

MM&D

MATERIALS MANAGEMENT & DISTRIBUTION

CANADA'S SUPPLY CHAIN MAGAZINE

July/August 2017

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Future imperfect

It was a pleasure earlier this summer to be invited to attend the International Transport Forum (ITF) as one of several international media guests. Held annually in the German city of Leipzig, the forum offers government, non-governmental agencies and the private sector a chance to come together to discuss—and sometimes solve—the significant challenges facing transport around the globe.



This year, for example, the ITF joined the Open Transport Partnership (OTP), a global initiative that brings together private and public partners to facilitate responsible use of private sector transport data for the public good. It supports collaboration on data-driven urban mobility policy and service programs.

Using data from more than 12 million drivers in more than 40 countries, the OTP's inaugural programme, called "Open Traffic", will be a global open data repository of anonymised traffic statistics generated by its members. The idea is to give cash-poor transport agencies the resources to develop better road use policies to reduce costly congestion and traffic-related deaths and injuries.

Programs such as this highlight useful collaboration between the private sector and governments to achieve goals that promote sustainability, safety and efficient economic activity, all at the same time. It was a real eye-opener to attend the ITF and witness the depth and breadth of this kind of activity taking place around the world. Our coverage of the ITF begins on page 16, with a look at the future of autonomous trucking, last mile delivery and intermodal transport in Europe.

We have our eye on another crystal ball this issue, in the form of the annual *State of Logistics Report* prepared for the Council of Supply Chain Management Professionals (CSCMP) by consulting firm AT Kearney. While focussed on US economic results and future projections, the report this year offers a very mixed bag of potential scenarios for the near term ahead, all of which would have repercussions north of the border.

It's an unsettling time for those who make their living dependent on trade with the United States, with political uncertainty emanating from the White House, mixed in with a good dose economic turbulence. The *State of Logistics Report* does little to allay fears, given that a major influence over these factors is US politics which reveals new twists every day. Our coverage begins on page 24, and once you've read it, please share your thoughts (emily@newcom.ca) on how the Canadian marketplace may be affected.

Emily Atkins

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The International Transport Forum points the way



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When leasing forklifts is the way to go



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Cover image: Otto motors

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E-commerce is driving adoption of automation in distribution centres around the globe, p 9

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Blockchain gaining ground in supply chain

By MM&D Staff

Supply chain professionals are increasingly aware of blockchain and see its potential, with about a third saying they are already implementing the technologies.

This is one of the findings highlighted in Chain Business Insights's first benchmark survey on blockchain in supply chain.

"Blockchain in supply chain and trade finance is definitely in a nascent stage," says Sherree DeCovny, co-founder and research principal at Chain Business Insights. *"Blockchain in Supply Chain: Edging Toward Higher Visibility* provides a benchmark on the current state of play, and allows us to effectively monitor change going forward."

The analyst firm defines blockchain as: "a class of software technology that is composed of other technologies including data storage, distribution and synchronization, cryptography and identity... [it is] a technology that enables large, complex communities of trading partners to transact business securely in real time."

The survey was conducted this spring among a sample of 42 supply chain practitioners along with shipping agents, technology providers, consultants and more, from companies of all sizes. Just over two thirds were from companies with global supply chains. Respondents were asked about their awareness of blockchain, how they might use it, what its advantages are and potential obstacles to adoption.

Awareness was found to be relatively high. One-third of respondents are already implementing blockchain, about one-quarter of respondents indicated they are knowledgeable about the technology, and the remainder are at the beginning of the learning curve.

In Chain Business Insights' opinion, the latter group are more representative of the industry as a whole. "Most of the blockchain development activity to date has been in

“The analyst firm defines blockchain as: “a class of software technology that is composed of other technologies including data storage, distribution and synchronization, cryptography and identity... [it is] a technology that enables large, complex communities of trading partners to transact business securely in real time.”

financial services, but other industries—and notably supply chain management—are now actively evaluating the technology.

Survey respondents indicated that the primary use case for blockchain is improving supply chain transparency and traceability. Eighty percent said they could see it being used to track product as it moves through the supply chain.

When asked about the most important advantages, they said it: improves supply chain visibility/transparency, reduces transaction costs and enhances trust between supply chain partners.

"Blockchain's ability to maintain a tamper-proof, timely record of product movements and related transactions is of huge interest to supply chain practitioners," says Ken Cottrill, co-founder and research principal at Chain Business Insights. "It comes at a time when the industry is under intense pressure to deliver improvements in these areas."

Chain Business Insights pointed out that the acid test of any innovative technology is the number of players actively engaged in



Photo: iMaginix/Stockimages.com

implementing it. This is especially important in the supply chain community, which in the past has experienced its fair share of false starts and new ideas that did not reach their promised potential.

Just over 40 percent of respondents reported they plan to implement blockchain within the next year, and one-fifth intend to implement the technology within two years. This result is compatible with the relative high awareness of the survey sample.

Still, 30 percent of respondents had no idea when blockchain might be implemented, reflecting the uncertainty that still surrounds the technology. Lack of understanding/awareness and lack of standards and interoperability were noted as the top obstacles to adoption.

Finally, Chain Business Insights asked survey participants which other technologies will likely have an impact on supply chain management. As we expected, big data/analytics, IoT, cloud computing, and RFID came out on top.

"The first development projects in the supply chain domain are emerging—but as our survey underlines, there is still a long way to go before the technology gains widespread acceptance," said Peter Harris, co-founder and research principal at Chain Business Insights. "In our view, capabilities such as product tracking and tracing and verifying product chain of custody will likely drive higher levels of awareness in the near to medium term."

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Robotics industry branching out, growing quickly

The definition of a robot is in flux and traditional robot manufacturers that have been building and supplying robots for decades have seen this industry undergo a dramatic transformation in the past few years. Robots have either been part of popular culture and science fiction or have been the workhorses of industrial shop floors until now.

But according to a new report from market research firm Tractica, as of 2016, the industrial robotics segment has been surpassed in terms of revenue by emerging robot types such as consumer robots, enterprise robots, and unmanned aerial vehicles (UAVs), with autonomous vehicles poised for strong growth in the coming years, as well.

Tractica forecasts that the global robotics market will grow rapidly between 2016 and 2022, with revenue from unit sales of industrial and non-industrial robots rising



from US\$31 billion in 2016 to \$237.3 billion by 2022. The research anticipates that most of this growth will be driven by non-industrial robots.

“The key underlying story emerging in the industry is that industrial robotics, which

has been the traditional pillar of the robotics market, has given way to non-industrial robot categories like personal assistant robots, UAVs, and autonomous vehicles,” says research director Aditya Kaul.

“In this process, the epicenter of the industry is shifting toward Silicon Valley, which is now also becoming a hotbed for artificial intelligence (AI), a set of technologies that are, in turn, driving a lot of the most significant advancements in robotics.”

Tractica’s report, “Robotics Market Forecasts”, covers the global market for robotics, including consumer robots, enterprise robots, industrial robots, healthcare robots, military robots, UAVs, and autonomous vehicles. The technologies included in the analysis are machine vision, voice/speech recognition, gesture recognition, and tactile sensors.

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Connected pallets shown to enable supply chain sustainability



BY MM&D Staff

If five percent of the estimated 10 billion pallets moving around the world today were reusable and Internet of Things (IoT) enabled, 7.3 million tonnes of CO₂—or 818 million gallons of gasoline could be saved every year.

This is the finding of a study by AT&T on the use of reusable RM2ELIoT BLOCKPal pallet. AT&T looked at the potential of using RM2's connected pallets, to help the company achieve its 2025 goal to enable carbon savings for its customers that are ten times the footprint of AT&T's own operations.

Using data from a peer-reviewed life-cycle assessment performed by Pure Strategies, the AT&T case study concluded that connectivity of the RM2ELIoT BLOCKPal pallet enables

the client to potentially avoid 640 tonnes of CO₂ (the equivalent of 72,000 gallons of gas) for every one million pallet trips.

RM2 produces reusable composite pallets, which then have an IoT tracking device attached. This solution, called RM2ELIoT, pairs RM2's reusable pallet with AT&T's LTE-M low-power wide-area network for longer battery life (expected up to 10 years) and better wireless coverage in difficult areas where pallets are often found: deep inside buildings, in below-ground storage areas, and on trailers, trains, and trucks.

According to the study, a connected pallet

“ According to the study's findings, a connected, reusable pallet can be used 162 times before it reaches end of life, resulting in a 20 percent lower per trip cost than non-reusable alternatives.

allows users to maintain oversight of inventory to prevent loss and gather new data from segments of the supply chain that were previously invisible.

“This connectivity changes the economics of reusable pallets, enabling more widespread adoption which, in turn, generates significant financial and environmental benefits,” the report said. “Reusable, connected pallets allow users to reduce fuel consumption (composite pallets are typically lighter

and have a lower profile than wooden pallets), decrease wood waste from broken pallets,

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and decrease the amount of raw materials required to produce replacement pallets by reducing the average number of pallets that are lost or broken each trip.”

The report also notes that connectivity allows tracking of individual pallets, thus reducing the chances of loss as well as the time spent trying to locate them.

According to the study’s findings, a connected, reusable pallet can be used 162 times before it reaches end of life, resulting in a 20 percent lower per trip cost than non-reusable alternatives. Other sustainability benefits found for a company managing a million pallet-trips a year included:

- ▶ A 21 percent reduction in CO₂ emissions;
- ▶ A 17 percent reduction in empty pallet traffic;
- ▶ 1,588 fewer truckloads annually.

AT&T and RM2 worked with sustainability consultancies Pure Strategies, Carbon Trust and BSR to measure the benefits reported in the study. **MM&D**

Ryder Material Handling opens new Canadian sales and service centre

Ryder Material Handling, part of Crown Lift Trucks, has opened a new facility in Brantford, Ontario.

The new sales and service facility integrates existing operations from London, Kitchener and Hamilton into one central location. The new location will offer sales, rentals and service of the full line of Crown lift trucks, and parts and other material handling services.

“Brantford is strategically located to accommodate our existing operations in south-western Ontario as well as our future growth and is the perfect location for this facility,” said Ron Greer, CEO of Ryder Material Handling.

Brantford Mayor Chris Friel added, “We are very excited to welcome Ryder Material Handling to the City. Ryder’s decision to locate in Brantford is a direct result of our community’s key competitive advantages such as our strategic location, access to large urban markets and a progressive labour force. We look forward to a long and prosperous relationship with Ryder and wish them every success.”

Ryder Material Handling provides material handling equipment sales, parts, service, maintenance and training to a diverse customer base representing numerous automotive, construction, food and beverage, logistics, manufacturing and retail applications, among others.

The company’s comprehensive offering is supported by an extensive group of mobile technicians who comprise one of the largest service fleets in Canada. **MM&D**



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WSPS was established as the Industrial Accident Prevention Association (IAPA) in 1917 to give voice to workers in the manufacturing and industrial sectors.

▶ READ MORE HERE:
<http://tinyurl.com/wspss-mmd>

KION starts production of new Linde models

KION North America has spent the past two years reconfiguring production lines and completing facility upgrades to boost production capacity.

▶ LEARN MORE HERE:
<http://tinyurl.com/mmd-kion>

MCFA celebrates 25 years in business

Learn how the forklift manufacturer has expanded facilities, employees and brands over its history.

