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July 2021

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FULL SPEED AHEAD

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LM management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

◆ **Bringg announces a $100 million Series E investment round.** Chicago-based Bringg, a provider of a delivery orchestration platform and related services, recently announced that it has officially closed a $100 million Series E investment round. The company said that this round was led by Insight Partners, with other participating investors including: Cambridge Capital; GLP; Harlap; Next 47; Pereg Ventures; Salesforce Ventures; and Viola Growth. Bringg added that this funding will be geared toward meeting increasing global customer and market demand through the scaling of its platform through merger and acquisition, as well as expanding its ecosystem of strategic- and technology-based partners. The round brings its market valuation to $1 billion. What's more, the company said that this investment makes Bringg the "first and only unicorn in last-mile delivery and fulfillment Cloud technology." And it added that as the delivery and fulfillment sector has undergone a major transformation, Bringg has seen 180% annual customer growth.

◆ **POLA and POLB set new monthly volume records in May.** Another month brought another set of records for the two largest ports in the U.S.—the Port of Los Angeles (POLA) and the Port of Long Beach (POLB)—according to data recently issued by the ports. POLA reported that total May volume saw a 74% annual increase, setting a new record in the port's 114-year history, and topping the previous monthly high set in April. This also marks the 10th straight month of annual increases, as well as the first time a Western Hemisphere port has topped 1 million TEU in a month. POLB reported that May volumes also hit a new monthly record, coming in at 907,216 TEU, increasing 44.4% annually and topping the previous high set in March by 66,829 TEU. This also marks the first time monthly volumes came in above the 900,000 TEU mark in POLB's 110 years of operation.

◆ **GlobalTranz and Worldwide Express herald plans to merge companies.** Phoenix-based GlobalTranz, a full-service 3PL focused on freight brokerage and technology, and Dallas-based Worldwide Express, a full-service non-asset-based 3PL focused on small package, truckload and less-than-truckload services (LTL), said that they will join forces. The companies said that this initiative is expected to be official during the third quarter of this year. The merged company will be led by Worldwide Express CEO Tom Madine, and GlobalTranz CEO Bob Farrell will be a member of the board of directors. "I'm excited to combine Worldwide Express and GlobalTranz," said Madine. "The opportunities for growth by combining our resources will dramatically increase our ability to drive technology, further strengthen our carrier partnerships and allow us to provide a deeper offering to our customers. The opportunities for our employees, franchisees and independent agents are now greatly expanded."

◆ **J.B. Hunt, Waymo partner up for autonomous driving pilot.** Lowell, Ark.-based trucking and intermodal services bellwether J.B. Hunt Transport Services Inc. announced that its subsidiary, J.B. Hunt Transport Inc., has partnered up with autonomous driving technology developer Waymo in an initiative focused on an intra-Texas test run movement of freight for a leading J.B. Hunt shipper customer. Hunt officials said that the test run will use Waymo Via, the company's autonomous Class 8 trucking unit powered by the Waymo Driver and move freight between its customer's Texas-based locations in Houston and Fort Worth on Interstate 45. The companies added that this will be done through a Level 4 autonomous driving technology supervised by Waymo autonomous specialists, a commercially licensed driver and a software technician on board to monitor every aspect of the Waymo Driver's operations throughout the runs. J.B. Hunt and Waymo Via will also focus on how autonomous driving technology can be integrated across fleets and enhance safety and efficiency.

◆ **LaserShip takes steps to expand into Tennessee.** Vienna, Va.-based regional e-commerce and last-mile delivery services provider LaserShip recently announced that it's expanding into Tennessee through the opening of new branches in Nashville, Memphis, and Knoxville. The company said that moves have increased delivery coverage by almost 18%, reaching an additional 979 new zip codes throughout 16 states. And company officials noted that the pandemic played a large role in the expansion, as retailers have had to balance increased e-commerce activity, coupled with higher delivery costs and capacity constraints implemented by national carriers. LaserShip chief commercial officer Josh Dinneen told *LM* that the company has been planning its expansion into Tennessee for more than a year. "We partner with

LM management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

retailers to understand where they are having current capacity challenges, or delivery challenges and select the markets we expand in to provide the fastest and most reliable service to as many consumers as possible," said Dinneen.

◆ **Bullish forecast.** Joel Prakken, co-head of U.S. economics for IHS Markit, says that the post-pandemic rebound in prices, exacerbated in sectors where demand is recovering faster than atrophied supply chains can accommodate, has proved stronger than expected. "In response, we have raised our forecasts of inflation for 2021 and 2022 from 2.6% and 1.7%, respectively, to 3.3% and 2.1%. However, as supply expands, we expect inflation in prices for core personal consumption expenditures to remain near 2% after 2021," he says. According to Prakken, recent strong demand has combined with sharply falling inventories, which will add to growth as firms replenish inventories during the second half of the year. "We expect GDP to surpass its previous peak in the second quarter of this year and the output gap to be eliminated in 2022," he says. "The potential economic impact depends on the final scope of the bill, and importantly, how much of the total is new spending."

◆ **Resilient assets.** Cushman & Wakefield, a leading global real estate services firm, released its "2021 Global Logistics Outlook" last month. The report analyzes key drivers affecting growth and global leasing dynamics and provides a snapshot for the sector. "The unprecedented disruption caused by the pandemic and changing consumer behaviors has reshaped the future of the logistics industry by exposing global supply chain vulnerabilities and accelerating technological advances," says Jason Tolliver, investor lead, logistics and industrial services, Americas, at Cushman & Wakefield. "As a result, a variety of global trends have emerged, propelling the sector forward in new ways." According to the report, the North American industrial market experienced growth despite the pandemic wreaking havoc across the globe. "It has proven once again to be one of the most resilient asset types," he added.

◆ **Reshoring revisited.** Thomas, a leader in product sourcing and supplier selection for industry, released its "2021 State of North American Manufacturing Annual Report" last month, sharing insights from its latest survey canvassing the North American manufacturing and industrial sectors. While the report reveals multiple shifts in domestic sourcing trends and supply chain demands, the key takeaway is the industry's growing prioritization of reshoring in the aftermath of the pandemic and the associated benefits of this shift for the U.S. economy. According to the survey, 83% of North American manufacturers are "likely" or "extremely likely" to reshore—up from 54% in March 2020. According to the report, if these manufacturers with plans to reshore bring on just one single-contract domestic supplier, the shift would drive as much as $443 billion in U.S. economic value. "We're witnessing the wholesale reexamination of supply chain relationships, which will realign global manufacturing for decades to come," says Tony Uphoff, president and CEO at Thomas.

◆ **Technology vision.** Eager to avoid a repeat of the challenges of 2020, logistics managers are looking to technology to build greater relevance to customers, stronger resilience to disruptions, and enhanced responsibility to society and the planet. New findings from Accenture's "Technology Vision 2021," based on responses from more than 600 supply chain leaders, reveal that 81% of executives say that the pandemic has been their organization's largest stress test. In fact, the same number agrees that they're facing technological changes at unprecedented speed and scale. The report explores key trends and priorities for supply chain executives, including harnessing the power of digital twins with mirror world simulations that provide enterprises the freedom to explore new ideas and ask limitless "what-if" questions in a risk-free, digital environment. It also notes that democratization is breaking down traditional divisions between the technology and business sides of the organization.

◆ **Get your logistics podcast fix.** *LM* has formally rolled out a new podcast series. Group News Editor Jeff Berman is interviewing industry analysts, academics, consultants, lobbyists, and executives about all things logistics and supply chain on a weekly basis. Subscribe to Supply Chain 24/7 or go to logisticsmgmt.com to start listening. •

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LM EXCLUSIVE

State of Logistics: Full speed ahead

18 In a year of unprecedented disruption, U.S. business logistics costs fell 4% as shippers found new ways of moving freight. Like the supply chains they serve, logistics managers must now fundamentally rethink and redesign their solutions—and how they do will define their future success.

Illustration by Jonathan Carlson

TRANSPORTATION BEST PRACTICES/TRENDS

30 2021 Truckload Roundtable: Advantage carriers

The TL market continues to see a flurry of high demand, elevated rates, and ongoing capacity issues. And while overall market conditions have improved from last year, there's still a long way to go before things get back to any semblance of normal.

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There's renewed optimism for global trade with the pandemic waning and borders beginning to open. Because of this upbeat projection, companies are continuing to invest in emerging markets—and those regions are getting ready for increasing volumes.

WAREHOUSE/DC MANAGEMENT

Find your robotics fit

50 The market has no lack of robotics solutions. To find the right robotics fit for your operation, best practices include having a solid handle on internal data like product dimensions, order profiles and peak requirements.

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COLUMNISTS

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Elizabeth Baatz Price Trends
Peter Moore Pricing

PEERLESS MEDIA, LLC

Brian Ceraolo President and CEO

EDITORIAL OFFICE

50 Speen Street, Suite 302
Framingham, MA 01701
Phone: 508-663-1590

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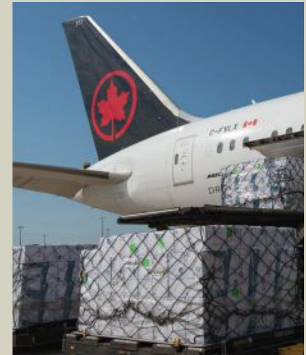
LM CONTENTS

SPECIAL REPORT

QUARTERLY TRANSPORTATION MARKET UPDATE: AIR

58 Air Cargo 2021: Pandemic leaves residual mark on sector

High demand for cargo space created capacity constraints and consequential high rates over the past year on a majority of lanes. And while it appears the height of the pandemic crisis is in the rear view, shippers most likely won't see relief from elevated rates until demand and available capacity level out.



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When we look back on this time in history, we can say with some certainty that the pandemic acted as a great accelerator for logistics and supply chain technology.

Technologies covered this year include:

- advanced transportation management systems;
- supply chain network design technology;
- the rise of goods-to-person systems; and
- optimizing e-commerce automation and delivery systems.

MODERATOR:

Michael Levans, group editorial director, Supply Chain Group, Peerless Media

SPEAKERS:

Bill Brooks, vice president, North American Transportation, Capgemini
Ian Hobkirk, founder & managing director, Commonwealth Supply Chain Advisors
Dwight Klappich, research vice president, Gartner
Norm Saenz, managing director, St. Onge Company

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State of Logistics: Full speed ahead

As the world continues to ease back into what we remember as normal, *Logistics Management* is staying the course by devoting a large portion of the July issue to the findings of the Annual State of Logistics Report (SoL). In fact, this marks the 32nd year that we've offered a deeper dive into this valuable report for U.S. shippers.

Authored by global management consulting firm A.T. Kearney in partnership with CSCMP and Penske Logistics, the SoL has become known over that time as the most comprehensive report of its kind, encapsulating the cost of the U.S. business logistics system during the previous year and offering a snapshot of how economic conditions are shaping the current logistics landscape.

The official release of the report—which took place virtually on June 23—once again sets our editorial staff on a quest to find out what the findings mean to freight transportation management in terms of service, capacity and rates across all the modes (page 18). Once again, contributing transportation editor John Schulz took part in the online panel discussion.

"It wasn't just the topsy-turvy changes that challenged shippers, it was the rapidness of that change and the whiplash effect of going from an economic shutdown to one of the robust economies ever," says Schulz. "For better or for worse, last year logistics managers who were able to keep necessary freight moving finally got noticed by the C-suite—and they should be applauded for their efforts."

According to Schulz, a few themes called out in the report match up well with the silver linings that we've been highlighting in our pages over the past year—upbeat takeaways on logistics performance, automation adoption, and the move toward improved resilience.

First, it certainly can't be overlooked that while the pandemic greatly disrupted any idea of predictability, and in many cases decimated service levels for periods, the overall U.S. logistics network remained "remarkably effective" given the situation. As the report authors call out: "Logisticians worked valiantly to respond to crises and devise creative new solutions to unexpected challenges."

Second, *LM* kept hearing and reporting on how the situation was acting as a great "accelerator" for the adoption of new software and automation necessary to streamline logistics operations to meet unprecedented e-commerce demands—especially in the face of shrinking labor availability.

And now that the market is beginning recovery and fulfillment pressures continue to mount, flexibility, scalability and resilience will be more important than ever—putting a premium on the adoption of sound processes, more automation and better partnerships with carriers and third-party logistics providers.

"This is clearly the time for shippers and carriers to do more communicating—both talking and listening—about their needs," says Schulz. "As the report authors point out, if you look at what worked best last year, it was the shipper who was nimble and willing to try new services outside the box in a co-creation effort with their carrier partners."

So, to the readers of *LM* I say: Keep adopting new automation and technology and improving on all of your carrier partnerships to build in more resilience, because it's going to be full speed ahead for the foreseeable future—and no one knows what that next disruption may bring.

Michael A. Levans, Group Editorial Director
Comments? E-mail me at
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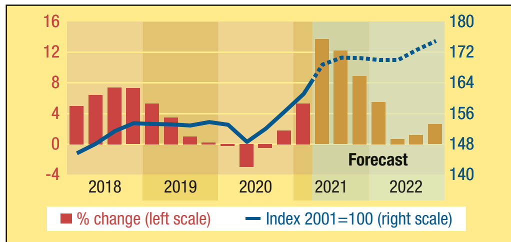
price**TRENDS**

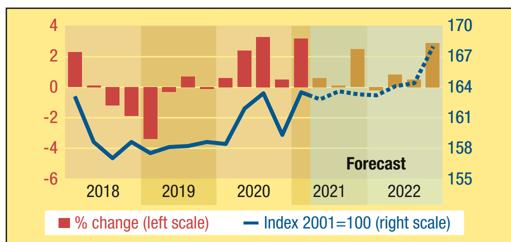
Pricing across the transportation modes



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
General freight - local	5.1	9.3	19.7
TL	7.3	13.1	26.3
LTL	0.7	9.1	9.0
Tanker & other specialized freight	1.1	5.5	6.1

TRUCKING

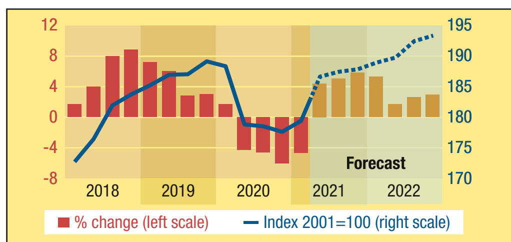
With its trend line now looking almost vertical, the three-month-moving-average inflation rate for truckload hit 18.9% in the latest quarter. Over the same time period, long-distance LTL and local trucking companies, respectively, report that prices increased at an 8.3% and 8.6% rate. Clearly, strong post-pandemic demand coupled with supply problems due to a lack of drivers and tractors are pushing price hikes into overdrive. These dynamics will continue at least through this year. Not stepping out on a limb, our forecasts have been revised upward again. The trucking industry's annual inflation rate is expected to be at least 10% in 2021 before slowing to a more reasonable 2.5% pace in 2022.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Air freight on scheduled flights	3.5	5.3	0.4
Air freight on chartered flights	-15.1	-9.7	-3.7
Domestic air courier	0.4	8.6	11.3
International air courier	0.4	7.0	9.8

AIR

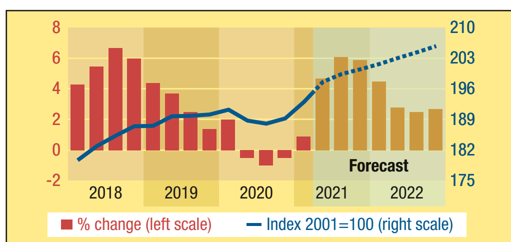
The Bureau of Transportation Statistics reports that U.S. air cargo revenue per ton mile increased 16% in the first quarter of 2021 compared to a year earlier. Meanwhile, over the same time period, the Bureau of Labor Statistics survey of U.S. airlines shows average transaction prices for planes carrying cargo and mail increased only 3.2%. The second quarter price data so far also has also not responded to the BTS demand surge. In April and May, prices for moving cargo on scheduled flights were up just 0.3% and on nonscheduled flights, up 4.3%. With data in flux, the forecast remains unchanged. Prices for flying cargo on scheduled flights are forecast to increase only 1.6% this year and 1% next year.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Deep sea freight	0.5	10.2	8.0
Coastal & intercoastal freight	-1.6	-2.5	-2.4
Great Lakes - St. Lawrence Seaway	0.3	8.7	9.8
Inland water freight	-1.1	-1.8	-5.3

WATER

Two categories—deep sea and Great Lakes/St. Lawrence Seaway—are causing the biggest waves in inflation trends. Over the most recent three-month period, prices for both increased by 5.1%. That's a large and rapid change from the start of 2021. Deep sea transaction prices had been falling at a three-month-rolling-average of 11.1% in January and Great Lakes/St. Lawrence prices had been dropping at a 7.2% pace since February. With inevitable revisions, we now forecast the average annual inflation rate for deep sea to hit 4.2% in 2021 and remain at 3.6% in 2022. The inflation rate forecast for the entire industry has been revised upward to 2.5% this year and 3.1% next year.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Rail freight	1.1	4.8	5.0
Intermodal	0.9	10.3	10.9
Carload	1.2	3.6	3.8

RAIL

The post-pandemic recovery is definitely supercharging the inflation environment for rail services. Speeding fastest and highest, average prices for intermodal rail service grew 10.9% in May compared to a year earlier. Also, the three-month-moving-average inflation trend shows intermodal at positive 7.5%. That's quite a reversal from the negative 7.6% registered in July 2020. These data are feeding upward revisions to the intermodal rail forecast as prices are now projected to rise 7.7% this year followed by a 1.4% gain next year. The carload category, meanwhile, continues on a more sedate path. With a smaller upward revision, average annual prices are forecast to be up 3% in 2021 and up 2.7% in 2022 for carload rail.

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NEWS analysis

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- White House releases findings from supply chain-focused executive order, Page 14
- XPO Logistics files Form 10 registration statement with SEC for GXO Logistics, Page 14

LM reader survey examines pandemic's impact on supply chain

Despite the disruptions brought about by the last year, only 40% of responding shippers expect permanent changes to their operations

BY **JEFF BERMAN**, GROUP NEWS EDITOR

WHILE MANY AMERICANS have received the COVID-19 vaccine, the long-term impact of the pandemic on logistics and supply chain operations has remained top of mind for industry stakeholders. That was made clear in the findings of a recent *Logistics Management* reader survey, based on feedback from more than 220 logistics and supply chain professionals.

Not surprisingly, 72% of the survey respondents indicated that the pandemic had a major impact on their logistics and supply chain operations, with the remaining 28% indicating that was not the case.

For the former, the reasons for which the pandemic had a major impact were plentiful, including: additional supply chain costs; lack of available labor; extended lead times; tight international ocean and air cargo capacity; longer transit times; increased demand and volumes that were hard to keep up with; shipping delays; and extended delays for goods coming from China that forced the allocation of inventory for outbound orders.

One shipper put it this way: "First, it made an impact on how we manage the pressure on supply chain costs. Second, we were dealing with unpredictable demand. And third, we had longer lead times." While these things are not new, it was clear that the situation created new challenges for shippers—and in many different ways.

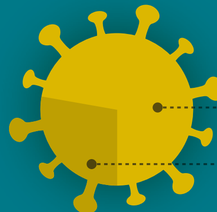
When asked if the changes in supply chains "could be permanent," 60% indicated that would not be the case, while 40% maintain that the changes could indeed be long lasting. One prevalent theme for this question was that shippers feel that they're better prepared for future disruptions that may arise.

Other significant "lessons learned" touched upon things like the planned continued use of pandemic safety protocols; multi-sourcing; increased remote work for applicable positions; and an improved focus on business continuity planning.

"I believe that things like the redundancy of shipping and 3PL usage across the United States will now become a

Pandemic impact

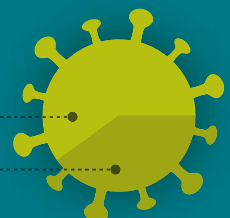
Did the pandemic have a major impact on your logistics and supply chain operations?



72% Major impact

28% No major impact

Do you think these changes will be permanent?



60% Changes would not be permanent

40% Changes could be long lasting

Source: Peerless Research Group (PRG)

standard to guard against things like pandemics and natural disasters and help protect our customers," said an MRO product distributor.

Another factor to monitor has to do with how the supply chain will react from seeing many consumers at home making e-commerce purchases to more of a service economy as more and more venture to restaurants, movies, and sporting events.

