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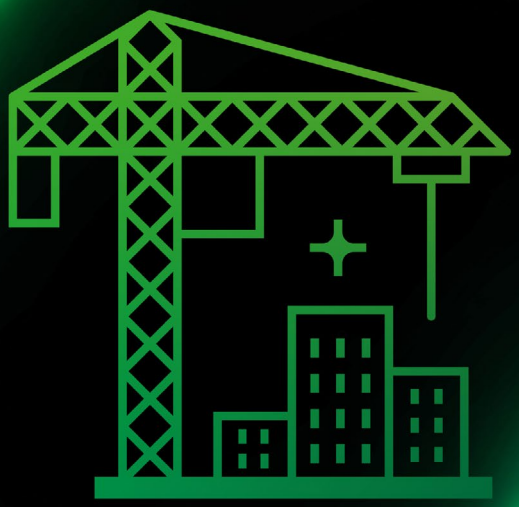


2022 engineering and construction industry outlook

Preparing for another strong year

The 2020 recession was among the shortest ever, but its impact continues to be observed across both the larger US economy and the engineering and construction (E&C) industry. In our 2021 outlook, we stated that the E&C industry's strong order books and better control over its leverage and credit could lead to a quicker recovery.[1] Indeed, the industry reached and surpassed prepandemic gross domestic product (GDP) levels by Q3 2020 and since then has been adding more than $20 billion to the economy every quarter.[2] Total construction spending continues to remain strong, reaching record-high levels in July 2021.[3] While the industry recovered close to 0.9 million of the 1.1 million jobs lost to the pandemic and maintained a strong order book,[4] six in 10 firms surveyed are experiencing project delays due to workforce shortages.[5]

2021 revenue growth for the industry is projected to be around 6.9% and will likely accelerate further in 2022.[6] Despite a positive outlook, the industry faces considerable hurdles, some new, but many familiar. Among the major ones is the growing disconnect between the growth of the residential and nonresidential market segments. While the former showed a significant uptick, with building permits and housing starts at record-high levels, the nonresidential construction segment struggled for much of 2021, with spending levels significantly below 2019.[7] The rising cost of materials and equipment and supply chain disruptions are other factors that continue to impair the industry's margins, while pervasive talent shortages are among those topics quickly rising on the boardroom agenda. Outside these, absorbing next-generation digital technologies, integrating data and analytics into workstreams, and implementing end-to-end connected construction capabilities are top of mind for executives.

In 2022, as we move into the second year of recovery, the industry has a big role in supporting the nation's growth plan. The Infrastructure Investment and Jobs Act (IIJA), with investments across health care, public safety, and other public infrastructure, is expected to bode well for the E&C firms and is likely to accelerate recovery across the nonresidential segment. The residential segment is expected to stay strong and exhibit similar activity as it did in 2021. The industry has increased its investments in digital, including through mergers and acquisitions (M&A), as it prepares to shift toward connected construction capabilities. These technologies can help E&C firms support initiatives such as smart cities, urban air mobility, and climate change programs and help enhance internal operational efficiencies, reduce costs, and improve margins. 2022 is likely to be an exciting year for the industry. Here are five themes to watch closely.

About the Deloitte survey

To understand the outlook and perspectives of organizations across the energy, resources, and industrials industries, Deloitte fielded a survey of more than 500 US executives and other senior leaders in September 2021. The survey captured insights from respondents in five specific industry groups: chemicals and specialty materials, engineering and construction, industrial products, oil and gas, and power and utilities.

Industry growth

Several factors positioning industry for strong growth amid headwinds

The industry responded very well during the pandemic and has come out strong in the recovery period. Total construction spending recovered and peaked at $1.57 trillion in July 2021, a record high for the series and 12% higher than 2019 average levels.[8] The Associated Builders and Contractors' Construction Confidence Index (CCI), which had plummeted to 38.1 in March 2020, recovered and hovered at 60+ levels during the first half of 2021, signaling consistent expansion in sales.[9] Order backlogs stood at 8.5 months in July 2021, well above pandemic-induced lows, though still below average 2019 levels.[10] In a recent survey (see "About the Deloitte survey"), 91% of E&C respondents characterize the business outlook for their industry as somewhat or very positive, 23% higher than last year. Driving this business confidence is the expected strong performance of the residential segment and growth from the nonresidential segment due to the $1 trillion IIJA.

