



COMMERCIAL INSURANCE

EMPLOYEE BENEFITS

PERSONAL INSURANCE

RISK MANAGEMENT

SURETY

MANUFACTURING

Markets in Focus

Insurance Pricing & Market Update

Q2 2022

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INTRODUCTION

Two and a half years into the global pandemic known as COVID-19, manufacturing firms are still grappling with staff shortages, supply chain issues and a shift towards pandemic-focused goods and supplies. The United States Government is becoming increasingly interested in how a robust supply chain supports a healthy economy and has responded within the past 3 months with Executive Orders, the Rescue Act and a collaborative, multi-sector Government approach to strengthen security.

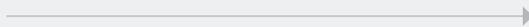
The United States Department of Defense has recently found a deficit of skilled workers in the manufacturing sector after decades of offshoring manufacturing firms.¹ Labor shortage woes combined with an ever-increasing list of risks for manufacturers has created challenges for finding the right risk management solutions for commercial entities as well as those who service the Defense Industrial Base sector.

There is hope, however. With improved risk management practices and innovative Artificial Intelligence & Predictive Maintenance, combined with a well-written insurance portfolio, manufacturing firms are on the front lines to secure the future of the United States economy.

The skilled workforce supply chain must grow to meet the projects deficit

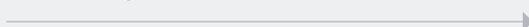
12.5M

Current Workforce



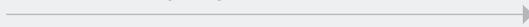
44

Median Age



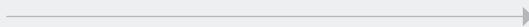
\$30

Median Hourly Pay



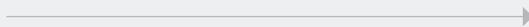
25%

Women



68%

White



2.1M

Deficit by 2030





PANDEMIC CONTINUES TO BE TOP OF MIND FOR MANUFACTURERS

Two months ago (February 2022), Congress granted \$54M toward “The Rescue Act” to increase application of advanced manufacturing for research & development as well as pandemic response.² Firms awarded will be called to innovate, produce medical equipment and PPE, as well as focus on improvement of resilience in existing supply chains.

“Rebuilding our manufacturing economy is an essential component to strengthening our communities and creating opportunity for all Americans,” said Commerce Secretary Gina Raimondo. “The breadth and variety of these awards shows that manufacturing can be an economic driver in every community. From creating an advanced manufacturing testbed in Appalachia, to building clean, reliable power in Native American communities, these grants are essential to creating manufacturing jobs and skills in every corner of America.”

Commerce.gov news article | “Commerce Department Awards \$54 Million in American Rescue Act Grants to Increase Access to Advanced Manufacturing Opportunities”