"There is an expectation that once things are fully back open, you're going to see a bit of a shift in consumer spending, but I think that's welcome," said Jonathan Gold, vice president of supply chain and Customs policy for the National Retail Federation (NRF). "As consumers go out and take vacations, they're going to want to go and buy things for that. There will still be some retail spending based upon those new habits as well, which is important for us in getting back to normal and is critical."

Larry Gross, president of Gross Transportation Consulting, agrees with Gold in that the general economy is in for a strong stretch of growth—with a shift away from goods and more toward services. "When we were quarantining and telecommuting, we became acutely aware of the shortcomings of that situation, and there was no other outlet for their money, aside from online spending," he said. "Now, there's this pent-up demand getting released that's going to change the mix of the recovery."

What's more, Gross said that there will be a bit of what he called "a tug-of-war" between how fast the economy is growing—which represents upward pressure for freight—and a change in mix toward services—which represents downward pressure for freight. However, he added that he doesn't expect freight pressure acceleration from this point, which he said the industry can't handle operationally given the continued tight capacity situation. •

INFRASTRUCTURE

Centrist group of senators offers $1 trillion infrastructure compromise

THERE'S A NEW, LONG-SHOT entry in the Washington infrastructure sweepstakes. And if you like old-fashioned, bipartisanship that's light on the details on how to pay for it, you could be a fan.

A bipartisan group of 10 Senate Democrats and Republicans have reached their own deal on infrastructure. It's

a $1 trillion, five-year package to improve the country's roads, bridges, pipes and Internet connections. The new plan is a fresh attempt to revive stalled negotiations between congressional lawmakers and the White House after talks collapsed.

At press time, it was unclear if the early accord will be enough to satisfy either the White House or a sufficient number of lawmakers on Capitol Hill.

The new deal is the product of five Democrats and five Republicans: Bill Cassidy (R-La.); Susan Collins (R-Maine); Joe Manchin III (D-W.Va.); Lisa Murkowski (R-Alaska); Rob Portman (R-Ohio); Mitt Romney (R-Utah); Jeanne Shaheen (D-N.H.); Kyrsten Sinema (D-Ariz.); Jon Tester (D-Mont.); and Mark Warner (D-Va.).

According to four people who briefed *The Washington Post* and other news outlets, the deal calls for about $974 billion in infrastructure spending over five

years. That's $1.2 trillion extrapolated over eight years and includes $579 billion in new spending.

However, the new plan doesn't include any new tax increases to pay for it. It touches on how to index the fuel tax—currently 18.4 cents on gasoline, 24.4 cents on diesel, unchanged since 1993—to inflation. That means everyday Americans would pay more for gasoline, which flies in the face of President Biden's refusal to raise taxes.

This latest plan comes after Sen. Shelley Moore Capito, the leader of a group of six Senate Republicans handling bipartisan negotiations, offered $330 billion in new spending on infrastructure—a number that seemed small compared with Biden's reduced $1.7 trillion offer. To pay for it, this latest bipartisan Senate compromise is also less than the revised, roughly $1 trillion price tag Biden sought in his last round of negotiations with the GOP.

The 10 Senate lawmakers described their effort as a "realistic, compromise framework to modernize our nation's infrastructure and energy technologies."

"We're discussing our approach with our respective colleagues, and the White House, and remain optimistic that this can lay the groundwork to garner broad support from both parties and meet America's infrastructure needs," the

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group said in a joint statement.

Washington observers and lobbyists are encouraged that both sides are still talking. Neil Bradley, executive vice president and chief policy officer of the U.S. Chamber of Commerce, said he was "strongly" encouraging both sides to keep negotiating.

"There is more in common between Democrats and Republicans on the core elements of an infrastructure bill," Bradley said. "The need for comprehensive infrastructure legislation is growing by the day. We commend those members of Congress who are dedicated to doing the hard work of finding common ground."

Former Transportation Secretary James Burnley IV, now an attorney at Washington-based Venable, said it's "still possible" both sides could find enough common ground for a deal. "The Biden administration may yet accept the certainty of a bipartisan deal that contains many desired policies that would be disallowed in a partisan, all-Democratic reconciliation bill," he said.

Getting to a deal, Burnley added, would require overcoming the twin hurdles of reaching a mutually acceptable funding agreement and the securing of support from progressives who may feel their priorities aren't reflected in a "skinny," less-desirable infrastructure package. •

—John D. Schulz, contributing editor

POLICY

White House releases findings from supply chain review

FOLLOWING AN EXECUTIVE ORDER issued by the White House in February that called for a 100-day review to identify near-term steps it can take "to address vulnerabilities in the supply chain," the White House recently issued its key findings.

The results focused specifically on supply chain operations in four critical product areas, including: semiconductor manufacturing and advanced packaging; large capacity batteries, such as those used for electric vehicles; critical minerals and materials; and active pharmaceutical ingredients.

"The supply chain reviews reinforce the need for the transformative investments proposed in the President's American Jobs Plan," stated the White House. "These efforts are critical because, as the pandemic and resulting economic crisis have shown, structural weaknesses in both domestic and international supply chains threaten America's economic and national security."

The 100-day review is replete with supply chain items on which the United States intends to execute upon, including: securing an end-to-end domestic supply chain for advanced batteries; invest in sustainable domestic and international production and processing of critical minerals; partnering with industry allies and partners to address semiconductor shortages; and establishing a new Supply Chain Disruptions Task Force to provide a whole-of-government response to address near-term supply chain challenges to the economic recovery.

Another key takeaway from the executive order's findings focused on

developing a comprehensive trade strategy to support fair and resilient supply chains by developing comprehensive trade policy to support supply chain resilience and U.S. competitiveness.

"Supply chain resilience should be incorporated into the U.S. trade policy approach toward China, including in the ongoing review of U.S.-China trade policy," said the White House. "The Administration should also examine existing U.S. trade agreements to identify ways to strengthen collective supply chain resilience.

Kamala Raman, vice president, analyst, for Gartner's Supply Chain Practice, said that this report summarizes many of the same issues Gartner has pointed out in the past in regards to the need for improved supply chain resilience.

"Primarily that a slow and steady migration of supply chain jobs and capabilities to low-cost locations has reached a critical mass," said Raman. "Short term profitability skews incentives towards cost efficiency over investments in longer term resilience which are hard to quantify, and we have to acknowledge that we're in a world where industrial policies and support for manufacturing industry in other countries should be matched by the U.S. government."

Raman explained that some short-term actions are likely to have quicker effect, such as direct grants and loans to help companies bridge the cost gap to manufacturing in the United States, but most of these require long term attention. •

—Jeff Berman, group news editor

LOGISTICS

XPO Logistics files Form 10 registration statement with SEC for GXO Logistics

XPO LOGISTICS, a provider of global freight transportation and logistics services, filed its Form 10 registration statement with the Securities and Exchange Commission (SEC) for GXO Logistics, its standalone global contract logistics group last month.

The company said that this Form 10 was filed in connection with the XPO's planned spin-off of its logistics unit into a separate publicly traded company, which was initially announced in December, 2020. And, it noted that the spin-off is expected to be complete in the third quarter, adding that GXO will be traded on the New York Stock Exchange.

"GXO's Form 10 public filing is a key step forward in our spin-off plan," said Brad Jacobs, chairman and chief executive officer of XPO Logistics. "The separation will create two pure-play powerhouses in the supply chain industry, XPO in transportation and GXO in logistics, each with enhanced prospects for growth."

XPO officials pointed to how, with years of technology-focused investments being a core principle of its growth trajectory, the new GXO will be able to leverage various aspects of what it called the logistics industry's predominant secular tailwinds, including: the growth in e-commerce and omni-channel retail; fast-growing customer demand for automation and digital capabilities; and a shift toward outsourcing supply chain services.

GXO Logistics will be led by Malcolm Wilson, XPO, CEO in Europe. Wilson said that the new company's brand identity captures the qualities that make XPO an industry leader, pointing to the company's ability to deliver faster, leaner, smarter logistics for customers at lower cost, using advanced automation and data science.

An XPO official said that upon its official debut, GXO will be the second-largest global contract logistics company. The company has also unveiled a new website—gxo.com—providing insight into the capabilities by vertical and service offering.

"GXO will have accelerated momentum out of the gate as an independent company, as reflected in the strong 2022 guidance we issued today," said Wilson. "Our growth is being driven by customer demand for outsourcing and for two areas of logistics where we hold leading positions—warehouse automation and e-commerce."

Wilson explained that as a pure-play logistics company, the customers GXO works with are making longer-term business decisions.

"When we imagine a new automated warehouse, that's a decision that could take two years in the process," said Wilson. "We could start by talking to the customer, find an agreement to build a new facility and implement all the automation. It's not unusual for us to find that from the very first contact with the customer to when the first items get dispatched from the warehouse. It can take two years to three years in some instances. With these big business decisions our customers are making, they're not really making those decisions every year." •

—Jeff Berman, group news editor

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Peter Moore is dean of the Logistics Training Center and adjunct professor at Georgia College and State University in the MSCLM Graduate Program and adjunct professor at The University of South Carolina Beaufort. He lives on Hilton Head Island, S.C. and can be reached at peter.moore@logstudies.com.

Truckload: More volume, fewer services

WHEN PLANNING FOR A LARGE SALES VOLUME, manufacturers now need to include transport—particularly truckload van requirements—earlier in the planning process.

Government and industry meta data analysis of 2020 indicates that, as the pandemic progressed, we all started ordering more goods—often online—as we reduced use of consumer services (restaurants, etc.) because they were closed or represented more of a hassle to visit and make use of.

The increase in goods purchased raised orders for transportation, either directly to the consumer (parcel and LTL), or to a near-to-market distribution center (truckload). However, it's important to keep in mind that the trucking industry is a "service" as well, and it experienced a reduction in drivers and operations personnel while the business was building volume, all while working under CDC guidelines.

This squeeze has resulted in price increases and significant capacity constraints. As an example, paving stones that are often regionally produced in the southeastern United States have lead times on orders of 90 days or more, and the installers tell me that the transport to the wholesaler is a further delay of up to a week. Thus, getting a walkway redone went from two weeks or three weeks to around 120 days.

A deeper dive into the paver manufacturing process reveals that raw stone and clay requires transport equipment and skilled heavy equipment operators, all of which are currently in short supply. So, how do we adjust our planning and buying to be successful in the coming period of limited capacity and higher rates?

In managing highway transportation costs as well as service levels, the smart ones are redoing the supply chain playbook for their enterprise. Here are five actions possible when the technology enables an agile approach to planning logistics now.

1. Lead times for products—historically forecast quarterly and including assumptions of fast transport—need to be revised, particularly for imported goods. Where truckload batches were standard, the use of LTL is growing as limited production capacity and high demand result in multiple smaller shipments to fulfill large orders. With this, the cost is higher per pound and order fulfillment time is stretched.

2. Team formation for sales and operations planning (S&OP) often gave little attention to transportation and omitted inviting the transportation folks to S&OP meetings as regular delivery performance was assumed. Not anymore. Firms need to maximize advanced notice to all service providers of upcoming needs.

> **"Now smart firms are gathering data all along their supply chain to get some advanced word on demand, disruptions, re-routing and re-engineering at their more remote supply and distribution partners."**

3. Outside help from brokers and dedicated fleet services to enhance scheduling and dispatching efforts is a common way for shippers to boost effectiveness. Cost will probably be higher, but service metrics will improve with more folks scouring the market for capacity.

4. Building the network and relationships is critical at all times, but particularly when the supply chain is under stress. For service providers, this challenging period can result in new desirable business by earning favor with target firms through performance in a pinch. Helping shippers innovate with new distribution options and expedited services can result in new, long-term relationships.

5. Analytics or business intelligence has become a top priority for most shippers that might have focused solely on the immediately adjacent customer or supplier in their daily operations. Now, smart firms are gathering data all along their supply chain to get some advanced word on demand, disruptions, re-routing and re-engineering at their more remote supply and distribution partners.

Today, visibility has taken on a whole new emphasis. Those who can provide visibility are valued, and those who can turn raw transportation data into actionable intelligence have long and rewarding careers ahead of them. •

Newsroom Notes
with Jeff Berman

Jeff Berman is group news editor for the Supply Chain Group publications. To contact Jeff with a news tip or idea, please send an e-mail to jberman@peerlessmedia.com.

Key economic indicators are shining bright

WHILE IT FEELS LIKE OLD NEWS BY NOW, it still never surprises me to see just how interwoven logistics, supply chain and freight transportation have become in all parts of our lives—specifically as consumers.

Make no mistake, the pandemic changed just about everything we address and evaluate when it comes to how most business processes are handled. That goes from an initial rush on essential products and food staples, and now the many items that we're buying at a furious pace during this current home improvement boom.

Of course, logistics, supply chain, and freight transportation were front and center for all of this and clearly continue to be. When we take a moment and look back, there have been more than a few signature moments that had major logistics implications, whether it was shortages or delivery delays of key consumer staples, the Suez Canal incident, the semiconductor shortage, port congestion, the heightened supply and demand imbalance in the truckload market, and, of course, rising freight rates.

And while this past year presented more than a few challenges, we're now seeing a dramatic turnaround in key metrics for things such as freight volumes that were decimated by the pandemic. As an example, according to the Association of American Railroads, total U.S. rail intermodal volumes from January through May posted its highest numbers *ever* for that period.

Another example that highlights strong economic activity are April U.S.-bound imports coming in at 2.15 million twenty-foot equivalent units (TEU), marking a 33.4% annual gain for its best April reading ever compared to the previous April, according to the *Port Tracker* report issued by the National Retail Federation and Hackett Associates.

Keep in mind that April reading came on the heels of March's 2.27 million TEU, the record-high for any month going back to when NRF first started tracking imports.

Things remain steady on the retail sales front as well, with consumer spending moving at a steady clip, while retail inventories remain very low due to what could be politely called "supply chain challenges" in the form of tight trucking capacity, port congestion, and an ongoing labor shortage.

What's more, with many Americans getting vaccinated, the services-based economy is currently riding high, with May's ISM Services PMI reading hitting its highest level on record. The reading for the report's key indicator, the Services PMI, is now at 64, and that headed up 1.3% from April to May, with the index growing for the 12th consecutive month.

"While many supply chain challenges remain, and many paths to remedy them are unclear, at the moment it's encouraging to see strong economic data points."

There's also the GDP, for which IHS Markit recently upped its 2021 forecast from 6.7% to 7.4%, and from 4.7% to 4.8% for 2022. Granted, these numbers are aided by the post-pandemic rebound, but they're still impressive.

While many supply chain challenges remain, and the paths to remedy them are unclear, at the moment it's encouraging to see strong economic data points. And it's important to remember that the supply chain is tied into all of them in one way or another. Things may not be perfect, but they're certainly far better than they were a year ago. •

State of Logistics: Full speed ahead

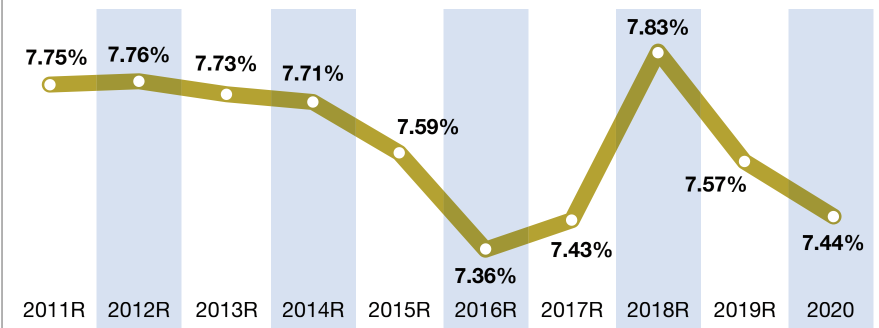
In a year of unprecedented disruption, U.S. business logistics costs fell 4% as shippers found new ways of moving freight. Like the supply chains they serve, logistics managers must now fundamentally rethink and redesign their solutions—and how they do will define their future success.

Illustration by Jonathan Carlson

BY **JOHN D. SCHULZ**,
CONTRIBUTING EDITOR

In 2020, USBLC represented 7.4% of GDP

USBLC as percent of nominal GDP



Notes: USBLC is United States business logistics costs.
R is revised.

Sources: Kearney analysis

At first everything stopped. Then, as supply chains began to slowly click back into gear, there were massive network disruptions followed by sudden, unforeseen spikes in demand patterns that found some industry sectors barely hanging on for survival. Finally, there were hints of an upcoming boom.

In the end, U.S. business costs, buffeted by a pandemic-decimated year of "chaos" worldwide, fell 4% to $1.56 trillion—that amounted to 7.4% of GDP, nearly an all-time low.

The 32nd annual State of Logistics report, produced by consulting firm A.T. Kearney, in partnership with the Council of Supply Chain Management Professionals (CSCMP) and Penske Logistics, dives into the previous year in logistics—in this case, one like no other. Entitled "Change in Plans," the report details a year of unprecedented disruption in the logistics industry, as professionals grappled with changing consumer demands at the same time transportation networks were scrambled.

"This story of the year 2020 is one of adaptation under the most severe conditions in memory," says Michael Zimmerman, partner with A.T. Kearney and the report's author. "Systems strained and sometimes broke."

According to the report, no logistics professional was able to simply stay the course in 2020, and "conditions ahead will require even greater adaptability and nimbleness." The global pandemic caused global supply chains to suddenly stop early in 2020, and as they started up again they had to be rerouted, often facing capacity shortages, huge price increases and unexpected bottlenecks.

At the same time, stay-at-home consumers increased demand for last-mile deliveries, and logistics proved essential to fighting the pandemic, even before the delivery of vaccines. "Yet the pandemic made shippers' and carriers' assets less efficient and destroyed any idea of predictability," states the report.

Even with service outcomes largely deteriorated, the report concludes that the logistics sector proved to be "remarkably effective given the disruptions." And while some shippers and carriers are profiting from pandemic-related moves made last year, others are laying groundwork for the future through greater e-commerce activity and the need for more resilient, nimble supply chains.

Now, let's take a look at how logistics management professionals made it through the year.

The numbers by mode

Given the unpredictable nature of 2020, it was remarkable that U.S. business costs were so low. Logistics represented a mere 7.4% of GDP, a decline from recent years, and near the all-time low of 7.36% of GDP in 2016. By comparison, in the final year before trucking deregulation in 1980, business logistics costs were slightly above 19% of GDP.

Of course, last year's ratio was helped because the national economy shrank by 3.5% to $20.94 trillion while logistics costs shrank 4% to $1.56 trillion.

"Most logisticians will be surprised by this drop, as they were certainly expecting a rise," says Zimmerman. "But inventory sales ratios hit 20-year lows in May, so there was far less inventory generating cost in the system."

The Kearney report labeled the current economic recovery as "K-shaped." Some sectors, such as grocery, home improvement and e-commerce, are booming. Others, such as hospitality, travel and restaurants are just now beginning to recover.

While transportation costs rose by 0.8% last year, that was far less than the 4.7% growth in 2019, and 10.4% rise in 2018. That transportation increase was largely driven by the 24.3% boom in parcel and last-mile services, mostly

represented by UPS, FedEx, and some less-than-truckload (LTL) carriers.

Costs of how much it took to move freight broken down by mode came in as follows.

- Motor carriage, the largest mode, was down 0.6% due to reduced capacity in the pandemic.
- Air freight costs increased by 9%, as capacity was decimated by the cancellation of passenger flights, which carry about 50% of all cargo in the hold.
- Ocean was down 28.6% due to a combination of one-time reclassifications in underlying calculations methodology, a likely drop in exports and domestic water traffic and lower container prices.
- Rail was down 11% overall, driven by a 15% reduction in traditional carloads, while intermodal fared slightly better.

Although transportation costs rose slightly in 2020, results varied by sector

U.S. business logistics costs ($ billion)

	2020	YoY 20/19	5 year CAGR
TRANSPORTATION COSTS			
Full truckload	307.6	-1.6%	2.5%
Less-than-truckload	69.6	-5.0%	4.2%
Private or dedicated	307.5	1.5%	3.3%
Motor carriers	684.8	-0.6%	3.0%
Parcel	118.6	24.3%	12.2%
Carload	47.7	-15.0%	-5.1%
Intermodal	26.6	-2.8%	5.8%
Rail	74.3	-11.0%	-2.0%
Air freight (includes domestic, import, export, cargo, and express)	96.5	9.0%	5.5%
Water (includes domestic, import, and export)	26.1	-28.6%	-4.5%
Pipeline	58.8	1.7%	6.1%
SUBTOTAL	**1,059.0**	**0.8%**	**3.5%**
INVENTORY CARRY COSTS			
Storage	146.5	1.4%	4.1%
Financial cost (WACC x total business inventory)	120.6	-29.0%	-5.3%
Other (obsolescence, shrinkage, insurance, handling, other)	114.5	-15.0%	-0.8%
SUBTOTAL	**381.6**	**-15.0%**	**-0.8%**
OTHER COSTS			
Carriers' support activities	58.8	-11.7%	3.5%
Shippers' administrative costs	58.1	3.1%	5.1%
SUBTOTAL	**116.9**	**-4.9%**	**4.3%**
TOTAL U.S. BUSINESS LOGISTICS COSTS	**1,557.47**	**-4.0%**	**2.4%**

Note: YoY is year-on-year. WACC is weighted average cost of capital.

