



Managing the Supply Chain:

Successful Strategies for Contractors
During Covid-19 and Beyond



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The Miracle of the Supply Chain Network

What is a supply chain? According to Investopedia, the supply chain is:

“a network between a company and its suppliers to produce and distribute a specific product to the final buyer.”¹

In other words, a supply chain is the logistics or series of steps for a specific product to get from producer to buyer or market. But what or who comprise the Supply Chain Network?

While a network sounds like something vague flitting about in the ether in a far away place, the fact is that the supply network is real, ubiquitous, and is comprised of small businesses and companies all around us. It is the "pipeline" that gets goods, materials, and supplies from point A to point B, and it

is this network that utilizes and employs those “essential workers” we heard so much about over the last two years during the Covid-19 pandemic.

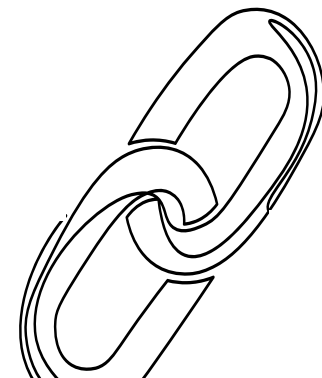
The supply chain includes:

- ❑ Manufacturers/producers
- ❑ Vendors
- ❑ Warehouses
- ❑ Transportation companies
- ❑ Distribution centers
- ❑ Retailers

This vast network churns away “silently” behind the scenes without us ever even knowing about it or giving thought to it. Rarely do we say, “How did this gas get to this gas station in order to get into my car?” Or even more importantly, “Why has the price of gas just gone up?” To the everyday American it is largely unseen and unheard. We rely on it. We expect it. And never do we think twice about it, or question it until . . . it breaks. Until our materials are delivered late or not at all. Until our supply arrives but with a 10-30% mark-up. Until, one day the supply is all gone—or what we call a “supply chain shortage” hits.

The everyday consumer often experiences a supply chain shortage as **empty** shelves, i.e., a lack of products we can purchase, or worse, products that when available are now available at a much higher cost. How many felt the vexing frustration when we rounded the corner at our local grocery store during March of 2020 only to discover large swaths of bare shelves. We found, for example, that half the paper towels stock was out or—at the height of the pandemic—that critical food we needed, such as milk, was gone.

Going further, how does a supply chain shortage then impact business and industry—specifically the construction industry? What’s normal for supply chain challenges in the everyday life of Construction? Interestingly, what might be considered a small inconvenience to us in our daily lives as consumers, can in turn become catastrophic in commercial construction.

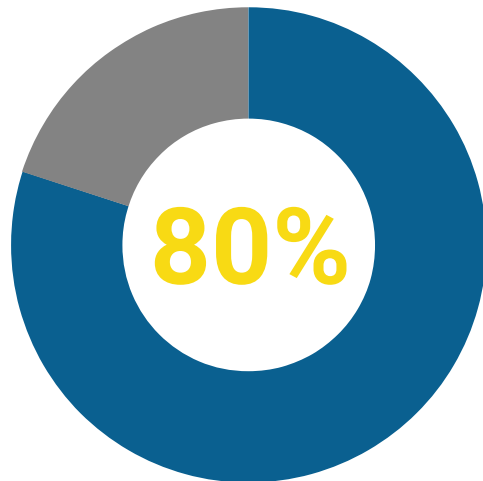


Same Problem—Different Name

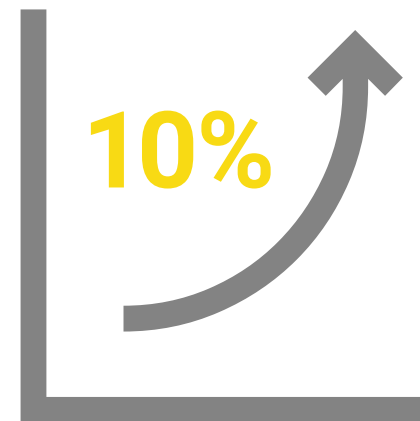
Supply chain shortages already existed before the pandemic, with many construction businesses feeling the pinch. The current labor shortages we see now are not new to the construction industry. Prior to the pandemic, **81%** of construction businesses reported having a hard time finding skilled labor for current projects and open positions,² and from 2015 to 2019, the number of open and unfilled jobs in construction across the U.S. increased from **150,000** to **300,000** openings.³ Construction materials costs were also on the rise (with a **10%** increase) pre-pandemic which was exacerbated by tariffs on steel and aluminum.⁴

Additionally natural disasters, such as Hurricane Mario in Puerto Rico, can devastate not just a company's supply chain, but also a country. Even a market shock, such as the Global Trade Wars in 2019, can cause "chain turbulence" and rock the "supply chain boat," driving up prices globally.

80% of construction businesses can't find skilled labor



Construction materials increased 10% prior to the pandemic



The Supply Chain in the New Normal

Enter 2020. After Covid-19 was declared a national emergency on March 13, 2020, states put lockdown measures in place to limit the spread of infection. This had a devastating effect on the construction industry. . .

Just a month into the pandemic, the construction industry experienced the following workforce complications and labor shortages:

- ❑ Nearly **40%** of construction firms reported layoffs⁵
- ❑ More than **1 million** contractors lost their jobs⁶
- ❑ **56%** of construction firms said they applied for the Paycheck Protection Program⁷
- ❑ The unemployment rate doubled⁸
- ❑ Employers spent on average **\$5,200** per employee on state mandated Covid-19-related health protocols including, establishing health screenings, developing isolation and quarantine procedures, and staggering work hours

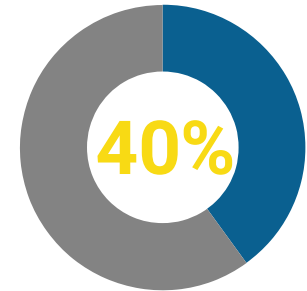
And there appears to be no sign of stopping. The labor shortages already reaching critical mass prior to the pandemic—and gaining steam over the last 2 years—are only predicted to get worse in 2022.

According to the American Builders and Contractors Association

“the construction industry will need to attract nearly **650,000** additional workers in 2022 to meet demand.”

