or mobile terminal device to log information,” says Melick.

## Continuous improvements

In the past, naysayers have indicated that wearable computers are too expensive for the warehouse, are uncomfortable to wear for long periods of time and, in the case of speech technology, that voice recognition has been poor. But manufacturers are working hard to overcome those obstacles. According to Colenik, “People are now beginning to learn how the technology has grown and how stable it has become.”

As for price, say the vendors, the wearable is not much more than the cost of a handheld device. In addition, the return on investment can come as early as four to five months after implementation. Because the devices are not user-specific, DCs that operate two shifts can see payback even sooner.

Symbol’s computers keep track of the user with simple employee data entry acknowledgment. Vocollect’s speaker-independent technology, on the other hand, requires a 10- to 15-minute exercise in which users repeat prompted system words so the product can recognize that user’s speech pattern. This enables multiple workers to use the same piece of technology.

Today’s wearable computers weigh less than a pound and manufacturers have worked hard to make them as unobtrusive

as possible. Some terminals are worn on the arm, with a ring acting as the scanner. The voice recognition devices use a headset with the onboard processor resting on a belt around the waist.

In order to keep the products as sanitary as possible, users each have their own headset, a relatively inexpensive part of the product. Symbol has also developed a “rain coat” that goes around the terminal in order to keep it dry as well as cut down on debris interfering with the processor.

In addition, the engine that runs the speech recognition capability has gotten progressively better over time—something Vocollect is taking advantage of. “We have our own speech recognition group called Bluestreak, and they have been refining that capability based on our years of experience and our real-world applications,” says Colenik. Voice technology has been made more robust and built for industrial environments. Because of a noise-canceling microphone that eliminates background sounds, the technology is not susceptible to sudden noises.

“This technology is extremely accurate as it recognizes various dialects and foreign languages, covers all of the various nuisances of speech and works specifically for each user,” explains Colenik

While wearable computers and portable PCs are not canceling each other out yet, the experts say there are some initiatives in PDAs (personal digital assistants) to enable voice technology. However, they add, wearable devices are specially geared toward the distribution environment. And, the vendors say, don’t rule out that these computers might just replace the PDAs in some instances. According to Melick, the wearable devices are tailor-made for the rugged warehouse environment where users are working at fast speeds, bumping into things and moving from freezer conditions to hot temperatures. She is confident that, down the road, wearable computers will have the same computing technology as PDAs. ■



## Online Career Sites: Are They for You?

If you watched the Winter Olympics in February, you undoubtedly saw flashy ads for Monster.com, one of several online career/recruitment websites that have sprung up in the dot-com era. The ads promised to place Olympic athletes in jobs once their athletic careers were finished, and stated that “we can do the same for you.”

The question is, however, can they? When conducting a job search or looking to fill a position, should you tap into this new resource or stick to traditional methods? The reviews are mixed.

Alex Metz, president of Hunt Ltd., in Lyndhurst, N.J., says that if you’re a job seeker, “you can’t really afford not to try them.” But, he cautions, “Don’t expect to get very good results.”

Rhoda Isaacs, president of R.I. James, Inc., in New York, N.Y., is even less enthusiastic. “As a recruiter, we’ve tried these sites,” she says. “They took so much time and didn’t produce good fits—we decided it wasn’t worth it.”

### Job seekers on the hunt

Despite reservations such as these, many people are still trying online recruitment sites. Most people want to give just about any potential resource a try when they really want to make a move.

An online career site will get you wide exposure to companies looking to fill positions. Monster.com, for instance, has been around since 1999 as an online job board. Its global network stretches to 21 countries and has some 95,000 member companies. Currently, there are over 21 million job seeker members, however, which makes you one of many.

To discover the value in the online sites as a job seeker, Metz logged on to see what he could find from that perspective. “Many of the jobs were stale,” he says. “The companies didn’t bother removing the ads after their jobs had been filled.”

### Recruiters seeking a fit

Kevin Mullins, spokesperson for Monster, says that member companies can post jobs for up to 60 days, taking them down any time beforehand if the job gets filled. Member companies pay a fee to post the jobs. “The member companies can search for candidates through specific matching criteria, choose specific candidates and then contact them if they’re interested,” he explains.

**Its global network  
stretches to 21 countries and  
has some 95,000  
member companies.  
Currently, there are over  
21 million job seeker  
members...**

While that all sounds well and good, Metz and Isaacs have found that such methods usually turn up poor matches when using sites like Monster. “Many job seekers don’t read the ads as closely as they should, and out of desperation they send a resume,” says Metz.

For a recruiter like Metz, who sometimes receives as many as 250 responses to

job postings a day, a poorly matched response is a study in frustration. Isaacs expresses similar sentiments. “In the years since these sites have been around, I have yet to find a match through such a service,” she says.

Metz has another concern when it comes to online career sites. “Some of these sites pick up ads that we’ve posted elsewhere without letting us know,” he says. “It took us a long time to figure out how this was happening, but once we did we put an end to it.”

### And the verdict?

Is there any value to using an online job board? Perhaps. While you don’t necessarily have to post your resume, you might try searching the sites to see if there’s anything of interest. On Monster.com, for instance, you can search for jobs by industry, region and even salary. While you probably don’t want to use such a site as your main source for job hunting, it could be a worthwhile supplement in your job-hunting arsenal.

Most recruiters, however, would recommend you stick to more traditional methods for finding the perfect job. That’s what they do. “If we check for candidates by certain criteria using a web service, it’s a two-day job,” says Isaacs. “It’s much more effective for us to use networking—we usually find a better, more reliable fit.”

Says Metz: “People expect to get more out of these sites than they will. It’s better to use the web to identify companies you’re interested in, do some background research and then send out a resume.”

Metz also adds that despite the odds, it still can’t hurt to post to an online career site. “You’ll probably get a lot of exposure through a site, but it’s where you’ll get the least bang for your buck,” he claims. “Don’t look away from it—you have to give it a shot.”



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