FMI
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2020

COVID-19 COLLECTION:
FMI INSIGHTS AND SOLUTIONS

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FMI QUARTERLY 2020

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Welcome to the FMI Quarterly

By Chris Daum

By now, the operating plan and budget you opened the year with have been scrapped. Unexpected, but appropriate. The top of this business cycle, the longest expansion in U.S. history, vanished over a weekend in early March. Ninety days on, the global economy is in steep decline and dragging the Built Environment down with it. But while the broader economy seeks its bottom, industry leaders and managers must find their footing now and lead forward.

The standard playbook of well-managed industry firms calls for maximizing revenue and profit at the top of the business cycle and then deftly pulling back ahead of the inevitable industry downturn that lags a general recession by 12 to 18 months. It's time to throw out the standard playbook; the industry recession arrived with COVID-19. Despite being an "essential service," schedule and site access delays, supply chain disruptions and increased operating costs are having immediate adverse impacts on construction put in place and margins.

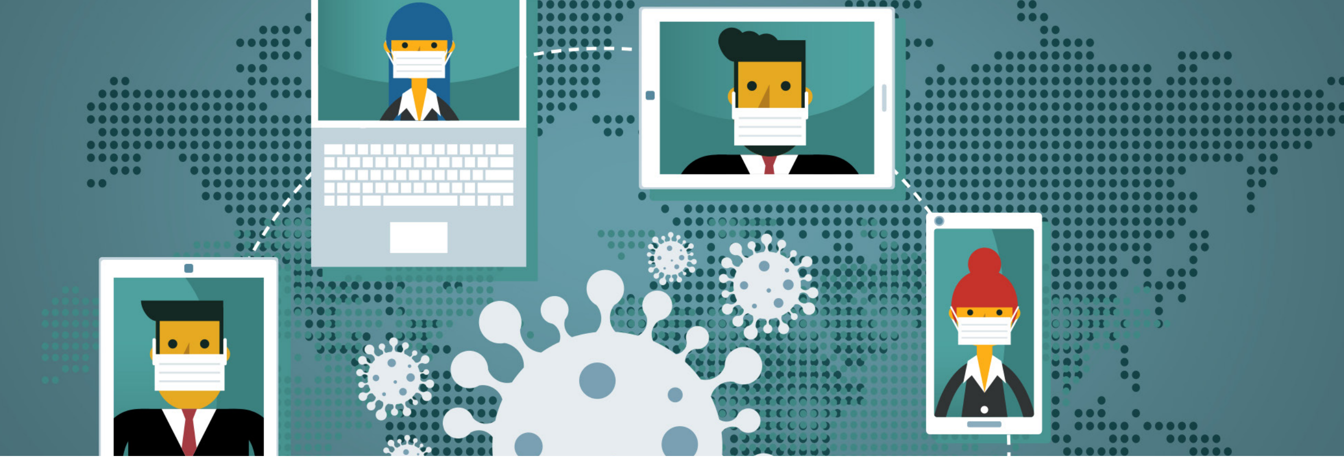
The damage to the U.S. economy is severe. Forty million new jobless claims in 10 weeks pushed April unemployment to 14.7%. GDP (annualized) declined 5% in the first quarter and is forecast to decline 40% in the second quarter. Private and public sector balance sheets have been impaired at all levels globally. While the broader economy may begin to recover by the fourth quarter, the Built Environment will be searching for its bottom well into 2021.

The COVID-19 pandemic is a rare and largely unanticipated "black swan" event. The abruptness, breadth and depth of the resulting economic downturn present tremendous challenges for leaders at all levels of the Built Environment. In fact, today's business landscape forces us to stress-test more than just our corporate and personal balance sheets.

Key aspects of our businesses are being put to the test from our purpose, values and culture to our strategies, business development and operating practices. This edition of the FMI Quarterly includes articles addressing project restarts, liquidity management, business strategy, technology and lessons learned from the Great Recession. We also spotlight two companies that are putting key elements of their values and cultures to test with excellent results. We highlight how Faith Technologies leveraged its core value of "*Redefining what's possible*" with astonishing results to deliver mobile and transferable modular hospital rooms. In another, we feature how Interstates of Sioux Center, Iowa, is using its agile business model to remain resilient throughout this crisis.

While COVID-19 pulled the rug out from under the economy and accelerated the timing of our industry downturn, it is both possible and necessary to develop new playbooks to lead well and manage effectively through and beyond this crisis. Near-term and midterm goals will need to be revised. Business strategies and operating plans will need to be redeveloped. But as each previous downturn has revealed, it is possible to respond effectively, manage well and eventually prosper even in hard times. On behalf of my FMI colleagues, we are thankful for the opportunities we have to partner with you and your team to ensure your continued success.

Chris Daum is the president and chief executive officer of FMI Corporation. Chris oversees the management of all FMI businesses and services and leads the firm's strategic growth efforts. He can be reached via email at *cdaum@fminet.com.*



The Changing Game of Strategy

By Jay Bowman

Why E&C companies need to approach strategy differently in times of heightened uncertainty and volatility.

The global pandemic has created a heightened sense of uncertainty across nearly all business sectors, where companies have suddenly found themselves dealing with an unusually high level of disruptive forces. The full impact of COVID's threat to human life and the subsequent shutdowns, closures and layoffs are still unknown; but one thing is certain: We have never experienced anything like this before.

While much of what's happening right now is unprecedented, it's important to remember that we live in a world filled with uncertainty, and engineering and construction (E&C) firms can't just rely on a single forecast, opinion or outlook when charting their paths forward. Instead, they should be factoring in a *range of different scenarios* and then strategizing new ways to play—and even win—in these times of uncertainty.

The question is, how can you effectively measure market potential—and gain a winning market position—in an environment that's changing daily. The key is to assess any new opportunities carefully, versus just jumping into them with the hope that they'll be able to buoy your sales—or your business as a whole. Put simply, taking a superficial view of a market (e.g., top-line spending only) or assuming past performance will be the same this time around is a mistake.

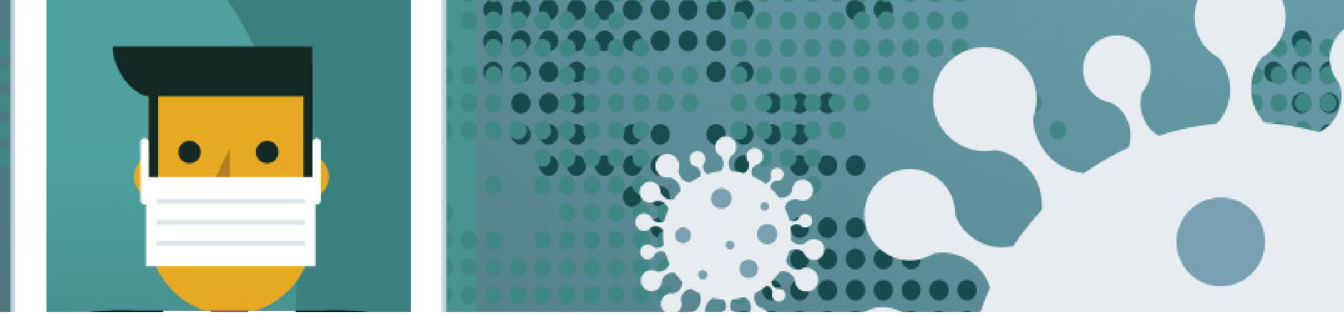
Don't Be a Blockbuster

The business world is littered with the skeletons of companies that have failed to see the need to strategize, change and adapt in real time. You could argue that Blockbuster was the best video rental store that ever existed. It dominated the market like no one else could and was the best at what it did for a specific slice in time. It had a chance to buy Netflix—whose current market cap is $187 billion—for $50 million and passed on it; now Blockbuster is gone (see "Strategy in a Time of Industry Disruption" for more details).

So while Blockbuster was one of the best companies in the video rental market at a certain point in time, it just wasn't adaptable. We can assume that the same situation could apply to the maker of the original kerosene lamp—an industry that was plugging along nicely until someone invented electricity and light bulbs. Intent on selling its kerosene lamps despite this obvious disruption, the manufacturer may have failed to realize what it was really selling: light. Kerosene lamps just happened to be the vehicle for that light (for a period of time); but if the manufacturer had really thought about what it was selling, it might have turned its attention to electric light bulbs.

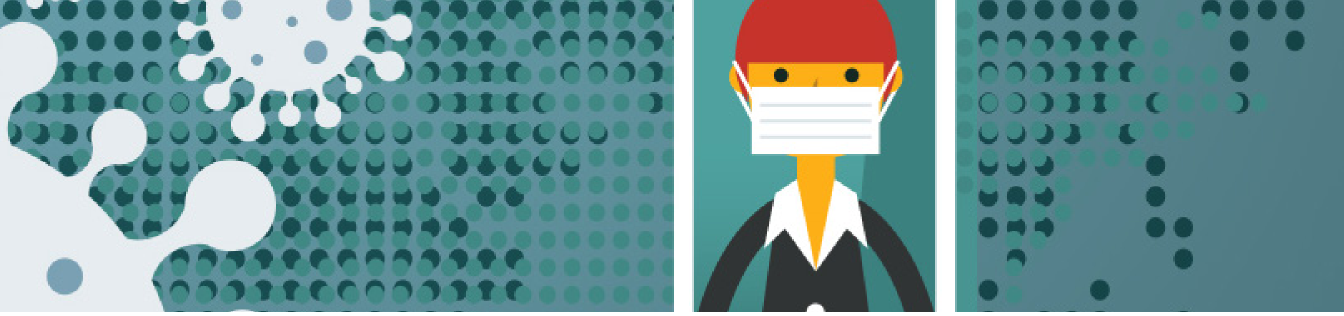
Companies like Blockbuster went out of business because they focused solely on ***industry dominance***. They doubled down on a strategy that reflected, at best, the current context or, at worst, a past context. When the context changed—as it is right now for many during this global pandemic—Blockbuster failed to recognize it or adapt to it. As the organization waited for things to "return to normal," the rest of its competitors dusted off their strategic plans, reworked them and focused on more relevant opportunities. Here's how you can follow in their footsteps and develop a solid strategy for managing through the current, disruptive environment.

