THE HAVES AND THE HAVE-NOTS ... AND NOT EVERYONE WILL SURVIVE

Supply chain complications are more than just an inconvenience to the construction equipment manufacturing industry. Successfully navigating the supply chain has never been more essential to the financial health of our industry and the difficulties involved are creating a world of "haves and have-nots". Will your business survive? ***Pete Kennedy*** reports.

America is facing a supply chain in crisis. "The strong will continue to get stronger and take market share because they will have product when the competition doesn't … and the weak will continue to get weaker," says Lisa Anderson, president of California-based LMA Consulting Group. "There will be no middle ground."

And part of the problem has been its past successes. The supply chain had become so efficient that it had no wiggle room when trouble hit, said Jake Dean, director of the Grainger Center for Supply Chain Management at the University of Wisconsin-Madison in the U.S.

"If you consider the global supply chain – all the trucks, factories and distribution centres – there isn't a huge amount of excess built into that system," Dean said.

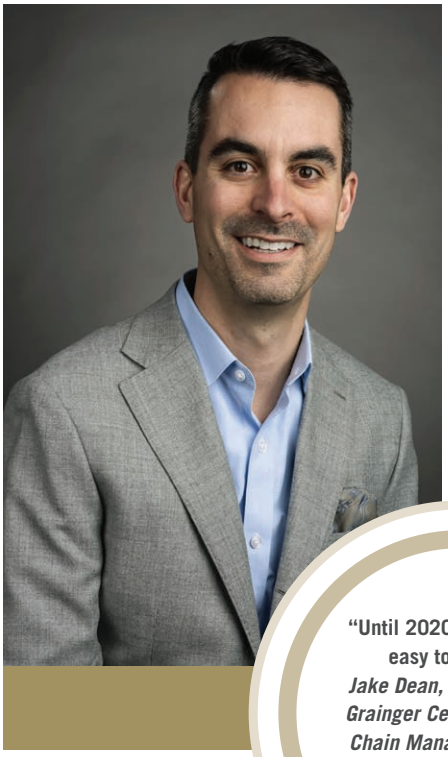
There was no reason for excess capacity. "Until 2020, demand was easy to predict," he said.

When the coronavirus struck in March 2020, demand for consumer goods went way up – as the demand for services plummeted. "As demand shifted for goods, we put more in the giant supply chain network than it was able to handle," Dean said. "Some stuff makes it into the pipeline, some doesn't. It clogged things up."

"There will be no middle ground."
Lisa Anderson, president of California-based LMA Consulting Group

The components and materials that did make their way into the supply chain were random, which led to manufacturing production problems. Finished goods were harder to come by, sometimes because of a single missing part. "A product that is 97 per cent finished isn't finished," Dean said.

Chris Perkins, managing director at Ammann America, said governmental efforts to improve economies didn't help supply chain difficulties. "Covid disrupted all the supply chains, and then governments that put in money to boost the economy created a peak in demand," he said. "The whole system is fractured, and then you put all this weight on it."



"Until 2020, demand was easy to predict,"
Jake Dean, director of the Grainger Center for Supply Chain Management at the University of Wisconsin-Madison in the U.S.

THE IMPACT ON MANUFACTURERS

Quarterly financial reports from large, publicly held construction equipment manufacturers focus a great deal on supply chain issues – an indication of the seriousness of the matter. The topic also dominates question-and-answer sessions with leaders of these companies.

One stock analyst recently asked Terex Corp. leaders, "Is it still a seven-day-a-week frenzy kind of dynamic, or has any of it normalised a bit?"

The response from the global manufacturer: "The supply chain environment is still incredibly dynamic … On any given day, we literally have hundreds of parts that are late or not where they need to be in our facilities around the world. … It's disruptive every single day."

RESILIENCE

Manufacturers have rethought supply chain priorities. There is now more talk about resiliency than cost. They will pay a bit more to ensure what they need is there when they need it.

"They want a supplier who, for example, makes a part in three regions of the world so there are options if something goes wrong in one location," Dean said.

Adding capacity – more ships, trucks, trains and warehouses – improves resiliency. But that costs money, too. All parties are hesitant to add capacity that they need in the short term but will be redundant in the relatively near future.