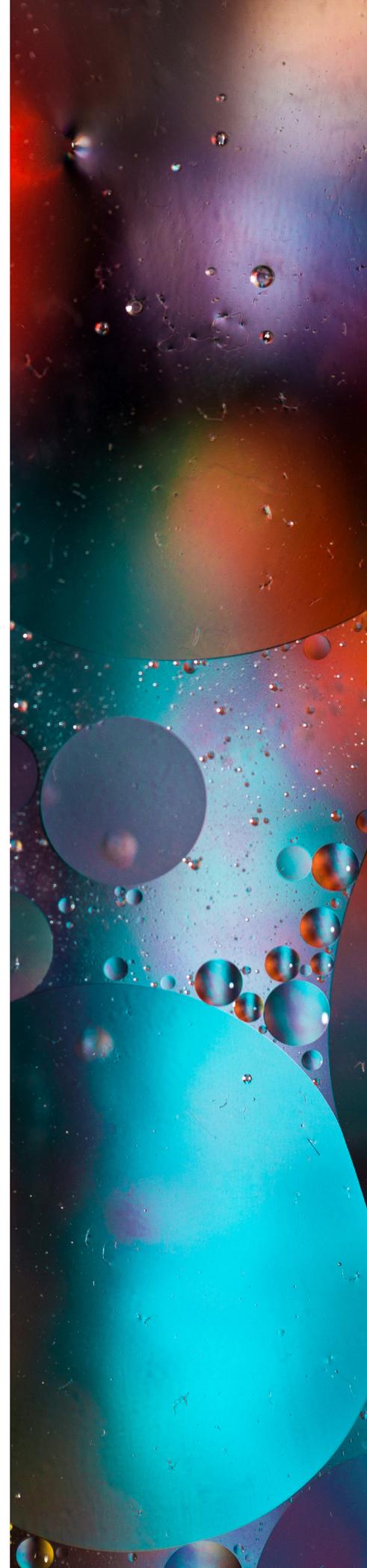
A PROACTIVE RESPONSE TO SUPPLY CHAIN MANAGEMENT; STRENGTHENING RESILIENCE

On February 24, 2021, President Biden issued Executive Order 14017 named "America's Supply Chains". The order calls for a 100-Day Supply Chain Review from the Secretaries of Commerce, Energy, Defense, Health & Human Services, Transportation and Agriculture to understand the needs, capacities and gaps in existing plans, review single-point-of-failure and address workforce education for innovation in the manufacturing space.³ The executive order comes on the heels of severe bottlenecks from COVID-19 and geopolitical events creating additional inflation pressures and project delays across the world.

The White House identifies "a multitude of threats" that challenge any given supply chain to include cyber risk, climate change and political competition.⁴ As referenced above, the global pandemic further exacerbates staff shortages and a re-focus on medical needs for the United States population. Carrier vessels have experienced delays in delivery to include the Suez Canal situation and the continuation of vessel piracy. Finally, the escalating war in Eastern Europe could kick-off a new "Cold War" creating separation between the United States and Europe. President Biden is calling for a "secure and diverse" supply chain with redundancies, secure networks with robust cyber hygiene and an educated and skilled employee base ready to service innovative technologies.⁵ This initiative directly ties into Executive Order 14028 "Improving the Nation's Cyber Security" from January 2022 as well as the passing of the Cyber Incident and Reporting Act in March.

In the Executive Order 14017, a particular focus is placed on PPE, semiconductor chips, pharmaceuticals and rare earth properties for batteries.⁶ PPE is a new requirement since December 2019, with a global focus on creating tangible products to support hygiene that keeps companies in business. Semiconductor chips and rare earth tangibles must continuously be mined and processed to support technology and the Internet of Things that power our vehicles, computers, homes, wearable technologies. Pharmaceuticals are in high demand, however the majority are manufactured and processed offshore in China. There is a significant concern on how the United States can become more self-reliant for these necessary products.

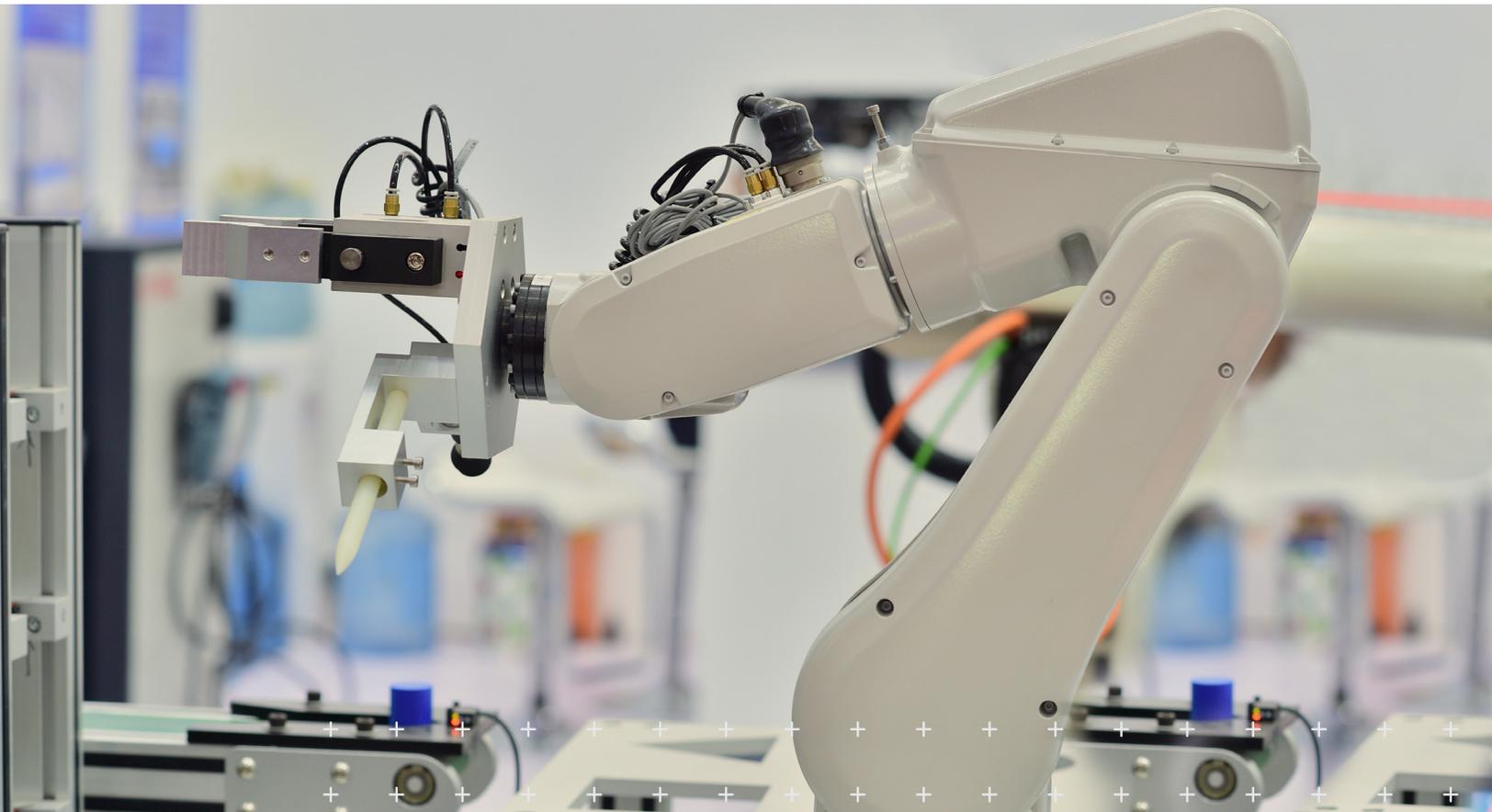
In the active pharmaceutical ingredients (API) space, just 28% of APIs for the U.S. are manufactured domestically. The United States barely registers in mining and processing of lithium, a metal used in rechargeable batteries, accounting for 1% of global output.