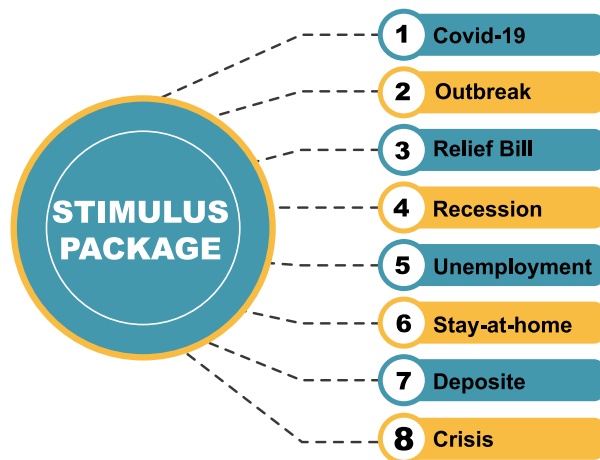
With the Covid-19 lockdowns continuing into 2022 and so many projects delayed or canceled due to Covid-19 restrictions, it would seem like there should be “no work” available and therefore zero jobs? So how can the construction industry be facing a shortage of 650,000 workers in 2022?

40% of firms
reported layoffs



1 million +
lost their jobs





One of the answers can be found in the stimulus. The stimulus relief pumped billions in new spending to update critical infrastructure such as roads, bridges, energy production and more across the country, creating more jobs. And, as the President of ABC, Michael Bellaman, has suggested, “More regulations and less worker freedom makes it harder to fill these jobs.”

And yet, it was also the virus itself that counted as a significant factor for the labor shortage. Many workers having been sick with Covid-19 (and others with long-haul Covid symptoms) stayed home. Meanwhile there were millions more who simply feared infection and didn’t want to risk working on-site.

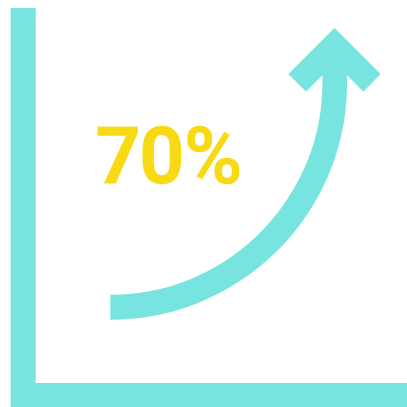
All this translates into very real labor shortages in the construction industry throughout the pandemic, which has exacerbated a huge crisis the industry was already facing.

“ The workforce shortage is the most acute challenge facing the construction industry despite sluggish spending growth.”



And what about *specific* disruptions in the construction supply chain that have created a logistical nightmare for the construction industry? After 15 days to slow the curve, pronounced and profound actions began to occur rattling the chain:

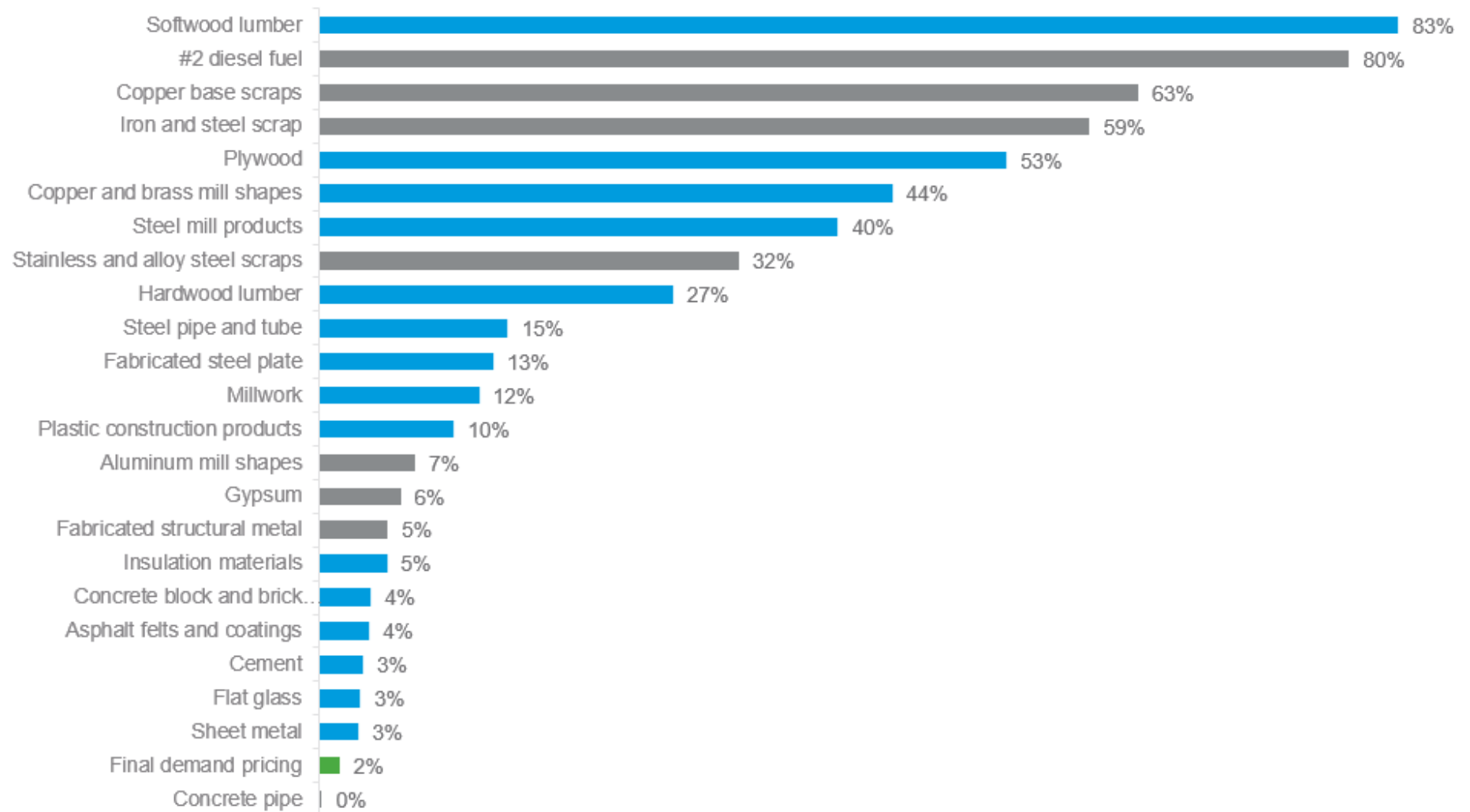
- ❑ Transporting materials across the country became more costly as diesel prices hit a 7 year high, now up **148%**⁹
- ❑ Scarcity of shipping containers and congested ports in Asia caused shipping costs for cargo to the U.S. to rise. The demand for goods has outstripped the availability of containers to carry them to the U.S.
- ❑ In the U.S., closed ports, cargo surges, and delays in unloading containers off the Pacific coast caused a backlog of containers and delays in the supply chain. (As an example, there were a record-breaking 73 ships—many so far out they were adrift—waiting to unload in the U.S. ports of Los Angeles and Long Beach just recently.)¹⁰
- ❑ Nearly all forms of transportation, including shipping, air, ground, and rail have experienced delays due to global Covid-19 travel restrictions, which have slowed truck freight, as well as ship and air cargo
- ❑ Construction materials such as steel and lumber have been in short supply, with demand increasing steadily over the past year. Estimates indicate that industrial metals now cost **70%** more than they did pre-pandemic¹¹
- ❑ And, the *Bureau of Labor Statistics* reports that construction materials across the board and specifically soft and hardwood lumber, copper, and plywood prices have skyrocketed, reaching record highs¹²