The same rule applies to building factories to catch up with demand. "If global demand contracts, then you have built all these factories and you won't be able to use that capacity," Dean said. In addition, the necessary materials are often unavailable to feed the existing foundries and factories – let alone new facilities.

The general rule, according to Dean, is that companies are "pulling forward" future plans. If they planned to expand capacity in a few years, they might well do it now. "But we don't have a lot of companies that are saying, 'We didn't plan to build a factory, but now we are.'"

SOURCING

Many believe the global economy has become too reliant on specific regions, particularly Asia. This has been highlighted by the impact of the pandemic, including the closing of many manufacturing facilities in China.

Dean sees a movement away from this reliance, though he believes it is somewhat separate from any pandemic-related issues.

"The supply chain became global over the last 30 years based on increased technology and declining barriers to trade, and an expansion in global demand (for products)," he said. "A winner for a lot of that was Asia. They were cheaper in terms of labour, and the supply chain was sophisticated. But some of those assumptions aren't true anymore."

Labour costs in Asia have increased, and nothing is as predictable as it was. This means businesses prefer to have some operations closer to home, be it local or even regional.

"Maybe it makes sense to build in China for Asia, and to build closer to home, too," Dean said. For example, U.S. businesses might move some manufacturing from China to Mexico.

"The manufacturers don't want everything in one particular location," he said. "Then, if something goes wrong there, it impacts the rest of the world."

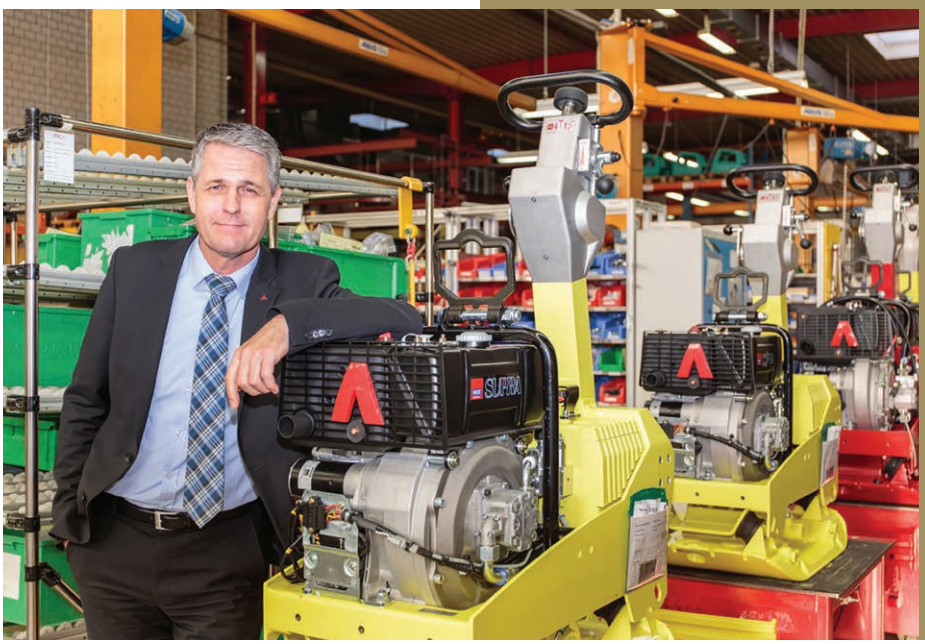
Bernd Holz, executive vice president of Machines at Ammann, said sourcing changes will continue. "I believe that the OEMs in Europe will do more sourcing in Europe, and stop buying from India and China," he said.