- 2030
- Surplus
0
 - Deficit
0 - 600,000
 - Significant deficit
600,000 - 1.2 million
 - Acute deficit
1.2 million or greater



The acuteness of the economy's deficit is based on its overall shortage of workers, not accounting for the size of its total workforce.



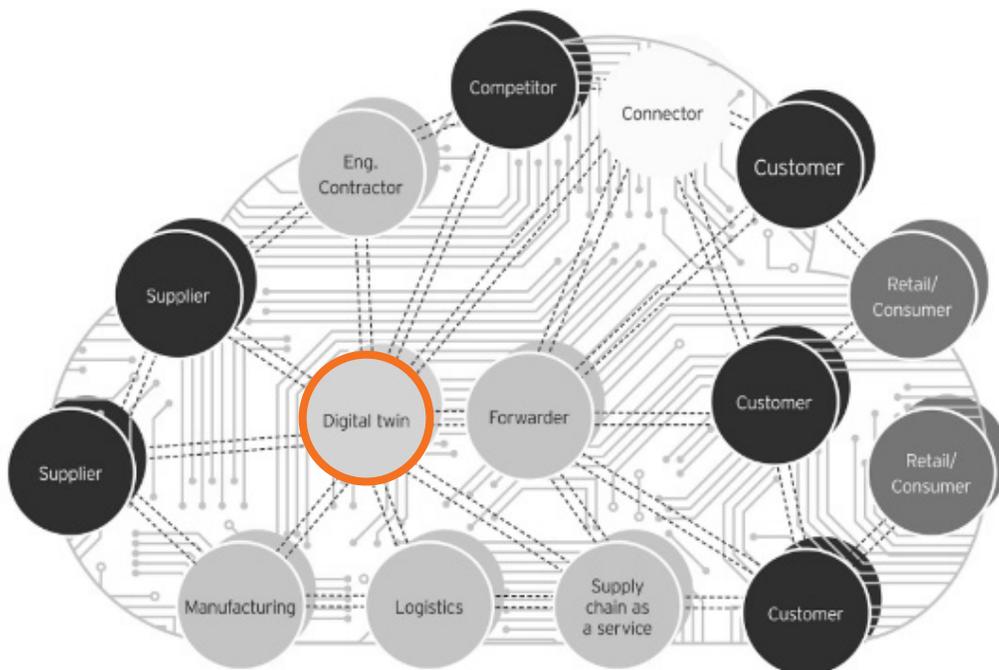
ARTIFICIAL INTELLIGENCE & PREDICTIVE MAINTENANCE: TWINNING

Ernst and Young recently surveyed 86 manufacturing companies across Europe and found that 81% of respondents agree that Artificial Intelligence has become more important in the past year, however only 10% have a detailed plan to initiate these new capabilities.⁷ Application of Artificial Intelligence can improve efficiency in global sourcing, prevention of machine breakdown, quick circumvention of unexpected delays, avoiding transportation disruptions and pre-planning for catastrophic weather events.