Sources: CSCMP's 31st Annual State of Logistics Report; A.T. Kearney analysis

What drove the unpredictability?

The explosion in e-commerce (some of which was picked up in-store, but nevertheless proved a boon to trucking companies) resulted in a 33% growth rate to $792 billion—some 14% of all retail sales.

According to the report, terms such as direct-to-consumer (DTC) and buy online, pick up in-store (BOPIS) became common retail language, adding that they are "accelerations of existing trends" and are likely to become permanent. Thus, shippers must adjust their delivery offerings and solutions, managing both capabilities and consumer expectations to create a better match while developing new ways to pay for these services and control their costs.

Trucking, the biggest segment of U.S. logistics spending, fell slightly for the year 2020. But a fourth-quarter recovery suggests that continued economic growth would keep rates high through 2021—until new trucks and drivers can increase available capacity. However, despite industry efforts to bring more capacity into the market, the report authors contend that it still won't be enough to bring truck rates down in 2021.

All things considered, there were distinct winners in ground transport. Andrew Moses, senior vice president of sales and solutions for Penske Logistics, says the demise of "middle-mile" transport was overstated. "That has not just come back, that has come roaring back," says Moses. "There is quite a bit of stress among carriers behind the scenes and among carriers trying to keep up with this market."

And the recent bidding war by Canadian National and Canadian Pacific railroads over the Kansas City Southern, the smallest of the five U.S. Class 1 rails, demonstrates the still-high potential for a large, integrated north-south North American rail operation. In the meantime, volumes are predicted to rise in intermodal. "Intermodal is getting investment dollars as it has inherent advantages," adds Zimmerman.

Uneven demand levels between rising imports and sagging export levels

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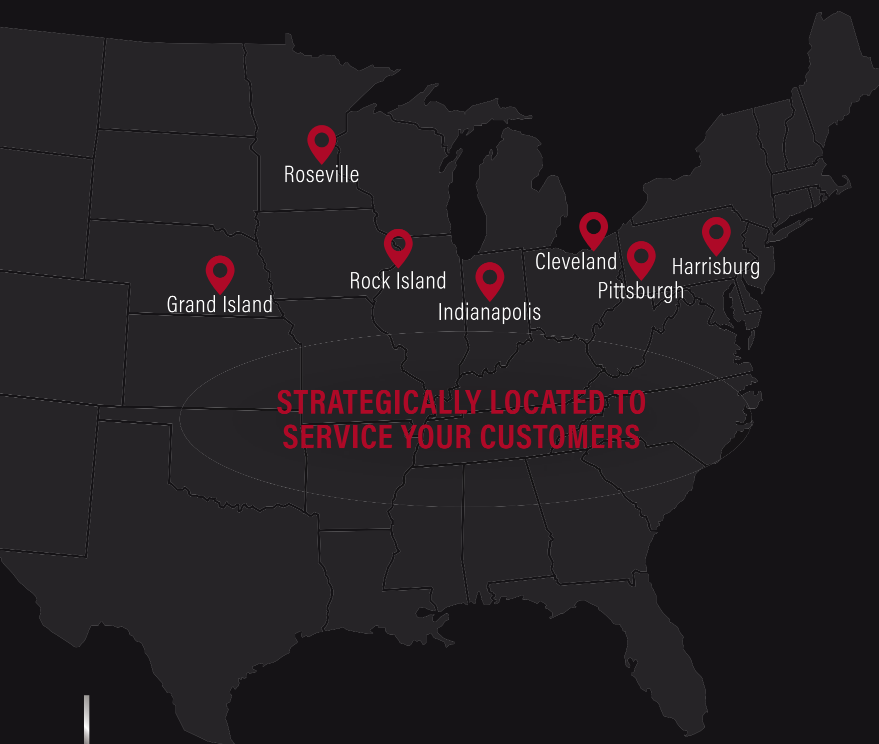

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created havoc in ocean shipping rates last year. And now ocean carriers are still struggling with balancing those uneven demand levels this year.

Matthew Hill, head of North American import market for Maersk, says that last year was "a tale of two halves" due to those uneven demand levels. "It was a completely different second half of last year," he says. "Exports did take a hit throughout last year, and that continues to be a challenge. We continue to prioritize equipment on the import side."

Rethink, redesign, reshore

The rapid disruption of supply chains last year is leading to needed alterations. In fact, the report suggests that logistics professionals change their ways and methodologies, especially across the global arena. "Navigating multi-shoring has clearly surged on the priority list of the logistician," states the report.

Before the pandemic, U.S. companies were planning more reshoring and nearshoring, moving some manufacturing operations to Mexico to be closer to the U.S. market and away from other countries, especially China. This was amplified both by U.S.–China trade disputes and the recently concluded United States–Mexico–Canada Agreement (USMCA). Those plans are still moving—and quickly.

Vietnam has also become a hotspot for companies seeking to avoid tariffs, although evidence of trans-shipment may result in measures to prevent such practices. Kearney's 2020 Reshoring Index shows that as the pandemic roiled import/export dynamics, a once binary choice over China or the United States has evolved into multifaceted strategies about right-shoring.

"The resulting complex logistics networks will require providers to become much more creative to meet or beat the speed and efficiency of routing from China," the report concludes. In other words, after years of talk about diversifying supply chains, the pandemic showed shippers the necessity of being able to quickly switch methodologies.

However, the report warned that the path to realizing that value involves not only creative vision—such as new north-south configurations to meet multi-shoring demands—but also well-executed operational investments.

In conclusion, the report states that 2020 forced logistics professionals to constantly change their plans—and they should expect more this year and beyond. "Logistics in many cases is the "tail wagged by the dog," says Zimmerman, adding that supply chains have been thrashed about not just by the pandemic, but by natural disasters and environmental disruptions.

"In 2021, shippers and carriers should plan for optionality in the face of instability," says Zimmerman. "Logistics is due for another wild ride during 2021."

State of Logistics: LTL

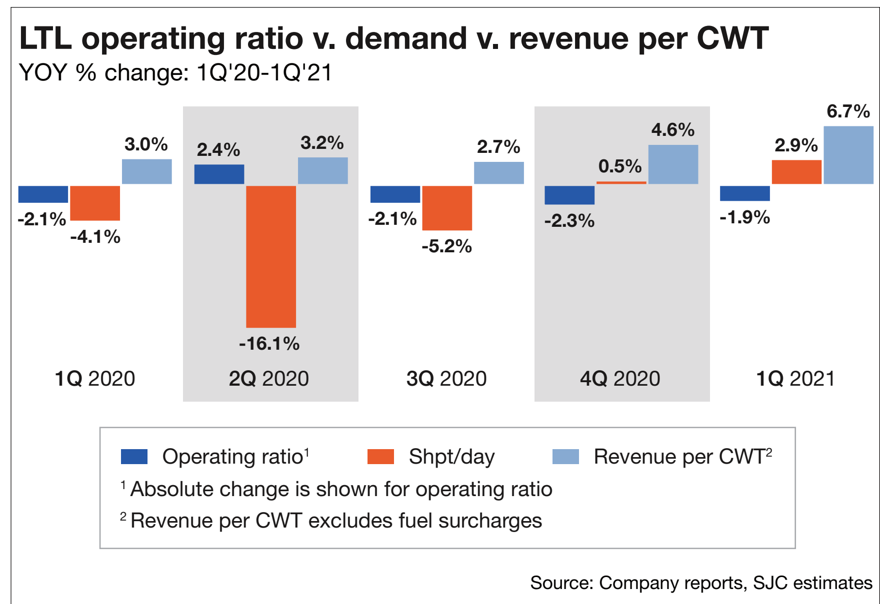
Retail, e-commerce, carrier discipline driving revival

BACK IN THE EARLY PART of this century, e-commerce rarely excited less-than-truckload (LTL) executives because of the way those deliveries used to be made—mostly to shopping centers and malls.

It wasn't terribly efficient. It was costly. It was time-consuming. And deliveries to private homes were even worse.

"Amazon and Wayfair changed all that," says Satish Jindel, principal of SJ Consulting, a firm that closely tracks the LTL industry. "E-commerce has been transformed, and the LTL industry is hitting on all 24 cylinders."

LTL carriers are now doing lots of "middle-mile" deliveries to warehouses for those online giants. And, as a result, they have become big, reliable customers to shrewd LTL carriers. "That business was always there, but LTL carriers are now managing it dif-



ferently and pricing it smarter."

Amazon and other e-commerce behemoths have become *huge* consumers of LTL capacity, and that has taken capacity away from LTL's "other half"—the industrial economy. This fact has led to an economic revival of the LTL sector, where the top 25 carriers control 90% of the market.

So, when that industrial economy hit the COVID doldrums last year, LTL carriers astutely changed gears and used that additional capacity to handle surging e-commerce, middle-mile deliveries.

This was a significant shift in priorities. A decade ago, LTL carriers thought building expensive last-mile delivery networks for home deliveries would be their panacea. "That was missing the point," says Jindel. "The fact is there are lots of middle-miles when Amazon is going to have deliveries to 400 of their warehouses."

As the chart shows, carriers in both LTL and TL segments have seen volume declines due to the pandemic in the first half of 2020—more significantly within the LTL industry. However, TL and LTL carriers have done a better job of maintaining profitability, with their collective operating ratio improving in the last three quarters, including the first quarter this year.

One can see the results in the headlines. Old Dominion Freight Line earned $199.4 million in net income in the first quarter, nearly 50% ahead of that period a year ago. XPO Logistics, parent of the 3rd-largest LTL concern, reported record first quarter net income of $115 million while revenue surged 21% to $4.77 billion from the 2020 first quarter.

Similarly, ArcBest, parent of ABF Freight System, the nation's 7th-largest LTL carrier, saw net income improve to $23.4 million from year-ago earnings of $1.9 million on an 18% rise in revenue of $829 million.

Industry officials and analysts say it's not just surging e-commerce and tight capacity that are driving this profitability. Carriers are now correcting erroneous weights in shipments that Jindel estimates have added an additional 4% to 6% of yield improvement—which goes directly to the bottom line.

LTL carriers have UPS and FedEx to thank for those yield improvements. Those package delivery giants weigh their packages down to the final ounce. It took a while, but the LTL industry has followed suit, along with dimensional pricing to help charge additional fees for larger, lighter packages.

So, when will this LTL revival end? No time soon, analysts predict.

"All the stars are aligned perfectly for the industry to have a good two to three years," Jindel predicts. "And that's a long time in today's world."

The only thing that could spoil this party would be the carriers themselves—not so much by pricing, but by adding capacity in the form of adding new trucks. "It's the pricing that takes away discipline," says Jindel.

In fact, LTL carriers are aggressively looking to add drivers, and that baffles Jindel. "Why would companies want to disrupt the balance between supply and demand when it's in your favor?" he asks. "Why are you wanting to change that?"

And for shippers trying to cope with ever-rising LTL freight costs, Jindel has a simple solution. "Transportation for every customer vertical is not more than 7% of cost of what they are selling," he adds. "If transportation goes up 10%, that's less than 1% of the cost of the product. Pass it on to the consumer."

—John D. Schulz, contributing editor

State of Logistics: Truckload

Carriers flush with freight, but high equipment, driver costs strain profits

TRUCKLOAD (TL) CARRIERS are battling strong demand for capacity with sharply higher costs for everything from raw materials for their trucks to rising driver pay.

"Fleets simply need more trucks and trailers," says Don Ake, vice president of commercial vehicles for research firm FTR. In fact, the demand for Class 8 heavy trucks could be more than 325,000 units this year. "But we don't know because supply is constrained," he says. "That demand could spill over into 2022."

As for overall conditions in the $340 billion TL sector, where the top 25 carriers combined barely have a collective 10% market share, Ake contends: "It's a tough market, and it could get even tougher."

The DAT spot market indicator showed TL rates remained near all-time highs during the week ending May 3, one year after bottoming out as U.S. economies closed during the pandemic. The seven-day average line-haul rate for dry van was $2.27 a mile in early May, which is 95 cents higher than the same period one year ago. Contract rates nearly always follow the spot market.

FTR is predicting 4.4% growth in gross domestic product (GDP) in the third quarter and another 2.4% in the fourth quarter of 2021, compared with a pandemic-constrained GDP a year ago. There was a stunning 17.4% rise in goods transport growth in the first quarter year-over-year that got the nation back to where we were last year.

Although some supply chain issues persist—computer chips for Class 8 trucks and lumber for floors of trailers—at least 20 different suppliers on the heavy truck side are facing shortages in areas of rubber, plastic resins and specialized steel. All this is crimping delivery of new Class 8 trucks, and is now affecting how many new trucks are on the highway.

"It's a great time to have trucks, and it's a great time to have new trucks," says Derek Leathers, vice chairman, president and CEO at Werner Enterprises, the nation's 7th-largest truckload carrier.

According to reports, carriers need to be prepared to pay more for trucks. Specialized steel was less than $500 a ton last year. This year, steel spiked to nearly $1,400 a ton. The same thing is happening with rubber. Monthly rubber prices were $1.32 per kilo last year and rose to $2.35 this year—nearly doubling within a year.

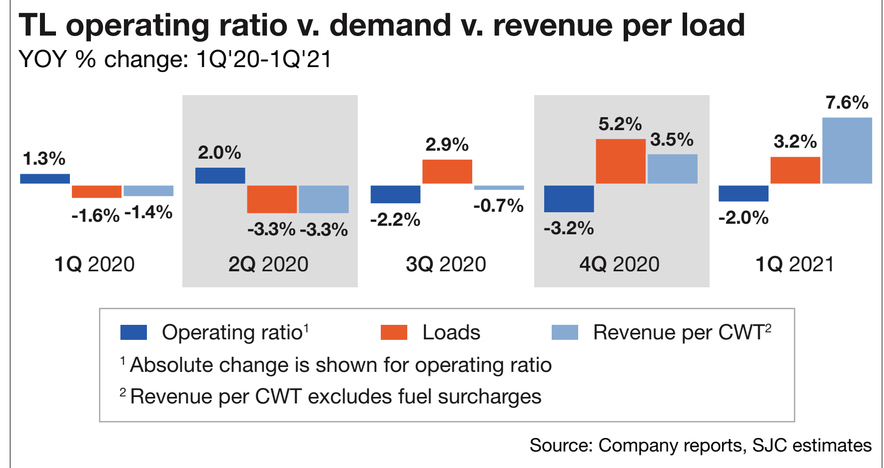
Still, TL carriers are placing orders for heavy trucks. Carriers recently posted six straight months with more than 40,000 Class 8 orders per month. "Now you have restricted supply not being able to keep up with demand," says Ake. And even with current supply chain constraints, FTR is forecasting total Class 8 production of 310,000 this year, 340,000 for next year and 350,000 for 2023.

"Freight growth in 2021 and 2022 will continue to put the industry in catch-up mode," Ake predicts. "We're in the midst of three super years for the industry as we recover from the problems of 2020."

The good news for truckload carriers is that the OEM community is optimistic they can meet demands, and the Class 8 heavy truck supply chain is rebounding. However, reports indicated that supply chain issues remain.

While there may not be shortages forever, high raw material costs are boosting prices for new Class 8 trucks. "The high component and material costs are squeezing margins on OEMs this year," adds Ake. "They're building more, but their margins are squeezed."

—John D. Schulz, contributing editor



State of Logistics; Rail/Intermodal

Volumes remain strong, but keep a watchful eye on service

A YEAR AGO, THE IMPACT of the pandemic had knocked a serious dent into the state of U.S. rail carload and intermodal volumes. But today, volumes are recovering at a significant pace due to the vast differences in business conditions between the two periods of time.

According to data from the Association of American Railroads (AAR), U.S. carload volumes are up 7.3% through the first five months of 2021 on an annual basis. And the weekly carload average for May far outpaced the May 2020 weekly carload average, which AAR said represents the lowest ever recorded since it started tracking this data in 1989. For the month of May 2021 alone, U.S. rail carloads saw a 30.4% annual gain, according to AAR.

Meanwhile, rail intermodal volumes have also shown a strong rebound compared to a year ago, with May U.S. container and trailer volume seeing a 26.2% annual increase. And U.S. container and trailer volumes through the first five months of 2021 are up 19.2% annually. Average U.S. weekly intermodal volume for May showed a 20.7% annual increase.

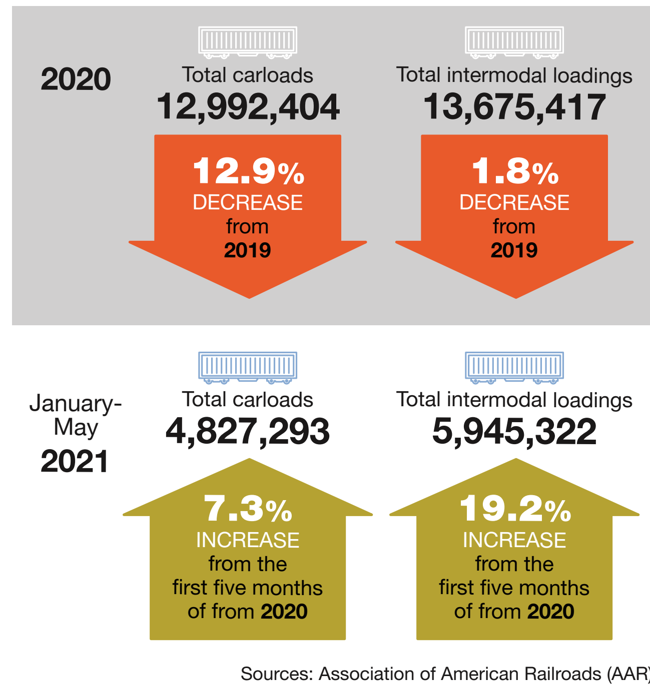
What's more, according to AAR data, this marks the 7th-highest weekly U.S. intermodal average for any month, and the most ever for the month of May.

"U.S. rail volumes in May 2021 were encouraging," says AAR senior vice president John Gray. "Total carloads were the most for any month since October 2019 on a weekly average basis. In May, 18 of the 20 carload categories we track had carload gains over May 2020, while 12 of the 20 had gains over May 2019. Meanwhile, intermodal just had the best January to May period ever for U.S. railroads."

While the volume gains are a good sign for freight railroad and intermodal,

Tony Hatch, principal of New York-based ABH Consulting, describes the annual comparisons as almost meaningless due to how 2020 volumes were negatively affected by the pandemic.

"Not only did the pandemic and the effects of the Polar Vortex impact conditions in the first quarter, unusual weather is much more usual when it happens year-over-year," says Hatch. "Another thing to remember is that 2019 was a bad year for railroads, as we were—and still are—in a trade war, with tariffs still on almost $400 billion worth of goods."



Over the course of the ongoing economic recovery, Hatch noted that railroads have done an exemplary job going back to the second half of 2020, adding that even though some cracks are beginning to show a little bit, he says that railroads are not the main offenders in the supply chain compared to ports, for example, which dealt with major congestion issued earlier this year.

"I would give the rails an A- or a B+ for the second half of last year and a B for the first part of this year," says Hatch. "Hopefully, that is not a trend. There are some stresses, like pressure on intermodal, due to the truck driver shortage. That is a good thing for business in some ways, but it's also hard with rails having a tough time getting crews."

While railroad and intermodal volumes are strong, Hatch says that a watchful eye needs to be kept on service in the wake of a recent letter from STB chairman Martin Oberman to leadership at Class I railroads. The letter was in regards to rail service issues reported by some shippers, adding that it may relate to a broader trend of rail labor reductions over the last several years, coupled with the pandemic-driven furloughs and quarantines.

"This letter sends signals to the railroads that the STB is not happy with them," adds Hatch. "I would argue that the STB comes with a preconceived notion to not be happy regarding service, and that shippers want to look unhappy so prices are down and it lowers logistics costs."