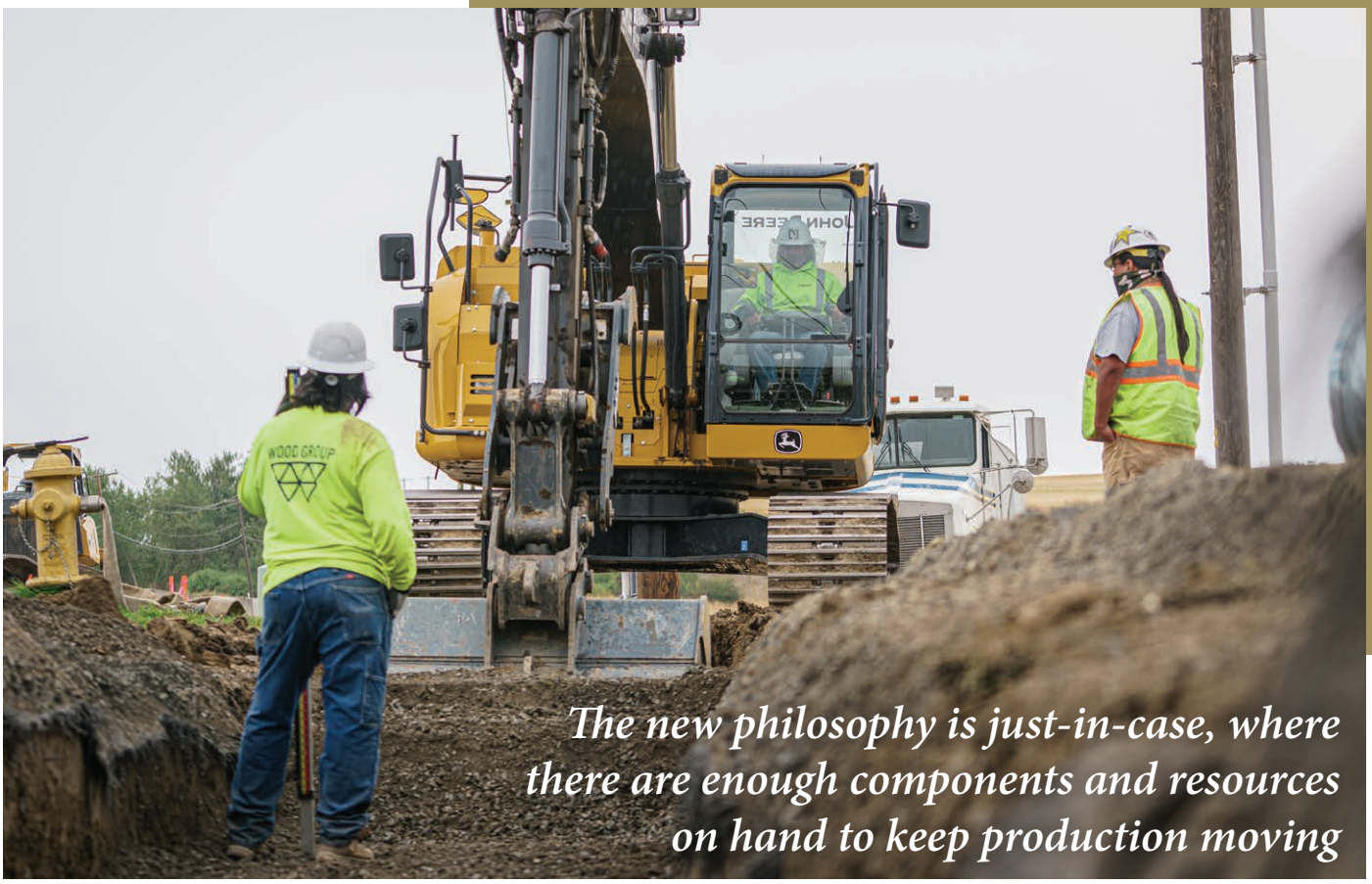
Ammann, a global manufacturer of roadbuilding equipment based in Switzerland, has started dual sourcing for many parts. In some cases, that is easier said than done.

"Sometimes the alternatives aren't well accepted elsewhere," Holz said. For example, end users often have opinions when it comes to engines. Simply swapping out one engine for another doesn't always satisfy customers.

The sourcing changes are lasting and part of an overall transformation of the supply chain that includes companies "reshoring/nearshoring, increasing control, re-evaluating

Bernd Holz, executive vice president of Machines at Ammann





The new philosophy is just-in-case, where there are enough components and resources on hand to keep production moving