▶ READ MORE HERE:
<http://tinyurl.com/mmd-mcfa>

IKEA adding Vancouver-area distribution centre

New DC for IKEA Canada will facilitate deliveries to western Canada.

▶ READ ABOUT IT HERE:
<http://tinyurl.com/mmd-ikeadc>

PECO Pallet turns 20

The company has grown from a cooperative effort of regional pallet recyclers and manu-

facturers into a North American provider of wood block pallets.

▶ READ MORE HERE:
<http://tinyurl.com/mmd-peco20>

Peter Cheema wins 2017 Brian Devereaux award

Scholarship set up to honour memory of Brian Devereaux

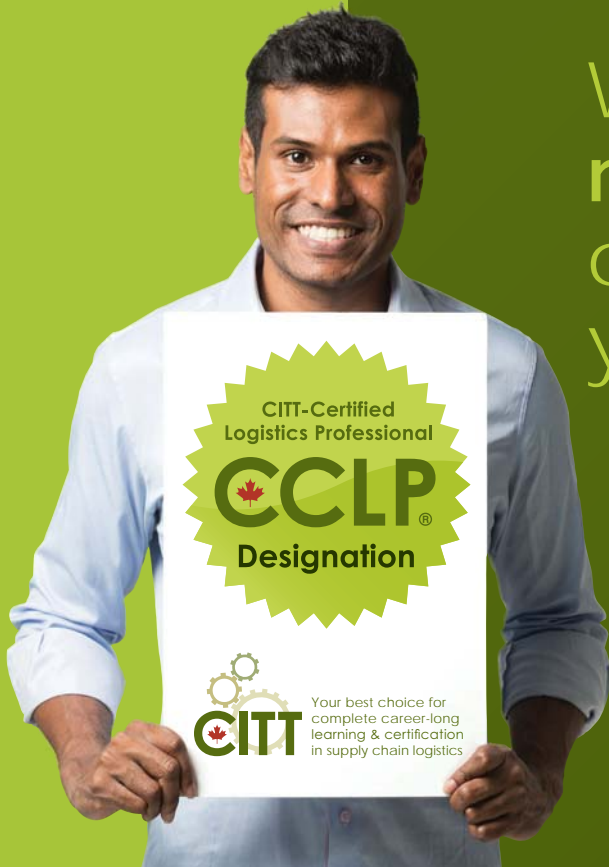
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Global e-commerce driving automated storage market



The Asia-Pacific (APAC) region will drive global demand for automated storage and retrieval systems (AS/RS) through 2021.

This is one of the findings of a new report predicting the AS/RS market over the next five years. Market research analysts at Technavio predict that the global market for AS/RS in the e-commerce industry will grow steadily at a compound annual growth rate (CAGR) of around nine percent through 2021.

High demand from APAC is identified as one of the primary growth factors for this market. Developing countries such as China and India are major regions driving the demand for AS/RS in the e-commerce industry. Online digital buyers in APAC are expected to grow to more than 1.5 billion by 2021, largely thanks to the above average

growth of the economies of India and China.

The Europe-Middle East-Africa (EMEA) region will also be a major revenue contributor to the AS/RS market for the e-commerce industry throughout the forecast period. The increased growth of e-commerce in the Middle East will drive the growth of the market in the region. Countries such as Saudi Arabia, the UAE, and Egypt offer good prospects for the growth of the e-commerce industry.

The emergence of omnichannel shopping is another trend that will drive the market. More than 70 percent buyers in the US in 2016 searched for products online and then bought them in stores. On the contrary, it is also estimated that more than 50 percent of consumer electronics buyers in the US visit stores to touch and feel the product and then buy them online.

The report identifies Daifuku, SSI SCHAEFER, Dematic, and Vanderlande as the key vendors in the global automated storage and retrieval systems (AS/RS) market for e-commerce. The competitive environment will intensify with the increasing product extensions and technological innovations such as the use of robots in warehouses to pick and retrieve items.

Other prominent vendors in the market are BEUMER Group, Dearborn Mid-West Company, Fives, Flexlink, Intelligated, Kardex Group, KNAPP, Legris Industries Group, Mecalux, Murata Machinery, Swisslog, and TGW Logistics Group.

During 2016, unit load AS/RS accounted for the major share of the market for the e-commerce industry. The increased usage of unit load in sectors such as retail and apparel, food and beverages, electronics, and consumer goods, will also drive the growth of the segment in this global market. **MM&D**

DONE DEALS

Mills Fleet Farm, a retailer of lifestyle products, has expanded its **JDA** footprint as it implements a new supply chain strategy anticipated to improve inventory management for its 37 stores. It is shifting to a supplier-to-distribution-centre (DC) model to gain inventory management efficiency and reduce costs. The company recently announced construction of a new 1.1 million square foot DC in Chippewa Falls, Wisconsin to better serve stores and customers. Mills Fleet Farm has been a JDA customer for more than 20 years, using a range of solutions from JDA Advanced Store Replenishment, to JDA Space & Category Management solutions, and will be implementing additional solutions to support its new distribution strategy. JDA's professional services group will partner with VACO Consulting to lead the implementation and help Mills Fleet Farm realize its new supply chain strategy.

Volkswagen OTLG, the logistical and system partner for more than 3,700 service partner companies of the brands Volkswagen, Volkswagen commercial vehicles, Audi, Seat and Škoda in Germany and Denmark, has chose **Aerohive** to deliver a controllerless Wi-Fi solution. The deployment includes 850 access points, mainly AP121 indoor models, implemented in the company's seven distribution centres. Aerohive's wireless infrastructure solution replaces the legacy controller-based solution, which was integrated in 2006, and supports OTLG to further optimize its logistical processes. In order to manage the supply chain it was necessary for Volkswagen OTLG to have a stable solution as all processes were carried out with Wi-Fi based handheld scanners and starter terminals. After 10 years it became obvious that the existing Wi-Fi infrastructure was outdated, lacking

the necessary speed and quality. In addition, firmware updates were no longer available for its existing controllers.

American Airlines Cargo selected **G Force GSA Mexico** as its new General Sales Agent (GSA) in Mexico, following the retirement of American's current GSA. The American and G Force partnership will also provide local sales expansion into five new locations. G Force is responsible for selling American's extensive services in Mexico City, as well as establishing a local sales presence in Cancun, Guadalajara, Leon, Puerto Vallarta and Monterrey.

DocMorris, Europe's largest mail-order pharmacy, has opened a new 35,000-square-metre (376,737 square foot) logistics centre on the border between Germany and the Netherlands. Logistics software specialist and certified SAP partner **inconso** was tasked with creating comprehensive software to manage inbound, replenishment and picking in the wholesale pharmaceuticals industry as well as packing, sample inspection and shipping in the pharmacy sector. Along with conventional warehouse operations, SAP EWM—together with the material flow system—manages and controls a pick-by-light system and multiple forklifts and carts in the different warehouse areas using multi-order picking. The new material flow system controls an A-frame machine for automatic picking and container conveyor technology. The material flow system is controlled with inconsoS/Line, an SAP based inconso add-on for improved communication between SAP logistics systems and subordinate control levels. The centre was designed for a capacity of over 2,000 orders per hour, with capacity for further expansion.

GLOBAL FOCUS

Gebrüder Weiss expanding in the Czech Republic

Gebrüder Weiss is further expanding its Czech headquarters in Jeneč, near Prague. Three new warehouses with a total area of almost 9,000 square metres (96,875 square feet) will

be constructed by the fall of 2017. The addition will double the European logistics provider's cargo handling and logistics capacities at this location. Headcount will also be increased and the staff facilities modernized as part of the expansion. The investment vol-

ume comes to around five million euros. As one of seven Czech locations for Gebrüder Weiss, Jeneč provides its customers with the entire spectrum of transport and logistics services, including specialist solutions for highly sensitive products. With over 6,500 employees, 150 company-owned locations and an annual turnover of 1.36 billion euros (2016), Gebrüder Weiss ranks among the leading transport and logistics companies in Europe.

CEVA takes over logistics for Mondadori Books and Retail in Italy

CEVA Logistics acquired the logistics operations of Mondadori in the books and retail businesses. CEVA has previously worked with Rizzoli Books, a division of Mondadori. Effective from May 2017, CEVA became responsible for the logistics activities of Mondadori Books and Mondadori Retail, in addition to Rizzoli books, and has been awarded an exclusive, nine-year contract. As a part of the deal, CEVA will also operate Mondadori's 24,000-square-metre (258,334-square-foot) warehouse facility in Verona and a 12,700-square-metre (136,702-sqf) warehouse facility in Rimini. One hundred and ten staff have also transferred to CEVA. The books business will continue to be managed through the Verona and Rimini facilities as well as CEVA's specialist 100,000-square-metre (1,076,391-sqf) City of Books at Stradella.

CH Robinson opens LCL terminal in Antwerp

CH Robinson has opened a new less than container load (LCL) gateway in Antwerp, Belgium. The Antwerp LCL gateway expands the company's European network, which includes air and ocean facilities in the UK, Germany and Italy. In addition to the new Antwerp Gateway service, CH Robinson provides FCL services from this location and has since May 2015. The Antwerp LCL Ocean gateway is strategically located in Europe, with connections from the rest of Europe through CH Robinson's network of 45 road transportation, ocean and air freight offices in the region. The company also recently announced the acquisition of APC Logistics, in Australia and New Zealand.



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Retailers outline priorities for NAFTA modernization

The National Retail Federation (NRF), an organization that represents the interests of retailers from the United States and 45 other countries, including Canada, outlined the American retail industry's priorities for the negotiation of a modernized North American Free Trade Agreement.

"The agreement has benefited US importers and exporters, and more importantly, US workers and consumers," NRF president and CEO Matthew Shay said in a letter to US Trade Representative (USTR) Ambassador Lighthizer detailing the retail industry's comments on NAFTA modernization.

"We applaud the administration for the re-evaluation of NAFTA. NRF and its members are very supportive of NAFTA, as well as other free trade agreements that not only open up sourcing opportunities for retailers to provide high quality products to US consumers, but those that also open foreign

markets for US retailers to sell US-made goods to foreign consumers."

"Since the agreement was negotiated over two decades ago, it does not reflect today's global value chain or many new ways of doing business in the global economy" Shay wrote. "A number of its provisions affecting 'old' ways of doing business need to be updated and modernized to reflect today's business environment as well as what may come in the future."

Broadly, retailers encouraged the administration to: first do no harm to the existing trade relationship, keep the pact trilateral, conclude negotiations quickly and provide a seamless transition for any changes that are agreed upon. NRF notes that NAFTA has spurred economic activity supporting 14 million US jobs in farming, manufacturing and a wide range of service sectors.

The comment letter also outlines key principles on tariffs, rule of origin, Customs and trade facilitation, digital commerce, labour

and environment, and enforcement provisions that would improve trade and support better regional integration among the NAFTA partners.

NRF's suggestions, while specific to Canada and Mexico, are also broad enough to apply to other US trading partners. This is because retailers recognize that the modernized NAFTA will become a model for the Trump Administration's efforts to negotiate future trade agreements with countries with which the US does not yet have such agreements.

The USTR officially notified Congress on May 18 that President Trump intends to renegotiate NAFTA, setting in motion the 90-day consultation clock under Trade Promotion Authority (TPA). Under TPA, negotiations with Canada and Mexico could begin in mid-August.