Industrial metal prices have increased 70% more than pre-pandemic levels



Materials Price Index



*Blue amounts represent index achieving a record high (March 2021)

**Green represents construction prices to end customers

Source: Bureau of Labor Statistics

3 out of 4

contractors are in disputes related to Covid-19. The average number of construction projects in litigation due to projects failing to deliver on schedule has more than doubled.²¹

Short and LongTerm Covid-19 Industry Impacts

As we can see, these disruptions have been throwing a cog into the figurative supply-chain wheel, but what impacts did they have over the last two years and will they also continue to have over the long term?

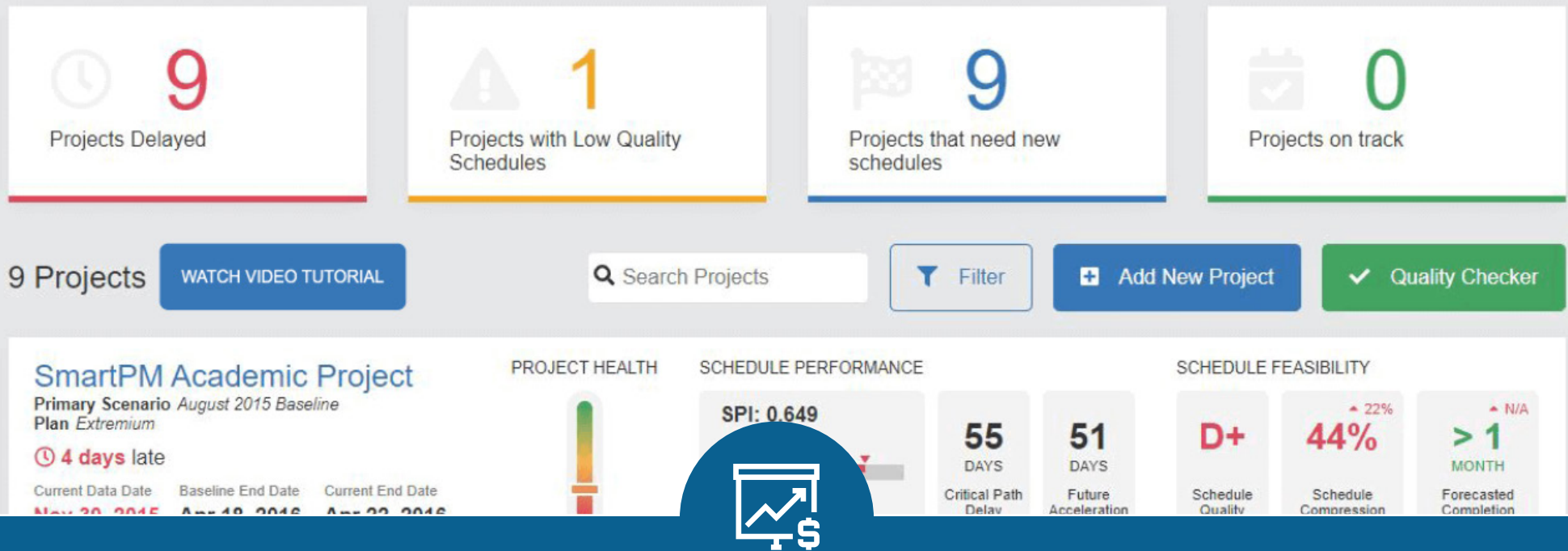
- ❑ **27%** of contractors were ordered by municipal, state or federal orders to halt or cancel construction projects, as they were deemed “non-essential.”¹³ (However, many of those projects that were allowed to continue and actually broke ground eventually stalled out due to lack of materials.)
- ❑ 9 out of 10 construction firms experienced pandemic-induced project delays, i.e., residential homes that typically took three months to complete before the pandemic took at least five months without any changes in the construction plan or any unforeseen circumstances¹⁴
- ❑ Labor shortages continue unabated, with **89%** of construction companies finding it hard to fill hourly craft positions and **86%** of firms still struggling to fill salaried positions
- ❑ On site, labor productivity diminished **15-18%** due to Covid-19 health and safety mitigation efforts. Employee absenteeism triggered by illness and quarantine, as well as a lack of available childcare for stay-at-home orders is a big culprit. Additionally, reduction in on-site staffing due to federal or local social distancing requirements, has further negatively impacted productivity, causing costs to rise¹⁵

“

To prevent disputes,
always start with
the contract.

~ Mike Pink, CEO, SmartPM Technologies





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Try SmartPM schedule analytics software to cut costs, reduce risk, and increase your construction margins.

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The Future: Supply Chain Forecasts

The question that now remains on everyone's mind is . . . will the supply chain issues resolve or become the new normal in the construction industry going forward? How much longer will these supply chain network disruptions go on for? If or when will it end?

Industry expected rebound

3.8% in 2021

+

3% in 2022



It may go well beyond the next three to four months, as there is a likelihood emerging that these disruptions will continue well into 2022 and beyond.”²²