- **Start with a solid business strategy.** Having a solid business strategy in place is important in any market conditions, but it becomes especially critical during disruptive events like COVID-19. This doesn't mean laying out a four- or five-year growth plan and then hoping that everything just falls into place during that time frame. You also must monitor, tweak and act on the plan on a dynamic basis. Staying fluid is even more critical during times of volatility. Where the rising tide of a good market tends to "raise all ships," when the tide goes out—as it has during this global pandemic—you find out quickly who's been swimming naked.
- **Understand that you're probably one generation away from losing a major customer.** When FMI talks to project owners, we usually ask them why they chose a certain contractor. Many of them don't know the answer to the question, and others say, "because we've always worked with them." Anytime we hear that response, we know that the contractor is likely just one generation away from losing that relationship. When the next generation comes in, that contractor may be out of the picture. The moral of the story here is that if you're not working to strengthen and maintain those relationships, they can be displaced quickly by a competitor.
- **Don't jump at an opportunity just because you can.** During the last recession, a lot of contractors tried to get into federal and health care markets—two sectors that held steady through that tumultuous period. While these pivots sound straightforward enough in theory, they actually could have been detrimental to the E&C firm that lacked a good strategy for serving these markets. In fact, many companies experienced disastrous results because of these knee-jerk moves. If health care is a new customer segment worth exploring, make sure this pivot aligns well with your company's overall strategy and that it's not just a knee-jerk reaction to a loss of business in another sector. Make sure you have the right success tools to be able to compete in that market, and use a deliberate, dynamic strategy—just like you would under any other market conditions.
- **Avoid decision paralysis.** Strategy in uncertain times requires constant monitoring and adaptability. Similar to a hurricane that's churning out in the Atlantic and being monitored closely by



residents on the East Coast and at the National Hurricane Center, the final outcome of the current business environment has yet to make landfall. We don't really know what's going to happen, but that doesn't mean you can't effectively strategize and prepare for what may happen. By tracking multiple potential outcomes, and by avoiding the "decision paralysis" that many companies have fallen into, you can create an adaptable organization that's well braced for success in any market conditions. This advice is often overlooked in the E&C world, where few companies know what they're actually selling. In fact, there's a reason why there are very few 100-year-old contracting firms in the U.S., and it's because they were the best at a given point in time, but they couldn't—or wouldn't—adapt. Maybe they had a long-term relationship with a specific customer, or maybe the company had a monopoly on a certain resource. Much like the Blockbusters of the world, these companies didn't adapt. They started to lose focus, and before they knew it, they were out of business.

- **Know what <u>really</u> matters to your customers.** There are always new companies coming into and existing companies leaving the E&C marketplace. Regardless of whether a contractor knows the benefit of what it's selling and what its value proposition is, it does have one. Most times, someone else assigns that value proposition. For example, if a firm is just winning its fair share, it's just competing on price. Some days it will get lucky and get selected for that reason. But beyond that, the company really doesn't know what really matters to its customers or what they're looking for. For example, a project owner may be shopping on quality, while another one may want a contractor that gets the job done the fastest. Yet another may want to work with a contractor that offers innovative solutions.
- **Get your market share numbers right.** Market share includes both a fixed and a variable component. If your competitor has an exclusive relationship with an owner and dominates a given market, and if that company represents 50% of the market, you can't call it a $100 million market. Instead, it's a $50 million market (because someone else already has half of it). In any marketplace, competitors will "own" a specific sector and therefore be unaffected by overall market demand fluctuations (i.e., an exclusive relationship with a client that has an established and pre-funded construction program). The best approach is to assume that 40% of a market represents the "fixed" share of a market, and 60% is "variable."
- **Factor in the current procurement practices.** During recessionary periods, it's not unusual for owner selection criteria to shift into new areas. This tends to catch contractors off guard, particularly if they haven't properly strategized or adapted to the current market conditions. A company that's



been selling quality all along can suddenly find itself shut out of market conditions if everyone suddenly starts shopping on price. Companies can avoid this trap by paying attention to shifts in the procurement process and by adjusting what they sell (or how they sell it) in response to these changes. In the end, if the contractor isn't paying attention to these market dynamics and focusing on how selection decisions are being made, it would wind up promoting something that either doesn't carry the same amount of weight or forgetting to include something pertinent in its bid.

- **Expand your breadth of offerings to current customers.** As companies across all industries scramble to shore up their bottom lines during this disruptive period, E&C companies should also consider selling more to their current customer bases. Where the overflowing project pipelines of the last 10 years probably didn't necessitate these types of proactive moves, the current environment commands a different strategy. A company that serves the industrial sector, for example, could offer its customers operation and maintenance services. Another E&C firm could expand into master planning or engineering for its health care or education customers. Think about the different areas where a client may need help right now, and then offer to assist in those areas.

Sell the Light

It's no secret that the future is going to be reinvented in some way; we're just not sure exactly how that will play out yet. As we wait for that picture to come into focus, use good strategy to navigate the uncertainty. Avoid rushing into decisions that may not turn out favorably for your company, its employees and its customers, and instead take a calculated approach to both the current and future E&C marketplace. The most successful companies focus on understanding the world around them, how that world is being reinvented, and how they fit into it.

Remember that you're selling light, not just lamps.

Jay Bowman is a principal with FMI. Jay Bowman assists a broad range of stakeholders in the construction industry, from program managers and general contractors to specialty trades and materials producers, with the identification and assessment of the risks influencing the strategic and tactical decisions they face. Jay can be reached at *jbowman@fminet.com*.

What Is Your Company's Post-COVID-19 Liquidity Strategy?

By Tyler Paré and Alex Miller

As the smoke begins to clear on the global pandemic, liquidity management will be a business imperative for the foreseeable future.

Both reeling from economic shockwaves induced by the COVID-19 pandemic, the U.S. national economy and the Built Environment are in unchartered territory. Over the past several weeks, both engineering and construction (E&C) firms and industry service providers have been scrambling to get a handle on the situation and brace for the associated financial impacts—particularly with respect to liquidity.

By now, much of the low-hanging liquidity fruit has been picked, including extending lines of credit, securing payroll protection program (PPP) funding and reducing discretionary spending. However, the industry is far from out of the woods, and liquidity management will be a business imperative for the foreseeable future.

The positive news is that times of volatility are also times of opportunity for firms that are well positioned and well capitalized. At FMI, we have been coaching clients to think about liquidity in today's market through these two prisms:

- **Survive**–What will your company need to get through the next 30, 60 and 90 days?
- **Thrive**–Can you feasibly go on the offensive and take advantage of a volatile marketplace?

In this article, we highlight key factors for E&C executives to consider in order to survive and thrive in the post-COVID-19 reality.

Survive

Consider how long you would be able to operate your business with zero additional cash inflow. This can be derived from the "Days of Cash on Hand" formula below. Under normal conditions, this ratio could be viewed as a superfluous metric (e.g., "if the world stopped tomorrow, how long could the business survive?"). For some, the world has stopped. Today, this crucial metric should be a standing agenda item at weekly executive committee meetings. While Days of Cash on Hand considers "worst-case scenarios," trend analysis of this metric can provide a meaningful gauge for executives to understand whether the company's liquidity position is improving or deteriorating going forward.

During the last several weeks, the E&C industry has gained a newfound appreciation for fundamental cash flow forecasting. By now, your financial leadership should have produced a reliable cash flow model. Begin to stress-test the model with what-if scenarios, erring on the side of worst-case situations related to factors such as:

- Mothballed projects
- Client bankruptcies
- Subcontractor defaults
- 30-, 60- and 90-day collection extensions beyond contract terms

Now is the time for project managers to develop cash flow projections on all of their projects on a monthly or biweekly basis for the continued period of economic uncertainty. Your financial leadership should provide templates, education and coaching for this process. It's important to note that detailed cash flow forecasting is the best way to instill confidence in your banking and surety relationships. Should you need financial assistance in the future, banks are more apt to bet on a business that understands its current and future cash needs.

You'll also want to factor in the cash flow impacts associated with project restarts. In markets where construction activity has been suspended, monolithic restart dates will put tremendous stress on the contractor community relative to manpower and liquidity. Project managers should be required to develop a restart strategy for all impacted projects, with consideration for key projects risks (i.e., clients, subcontractors and procurement). Cash flow implications associated with each project restart strategy should be incorporated into the cash flow forecasting referenced above (see "Critical Project Restart Strategies" by Gregg Schoppman for more details).