With Artificial Intelligence, preventive maintenance can be enabled to combat the \$647 billion in lost revenue annual due to downtime in manufacturing equipment per the International Society of Automation. Not to be confused with predictive maintenance which can be further imperative to down time risk management by using IoT sensors to predict and identify equipment that needs proactive servicing, much like the oil sensor in your personal vehicle.

The oil and gas industry is heavily reliant on expensive equipment, that has significant costs associated with downtime, and manufacturers in this space have been forced to utilize predictive technology in order to retain customers. Utilizing IoT-enabled predictive maintenance has cut costs by 30% and equipment downtime by 45%; helping raise production by 25% per the US Department of Energy.⁸

Another specific way that the manufacturing industry is utilizing Artificial Intelligence is “Digital Twinning”. Digital Twins can produce virtual replicas to allow real-time simulations to advise if an asset needs maintenance and could fail. The simulation can identify a future disruption before it happens, allowing the firm to respond with more intelligent and fact base approach for the live asset. This strategy can map out scenarios and allow a more robust risk management approach; moving from Reactive to Proactive.



Digital twin technology provides tangible benefits to a company's P&L

<p>Annual</p> <p>1% to 2%</p> <p>Revenue growth</p> <ul style="list-style-type: none"> + Increased fill rates (on-time and in-full) + Increased speed-to-market + Increased strategic sales 	<p>Annual</p> <p>10% to 30%</p> <p>Planning efficiency (SG&A)</p> <ul style="list-style-type: none"> + Decreased manual intervention, duplication of efforts 	<p>One time</p> <p>5% to 10%</p> <p>Inventory reduction</p> <ul style="list-style-type: none"> + Improved inventory visibility and reliability
<p>Annual</p> <p>5% to 10%</p> <p>Increased throughput</p> <ul style="list-style-type: none"> + Revenue growth + Improved on-time delivery + Improved working capital 	<p>Annual</p> <p>10% to 30%</p> <p>Reduced expenses</p> <ul style="list-style-type: none"> + Reduced expedited logistics costs + Reduced returns + Reduced fines from shipment delays 	<p>Annual</p> <p>10% to 20%</p> <p>Reduce inventory write-off</p> <ul style="list-style-type: none"> + Increased fill rates (on-time and in-full) + Increased speed-to-market + Increased strategic sales

Source: EY analysis.

The top four uses of AI Adoption

	Top four use cases [% , share of respondents adopted use case]	Value potential (1-no, 5-high)	Other potential use cases
Transform products	+ Digital twin (62%)	4.5	+ Generative design
	+ R&D lab acceleration (44%)	4.2	+ Product variant generation
	+ Product intelligence (43%)	4.3	
	+ Market insights and social monitoring (43%)	4.0	
Engage customers	+ Chatbots (66%)	3.3	+ Lead qualification
	+ Demand planning and forecasting (37%)	3.8	+ Content automation
	+ Automated marketing (31%)	3.5	+ Prescriptive pricing
	+ Profitable field service (29%)	4.1	+ Churn prediction and prevention
Optimize operations	+ Predictive maintenance (68%)	4.0	+ Predictive sourcing
	+ Supply chain transparency and predictability (34%)	4.1	+ Automated route optimization
	+ Predictive inventory management (32%)	3.9	+ Continuous product quality improvement
	+ Sustainable operations (30%)	4.1	+ Supplier risk assessment
Enable employees/support	+ Cybersecurity intrusion identification (69%)	4.1	+ Interconnected recruiting
	+ Autonomous manual and paper-based processes (66%)	4.1	+ Customer credit risk identification
	+ Fraud detection (31%)	3.9	+ Virtual factory workforce support
	+ Tailored management analytics (26%)	4.1	+ Predictive performance management