—Jeff Berman, group news editor

State of Logistics: Ocean

Container shortage continues to restrict options on the high seas

LOGISTICS MANAGERS RELIANT on ocean cargo shipping have been confronted with a series of calamities and close calls this year, note industry analysts.

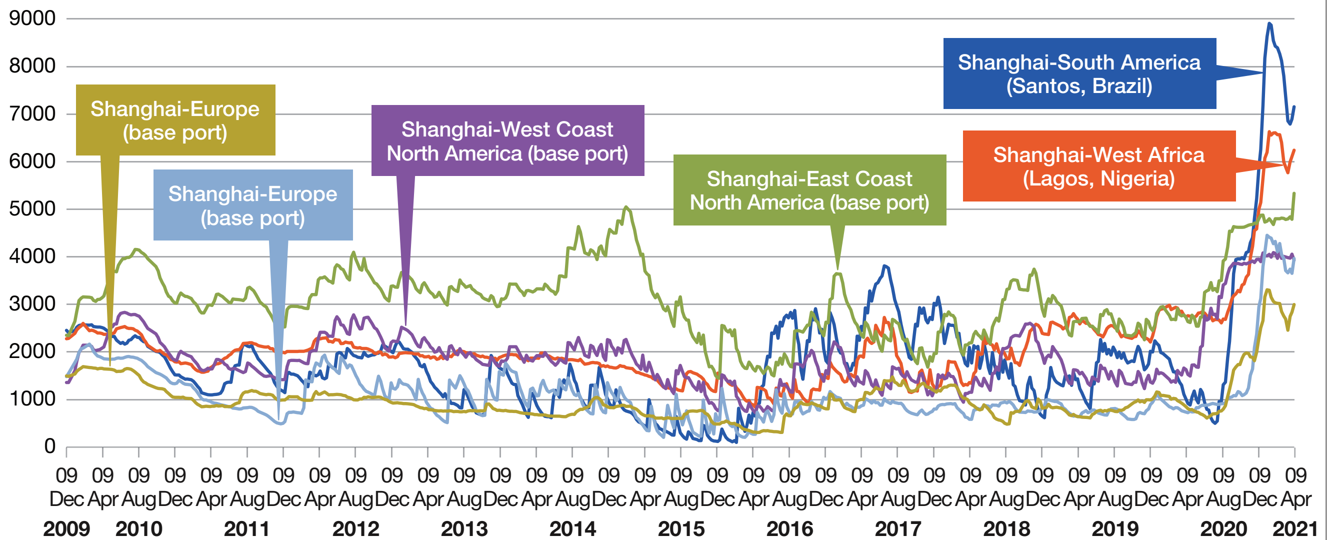
The pandemic led to global changes in consumption and shopping patterns, including a surge in e-commerce. This was followed by increased import demand for manufactured consumer goods—most of which are moved on container vessels.

With the lessening of lockdown measures and varying speeds of recovery worldwide—as well as stimulus packages supporting consumer demand—inventory-building and frontloading contributed to a further increase in containerized trade flows. Finally, the recent obstruction of the Suez Canal by a grounded container ship contributed to another escalation of freight rates.

The United Nations Conference on Trade and Development (UNCTAD) recently released a paper titled "Container Shipping in Times of COVID-19: Why Freight Rates Have Surged."

It notes that the underlying causes of skyrocketing expenses are complex and include capacity management by carriers and a severe shortage of containers. Pandemic-related delays in intermodal connections further cloud the picture.

"The impact of the container shortage is greater on longer and thinner trade routes to developing regions than on the main east-west routes," says Shamika N. Sirimanne, UNCTAD's director of the division on technology and logistics. He adds that, in



Source: UNCTAD calculations, based on data from Clarksons Research, Shipping Intelligence Network Time Series.

the longer term, policymakers need to focus on further reforms in trade facilitation and ports, improved tracking and forecasting, and the strengthening of national competition authorities.

At the outset, the disruptions resulting from the pandemic, trade imbalances and changing trade patterns led to shifts in the geography of container trade. Empty boxes were left in places where they were not needed, and repositioning was not planned. Moreover, as carriers introduced "blank sailings," or skipped port calls, a mismatch between supply and demand for empty containers was exacerbated, as empty boxes were left behind and failed to be repositioned.

The container crisis is also a reflection of a slowdown in and delays across the maritime supply chain due to strains caused by the pandemic. This includes port labor shortages, port congestion and capacity constraints in inland transport systems. Monitoring of port calls and liner schedules, along with better tracing and port call optimization, are among the issues covered by the growing field of "maritime informatics," UNCTAD concludes.

"Policymakers need to promote transparency and encourage collaboration along the maritime supply chain, while also ensuring that potential market power abuse is kept in check or prevented," says Sirimanne.

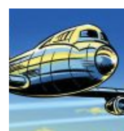
Meanwhile, The U.S. Federal Maritime Commission has voted to create a National Shipper Advisory Committee to advise the FMC "on policies relating to the competitiveness, reliability, integrity, and fairness of the international ocean freight delivery system." The committee will consist of 24 members, evenly divided between exporters and importers.

FMC commissioner Rebecca Dye applauded the creation of the committee and expressed gratitude for the support it's had in Congress. "I have long believed, and said publicly on repeated occasions, that the commission would benefit from having a formal and established method for collecting the advice of its shipper constituency," she adds.

–Patrick Burnson, executive editor

State of Logistics: Air

Air cargo continues steady climb in volumes, rates



AIR CARGO CONTINUES to be the bright spot for aviation in terms of demand, but capacity remains tight, and shippers are paying higher rates.

Data collected by the International Air Transport Association (IATA) and air cargo data services firm CLIVE over the past year show an upward trajectory in demand for air cargo services, although it did dip 4% in May. IATA attributes this to heightened global industrial production and cross border trade.

"Supply chain disruptions and the resulting delivery delays have led to long supplier delivery times—the second-longest in the history of the manufacturing

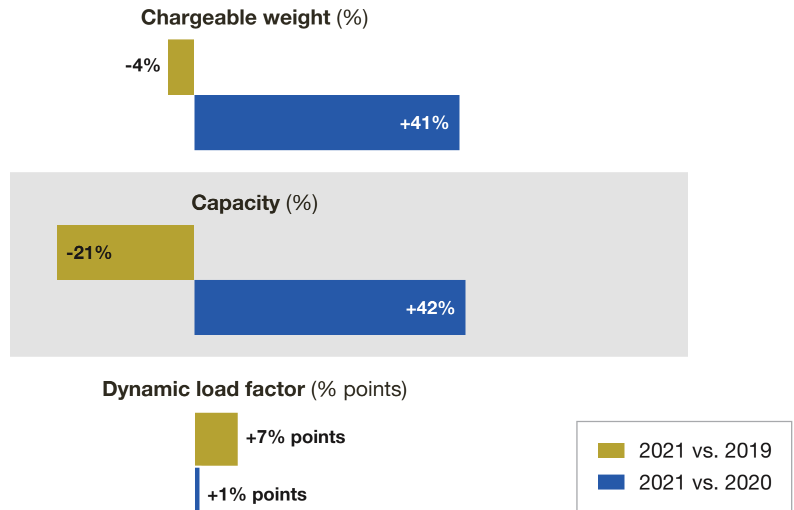
PMI," states IATA. "This typically means manufacturers use air transport, which is quicker, to recover time lost during the production process."

Further data collected by CLIVE for April 2021 indicates air cargo volumes up 78% compared to April 2020 and up 1% compared to April 2019. CLIVE analysts emphasize how high load factors continue to strain international air cargo particularly given that the traditional surge in summer capacity has so far failed to materialize.

Analysts at CLIVE state that while April 2021 volumes may be close to those of April 2019, overall capacity was down 18%. For May 2021, available capacity was down 21% compared to May 2019. "This shows the gap in airline capacity is widening again compared to pre-pandemic market conditions following the -18% figure in April and -14% for March," according to the analyst report.

May 2021 data versus the same month of 2020, when COVID restrictions caused severe disruption to the global aviation market, show +41% growth in chargeable weight, a +42% rise in available capacity, and +1% point increase in dynamic loadfactor. The "dynamic loadfactor" measures how full an aircraft is by considering both freight volume and weight.

"Airfreight capacity is still scarce on many key trade lanes, so prices remain strong as economic activity picks up while passenger air capacity remains constrained due to restrictions on international travel," says Gareth Sinclair of air cargo market intelligence firm TAC Index. "The Baltic Air Freight Indices [weekly transactional rates for general cargo as provided by freight forwarders] increased by 3% in May over April, but this is a slowdown on the 17% growth seen in April over March."



According to TAC, pricing strength continues on routes between China and Hong Kong to the United States and Europe, and from Europe to the United States. The airfreight market, particularly China and Hong Kong to the United States, also continues to be strong.

Sinclair surmises that this is likely to continue for some time as demand in several markets continues to outstrip supply. The result is that e-commerce traffic continues to increase and economic activity is strengthening in many markets.

—Karen E. Thuermer, contributing editor

State of Logistics: 3PL

Challenged and in demand, 3PLs face transformation

GIVEN THE CHALLENGES presented by the pandemic, shippers have leaned heavily on their third-party logistics (3PL) operators.

Subsequently, the industry has seen impressive growth. Estimates by Armstrong & Associates, Inc. (A&A) show U.S. 3PL market gross revenues grew 8.8% in 2020, bringing the total U.S. market to $231.5 billion.

"Most of that growth came from international and domestic transportation management, which responded to COVID-related demands for PPE and needs to restock inventories upon economic reopenings," says Evan Armstrong, president of A&A.

In the meantime, Armstrong projects that revenue for 3PLs will stay strong throughout 2021, particularly in the domestic transportation management and freight brokerage sectors. "We're currently estimating 20% growth by year's end over 2020 and expect the overall 3PL market to see double-digit growth [12%+] in 2021," he adds.

However, 3PL operators are not without their challenges. For one, development of the e-commerce sector and increases in demand for services that manage supply chains worldwide are expected to escalate.

Manufacturers and retailers are focusing more intensely on their core competencies and are now more readily subcontracting functions—such as logistics—to those with the expertise. Thus, the increase in competition has diverted the focus of manufacturers to promote respective specializations in production and distribution, according to a recent report from *MarketWatch*.

A recent survey conducted by Accenture and GEODIS of 200 large retail and consumer goods brands found that companies expect the shift to online sales—especially in selling directly on their own websites—to remain even after the pandemic subsides. "However, more than half [52%] believe that their logistics capabilities are *not* scaled to absorb quickly growing e-commerce volumes," stated the survey authors.

Consequently, 3PLs are going through a digital transformation and are investing in end-to-end solutions and end-to-end visibility to meet growing customer demand. And while these are all positive developments, it's important to keep in mind that 3PLs work in an environment challenged by limited airfreight capacity, congested seaports, container shortages, and a trucking industry begging for more truck drivers.

"Shippers are wanting more committed capacity to combat rising spot market rates," says Armstrong. "It has been especially difficult for companies that usually rely on load boards to move their freight."

In a recent survey A&A conducted of top dedicated contract carriage providers, this continued and increasing capacity crunch has regular trucking fleets expanding into the dedicated contract sector and, to a greater degree, the dedicated truckload sector.

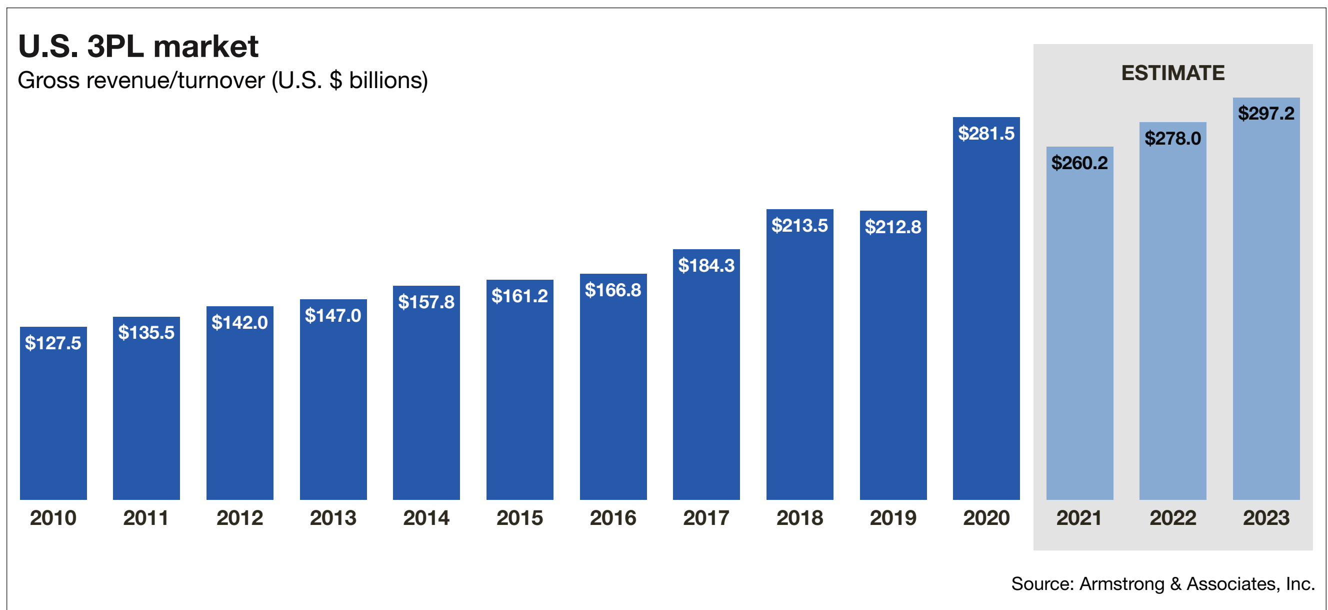
Therefore, A&A advises shippers to build application programming interfaces (APIs) with their top transportation management 3PLs to reduce tendering friction and more efficiently secure spot market truckload capacity. "Getter closer to 3PLs via technology is one way to better manage your supply chain and keep enough carrier capacity available to meet demand," says Armstrong.

Today's environment is also putting strains on warehousing, particularly given the enormous expansion of distribution centers by Amazon. "3PLs are seeing continued competition with Amazon on warehouse employee wages, so hiring and retaining employees, in addition to the effects the pandemic, have been challenging," says Armstrong.

In addition, low warehouse vacancy rates, on top of rising lease rates, especially in key distribution areas, continue to increase costs for the 3PL—and then ultimately the shipper.

With all of these challenges rolled up, Armstrong projects that 3PLs should see more modest growth in 2022, with activity returning to normal. "Shippers should expect fewer challenges and more stable conditions over the next year," he adds. •

—*Karen E. Thuermer, contributing editor*



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2021 Truckload Roundtable:

Advantage carriers

The TL market continues to see a flurry of high demand, elevated rates, and ongoing capacity issues. And while overall market conditions have improved from last year, there's still a long way to go before things get back to any semblance of normal.

BY **JEFF BERMAN**, GROUP NEWS EDITOR

Coming off of a year that was clearly unlike any other we've ever seen, the truckload (TL) market appears to have largely weathered the storm on solid footing at the halfway point of 2021. With more people receiving vaccinations, coupled with stimulus funding leading to increased consumer spending activity, the truckload market continues to see a flurry of high levels of demand, elevated rates giving carriers the upper hand, and ongoing capacity issues due largely to the seemingly endless driver shortage.

And while market conditions have improved when compared to a year ago, there's still a long way to go before things get back to a point of market equilibrium.

Joining us this year to help truckload shippers traverse a very unique period in the sector's history are three of the top freight transportation experts in the nation, including: John Larkin, operating partner, transportation and logistics, Clarendon Capital; Avery Vise, vice president of trucking for FTR Transportation Intelligence; and Garrett Holland, senior research analyst for investment firm Robert W. Baird & Co.

Logistics Management (LM):
How would you define the current state of the TL market?

Avery Vise:: Market conditions are likely at or near the peak of their favorability for truckload carriers, but the slope on the downside of that peak is uncertain. The pandemic has created unprecedented situations on both the demand and capacity sides of the ledger, and the range of plausible outcomes remains quite broad.

Enormous levels of stimulus from Washington have fueled a buying spree the likes of which we have never seen, especially in durable goods. One scenario is that spending on goods crashes in 2022 or 2023, especially if inflation continues. However, while growth in

freight demand almost certainly has peaked, unprecedented levels of consumer savings and debt retirement could maintain a solid floor on freight volume.

Pandemic-related constraints on driver capacity might make it harder than usual to bring demand and capacity into balance, but nobody truly knows how many drivers have left the market permanently.

John Larkin: The truckload market is currently tight as a drum. The combination of changed consumer buying patterns, low inventory levels due to the changed consumer buying patterns, and a debilitating driver shortage made worse by pandemic fears has created one of the tightest supply dynamics we have witnessed since deregulation in 1980.

Normally, fleets would be adding trucks at a time like this to handle the big surge in demand, but they're thankfully showing restraint this time around. First of all, many of the trucks in their existing fleet are unseated with drivers. Why add incremental power if the tractors would simply sit against the fence with the existing unseated portion of the fleet?

Also, carriers are more generally reluctant to add equipment this deep into a freight market expansion knowing that expansions don't last forever. Who wants to be caught with surplus equipment when the market begins to contract? Instead, many carriers are struggling so severely with the driver shortage issue that they have actually been reducing their fleet size in the face of this robust market.

Garrett Holland: While thankfully we appear to have the pandemic under control and the peak of lockdown-related consumption has likely passed, demand for consumer goods remains robust and fueled by stimulus measures. Inventory levels have been depleted.

"Shippers would be wise to consider using a dedicated fleet for base load, repeatable freight. They would then have their core freight flows covered at prices that are locked in, contractually, for a number of years."

—John Larkin, Clarendon Capital

Capacity for carriers remains limited by driver shortages and OEM production challenges. The net result is a severe imbalance in demand and supply, which is a condition that likely persists through the balance of 2021 and extends into 2022

LM: How should shippers approach the market?

Larkin: Shippers would be wise to consider using a dedicated fleet for base load, repeatable freight. They would then have their core freight flows covered at prices that are locked in, contractually, for a number of years.

A core carrier program is also recommended for the next layer of semi-predictable, if not always steady, freight. The core carriers will handle this freight in a reliable manner at a price that has been agreed upon for up to a year or longer. The freight not suitable for a dedicated fleet or a core carrier program can be handled by one or more brokers with whom, as a shipper, you have strong relationships.

Holland: In the near term, securing both production and transportation capacity ahead of peak season remains a primary focus. First-quarter demand remained very strong, and demand likely continues to seasonally build through the year. Outlooks from the nation's largest retailers indicate sales are expected to remain very strong in the second half of 2021 despite challenging growth comparisons.

Industrial end market demand continues to build as well. Securing inventory and transportation ahead of another challenging season to avoid complications in these tight transportation markets is clearly the top priority.

Vise: Uncertainties created by the pandemic have led many shippers to use small-scale bid packages as frequently as quarterly. Nobody involved in these negotiations likes this situation, but the alternatives often seem worse. Some shippers are clearly frustrated with the current environment and are beginning to feel that they have little to lose by bidding most or all their lanes for a longer term. That impulse is understandable, but it is probably a mistake, at least until the fourth quarter or early next year.

We do not yet know whether stimulus-fueled spending truly has subsided, and we're heading into a holiday shopping season with extraordinarily lean retail inventories. On the capacity side, after generous unemployment benefits disappear this summer and fall, we could see a noticeable easing in the driver market. Shippers should only bid their most troublesome lanes and wait out the rest for a few months.

LM: What can shippers expect in terms of service over the course of the next year?

Holland: Friction across the supply chain after the rolling series of shocks

has resulted in significant service challenges for shippers. The pandemic first triggered a massive shock then surge in demand, which would have been extremely challenging to navigate in isolation. As the supply chain grinds to catch up, we have faced other unique challenges such as the February winter storm disruption and Suez Canal blockages, which have amplified network congestion and extended timelines for production and delivery.

Network fluidity has incrementally improved in the second quarter as was evident in the moderating port backlogs and improving rail performance metrics, but labor shortages are likely to extend the challenging operating environment in the near term.

Vise: Service will probably become incrementally better over the next year as capacity utilization eases. Shippers will not need to turn as frequently to the spot market or to intermodal, which suffers its own chronic service challenges.

As with our outlook for volume and pricing, the range of outcomes is wide, but almost all would be better for shippers than the current situation. A longer-term factor could be a reversal of the deregulatory stance taken by the previous administration in Washington, but any changes on that front almost certainly would not take effect for more than a year.