Looking into the two segments in more detail, residential activities continued to stay strong despite rising material prices and the spread of the coronavirus Delta variant. The segment posted record spending levels of about $770 billion in July 2021, 27% higher than last year and almost 30% higher than prepandemic levels.[11] The housing segment exhibited strong growth on the back of low mortgage rates and experienced improvements across both single- and multifamily new construction.[12] Provided mortgage rates remain at similar levels and no new variants surge, housing starts are likely to stay strong, further aiding residential segment growth in 2022.[13]

In contrast, nonresidential segment spending growth remained weak for much of 2021.[14] Spending across educational, office, transportation, health care, and commercial facilities observed the largest year-over-year (YoY) decline in July 2021.[15] Overall, spending levels in July were 11% lower than prepandemic levels (February 2020).[16] Weakness in spending calls for additional funding for infrastructure projects, and investments through the recently approved IIJA might provide that.

Per the recently approved IIJA, $550 billion in new federal investments would be made to upgrade America's infrastructure over five years, including $110 billion on roads, bridges, and major infrastructure projects, $66 billion on passenger and freight rail, $55 billion on water infrastructure, $40 billion on bridge repair, and $39 billion in public transit infrastructure.[17] Additionally, the bill has other tax incentives to promote partnerships with cities and states and encourage private investments.[18] The bill bodes well for E&C firms and is likely to propel some growth in the nonresidential segment. In addition to infrastructure work, E&C firms are likely to see a further mix of projects coming through with data centers, warehousing, and even health care likely to observe more activity than offices or commercial segments.[19] The bill would provide $65 billion to expand high-speed internet access; $110 billion for roads, bridges, and other projects; and $25 billion for airports.[20] In 2022, both residential and commercial segments are expected to present substantial opportunities for E&C companies compared with 2021, where the residential and nonresidential segments grew at different rates.

2

Industry profitability and performance

Supply chain disruption and sourcing challenges likely to affect project delivery and margins

During the second half of 2020, the pandemic exposed the vulnerabilities of global supply chains. Supply issues were expected to stabilize moving into 2021 as both global production resumed and supplies normalized. However, pandemic-induced supply shortages persist, affecting key materials such as lumber, paint and coatings, aluminum, steel, and cement, among others. These disruptions are due to multiple factors, the first being pent-up demand for key materials as global construction activity resumed. For example, the Aluminum Association reported that aluminum demand in the United States and Canada totaled 8.8 billion pounds through the first four months of 2021, increasing from 2.1 billion pounds in the first four months of 2020, when the pandemic was beginning.[21] Further exacerbating the situation are disruptions in the movement of materials due to increased congestion and delays at major ports such as Yantian and Ningbo in China.[22] The delays are also leading to a spike in freight costs, which are on average three to five times higher than last year's level.[23]

The impact of this crisis is twofold. The first challenge is the lack of materials; per an Associated General Contractors of America (ACG) survey, 75% of E&C firms indicated project delays due to longer lead times or shortage of materials.[24] Further, 57% reported delivery delays, indicating that the industry has difficulty predicting when materials would arrive.[25] The second impact is sharply increased costs; during the first seven months of 2021, the prices of critical construction materials prices observed double-digit increases every month.[26] For example, the producer price index (PPI) for steel mill products increased by more than 120%, copper and brass by 45%, plastic construction products by 30%, and lumber and plywood by 15.9%—all year over year in August 2021.[27]

A look at the Turner Building Cost Index (which measures costs in the nonresidential building construction market in the United States) indicates that costs in Q2 2021 peaked and are nearly back to Q1 2020 levels.[28] The worrying aspect for US construction companies is that while input costs have increased by more than 26% year over year in June 2021, average bid prices have only increased by 3.4%.[29] Low profitability and margins have been a bane for the E&C industry for far too long, and such a mismatch between cost and bid price will exacerbate the problem. Per a recent Deloitte survey, 20% of E&C industry respondents indicated that operating profitability and industry margins are likely to further deteriorate in 2022.