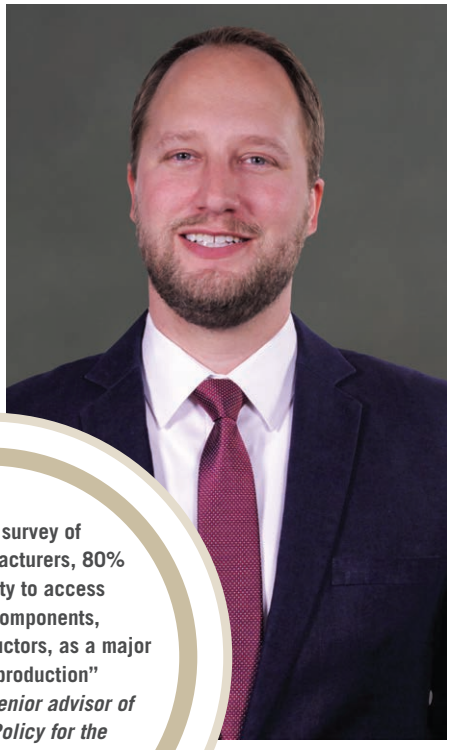
their supply base as well as their strategic inventory and capacity reserves," according to Anderson, with LMA Consulting Group.

In at least one instance, a manufacturer is finding new sources and also helping suppliers solve labour challenges. "Our supply management teams are working tirelessly on mitigation actions such as multi-sourcing, additional investments in supplier tooling, and even in some cases, helping our suppliers with supplemental John Deere labour," chairman and CEO John C. May recently told Deere & Company investors.

SEMICONDUCTORS

Manufacturers continue to suffer from a shortage in semiconductors. "In a recent survey of equipment manufacturers, 80% cited an inability to access intermediate components, including semiconductors, as a major bottleneck to production," said Alexander Russ, senior advisor of Global Public Policy for the Association of Equipment Manufacturers, a North-America-based trade group.

Semiconductor manufacturing is one industry where added capacity can be justified, said Dean, of the University of Wisconsin-Madison. "Throughout the world, demand for products that require semiconductors is going nowhere but up, so it makes sense to add capacity there," he said.



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The demand will only increase. There are now 1,500 to 2,000 semiconductors in the average automobile, Dean said. "As cars become more electric, they require more semiconductors." And of course the same can be said about construction machinery and the increased use of electric drives.

Adding semiconductor capacity is easier said than done; there are no quick solutions.

"It takes years to get those facilities started," Dean said. Specialised machinery must be purchased, assembled and delivered. Ongoing natural resources are required as well. Yet the investments are sound given the future demand.

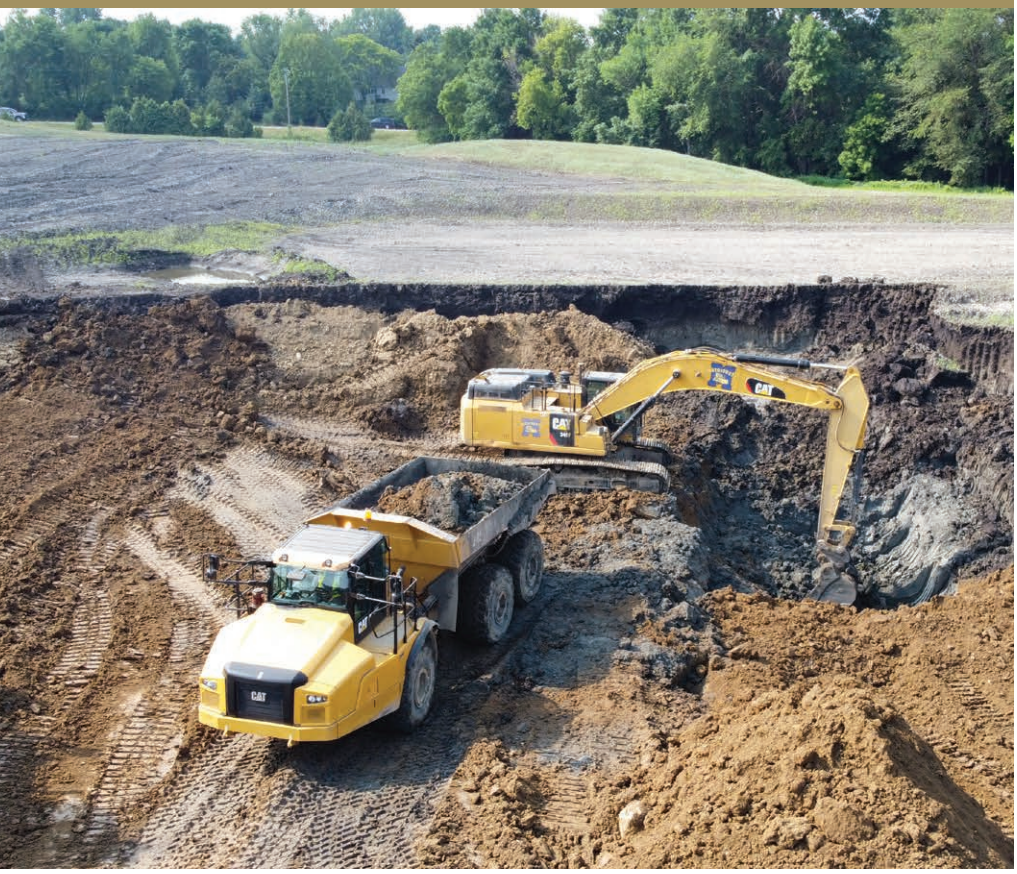
"Electric storage is another industry where added capacity makes sense," Dean said.