Finally, understand the covenants associated with your banking and surety arrangements. Leverage forecasting to determine whether covenants may be in jeopardy and communicate with your financial institutions proactively if you suspect that you may require relief in the near future.

$$\frac{\text{Total Cash on Hand}}{\text{Annual Operating Expense}} \times \text{365 Days} = \text{Days of Cash on Hand}$$

Focus on what you can control

To best drive cash *inflow*, consider making these moves:

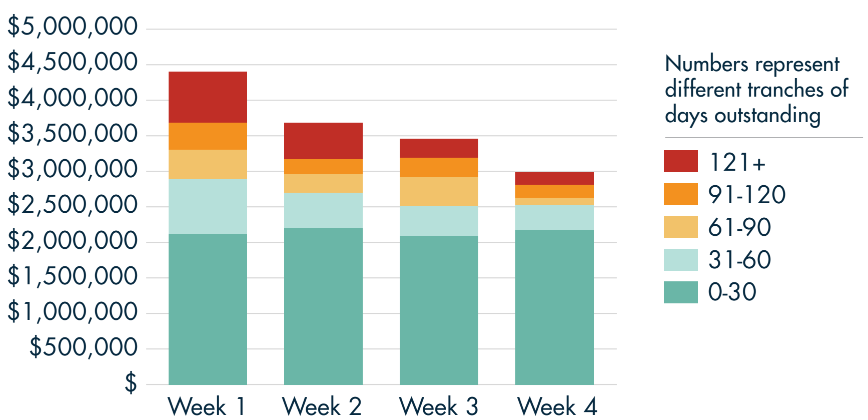
1. **For management:**
   - Increase management focus on billings and collections.
   - Dashboard outstanding AR in tranches of 30 days.
   - Meet weekly with project management to review and understand the status of all invoices.
   - Develop action plans for every outstanding invoice–and review the following week.

2. **For clients:**
   - Require project managers to proactively communicate with clients.
   - Confirm intention of payment prior to payment due date per contract terms.
   - Communicate late payment status weekly in documented job status update email.
   - Leverage zippered relationships to communicate upstream in client organizations if there's no response in two weeks.

3. **For accelerations and "fill-in" work:**
   - For essential projects, determine whether production/schedules can be accelerated (to the extent you have confidence in payment terms). Clients with deferred maintenance or small projects may be receptive to initiating work in spaces with reduced occupancy during work-from-home or stay-at-home ordinances.

4. **For new work contracts:**
   - Negotiate advantageous terms impacting cash flow (schedule of values, mobilization, trade credit terms, etc.), and consult with legal counsel to develop contract language relative to potential future shutdowns related to COVID-19 (e.g., a "second wave" in the fall of 2020).

AR Trend Analysis



When it comes to current obligations and accounts payable, there is more risk than opportunity in slowing down payments. Subcontractors, vendors and suppliers typically prioritize services to customers who pay on time. This will be particularly true in markets where work has been suspended and where the project restart risk outlined above is significant. To avoid supply chain and production issues that can impact cash flow dramatically, pay current obligations on time per contract terms.

Time to Thrive

Times of volatility can be times of opportunity ("don't ever let a good crisis go to waste"), particularly if you have the financial and operational capacity to identify and seize the opportunity. At the peak of the market, it can be expensive (at best; impossible, at worst) to hire senior talent needed to grow the business, and the opportunity cost for taking senior managers and allocating them to growth initiatives can seem too high.

As for acquisitions, the last few years have seen tremendous activity (with new buyers entering the market), and many buyers have decided to sit out the recent wave and wait for the right opportunity. In February 2020 ("pre-COVID"), FMI conducted its annual "M&A Trends for the Construction Industry" survey. We found that, overall, buyer interest had begun to slightly soften compared to the past three years as buyers sensed we were nearing the peak of market activity and valuations had grown accordingly. We received feedback like:

- "We will look to be opportunistic as the market slows down and the current age of many business owners forces them to retire."
- "We are preparing for a downturn. This will make targets more affordable."

We are already seeing well-capitalized companies position themselves to be acquisitive in the next few years, either of well-performing companies whose values may be impacted or of firms that have found themselves in trouble (they didn't read the survive section of this article) and are looking for a lifeline. As for sellers, recessions and pandemics do not change demographics; business owners in the E&C industry continue to get older and will need to consider their personal liquidity in the context of a volatile market.

FMI has identified the following tips for managing liquidity during this time with an eye on thriving through the crisis:

Keep a "Liquidity Reserve." First, make sure the business has the liquidity needed to get through this crisis. Next, go back and double-check your math. Stabilizing the business should be your top priority. There will be unique opportunities for growth that present themselves in the coming months, but they will be wasted if you have not cultivated your "own garden." Once you have assessed your own financial needs, consider what amount of capital you can set aside for opportunities—segmenting "operational liquidity" from "strategic liquidity." Strategic liquidity is the capital that can be used to fund growth or other strategic initiatives, such as:

- Hiring a key leader or business development professional for a new market segment.
- Opening a new office in an attractive market.
- Hiring crews to increase or greenfield self-perform capabilities.
- Acquiring a company that accelerates a strategic growth plan.

Reevaluate Strategy for an Uncertain World. Not all opportunities are great (or even good), so reevaluate your strategic plan and have a clear set of objectives by which to measure all potential opportunities (i.e., a strategic "go/no-go"). This is particularly critical when you have less liquidity to make multiple gambles. Be judicious with your resources (both capital and time). In the context of the post-COVID-19 world, ask yourself:

- How will our core markets/segments be impacted by COVID-19?
- How dramatic and long-lasting will changes in demand be?
- If our markets/segments will grow substantially, how do we capitalize on them?
- How do we protect/grow market share or customer share of wallet? Do we have enough time to accelerate growth organically, or do we need to consider acquisitions?
- If our markets/segments will shrink substantially, how will we pivot to new opportunities?
- How do those opportunities align with our core capabilities?
- What capabilities will we need to add to be competitive going forward?
- Is there enough time to pursue opportunities outside of our wheelhouse organically, or do we need to consider acquisitions?
- How much liquidity do we need to fund an organic/startup penetration strategy, acquire top-tier talent to accelerate market/segment penetration, or buy our way into a new market segment?

Don't Forget Your Personal Liquidity. For many business owners, their largest asset is their investment in their companies. Unfortunately, this is an illiquid asset. In the last few years, we have seen a record volume of both M&A activity and ESOP transactions in the E&C industry, both of which allowed owners to extract liquidity from their ownership in the company. However, the average age of ownership in the industry is still increasing, and many firms will face the need to transfer ownership (i.e., get the owner liquid) in the next few years.

At FMI, we encourage owners to consistently consider their personal liquidity plans when implementing strategic plans. While there will be unique growth opportunities in this market, growth requires investment—which comes at a cost to near-term liquidity. With both the credit and surety markets likely looking to increase capital requirements for the foreseeable future, getting liquidity out of the business will come at a premium.

Also consider that while the M&A markets have been strong, the majority of construction firms still transfer equity internally. This places a premium on developing next-generation leadership. When times get tight and we are forced to re-

evaluate all costs, it is sometimes easiest to look at tenure as a determining criterion. However, we must remember that the next generation of leadership will be vital to ensuring liquidity for our investment in the company—whether that ownership transfer is internal or external. Even if our plan is to sell the company, one of the highest drivers of value in the M&A market is a management succession plan (no one wants to pay you money to fix your succession plan).

Capital is a finite resource in a business—the same dollar cannot be used to fund operations, fund strategic initiatives and provide the owner liquidity. In the current environment, business owners must be more disciplined in managing liquidity and increasing access to capital to ensure the sustainability of operations and to take advantage of opportunities that will become available. Owners must also consider their personal liquidity within the context of their life goals (i.e., retirement, de-risking personal assets) as they consider where to place bets with capital. A disciplined approach to maximizing and strategically deploying liquidity will allow firms to survive in the near term and thrive for years to come.

Tyler Paré leads FMI Consulting's Performance Practice, which assists E&C firms in the areas of operational excellence, risk management, compensation and rewards, and peer groups. As a principal with FMI, Tyler leverages his construction experience, coupled with his advanced knowledge of business mechanics, to help clients manage risk and optimize profitability. His consulting work focuses on linking work acquisition processes with project execution best practices in support of competitive strategy. He can be reached at *tpare@fminet.com*.

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The Role of Construction Technology in COVID-19 Recovery

By Russ Young and Jay Snyder

How E&C firms can leverage technology to support their strategic and operational objectives.

COVID-19 opened the engineering and construction (E&C) industry's eyes to how technology can be fully leveraged and depended upon for business continuity and remote project execution. Many thought the pandemic would create radical change in how we work and invest in technology; but as we start to see some light at the end of the tunnel, the event has mostly served as an ***accelerant*** of existing construction technology trends. In fact, COVID-19 may have done more to propel the industry forward technology-wise than the massive influx of venture capital has over the last five years.

Startups and venture capital firms should expect this trend to accelerate technology spending in the short term. In fact, while technology spending and ***willingness*** to spend on technology will both surely increase, contractors will likely focus on core technology to benefit the company strategy versus "quick-point" solutions that benefit individual projects only (or at least, they should). For example, they should focus on optimizing their technology spending by assessing which solutions are core to their businesses and commit to fully funding and adopting those solutions across the enterprise. They should also look for areas where their software solutions overlap, assess the tradeoff of choosing one or the other, and then trim their technology stacks to make them lighter, leaner and more resilient.

Before the Pandemic

As we recap some of the pre-COVID construction technology trends, we saw ample venture capital, a proliferation of startup technology and a heightened level of mergers and acquisitions. On the buyer side of this equation, we had more active contractor pilot projects, beta testing and research and development (R&D).

We also noticed a distinct lack of accountability and maturity for dollars spent on technology within E&C firms. In fact, many firms had undefined strategic goals for their technology and struggled to know if their applications and data management solutions were meeting their needs. Technology products purchased based on a short-term need or success of a unique project often took precedence over a company's longer-term technology needs.

Much has changed since the buzzword "COVID-19" has become part of our everyday language. Going into a period of recovery, we now expect to see not only ample venture capital but also increased diligence. There will be a continued infusion of startups, but with the market focused less on "trusting the demo" and more on the proven use case and functionality.