A much greater near-term risk is that ongoing litigation concerning use of the leased owner-operator model in California could constrain truckload carriers' access to surge capacity. However, the broader freight market has already begun to shift toward different models for managing this capacity.

Larkin: Garrett and Avery are both correct, and I will add that service, as measured by capacity availability, will be challenging over the next year as supply and demand are so tight that it may prove difficult to attract capacity to certain origin destination pairs at a reasonable price.

"Some shippers are clearly frustrated with the current environment and are beginning to feel that they have little to lose by bidding most or all their lanes for a longer term. That impulse is understandable, but it is probably a mistake, at least until the fourth quarter or early next year."

—Avery Vise, FTR Transportation Intelligence

Service, defined by transit time, will also be challenged in light of the labor shortage. Similarly, transit time variability is likely to be an issue as on-time pick-ups and on-time deliveries will be challenged by the absolute lack of drivers, the lack of experienced drivers, and a return to high levels of highway congestion in many urban markets. Those desiring fast, reliable freight movements will need to think in terms of paying up for that level of quality service.

LM: **Is pricing where it needs to be for truckload rates from a contract and spot market perspective?**

Vise: One reason many shippers feel they have little to lose by rebidding their entire networks is that spot rates have been uncharacteristically sticky. We have yet to see clear signs of weaker spot rates even though spot volumes might have stabilized. FTR's forecasts of spot rates have grown incrementally stronger for months with a current forecast above 20% higher year-over-year.

One reason for this situation, of course, is that freight pressures are so strong that the contract rates that would be needed to avoid sky-high spot rates appear unacceptable. Shippers already are staring down contract rate gains of around 12% in 2021—an increase larger than what the market saw in 2018. Shippers don't necessarily see an upside to changing course. The current market is such that the traditional tactic of trading higher contract rates for stability is not a sure bet.

Larkin: In most markets, spot pricing currently sits above contract pricing. Shippers using a high percentage of spot market freight are trying to move more of their freight over to the contract side of the market, where capacity remains tight. They're encountering a rising price environment on the contract side of the market as well.

It's clear that the big recent spike in contract and spot pricing has not drawn much incremental capacity into the markets. Plus, even though much of the recent price hikes have been earmarked for drivers, driver availability has not improved.

It appears that there's little price elasticity of driver supply right at the moment. As the economy fully emerges from the various pandemic-related lockdowns, those considering careers as truck drivers will have many other options, not the least of which will be first-mile pick or last-mile delivery jobs that allow for more regular home time.

Last, an infrastructure bill will put further pressure on truck driver availability, as some drivers may prefer to drive a cement mixer, a front-end loader, or a backhoe. So, with such a tight labor market, look for carriers to continue to

ask for rate increases in order to continue padding driver pay in hopes of attracting additional labor into the market.

Holland: Given the oversold market conditions, shippers continue to face rising transportation costs. With bid season approaching completion, many shippers are likely absorbing mid- to double-digit rate contract increases for this latest cycle.

Spot rate growth likely starts to moderate in the second half of this year as we cycle peak-growth rates, but two-year comparisons continue to grind higher and reflect pricing pressure in the market. Shippers in turn will likely look to pass along their higher costs to consumers. Some normalization in demand conditions will likely provide pricing relief by later next year, however.

"Spot rate growth likely starts to moderate in the second half of this year as we cycle peak-growth rates, but two-year comparisons continue to grind higher and reflect pricing pressure in the market. Shippers in turn will likely look to pass along their higher costs to consumers."

—Garrett Holland, Robert W. Baird & Co.

LM: **How do you view the current state of driver availability?**

Larkin: The driver shortage has seldom been more severe than it is right now. In addition to the driver recruiting and retention issues we already mentioned, driver training schools were closed or scaled back dramatically during the pandemic, thereby reducing the number of new entrants.

Increased use of hair follicle-based drug testing and the roll out of the Drug and Alcohol Clearinghouse have combined to shrink the truck driver labor pool. And, as alluded to earlier, the gig economy opens up a whole new world of careers for individuals that otherwise might consider joining the pool of truck drivers or potential truck drivers.

Holland: Driver availability is likely to remain a binding constraint for transportation market supply well into next year. Pandemic concerns, competition from other jobs enabling more time at home, stimulus payments, and regulatory changes have collectively sidelined a large cross section of the driver population and presented significant challenges in attracting new talent.

Despite multiple rounds of wage increases and bonus payments, driver availability conditions are showing no indications of a quick recovery. Long-term demographics suggest the shortage is more structural than cyclical as well. We're encouraged that carriers are taking steps through compensation, but also through addressing lifestyle concerns to the extent possible to help attract more drivers.

Vise: I agree with both John and Garrett. At FTR, we no longer uses the term "shortage" to describe a tight driver market because we felt that it implied a condition that did not really exist. Yes, carriers might have to sharply increase pay, and shippers and brokers might have to resort to intermodal and the spot market, but freight that needs to move finds a way to move.

However, the pandemic created some unprecedented drags on driver capacity, including a significant reduction in the training and licensing of new drivers, a big drop in U.S. labor participation, and generous unemployment benefits.

The Drug and Alcohol Clearinghouse has removed nearly 60,000 truck drivers directly and probably thousands more who seek to avoid the inevitability of ending up in the clearinghouse eventually. Aside from the clearinghouse impact, we believe we know by year-end whether trucking faces a longer-term under-supply of drivers.

LM: **How will the truckload market look five years from now?**

Holland: The truckload market is likely less fragmented and less volatile in our view as larger carriers leverage technology to better aggregate market share and smooth returns over the course of a cycle. Multi-modal offerings from large carriers offer significant potential to shippers looking to consolidate and optimize transportation services.

Quality-service providers in truckload will always have a market though, and there will be opportunities for smaller carriers to leverage technology benefits as well. Over that timeframe, we will also likely start to realize potential benefits from applications of electrical and autonomous vehicles. We don't envision a winner-take-all technology solution emerging, but technology likely enables greater market share gains and less-volatile returns for scaled providers.

Vise: We expect the lines to continue blurring between carriers and intermediaries. Rapid evolution of digital freight platforms and the total visibility afforded by telematics are already allowing brokers and third-party logistics firms to compete for contract freight on an equal footing

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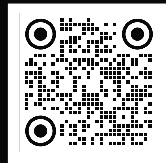

with traditional asset-based operations.

Also, within five years, we'll probably see commercially viable autonomous trucks operating routinely in some low-congestion corridors, such as I-10 in the Southwest. Autonomous will evolve gradually, and it likely will be the next decade before autonomous represents more than a token share of truck freight.

However, solutions needed to make autonomous work—remote drop-and-hook lots and dedicated drayage operations, for example—are already developing due to the pressure to maximize productivity of today's drivers. The next five years will likely bring truckload closer to shippers' goal of reducing the market swings that we've seen in the past decade, but progress will be incremental.

Larkin: Ten years ago and even earlier, very little new thinking or new technology was in play across the industry. However, with many entrepreneurs, venture capitalists, and private equity firms now finally turning their attention to new business processes, automation, new power sources, and with many new process and operating optimization applications being developed and applied, I expect to see an industry that's able to dramatically increase the productivity of assets, labor, and infrastructure.

The combination of all these elements will keep the United States in the leadership position with respect to supply chain efficiency and will enable us to, with the help of more factory automation, nearshore more manufacturing, thereby creating even more freight to haul.

***LM:* What are the biggest lessons learned for the truckload market as it relates to the pandemic?**

Vise: Perhaps the biggest lesson is that often the longest-lasting economic effects of a catastrophe come not from the event itself, but rather from actions aimed at counteracting or mitigating it. We simply can't divorce the pandemic itself from the extraordinary levels of financial support Washington provided in response.

Without the infusion of more than $2 trillion in cash from the CARES Act—not to mention the $3 trillion more injected in the first quarter of this year—we clearly wouldn't have seen the sharp rebound in the economy and, especially, in the purchasing of goods. Aside from the tragic human cost of the pandemic itself, consequences include enormous supply chain disruptions and operational nightmares for all concerned. However, from a market perspective, the situation has been a boon to carriers and a curse for shippers, at least from a transportation perspective.

Larkin: This country's citizens learned to appreciate front-line transportation and logistics workers for keeping store shelves filled and e-commerce fulfillment pipelines flowing efficiently.

Carriers and shippers learned that the management of their networks could be handled efficiently working remotely. And, we learned that consumer buying patterns can be greatly modified during quarantines thanks to the growth of e-commerce. I suspect that these learnings will carry over into the post-pandemic environment.

Holland: In an era of global supply chains and just-in-time inventory systems, shippers and carriers likely agree on the need for more resiliency across the supply chain. This evolution likely contributes to higher levels of inventory and more nearshoring activity, which will create industry opportunities, but take time to unfold.

Consumers likely have a greater appreciation for the role of transportation providers following the structural change in e-commerce adoption and more at-home consumption. It's easy to take supply chain reliability for granted—because with a few clicks a needed product is seamlessly delivered to our doorstep. Transportation and logistics providers make this look easy, and we are grateful for their service to the nation and economy during the extremely challenging pandemic operating environment.

***LM:* Given current events and the improving economy, what are some words of advice you can offer to truckload shippers?**

Larkin: Develop long-term, trusting relationships with multiple dedicated fleet service providers, multiple core carriers, and multiple full-service truckload brokerage firms. Stay on top of the latest technological and service innovations offered in the marketplace. With today's pace of innovation, it would be easy to be leapfrogged by a competitor

that has reconfigured their supply chain to gain a competitive advantage with a lower cost supply chain or a higher service supply chain.

Attend conferences, develop peer group relationships, and stay in continuous dialogue with the carriers and brokers closest to you. Stay informed on the latest innovations, best practices, and approaches to what is a challenging market. I would also recommend hiring and grooming graduates from the top shelf supply chain programs that have emerged at many of our nation's top universities. To succeed in this new, rapidly changing, technology-based supply chain world will require that you surround yourself with top caliber talent.

Holland: Prepare for another extremely strong peak season, but also potential normalization in consumer spending mix. Experience-oriented spending remains well below pre-pandemic levels.

And as the economy re-opens, the shift in spending has the potential to exceed a simple mean reversion as consumers resume experiences post pandemic. Additionally, demand has been significantly boosted by fiscal stimulus, which is an unsustainable driver. The acute demand/supply imbalance and related pricing strength will likely fade as we move through next year, as the operating environment starts to normalize.

Vise: The stress in truckload is almost certainly at or very close to its peak, so shippers might as well wait a few more months before making any major moves.

The overriding issue is driver capacity, and we believe that the impending end of generous unemployment benefits could be significant in loosening up the market.

With many states ending these benefits in June, by August we could begin to understand whether unemployment benefits might be a significant factor. Also, the past year has brought an extraordinary number of new trucking operations, most of which are very small. Once the spot market begins to turn south, we expect many of these drivers to return to payroll jobs at larger trucking companies.

This dynamic will likely weaken the spot market further, leading still more independent drivers into jobs at larger carriers. Despite some thornier driver supply challenges, the market potentially could turn quickly. •

Jeff Berman is the group news editor for Peerless Media's supply chain group

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With 92% of companies already using the Cloud, the race is on to get even more supply chain management solutions into this convenient, accessible and affordable delivery model.

BY **BRIDGET McCREA**, CONTRIBUTING EDITOR

As companies assess their current technology infrastructures and look for new ways to tackle the rigors of the current business environment, more and more of them are turning to the Cloud.

Whether they're replacing existing, on-premises supply chain software or simply looking to add newer, more modern functionalities, these companies are tapping into Cloud delivery models. Promising faster implementation times, cheaper upfront costs, and less reliance on internal IT teams, these solutions are now being fully embraced by both shippers and software vendors alike.

Supply chain organizations are in good company. According to Accenture, the global Cloud services industry has been growing year-over-year since 2010 and is now worth $370 billion (as of 2020). It says worldwide spending on public Cloud services is expected to grow by 18.4% this year, driven in part by the move to more remote work—a shift that requires more flexible, Cloud-based software.

Calling 2020 a "pivotal year" for the Cloud, Accenture says it played a lead role in facilitating remote work solutions. According to Accenture, the Cloud has become an essential part of continuing business and is the key to unlocking organizational growth.

Cloud domination

A software sector that has been gradually moving into the Cloud for over a decade now, supply chain management (SCM) handles a broad range of functions for logistics and supply chain operators. Under that umbrella, supply chain execution (SCE) manages activities like warehouse management (WMS), procurement, transportation management (TMS), global trade management (GTM), yard management (YMS), and labor management (LMS), among others.

Also encompassing supply chain planning (SCP) solutions, SCM touches most links in the typical, end-to-end supply chain. Within that realm, Bart De Muynck, vice president of research at Gartner, says Cloud SCM has experienced steady growth over the last four years.

Consider this: In 2017, De Muynck says software as a service (SaaS)

2021 STATE OF CLOUD:
NO END IN SIGHT

comprised about 30% of all new SCM implementations, with the remainder being on-premises installations. By 2022, he predicts that ratio will flip, as SaaS implementations will outnumber on-premises installations.

Certain market segments within SCM will move to the Cloud faster than others. According to De Muynck, roughly 62% of all new procurement implementations will take place in the Cloud by 2022, versus a current 40%—and around 30% in 2017. He says SCE solutions will follow a similar pattern, having grown from being 30% in the Cloud in 2017 and now on track to exceed 50% Cloud implementations by 2022.

Some of the drivers are economic in nature. With companies watching their spending right now, capital expenditures (capex) are taking a backseat to operating expenses that are quick-to-value and less resource constrained. At the same time, quick, easy implementations have taken precedence over long, drawn-out on-premises software implementations. "Companies are deferring their larger, capex software investments that take a long time and that consume a lot of resources," says De Muynck. "Those have been put on hold."

De Muynck says that other key market drivers right now include the need to replace legacy on-premises warehouse management systems. "We still see a high number of companies with warehouse systems on premise, in a server room in the back of their warehouses," says De Muynck, who adds that some shippers are reluctant to move that data out into the Cloud. "Convincing a business to take a box that's physically sitting in its warehouse and put it in a centralized location—let alone into the Cloud—can be difficult."

Transportation management, on the other hand, has historically been one of the most Cloud-first SCM applications. To operate most effectively, TMS must be able to connect to many different carriers, trading partners, and even customers. As a result, this corner of the SCM market tends to be one of the biggest drivers of overall supply chain software Cloud adoption. This, in turn, has helped drive innovation within the segment, as new vendors come on the scene and find new ways to help shippers leverage the Cloud.

Castellini: Moving WMS into the Cloud

Established in 1896, Castellini is a U.S. distributor of fresh produce that provides next-day shipping and cold storage options. With foodservice operations and wholesale locations in Wilder, Ky., and Conley, Ga., the company is the largest distributor of organic produce east of the Mississippi River.

An enVista customer since 2014, Castellini looked to enVista's team to implement a Cloud-based warehouse management system (WMS) to replace its existing, mature system. As the company continued to grow, it needed a best-in-breed WMS that would enable greater flexibility and better service for its customers, as well as offer a competitive edge in the market.

With these specific needs in mind, Castellini selected Blue Yonder for its WMS and engaged enVista for implementation in early March 2020. EnVista created a plan for Castellini within a week of the initial conversation, prior to COVID-19.

As uncertainty surrounding the pandemic grew and restrictions were put into place throughout the country, mid-March became an ideal time to begin the project to provide the distributor with greater flexibility and enhanced service for its customers during the pandemic.

The enVista and Blue Yonder teams worked to create a seamless integration from Castellini's existing, on-premises WMS. Due to restrictions, enVista restructured its methodology to collaborate with both Castellini and Blue Yonder and effectively use tools and technology to ensure success. As a result of this restructure, 90% of the project was done remotely.

At the same time as the Cloud WMS implementation, Castellini also upgraded its enterprise resource planning (ERP) system, adding a new level of communication needed to ensure a seamless go-live. EnVista channeled its expertise and proper implementation methodology to help the distributor ensure the WMS was fully tested against the right systems with the right data.

Training was also provided by enVista to help ensure that the distributor could be self-sufficient post implementation. By ensuring the correct training and education was delivered to the right users from Castellini's team, the company has remained self-sufficient after the system has been implemented—thereby reducing the potential need for outsourcing or system errors and ensuring it can successfully prioritize resources.

"The key factors for choosing to work with enVista were their in-depth knowledge, dedication to our needs and requirements, as well as their ability to supply Castellini with innovative supply chain solutions that has transformed our entire business," says Dan Taylor, Castellini's CIO.

–Bridget McCrea, contributing editor

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"Some vendors have made TMS much easier and cheaper to implement and use, and this has driven up the use of Cloud-based TMS," says De Muynck, who points to the new crop of last-mile, rail management and fleet management software solutions as a few examples of the latest vendor innovations in this arena. "We're seeing software providers developing Cloud-based solutions that are fairly reasonably priced and that can be live within 30 days, in some cases."

No letup in sight

Over the last year, William Brooks, vice president of the North American transportation portfolio at Capgemini, says he has seen more customers asking for Cloud-based SCM systems. That interest reached new heights during the pandemic, as companies worked to shore up their supply chain operations, manage remotely, and fully leverage their technology investments.

"Cloud adoption is continuing its strong growth trajectory," says Brooks. "I don't see any letup in sight."

At least some of that growth is being driven by the fact that the Cloud is now viewed as a tested and proven software delivery method. Past stigmas concerning data security and the possible "loss of control" that comes when the Cloud replaces on-premises servers have been dispelled by the 92% percent of organizations whose systems were already at least "somewhat" in the Cloud as of 2020, according to a recent InfoWorld survey.

"Companies are more educated on the Cloud, have tested its waters, and realize that it really does work as advertised," says Brooks. "And because of that, the Cloud is becoming more and more mainstream." Those converted organizations also like Cloud software's lower upfront costs, the fact that it doesn't consume internal IT resources, and because it can be scaled up easily as a company grows.

Knowing this, SCM vendors have steadily started offering more Cloud-based solutions. Some have made Cloud their core product offerings, says Brooks, and are using pre-built integrations and application programming interfaces (APIs) that allow shippers to "hook" those applications back into their existing, on-premises systems.

A new twist on the Cloud

Clint Reiser, director of supply chain research at ARC Advisory Group, says the big news on this front for 2020 was the introduction of Manhattan Associates' Active WMS, a Cloud-native platform comprised of microservices architecture.

According to Manhattan, these platforms connect different applications (the "microservices"), each of which runs a unique process. In retail, for example, these applications may include order management, point of sale, inventory management, and fulfillment—each of which contributes to the overall customer experience.

In 2021, Manhattan followed up with its Active TMS solution, which takes a similar approach with transportation. Reiser sees this as a key development in the push to create even more advanced, Cloud-based SCM solutions. "Manhattan built these solutions using different, interchangeable widgets [microservices]," says Reiser. "This isn't just a 'lift and shift' to the Cloud; the platform is designed on a different infrastructure."

Put simply, the software developer didn't just move its existing WMS and TMS into the Cloud, it completely rearchitected the technology within the microservices environment. De Muynck says this allows shippers to more easily use the solutions, which can be acquired on a "microservice by microservice" basis. "It's also makes it much easier for vendors to extend their solutions' capabilities," he adds.

Asked whether he thinks other SCM vendors will follow Manhattan's lead on the microservices front, De Muynck says those that are "starting from scratch" may naturally move in this direction. Established vendors may have to rethink their current application

stacks if they decide to move in the microservices direction."

"Companies are more educated on the Cloud, have tested its waters, and realize that it really does work as advertised. And because of that, the Cloud is becoming more and more mainstream…and I don't see any letup in sight."

—William Brooks, Capgemini

What's ahead?

From the vendor perspective, Reiser says increased Cloud adoption has helped provide stability for the WMS market over the last three years to four years. In other words, even companies that backburnered their large capex investments and on-premises software implementations have been willing to give Cloud a try.

In response, vendors have created more Cloud offerings, effectively "stabilizing the revenues of the market," says Reiser. "A percentage of the marketplace has moved to SaaS, so now there aren't as many vendors that rely on the software portion of their revenues," he continues. "This trend has also stabilized the vendors' relationships with their own customers."

With no end in sight to Cloud's domination in the supply chain software arena, expect to see new innovations, functionalities, and capabilities hitting the market in 2021 and beyond. As companies continue to emerge from the pandemic and continue their digitalization journeys, De Muynck says that more of them will be seeking Cloud-based solutions that incorporate artificial intelligence (AI), real-time visibility and advanced analytics capabilities.