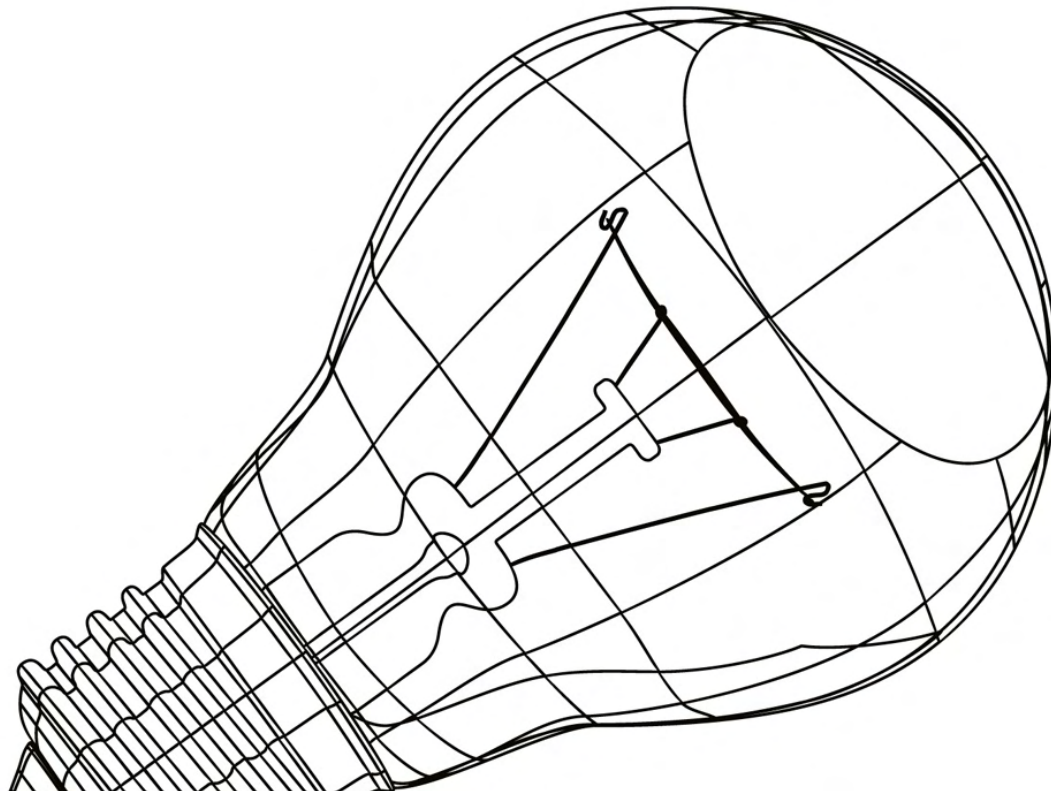
~ KMPG

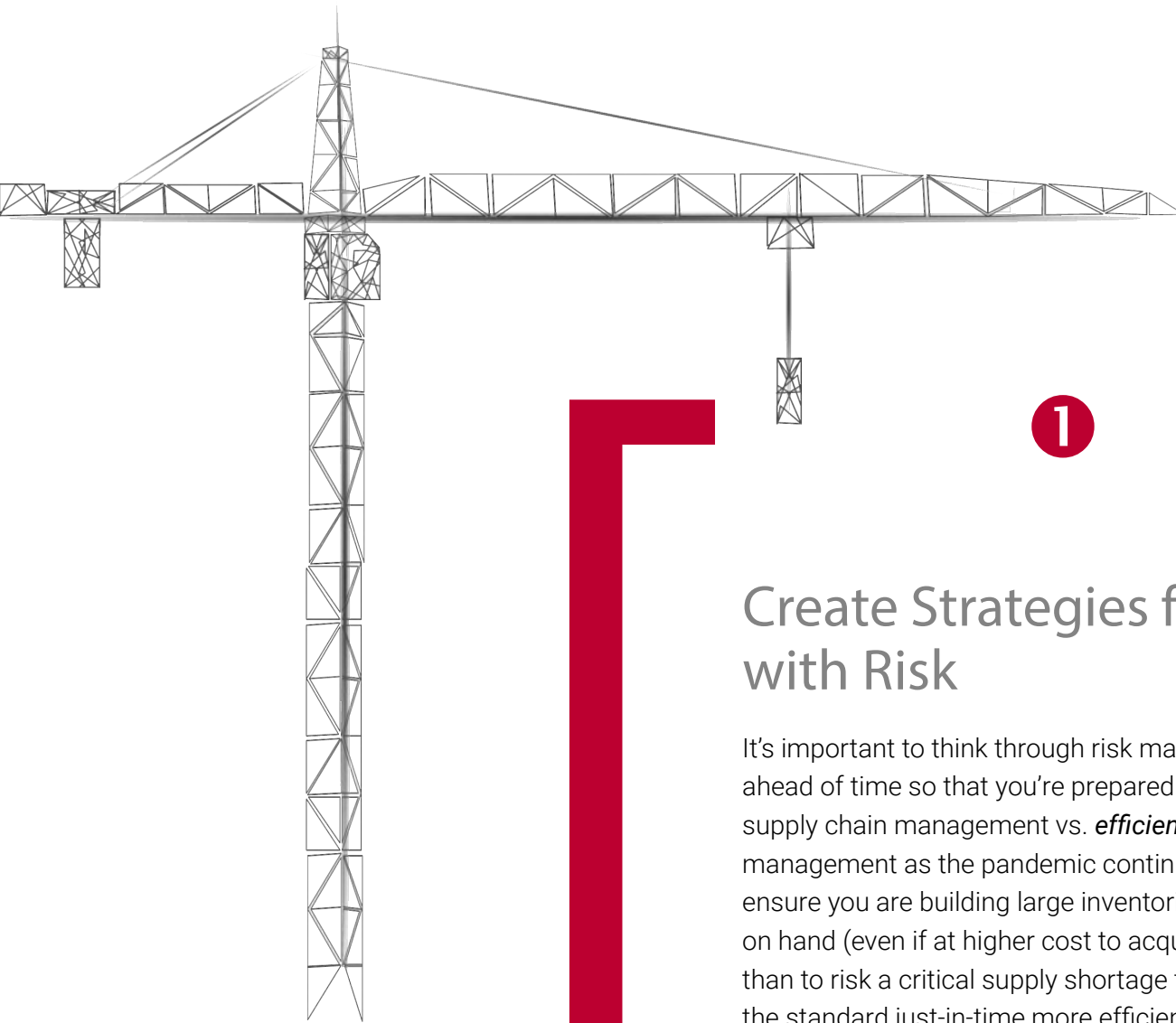
Even if a company has been fortunate enough to emerge from the pandemic thus far unscathed, its very existence and the uncertainty around what the future holds with Covid-19 can make any manager nervous and introduce unwanted risk into the equation. Although the industry is expected to recover quickly as a whole (it's expected to rebound by **3.8%** in 2021 and further **3%** in 2022), the supply chain logistical disruptions as well as the labor shortages are not. Unfortunately, many experts predict that these supply chain disruptions are likely to continue for some time and recovery rate will vary by region.

10

Recommendations to Manage Supply Chain & Labor Shortages while Mitigating Risk for Commercial Construction

And at long last: what can a contractor do to mitigate risk in 2022 and avoid the pitfalls of the last two years? Here are some suggestions to successfully manage your supply chain network as we roll into a post Covid-19 world and the pandemic becomes endemic. In short: manage your supply! In order to rebound in 2022, ensure that you have efficient supply chain management that is more resilient and better prepared for handling the volatility to come.