REGULATIONS IN THE MANUFACTURING SECTOR

On March 7, 2022 the Department of Defense, GSA and NASA revised the Buy American Act (BAA) requirements for federal procurements as a precursor for the White House’s plan to add a manufacturing office the federal contracting division of the Small Business Administration.⁹ Federal agencies are planning to meet an incremental increase in “Buy American” from 55%-75% by 2029. Also stipulated in the filing is acceptance of higher prices for “critical items” and “critical components” pursuant to Executive Order 14017 for “America’s Supply Chains”.¹⁰ Even as this is a Government ruling, the trickle-down effect will no doubt eventually amend the commercial manufacturing space in the future.

The National Association of Manufacturers (NAM) identifies more than 297,696 federal regulations restrictions in the industrial sector.

RISK MANAGEMENT FOR SUPPLY CHAINS

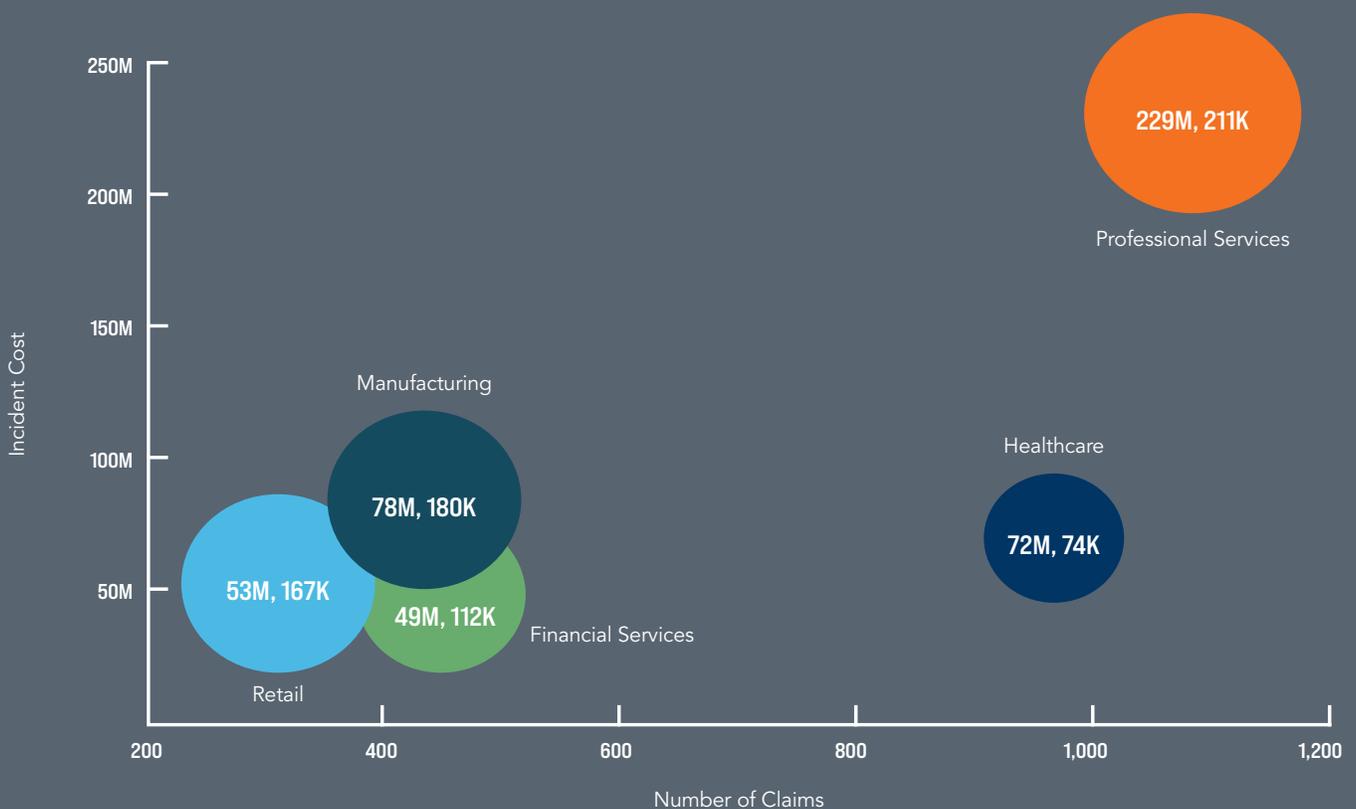
Manufacturing continues to be the top impacted sector from Ransomware (32%) and the second top impacted sector by Industry (12%) per Kroll Spotlight January 2022. Regulations will continue to change and evolve. The move to on-shore manufacturing jobs within the United States will lead to the creation of additional jobs and a boom in hiring in this sector. How can firms proactively lead to ensure security and cutting edge risk management provisions to avoid liability claims?