MM&D

Internet of Things increases need for security

Connectivity opens opportunities for crime

BY MM&D Staff

Process automation in industrial and supply chain applications is leaving the door open for cyber crime, making it of paramount importance that system integrators take precautions to ensure the security of their connected networks.

This is the main message of a recent whitepaper published by CSA Group. The paper, "Protecting connected devices against cyber attack", was written by Matt Jakuc, CSA Group's product group manager and cybersecurity technical lead.

The Internet of Things (IoT) and Industrial Internet of Things (IIoT), with their vastly interconnected networks of devices both large and small, are potentially high value targets for cyber criminals who seek to disrupt and destroy supply chains. The report asserts that to thwart malicious attacks functional safety verification is vital for equipment that is responsive to inputs from an operator, either human or machine to be secured.

"A cyber attack on the integrity of a controller can jeopardize the functional safety of a device or control system in an open network architecture," the whitepaper says.

Three potential hacks need to be prevented, it continues, jamming of a device and its safety functions, hijacking to make a device appear to be functioning properly, and hijacking to trigger safety alarms when none is required, thus forcing the system to react.

"If the manipulation seriously abuses the system it can damage equipment and potentially endanger lives. Even if the compromised device or system can still perform its safety function, it could be rendered inaccessible or raise false alarms that require service attention," the paper notes.

To prevent these possibilities, the report recommends that all connected devices be tested and certified against established protocols.

While these threats exist, the paper notes that the benefits of IIoT applications outweigh the perils, and make the introduction of security measures worthwhile. However, failure to take proper security measures can result in loss of data, interruption of operations, revenue losses, unplanned recovery costs, liability for negligence and reputational losses. "A cybersecurity breach poses no greater threat than the loss of functional safety, which can place workers, residents and communities at risk of injury or even death, while also threatening property and the environment," the paper warns.

MM&D



Online shopping going global

Nearly half of avid US online shoppers bought items from international retailers, demonstrating the need for retailers to offer more personalized services as a way to compete against lower prices, according to

the sixth annual UPS Pulse of the Online Shopper study.

The UPS study found that 81 percent cite price as the most important factor when searching for and selecting products online.

“The lines that separate domestic and international retailers continue to disappear,” said Alan Gershenhorn, chief commercial officer, UPS. “Retailers are now competing across the globe. In order to win, retailers can distinguish themselves by providing value through personalized experiences.”

According to eMarketer, global cross-border e-commerce is projected to grow at an average of 22 per cent from 2015 to 2020 compared to 15 percent for US e-commerce during the same time period.

The top considerations that online shoppers make when purchasing from international retailers include knowing the total cost of the order including duties and fees (77 percent), receiving pricing in the shopper’s native currency (76 percent), the retailer being reputable (74 percent), and reasonable speed of delivery (66 percent).

China is now the biggest e-commerce market in the world with approximately US\$900 billion in 2016 sales, accounting for nearly half of all digital retail sales worldwide.

UPS recently announced a joint venture with SF Holding, the parent company of China’s market-leading express delivery company SF Express. The two companies will develop shipping products designed to help Chinese companies gain greater access to the US market.

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What’s In Store for Stores?

Providing personalized experiences at stores includes adapting with new technologies and offers. The average percentage of purchases made in physical stores by avid online shoppers decreased from 53 percent in 2014 to 48 percent in 2017. Comparatively, online sales increased from 47 percent in 2014 to 52 percent in 2017.

“Technology continues to drive change in the retail industry, but the physical store is still very important. Pure play online retailers are expanding with physical stores and multichannel retailers are using their local storefronts as e-commerce fulfillment centres,” said Gershenhorn. “Online shoppers are indicating they want technology that enables rewarding, personalized experiences both online and in store.”

MM&D

CETA: it's for real!

By Christian Sivière

Great news for Canadian manufacturers, exporters and importers: the long-awaited provisional implementation of CETA, the Comprehensive Economic and Trade Agreement between Canada and the European Union (EU), has been confirmed for September 21, 2017.

This was announced by Prime Minister Justin Trudeau and Jean-Claude Juncker, the President of the European Commission, in Hamburg on July 8. On September 21, Customs duties on most goods will be lowered or eliminated, either immediately or over several years.

This agreement opens a huge market for Canadian exporters, whose products will be more competitive in Europe. Canadian consumers will benefit too, as European products will become cheaper.

Originally, the provisional implementation was scheduled to take place on July 1. Two issues created the delay: the new cheese quotas and how they will be allocated, as well as regulatory changes on pharmaceuticals, particularly for generic drug manufacturers.

Critics had said CETA would never happen, but not only is it happening for real, the final implementation process is going well, as the national Parliaments of Latvia, Denmark, Spain and Croatia have now approved it. For full implementation, in particular the dispute settlement and foreign investments chapters, approval by the national Parliaments of all 28 EU member countries is necessary.

Maybe it's just as well that CETA didn't happen July 1, as we already had so much to tackle: celebrate Canada's 150th anniversary, and the internal Canadian Free Trade Agreement (CFTA) between Canadian provinces and territories that came into effect that day. It is also possible Canadian companies were not quite ready for it, maybe some didn't even believe that CETA would come through, so the additional time is useful.

What's coming next is that the CBSA will issue its traditional Customs Notice, likely at the end of August, advising of the technical information necessary to process incoming shipments from the European Union. It will



“ Canadian exporters should now familiarize themselves with the CETA rules of origin and select their market entry strategy, in order to capitalize on this opportunity. And, after re-evaluating their current supply chain, Canadian importers and manufacturers currently bringing in raw materials, components and/or parts from Asia or other distant lands, may find it advantageous to switch to European suppliers, saving costs and transit time, for a more agile supply chain.

confirm the implementation date, provide links to the text of the Agreement and the implementing legislation Bill C-30. It will also

provide the new tariff treatment code (likely code 33) needed to obtain the preferential duty rate—this information goes in slot 14 of the Canada Customs Coding Form B3.

The Customs Notice will also refer to the rules of origin and the origin declaration as well as the time-frame for refund of excess duties paid due to a missing origin declaration at time of importation. In this respect, CETA will provide a three-year period to make retroactive refund claims for goods imported on or after September 21, 2017. Formal amendments to Canada's Customs Tariff and Customs Act will take place as a second step.

Canadian exporters should now familiarize themselves with the CETA rules of origin and select their market entry strategy, in order to capitalize on this opportunity. And, after re-evaluating their current supply chain, Canadian importers and manufacturers currently bringing in raw materials, components and/or parts from Asia or other distant lands, may find it advantageous to switch to European suppliers, saving costs and transit time, for a more agile supply chain.

Canada and the EU are open for business and want to trade, in contrast to the protectionist winds blowing elsewhere. **MM&D**

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BILL DOHERTY

Day & Ross Inc appointed **Bill Doherty** as its new president and CEO, succeeding John Doucet who retired at the end of June. Doherty joined Day & Ross in October 2016 as part of the leadership transition plan. Based in Hartland, New Brunswick, and reporting to **Dirk Van de Put**, president and CEO of McCain Foods Limited, he will lead The Day & Ross Transportation Group that operates four divisions: Day & Ross Freight, Day & Ross Dedicated Logistics, Day & Ross Supply Chain and Trade Networks, and Sameday Worldwide. In addition to a 25-year career with FedEx, Doherty held executive-level roles with Greatwide Logistics Services, Omniflight Helicopters Inc, New Breed Logistics, Inc, Warehouse86 Ventures, LLC, and Transervice Logistics Inc.

Logistec Corporation, a marine and environmental services provider, appointed **Rodney Corrigan** as executive vice-president, operations of Logistec Stevedoring Inc. Corrigan joined Logistec six years ago as a vice-president, operations and has more than 20 years of experience in the industry during which he held senior management roles for various companies. He graduated from Concordia University with a Bachelor of Commerce and completed an Executive MBA at the John Molson School of Business.

Nick Pedneault of **Congebec Logistics** in Québec City was named the 2017-2018 Chairman of the **World Food Logistics Organization** (WFLO) Board of Governors. The WFLO is the research and education arm of the Global Cold Chain Alliance (GCCA). Other new WFLO officers elected were vice chairman **Paul Henningsen** (**Henningsen Cold Storage** in Oregon), and treasurer **Don Dick** (**Dick Cold Storage** in Ohio). **Adam Forste** (**Lineage Logistics** in California) was elected to serve a three-year term on the board. **Dan Kaplan** (**Cloverleaf Cold Storage** in Iowa) and **Mike Pokel** (**Midwest Refrigerated Services** in Wisconsin) were re-elected to three-year terms. **Arne Martinsen** (**Transmar Ltd** in California) and **Kirk Robertson** (**Terra Vista Capital** in Washington, DC) were re-elected to three-year terms as WFLO public members.

Paul John Griffin has been reappointed for one year as president and CEO of **Marine Atlantic Inc**. He holds a Bachelor's Degree in engineering.

Marie-Huguette Cormier and **Esther Gaulin** have been appointed to the **Québec Port Authority**. Both are newly appointed user group representatives, for a term of three years. Cormier holds an MBA with specialization in marketing and management from Laval University and is executive vice-president, human resources and communications, at Desjardins Group. Gaulin is a Chartered Professional Accountant of the Ordre des comptables professionnels agréés du Québec and was a partner of the tax group at Ernst & Young.

Denis Reilly is the new president and CEO of **Kenco**. He succeeds **Jane Kennedy Greene**, who will continue to serve as chair of the board. Reilly has had a 30-year career in the logistics industry, most recently serving as CEO of St George Logistics. He previously held executive and senior leadership roles at USA Dry Van Logistics, GEODIS, MIQ Logistics, and Menlo. He began his career in logistics with Frito Lay in 1983. Reilly is a member of the Council of Supply Chain Management Professionals, and received a BS in Logistics and an MBA in Logistics and Marketing from the University of Tennessee.

Dave Lowe has joined **Honeywell** as vice-president of sales for the US and Canada in the company's productivity products business. Lowe joins Honeywell from Samsung where he spent the last six years most recently as the vice-president and general manager of enterprise sales for Samsung Electronics America. In his 30 years of experience, he has held a variety of sales leadership roles where he accelerated revenue growth and drove the adoption of enterprise mobility, cloud services and software as a service (SaaS) within large enterprise accounts.

BSM Technologies Inc appointed **Douglas Swanson** as chief technology officer. Swanson has more than 25 years of experience in research, software, hardware, architecture and management. Most recently, he was VP of engineering at Intelligent Mechatronic Systems Inc. His previous experience has involved extensive oversight of various technologies and includes a role as director of engineering for Blackberry Limited as well as more than eight years of experience with Cisco Systems working across various North American offices. Swanson holds a Bachelor of Applied Science, System Design Engineering from the University of Waterloo and is currently a PhD student at the University of Waterloo.

Sharka Chobot Stuyt has joined the board of **Tailwind Transportation Software**. She will be the first independent director on the board, and brings significant insight and expertise in technology, cloud-based platforms, and marketing. Stuyt is the founder and owner of Inspiro Services, a consultancy that provides leadership coaching and consulting, and is the chief transformation officer at Neural Impact. She was instrumental in launching Simply Accounting in the 1980s (now Sage), helped grow ATI technologies and was the creator of the Customer Relationship Management (CRM) product category in 1996. Stuyt has served as a director for a number of technology companies, and teaches at the Sauder and Beedie Schools of Business at University of British Columbia and Simon Fraser University in BC.