Ukraine provides much of the world's neon, which is used to manufacture semiconductors. Plants in Odessa and Mariupol that produced about half of the global supply of neon have been shut down, reported The Financial Times, based in London. Reserves had been established to ensure ongoing chip production, but the longer the conflict, the more shortages could result, according to a report from cable business news channel CNBC.

JUST-IN-TIME

The just-in-time days are over, or at least on a long pause. "Just-in-time, in the popular sense that you run so tight that you know with certainty you can get what you need – that's done for now," Dean said.

The new philosophy is just-in-case, where there are enough components and resources on hand to keep production moving.



Dean doesn't see the change as tragic for manufacturers, particularly those with decent margins. "Wouldn't you rather spend a bit on warehousing and other expansions than to not move profitable products?" he asked.

PRICING

Manufacturers are seeing price spikes for some components. They are, of course, passed onto OEM customers.

"From a competitive standpoint, the good thing is all the other OEMs are sitting in the same boat," Holz said. "Everyone has to increase prices."

He does expect prices to steady – but not return to previous levels. "I believe in a year or two, the prices will stay where they are. Hopefully, some logistics costs will be reduced."

Perkins, also of Ammann, said his transport costs per shipping container have doubled, and in some cases nearly tripled. "I'm hoping there is some correction in the transport costs, but I don't believe they'll go all the way back."

Businesses with the most resources are paying premiums to get their materials, Dean said. Those costs are passed onto consumers – who are willing to pay more to get what they need.

"The inflationary period we are in is not a surprise given the environment we're in," he said.

WHERE WE ARE

Manufacturers say they are overcoming the challenges, though they are not seeing supply chain improvements – and don't expect to for some time.

A John Deere spokesperson echoed the thoughts of most manufacturers when offering this statement: "While orders for our products remain high, we anticipate the supply chain challenges impacting our industry will continue through the remainder of 2022. We continue to work with our supply partners to solve issues as they arise. Through these collective efforts we are getting products into our customers' hands as quickly as possible."

John Deere's CEO told investors: "Our guidance does reflect order restrictions where our supply base has constrained our ability to produce. In fact, fiscal year 2022 will be the second year in a row in which the industry demand has outstripped supply."

Japanese manufacturer Komatsu told investors that the "external environment is undergoing intense change and uncertainty is rising." The company's leadership pointed to growing geopolitical risks, such as Ukraine; unstable supply chains; and the need to increase its ability to address contingencies such as infectious diseases and natural disasters.

Essentially, all manufacturers have developed backlogs. At Deere, orders for 2023 are adding up. Ammann is in a similar situation. "Customers realised there are long lead times, so they started ordering earlier," Holz said.

THE FUTURE

Manufacturers referenced in this report don't expect the problems to improve during 2022.

The way forward is for demand to "normalise to some extent," which is starting to happen, Dean said. Yet a huge logjam still must move through the global supply chain. "It's going to take a while for that to happen – all of this year and into next year," Dean said.

That assumes there is not another pandemic or further global geopolitical events – not that the events being faced aren't significant enough.

"We have entered a new time period of volatility and uncertainty, and so the only companies that will be successful will take control of their supply chain, instead of waiting for the global supply chain to realign," Anderson said.