Also expect to see more technology mergers and acquisitions (M&A) activity as startups seek stability and as mature technology vendors work to build out their platforms. There will be more emphasis on proven thought leadership and growing market needs, such as proven customer success at scale over the flashy technology. The Built Environment should hold technology companies responsible to prove the problems solved and not just emphasize the science or technology of solutions like artificial intelligence (AI) and blockchain. Plan to see a bigger focus on proven market penetration, return on investment and the problem solved for our industry—more steak and less sizzle.

Applying Lessons Learned

As the recovery progresses, we expect to see increased accountability and scrutiny for technology spend, with a focus on optimizing technology budgets and incorporating more comprehensive planning processes to determine real technology needs. Technology companies should also expect more requests from contractors seeking better understanding of their current software agreements, price and packaging renegotiations, and more access to data.

This will also be a good time to examine success in construction technology in other countries and apply some of those lessons learned here in

North America. Successful E&C firms will adopt an agile tech strategy intended to employ a decision matrix, establish the role of tech in the business, and create two- to three-year road maps. In short, the role of technology will be held accountable to support the strategic and operational objectives of E&C.

The New "Abnormal"

Companies looking to advance on the technology curve and build a leaner, more effective, resilient technology asset stack can use these strategies to make that happen:

- Freeze nonessential spending for two to three months and don't allow an overreaction to invest in tech "just in case" this happens again.
- Take inventory of your current technology stack and identify how each solution is used (see Exhibit 1 for a tech stack example).

Exhibit 1. Example of a Tech Stack

- Identify overlaps and assess the need for any redundant solutions.
- If two solutions do the same thing, but if each does something “a little better” than the other, make the tradeoff. Simplicity pays off both in licensing costs and repeatability across your enterprise.
- Review your software agreements and benchmark your pricing.
- Schedule calls to renegotiate contracts with appropriate technology providers in your stack. Good technology partners will welcome the conversation to explain their value and support your initiative.
- Review contracts with your managed service providers (i.e., network administration, database administrator, help desk, cybersecurity and cloud hosting).
- Ask yourself where you can consolidate services and reduce potential service overlap or simply avoid paying multiple fees. For example, is there an opportunity to move into all-inclusive cloud providers for simplicity and longer-term cost savings?
- Provide transparency for feedback and ideas; use a series of questions to act as a filter so that employees understand the company’s technology approach.
- Establish feedback channels and form a committee to assess, vet and recommend actions that will improve your tech asset stack and/or maximize the use of current tech assets.

Finding Strategic Value

Some technologies moved right to the front of the line to combat the immediate impacts of COVID-19. Take a hard look at these solutions to determine if and how they support your company's vision and strategy. Some may end up as temporary Band-Aids, but many will have longer-term impacts to your business—namely because this event has evolved as an accelerant of existing trends. For instance, before COVID-19, Amazon was taking business from shopping malls, and Zoom meetings were already growing; the global pandemic simply added rocket fuel to these growing business lines.

Similarly, in the E&C world, we were already seeing winners in digitization, remote work capabilities, collaboration and data management. The pandemic moved many of these from "nice to have" to "must have." Here are three of them:

- **Virtual Reality and Augmented Reality:** These technologies provide remote project management, inspection, conflict resolution and approvals that help keep projects rolling while project managers, engineers, architects and inspectors couldn't safely get to the job site. Devon Copley, CEO of Imeve, had a similar situation that we all saw with Zoom. His web and phone traffic shot up 300% from construction companies trying to solve this immediate problem. As companies see the positive impact to project cost and project completion time, we would expect these technologies to become more commonplace on projects.
- **Video, Devices and Artificial Intelligence:** Josh Kanner of Smartvid.io also had his phone ringing off the hook as he was able to quickly modify and enable his AI technology to report on new social distancing requirements on the work site. It was amazing to see such a quick and effective partnership between construction and technology to solve an immediate and new problem. This specific use case may be a unique solution to the new realities of a pandemic, but as construction sites embrace video, devices and AI, there will be long-term positive impacts on safety, compliance and productivity.
- **Default and Risk Management:** The financial health of the entire construction supply chain—owners, A&E, GCs, specialty trade contractors and building project managers—is coming under a new level of scrutiny. Michael Ho of Bespoke Metrics also had his phone ringing as GCs needed a more immediate and scalable solution for subcontractor verification in this new world. Data standardization and data collaboration to collectively price risk were not new needs, but they came to the forefront due to the effects of COVID-19.

Getting Into the Tech Sandbox

E&C companies need to be aware of and track new technologies that could support the future vision and strategy of the company. We still see too many companies quickly putting these new offerings into a live project without prior diligence to build a proven plan for change management. Training, integrations, updated processes and workflow are a few of the most important items to consider. One proven approach is to create a dedicated technology "sandbox" for your company. This is a separate testing environment to use before implementing on a live project or the entire enterprise. Make sure your sandbox environment is contained and do not let test projects unintentionally become long-term, fully deployed solutions without a clear plan for change management.

COVID-19 poured gas on the fire for why technology is important in E&C. This alone will change technology in your company—and your life in general—during this recovery period. The companies that survive and thrive in the new normal must be both deliberate and purposeful with technology. They must also demand increased accountability for the performance and cost of their technology solutions and initiatives, and create lean, efficient, resilient technology asset stacks.

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Building an Agile Organization to Thrive in Uncertain Times

By Michael Mangum

One electrical construction and automation services provider used its agile business strategy to break through the barriers during coronavirus pandemic and prepare for the next disruption.

All companies would like to think that their operations were built to withstand a major crisis, but COVID-19 taught a lot of organizations otherwise. From its initial onslaught and subsequent shutdowns to the global supply chain failures and permanent shuttering of some businesses, the global pandemic has exacted a heavy toll on both human life and our livelihoods.

While some companies are still trying to figure out how to deal with the immediate situation, Interstates of Sioux Center, Iowa, not only has the current impacts under control, but it's also carving out a path forward that will help shield the organization from future disruption. Some of its success on this front can be traced to its status as an *agile organization*, where "agile" is defined as ability to create and rapidly respond to change.

According to Clearly Agile, the success of agile organizations is well documented and includes companies like Google, Amazon, Netflix, Adobe and Spotify, to name a few. Able to develop and deliver products rapidly and provide value to customers and stakeholders alike, **agile organizations focus on transforming a group of people into a cohesive community through a shared purpose and vision.**

Well on its way to becoming an agile organization before the COVID-19 outbreak, Interstates was making moves to ensure high levels of resilience during times of uncertainty. In recent months, its traditional business unit structure had been revamped to allow for the creation of agile teams formed to deliver work for clients. Employees and leaders alike were also empowered to begin making more decentralized decisions and integrate agile behaviors rooted in the Interstates Core (Interstates Culture). "VUCA[1] is constantly changing, and the market is uncertain from

[1] VUCA stands for Volatility, Uncertainty, Complexity and Ambiguity.

many different perspectives," says Joel Van Egdom, CFO. "As we moved into the COVID-19 situation, we knew that we needed stability, a focus on core values and a strong mission to set us up to make quick, agile decisions—to adapt rapidly to the changing environment."

For example, the company immediately mobilized to form several teams and subteams to address specific areas of concern. This dovetailed off the firm's agile approach, which is based on multiple different "nerve centers." To address COVID-related concerns, the company's emergency response team began evaluating everything from travel restrictions to state closures to social distancing requirements and how those issues impacted Interstates' work and team member safety in specific regions.

"We quickly formed another team to address impacts to our supply chain and how we were going to stay in tune with those impacts," says Van Egdom, "and one that we called 'revenue growth initiative' team." The latter was focused on increasing correspondence with clients while also ferreting out new project opportunities for the short term, while other work was being placed on hold as a result of the COVID-19 impacts.

Van Egdom says these (and other) quick moves helped Interstates respond quickly in an extremely disruptive situation. "The ability to quickly form new teams, get them launched with a clear mission, and then allow them to really own the decisions in their areas of responsibility," says Van Egdom, "is a prime example of agile, decentralized decision-making in action."

A Nerve Center

It would have been nice if Interstates had been further along in its agile journey before COVID-19 surfaced in March of 2020, but President Dave Crumrine admits that simply establishing a nerve center quickly helped the company more effectively deal with the challenges of the global pandemic. For example, by creating centralized direction, the company's leaders and managers were given more autonomy for distributed decision-making, and critical issues were handled on the spot—versus waiting around for a chain of command to approve or deny specific requests.

"They didn't have to worry about their level of approval or who to ask—they just took care of the problems," says Crumrine. "They relied on their teams to move forward boldly, knowing that they were empowered to make those decisions." Reflecting on the company's previous structure, Crumrine feels that Interstates would have been slower to respond to the COVID-19 situation, namely because decision-makers would have been reluctant to pull the trigger without further consultation.

"People would have been dragging their feet in all corners of the organization," says Crumrine, "mainly because they didn't agree on something, or because they didn't see things the way we (the leadership team) did." For instance, a number of employees were immediately furloughed for one or two days a week. Now those employees are being rehired full time. "That was one of the more painful topics," says Crumrine. "Was that the right thing to do? History will judge."

Forming a Core Team

According to Doug Post, president, Interstates' biggest leverage point in any type of crisis is the fact that it has 25 leaders in place, each of whom is responsible not just for one small area or department, but for the entire organization. Working together as an overall "senior leader team," this group helped the company be better equipped to examine the impacts of COVID and then respond as a unified front—not just as different "pockets" of the company.