Michael Leonard is sales and marketing director for **Flow-Rite Controls**. Leonard brings over 27 years of experience and senior leadership from the battery industry into his new role at Flow-Rite. He was previously employed with Johnson Controls as their director of OE Sales & Engineering. Before that, he worked with Exide Technologies as a director for their Electric Vehicle Programs.

Streamlining

At the beginning of June the International Transport Forum, a Paris-based intergovernmental organization affiliated with the Organization for Economic Cooperation and Development (OECD), hosted its annual summit in Leipzig Germany. *MM&D* was selected as one of a handful of international media outlets invited to take part, giving us access to the full event.

The 2017 summit on “Governance of Transport” set new records. With more than 1,300 registered participants, attendance was up 30 percent from previous years. Eighty countries were represented, up from the previous record of 71.

Kazakhstan and the United Arab Emirates joined the organization, bringing the number of ITF member countries to 59 and reinforcing the global nature of the organization. Dr. Young Tae Kim from Korea was elected to succeed José Viegas as the first ITF Secretary-General from a non-European member country.

In their Joint Declaration, ministers highlighted the changes required to transport systems in the light of the 2015 Paris Agreement, called for responsive regulation to foster innovation and expressed the will to create frameworks for open mobility data.

In a message to the Summit, UN Secretary-General Antonio Gutierrez thanked the ITF for working on policies that improve people’s lives and declared that “the United Nations stands ready to partner with you [the ITF] in promoting sustainable transport and mobility for all”.

The following reports highlight just some of the many sessions and meetings that took place over the three-day summit.

THE FUTURE OF AUTONOMOUS TRUCKS

ITF recommends steps to ensure a smooth transition to driverless freight transport

By Emily Atkins

Self-driving trucks will help save costs, lower emissions and make roads safer. They could also address the shortage of professional drivers faced by the road transport industry, says a new report published by the International Transport Forum (ITF) with three partner organizations.

However, governments must consider ways to manage the transition to driverless trucks in order to avoid potential social disruption from job losses, the study cautions.

Automated trucks could reduce the demand for drivers by 50 to 70 percent in the US and Europe by 2030, with up to 4.4 million of the projected 6.4 million professional trucking jobs becoming redundant, according to one scenario.

Even if the rise of driverless trucks dissuades newcomers from trucking, over two million drivers in the US and Europe could be directly displaced, according to scenarios examined for the report.

“We want to ensure an orderly transition,” said José Viegas, secretary-general of the International Transport Forum (ITF) at a press conference releasing the report. “Within 10 years driverless trucks could be common” on many public roads, he said. “The only doubts are exactly when and how” the transition will take place.

Anders Kellstrom of the European Automobile Manufacturers’ Association pointed out that autonomous vehicles are not new, citing recent platooning trials in Europe and the US, and noting that the technology is quickly “accelerating and expanding.”

The report makes four recommendations to help

GLOBAL TRANSPORT



ABOVE: José Viegas, Anders Kellstrom, Christian Labrot and Mac Urata present the report.

manage the transition to driverless road freight:

- Establish a transition advisory board to advise on labour issues.
- Consider a temporary permit system to manage the speed of adoption.
- Set international standards, road rules and vehicle regulations for self-driving trucks.
- Continue pilot projects with driverless trucks to test vehicles, network technology and communications protocols.

These recommendations were agreed to jointly by organizations representing truck manufacturers, truck operators and transport workers' unions.

The report was researched and written by the European Automobile Manufacturers' Association (ACEA), the International Transport Workers' Federation and the International Road Transport Union (IRU), the road transport industry's global body, in a project led by the International Transport Forum.

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TRUCK TRAILERS BY RAIL

An innovative concept in Europe

By Emily Atkins

In Europe, where 70 percent of cargo still moves by road, an innovative startup is trying to change that by offering a way to move truck trailers by rail.

CargoBeamer, based outside of Leipzig, Germany, provides a completely automated system and specialized rail cars that load road trailers onto the rails.

The trailers are driven right through a carrier—they call it a pallet—and secured there. The carrier sits atop two beams (hence the name CargoBeamer) that then slide it sideways onto the unique rail carriage. It locks automatically into place with side panels.

CONTINUED ON PAGE 18

LEFT: CargoBeamer CEO Hans-Jürgen Weidemann

International Transport Forum



TOP: CEO Hans Jurgen Weidemann shows a trailer loaded on the CargoBeamer pallet.

ABOVE: The beam (seen at the top of the photo) runs across the rails on rollers built into the terminal floor.

While it requires built infrastructure—the beam system is built into the rail terminal’s floor—the loaded CargoBeamer pallet is also designed to be lifted by a normal container crane, making it fully functional at any

intermodal facility.

At present the company has about 70 of the pallets and cars in use on a route in Europe that runs from Venlo in the Netherlands, through to Cologne, Germany and ending in Domodossola, Italy, near Milan. They run two trains a day over this transalpine route.

The company does not yet have the dedicated beam loading systems in place, although the company is working with Deutsche Bahn to build the terminals.

CargoBeamer trialed the system for three years with Volkswagen at the car manufacturer’s Wolfsburg plant, setting up a three-module terminal

CargoBeamer CEO Hans-Jurgen Weidemann demonstrated the system at the company’s test yard during the recent International Transport Forum event in Leipzig, Germany. With a single mouse click on an off-the-shelf ruggedized laptop, the system whirrs into motion, sliding the laden pallet into the rail car, and locking it down. Another couple clicks and the process reverses, delivering the trailer and pallet back to the ground where a shunt truck can quickly back in and pick it up.

The only manual processes require the driver to complete the hookup in the usual way.

Weidemann explained that with CargoBeamer a train can be fully loaded or unloaded in 15 minutes, while a conventional European container train can take up to five hours. As well, a CargoBeamer terminal requires a much smaller footprint, using a quarter of the space of a regular terminal.

Weidemann noted that his company is competing

not against conventional intermodal traffic, but against trucking carriers. “We are addressing a huge market,” he said, referring to the 94 percent of truck traffic in Europe that is compatible with his service. CargoBeamer can handle any road-going trailer, up to 37 tonnes—from reefers, tank trailers and silo trailers to sliding floor trailers—while only six percent of the trailers on European roads are compatible with container cranes.

The problem of traffic congestion is just getting worse on European roads. In 2016 there were almost 700,000 traffic jams in Germany alone, which added up to 420,000 wasted hours for those stuck in gridlock. The estimated cost of traffic tie-ups in 2015 was 25 billion Euros in 2015.

The German government estimates that over-the-road freight will increase 30 percent by 2030, but road capacity is only planned for four percent growth in that same time period.

In light of these challenges for road transport, Weidemann pointed out the benefits of moving cargo by rail. In addition to increasing the speed of service, rail has lower CO2 output per tonne-kilometre, diverting cargo to the rails would help alleviate highway congestion and would provide a less expensive way to move freight.

He asserted that a more efficiently organized European rail freight system would be able to handle 200 billion more tonne-kilometres than it does now.

Double-stack containers that are commonplace in North America cannot be used in Europe due to the different gauge and many tunnels, but automated loading will add efficiencies to make rail more competitive, he asserts. Future plans include building a high-volume container with a 48-tonne capacity that would serve the route between Europe and China.

Weidemann noted that 80 percent of the cost of rail transport in Europe is accessing the network, while his service competes on the remaining 20 percent. “Automation is where the savings are,” he concluded.

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LAST-MILE DELIVERY GOES HIGH TECH

Mercedes Benz rolls out van with drone on board

By Emily Atkins

Sleek and futuristic on the outside, and supremely practical on the inside, the Mercedes Benz Vision Van is a concept vehicle designed for modern last-mile deliveries.

On display at the International Transport Forum, the one-off concept van was demonstrated by Thomas Moser, manager of prototypes with Daimler AG. It is designed to increase efficiency by allowing drones to make deliveries at the same time as the driver moves from stop to stop.

“We’ve designed a system to make the overall process of delivery more efficient,” Moser said.

Based on a Sprinter—which Moser said the eventual production model will look like—the Vision Van has two drones parked atop its high roof, while the interior is fitted with a fully automated storage and retrieval system (AS/RS).

The AS/RS unit is modular, with adjustable racks and shelves that can accommodate parcels of varying sizes. It can also be completely removed from the van, sliding out on rails for loading, while another full unit is swapped in, saving time at the distribution centre’s loading docks. While loading a conventional package van can take up to 90 minutes—time that the van cannot be on the road—the Vision Van’s modular AS/RS can be loaded in just five minutes, by an AGV.

When it comes time for a delivery, the AS/RS can do one of two operations. If the parcel is to be delivered by the van’s human driver, the AS/RS selects the parcel and places it on a shelf adjacent to the driver’s cabin. The driver then opens a hatch on her way out the van’s door, grabs the package and heads to the recipient’s door.

The other option is for the AS/RS to move the parcel to a hatch in the van’s roof where it gets loaded onto the drone’s carrier. The drone then flies the parcel to a set delivery point—it requires a special landing pad, so cannot deliver to a customer’s door—and leaves the parcel.

If the van is on the move, the drone can find it using



an infrared guidance system and will follow along until it can land safely back on the roof at the next stop.

Although it's a concept, the Vision Van has specs. The drones can travel a maximum of 20 kilometres at 60 km/h with a two-kilo payload. Each van would be equipped with three battery packs, and the drone gets a new one with each delivery to ensure maximum range. The 11-kg drone takes 40 seconds to drop a parcel on the landing pad.

The van itself is joystick controlled with an ergonomically designed cockpit that at first glance looks empty but for a chair. A typical delivery driver is in and out of his seat 150 times a day, a fact that was taken into account in the design, Moser said.

Routing is optimized and managed over a cloud-based server, relying on GPS for navigation and avoidance of congestion to make trips as efficient as possible.

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- 1 The Vision Van carries two drones on its roof.
- 2 Inside, the cargo is managed in a modular AS/RS.
- 3 The cockpit is minimalistic, designed for ergonomics.
- 4 The drones use a dedicated landing pad.

LEASING OPTIONS FOR FORKLIFTS



Suppliers are coming up with creative ways to gain customers and help them save

By Treena Hein

Cost control is always top of mind for warehouse and distribution centre managers, and with mobile powered equipment being a big part of most operations, this is an area that often reveals opportunities for savings. Leasing equipment is one option that can reduce costs for operations managers.

“In an unpredictable market, it’s very difficult to anticipate your future fleet needs,” notes Shane Weistra, national leasing specialist with Johnston Equipment. “With a lease, you avoid owning capital assets you may not need down the road.”

Weistra also points out that leasing can provide greater asset accounting flexibility.

“For example, a customer may require an operating lease where they can record the asset as a monthly expense while not recording corresponding debt onto their balance sheet,” he says. “A capital lease is the opposite; the asset is recorded onto the balance sheet, as well as the corresponding debt, and the client will need to depreciate the equipment instead.”

Weistra adds that leasing also simplifies the budgeting process with one consistent payment, “even more so if you combine a lease with a service maintenance plan”.



“In an unpredictable market, it’s very difficult to anticipate your future fleet needs. With a lease, you avoid owning capital assets you may not need down the road.”

— SHANE WEISTRA, NATIONAL LEASING SPECIALIST WITH JOHNSTON EQUIPMENT.