Those who take charge will emerge from the chaos stronger than ever. "There will be more opportunity in the next few years than there has ever been before, except for the time period following the Great Depression," she said. ☐

Creating supply chain resiliency. Source: LMA Consulting Group

Supply chain readiness

- Personalise/ configure
- Reshoring / Near-shoring
- Align demand with supply SIOP-Sales, Inventory and Operations Planning

Talent

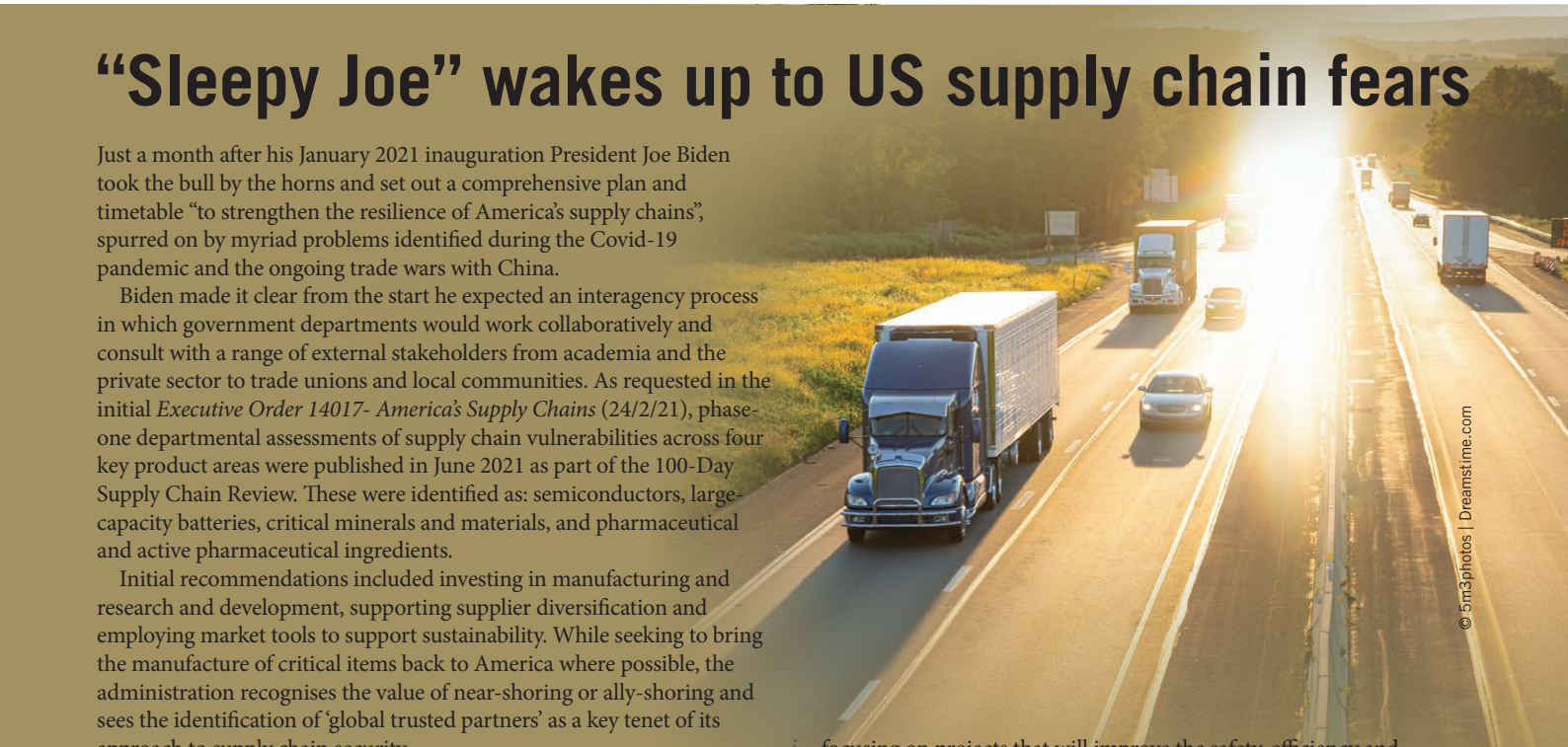
- Great resignation
- Great reshuffle
- Increasing need for skills
- Rethink talent strategy

Digitisation/ Data

- Modern ERP base
- Digitize, automate, advance - Industry 5.0
- Turn data into insights

Bottom line: Take control of your supply chain

"Sleepy Joe" wakes up to US supply chain fears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Just a month after his January 2021 inauguration President Joe Biden took the bull by the horns and set out a comprehensive plan and timetable "to strengthen the resilience of America's supply chains", spurred on by myriad problems identified during the Covid-19 pandemic and the ongoing trade wars with China.