Noting that the company has always had excellent leadership in place, Post says the company's new agile approach has encouraged its leaders to respond more quickly, pull in available resources and then leverage those resources across the company. This has helped produce more consistent messaging about how the company is faring through the current crisis while also emphasizing its key strengths as an organization.

"That way, someone who is working in a regional office that's been highly impacted by COVID can also see that Interstates overall is remaining robust, and that he or she stands to benefit from that," Post explains. "Out on the job site," he continues, "operations haven't shifted much in response to COVID, save for some additional screening processes (for entry onto job sites)." On the client side, Post says the company has seen shifts within its consulting, design and control divisions, all of which have faced some limitations in terms of being able to get on-site. Thinking about how quickly Interstates has reacted to these and other COVID-related changes to its business, Post says the company is still in the learning stages with its agile initiative.

"The one thing I really appreciate about Interstates—and this transcends agile—is that we have a resilient group of leaders that acted quickly and played defense coming out of the gate in terms of strategies like preserving cash," says Post.

"Within a couple of weeks of the first outbreak in the U.S., we were already pivoting and trying to figure out how to best take advantage of this new situation, and how we could better help our clients," Post continues. "That's resulted in a number of 'strategic sprints,' or trying to serve clients in the new normal as soon as possible. That's been fun to watch."

Change Management

As Interstates continues its transition over to becoming a fully agile company, the resultant change management continues to come to fruition across the organization. For example, the systems, tools, metrics, KPIs and forecasts were quickly ramped up when the COVID-19 situation came into play. "We're still in the middle of finishing our transition from a system and a metric perspective," says Van Egdom, "even in terms of what leaders are used to seeing, analyzing and using for making decisions."

This presented an interesting challenge for Interstates' leadership team, which needed those new information systems and tools mobilized quickly in response to COVID-19. Accurate forecasting, for example, suddenly became both mandatory and difficult at the same time. In the past, the company generated forecasts based on hierarchal organizational style by business unit, for example, and for the departments within those business units.

"We really needed to adapt our forecasting to our new Interstates agile organization structure," says Van Egdom, "to be able to make good decisions under the new structure. COVID really sped up the implementation of new systems and even mental mindsets that were in the process of changing."

To help that process along, CEO Scott Peterson centered his focus on the nerve center, which includes a mix of expertise and purviews within the organization. He also implemented a base "adapt and respond plan," with corresponding subteams that were put in place to help shepherd Interstates through this challenging time. "That in and of itself was critical," says Danielle Crough, vice president of people and culture. "In the past, we probably would have just used the teams that were already in place, versus being purposeful in the creation of new ones."

Interstates' emergency response team, for example, includes the company's safety director, an employee representative, a risk management professional and members of the asset management team—the latter of which have been called into play as the company's offices were closing down or reopening. "Now that we're adding team members back into the workplace," says Crough, "our mission has shifted to: What's the safest way to reopen and have people come back?"

As this return to normalcy continues, Peterson says the focus is now on preparing current and next-gen leaders for the next crisis. "Whether I'm here or not, hopefully the company and its leaders can keep doing a better job of dealing with the situation and not hunkering down."

Be Prepared to Work

To companies looking to emulate Interstates' successful agile management approach—and also hoping to weather the next storm gracefully—Peterson says his best advice is to "do it for the right reasons." For Interstates, that reason was to better serve its clients while also supporting and empowering its people.

Also, remember that nothing easy is worth having and that any companywide initiative is going to take effort, grit and perseverance. "Be prepared for a heck of a lot of work and pushback because it's not easy; it's not a quick fix," Peterson adds. "It's a long-term deal that impacts almost every aspect of the company. Fortunately, our leaders here got behind it and really embraced it."

Crumrine concurs, and is confident that Interstates' agile status will more than help it weather the next storm. "The world is a very fluid place and becoming more so every day, and you simply need to have an organization that can match up with it," he concludes. "Whether it's out in the field, when working with customers, dealing with regulatory demands or navigating the weather, we all have to be more responsive and agile to be successful."

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Jump-starting E&C Projects After COVID-19: What You Need to Know

By Gregg Schoppman

Key strategies that E&C companies can use to proactively restart projects that were impacted by COVID-19.

As we've seen in communities around the world, starting back up again after a global pandemic is much more difficult than the initial "shutting down" process, which took place literally overnight in many regions and countries. Getting the wheels back in motion will take more effort, but the extra planning will pay off on numerous fronts.

Wanting to prevent COVID-19 transmission, adhere to quarantine rules and manage "stay at home" guidelines, engineering and construction (E&C) projects nationwide were shuttered beginning in mid-March. According to AGC's industry snapshot in late April 2020, 67% of respondents said they had encountered project delays, disruptions or cancellations.

In an unprecedented series of events that unfolded as the result of the outbreak, E&C firms must recognize the importance of project restart strategies once such restrictions are lifted. In the same way that work on projects came to a screeching halt, the restart of construction projects worldwide will have the same frenetic pace and fervor of activity as the New York City Marathon when the gun goes off.

Ready, Set, Go

Consider a time when all projects nationwide start simultaneously. While all projects may be in differing states of completion, there has never been a time where all activity kicks off from a dead stop.

Ideally, construction leaders would like to see a seamless transition to simply "continuing where they left off." Realistically, even if the restart occurred just seven days after a work stoppage, activity wouldn't resume normal function—mainly due to supply chain disruptions, new hygiene-related work rules and other modern issues that emerged as a result of COVID-19.

Put simply, construction projects will resemble the trajectory of a supertanker in the ocean trying to turn rather than a high-performance sports car cornering on a dime. The firms that plan out a proactive restart strategy for all their projects will be the most successful in achieving superior performance results and mitigating impacts from the pandemic.

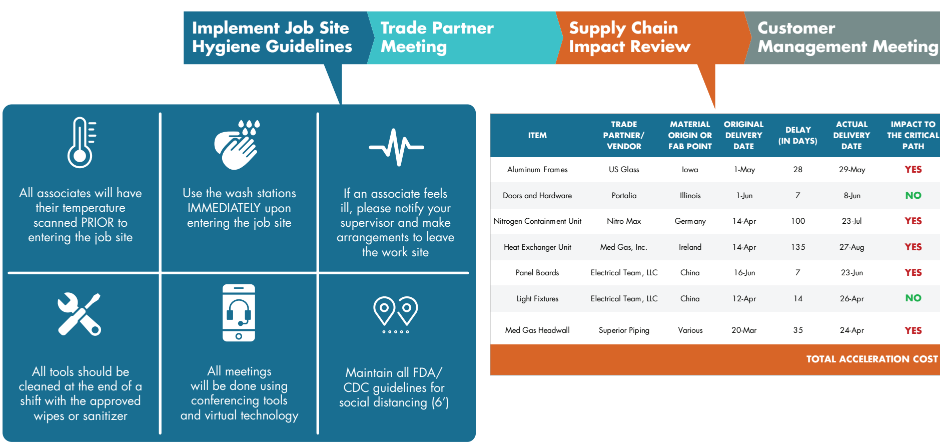
New Normal or Restart?

There are distinct cases, states and markets where construction activity hasn't been disrupted (yet). In some cases, the work itself serves as enough "social distancing." Even in situations where a shutdown has not occurred, there is a new normal affecting the construction project cycle. Whether it's through signage to address new hygiene protocols or daily cleaning procedures, you'll be required to present a realistic and proactive disease prevention plan.

Additionally, management of key trades and suppliers will now become the next critical factor in the project restart process. For instance, a conscious focus on the supply chain is now mandatory. Both cost and schedule impacts should be carefully examined and measured, regardless of whether this is a trade contractor simply evaluating its material needs for a project or a general contractor evaluating every trade partner's needs.

Exhibit 1. New Normal Projects Analysis

COVID-19 PREPARATIONS AND COUNTERMEASURES WHEN WORK IS PERMITTED ON THE JOB SITE



ITEM	TRADE PARTNER/ VENDOR	MATERIAL ORIGIN OR FAB POINT	ORIGINAL DELIVERY DATE	DELAY (IN DAYS)	ACTUAL DELIVERY DATE	IMPACT TO THE CRITICAL PATH	COST TO ACCELERATE SHIPPING (IF APPLICABLE)	NOTE ON ACCELERATION	GENERAL CONDITION IMPACT	GC COST IMPACT	VERIFIED WITH VENDOR?
Aluminum Frames	US Glass	Iowa	1-May	28	29-May	YES	$5,000.00	Acceleration ONLY on restart	Additional Supervision	$4,500.00	YES
Doors and Hardware	Portalia	Illinois	1-Jun	7	8-Jun	NO	$0.00			$0.00	NO
Nitrogen Containment Unit	Nitro Max	Germany	14-Apr	100	23-Jul	YES	$1,500.00	Only on domestic	Rigging Extra, Add. Super	$1,000.00	PENDING
Heat Exchanger Unit	Med Gas, Inc.	Ireland	14-Apr	135	27-Aug	YES	$0.00	No acceleration	Additional Supervision	$0.00	PENDING
Panel Boards	Electrical Team, LLC	China	16-Jun	7	23-Jun	YES	$0.00	No acceleration	OT for Electrician	$3,250.00	PENDING
Light Fixtures	Electrical Team, LLC	China	12-Apr	14	26-Apr	NO	$0.00	No acceleration	OT for Electrician	$1,500.00	YES
Med Gas Headwall	Superior Piping	Various	20-Mar	35	24-Apr	YES	$15,000.00	Acceleration due to FAB ONLY	In extra Supervision above	$0.00	PENDING
							TOTAL ACCELERATION COST = $21,500.00			TOTAL GC IMPACT = $10,250.00	

The good news is that you can identify effects to the critical path as well as the dollar impact from a variety of angles, including:

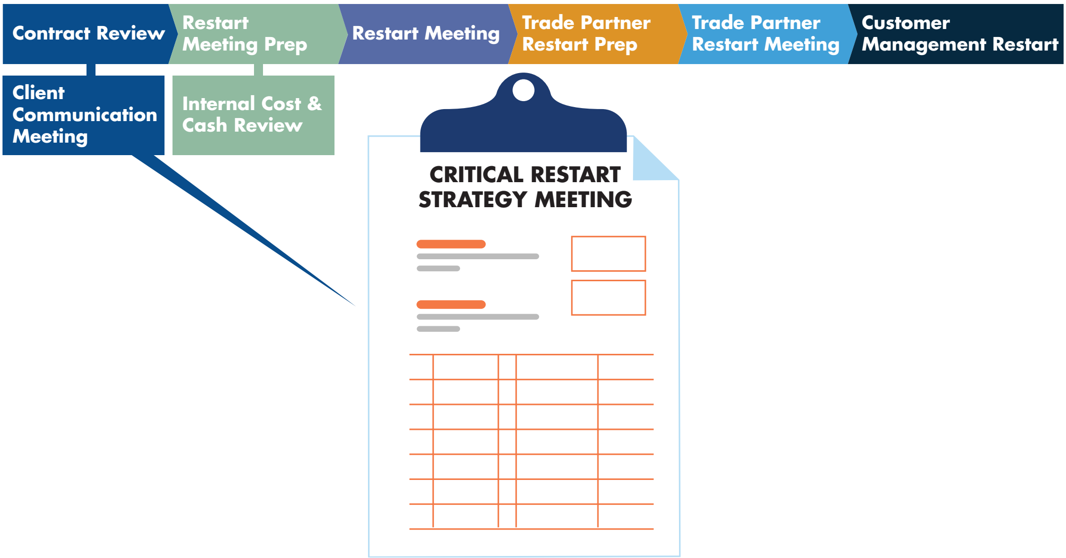
- **Quick shipment and transportation.** More than likely, the entire supply chain will have been impacted, and it may not be realistic to assume any quick shipments. However, by targeting specific items, there may be higher priorities to strategize.
- **General condition impacts.** With changes to the Critical Path Method schedule, the prime or trade contractor will likely have additional general conditions (e.g., overtime premiums, additional rentals, etc.). Careful examination of all items that are associated with the delay may also provide savings opportunities as some delays will be concurrent.
- **Trade contractor impacts.** It's time to assess the extra costs from a trade partner perspective, particularly in the case of accelerations.
- **Labor histograms.** Whether internal or external, what are the impacts to the labor pool? Do these labor projections account for instant 100% utilization and efficiency, or do they reflect a more realistic incremental view of efficiency?

For the vast majority of construction projects that were forced to shut down production in the short term, careful consideration should be given to the critical restart. In fact, the best approach is to view this restart as a "second chance" at proper preconstruction planning. Take the opportunity—after all, how often do we get a second chance at anything in life?

Revving Up Your Restart Strategy

Before restarting a major construction project, you should properly review contract documents and maintain proactive and current dialogue on force majeure and other work stoppage guidelines. It's also critical to examine the restart meeting agenda to ensure that discussions are forward-thinking and focused on identifying potential rocks in the road.

Exhibit 2. Critical Project Restart Strategies



While the restart meeting may seem simplistic in nature, its focus areas should include both developing realistic solutions to problem areas as well as establishing firmwide consistency on all projects in the "work in progress" category.

With planning complete, management teams must also examine several financial curves to gauge project stability and ensure successful profitability. For most companies, that means reestablishing the rolling 12-month billings projection. During this stage of the restart process, you'll want to overlay not only the projected billings but also the overall cost impact (including an impact to productivity).

While direct project costs probably weren't uniformly impacted by the shutdown, you'll want to create a model that shows the short-term impact to material shortages, labor inefficiencies, trade contractor support, equipment shortages and related issues.

Four Tips for Firing up the Machine

Up until this point, your plan's focus has been on establishing a strong baseline for the project restart. With the internal machinations complete, the focus can then turn to client management and clear communication. Here are four key points to keep in mind as you fire the machine back up and start working again:

1. **Factor in pending changes to the design per their instructions/guidelines.** What are the short- or long-term impacts to the facility/structure due to COVID-19? For instance, if this is a school or public assembly area, will the client/end user want to modify any aspects of the design?
2. **Consider long-term ramifications to the project schedule, workload and finish date.** Using a Contractor Critical Restart Meeting, the contractor or trade partner can eloquently describe the overall impact to the critical path and a realistic mitigation plan. For instance, the contractor can walk through each of the supply chain impacts and the related tactical changes.
3. **Use proactive "Personal Safety Plans" and "Job Site Hygiene" strategies.** Outline new personnel guidelines on job site hygiene and accountability. Realize that standards will continue to morph in light of the "moving target" status of this pandemic, but that doesn't mean you can't get the ball rolling now by establishing proactive standards of care.
4. **Monitor schedules and budgets carefully.** After the initial shock of these project restarts, the initiatives themselves will assume their normal trajectories. Careful monitoring of the schedule and budget adherence will be critical; complacency is dangerous with any project. The project team would be best served to adhere religiously to the established project exit strategy plans.

Avoiding a Slip at the Starting Gate

Even in the aftermath of an event like COVID-19, the concept of the exit strategy remains the same: driving the project toward a thorough and profitable completion. Put another way, ensure the project is DONE-DONE. The critical changes to this process will most likely revolve around final cleaning standards. Establishing those cleaning standards early in conjunction with closeout/deficiency list/punch list processes will prevent many difficult conversations.

During any time of uncertainty, remember to engage with customers, end users and the design community to address the uncertainty around acceptable standards. New data about COVID-19 is emerging daily, and the impacted communities, builders and projects all fall under the shadow of this invisible specter. Never before have projects on this scale required a simultaneous restart. Contractors that consider the restart with judicious care and a proactive approach will avoid a dangerous slip at the starting gate.

This article represents an abbreviation of the original article published in April 2020. The full white paper can be accessed here: https://www.fminet.com/reports/critical-project-restart-strategies/

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Case Study: Adopting a Proactive Mindset During a Crisis

By Hannah Bick and Steena Chandler

How one E&C company decided to grab the global pandemic by the horns instead of waiting around for it to impact its operations.

With the world around us changing at a rapid pace, it's easy to adopt a highly reactive, alarmist mindset. The constant influx of information and the need to make quick decisions create a constant sense of urgency; but leaders must retain clarity of vision and purpose in order to be able to make the right choices to protect their people and their companies' futures.

While almost every business has been deeply affected by the COVID-19 virus, few have been able to successfully deploy solutions to the urgent problems facing society. The FMI team had the opportunity to interview Faith Technologies' Senior Vice President John Gunderson, who runs Faith's manufacturing division, Excellerate, to learn how his team is leveraging existing capabilities to innovate during the current crisis.

When asked how Faith Technologies is innovating in today's environment, Gunderson says the company has leveraged its prefabrication capabilities and containerized solutions expertise to open an entirely new market. "We decided to repurpose and combine our separate efforts and make mobile and transferable hospital rooms," he explains. "It's not far off from the containerized solution we were already making, and not much different from our construction trailers."

"We decided to repurpose and combine our separate efforts and make mobile and transferable hospital rooms," he explains. "It's not far off from the containerized solution we were already making, and not much different from our construction trailers."

John Gunderson, Senior Vice President
Faith Technologies Manufacturing Division

This was a bit of a stretch for Faith Technologies, but one that its leadership was able to make in terms of product capability and capacity. "I would say it was on the edge of what we thought was possible," Gunderson says, adding that the plan came together organically. "We were wondering what we could do to support the community based on what we were already making, and we wanted to create a solution that would keep the business moving."

Upon speaking to a doctor in Chicago, the Faith Technologies team learned that his facility's makeshift hospital beds were hardly up to the task of accommodating an influx of patients suffering from COVID-19. "We knew we could come up with something better," says Gunderson, who said the team learned some hard lessons about the importance of getting in front of opportunities and making the best of the situation during the 2008-09 recession.

"This time around, we wanted to hit it on the head," says Gunderson, "versus just 'wait it out.'"

Team Resilience Impacts Innovation

Armed with core values that are deeply rooted in redefining what's possible and driving innovation, Faith Technologies was already prefabricating equipment for the Children's Hospital in Milwaukee and doing containerized solutions elsewhere when COVID-19 reared its ugly head. "When we put it all together, it made sense to innovate and bring a solution to market."

"We're in the problem-solving business, and this was a global problem that needed solving," Gunderson says. "We're not in the space where we can solve it all, but we can certainly create a modularized prefabricated construction solution to help the health care community; so we just went all-in on it."

Just a few days later, Faith Technologies started talking to customers about the innovative new solution. The entire company got behind the effort, with all team members rallying around the new idea. "Everyone had a lot of energy going into it and felt like being a part of the solution to this larger crisis," says Gunderson. "It's interesting from a leadership perspective in this type of situation to see how people can go negative or they can elevate their game."

Asked whether he ever doubted Faith Technologies' ability to mobilize an entirely new solution in under one week, Gunderson gives credit to his team for overcoming the initial obstacles and points to the positive energy that resulted. "Some of our product development moved faster in the past two weeks than it did in the past two years," he says. "We're learning the value of actually doing rather than just conceptualizing."

Still, Gunderson knew that getting a product to market in a few days was a long shot. "No one thought we could get a multitrade containerized design for health care that's deployable to anywhere in the country in two weeks," says Gunderson. "When we got together and worked to make it happen, it happened. There's a lot of pride in that and a lot of energy."