Leasing can also play an important role in fleet optimization, in Weistra’s view. “You avoid equipment obsolesce and can take advantage of the latest material handling technology [through replacement of equipment at the end of the lease term],” he notes.

Replacing lift trucks more frequently as technology evolves allows access to the newest in productivity enhancements and at the same time, avoids wasted time in the service bay.

Among the leasing options Johnston Equipment offers is traditional closed-end leasing (where at the end of the term, Johnston is responsible for the residual value, assuming normal wear and tear). While specific terms of 24 to 84 months are possible, Johnston will also work with customers to provide tailored leasing structures that take customer needs and challenges into consideration, including internal approvals, equipment relocation, lease restructuring and equipment issues.

“For example, a customer that has a high-hour application should consider a shorter-term lease, so the term better aligns with the equipment’s useful life in application,” Weistra says. “This feature allows customers the benefit of reduced downtime, the latest technology and the ability to ensure that they are optimizing productivity.”

He adds that companies with multiple locations may need to move equipment around to meet various business needs, and will therefore want to ensure their lease agreements are structured so that a minimum of

paperwork is needed—especially for inter-provincial moves.

Restructuring a lease, Weistra notes, may be needed when a customer's business needs change and, along with that, so does the usage of the truck. "When this happens, a customer may end up doubling the amount of hours being used on a truck when the lease was not structured for the increased demand, which can cause overage charges at the end of the lease term," he explains.

Weistra therefore advises companies to ensure all lease agreements allow for restructuring mid-term, and include regular reviews of usage "so you can proactively restructure the agreement as needed."

Liftow also offers many tailored programs depending on application, use and other needs of the customer. "In general, they are lease-to-own, lease, lease with full maintenance and long-term rental," explains Jamie Stephen, Liftow general manager of sales and the Western Ontario district. Lease with full maintenance is for customers who want cost

Advantages of short-term rental include increased productivity during peak seasons, the ability to handle unanticipated product volumes and to maintain production during equipment servicing or breakdowns.

certainty over the course of the lease, he says, but still want the option to own at end of term. Long-term rental is for customers who also want cost certainty, with less administration and no ownership at end of term. "This helps businesses who want the tax benefits of writing off the expense of the equipment in the year it is accrued, and who also wish to preserve capital spending for production and marketing initiatives," Stephen says.

Liftow offers a number of other inducements including free demos, specific product specials, extended warranties, special financing rates and several free service options. "Free demonstrations allow the cus-

tomers' forklift operators to try the equipment in their facility," Stephen explains. "Specific product specials might include a special pricing rebate for a specific product, a delayed financing option or subsidized interest rates. Extended warranties are sometimes offered on a new product or a specific product for a certain period of time (typically three months). Special service options might include free preventative maintenance or extended warranties."

Hewitt Equipment Limited/Hewitt Material Handling offers both short and long-term lift truck rentals. Advantages of short-term

CONTINUED ON PAGE 22

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“Restructuring a lease may be needed when a customer’s business needs change, and along with that, so does usage of the truck.”

rental include increased productivity during peak seasons, the ability to handle unanticipated product volumes and to maintain production during equipment servicing or breakdowns, explains market strategy man-

ager Liana Bellizzi. With its ‘Global Solutions’ long-term turnkey rental program, Hewitt handles all repair and maintenance, which allows companies to maximize productivity and reduce capital costs.

Lastly, the company offers a rental purchase option, where a customer can rent a lift truck for six months. “Any time during the six-month period the customer can choose to purchase the unit at a given interest rate and the payments made until that point will be put against the purchase price of the unit,” Bellizzi says. “This option is applicable to customers who need a rental unit for a given period but are unsure whether their volumes will merit the permanent addition to their fleet. It is also applicable for those who would like to try the lift truck before committing to the purchase.”

In addition to lease-to-own and long-term rental, Wajax offers leases with a fixed residual position. In this case, the customer may elect to return the unit at the end of the lease term, but is ultimately responsible for the residual value of the equipment on return. This arrangement includes a lower monthly payment than what is typical through traditional financing.

Another option offered by Wajax is a walk-away lease, which provides the greatest residual position and significantly reduced monthly payments, notes Wajax director of material handling Sajith Manikath. “It’s a usage-based contract allowing customers the greatest flexibility at the end of the lease term offered when the customer asks for an operating lease or off-balance sheet leases,” he explains.

Wajax also offers a fixed purchase price lease, which Manikath says is gaining popularity. In this situation, a usage-based contract allows the customer to return the equipment at the end of the lease term or buy it at a pre-determined amount.

One last Wajax option is called ‘Power-by-the-hour’, a new rental initiative where the customer pays the dealer only for the usage of the lift truck. “This is a very useful program for customers who are not sure how much usage they may need in the long term,” Manikath explains. “This option gives them the time to gather data on actual utilization and make the best decisions about future requirements.”

Whichever leasing or other program you decide to use, Weistra offers some last pieces of advice. “Watch for hidden costs like administration fees in terms and conditions, which may be masked in lower interest rates,” he says. “Be sure to do your due diligence in vetting the fine print on your leasing agreement before you sign.”

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‘TRY BEFORE YOU BUY’ FOR ROBOTS

By Emily Atkins

For most DC operations managers, robots are new technology that they usually haven’t had much exposure to. That lack of familiarity can make it harder to sell the advantages of robotics, a barrier that Waterloo, Ontario-based OTTO Motors is seeking to overcome with a ‘try before you buy’ program.

OTTO’s Test Drive program provides North American facility operators with a one-week trial of an OTTO 100 or 1500 self-driving vehicle.

“Customers would come and see the technology at our site, or they would see it at other customers’ sites and invariably the conversation would go ‘wow, but we have a grate. I’m not sure it will work there,’ or ‘I’m not sure how my team would react,’” explained Simon Drexler, OTTO’s director of product, in an interview.

The OTTO team decided they needed a painless way to demonstrate to prospective buyers just how simple it is to get OTTO working in their own environment. Beginning in January 2017, they started the first test drive program and have now completed about 50 of the demos across Canada and the US.

Operations managers who are considering automation generally have two concerns, Drexler said. First are those who feel their facility is not suitable, whether because it’s too busy with forklifts and people, or because it changes frequently. Second are the ones who think it will be complex to set up.

“What’s so effective about the test drive is that we can bring in a system that requires no IT integration; it is a standalone, out-of-box experience,” Drexler said. “The test drive is very simple; you sign up for

a nominal fee. We can show up at nine o’clock in the morning and we can have an OTTO unit running around your facility by 10. You can get it working in the time it takes you to walk around the building.”

And, he noted, it’s an ideal way to introduce the system and how it works to the important stakeholders in your organization, right on your own facility floor. “They can show everybody from the operators all the way up to the CEO because it’s a whole lot easier just to walk down to the floor and see it,” rather than gathering everybody at a remote site for a demo.

Drexler noted that operating OTTO is extremely simple, using “consumer-grade” app technology. Essentially you drive it around your building like a remote-control car, tapping on the screen to drop delivery points. “Once you’ve done that you create an interface for yourself with the click of one button and you can then send the vehicle between the different way points you defined during the walk around,” Drexler explained.

The five-day program begins with this setup and familiarization process, and from the first afternoon through day two the idea is to push the system to its limits, integrating it into the processes in your facility that you want to automate. Days three to five are about gathering data, Drexler said. Users are “acquiring key performance indicators on how the vehicle is performing in their environment and the processes they integrated into it on day two.”

The data captured with the one test vehicle is enough to validate the assumptions made in the ROI calculator OTTO Motors uses to help customers build out the business case for the installation of the robots.

“You don’t buy a car without test driving it, so why would you buy a self-driving vehicle or automation technology without test driving it” We want to hand our customers the keys to our technology,” Drexler concluded.



Simon Drexler

LOGISTICS INDUSTRY AT A Crossroads

Annual State of
Logistics report
warns of
uncertainty



By Emily Atkins

Logistics costs declined in 2016 for the first time since 2009, even as increasing e-commerce boosted demand for last-mile delivery services.

This is one of the key findings in the 28th annual *State of Logistics Report* produced by the Council of Supply Chain Management Professionals (CSCMP) in collaboration with global strategic management consulting firm, AT Kearney, as the author and researcher, and with Penske Logistics continuing in its longstanding role as presenter of the report.

The report includes: a focused narrative on the economic environment impacting logis-

tics; insights from interviews with industry leaders, including shippers, carriers, and analysts; a spotlight on relevant trends; and a strategic point of view on the state of the industry.

“This highly anticipated report contains the statistics and industry insights that will not only help our members do their jobs better, but also better prepare them for the business demands ahead, in a very dynamic marketplace,” said Rick Blasgen, president and chief executive officer of CSCMP.

A mixed bag causes confusion

This year’s report shows the first decline in United States Business Logistics Costs

(USBLC) since 2009, while the booming surging e-commerce sector propelled demand for parcel delivery services. Logistics costs fell across all three measures the report examines: transportation, inventory carrying costs and other costs. Overcapacity, weak volumes and rate pressures are blamed in many sectors, while parcel sector and warehousing costs grew, thanks to e-commerce.

The report also noted that fuel prices and logistics costs have become disconnected, where previously they operated in lock step. This is also attributed to the growth of e-commerce, with the report noting that consumers are now the driving force behind logistics spending.

The report's analysis predicts that US economic growth will be strong in the near term, although climbing interest rates and an appreciating US dollar could increase the costs of doing business south of the border.

The report highlights the political uncertainty that is a hallmark of 2017 so far, influenced by President Donald Trump's "mixed message of tax relief, regulatory reform, and trade restrictions."

Meanwhile, mixed economic signals—high consumer confidence versus sluggish GDP growth—are making it difficult to determine which way the economy is going.

"The logistics industry appears destined for a prolonged bout of cognitive dissonance, coupling frustration over subpar growth with the optimism reflected in rising stock market values, technology investments and consumer confidence data," the report says.

The report notes that in this uncertain environment businesses seem to be exercising caution in adding inventory. Likewise, demand for truck capacity is expected to fluctuate as businesses continue to adjust their outlook.

"Looking ahead, 2017 could be a pivotal year for logistics," the report notes. "Demand patterns are shifting, technological advances are altering industry economics, and new competitors are challenging old business models. This year could bring significant moves that reshape individual sectors and even the industry as a whole. Major business combinations, large-scale shifts in distribution flows, deep capacity cuts, massive infrastructure investments—anything is possible."

The report details the performance and outlook for each of the modal sectors as well as pipelines, freight forwarding and third-party logistics.

The digital shift

The report highlighted the coming shift to digital supply chains. "The next-generation supply chain will enhance fulfillment capabilities and drive efficiencies through technologies ranging from big data and predictive analytics to artificial intelligence and robotics. Inevitably winners and losers will emerge as companies that make the right technology investments and strategic choices will outperform others," the report said.

We asked Marc Althen, president of Penske Logistics to comment on this significant shift.

In an interview, Althen pointed out that

technology is playing a huge role in the way logistics is being done, and this is influencing customer behaviour.

"There's so much data being generated from all the various devices, so [the customers] want a provider to be able to capture the data and really analyze the vast amount of data and present it to them in a very easy format so that they can make data-driven decisions," he said.

And with the increasing reliance on technology comes the increased peril of hacking. On the very day in June that many global logistics players were crippled by a ransomware attack, Althen commented on the critical importance of cyber security: "We don't take shortcuts when it comes to IT security. It costs money, and we make sure we're making the right investment to ensure our systems and our devices are secure."