Contractors should be proactive in managing processes and operations that contribute to margins and profitability, adding efficiencies and optimization where possible. The integration of digital technologies into the supply chain could help. These advanced networks, now ubiquitously known as digital supply networks (DSNs), can help contractors gain better visibility into the availability and movement of materials. Analytics performed on real-time data can help schedulers make better-informed decisions and develop alternate sourcing strategies and forward-looking insights to ensure minimum impact on projects. Smart project management can also help bring suppliers, vendor and contract management, and materials management onto a single platform. E&C firms should make these investments not just in isolated projects, but also across the enterprise level to bring all areas of sourcing online.

In a recent Deloitte survey, 61% of E&C respondents indicated strategic sourcing and category management as an area they are likely to invest in during 2022. Another strategy is to develop prefabrication and modular construction capabilities, helping firms save costs and reduce sourcing complexity. The industry can also come together to form a supplier collaboration network to help bring in new sourcing strategies and reduce the current material supply volatilities. Overall, supply chain disruptions and volatility are expected to be among the biggest challenges in 2022, and the firms that can navigate through them will likely emerge as winners.

3

Connected construction

Connected construction to help the industry unlock new value streams

The industry landscape is rapidly evolving as engineering firms, contractors, and participants across the value chain realize the benefits of, and increasingly deploy, connected construction technologies. These technologies can help bring assets, people, processes, and job sites onto one platform, making everyone and everything work smarter, reduce downtime, optimize asset utilization and efficiency, and gain greater visibility into operations. These technologies include building information management (BIM), digital supply networks, digital twins, predictive maintenance, prefabrication and modular construction, asset tracking, and autonomous drones, among many others. In a recent Deloitte survey, 43% of E&C executives indicated greater investments in new design processes, such as focusing on BIM, over the next year.[30]

At the core of connected construction are emerging technologies and the data and advanced analytics that these new capabilities can enable. Also, at the center of these investments is the creation of command centers or control towers that can drive visibility and velocity across a portfolio of projects. As the industry moves toward connected construction, developing data, analytics, and user-based insights capabilities could be critical. Connected construction is likely to present several benefits in the future besides helping businesses transform their problem-solving approach from reactive to predictive. However, many other aspects of connected construction are likely to pick up pace in the coming year. A larger integration of modularization and prefabrication approaches into the design and build processes is at the forefront as more E&C firms begin to distribute their build and sourcing capabilities. Another aspect of connected construction is better control over emissions through dynamic, always-on monitoring, not just during design and build, but also during the operate phase. End-to-end operations management, known as Design-Build-Operate-Own-Maintain (DBOOM), can likely facilitate this aspect and help E&C firms improve potential margins while reducing emissions during the project life cycle.[31]

In 2022, connected construction will likely be a catch-all for major digital investments to connect, integrate, and automate operations and bring the entire value chain onto a secure, intelligent infrastructure. Growing digital and technology capability requirements from the commercial construction segment are also likely to push adoption. Similar to last year, building connected capabilities will likely be a priority on CIOs' growth agenda as they look to enhance their ability to make data-driven decisions, better control costs and schedule variances, and ensure timely project delivery across multiple sites.[32]

4

Mergers and acquisitions (M&A)

M&A to help build broad-based capabilities

In 2020, most E&C firms were focused on being risk-averse and conserving cash to maintain liquidity. 2021, however, provides a stark contrast, as transaction levels for the first nine months are already 152% higher than the full year 2020 and 10% higher than all activity in 2019.[33] The US E&C industry ramped up M&A activity, registering $16 billion in deal value, during the first eight months of 2021.[34] At this pace, the industry is likely to exceed the $20 billion deal value mark by the end of the year.[35] In terms of deal volume, the industry is not a long way off 2020 levels, registering 383 deals during the first eight months of 2021 compared with 477 deals in 2020.[36] This indicates that the industry has been bold and more open to bigger acquisitions versus 2020, when the focus was largely on acquiring smaller and more specialized firms. There have been seven deals larger than $500 million this year, compared with just three in 2020.[37]

E&C companies have also shown renewed interest in technology and telecom targets to gain faster access to new digital capabilities and solutions. Between August 2020 and 2021, US E&C firms acquired as many as 27 targets across the software, electronics, technology consulting and services, and motion picture fields.[38] A move in the right direction, this is further anticipated to pick up pace in 2022 as E&C firms work toward acquiring technologies to help develop a connected, integrated, and automated operations foundation. These technology investments are in addition to increased venture capital funding across construction technology startups in the United States.[39] Additionally, E&C firms are likely to form public-private partnerships (PPPs) with cities and states to capture opportunities from the recently approved IIJA.