Guided by Core Values Every Step of the Way

Reflecting on how his company's purpose and core values inform decisions during a major, worldwide crisis, Gunderson says it's times like these when the basic aspects of a firm's core values become the most important. For Faith Technologies, those values are: a focus on safety and trust, redefining what's possible, team ethics and team success.

"In times like these, you can rally around those; these are the bedrock of how we solve problems," he explains. "They help to get alignment around the goal of getting a solution to market and

doing as much good as we possibly can. And it's a win-win for suppliers, trade partners, workers and the health care community."

Acknowledging the hardships and challenges presented by the crisis, Gunderson points out that there have been numerous "silver linings" for Faith Technologies during this difficult period. For example, the company has made improvements and progress on some of its existing structural and building designs.

This bias toward action allowed Gunderson's team to create solutions that go beyond the current crisis. "In terms of brand recognition and reaching different areas of the country and different potential customers," he adds, "the work we've been doing will all be beneficial for existing and future partnerships."

Strong Leadership Supports Positive Action

Tough times call for strong leaders, and the Faith Technologies leadership team showed that high commitment, combined with purpose, can be a driving force for problem-solving. This proved to be yet another advantage for the company, whose leaders were forced to manage an extremely high level of ambiguity overnight.

"Many of our employees are either tradesmen or engineers; their expertise is not necessarily focused on taking big risks. But we had to make some assumptions and take risks here; and the design had to be iterative," says Gunderson. "You're operating with limited information and somewhat limited resources—they're not infinite."

Along the way, teamwork, collaboration, risk-taking and decisiveness in the face of a tight timeline also came into play, helping Faith Technologies realize its goal of creating a product that could address a very real and current problem. Through that process, Gunderson says it was interesting to watch how challenges with working relationships sort of "melted away" when everyone was working toward an urgent vision.

"This allows people to come together to achieve a team goal that they hadn't yet thought about," he says. "I cannot understate the amount of energy and effort that needs to go into it from a leadership perspective."

"We Didn't Set Out to Change the World"

To other industry leaders that are grappling with addressing certain challenges during this time of crisis, Gunderson says it's important to understand that there are many different ways to add value in any situation. To do it right, he says, you must think about how your particular capabilities might add up to a solution and then take the necessary action to bring that idea to fruition.

Faith Technologies' innovative course of action illustrates one of many ways that E&C leaders can motivate and inspire their teams to reach a bold vision by leveraging company values and hard work. More than ever, leaders must think critically about how they can utilize their existing resources to proactively respond to the changing environment.

In the E&C environment, the most innovative and effective solutions come from leaders who intentionally leverage the creative thinking of their teams and pursue paths that align with their purpose and values. Now is the time to look closely at how your leadership team is driving the organization forward.

Gunderson summarizes it well, "We never thought we were going to solve the whole problem; we thought there's probably a place where we can help. Our problem statement was: We can do better than what we see out there. We didn't set out to change the world; we just set out to solve one problem that was matched with our capabilities."

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Turning the Great Recession into a Learning Experience

By Sabine Hoover

Here are five solid lessons taken from the Great Recession that all E&C firms can be using right now to navigate the complexities of the current marketplace.

It's been nearly a decade since organizations needed to give serious thought to how they would ride out a recession and come out stronger and more resilient. With little notice, other than the obvious signal that we were long overdue for a different economic cycle, the global pandemic put nearly all engineering and construction (E&C) companies squarely back into survival mindset. As states shut down, job sites were shuttered, and millions of employees were laid off, E&C firms suddenly found themselves in a position that most weren't even envisioning just four to six months ago.

"Within a matter of days, contractors found themselves scrambling to figure out how to perform work while complying with social distancing and other new safety measures or wondering if they could work at all under state and local shelter-in-place restrictions," ENR reports.[1] "Compounding the day-to-day challenges has been uncertainty about what the post-pandemic economy will hold, and what strategic adjustments may be needed to survive."

The good news is that for any company that's 10-plus years old, this is not its first rodeo. These firms endured one or more recessions and downturns and, by rights, should have the tools they need to survive yet another one. For younger E&C companies, there were some clear lessons taken away from the Great Recession that can now be applied to the current environment. And while every downturn comes with its own set of nuances, there are some commonalities that they all share.

In this article, we take a retrospective look at what occurred during the last major downturn and share key takeaways from our recent research that all E&C companies can be using to find their way through the current turmoil.

[1] Strategic Lessons for an Uncertain Post-Pandemic Future. Jim Parsons. ENR. April 27/May 4, 2020.

5 Ways to Beat the Odds

Today we find ourselves at a turning point in the market. Based on what we know about the Great Recession and how it caught many companies off guard with its swift and lengthy economic downturn, there's no excuse not to start preparing, given current events; and as these events unfold, more surprises are to be expected. Here are five things you can be doing right now to build a more resilient organization:

1. **Build deep relationships with clients and project partners**
   During the Great Recession, many companies learned the value of deep, authentic client relationships. Today the same companies use these strategies to stay relevant during any business conditions:
   - **Engage seller-doers.** Have seller-doers build a list of contacts that they want to keep in touch with and develop a strategy for following up with clients.
   - **Build client management skills.** Create programs and opportunities to educate your people on "how to behave in a recession," with a focus on estimators with project selection, field managers with scope management, and project managers with cash management. Considering where and how to invest through the lens of your customer needs can be a powerful filter to use when making investment decisions.
   - **Don't go it alone.** Make sure that you are finding ways to "zipper in" your next generation. Encouraging interaction up and down the organization will not only increase younger people's presence with clients but also offer them an inside track and build a foundation for collaboration among future leaders.
   - **Reward and call out client success.** Find ways to highlight strong client relationships, rewarding talent who go above and beyond in building those relationships.

2. **Focus on diversification**
   A well-known strategy for thriving and surviving in a cyclical market, diversification was often cited by research participants as key to weathering the recession. While some companies opted to diversify into different geographies, others saw the need to diversify into private and public work where they had previous experience in either market. Be forewarned: Not all diversification approaches are created equally. Here's how to infuse them with intentionality:
   - **Diversify your risks.** Go beyond diversifying segments, geographies or services by also asking yourself how these various settings respond to a recession. Diversifying in two geographies with similar economies could negate the positive effects of diversification.
   - **Find a unique way to outperform the competition.** When companies enter a new market, they are like the new kid on the block of established competitors. Develop a solid foothold by setting up strategic relationships, offering a unique service or promoting a strong pedigree of projects that local players lack. Acquisitions can also be an option to offset the cost of organic growth.

- **Take an investment mindset.** Entering a new territory rarely generates overnight success. View this as a long-term investment, diversify when the market is still strong, and take an honest look at your ability to compete in this new environment.

3. **Streamline your operations**
   Lean times call for agile operations that helped one construction firm stay ahead of the curve in researching and implementing lean construction concepts for several years. As the company's processes and project management evolved, all staff worked with clients and partners (e.g., subcontractors, architects and engineers) to build awareness around lean approaches to collaborative building. "Waste in the construction industry has been talked about for decades. We are firm believers in lean construction, and clients who have participated say it has rewritten how they look at the construction process," stated one executive.

   After the last downturn, some E&C leaders admitted that the frenzy of the recession increased their focus on getting any and all jobs possible, regardless of whether those projects were a good fit.

4. **Invest in your people**
   We often hear leaders talk about cuts they've had to make in bad times, particularly around people development and talent management. Some variation of "learning and development efforts are nice to have but are something we simply can't afford in tough times" is a common refrain in the industry. We saw many leaders adopt this mindset during the Great Recession, downsizing their workforces considerably and reducing expenses in all aspects of talent management.

   Businesses that kept their best people compete more effectively today. The deep labor cuts from the Great Recession still haunt the Built Environment today. Our latest AGC/FMI Risk Survey showed that for the third year in a row, lack of qualified talent was the top risk for study participants, with the limited supply of skilled craftworkers being the biggest challenge for 80% of respondents. The limited supply of field supervisors became the second most critical risk (44%) and reflects the ongoing demographic shift of baby boomers cycling out of the industry.

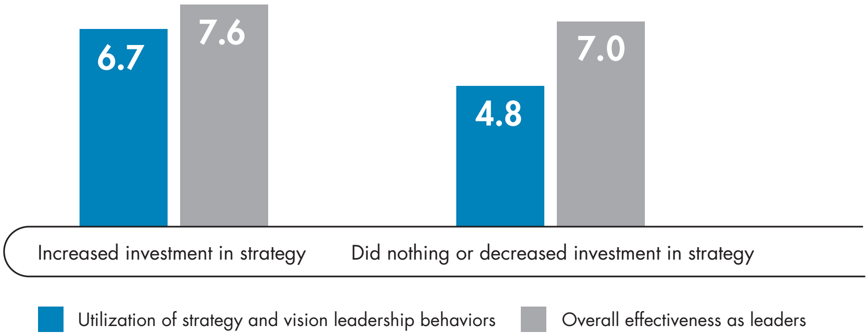
5. **Create a transparent, collaborative culture**
   Leadership in a crisis often looks like a stoic figure, ever in control of the situation and knowing the right thing to do. Leadership is also expected to say the "right things" to reassure others and ward off chaos. For many executives, this leadership style is hard-wired. When things started going haywire, the first reflex was to protect people by not

telling them everything and instead fixing things behind the scenes and acting decisively in solitude.