"The pandemic-related disruptions that have taken place over the last 16 months have suddenly made these needs much more acute," says De Muynck. "As a result, companies are investing in these different technologies within the logistics space, where the race is on to get these digital capabilities in place." •

Bridget McCrea is a contributing editor to Logistics Management

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EMERGING MARKETS:

Infrastructure in a post-COVID world

There's renewed optimism for global trade with the pandemic waning and borders beginning to open. Because of this upbeat projection, companies are continuing to invest in emerging markets—and those regions are getting ready for increasing volumes.

BY **SCOTT FATA**, PRINCIPAL DIRECTOR, SUPPLY CHAIN AND OPERATIONS, ACCENTURE

As the world begins to recover from the global COVID-19 pandemic, trade barriers, labor shortages, and now shortages in raw materials continue to be risks to the global supply chain. With many countries now opening again, new trade lanes will become exponentially more important in the global economy.

Expansion of emerging markets had occurred prior to the pandemic, thanks to increased access to capital and more robust automation systems. Despite the struggles over the past 18 months from the contraction of the global economy due to COVID-19, the "global logistics market has reached $5.2 trillion in 2020 and is expected to reach $6.9 trillion USD by 2026," according to a recent report by IMARC Group.

2021 Emerging Markets Logistics Index: Top 20

Ranking	Country	Domestic Logistics Opportunities	International Logistics Opportunities	Business Fundamentals	Overall	YoY Change
1	China	8.81	9.72	7.14	8.86	0
2	India	8.19	7.16	5.95	7.33	0
3	Indonesia	6.61	6.11	6.05	6.30	1
4	UAE	5.63	5.59	9.06	6.29	-1
5	Malaysia	5.41	5.87	8.24	6.15	0
6	Saudi Arabia	5.35	5.53	8.04	5.95	0
7	Mexico	5.33	6.70	5.46	5.91	1
8	Vietnam	5.04	6.41	5.44	5.67	3
9	Qatar	5.38	4.84	7.97	5.67	-2
10	Turkey	5.22	6.06	5.50	5.61	0
11	Thailand	5.18	5.69	6.04	5.55	-2
12	Chile	4.86	5.19	7.50	5.51	0
13	Russia	5.13	5.56	5.64	5.40	0
14	Oman	4.96	4.86	6.85	5.29	0
15	Bahrain	4.99	4.69	6.97	5.26	0
16	Brazil	5.34	5.59	4.15	5.21	0
17	Morocco	4.59	5.00	6.70	5.17	1
18	Jordan	4.88	4.70	6.54	5.13	-1
19	Kuwait	5.09	4.50	6.37	5.10	0
20	Egypt	5.21	4.69	5.50	5.05	0

Source: Agility

The impact of the COVID-19 pandemic on annual logistics growth rates within emerging market countries has turned out to be unique across the board. E-commerce increased 13% during 2020, however both the Eurozone and Asian economies contracted by 7% and 2.6% respectively.

With continued focus on infrastructure development, as people get back to work, projections will likely continue to show good growth. In the United States, GDP reduced approximately 4.9%, which pales in comparison to China's rise in GDP of 1.9% during that period. Additionally, contract logistics shrunk approximately 3.7% in 2020.

Companies are looking to expand and are now seeking top-tier talent as the global economy continues to recover from the disruptions of 2020.

There's renewed optimism for global trade, with the pandemic seemingly waning and borders beginning to open up. And because of this up beat projection, companies are continuing to invest in emerging markets.

With shippers pivoting toward more and more emerging markets, supply chains need to be redesigned with economic diversification in mind.

Thailand

Thailand

To meet these demands, countries are revising their plans for their logistics infrastructure for the future. As an example, Thailand has been able to improve access to domestic market growth, considering the current global trade environment. At the end of 2020, the pandemic "affected both imports and exports negatively, and this led imports to fall by 12.4% and exports to contract to 6.01%," according to the Thailand Board of Investment.

Vietnam

The growth in online shopping, which has increased exponentially in 2020, has required countries in emerging markets to improve their logistics infrastructure. For instance, Vietnam has continued to invest and expand their roads, bridges, railways and ports. Because of the added expansion, Vietnam fared quite well during the pandemic lockdowns, with global third-party logistics provider Agility raising the country's rankings on their Emerging Markets Logistics Index to 8th overall.

Mexico

Mexico was affected quite significantly during COVID-19. According to Mexico Business News, "the country has been in recession since 2019, and, in 2020, lapsed into its steepest decline since the 1930s." This led the Mexican economy to contract 8.6% in 2020. Overall, the sentiment for Mexico is that the worst is behind them, and due to technological advancement and the partnership with their North American neighbors through the new United States-Mexico-Canada Agreement (USMCA) agreement, they anticipate growth for 2021 to be near 5.3%.

India

According to recent data from the India Brand Equity Foundation, India is continuing to improve road and highway infrastructure with an increase in spending over the original announced investment of $777.7 billion for infrastructure improvements by 2022. And opportunities still abound for outside investment in India related to road and highway infrastructure development.

Government policies such as the "Housing For All" and "Smart City Mission" have attracted investments from major global investment groups. The Indian government is still prioritizing a strong infrastructure growth plan that includes urban transport development, as well as highway infrastructure improvements. Post pandemic results for India came in with expansion of relocated supply chains of approximately 17.4%, which led a strong rebound and allowed Asia-Pacific countries opportunity to recover by the end of 2021.

Indonesia

Indonesia's infrastructure development in railways, warehousing and transport logistics investment continued throughout 2020, despite corrections in the estimated growth rate. Demand for domestic trucking has continued to favor growth and expansion of international and ocean freight movement in Indonesia.

These trends yielded increases in e-commerce markets, making the major opportunity through the pandemic contraction period. This trend grew e-payments 122.16% in Indonesia in 2020. With infrastructure reforms made over the past five years, Indonesia reduced its logistics costs from 27% in 2015 to 22% in 2020. Therefore, while the market contraction affected the region,

Indonesia's infrastructure development allowed them to move to an e-commerce fulfillment model quickly and the region is poised to rebound from the contraction in 2021.

Malaysia

Malaysia has seen a similar experience to that of Indonesia, as road freight transport has seen an increase in utilization. Despite COVID, Malaysia sees expansion and infrastructure development going forward. Over the last year, these developments in the e-commerce fulfillment marketplace have improved Malaysia's standing on the Agility index to No. 5.

With the diversification of supply markets due to disruptions in supply out of China, Malaysia has been on the top of the list for companies wanting to ensure security of supply throughout the region. In addition to the advent of digital tools and technology adoption of e-commerce and fulfillment platforms, these trends seem likely to continue for the foreseeable future.

Looking ahead

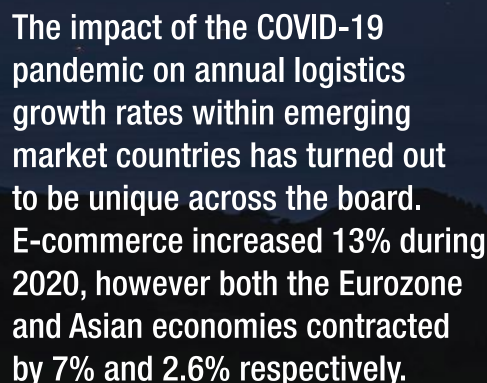
After experiencing the COVID-19 impact in 2020 and early 2021, the logistics industry does not foresee a global economic recovery until 2022 or beyond, despite an expectation that Asia, North America and Europe will rebound this year from the downturn triggered by the pandemic.

Overall, the common theme of the global logistics industry is that COVID-19 has affected growth. With the increase in global vaccinations and decrease in new cases, development continues to move forward as emerging markets continue to put a significant amount of investment into infrastructure of roads, railways, maritime and ports. The Trade Blocs Act and an increased investment in technology has also enabled cross-border commerce, which in turn has created an opportunity to reduce transport and associated logistics costs.

With shippers pivoting toward more and more emerging markets, supply chains need to be redesigned with economic diversification in mind. And according to a recent report from the Oxford Business Group, "this diversification has proven important not only in terms of GDP makeup, but also for trade routes and supply chains."

The question remains: Will the pace of diversification and modernization be effective enough to minimize trade imbalances, reduce economic headwinds and avoid significantly increasing supply chain complexity leading to lengthier and costlier global trade? •

Scott Fata is principal director, supply chain and operations, Accenture



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FIND YOUR ROBOTICS FIT

The market has no lack of robotics solutions. To find the right robotics fit for your operation, best practices include having a solid handle on internal data like product dimensions, order profiles and peak requirements.

BY **ROBERTO MICHEL**, CONTRIBUTING EDITOR

Robotics are a hot item in warehouses right now, with strong double-digit growth projected by most analysts over the next few years. There's a big difference, however, between knowing that robotics has market momentum, and knowing how to properly scope a robotics solution.

The dilemma with scoping robotics for a DC is that plenty of "it depends" are engrained in finding a good fit. It depends on what workflow you want to automate. It depends on order mix and volume, product dimensions, layout and labor considerations. That said, if you back up from these parameters, some best practices emerge around knowing operational priorities, having a handle on data like SKU dimensions, and being clear about the problem.

"The No. 1 step is to look at what the dynamics of your business are, and where you might use robotics to improve your operations," says Dwight Klappich, vice president of supply chain research with Gartner. "From there you examine specifics like what's the nature of the materials that need moving or handling, because moving a pallet with robotics is going to send you in an entirely different direction than doing collaborative picking of small items."

Indeed, an operation can leverage many types of robotics, from fully autonomous lift trucks that can heft a pallet, to relatively small, aisle-based mobile collaborative picking robots that guide humans through efficient picks, and goods-to-person mobile robot systems as well as robotic picking arms and associated software capable of picking "eaches" for e-commerce fulfillment.

While some robotics applications, like horizontal transport of a pallet, are fairly straightforward, others are more complicated and may involve an interplay of robotic systems, cell design issues, and the need for software tools to help users visualize performance and integrate with other systems.

Particulars like dimensions, SKU velocity, or how many lines are typically in customer orders, will influence what the best choice is, notes Klappich, as can whether the DC is new or a brownfield site. "If you're trying to retrofit robotics into a site with existing rack infrastructure that you don't want to change, that can be an important factor," says

One way that AutoStore's system can scale up is by adding more robotic carriers to the top of the storage grid. Adding more workstations or more storage/bins are other flexible elements.

Klappich. "All these questions, as well as the fact that different robotics vendors might solve the same problems in different ways, are complexities many companies struggling with."

Know your data

A good first step is knowing your SKU and order data, which sounds simple enough, but often isn't, given frequent changes to SKUs and significant demand volatility this past year.

"Factors like dimensionality matter with robotics, and vendors are going to ask questions about order mix and the order velocity of your different SKUs, or about warehouse layout, like how wide your aisles are," says John Santagate, vice president of robotics with Körber Supply Chain, which offers warehouse automation and warehouse management software (WMS) and partners with multiple robotics vendors. "The more prepared a customer can be to answer those types of issues, the better, when looking for robotics solutions."

However, adds Santagate, a prospective user operation needs to be ready with questions for robotics vendors, such as:

- What type of DC environments and workflows has your robotics solution been most effective in and why?
- How can your robotics solution scale to handle my volume peaks and my more normal volumes?
- For third-party logistics warehouses, how does the robotics solution accommodate multi-tenancy? (How can a single fleet of robots support picking or other tasks on behalf of multiple clients)?

To really understand the nuances between similar robotics offerings, Santagate advises, it's typically best to talk to multiple vendors and get them to explain how their system offers a

Robotic piece-picking technology has advanced rapidly, but users need to keep a good handle on item master data, and have software to handle to exceptions, to make for an effective solution.

significant advantage for the workflows you want to concentrate on.

"The vendors should be ready to define their points of differentiation, because for different customers, or even for the same customer for different workflows, those points of differentiation will help you identify where the best fit resides," says Santagate.

Other best practices include talking to a trusted third-party expert for guidance, says Santagate, and also keep in mind you may need more than one type of robotics to accommodate different types of inventory and workflows, just like a DC might have more than one type of fixed automation. "I think the future involves distinguishing, within the four walls of your DC, what is the best fit type of automation for different segments of inventory," says Santagate. "Don't try to force fit one solution into every segment or scenario."

Scoping out an appropriate robotics solution requires a solid understanding of order profiles and expected throughput levels, dimensions, inventory days on hand, as well as considering labor availability and productivity expectations, says Andrew Benzinger, business development manager at AutoStore, a robotic order fulfillment solution provider. Other strategic drivers like DC network plans and the need for more space can also influence the robotics approach, as can a major shift to more direct-to-consumer e-commerce fulfillment.

While the drivers for automation might be a combination of factors, once a company identifies what it wants to accomplish, it's a matter of assessing data including order profile, throughput requirements, and available inventory on hand, to properly configure a solution.

"When we work with a new customer, we first understand why they're reaching out in the first place to identify what they are really seeking to address, that's step one," Benzinger says. "From there, you have to get a feel for the data—it's best to fully understand the size of each product, the days on hand for each item, and the throughput volumes. It's very important to understand what the current state is, what the operational key performance indicators are, and how effective those processes are, to understand the value the automation will create."

With AutoStore's cube storage automation, dense storage of bins with robots on top of the grid storage structure do the retrieval and presentation of needed bins to workstations or "ports" that can be operated by team members or robotic picking arms. Benzinger explains robotic piece picking software has advanced rapidly over the last 12 months, with about 12 DC sites in the United States that are

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pairing up AutoStore deployments with various robotic picking arms.

The size of the cube and number of bins, the number of robots on top, and the number of ports on the side, are all configurable elements, and tend to vary by site depending on factors like dimensions, order volumes, and how many days on hand of inventory are in the DC for goods that go into the automation. "We lean heavily on experience and statistics to devise an appropriately sized system," Benzinger says.

Another best practice is to size a robotics solution that can scale up to handle peak volumes, but not be underutilized the remainder of the year. The robotics vendor should be able to help establish a method for scaling up with tactics such as adding workstations or robots, Benzinger explains. "An understanding of the peak to average ratio for an operation is really helpful to determining how big the system should be," he says.

Start simple, but start

While prospective robotics users should be ready with answers on factors like product dimensions, layout and order profiles, robotics is flexible enough that with the right approach, its benefits can be tapped into quickly.

Rick Faulk, CEO of Locus Robotics, says his main piece of advice for managers contemplating use of mobile robotics is to start a project, since the technology is quick to deploy and can be acquired through robotics-as-a-service (RaaS), with very limited set up costs. "Just get started, and don't be fearful of disruption," says Faulk.

With Locus Robotics' collaborative multi-bot picking solution, says Faulk, the system uses existing storage and shelf infrastructure, leveraging the robots to reduce picker travel and increase the picking productivity by a factor of two or more. Thus, collaborative multi-bot picking requires little or no change to storage, though it does typically call for some consideration of the impact of greater productivity on downstream processes, such as pack-out stations. Such assessments can be done rapidly, he adds, without getting bogged down with months of study.

"Some folks may think that with deployment of robotic solutions, you've got to reinvent the wheel and start all over, and that it's going to cost you millions of dollars, but that's just not the case," says Faulk. "Our advice is to look at what makes sense for your operation, keep it simple, and start automating without making a lot of infrastructure changes. Then over time, you can adjust some processes and make the solution better."

To support fine-tuning of its solution, Locus conducts regular health checks on factors like picker productivity, slotting, throughput and other factors, leveraging a "heat map" view of activities the robotics software generates. Faulk explains that with these types of heat maps and periodic reviews, and the rapid implementation of mobile robotics, an operation can get started and

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"We think of them as initial deployments rather than pilots. We'll do a full deployment, then look at the data two weeks in, 30 days in, 60 days in, and on a quarterly basis thereafter, to optimize the system," Faulk said. "The approach is more about continuous optimization, and not so much about running a pilot.

No robot is an island

For piece-picking robotics, having a handle on product dimensions and weights, as well as throughput and SKU velocity requirements, is a crucial aspect of properly scoping a solution, and so is the design of the picking cell, says Erik Nieves, CEO and co-founder of Plus One Robotics, which offers vision software for piece-picking robotics.

"If you are a new user, you have to ask practical questions, like: 'where am I going to put this robot?'" says Nieves. "'Is it going to fit?' A bunch of brownfield versus greenfield type questions need to be asked."

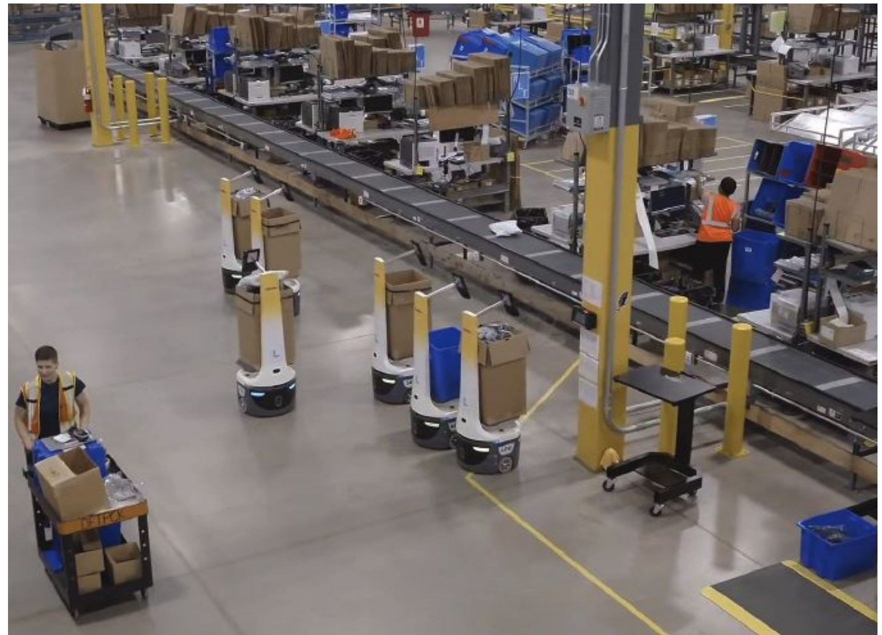
For success with robotic picking, the throughput goals heavily influence the type of robotic arm to use, since the lighter duty collaborative robots can't pick as fast as a bigger industrial robotic arm, says Nieves. The size and movement of a robotic arm and its weight will influence cell design, he adds, so time spent on figuring out what arm is truly needed, and close attention to cell design, help ensure that pick-and-place robotics will have a smooth implementation. "Any automation, even robotics, is still automation, so you still have to go through some degree of an engineering exercise," says Nieves.

The ability of a robotics solution to manage exceptions is an important area to investigate with piece picking, says Nieves. It may be, for instance, that the same SKU now has different packaging, which could cause problems picking a SKU that was easily picked before. The robotic software, Nieves adds, should be able to spot and resolve exceptions quickly.

In Plus One Robotics' case, the vision technology allows for remote monitoring and support of the cells, so that if a robotic arm gets perplexed by what it sees, the system notifies a "crew chief" support person from Plus One, who can remotely "take a look" and resolve issues. If the problem is physical in nature (like a carton ruptured or contents spilled), remote support can alert on-site maintenance personnel.

A robotic piece-picking solution should have some quality control functions built in to ensure proper placement to avoid problems downstream. Some of Plus One's applications, for example, use a second camera to ensure correct placement.

"We can use a second camera for inspection, before we release that order downstream," says Nieves. "We function as our own closed-loop quality control in these applications."



Robotics-as-a-service makes it possible to deploy autonomous mobile robots with minimal upfront costs and pay for a solution under a subscription model, taking away large capital costs associated with automation projects.

Software steps up

Robotics vendors not only have software layers to help with fleet operations and path optimization, they also increasingly have dashboards and analytics that can be useful for managers. That makes asking about software functionality as important as hardware issues like payload capacity.

Vince Martinelli, head of product and marketing with RightHand Robotics, a robotic piece-picking solutions provider, says robotics technology has matured to a point where vendors and users are putting more emphasis on the operational considerations of running robotics at scale successfully. As a result, vendors are putting more emphasis on tools that help provide feedback on issues like any SKUs that are taking longer to pick than usual.

Martinelli explains a robotics cell may do just fine at picking a variety of SKUs into a tote, but the robotics software also needs to know how to properly place or arrange items into that tote to conform to downstream constraints or system considerations. For example, an operation

may want to have totes filled to a certain height to avoid items spilling out of the tote when conveyed on an incline.