1

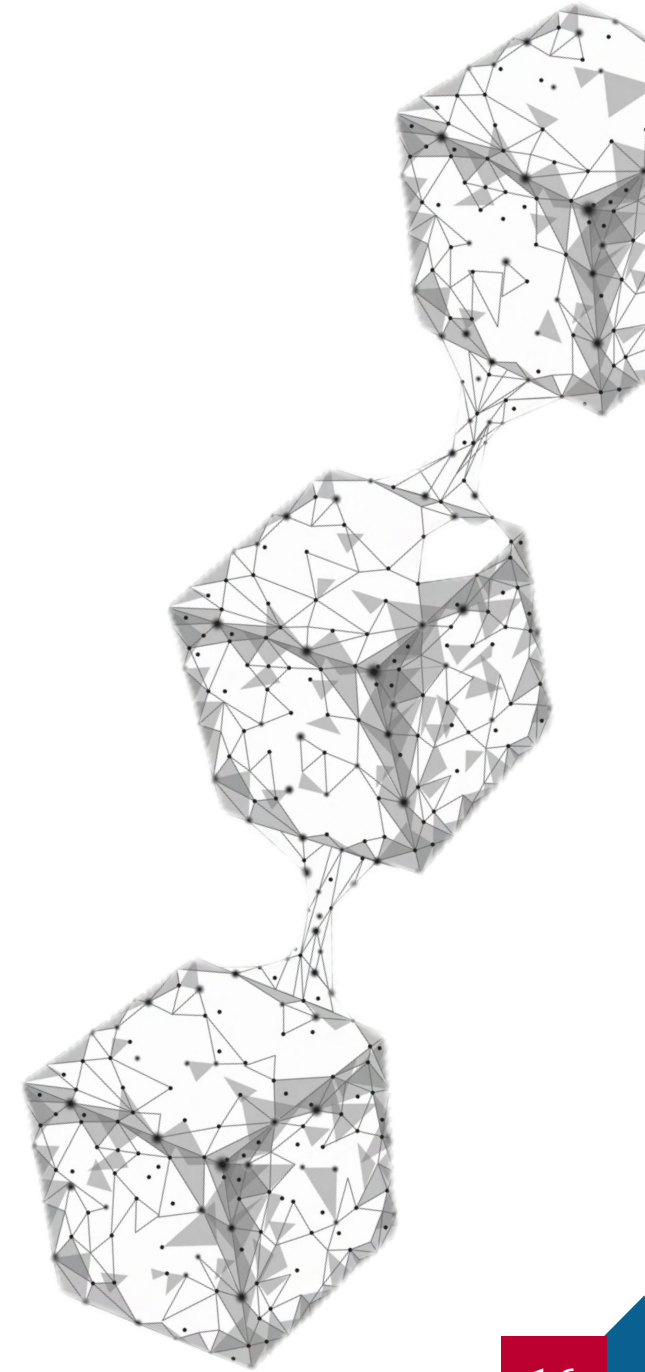
Create Strategies for Dealing with Risk

It's important to think through risk management strategies ahead of time so that you're prepared. Practice **reliable** supply chain management vs. **efficient** supply chain management as the pandemic continues. It's better to ensure you are building large inventories and have supplies on hand (even if at higher cost to acquire and store) than to risk a critical supply shortage that will occur in the standard just-in-time more efficient supply chain management that the construction industry is used to.

2

Keep Reserves or Extra Input Inventories on Hand

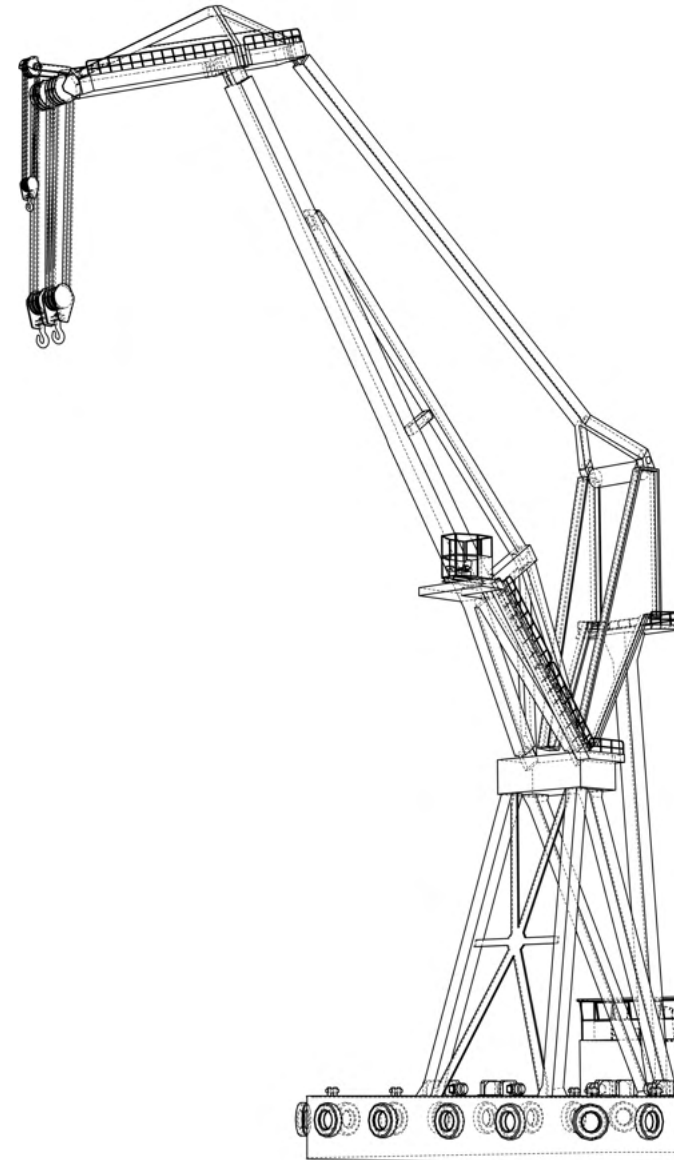
While many construction projects need a steady stockpile of raw materials on hand, they may want to store large “safety stock” to hedge against uncertain demand and mitigate against supply shortage or stockout.