Biden made it clear from the start he expected an interagency process in which government departments would work collaboratively and consult with a range of external stakeholders from academia and the private sector to trade unions and local communities. As requested in the initial *Executive Order 14017- America's Supply Chains* (24/2/21), phase-one departmental assessments of supply chain vulnerabilities across four key product areas were published in June 2021 as part of the 100-Day Supply Chain Review. These were identified as: semiconductors, large-capacity batteries, critical minerals and materials, and pharmaceutical and active pharmaceutical ingredients.

Initial recommendations included investing in manufacturing and research and development, supporting supplier diversification and employing market tools to support sustainability. While seeking to bring the manufacture of critical items back to America where possible, the administration recognises the value of near-shoring or ally-shoring and sees the identification of 'global trusted partners' as a key tenet of its approach to supply chain security.

The recent invasion of Ukraine by Russia will only serve to emphasise the importance of this approach.

In February 2022 a series of one-year sectoral assessments of those supply chains which underly the US industrial base was released by seven cabinet-level agencies. These departmental reports, including one from the Department of Transportation (DoT) (*Supply Chain Assessment of the Transportation Industrial Base: Freight and Logistics*), identify the main vulnerabilities and outline developments necessary to establish supply chain security in both the short and the long term.

Key recommendations here, presented in more detail, include rebuilding America's manufacturing base, increasing government support for markets that invest specifically in workers and value sustainability, leveraging the federal government's role in critical-goods purchasing, strengthening and also enforcing international trade rules, and creating a network of allies and partners to provide protection against future threats to the global supply chain. The risk of natural disasters caused by climate change is now as much a cause for concern as geo-political threats.

The DoT's report makes a total of 62 proposals for action, noting that the Covid pandemic only served to highlight problems that the country had systematically failed to address over many years, such as infrastructure investment. Delving deeper, it also identifies issues with equipment and warehouse capacity, workforce issues, and a lack of data availability and visibility as damaging to supply chain security and resilience.

Acknowledging that the federal government cannot possibly solve supply chain disruption on its own, not least because significant parts of the freight supply chain are in private hands, the report calls on federal, state and local agencies to work together on a range of policies.

One of the central recommendations is for significant investment in freight infrastructure such as ports, bridges and railroads to enhance both capacity and connectivity. The Port Infrastructure Development Program (PIDP) will release nearly US$450m in funding opportunities focusing on projects that will improve the safety, efficiency and reliability of the movement of goods in and out of ports. Investment in the inland waterway system is also proposed.

Port congestion has been a problem since the global economy opened up after Covid-induced lockdowns around the world. It has since been exacerbated by labour issues, especially in America's west coast ports. As a result, inland ports and temporary solutions such as 'pop-up' intermodal container yards are under consideration.

As well as the PIDP, the Trucking Action Plan will seek to increase truck driver recruitment and improve retention rates. The report also recognises the need to ensure that truck parking availability is consistent with land use and safety considerations. The development of state-level freight planning is also advised, via improved data and research into supply chain performance. This needs to include the tracking of freight.

Biden has consistently put the focus on a "whole-of-government" approach, setting up the Supply Chain Disruptions Task Force (SCDTF) in 2021. However, the administration acknowledges that there will be difficulties ahead, not least because of the complexity and scope of the goals, and the costs of implementation. Some industry stakeholders have already expressed their opposition or concerns. The freight rail industry, for example, has said that new economic regulations will ultimately disrupt rather than improve supply chain fluidity.

Keeping up the pressure, the Assistant to the President for National Security Affairs (APNSA) and the Assistant to the President for Economic Policy (APEP) must provide President Biden with further reports, reviewing actions over the previous year and making further recommendations as a result.

And, finally, full national supply chain reviews are going to be held every four years. These US-wide reports will maintain the momentum for continuous data gathering and supply chain monitoring. Protecting the supply chain and improving its resilience are now embedded in US government policy, Biden hopes.