- + Board Engagement
- + Embrace new technologies
- + Map the risk
- + Identify third parties risks
 - Contractual agreements
 - Cyber hygiene
 - Down-wind supply chain risks
 - Risks per location (flood, EQ, Wind)
- + Look for single-point-of-failure and create redundancies
- + Third-Party Risk Management Review – (can be facilitated by your account team)
- + Cybersecurity
- + Employee Training
- + Legal Review
- + Continuous Risk Review from Leadership

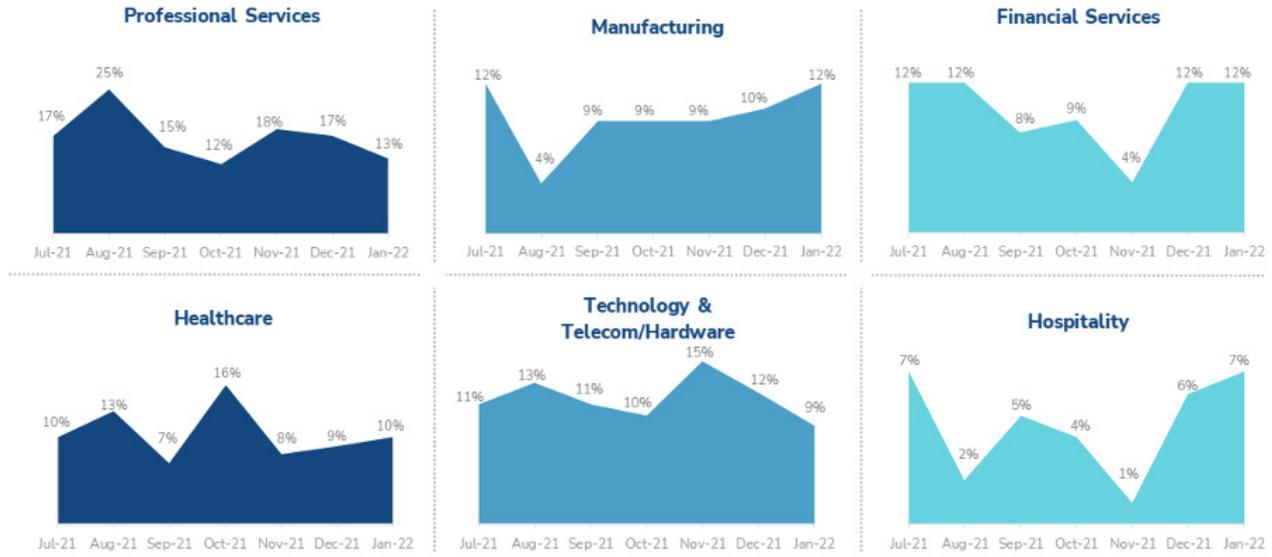
IMPACT OF CLAIMS IN THE MANUFACTURING SECTOR

Manufacturing remains one of the most impacted sectors by cyber claims per Kroll Spotlight, January 2022.¹¹ Malware infection through ransomware remains the top threat incident type at 30% comparative to email compromise (28%) and unauthorized access (21%). Investing in robust cyber security infrastructure and protocols that are backstopped by cyber insurance will be imperative for addressing this risk.

Total Incident Cost and Average Incident Cost (N=5,007)