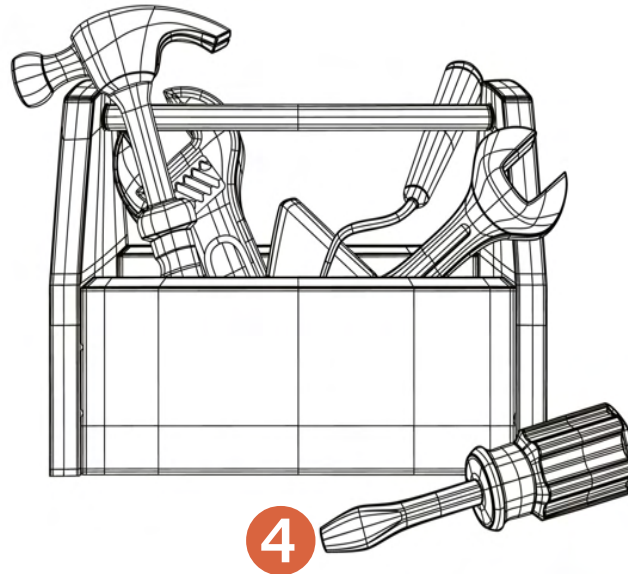


3

Forecast Construction Material Costs

Analyze trends in pandemic-created supply and demand challenges and identify those key shortages for critical inputs and materials expected to be in high demand and therefore to increase in cost. For example, a contractor might order anticipatory stock of raw materials when forecasting a spike in a commodity's price.¹⁶





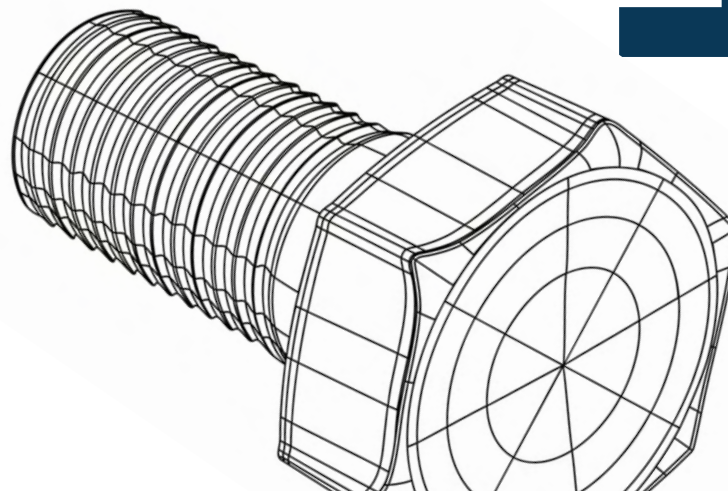
Obtain Input Contracts at Known Pricing

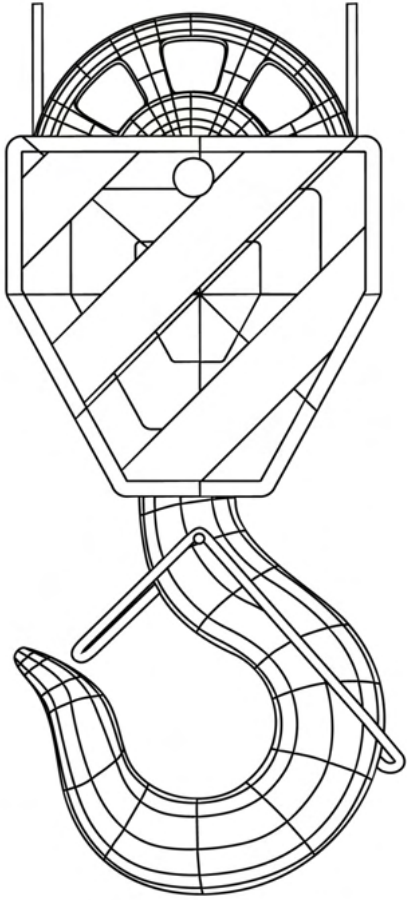
Secure and lock-in input contracts for known price and quantity with willing suppliers early to reduce your exposure to risk later.¹⁷

5

Invest in More Supply Inventory Storage

Investing in and stocking-up on inputs and materials when prices are favorable can mitigate pricing volatility and may save money. Plan for more storage to hold it.





6

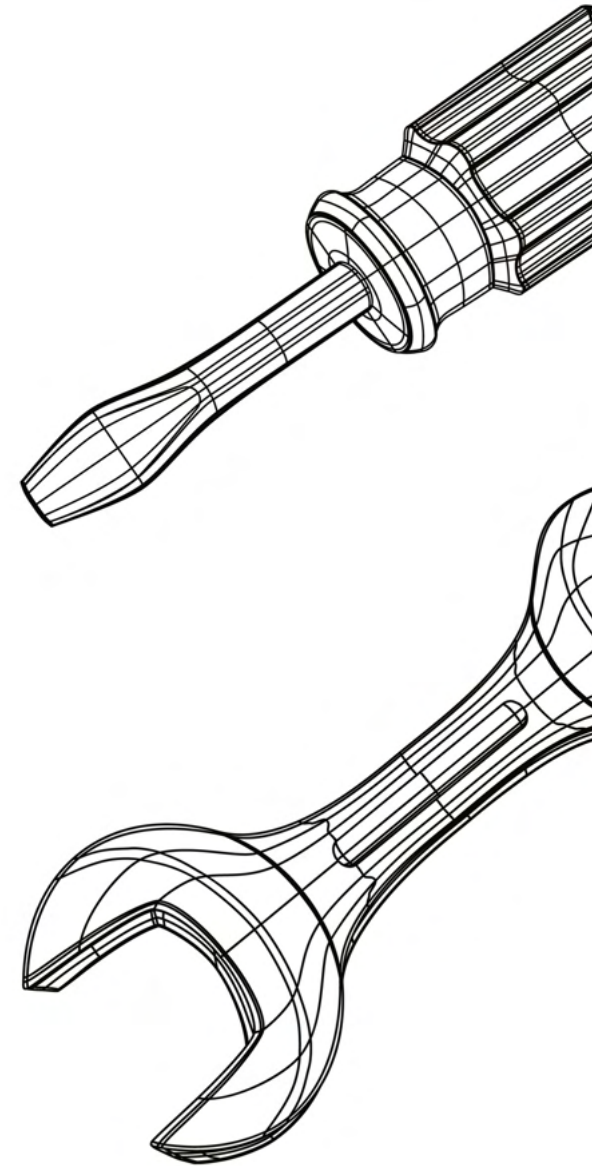
Expect Supply Chain Disruptions and Establish Long Lead Times