With the interconnectedness of the logistics provider and customer, this is not negotiable. Althen pointed to his company's relationship with Ford, for example.

"We manage all of Ford Motor Company's inbound material flow in North America. They have 35-plus manufacturing facilities located in North America. So we're working with their teams, we're taking all of the information that says these are the vehicles they're going to be building in the next fifteen days, and we've got to orchestrate the material flow, the material movement into those plants," he said. "We cannot have any disruption in our supply chain because it would have a massive adverse effect on them."

At a crossroads

The report posits four possible scenarios facing the logistics industry. The first is called "Plain Sailing". In this future, regulation declines, creating a more open market and encouraging trade. Competition drives down costs and encourages logistics suppliers to innovate and adopt new technologies to

enhance their competitive position. Shippers benefit through improved supply chain visibility and better efficiency.

The second scenario, "Choppy Waters", envisions a more protectionist US that is focused on protecting and bolstering old-school domestic industries like steel. These industries have different logistics requirements from the consumer-centric models currently in play, creating a modal shift towards rail and away from import-centric ports and cross-border trucking. As carriers struggle to adapt, shippers are left bracing for interruptions in service. The report also suggests that in this world the 'uberization' of freight will become increasingly prevalent as a means of filling in the gaps as carrier networks adjust.

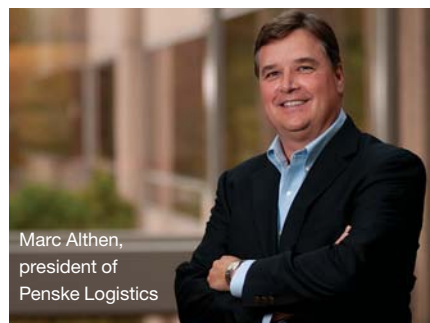
Future three, "Stemming the Tide", sees the enactment of stronger regulations affecting the transportation industry, including stricter hours of service rules and lower emissions targets. This would be expected to increase costs and reduce levels of service for shippers. However, at the same time global trade volumes would be increasing, allowing carriers to invest in technology that would boost supply chain efficiencies. These would focus on ways to work the new regulatory environment, with a likely emphasis on driverless trucks and cleaner engines.

In the last scenario, "In the Doldrums", a protectionist US coupled with poor economic conditions makes the business environment difficult for carriers and slows investment in technology. Price wars drive all but the strongest suppliers from the market, initiating a chain reaction where shippers at first benefit from lower prices, then suffer as capacity dries up and prices climb again.

Which of these futures might come to pass? Of course, the *State of Logistics Report* is no crystal ball, but it does offer the following counsel in times of flux:

"The first step in dealing with such uncertainty is to identify the major forces at play and articulate the most extreme manifestations of each... A well-informed evaluation of strategic choice will become more important for companies charting routes to growth in a world accelerating toward a new era of uncertainty."

The CSCMP 28th Annual *State of Logistics Report* is available for download on the AT Kearney website at: <https://www.atkearney.com/transportation/cscmp-2017>. MM&D

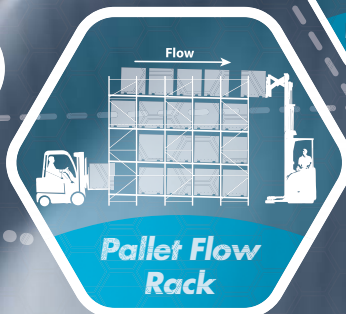
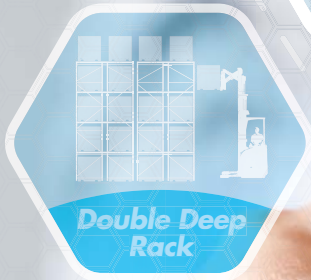
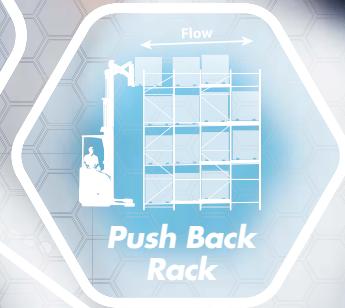
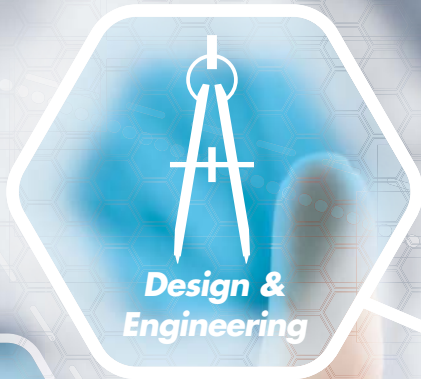


Marc Althen,
president of
Penske Logistics

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PRIMING THE PUMP



Viking Pump teamed up with Vidir Machine to streamline storage of its slow-moving parts

By Jim McMahon

At Viking Pump's central manufacturing plant in Cedar Falls, Iowa, the company stocks more than 30,000 unique parts to supply its assembly workstations, as well as replacement parts for its installed base worldwide. These parts are inventoried on rows of stationary shelving, occupying approximately 30,000 square feet of storeroom in multiple locations throughout the facility.

Viking wanted to consolidate its stockrooms, make them more efficient to pick parts for assembly and improve inventory accuracy. The first area of approach was its slow-moving parts inventory. The company discovered that although slow-moving parts made up only two percent of its inventory (about 500 part numbers), they were being handled inefficiently.

Manufacturing is a dynamic process of companies evolving and expanding product lines, and automating assembly processes

within their facilities to increase throughput volumes and improve quality. For many industrial manufacturers, it is no small organizational challenge to keep assembly production requirements supplied with kitting parts, particularly when dealing with continually escalating volumes of unique part numbers.

Most manufacturers maintain parts stockrooms that are manual operations with aisles of stationary shelving. As companies grow,

CONTINUED ON PAGE 29



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and the number of unique parts expands into the thousands and tens-of-thousands, so does the need for more aisles and shelving to stock these parts, frequently pushing plant stockroom footprints into the tens-of-thousands of square feet.

Such stationary-shelf stockrooms become logistical challenges, requiring considerable footwork for pickers. This can be tolerable so long as parts are in their designated locations. But as part volumes grow, they increasingly are not where they should be, escalating picking times considerably, delaying delivery of parts to assembly, and potentially compromising production throughput.

Add to this the growing square footage of plant floor space needing to be utilized for inventory, and manufacturers will eventually reach a critical threshold where automated parts storage becomes more of a necessity than an option.

Viking Pump, Inc, a subsidiary of IDEX Corporation, has been a pump industry leader and innovator since 1911. As it builds on its experience to deliver innovative pumping solutions—including custom designs—to thousands of customers who use millions of Viking pumps in some of the world's toughest applications, it was running into this kind of inventory control problem.

"We have been looking at how to process orders better between our stockrooms and assembly stations," said Viking's operations manager, Marty Meyer. "We started by preparing detailed material flow diagrams to better understand how to reorganize our stockrooms to facilitate improved flow."

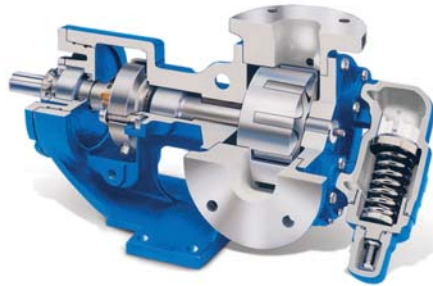
"Managing our slow-moving parts was our first priority," added Meyer.

Many of the slow movers did not even have specified storage locations in the static racking. Frequently, they would be put into disparate shelving locations, sharing space with other parts. Sometimes as many as 25 slow movers would be in the same location, Meyers recounted.

"We really did not have a good way of organizing these parts, and our pickers would be wasting time trying to find the right parts to fill the kitting orders."

Automation to the rescue

After considerable research, Viking determined the best solution for its slow-moving



“Our workers are no longer scouring our storage areas for these parts. And we are seeing improvements in inventory accuracy.”

small parts storage would be automated vertical pan carousels. Manufacturers have been benefitting from the use of vertical carousels for decades to reduce waste and increase their productivity. In September 2015, Viking selected two vertical pan carousels, manufactured by Vidir Machine, a manufacturer of automated storage and display systems based in Manitoba.

Vertical pan carousels operate under the goods-to-person principle, which means the operators no longer concern themselves with search-and-retrieval functions, but allow the vertical carousel to retrieve items regardless of their location within the machine. This eliminates many of the steps required when using stationary shelving for stocking and retrieving parts.

Small footprint, dense storage

Each of Viking's vertical pan carousels is an automated small-parts storage system that provides high-density storage volume, while occupying a very small 72 square-foot footprint (6 feet deep by 12 feet long), 16 feet tall. Parts are organized in storage bins and shelving configurations that are easily and automatically located by the operator.

The increased density is accomplished with a series of interchangeable dividers and removable intermediary shelves that allow

easy reconfiguration of the carousel interior to accommodate a diverse range of Viking's parts. Each carousel has a capacity to hold 13,000 pounds.

Smaller footprint, faster retrieval

"We were able to take all 500 of our slow-moving part numbers and put them in the carousels, instead of leaving them spread out across multiple storage aisles in our stockrooms," Meyer said. "Each individual part now has a unique location assigned."

The carousel machines interface with the company's inventory management system. Orders are generated and sent to the operator out on the floor. A barcode, part number or even a part description are entered into the machine. The carousel rotates the shelves internally, and presents the shelf holding the requested part. The operator is then directed to the exact location on the shelf where the part is located. The carousel ensures that the operator is working at an ergonomically acceptable height to reduce unnecessary bending or lifting.

"Many manufacturers have started to recognize the benefits available by condensing their parts inventory into automated carousel storage devices," said David Mills, national accounts manager for Vidir. "It makes for a very organized, simple and secure system to manage inventory."

"Vertical pan carousels are typically a little smaller in footprint compared to vertical lift modules (VLM)," Mills added. "They do not need quite the same amount of room to operate, comparatively, for the amount of storage that they provide. Pan carousels also tend to be more cost effective and provide a more reliable solution that experiences less downtime than their counterparts."

Both carousels combined take up a total of 144 square feet, replacing the 1,440 square feet of static shelving. This space, now opened up, is being used to make the storage and picking of faster moving parts more accessible and efficient.

"Our workers are no longer scouring our storage areas for these parts," Meyer noted. "And we are seeing improvements in inventory accuracy. The pan carousels are driving fewer mispicks. The addition of the carousels has also allowed us to reduce our labour force by one worker."