Another trend consistent with our 2021 outlook is E&C companies realigning their exposure to end markets via targeted divestiture efforts. In 2021, the pace of divestitures remained strong, with 50 divestitures announced during the first eight months of 2021 compared with 76 in 2020.[40] In fact, all four billion-dollar deals announced during the first eight months of 2021 have been divestitures, with E&C firms either divesting noncore businesses to focus on major end markets, exiting low-margin product segments, or balancing exposure to underperforming end markets.[41] In a recent Deloitte survey, 41% of E&C respondents indicated plans to diversify their businesses to reduce exposure to underperforming segments. Yet another trend consistent with the 2021 outlook is a renewed focus on nontraditional M&A approaches, such as forming alliances with technology vendors via an ecosystem approach. Developing or becoming part of such an ecosystem can help E&C companies gain access to new capabilities and turnkey solutions faster, without the need for up-front investments.[42] As we move into 2022, the industry could see another strong year from traditional M&As as well as ecosystems and PPPs.

5

Talent challenges

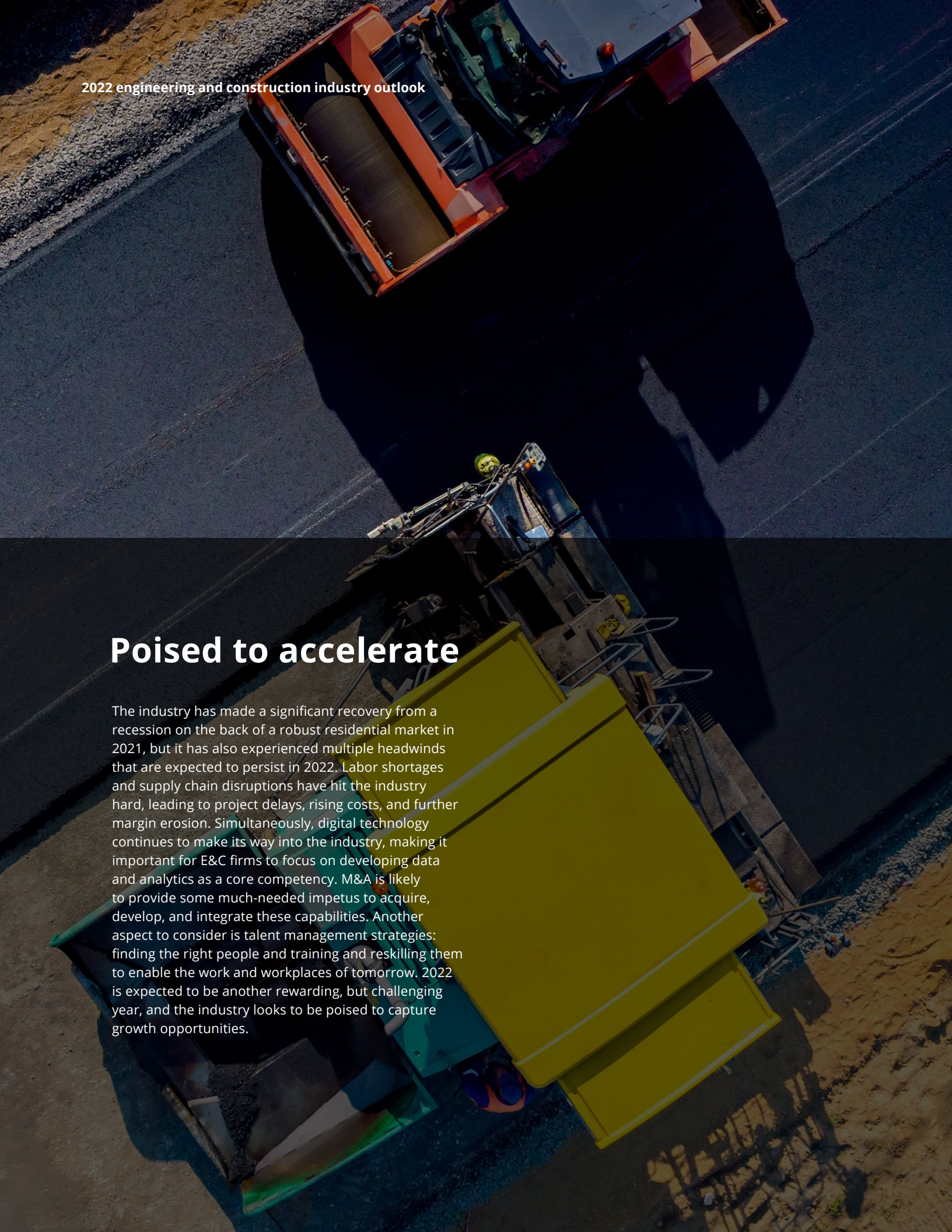
Firms continuing to grapple with labor shortages as workforce landscape evolves