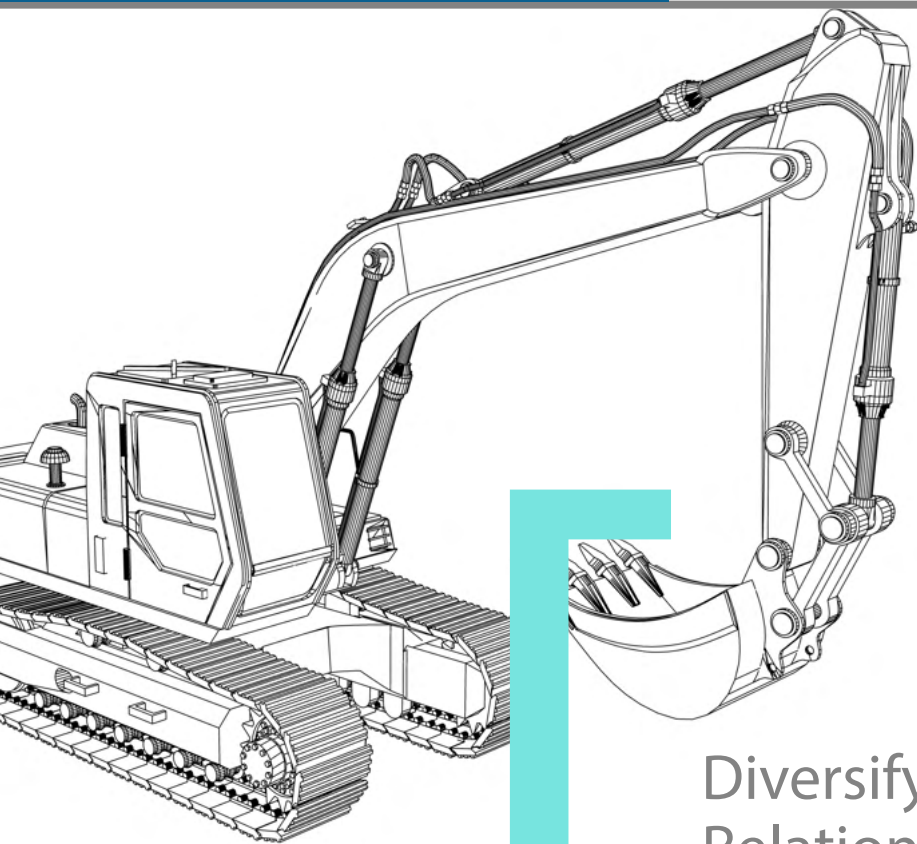
Plan "backwards" and order supplies and materials with a long lead time. Instead of days or weeks, allow months and in some cases even years for your crucial build materials to make it through the supply chain to your physical construction site.

7

Explore Alternative Delivery Methods Enterprise-Wide, Early On

Employ collaborative and coordinated project delivery methods (IPD) with strong partnerships across enterprise —PMs, engineers, architects, contractors & sub-contractors—to address decisions early on in the project and get a head start.¹⁸





8

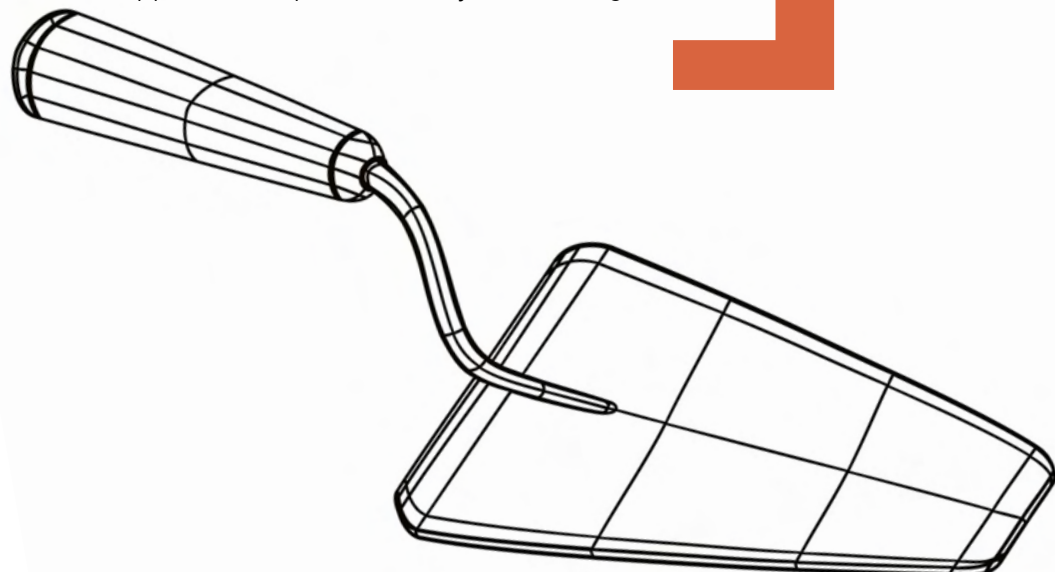
Diversify or Maintain a Relationship with Multiple Suppliers, Including Local

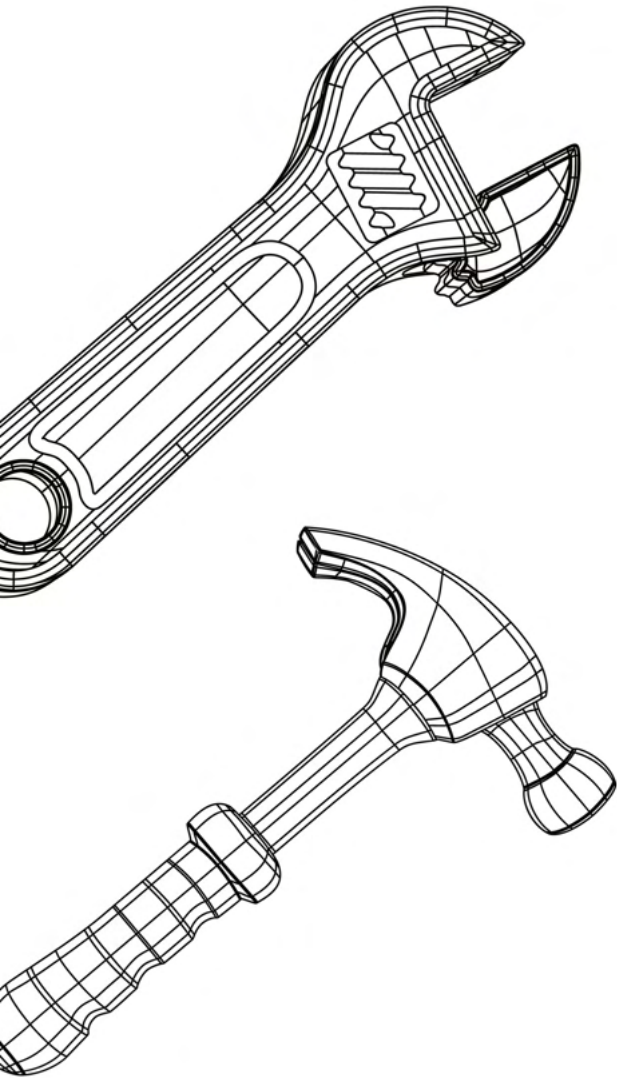
Building a "back-up" of multiple vendors (and distributors) can better protect your business in uncertain times. Leverage locally produced materials and suppliers with optimal inventory, location and transportation cost. If one supplier struggles to provide the quantity needed at the price you can afford, it's a good strategy to have other suppliers you can turn to.

