Dawn of a new era: Digital and advanced technologies are reshaping the E&C sector

Technology has an unprecedented impact on the E&C industry—from robots to connected job sites, the industry is seeing an incredible array of digital technologies that are transforming how E&C firms operate. These inherently disruptive digital and advanced technologies have the potential to provide greater efficiency, productivity, as well as safety breakthroughs the industry has sought for decades.

From planning to design to construction—digital is everywhere
On the construction side, connected job sites are using cloud-based technology on new information programs that allow almost anyone to manage projects, available to all on the construction sites. The adoption of advanced software and technologies that enhance ecosystem relationships, as E&C companies can increase productivity by improving operations. These solutions are future-oriented, creating symbiotic relationships that link physical and digital assets. Beyond individual construction sites, E&C companies are gradually moving toward using connected job sites and other readily available data about the assets.

Improving productivity and safety—digital technologies

The key enabler
E&C companies are gradually moving toward using automation and robotics for highly repetitive tasks as well as site operations. This could lead to significantly improving productivity while creating a safer work environment and removing the industry’s labor deficit. While mechanical arms are automating repetitive tasks such as brick-laying, drones are also set to become increasingly common in construction projects, primarily to perform inspections that would otherwise be dangerous for workers.

Beyond simple robotics and automation, the rise of artificial intelligence (AI) is also driving new advancements in the E&C industry. For instance, AI and machine learning-related software could help in predicting real-time logistics and reducing safety hazards.

E&C companies are gradually moving toward using automation and robotics
Although there is tremendous interest and desire amongst E&C firms to incorporate new organizational processes, the adoption rates are still low, and the industry continues to lag other industries. One of the main challenges for E&C companies is being able to demonstrate the ROI. These investments are significant, and with constant pressure to perform and construction jobs—redefining the roles that humans could eventually change engineering and construction. Building a digital-ready workforce to be future-ready

However, the growing capacity of digital capabilities requires new skills and could eventually change engineering and construction jobs. Investing in skills that humans perform on sites is critical, and the E&C industry needs to be prepared to invest in upskilling the existing workforce to build a digital-ready workforce and effectively implement digital transformation within their organization. To accomplish this, the industry is expected to develop a human and talent management strategy that incorporates the move toward digital and is expected to be an essential ingredient for success for E&C companies.