Emerging from the pandemic, the biggest question on the minds of most E&C firms was how to restart work at job sites safely. Surprisingly, while the industry quickly implemented the required safety standards, it is still trying to overcome the challenge of attracting workers. By August 2021, the industry had yet to recover about 20% of jobs lost to the pandemic, while many other labor-competing industries, such as transportation and warehousing, had recovered all jobs lost.[43] More worryingly, the industry lost an additional 3,000 jobs in August 2021, while overall US nonfarm employment increased by 230,000, further highlighting the dichotomy.[44]

Most E&C contractors are eager to hire, as evidenced by job openings across the industry hitting a two-year high.[45] However, only 4,000 net payroll additions during the first eight months of 2021 may signal significant issues in getting people through the door.[46] Labor shortages could reach crisis proportions, as the current situation is expected to continue through 2022. In a recent Deloitte survey, 52% of E&C executives indicate their organization is facing a severe labor and talent shortage on the job site. The impact of not filling job openings can negatively affect E&C firms in more ways than one, including project delays and cancellations, projects being scaled back, inability to respond to market needs, losing project bids, and failing to innovate, among others. Per an August 2021 survey by the Associated General Contractors of America (AGCA), six in 10 firms reported experiencing project delays due to workforce shortages, leading to projects being canceled or postponed.[47]

Another factor compounding labor shortages is a lack of qualified candidates. As the industry is creating new roles that are digitally oriented, companies are seeking data engineers, data scientists, coders, and developers. But attracting talent in these roles is a challenge as there is strong competition with technology companies. This skills gap is partly driven by industry advances into integrating digital technologies with key workstreams to further enhance productivity, efficiency, and worker safety. The penetration of digital technologies requires workforce optimization both in terms of skills needed to perform the job and the knowledge of digital technologies such as digital twins, smart project management, and connected construction.[48] For instance, many E&C firms have analyzed how jobs will evolve and are hiring more software programmers, data researchers, and data scientists than traditional engineers.[49]

In addition to reskilling, two other important elements to unleash true workforce potential include engaging in open talent ecosystems and expanding talent and opportunity marketplaces.[50] More companies across industries are considering expanding their workforce beyond full-time and part-time positions, and engaging in external ecosystems can help them access diverse external contributors. In a recent Deloitte survey, 60% of E&C respondents indicated plans to engage in open talent ecosystems to address workforce challenges. Furthermore, the E&C industry can also leverage opportunity marketplaces, internal platforms that can help the workforce focus on work type and not roles, also providing them additional learning, growth, and progression opportunities. As we move into 2022, adapting existing talent strategies and forming new talent management and workforce experience strategies could be critical to navigating workforce challenges.



Poised to accelerate

The industry has made a significant recovery from a recession on the back of a robust residential market in 2021, but it has also experienced multiple headwinds that are expected to persist in 2022. Labor shortages and supply chain disruptions have hit the industry hard, leading to project delays, rising costs, and further margin erosion. Simultaneously, digital technology continues to make its way into the industry, making it important for E&C firms to focus on developing data and analytics as a core competency. M&A is likely to provide some much-needed impetus to acquire, develop, and integrate these capabilities. Another aspect to consider is talent management strategies: finding the right people and training and reskilling them to enable the work and workplaces of tomorrow. 2022 is expected to be another rewarding, but challenging year, and the industry looks to be poised to capture growth opportunities.

Let's talk

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