These leaders have since learned that transparency and open communication are better approaches. In some cases, this means having the courage to be painfully honest, admitting to mistakes and leading by example. For example, Scott Peterson, CEO of Interstates, explains his learning experience, going from the stoic leader to an authentic one and equipping leaders downstream with transparent information: “The first time [we faced a downturn], our instinct was to protect our people. We were telling them, ‘everything’s OK, don’t worry about it,’ and we tried to solve it all behind the scenes.” This time around, Peterson shared the tough information openly with his team. “It built credibility and brought them along with us. They now had the opportunity to come with ideas to save overhead or bring a new offering or client lead forward. With all the information, it put them in a better position to help the company they know and care about get through a tough situation.”

John Cannito, president of PENTA Building Group, Las Vegas, says a willingness to immediately confront hard facts as the virus began to spread has helped his firm adjust to its impact. “We made some decisions during the Great Recession that we should’ve addressed earlier,” he admits. “This time, responding to the virus and keeping the business on track has been easier to deal with because we’d already put leadership and planning mechanisms into place.”[2]

Strategic Investment and Behaviors During The Recession



Source: 2020 FMI Leadership & Strategy Survey

[2] Ibid.

Put Your Feet on the Ground

As E&C companies develop their business strategies for the remainder of 2020 and look ahead to 2021, new issues like the trade wars, the coronavirus, the upcoming presidential election and other uncertainties are all sure to play a role in the Built Environment. During ambiguous and volatile times, staying true to your company's vision and core values is critical.

It's also important to keep a close eye on your ever-evolving business context, while deciding how best to respond and act on those choices. Now is not the time to panic but instead to be proactive and keep a pulse on key factors influencing your business environment. Then, monitor those external and internal dynamics on an ongoing basis to help solidify your firm's position in the market today and well into the future.

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Learning How to Adjust and Adapt in a Post-COVID-19 Construction World

By Mark Bergman and Rick Zellen

Paving a path forward for suspended and resumed projects.

Construction has always been more unpredictable and perilous than many industries, making agility a basic necessity for contractors and their teams. The COVID-19 pandemic has tested that agility like never before.

Decisions on whether construction work could or should continue during the pandemic have varied by city and state. The interpretation of mandates can depend on the day and person you ask. Relatively early during the coronavirus shutdown, Boston ordered most construction work to stop. New York initially deemed construction essential and then ordered a halt to most work, instituting fines up to $10,000 for those found working on nonessential or nonemergency construction.[1] The city of Austin required all nonessential construction to pause in March, but then in early April, the Texas governor issued an executive order allowing construction across the state to continue.[2] Even where construction was allowed, contractors faced labor shortages as workers had to choose between a paycheck and risks to their personal health.

Contractors are trying to interpret evolving rules and navigate unprecedented challenges while contending with a start-stop-restart scenario—a cycle that heightens an assortment of risks on job sites where work began before the pandemic, then paused. Suspending a construction project isn't as simple as shutting off the lights and locking the doors of an intact building. Restarting will present its own challenges, partly because of what can happen during a hiatus, but also because work practices must be altered to manage ongoing COVID-19 risk.

[1] Cubarrubia, Eydie. "NYC Announces Fines of up to $10K if Work Continues on Non-Essential Projects." ENR. 30 March 2020. https://www.enr.com/articles/49050-nyc-announces-fines-of-up-to-10k-if-work-continues-on-non-essential-projects

[2] Goodman, Jenn. "Study finds construction safety practices are essential to protecting workers, community during pandemic." Construction Dive. 16 April 2020. https://www.constructiondive.com/news/study-confirms-construction-during-pandemic-puts-workers-community-at-risk/576161/

While Crews Are Away…

There's exposure to many elements on a construction job site when a project is halted for any reason at any stage. Mitigating the risks or handling the fallout can add unanticipated expenses. To touch on just a few:

- Rain can degrade supports, structures, equipment and materials. It can also cause erosion or flooding on partially excavated sites.
- Wind can blow safety netting, fencing and materials that aren't completely tied down, posing risks to the public.
- Idle sites can be targets for vandalism, theft and arson. The contractor may need a skeleton crew just to keep the site secure. That includes monitoring scaffolding, fencing and netting to ensure it stays in place.
- The contractor must determine how to store or relocate materials or return them to the supplier. Volatile gases and liquids need to be removed.
- Critical systems such as fire suppression, water pumps and HVAC need to be maintained; utilities may need to be secured or disconnected.
- Thorny payment issues also may need to be addressed and resolved with subcontractors, crews, suppliers and others.

When Crews Return…

As new COVID-19 cases taper in some cities, there's been ongoing debate about a gradual restart of the whole economy. Many idled engineering and construction firms ask: When can we get back to work? The answer isn't as simple as getting a greenlight from a governor and then pulling open a padlock on a chain-link fence.

Once permission to resume work is granted, any consequences of the idle period require attention and perhaps remediation. Permits and builder's risk policies may have expired. Financing may be affected. Workers and subcontractors may have dropped out of contact or found work elsewhere. There may be breaks in the supply chain; project timeline and work sequencing may be in disarray. These can all drive up costs, especially if demand for labor and materials rises as a widespread resumption of construction takes place.

A primary concern for many contractors is how to best protect their crews' health and safety going forward, especially with the prospect that infection risks could rise again at a later date.

A study commissioned in Austin found that keeping the city's job sites open during the height of coronavirus transmission could, in a worst-case scenario, raise construction workers' risk of hospitalization eightfold.[3] It also stated that scenario was avoidable through safety practices and provisions that many contractors already adopted if they worked during any part of the shutdown.

Precautions that promote social distancing and site hygiene include, briefly:

- Suspending canteen trucks and similar services.
- Eliminating all-hands safety meetings and using online training and virtual new-hire orientation.
- Staggering crew start times and breaks and adding shifts.
- Increasing use of off-site and on-site prefabrication.
- Screening employee health at the job site entrance and mandating use of face coverings.
- Enhancing cleaning and disinfecting of the job site, including tools and other high touchpoint areas.

[3] Ibid.

Some of these practices could become part of the new normal for construction, and some aren't that much of a leap from pre-coronavirus best practices.

Near-Term Planning and Longer-Term Impacts

Before coronavirus, contractors sequenced trade workers for efficiency and safety (e.g., to avoid one trade worker dropping materials or tools on someone working below). This type of sequencing can also help enable six-foot social distance between workers. It's similar with composite crews, where workers from different trades are typically appointed to tidy up for safety reasons at regular intervals.

Now in addition to making sure materials are arranged properly to help prevent slips, trips, falls and other hazards, composite crews may also ensure handwashing facilities are stocked and all areas of the job site are sanitized.

And that's just one piece of the post-COVID-19 puzzle.

The long-term impacts on contractors and how they and their crews perform work are only beginning to unfold. That doesn't mean anyone should sit back with a wait-and-see mentality. It's time for contractors to develop comprehensive COVID-19 exposure control plans, which may include appointing a COVID-19 officer at every job site and developing a training program for workers. Standard operating procedures also should be considered carefully for measures such as temperature taking at job site gates and mask wearing. The primary goal is worker safety; a secondary consideration is to reduce the contractor's exposure to unnecessary liability.

Key points to consider include:

- How will temperatures be taken to avoid breaching the six feet of social distance?
- Will workers be trained to take the temperatures properly in the least intrusive way possible, including by using no-contact thermometers?
- Or will a third-party medical service be brought in to administer the on-site temperature checks?

There also should be a clear understanding of the threshold for an elevated temperature that would warrant sending a worker home, consistent with CDC guidelines. Furthermore, if the employee's temperature is elevated, workers need to be aware that this information should be treated as confidential employee medical information that is not to be freely shared. Will portable testing centers be required on job sites to prescreen workers, and to what extent will testing be available and reliable? The contractor will need to determine how much documentation is kept of workers' test results. A great degree of detailed decision-making is necessary.

Clear protocols for face coverings will need to be established as well, because a time will come in the life of a construction project when maintaining six feet of social distance will be next to impossible. Will cloth face coverings be deemed sufficient, or will respirators or other protective

clothing, approved by the National Institute for Occupational Safety and Health (NIOSH), be required in certain circumstances?

COVID-19 considerations need to be woven into pre-task plans, and protocols should be reviewed daily. Every task on a construction job site should be independently evaluated for the number of people required, how close they need to work together, and what precautions will be taken. If a task requires workers to be within six feet of each other, a specific permitting process could be established and followed. Plexiglas or other acrylic barriers, like the ones many grocery stores have introduced, could be used, if necessary, to separate workers in close proximity.

Contractors may also want to use project management software (e.g., Procore™) and online platforms to inspect sites more often for COVID-19 compliance.

An Evolving Situation

Because the situation with COVID-19 is evolving, government and industry guidelines are too. Contractors will need to build a habit of checking federal, state and local mandates and industry recommendations related to coronavirus to see whether their practices align with the latest guidance. They must be ready to adjust accordingly and communicate clearly and frequently with their crews.

The prospect of operating in an environment where COVID-19 risk lingers can be daunting. But through heightened vigilance and increased training—whether on-site or virtual—steps to manage COVID-19 risk on job sites can become as second nature as donning a hard hat.

The pandemic has shown already that many office staff and supervisors (i.e., project managers and engineers) can work remotely in an effective way. Off-site prefabrication is gaining attention as a potential means to help manage coronavirus exposure. Other adaptations will emerge as the industry thinks creatively about how to move forward after work resumes more widely—and all against the backdrop of further coronavirus risk.

It's worth noting that the construction industry has dealt with unexpected challenges and temporary project shutdowns in the past. Severe weather, natural or manmade disasters, political disruption, terrorism and even labor strikes can bring projects to a halt. Contractors have always shown their ingenuity and agility in overcoming these situations. In the new age of coronavirus, contractors and crews will show their agility yet again.

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