9

Develop Competitive Hiring Packages/Practices and Recruit Skilled Workers

Although we're still experiencing the after effects of the 2008 recession where the construction industry hemorrhaged 630,000 workers, in 2023, the industry will need to bring in nearly 590,000 new workers on top of normal hiring to meet industry demand. But not just any workers. The industry faces a crisis in *skilled* workers. According to Anirban Basu, Chief Economist, "The workforce shortage is the most acute challenge facing the construction industry despite sluggish spending growth." The number of entry-level construction laborers has increased 72.8%, while the number of total construction workers is up just 24.7%. The labor market remains extremely tight going into 2022. Contractors will be competing fiercely for talent.¹⁹ Invest in creating skilled craft laborers by providing education, apprenticeships, and safety and management programs.





10

Review Specific Contract and Jurisdictional Mandates, and Revise Future Contracts

As projects affected by restrictions and Covid-19 lockdown protocols reached their final stages in 2021, delay and disruption disputes are now rising in 2022. In order to protect your business and avoid disputes, keep current and thorough project records.²⁰ Track and meticulously document the pandemic-induced supply chain issues out of your control that caused the delay or disruption, and any efforts made to mitigate. Check those documented issues against local and federal mandates, and then review specific contractual clauses as they relate to force majeure and other "legal" excuses for failed or delayed project delivery.

“

The difference
between a claim and
dispute depends on
whether you agree.

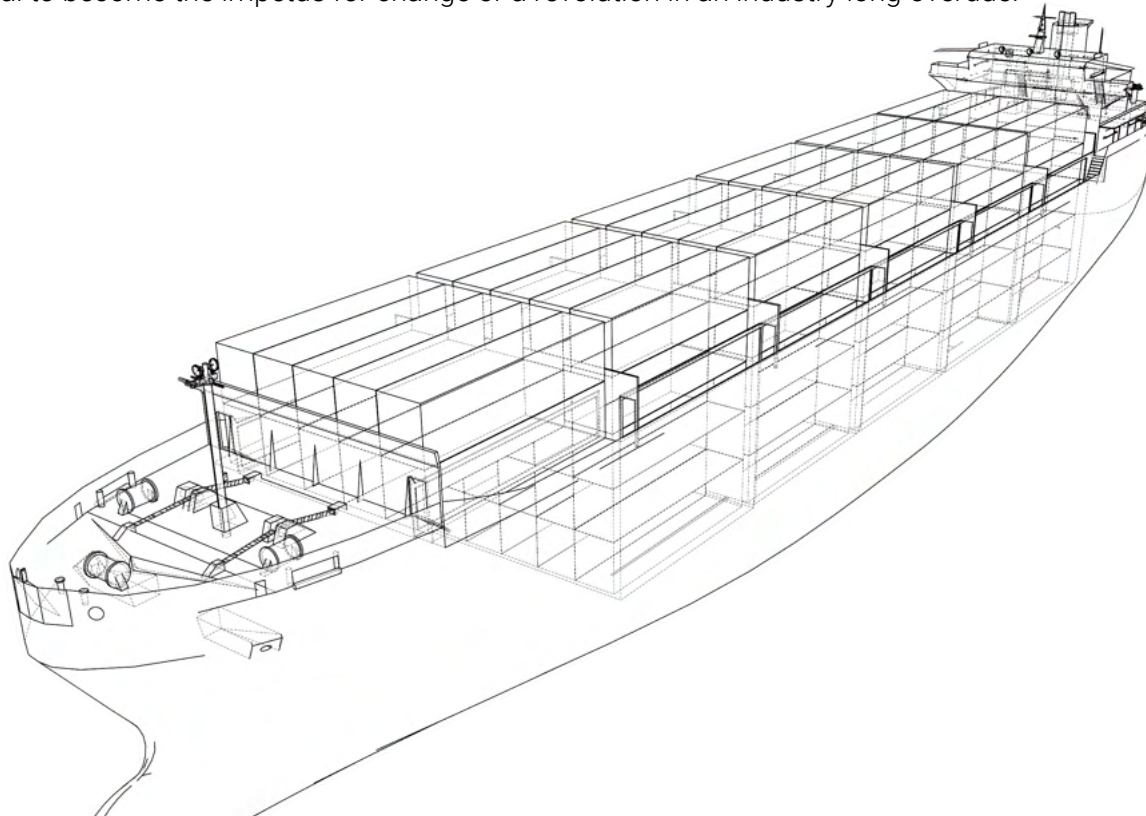
~ Mike Pink, CEO, SmartPM Technologies

Conclusion—Impetus for Change

As you can see, contractors and the construction industry faced unprecedented challenges in 2020 and 2021 due to the pandemic wreaking havoc on the supply chain network. While contractors can still expect to face many of the same supply chain challenges in 2022 as they did in 2021—including skyrocketing materials costs, delays in shipping, supply disruptions, and rising labor shortages among many—if they take a more conservative approach to managing their supply chain, follow the recommendations above, and heed the lessons of 2021, they can take real steps forward.

Taking these new steps will lower costs and reduce delays in the supply chain as well as begin the difficult but necessary process to build a new workforce. These steps will not only minimize the negative impacts of Covid-19, but will also start solving the structural issues that have plagued the industry for decades and were present well before a virus shined a light on it.

What might have begun as a dark period in the construction industry, fraught with pain and unparalleled strife, has the potential to become the impetus for change or a revolution in an industry long overdue.



Endnotes

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- 2 The Hartford: Construction and COVID-19: The State of the Industry and Future Trends
- 3 The Registry: Report: Material, Labor Shortages Continue to Affect Construction Industry
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