



Road To Recovery by Tom Andel
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Penton Media, Inc. (August 2003)

The art and science of material handling are shifting gears from evolutionary to revolutionary -- and you're in the driver's seat. Here's a sector-by-sector report on how the industry is helping you plot your course toward 2004 and beyond.

So what's the purpose of a mid-year industry report? Isn't this kind of thing more appropriate as an end-of-year wrap-up?

In any other year, yes. But there's so much happening so fast in 2003 that MHM thought a breather was in order. We all need some time to pause and analyze what's happening among the material handling OEMs as well as inside the plants and warehouses of you, their customers.

First, you should know the OEMs are studying what makes you tick. Through associations like the Material Handling Industry of America, they're working with academia to try to figure out how they can better serve your needs — thus enticing you to start buying their products and services. Here are two critical things they've learned about you:

- You don't want to buy gigantic systems that you don't understand and can't modify. Systems must be flexible and changed easily — by you!
- You need help with cost justification. Your business cycles are getting shorter, and you need system payback to be shorter.

"The customer wants smaller, more elegant design that's easy to repair and reconfigure," continues John Usher, professor in the Department of Industrial Engineering at the University of Louisville. "If I'm going to spend all this on this system, I'll have to be able to modify it."

That's why, when explaining your needs to a vendor, remember that the ability to effect quick repairs is as much an aspect of reliability as meantime between failures. Take control

"Uptime is a function of repair, rarely a function of how often a system fails," Usher adds. "If it fails often but you can repair it in five minutes because you have the control program on your PC and you know how it works, it's not a big deal. It's when it fails and you have to fly guys in to fix it that you have serious system problems."

Still, partnership — both among technology vendors and with their customers — is the order of the day in the material handling industry. Dick Ward, executive vice president of professional development for MHIA, says the benefits are great from a properly integrated system, but it is never easy to cost justify.

"The unfortunate part of justification is that most companies don't take the time and make the effort to dig deep enough into the ripple effects of automation to make their case strong enough," he says. "Companies do a wonderful job of documenting the labor-related benefits and then simply list the so-called intangible benefits. I am a believer that the intangibles are indeed quantifiable, but it takes knowledge, time and effort. If done correctly the payoff is great."

Evolving vendors

The offerings of lift truck manufacturers are starting to reflect a trend toward hybrid material handling solutions. Toyota Material Handling, USA has made that evolution part of its three-year plan.

“The objective is to move from just being a lift truck manufacturer to being a full line manufacturer, then to a national account and fleet manager,” says Shankar Basu, CEO and president of TMHUSA. “That means providing the hardware, plus taking care of all your fleets. We’ll take a look at how you operate your business and make recommendations on how you can reduce cost and increase efficiency and flow-through as a solution provider. Toyota Japan has already moved to third-party logistics.”

Conveyor manufacturers are designing solutions to compete with lift trucks in several industries. Bill Casey, president of the Conveyor Equipment Manufacturers Association (CEMA) and consultant for Industrial Kinetics, cites the Post Office as an example.

“A friend of mine is on the engineering design crew for the USPS, and he says they have an interest in getting rid of lift trucks,” Casey continues. “They haven’t found the answer yet, but manufacturers are doing things like incorporating photoeyes inside the conveyor structure so they’re not prone to high maintenance or damage. Manufacturers are also implementing lean manufacturing technology so they can be more competitive against foreign suppliers as well as domestic.”

Partnerships

Technology’s evolution is not only inspiring more competition among established material handling OEMs, it’s creating more opportunities for them to cooperate in product and system development. Partnerships among material handling OEMs are resulting in the marriage of new with proven technologies. According to Siemens Dematic (the product of a noteworthy corporate conglomeration themselves) the following are the major technology mega-trends to watch:

- The electronic product code (EPC) will optimize the way you make, distribute, and deliver products. Material handling systems that convey and sort will be able to perform these functions with greater accuracy, speed, and traceability.
- The use of robotic devices for orderpicking is gaining acceptance as ROI and accuracy rates are being realized.
- Integrated weigh-on-the-fly verification sub-systems in fulfillment operations will contribute to more accurate picking verification.
- Standard, pre-tested, modular, configurable software for AGVS, AS/RS and conveyor sortation systems will continue to make material handling automation easier to manage and support throughout its life cycle.”
- The retail store distribution center has evolved into a retail support center that offers more deliveries more often, smaller orders, expanded VAS (value added services), and reduced inventory. Floor-ready order fulfillment now allows items to be priced at the distribution center, picked in family/store aisle groupings, and handled with critical/non-critical item separation. Fewer touches by operators in the distribution center will result in greater accuracy and speed.
- Modular Assembly Systems can be modified and re-configured with ease and speed thanks to conveyor systems with mechanical components and controls that enable quick reconfiguration.