Doing that requires software intelligence to govern how the robot should place multiple items in a tote, or other situations like how to best place items into a moving tray, says Martinelli, so the sophistication of the "place" functions of a robotic picking solution can be just as crucial as the picking aspect.

"You don't want the items to start to pile up randomly in a tote and create a tower of items that is prone to problems when the tote starts moving," Martinelli says.

RightHand also offers software tools and reports to let an operation know if any SKU being picked is taking longer than normal or experiencing failed picks, so operations managers can investigate whether something has changed with the SKU, its packaging, or the way it's being presented. It could be, for example, that upstream from the robotics cell, a tote full of SKUs is now getting packed more tightly than before, which can pose problems for a piece-picking robot, whereas a human picker could use two hands to get an item out of a tightly packed tote.

At 6 River Systems (6RS), which offers collaborative mobile robots that work alongside human pickers, the software has grown to include an overarching set of analytics and visibility functions. "It's an intuitive Cloud-based control center that can be used by supervisors in the warehouse, but also by executive staff in supply chain operations," says Fergal Glynn, vice president of marketing for 6RS.

To make robotics work well over the life of the system, visibility and management tools have become increasingly important, Glynn says, especially if it can do things like adjust the priorities of the robotic zone mid-shift if the analytics indicate that orders

aren't going be ready for a carrier pickup, or miss some other deadline. "It is real-time visibility, because the data is being generated by the robots and the pick activity happening on the warehouse floor," says Glynn.

Operational effectiveness

Mitch Hayes, Swisslog's vice president for retail and e-commerce, agrees that having solid data on issues like product dimensions is essential to scoping the appropriate robotics, but it's also wise to assess the vendor's industry track record and software functionality to address exceptions such as bins that come up short on inventory. Here, an operationally effective robotics solution should be able to communicate with a warehouse management system (WMS) to trigger actions like cycle counts and any needed inventory corrections.

As a result, says Hayes, companies looking at robotics should ask questions about the exception handling between the robotics and WMS, or between robotics and the software that manages warehouse execution. This calls for industry expertise from the vendor and software that addresses functions like opportunistic cycle counts.

"Robotics is more than what a robot arm moving at X speed, or able to handle this size or weight item—there are also operational considerations to address," Hayes says.

It also may be that a DC operation could benefit from more than one type of robotics, which increases the need for a solution provider who can work through the operational details of what the inputs and outputs should be between systems. In effect, says Hayes, "users need more than robotics technology—they need a vendor who can act as a chief engineer or a guru who can understand the metrics and data important to each system, and what the inputs and outputs should be for a robotic solution."

If all of this sounds like a lot to chew on, it's because it can be, concedes Klappich. To cope with the complexities of knowing what type of robotics fit well different workflows or sites, as well as how robotics needs to interact with the rest of the systems in a warehouse, Klappich says the approach some companies are beginning to take is to create a robotics center of excellence (COE). Such a COE would be a group of people within a company who've worked with robotics and also understand operational issues, and can guide managers. Some companies might even create a "chief robotics officer" to oversee the COE.

"The talent for these centers of excellence for robotics would be like a three-legged stool, with expertise in IT, in engineering, and in business and operations," says Klappich. "Some companies are already moving in this direction. They recognize the need for an organization that can work with the business to align them with robotics that would match up with their specific needs, and then can help them introduce a solution and support it." •

—Roberto Michel is a contributing editor for Logistics Management

Air Cargo 2021: PANDEMIC leaves residual mark on sector

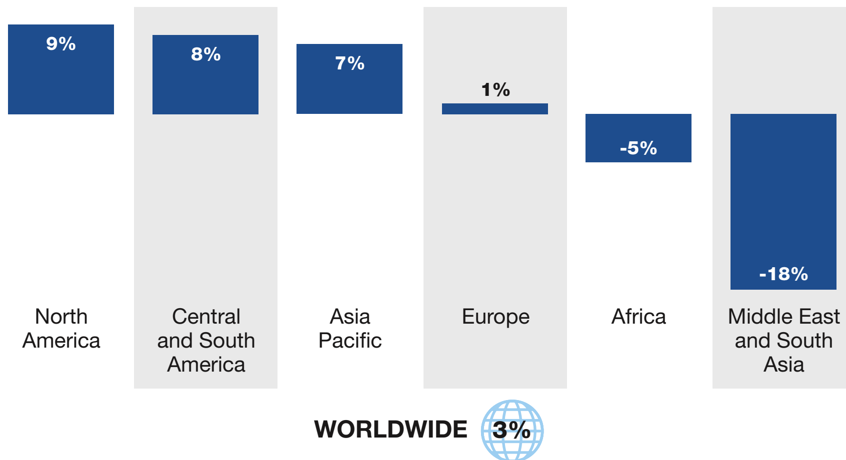
High demand for cargo space created capacity constraints and consequential high rates over the past year on a majority of lanes. And while it appears the height of the pandemic crisis is in the rear view, shippers most likely won't see relief from elevated rates until demand and available capacity level out.

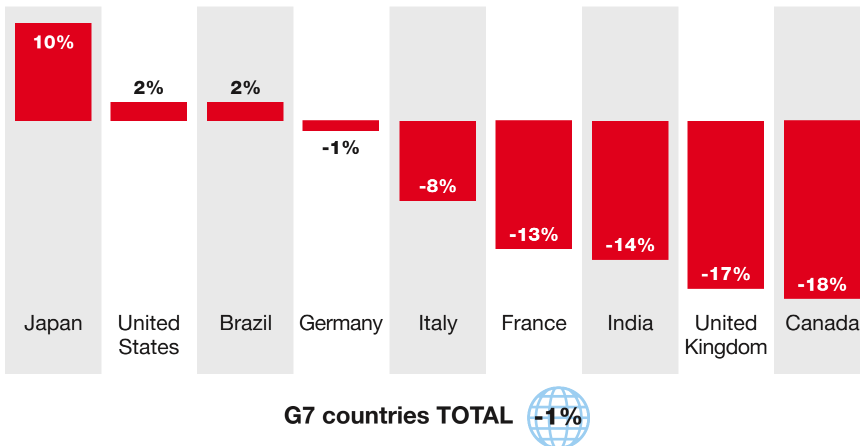
BY **KAREN E. THUERMER**, CONTRIBUTING EDITOR

American Airlines aircraft at DFW prepares to receive cargo.
Photo courtesy of AACargo

The pandemic may have nearly decimated passenger airlines, but air cargo carriers have been reeling in the business. Considering all the PPE supplies, as well as e-commerce and products resulting from increasing global production taking to the skies, demand for air cargo services has reached record highs.

International Air Transport Association (IATA) data shows that in March, air cargo tonne kilometers (CTKs) flown rose 4.4% above the pre-crisis March 2019 level. Air cargo data services firm CLIVE reports that for April, air cargo volumes increased 78% over April 2020 and 1% over April 2019 (pre-COVID) figures. CLIVE also found that continued market uncertainties and extended public holidays contributed to a -4% drop in global air cargo demand in May 2021 versus the pre-pandemic level in 2019.





Air cargo carriers have also been racking up impressive revenues. For 2020, IATA estimates revenues hit at a near-record $117.7 billion, up from $102.4 billion in 2019. By comparison, passenger service lost more than $84 billion.

Lufthansa Cargo, for example, achieved the best result in its 26-year history, with revenues rising by 11% to nearly $3.37 billion with adjusted earnings before interest and taxes of nearly $941 million. By sharp comparison, the previous year it was nearly $1.22 million. For 2020, the passenger side saw revenues of $15.52 billion, a 61.95% decline year-over-year.

But more importantly, Lufthansa saw a 45% fall in overall capacity, driven largely by the precipitous fall in passenger demand which took out critical belly capacity for cargo (-24%), pushing yields up by 30% in 2020. Pre-pandemic, passenger flights carried about 60% of global airfreight. Case in point, Lufthansa Cargo's average load factor may have improved by 7.8 percentage points to 69.1%, but its cargo capacity shrank by 36%.

Bad news for shippers

Without pulling any punches, all of these facts spell bad news for shippers. "When passenger flights were suddenly taken away, cargo planes and charters seemed to play the role of a band-aid or temporary fix for shippers in a pinch," says Matt Castle, vice president of global airfreight at C.H. Robinson.

High demand for cargo space created capacity constraints and consequential high rates. And while it appears the height of the pandemic crisis is over, Castle warns that shippers most likely won't see relief from elevated rates until demand and available capacity level out.

"I've been in the business for more than two decades, and I can't remember when rates have stayed elevated and capacity remained tight for so long," adds Castel.

CLIVE data reveals that load factors continue to strain international air cargo, particularly since the traditional surge in summer capacity has so far failed to materialize. Analysts at the firm report that available May 2021 capacity was down -21% compared to May 2019, indicating the gap in airline capacity is widening compared to its -18% figure in April and -14% for March.

Based on the volume and weight perspectives of cargo flown and capacity

An Emirates passenger freighter is loaded with cargo. *Photo courtesy of Emirates SkyCargo.*

available, CLIVE determined that the industry's "dynamic loadfactor" for April 2021 was 71%—or 10% points higher than in 2019 and 4% points above a year ago.

"A dynamic loadfactor of 71% represents a tremendous strain on the air cargo system," says Niall van de Wouw, CLIVE's managing director. He reports that May 2021 data versus May 2020 show +41% growth in chargeable weight, a +42% rise in available capacity, and +1% point increase in dynamic loadfactor.

"Capacity is growing, but not quite at the rate we were expecting initially as passenger travel has been a bit slower to return," says Maulin Vakil, managing director of customer care and performance at American Airlines (AA) Cargo. "That said, cargo performance will likely remain strong for a while as demand remains steady."

Consequently, AACargo has been expanding its network substantially. "In June, we expect to operate more than 5,700 wide-body flights, which is great for cargo capacity," says Vakil. "The majority of these flights are passenger flights, which is positive to see."

Vakil adds that AACargo will continue to operate cargo-only flights based on customer demand and in certain markets where passenger service is not yet scheduled.

Capacity creation

To create capacity, some carriers continue to use the expensive alternative of dedicated freighters as well as retrofitting upper belly space on passenger aircraft to haul cargo, creating new

An AACargo employee inspects cargo for an American Airlines flight. (right) A fleet team member secures the cargo for an American Airlines flight. (below) *Photos courtesy of AACargo.*

entities called "preighters."

Emirates SkyCargo is one example. It was among one of the first carriers in the world to make up for the shortfall by introducing cargo-only flights on its passenger aircraft. This included loading cargo on the seats of passenger aircraft and in the overhead bins.

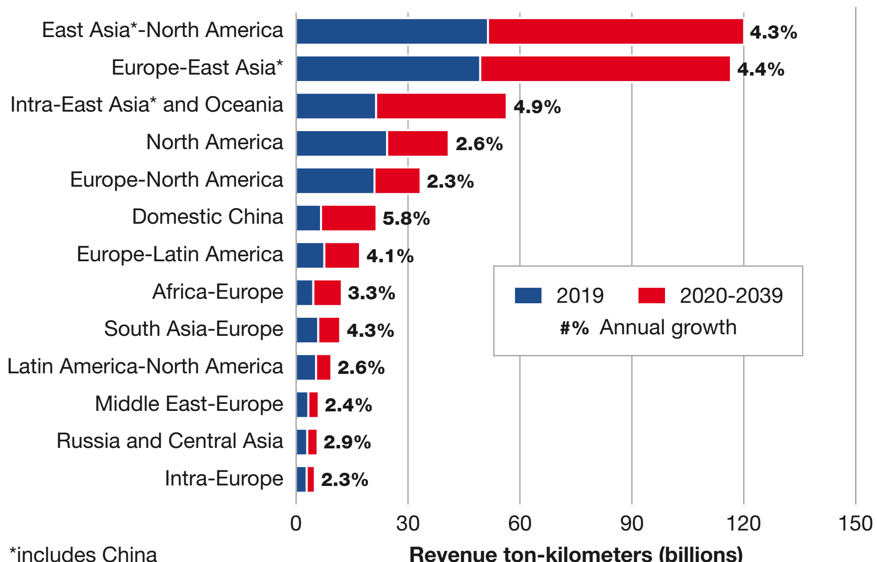
"We used the wide-body capacity of our B777-300ER passenger aircraft to provide much needed capacity for the movement of essential goods," says Hiran Perera, senior vice president of cargo planning and freighters at Emirates SkyCargo. Consequently, within 100 days from the end of March 2020, when Emirates had suspended all passenger operations, Emirates SkyCargo had re-established a network of more than 100 destinations across six continents.

"In June 2020, we also removed seats in economy class from 10 B777-300ER aircraft to convert them into what we call mini-freighters," says Perera. "To keep up with demand, we added six more mini-freighters into the cargo fleet. With this, we were able to rapidly scale up our cargo network." Within a year, the carrier had operated more than 27,800 cargo-only flights, which he says is more than any other carrier globally.

However, industry observers say the reconfigured passenger flights have led to higher cargo rates. "Airlines operating 'preighter' services need these rates to operate cargo-only operations because the margins on these services are very thin," says van de Wouw.

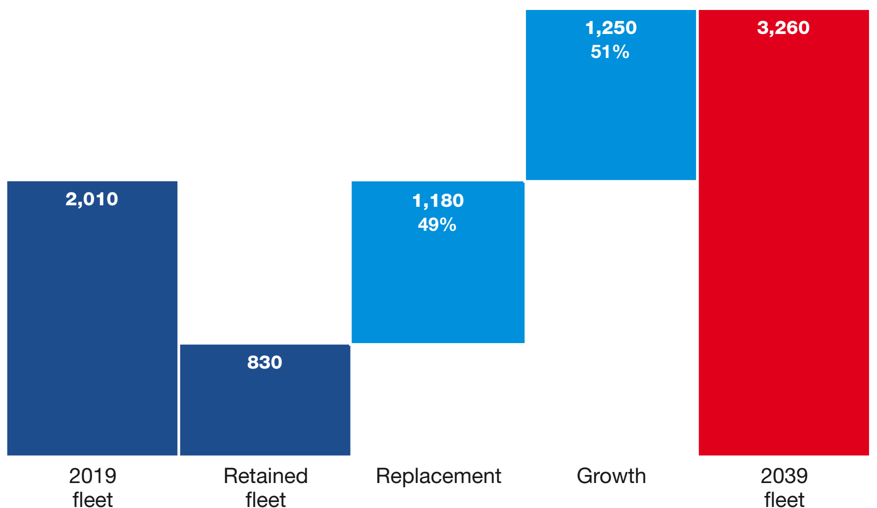
With vaccination rates in most developed countries expected to exceed 50% by the third quarter and passenger numbers expected to recover to 52% of pre-pandemic levels, according to the IATA, more passenger aircraft should be flying and adding cargo capacity

East Asia markets will continue to lead industry growth



Source: Boeing

2,430 freighters required for growth and replacement



Source: Boeing

through the end of the year. Meanwhile, however, capacity remains in short supply on many lanes.

"The majority of passenger demand is domestic, so cargo planes and charters are still driving international routes," emphasizes Castle. "Until there is greater demand for international passenger travel, it's likely the passenger capacity that does comes back will remain in traditional hubs such as Dallas for American, Chicago for United, and Atlanta for Delta."

Jason Berry, vice president of cargo

at Air Canada, says the carriers is doing its best to place capacity where needed by utilizing its wide-body fleet of B777s, B787s and A330s. In addition to the passenger freighters Air Canada has deployed, the carrier operates upper deck/cabin load 777s and A330s. "These aircraft have played a key role in preserving the global supply chain throughout the pandemic and remain an integral part of our ability to keep critical goods moving," he says.

With capacity remaining very volatile, trade lanes have their own challenges. Those with the most robust cargo growth also have the highest pricing. For example, the Baltic Air Freight Indices (BAI) increased by almost 17% in April over March largely driven by China (Hong Kong and Shanghai Pudong) with growth around 30%. Rates on the China-U.S. route increased 8% in April 2021 over April 2020, and 153% over April 2019.

"The BAI increased by 3% in May over April, but this is a marked slowdown on the 17% growth seen in April over March," notes Gareth Sinclair of TAC Index. "Pricing strength continues to be seen out of China and Hong Kong to the U.S. and Europe and from Europe to the U.S., with all three trade lanes seeing price increases in May over April."

An Emirates B777-ER aircraft lands at DXB. *Photo courtesy of Emirates SkyCargo.*

"On the trans-Pacific, capacity has actually maintained or slightly increased, but at high rates, which is what is attracting the capacity," adds C.H. Robinson's Castle.

Berry concurs. "And rising fuel prices and varying levels of COVID-19 mitigation strategies have made it increasingly difficult to balance demand with capacity," he says.

Meanwhile, Vakil reports that AACargo is operating its largest wide-body network since the pandemic's start. "This includes growth in both domestic and international networks," he says. "Our international lanes do very well, especially our trans-Atlantic lanes. In fact, by operating cargo only flights, we've effectively facilitated the return of full service, such as including passengers to markets like Paris–Dallas, Rome–Dallas, Milan–Philadelphia, Madrid–Philadelphia and Barcelona–New York."

Vakil notes how airfreight options across several regions around the world remain very constrained. "This is where

The Boeing family of freighters. *Photo courtesy of Boeing.*

Cargo is loaded on an Air Canada aircraft. *Photo courtesy of Air Canada.*

partnerships, trucking lanes and close communication with customers comes into play to meet as many needs as possible," he says.

Going forward

The lessons learned from the pandemic are many, but a big one is how to offer a quick response.

"Early in the pandemic, critical pharmaceuticals, PPE and medical equipment didn't have the luxury of several months it would take on other modes," Vakil says. "In my view, shippers, forwarders and airlines are now increasingly planning proactively to avoid disruption of critical transport solutions."

Carriers are also increasing the adoption of digitalization to improve airfreight forwarding tracking and supply chain visibility through artificial intelligence, application programming interface (API), analytics, Cloud computing, blockchain and Big Data.

In April, for example, Cathay Pacific Cargo performed its third IATA ONE Record initiative pilot, this one at its home hub in Hong Kong. ONE Record is a standard for data sharing and creates a single record view of the shipment. The standard defines a common data model for the data that is shared via standardized and secured web API. The program builds on paperless operations of the electronic air waybill.

Meanwhile, competition is increasing. Amazon Air continues to add aircraft and gateways—the most recent being Kansas City International Airport. Ocean carriers are also jumping into the business. CMA CGM recently added an air cargo division and extended its fledgling network beyond the U.S. with destinations Dubai, Beirut, and Istanbul.

In the meantime, carriers continue to add or upgrade their fleets. Boeing, which supplies nearly 90% of the world's freighter fleet, is seeing strong demand for dedicated freighters including new production and converted freighters. "This intensified during the pandemic," says Boeing spokesperson Brianna Jackson.

Last year, Boeing delivered 46 new freighters and received orders for 23 freighters. It's also seeing strong demand for converted freighters, the 737-800BCF and 767-300BCF.