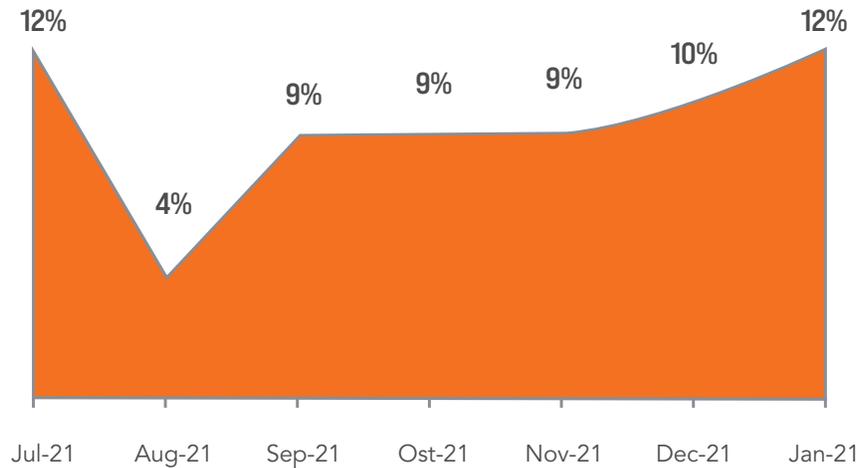


Most Impacted Sectors Previous 6 Months



*Top 6 Targeted sectors in January 2022

Manufacturing



INSURANCE COVERAGES OF IMPORTANCE IN MANUFACTURING

There are a few key coverages that a seasoned insurance broker looks for in a Manufacturing portfolio. In the current environment, Cyber coverage is of the utmost importance as can be seen above in the January 2022 Kroll report. Business Interruption is arguably the second key coverage and can be found on both Cyber policies as well as property coverages. Product Liability was, is, and will always be the paramount coverage for bodily injury and property damage claims arising out of the manufacturing sector. But equally as important is Manufacturers Errors & Omissions which will address the financial damages suffered in the event of a claim alleging negligence. Finally, pollution liability is many times an oversight, but can address damages and regulatory issues that arise out of a pollution event.

All cyber policies differ as much as “apples and oranges.” A policy must be specifically crafted by your broker to properly address your risks based on components such as revenues, scope of work, industry niche, locations, contract provisions, third-party risks, tangible property values and estimated cost of revenue loss.

- + In a basic sense, Business Interruption provides for the loss of income and extra expense due to a business interruption resulting from a security breach or system failure (an owned or fully controlled system).

Sample Claim Example: The manufacturer suffers a ransomware loss where systems are nefariously shut down before the holiday season, resulting in a loss of revenue. If the manufacturer must shift-to back up servers and locations to push through backlog, that could be considered extra expense.

- + Contingent Business Interruption coverage offers the loss of income and extra expense due to a security breach or system failure on a third-party computer system (independent contractors or outsourced IT systems).

Sample Claim Example: A third-party cloud provider that the manufacturer contracts with suffers a regional breach and takes days to reengage to 100%.

Property policies also provide coverage for Business Interruption (also known as Business Income), however strictly for lost revenue and extra expenses due to a property loss.

Sample Claim Example: The manufacturer suffers a fire loss that damages 40% of the building and is unable to operate that location until repairs have been done. The manufacturer suffers not only loss of revenue, but extra expense to set up a temporary site while remediation is completed.

Product Liability policies will provide coverage for third party suits alleging bodily injury and property damage due to an actual or alleged defect or deficiency in a manufactured product. In the manufacturing industry this coverage grant is most times pulled out of General Liability coverage and placed as a separate policy due to the increased risk of these types of claims. Product Recall policies are intended to provide coverage to pull a product, discontinue a sale and/or bring the product back to the manufacturer to prevent future harm to third parties.

Sample Claim Example: A manufacturer that produces stepstools for children receives a legal letter demanding financial recourse after a child falls through the product injuring themselves. This scenario highlights Product Liability trigger. While the company investigates, they decide to pull the product off shelves and re-test the equipment to ensure no further injuries or claim activity. The proactive measure of recalling product can be insured to safeguard the financial impact of a claim.

Manufacturers Errors & Omissions policies provide coverage for financial damages suffered by a third-party with allegations of errors and omissions or negligence in the design and manufacturing of product. This coverage may also be referred to as Professional Liability. Note that this differs from Products Liability, as the Professional Liability trigger is financial damages rather than bodily injury or property damage.

Sample Claim Example: A manufacturer produces a custom-made vehicle mount for a third-party Government Contractor. That third-party Government Contractor then plans to install the bespoke mount onto Government vehicles on a prime contract for the Army. The mount is found to be outside of contract specifications due to a calculation error & the manufacturer is sued for lost time, profits and revenue and the cost to correct.