You’ll see more big players working together to fill out their product offerings. Psion Teklogix, provider of mobile computing devices and wireless LAN systems, entered into a product partnership agreement with Zebra Technologies, providers of printing solutions. Under the agreement, Psion Teklogix will sell Zebra’s printers, resulting in a single source solution that includes the technology backbone, terminals, accessories, service and support.

“A big and time-consuming challenge for customers implementing a complete stationary or mobile computing system is that it involves speaking with numerous vendors to get all the hardware, software, and services working together,” says Christian Rogiers, director of

marketing, Americas, Psion Teklogix. "Printers are a natural add-on to Psion Teklogix's product offerings, and will give customers one point of contact."

John Nofsinger, CEO of the MHIA, says these developments put you, the end user, in a great position to implement material handling solutions that are better suited to your particular environment.

"I think we'll see some near-mid-term consolidation in the information technology sector and in selected equipment groups like mobile equipment and storage," he concludes. "The former will exploit economies of scale in both product and service, the latter will help companies deal with capacity issues. There are likely to be a number of companies jettisoned from earlier mergers/consolidations, resulting in the creation of several larger companies focused on specialty technologies. I also see a growth in collaborative relationships, both as a response to the restructuring of the 90s, as well as a response to users looking for solutions that are less dependent on channel structure." MHM

Niche players

Even small niche players offering simple approaches to tough material handling problems are finding willing ears among potential customers. Larry Tyler started Kinetic Technologies in early 2002 to take advantage of some companies' desire to eliminate lift trucks.

"When we decided to get into business ourselves, the automotive industry was a good target," Tyler says. "It looked like one company was following the path of getting rid of lift trucks. They found they couldn't move products as well with a lift truck as they could with little dollies and trains. We knew if our product was going to integrate well with their assembly line operations, the carts would have to be certain heights, and they'd have to contain dunnage so it wouldn't fall off. The carts would also need flexible upper frames and special steering to accommodate the kind of turns and corners to navigate constrained aisles."

Kinetic is still young and small, and Tyler expects to see partnership opportunities with older, more established material handling companies that want to fill out their product offerings with flexible solutions to accommodate lean manufacturing.

"Lift trucks don't enable you to do lean manufacturing flow because most are non-articulated," he says. "We thought, would the lift truck manufacturers be open to a strategic play from us as a partnership to help them sell both ends of the spectrum? We approached people who had complementary products such as tugs. AGVs are also complementary and might be something we as a small business might acquire as we grow, or be acquired by."

New hybrids

When Peter Amico first showed his hybrid omnidirectional lift truck a few years ago at a material handling trade show, it got a lot of stares, but not many material handling companies were ready to sell something that unorthodox. But times have changed.

"We're averaging about five calls a week from dealers wanting to sign up with us," says Amico, president and chairman of Airtrax, makers of the ATX3000. "Most of it is unsolicited. This is a whole new concept for lift trucks. We're making an electric rider usable in any warehouse or factory. It has no steering wheel, brake pedal, clutch pedal, accelerator pedal, no shifting rods and levers you're used to seeing. In each corner there's one motor, one brake, one transmission and one wheel. You could cut this machine in half, stretch it out, cut it in quarters, stretch it out, weld it back together and just drive off with it. That how modular its design is."

Each wheel hub is encircled with multiple elliptical rollers. By independently controlling the rotation of each wheel, the vehicle can travel in any direction, as controlled by a joystick. Joystick inputs feed information to a microprocessor, which interprets the information received and coordinates it with information received from the motor encoder. It then forwards this information to an amplifier, which tells the motor how to react.

This vehicle is designed to get a 40-foot beam through a 12-foot doorway. Its features are designed to compete with sideloaders and priced to be competitive with standard lift trucks,

according to Amico. It's also designed to compete with cranes in some work positioning applications.

"One of the things we demonstrated for the Navy and Air Force was not how fast our machine can go, but how slow," he adds. "They were trying to put jet engines in, lining up the bolt holes. We could press a button on our vehicle and it does one tenth of its normal speed and acceleration speed, enabling you to line up holes to a sixteenth of an inch. In another application they were putting motors into some equipment they were manufacturing, so instead of using overhead cranes they were using our lift trucks."

Crane and Machinery Inc., which manages production of Schaeff lift trucks, will provide components, such as frames and overhead guards, and assemble the ATX-Series at its facility in Bridgeview, Illinois, on Airtrax's behalf.

Sources

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