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Installation inventory

Material handling
and inventory control
installations
from around
the world

Compiled by Emily Atkins

Lights out for Otto

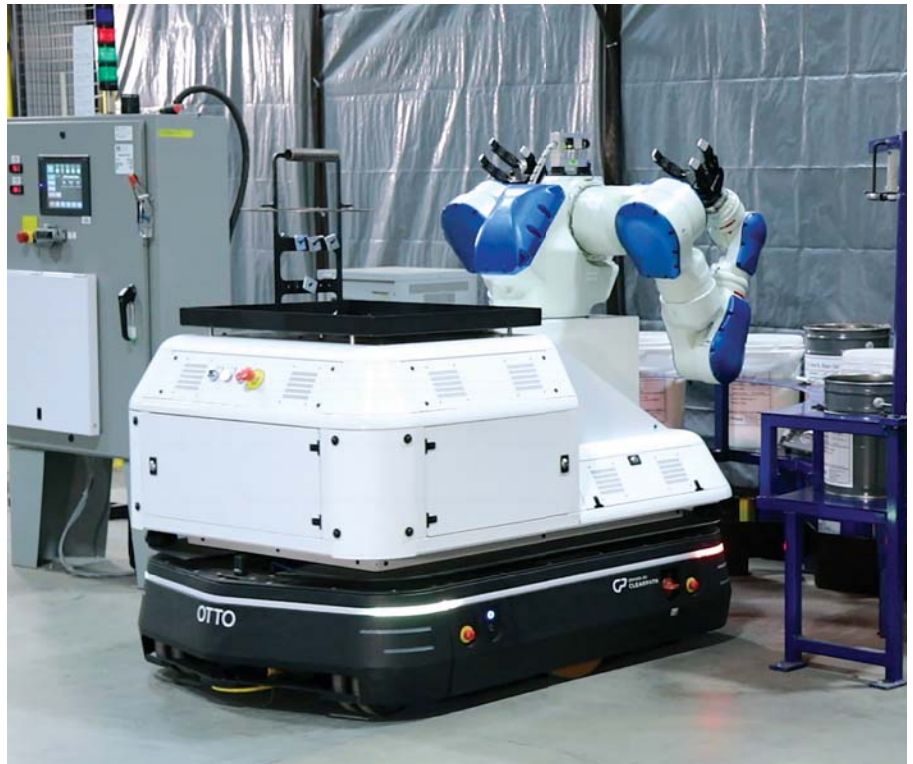
Hirotec America has partnered with Waterloo, Ontario-based OTTO Motors to automate Hirotec Group's spare parts production as part of a goal to achieve lights-out manufacturing for 24/7 operation. The OTTO 1500 self-driving vehicle is used for automated material movement, while a Yaskawa Motoman dual-arm manipulator has been integrated onto the OTTO to pick up and dip parts in black oxide for corrosion protection.

"HIROTEC is always looking for the next technology that is going to take over the industry," noted Gary Krus, VP of business development at Hirotec America. "We started by looking for a platform that could make a dual-arm manipulator into a fully mobile manipulation solution. By using the OTTO 1500 with the integrated Yaskawa Motoman manipulator, we have the technology to replicate human labour. OTTO lets us test and prepare future systems to meet our corporate goals of zero operators for spare parts," he added.

Hirotec America provides weld assembly equipment for original equipment manufacturers (OEMs) including GM, Fiat Chrysler Automobiles, Ford, Toyota and BMW. For close to 30 years, the division has been a pivotal part of the global Hirotec Group with more than \$200 million of the \$1.6 billion in worldwide sales.

"The next frontier in manufacturing is lights-out production. For so many, and for so long, this has been a vision in the distant future, but the convergence of today's technology and manufacturing sectors is allowing this vision to become a reality. It's innovators like Hirotec America that are leveraging new capabilities — we're excited to be their strategic partner to make it happen," said Matt Rendall, CEO of OTTO Motors.

The first process that was automated within



The OTTO 1500 is paired with a Yaskawa Motoman dual-arm manipulator to pick up and dip parts in black oxide to protect them against corrosion.

Hirotec Group's spare parts production was the black oxide process, which involves moving and dipping parts from bucket to bucket in a sequence, with specific time delays between each sequence as parts become oxidized to provide a corrosion resistant surface.

Previously, the process was completed manually by whomever happened to be available from the shop floor — there was not a set operator on the line. As such, parts were prone to quality issues and were often required to re-enter the process, significantly impacting productivity and throughput.

"We can rely on the OTTO solution to do the same thing, exactly the same way, every time. We're seeing much more consistent

parts than what we saw with our manual process. We don't have to run the parts through multiple times anymore, which has improved our productivity in spare parts production," said Peter Mourelatos, R&D project engineer at Hirotec America.

"Operators can now remain focused on the valuable tasks in the shop, and not be distracted with secondary jobs like black oxide dipping."

"We've successfully implemented mobile manipulation at our site, and I can see the OTTO vehicle being used by Hirotec operations globally. It's just the beginning for us as we work towards our goal of lights-out manufacturing with zero operators for spare parts production," explained Mourelatos. MM&D

Twenty years on: Racking up successes

In the late 1990s, Ceres Fruit Growers (Pty)Ltd (CFG), a storage, packing and marketing facility, evaluated numerous storage options, each with its respective benefits and challenges. The decision was to utilize Poweracks by Storax — a high-density, mobile racking system.

The short life cycle of perishable produce and the risk of spoilage call attention to the requirement for speed, accessibility, temperature control, and airflow management.

Poweracks was able to provide the speed and accessibility needed in this high-turn inventory environment. The proper circulation of cool air and temperature control not only reduced the risk of spoil-



age, but helps minimize energy and overall operating costs. In fact, after Poweracks were installed, this organization was able to raise its set-point temperature due to improved air circulation.

“My primary responsibility is refrigeration and maintaining temperature. The Poweracks system has helped our airflow and improved it enough to even chill and store deciduous fruit in plastic bags,” said Deon Schickerling, electrical and refrigeration manager at Ceres Fruit Growers.

“If we converted to fixed storage, we’d reduce our storage capacity by 50 percent — that’s the strongest business case. Poweracks presents the best option for maximizing storage capacity,” he added.

The company realized a 75 to 80 percent increase in practical storage capacity, complete accessibility to every pallet at any time, and decreased operating costs due to the improved air circulation and increased storage capacity.

“Our Poweracks system is designed to accommodate 2,870 pallets and is 10 bays long. I have full accessibility to every pallet immediately,” Schickerling said. “The system was designed to be able to work both our moving aisles at the same time. On any given day, we are able to locate and move 60 pallets an hour for short periods with the use of the reach truck and a team of counterbalance forklifts. I have no issues at all with speed, productivity, or accommodating our high throughput.”

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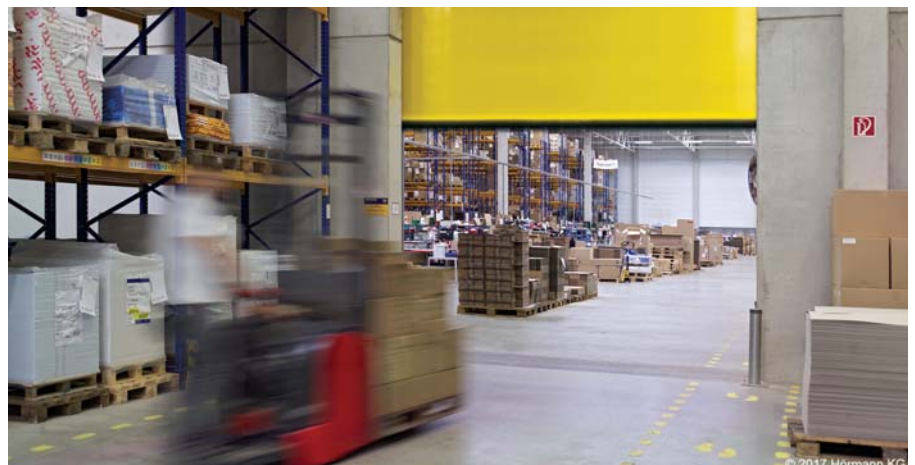
Integrated transport management

At several sites, Hörmann, a European manufacturer of doors, hinged doors, frames and operators, now uses a new SAP based solution, SAP LE-TRA, to improve the processing of its transport and shipping activities. Since the first quarter of 2017, more than 1,600 trips with over 15,000 deliveries have been planned and processed.

The transport management solution, including functional extensions, was implemented at three sites by the logistics software specialist inonso.

The first site, Brandis, near Leipzig, was equipped with SAP-based inonso add-ons to support SAP integrated goods planning. The new system significantly increased visibility into transport activities, from planning through to invoicing. In addition, connected software components and the external Warehouse Management system are now able to closely interact.

The solution was subsequently rolled out to two more warehouses of the Hörmann Group. At the company’s Upper Austrian Wolfsegg facility the system ensures full



visibility into packaging and shipping planning, automated pallet planning and the integration of a mobile customer solution for packing processing.

A route-planning solution that supports packing planning and takes current inventory positions into account was sought specially for the Hörmann Group site in Freisen, Saarland. There, inonso implemented add-ons to address diverse planned tasks. The

inonso packing dialogue allows for advance planning as well as fast response times to sudden changes occurring in the group’s daily business.

Hörmann develops and produces high-quality doors, hinged doors, frames and operators for use in private and commercial properties at 26 specialized factories in Europe, North America and Asia. It is based in Steinhagen, Germany.

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NEW KID IN TOWN



Consulting firm offers integrated real estate services

By Emily Atkins

There's a new player on the industrial real estate block in the Greater Toronto Area, and they claim to be the only ones offering real estate services and distribution centre/warehouse design in one package.

LIDD Supply Chain Consultants opened a Toronto area office in 2015 and added a real estate practice in October 2106.

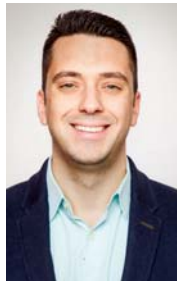
Jesse Micak the principal and broker of record at LIDD Toronto Brokerage Inc—the real estate arm—took a few minutes to explain the concept in an interview.

LIDD got its start in Montreal as a supply chain engineering and consultancy, and now has 22 employees, operating across North America. Its engineering and consulting practice was the original business.

The real estate practice came about after Micak spent time collaborating with LIDD in his capacity as vice-president of industrial for a major real estate firm. Seeing the synergy, it made sense for LIDD to consolidate and bring the real estate expertise in-house.

“What we do is help organizations make investment decisions or infrastructure decisions in their supply chain,” Micak said. “Anything from the facilities, the material handling, to the IT systems that run a supply chain.”

LIDD only serves the industrial market, he says, with all of its business being end-user assignments. In other words, it does not represent landlords or take listings. The real estate service dovetails with supply



Jesse Micak

chain strategy and design services for those companies that require it, provided by the group's team of veteran consultants.

Avoiding pitfalls

LIDD positions its services as designed to “advise our clients on how they can mitigate the risks associated with poor infrastructure decisions that can create long-term operating penalties,” Micak said.

“We know from experience that within an infrastructure decision, there's really four areas where capital can go to waste.”

First is the language of the lease agreement. “If a lease is not negotiated properly you can have language that is onerous and favourable to the landlord.” There are many areas in a 40 to 50 page lease agreement that if not attended to can “be a profit centre for the landlord,” Micak warned.

Second is in the facility size or location. Buildings can be too big to too small, the column spacing can be off, the clear height may be inappropriate, the dock size may be too small. LIDD's consultants can help to optimize the overall layout and functionality of a location.

The implementation is another area where mistakes can be made. The pick-line layout, the WMS integration, order configuration can also be inadequate, so LIDD has specialists on staff who can ensure an efficient

implementation is achieved.

The final area for potential loss is in the lease negotiation itself, Micak noted.

“We know that real estate companies know a lot about real estate, but might be at a loss when it comes to designing the interior of a distribution centre,” he said. “Under one roof what we try to do is seamlessly integrate the design, implementation and the optimization of a facility.”

As a brokerage, LIDD gets paid by the landlord for the real estate services, and the optimization and integration consulting is charged on a fee-for-service basis.