Boeing forecasts the global freighter fleet—production and conversions—to grow more than 60% to 3,260 over the next two decades, with 2,430 freighters deliveries. Of those deliveries, roughly half will replace retiring airplanes and half will expand the fleet to meet projected traffic growth. •

Karen Thuermer is a contributing editor to Logistics Management

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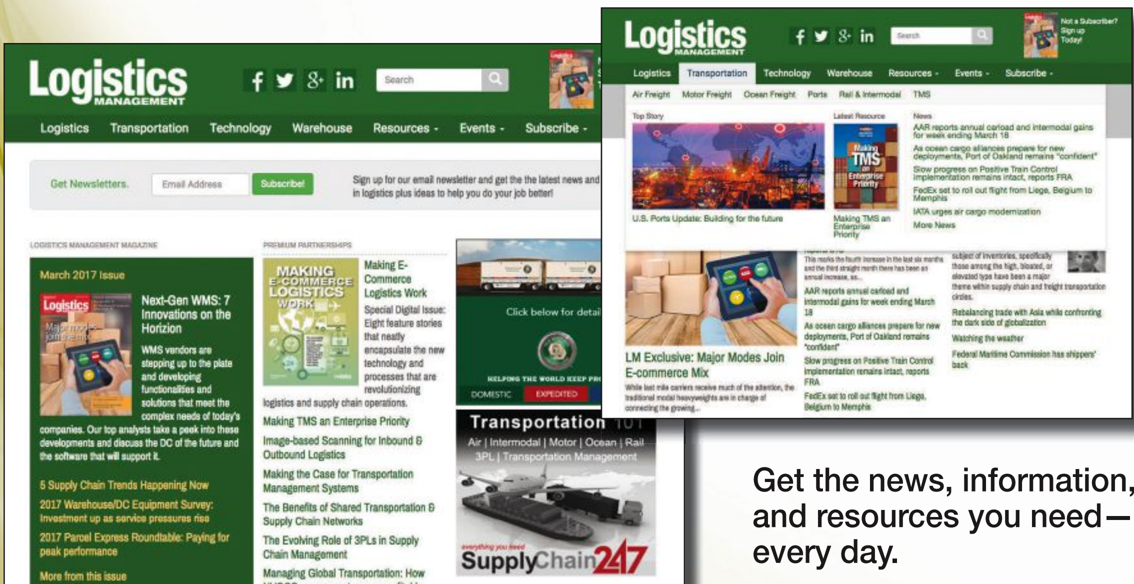

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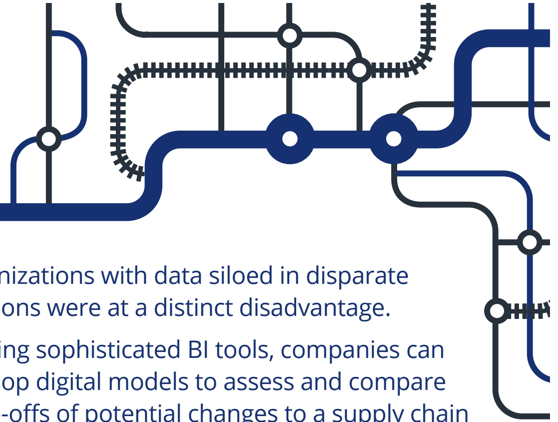

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What's Next On the Logistics Horizon

As the world shows signs of turning the corner from the global pandemic, we are only beginning to realize the long-term ramifications of the past year. There are several key areas where shippers can focus their time and resources to limit disruption.

Diversifying Supply Chains to Meet Capacity Challenges

While there is no overnight fix for the myriad supply chain and transportation issues that have surfaced in 2021, transportation providers and other entities are taking steps to help minimize the negative impacts on their own organizations and for their customers.

As carriers work to attract more drivers, other groups are working to address other supply chain issues like seaport congestion and a lack of ocean shipping containers for imports and exports. With ongoing congestion at larger ports, inbound freight delays are the norm and costs are spiraling. In turn, intermodal yards have never been more congested and over-the-road (OTR) trucking capacity is constrained. It's important to add diversity to your supply chain and working with a logistics partner that delivers the flexibility to ship import cargo directly to your customers, or cross dock, consolidate, or de-consolidate it into a wide range of services and locations.

Data Must Be Visible, Actionable and Accessible

When global supply chains were disrupted, the shippers best positioned to weather the storm were those who had actionable, visible data. Organizations with data siloed in disparate locations were at a distinct disadvantage.

Utilizing sophisticated BI tools, companies can develop digital models to assess and compare trade-offs of potential changes to a supply chain network. This process empowers an organization going through a network optimization to quickly separate opportunities for measurable improvement from activities that result in no real gains — or even losses. The visualization tools make it easy to select the scenarios, view possible strategies and calculate outcomes.

Committed to a Cleaner Planet

Sustainability in the transportation industry is not a new topic. Shippers, 3PLS, carriers and others in the market have been talking about reduced carbon footprints, electric & alternative fuel vehicles and other sustainability topics for decades.

At Odyssey, we've always believed that the right strategies can increase economic value for shippers and carriers, while simultaneously allowing everyone involved in the supply chain to become better stewards of our planet. We're helping customers build more efficient supply chains, control costs and build reputations as responsible shippers who are willing to track and report their sustainability progress.

Odyssey™
Innovating Logistics

Bob Shellman
President and Chief Executive Officer
Odyssey Logistics & Technology

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EVERY SHIPMENT IS A PROMISE.

Through nearly nine decades of operation, delivering on our promises has been the cornerstone to enduring downturns and thriving in upswings. Our customers know Old Dominion Freight Line as a shipping partner with the relentless desire to always deliver.

We're not just shipping freight, we're shipping your promises.

Supply chains face unprecedented stresses globally, so having a carrier you trust is more important than ever. You work hard developing product. Getting it to market is a critical but often undervalued part of the process. When a shipment arrives to your customer, you want it to be on time and undamaged.

After all, nothing is more profitable than certainty.

At Old Dominion, we focus on delivering dependability on standard LTL to the most critical shipments and projects, adding value to our customers' supply chains.

BEING A TRUSTED ADVISOR. We build strong relationships by conducting day-to-day business with the ultimate goal of becoming an extension of our customers' businesses. Being agile, supportive, communicative, and creative are key ways to build partnerships and solve supply chain issues.

KEEPING OUR BRAND PROMISE. Logistics managers understand that dependability removes uncertainty and cost from their supply chains. That's why we work relentlessly at maintaining our value proposition: on-time service, claim-free, for a fair price.

BALANCING SHORT-TERM DECISIONS WITH LONG-TERM GOALS. No matter the business environment, ODFL never compromises on our service. There is no such thing as "good and cheap," so we invest in quality throughout our operations; quality people, equipment, customer service, and facilities.

REMEMBERING OUR 'WHY.' People do business with you not just because of what you do but also why and how you do it. At OD, we keep our 'why' in focus every day; being the premier transportation company requires us to always go above and beyond for customers.

At ODFL, staying true to our brand's promise strengthens customer relationships, builds a strong company culture, and steers our operations in a positive direction for the long run.

Helping The World
Keep Promises®

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OD DOMESTIC | OD EXPEDITED | OD PEOPLE | OD GLOBAL | OD TECHNOLOGY

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LOGISTICS EXCELLENCE. DELIVERED.

Gaston Curk, CEO

To learn more about how OSM can help you ship packages faster and more reliably than ever, contact us at **osmworldwide.com** for more information.

DEAR LOGISTICS MANAGEMENT READERS:

Coming off of a year in which many aspects of everyday life have fundamentally changed, market conditions in the shipping industry have gone into overdrive, with eCommerce activity climbing to unprecedented levels. This resulted in a much longer peak season, elevated rates, tighter capacity and more challenging service conditions. While there are no signs of slowing down, OSM is fully prepared to help customers navigate the evolving challenges of our industry.

Because of ongoing capacity issues, we'll likely see an increase in surcharges to offset the costs associated with the additional volume. The larger carriers are starting to pick and choose what types of packages they're bringing into their network, and most of them will be focused on heavier shipments. For small parcels shippers like OSM, this presents a huge opportunity to accommodate this space in the market.

For companies to mitigate risk and manage peak surcharges, it's becoming increasingly important for online sellers to adopt a multi-carrier strategy. It's unlikely that a single carrier will be able to accommodate all of a business's shipping needs, so having multiple partners to choose from can help them negotiate lower rates, optimize delivery routes, and avoid service disruptions.

We can also expect a significant increase in resources from USPS — with the post office reinvesting $40 billion into their middle and final-mile strategy according to their 10-year plan. They're opening up new facilities and investing in electric vehicles to replace an aging fleet. And, with the peak season quickly approaching, we expect the USPS to deploy 40 new parcel sorting machines to mitigate the volume processing challenges experienced in 2020.

With the OSM Premium Network® and our partnership with the USPS, we deliver 98% of packages nationwide in 1-5 business days. We always look for the fastest and most affordable way to ship packages, and our OSMART technology suite lets customers track, trace and manage any shipment 24/7.

This is an exciting time for eCommerce companies and the shipping industry in general. No matter what 2021 brings, OSM is fully committed to providing our customers with the most efficient and cost-effective delivery solutions to meet the needs of the industry.

PENSKE LOGISTICS KEEPS YOUR BUSINESS MOVING FORWARD

Penske Logistics engineers supply chain solutions that deliver powerful business results for market-leading companies. With offices in North America, South America, Europe and Asia, Penske can help your business move forward by boosting efficiency and driving down costs in your supply chain.

Industry-specific expertise
Our experts work with the world's leading companies across many industries including: automotive, food and beverage, manufacturing and retail. We offer specialized solutions tailored to your operations, production and market demands. Penske Logistics can help you:

- Ensure efficiency within your supply chain using smart technology
- Improve the product development cycle for a successful launch
- Drive dynamic supply chain solutions
- Achieve record savings

Our technical capabilities, depth of experience and practical creativity have been recognized by both our customers and the industries we serve, and our people deliver the results you need to succeed every day.

Innovative thinking
As a recognized industry thought leader, our award-winning teams bring fresh perspectives to benefit you and your business. By tapping into our expertise you can start driving innovation that produces real business results.

To keep ourselves and our customers on the cutting edge of industry trends and information, we partner with leading organizations such as the Council of Supply Chain Management Professionals and sponsor well-respected longitudinal studies from top supply chain researchers at Penn State University.

Global capabilities
Penske Logistics has extensive experience successfully establishing operations in new territories and a proven ability to transfer knowledge across geographies and cultures. We're committed to serving our customers anywhere, meeting the needs of suppliers, manufacturers and retailers around the globe.

Let us show you how our winning strategies can work for you. Call 844-868-0818 or visit us online at penskelogistics.com today.

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VIEW FROM THE TOP

WWW.PITTOHIO.COM

Our commitment to People, Planet and Purpose encouraged us to rethink what we can do to revolutionize sustainability in business and in the trucking industry. These three principles guided us through the Pandemic and allowed us to keep our longer-term focus intact, positioning us well for the post-COVID business environment.

Our sustainability ambitions go beyond environmental tactics; sustainability contributes to our greater purpose. We are dedicated to the safe and sustainable motor transport of products, doing right by our employees and our customers, and making a positive impact on the environment and community.

It is with these stakeholders in mind that we take sustainability into consideration with every step forward we take. Some of our practices just make good business sense, but we also make appropriate investments to achieve environmental and social responsibility.

We recognize the nature of our business, but also embrace opportunities for research and application of renewable energy. The renewable energy powered micro-grids, found at two of our buildings, uses our patented, groundbreaking process that takes wind and solar energy into a battery system and the subsequent distribution of that power to points of use.

Along with sustainability research, we also promote the construction and maintenance of buildings that are environmentally responsible, efficient, and healthy places to work. New construction projects are designed to meet certain sustainability standards in water, energy, and material usage efficiency to reach LEED (Leadership in Energy and Environmental Design) Certification levels. To date, PITT OHIO has 5 buildings that have achieved LEED status. Along with these certifications, we're reducing our carbon footprint with top of the line equipment, which also keeps our employees healthy, safe and comfortable.

Like many others in our industry, the biggest challenge we are facing is how the Pandemic accelerated the driver shortage, and how this gap contributes to capacity constraints, rising prices, and service levels.

We're using sustainability to differentiate ourselves and the same is true in recruitment. To meet the driver shortage challenge, we find it important to provide education about our industry and company. The Pandemic brought to light the important role the trucking industry plays in keeping the American economy moving. People do not always think of a trucking company as a practical or lucrative career, but we, like many, recognize that Professional Truck Drivers are essential to our economy and we need to do our part to change that perception.

Striking the right balance between capacity, service and rates continues to be a top concern and securing it with a reliable carrier is the priority in the market. Shippers need the space, but are not willing to sacrifice the delivery experience to their customers. Rightfully so.

To protect the quality of our on-time service, which has been a hallmark of our company for over 42 years, we are prioritizing our resources with the customers who are willing to invest with us long term. We're also having honest and more frequent conversations around what customers can do to help.

Our shippers tell us that building a foundational relationship with carriers is critical to their business, which goes beyond the day to day challenges of getting shipments from point A to point B. The market needs carriers who are helping to solve problems. Carriers and shippers who are being transparent with their organizational goals, where they are struggling, and where they need to grow, are positioned for a win-win in today's market.

PITT OHIO will continue to put our employees first and create healthy, encouraging places to work, so that we are able to hire and retain the best of the best in the industry. As a result, our customers can expect reliable service, enhanced transit time capabilities, and growth for their business.

Employees first is more than our mission, it's a commitment to our employees' families, their health, and their happiness. Happy employees will take the best care of our customers so we remain committed to work life balance, recognizing and celebrating diverse voices and ideas, and educating our people about healthy choices and financial planning. Our employees are our best advocates and are responsible for the truly unique culture we have at PITT OHIO.

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Omnichannel Supply Chain Solutions

At Saddle Creek, we specialize in helping retailers, manufacturers and ecommerce companies get products where they need to be quickly, cost-effectively and seamlessly.

MARK CABRERA, CEO
Saddle Creek Logistics Services

SOPHISTICATED SOLUTIONS

As an asset-based 3PL, we focus on designing and delivering omnichannel logistics solutions for our clients. Our approach is solution based and data driven, using the most advanced operational methods and sophisticated technologies. We offer robust systems (OMS, WMS and TMS) as well as state-of-the-art fulfillment automation and robotics.

FULL RANGE OF SERVICES

Clients utilize our omnichannel fulfillment, warehousing and transportation services as stand-alone offerings or as part of an integrated logistics solution. They can also take advantage of a host of value-added services such as packaging, kitting, display building, embroidery and engraving.

Through our custom fulfillment solutions, they're able to accommodate customer requirements in a variety of channels - including ecommerce, direct selling and subscription programs.

EXTENSIVE RESOURCES

Clients also have access to our nationwide network of strategic locations – 50 shared-space and dedicated facilities across the country – totaling 26.8 million square feet of warehouse space. They enjoy cost-effective, service-driven transportation capabilities including a large private fleet, a full set of brokerage services and extensive relationships with all major parcel providers.

SERVICE EXCELLENCE

Saddle Creek is one of the largest family-owned logistics providers in the country. We have been in business for over 50 years and are recognized in our industry as an extremely high-level service provider. Our company culture is built on integrity, strong performance expectations, a high level of accountability and the commitment to doing what is right for our clients and their customers each and every day.

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Our company was founded in 1984, sold, and then reborn 10 years ago as Syfan Logistics.

TRUSTED, RELIABLE SHIPPING SERVICES FOR OVER FOUR DECADES

The Syfan name has long been respected for trusted, reliable over-the-road shipping. With over four decades of experience under our belt, Syfan Logistics and asset-based Syfan Transport provide a diverse array of shipping services such as Freight Management, Full Truckload, LTL, Expedited, Dedicated, Power Only, Yard Management Support, and Project Management. We are a growing company with professional team members and services covering the entire continental United States, Mexico and Canada.

Our logistics division pulls from an expansive network of carrier partners to further bolster our capacity for Full Truckload and LTL shipments, while Syfan Transport provides customers with access to our private fleet of over-the-road trucks. Additionally, we own and provide access to several hundred trailers – dry vans, flatbeds, and temperature controlled refrigerated trailers.

With our roots in Georgia's poultry industry, Syfan is particularly well-versed in the deadline requirements of shipping meats and other perishables for some of the nation's largest food companies in poultry, seafood, confectionery, cereal, and soft drinks.

Syfan also hauls for a wide range of industries nationwide such as parcel shipping, automotive, construction materials , electronics, healthcare, food and beverage manufacturing, paper products, and retail/consumer products.

We do not rely on third-party call centers to communicate with our customers. Syfan is a 24/7 operation with our own full-time dispatch team, which allows us to command the greatest control over on-time shipments. Syfan technology delivers the highest level of transparency, communications, and reliability for our shipper customers – with service so seamless and drama-free that we may as well be invisible.

SYFAN TRANSPORT | SYFAN LOGISTICS

An American Tradition in Transportation

IN GOD WE TRUST

SyfanLogistics.com | Gainesville, GA

email: info@syfancorp.com toll-free: 855.287.8485 tel: 770.287.8485

VIEW FROM THE TOP ||| VECNA ROBOTICS

Dear Logistics Management Readers:

Supply chain companies are facing widespread challenges, including labor shortages, supply chain disruptions, safety concerns, increased consumer demand, bottlenecks and more. There has never been a greater need for automation solutions that help organizations survive and thrive in our rapidly changing global market.

It's an incredibly exciting time to be part of the industry. I'm thrilled to have recently stepped into the role of CEO of Vecna Robotics. Our founder, Daniel Theobald, is resuming his role as Chief Innovation Officer, and, as one of the top roboticists in the world, he is uniquely suited to keep the innovation engine running at Vecna Robotics. His work has made Vecna Robotics a leader in warehouse automation since its founding in 2018 and landed the company a top spot in Fast Company's 2021 World's Most Innovative Companies list for the Logistics Category.

What stands out to me about Vecna Robotics' is that our robots are undeniably the most advanced in the industry. Our high-capacity AMRs are the only self-driving forklifts in the industry capable of adjusting to their environment and rerouting in real-time.

But, perhaps what excites me most about joining this incredible team is exploring the relationship between robotics hardware and orchestration software. Vecna Robotics prioritizes workflows over robots. While many robotics organizations create a specific piece of hardware and then write software to perform a particular function for that piece of equipment, Vecna Robotics is interested in orchestrating mixed fleets of robots and human workers across a range of applications for a truly flexible and resilient warehousing solution. Looking at warehouses and distribution centers as a whole ensures that the right support is in the right place at the right time. Customers quickly adapt to disruptions and bottlenecks while improving efficiency, safety, and productivity.

We know continued industry challenges have strained corporate budgets. That's why we're empowering customers with our flexible Robotics-as-a-Service pricing structure, allowing them to get started quickly with as little up-front cost as possible.

We at Vecna Robotics continue to advance our technology, adapt to unique customer needs, and deliver performance no other automation company can claim. We're excited for our next wave of growth, and I look forward to helping propel the company to the next level.

If you are interested in learning more about our solutions and how we might be able to partner, please visit www.vecnarobotics.com or follow us on Twitter and LinkedIn. We look forward to meeting you and driving the industry forward, together.

Sincerely,

Craig Malloy
CEO, Vecna Robotics

Pacific Rim Report

By Patrick Burnson

Patrick Burnson is executive editor of *Logistics Management*. To contact Patrick with feedback or a story please send an e-mail to pburnson@peerlessmedia.com.

Air Cargo: Less regulatory interference, please

RECENTLY, THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) renewed its call on governments to take urgent measures to ensure that vital air cargo supply lines remain open, and effective. In the United States, meanwhile, The Airforwarders Association (AfA) is asking the Biden Administration to review regulatory ordinances that are preventing progress and inhibiting efficiency across a wide range of businesses.

Global airlines are scrambling to meet the gap between cargo demand and available lift by all means possible, notes Alexandre de Juniac, IATA's director general and CEO. This includes re-introducing freighter services and using passenger aircraft for cargo operations. "The pandemic crisis has seen almost the entire worldwide passenger aircraft fleet grounded," he says. "This is a fleet that normally transports almost half of total air cargo shipments."

To prevail over these challenges, IATA is asking governments to remove key regulatory obstacles by introducing fast-track procedures for over-flight and landing permits for cargo operations. This is particularly key for manufacturing hubs in Asia—China, Korea and Japan. IATA is also advocating the removal of operating hour curfews for cargo flights to facilitate the most flexible global air cargo network operations.

"Air cargo is on the front line, not only fighting COVID-19, but also ensuring that global supply chains are maintained for the most time-sensitive materials," says Glyn Hughes, IATA global head of air cargo.

However, they only continue to do this well if they work together with the support of governments, Hughes adds. "Keeping supply lines open also supports jobs in local economies, for example producers of perishables in Africa and Latin America. We are stronger together."

For U.S. shippers that see greater containment of the pandemic these days, much credit goes to FedEx Express, which has helped the government transport COVID-19 test specimens from more than 50 remote drive-thru testing centers at major retailers across 12 states. The UPS Foundation, too, has expanded its relief response to the pandemic by delivering urgent medical supplies, food and housing, and financial assistance to aid in recovery efforts.

Still, the issue of resilience on both the physical and cyber fronts remains a chief concern for U.S. shippers. "We strongly encourage the new administration to rapidly implement high-security standards that provide necessary protections for both cargo and transportation personnel," says Brandon Fried, AfA's executive director.

At the same time, air cargo providers are concerned about regulatory reforms that may stifle free enterprise. "President Biden's 'Made in America' executive order is a laudable resolution to stimulate the economy," declares Fried, "and the AfA endorses the effort. However, it is equally as important to keep global trade lanes open."

> **"Global airlines are scrambling to meet the gap between cargo demand and available lift by all means possible."**

Fried also notes that the introduction of innovative technologies should be used to cut red tape. "We ask that the Biden Administration make it a priority to review and consider revising several regulatory ordinances that are preventing progress and inhibiting efficiency across a wide range of businesses," he concludes. •

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