



TECHNOLOGY/INNOVATION

TECHNOLOGY AND INNOVATION NEWS
FROM THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION

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How can technology help us address our skilled labor shortage?

Labor challenges often rise to the top of the list of frustrations experienced by contractors—be it finding talent that has the right skillset or assigning the resources to train new team members on the way you do things. The industry stats on skilled labor are sobering: 70% of construction firms report difficulty in hiring hourly craft workers; and hundreds of thousands of high paying skilled trades positions are vacant because fewer youths are joining the trades. This scenario is likely to get worse as the current workforce continues to age. The median age of the construction worker in the U.S. is 42; statistically, ~40% of the current workforce will be retired by 2031. Since it takes four years for a new entrant to learn basic craft and another three to five years to reach journeyman proficiency, knowledge is draining out of the workforce faster than it can be transferred.

The statistics above address formal knowledge, but consider all the project specific knowledge that needs to be learned anew for each project: site security procedures, building layout, materials laydown process, change order procedures or software that the GC requires, and more. The informal expertise you gained through experience had been practiced

SKILLED LABOR CHALLENGES



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consistently and become a habit. You may not give it a second thought, but all that know-how is valuable. Companies that can capture that informal knowledge and use it to train new trades workers from the get-go will be miles ahead in terms of competitive edge.

When you generate estimates for bids, you consider hard facts, such as the cost of materials, the time it takes to do various tasks, maybe some contingencies for the unexpected technical issues that may arise, and any markups to make it worth your while. But you should also consider the 20% employee turnover rate in construction, and the 93 days on average it takes to fill an hourly craft job. Do your estimates account for one in five workers being absent for three months? How do you cross train the rest of the project team to cope and train the replacements quickly?

Job shadowing and classroom instruction are great ways to transfer practical knowledge, but they are not scalable, mobile or convenient when everyone is busy on a project. On average, it takes six and a half months for a new employee to settle into their role. During that time, they spend on average 12 hours per week looking for information and asking questions. That's 15% lost productivity in their first year, not including the experienced workers' time to answer those questions, because so much valuable knowledge exists in the heads of your workforce and is inaccessible to others. This leads to downtime while new employees wait for answers or rework if their guess was wrong.

Considering this impact on productivity, as well as the scale and the urgency with which information would need to be captured, the standard practices of process mapping and work documentation will not be enough. Companies need to leverage

technology to be able to capture and organize all this information quickly and effectively for it to be useful. There are a few technologies being applied in this space. There are innovations like DeepHow, which use artificial intelligence to organize knowledge and automate training video creation. This allows a foreman or expert trades worker to create instructional content using a smartphone without needing to be an expert process mapper, instructor or videographer. This format of instruction is more in-line with the new workforce preference for just-in-time, micro learning using mobile video. To learn more about DeepHow, check out our Technology Spotlight recording [here](#).

Creating an accessible reference library needs to be a priority before all this knowledge leaves the industry. And we need to use better tools to help us do that quickly and painlessly. As the saying goes: "knowledge is power." But one can also say "shared knowledge is productivity."

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Please contact innovation@necanet.org if you have any questions.

Josh Bone

Executive Director of Innovation

Josh.Bone@necanet.org

Lonnie Cumpton

Director of Construction Manufacturing

Lonnie.Cumpton@necanet.org

Amanda Harbison

Associate Director of Research

Amanda.Harbison@necanet.org



National Electrical Contractors Association, 1201 Pennsylvania Ave. NW, Washington, D.C. 20004,
United States, 202-991-6300

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