Although they have done work for companies of all sizes, the sweet spot is in the \$50 to \$200 million revenue range for private companies. LIDD has also done quite a bit of work government agencies, including assisting the Alberta Gaming and Liquor commission to establish a new DC outside of Edmonton.

The consulting business extends through much of Canada with about 50 percent of its contracts in the US.

While the real estate portion of LIDD's business is confined to Ontario for the moment, the company does plan expansion to other provinces in time.

“Toronto is a very exciting market for us right now,” Micak said. “It's the third-largest in terms of industrial square footage in North America, behind Orange County/Los Angeles and Chicago, Illinois, so it was a natural step in the evolution of the company.”

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Ontario government misguided in changing rules for temp workers

The Ontario government's recent announcement of the "Fair Work Places and Better Jobs" policy is designed to legislate and enforce labour laws in a one-size-fits-all program. The legislation introduces measures to ensure staffing companies apply the same work conditions as those their clients provide to their employees.

The Ontario Government states 'secure, full-time, permanently employed work status' is something that all those in the workforce, including the so-called 'precarious temp worker' should benefit from. Most production, distribution and transportation company environments have a flexible workforce employed by a third party in order to mitigate variations in workload, the cost and process of on-boarding, and extensive payroll administration resources needed to manage a fluctuating labour supply and demand climate.

Furthermore, the increasing challenge of attracting, screening and retaining applicants due to the aging workforce and millennial-driven low level of engagement means businesses rely on service providers to spend their time and energy to access the skilled talent required. Ontario is listed as the second costliest place in the G7 to employ workers, not because of wage levels but because of employer payroll costs — that is, government costs. What does that do for job creation?

While the efforts to raise minimum wage, standardize the wage practices between full-time employees and temp workers and amend the labour organization process to include temporary workers might appear to address the quality of work and wage conditions, many companies already employ dedicated contract employer companies as a business service and solution to the challenges of a skill shortage and complex Canadian payroll compliance processes. They match the competitive wage levels and all the perks like benefits, bonuses and incentives.

Clearly the mandate with the Ontario Workplace legislation is a reaction to the status of work for employees who are not in-house and who opt for the flexibility of making their own work schedule and having more independence and do not require the seemingly protective labour unions to negotiate their work status.

Organized labour has traditionally challenged strikebreakers in Canada and has created collective agreements to protect members from having jobs replaced by temporary workers. Some companies will pay the union dues for the agency workers to keep the flow of

work going when additional and otherwise not available workers have been accessed from agencies.

There can be a very large difference in quality of work between strikebreakers, temp agency workers and contract employee placement companies. Most retention success for agencies comes when they either mirror or better wage rates, vacation allowances and other workplace benefits.

Some of the companies that use these services prefer to outsource their HR function and focus on their core competency, especially entrepreneurial firms with tight budgets or large corporations with extensive HR administration and lengthy on-boarding processes for staff when the work demands are immediate. With the Employment Standards Act applying to every employee, regardless of status of employee on a dedicated assignment or temp agency worker, the right to overtime, paid holiday, vacation pay and other features are already in place.

So with input from temp industry nowhere to be seen in the Ontario Government's agenda of attacking workplace practices, where are the facts to support the negative working conditions being presented to pressure governments to make these rules?

An Ontario Chamber of Commerce report, in 2015 reported the majority of Ontario workers had held their position for nine years, showing employment stability and undermining some claims made on the necessity of employment reform action.

If the goal is to find a way for Ontario businesses to be even less competitive than other markets, then they have won. Ontario is already a tough place to do business; utility costs, the tax costs, and onerous government reporting policies are all putting businesses in Ontario at a disadvantage.

This short-sighted and reactionary mandate set out by the Ontario government is an attack on free enterprise and shows blatant bias towards labour interest groups who would prefer we all operate unionized enterprises. Perhaps the unions are trying to access union dues from temp workers and in their minds build a stronger workforce presence so they can leverage increased wages and perks.

However, many of the workers in the temp help sector do not see the value in unions, and have not seen the benefits of worker solidarity to ensure job security. The thing about an entrepreneurial company is that we focus on mutual prosperity with clients and candidates. Adversity never wins. **MM&D**



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Where it all began

How time flies. Over 30 years ago, in the mid 1980s, I commenced writing a regular warehousing column for *MM&D*. The first column subjects were based on a new logistics concept for the time. Originating in Japan, it was commonly called 'Just-In-Time' (JIT) manufacturing, or the Toyota Production System, after the company where it was developed. The initial columns focused on its impact in key logistics functional areas like shipping and receiving.

In the 1980s and 1990s continuing evolution resulted in increased emphasis on lean manufacturing as a continuing refinement of the JIT process. Some of these positive achievements on a macro level, compared to the 'just-in-case' production philosophy that had prevailed in the 1960s and 1970s included:

- Lower manufacturing space required
- Reduced inventory (including work in progress - WIP) and finished goods
- Lower labour costs
- Faster turnaround time.

JIT has lasted so long because of its emphasis on the reduction of resource use to achieve production goals and the emphasis on continuous improvement. The reduction in resource use was achieved through higher efficiency and better quality products, meaning fewer rejects.

JIT also succeeded because of the emphasis on continuing second-round smaller productivity enhancements. Like the old cliché, 'the devil is in the details', many of JIT's gains come from relentless attention to continuous improvement. As you examine each component you realize how extensive a field they cover.

- 1 Reduction of mistakes and errors (get it right first time)
- 2 Make it right the first time – elimination of defects
- 3 Reduce scrap and waste through rapid, efficient change-overs
- 4 Ideally reduce lot sizes to one
- 5 Maintain good housekeeping and avoid clutter.
- 6 Use a pull production system (Kan-Ban) rather than the older push production systems
- 7 Maintain constant plant production load with balanced department loading
- 8 Use streamlined workflow.
- 9 Use preventative maintenance to avoid unscheduled downtime
- 10 Have a flexible multiskilled workforce

There are a lot more advantages, but it is easy to see fundamentally why JIT has lasted so long. Even as it faces technological and process change, it provides

operating advantages that allow adaptation.

But enough of the past; just as it did 30 years ago, logistics continues to evolve. The change ranges from technical—especially use of mobile computer platforms and software. There are also innovations like Uber or other delivery applications which permit advancements in mobile maintenance such as tire changes or auto glass repair or delivery service direct to consumer.

It is not clear where some of the trends will take us in the future, but the potential for change is significant. Consider the size of supply chains, which have tended to grow in scope over the last few decades. For some products, like spare parts, their slow moving inventory suggests continent-wide supply systems.

Today a radical new technology—3D printing may replace traditional storage and distribution of spare parts entirely. 3D printing, or additive manufacturing, is a process of making solid objects from a digital file. In an additive process, successive layers of material are laid down until the object is created. Each of these layers can be seen as a thinly sliced horizontal cross-section of the final desired object.

Key to this technology's transformative power is that this is done on site, in the quantities needed. No more need for elaborate spare parts delivery and supply chains.

Other changes include the impending growth of very large logistics companies like Amazon. Their influence is interesting because they emphasize local delivery, while at the same time their large size threatens to dominate certain industry sectors.

Whether governments will continue to allow this dominance will be an interesting question for future logisticians. Personally, I believe we are entering a period of increasing government regulation of logistics. Some of this will be directed at new technology like 3D printing. Other future technological changes will include: Improvised mobile use of track and trace technology; changing in manufacturing caused by 3D printing technology; increasing use of robots working with humans; and, driverless truck technologies.

One of the areas that has not received much attention is possible restrictions on future fuel use in response to climate change. Is it possible that we will face fuel rationing? Or will some sectors, like ocean shipping, have to adopt use of sails? Some sectors of government seem to want to greatly increase government regulation in this area.

Whatever happens in the future, we can say it will not be boring!

MM&D



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Ross Reimer

Thinking like Churchill

“*The pessimist sees difficulty in every opportunity. The optimist sees the opportunity in every difficulty.*”

— SIR WINSTON CHURCHILL

I think it's fair to say we all enjoy the day when everything comes together neatly—a plan that falls into place, a goal being met, a result that we planned and worked for being realized.

But it's probably also true that there are more days than not when it doesn't quite feel like everything's coming together. Maybe it's a shift in what the customer wants, maybe it's a lack of alignment among team members, or maybe the original plan was flawed.

There are countless reasons why business can be challenging. Those days require recommitment, rethinking and re-energizing ourselves with a plan that can succeed. Those days require us to think like Sir Winston Churchill and see the opportunity in the difficulty.

As a young man early in my career within the transportation industry, I observed an important lesson about opportunity. It was an unusually cold winter day—even for Winnipeg. Trucks don't like to start on days like that. Diesel fuel doesn't flow like it should, drivers are challenged by the conditions, and yet freight needs to move expeditiously.

Our maintenance manager was feeling the pressure; the look on his face showed both frustration and exhaustion. At this point his boss asked a simple question: “What's the temperature this morning over at the competition's terminal?”

The answer, of course, was that it was exactly the same as ours. So the inspiring leader said: “Then we have the opportunity to be smarter, more determined and more successful in this difficult environment.” The maintenance manager got the point, was thankful for the encouragement, and did indeed find ways not only that day—but over his entire career—to seize the opportunity in the midst of difficulty.

In my current role in the recruitment business we need to find opportunity in every difficulty. If recruitment weren't difficult, neither we, nor any other specialist in recruitment would be in business. If companies could simply post a position and receive résumés to fill critical roles, we would have to find other another way to earn a living.

The reality is that great talent is in short supply, and finding the best in the industry takes strategic focus and experienced effort. So we embrace the difficult



reality and keep researching, interviewing and assessing talent until we reach our goal. We're thankful that the difficulty provides us with business opportunity.

One of the most interesting and recent examples of embracing opportunity that includes plenty of difficulty is Amazon's enormous logistics success. Right now they deliver about 1.6 million packages per day.

Just imagine the number of potential challenges with this as a daily target. An absolute myriad of things can go wrong, and yet they continue to grow and succeed at a remarkable pace.

Clearly it takes a leader who sees opportunity in the midst of difficulty and assembles a team who think and act the same way. And their story is just getting started.

On a much more personal level I think of my colleague and friend whose doctor recently shared with him a dreaded cancer diagnosis. Not many things will get your attention like that does and I can only imagine the temptation to focus on the difficulties ahead. I know there were certainly some dark hours.

But my friend was determined to push on with all the positivity he could muster, to draw upon the inner strength provided by his creator, and to study and to determine—along with his doctors—the best course of action, which ultimately led to his current clean bill of health. Truly he is an inspiration to me and to many others as we saw him seize upon opportunity when presented with enormous difficulty.

It's worth remembering Sir Winston Churchill's words uttered just before the Battle of Britain. “Let us therefore brace ourselves to our duties, and so bear ourselves, that if the British Empire and its Commonwealth last for a thousand years, men will still say, this was their finest hour.”

Perhaps none of us will face the challenge that he and his armed forces did in those days. It would have been easy to see only difficulty, to focus only on the pessimistic reality. But Churchill was anything but a pessimist. And the rest, of course, is history, and history that we all have greatly benefited from. **MM&D**

Ross Reimer has over 30 years of experience in transportation/supply chain. For the last 20 years he has been President of Reimer Associates, a recruitment firm within supply chain. rreimer@reimer.ca

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