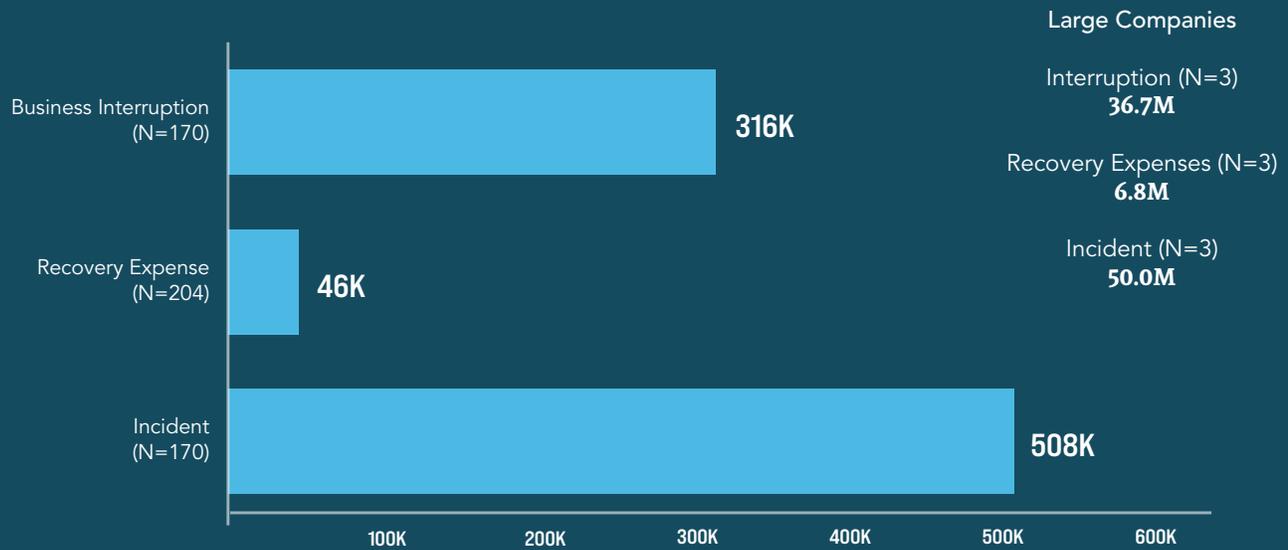
Pollution Liability policies are also many times referred to an Environmental Insurance. Pollution Liability is largely excluded on General Liability, Products Liability, Umbrella and Professional Liability coverages and must be procured as a stand-alone policy. This policy provides coverage for loss resulting from unexpected release of pollutants. Coverage can be obtained for bodily injury & property damage, clean up, regulation and defense coverages.

Sample Claim Example: An herbicide manufacturer suffers a leak at the manufacturing site with a risk of nearby public lake contamination. This manufacturer has the risk of manufacturing, storage and transport of what can in many states be considered hazardous materials. Pollution or Environmental policies do not have to be limited to liability and can be tailored to each risk.



Average Costs for Business Interruptions

SMEs



¹ Biden Executive Order on Supply Chain: PwC
² Commerce Department Awards \$54 Million in American Rescue Act Grants to Increase Access to Advanced Manufacturing Opportunities | U.S. Department of Commerce
³ Biden Executive Order on Supply Chain: PwC
⁴ Biden Executive Order on Supply Chain: PwC
⁵ Executive Order on America's Supply Chains | The White House
⁶ Executive Order on America's Supply Chains | The White House
⁷ https://www.ey.com/en_us/advanced-manufacturing/how-manufacturers-can-amplify-intelligence-with-ai
⁸ How preventive maintenance can backfire and harm your assets | EY - US
⁹ Biden Administration Finalizes Important Changes to the Buy American Rule | Insights | Holland & Knight (hklaw.com)
¹⁰ Biden Administration Finalizes Important Changes to the Buy American Rule | Insights | Holland & Knight (hklaw.com)
¹¹ Executive summary. IR Spotlight Trends Report, Kroll, 2022, Kroll, PDF Document (.pdf)
¹² <https://netdiligence.com/cyber-claims-study-2021-report/>
¹³ <https://netdiligence.com/cyber-claims-study-2021-report/>



MORE THAN JUST INSURANCE

Parker, Smith & Feek is an integrated financial services company specializing in risk management, insurance, employee benefits and wealth management. It is the third-largest privately-held and employee-owned insurance broker in the country and employs more than 1,700 associates.



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