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FEATURE

Adopting Technology to Gain an Edge

Brian Chickowski, Director at Maxim Consulting Group

The Construction industry has frequently been an early adopter of the latest technology. Looking back, we used pagers, cell phones, desktop computers, laptops and tablets to gain a competitive edge in a fast paced, highly competitive industry. Today is no different and the pace of innovation in the construction industry is nothing short of extraordinary. To compete in today's world, a contractor absolutely must embrace and adopt technology. To what extent in each facet of a construction company's business will determine how much of an edge over the competition the company will have.

Get Work

Let's start with how contractor's "get work" and look at the current state of Estimating. The advancement of On Screen Takeoff (OST) has greatly increased the capacity of today's contractors estimating departments. No longer does OST require an actual CAD drawing to be accurate or effective. A clean Portable Document Format (PDF) of the drawing is all that is required now. The "dots and spots" take offs can be handled by OST in a matter of minutes per page with very little verification of accuracy by the estimator. Most major estimating software platforms have some sort of OST integrated option that will allow for direct entry into the

estimate itself eliminating the possibility of miscounted or inaccurately entered values into the estimate.

Implementing OST into your estimating department will gain not only more accurate takeoffs, it will also allow for at least 20% more work to be bid with the same amount of staff.

Do Work

Now that the project has been procured, the actual installation of the work needs to be performed. Many construction projects have employed the use of Building Information Modeling (BIM) to help identify "conflicts" in the field virtually on screen before they happen in real life.

Often, the designs are often still not 100% complete when the work is procured, and specialty trade contractors oftentimes become part of the design team involuntarily. Having an inhouse BIM coordinator fluent in Revit or BIM modeling becomes a tremendous value-add to the client and many times is a requirement. Couple the use of a BIM model with field layout tools such as Trimble Total Station, and the possibility for errors in installation is drastically reduced. Collaboration of the entire construction team using these technologies often leads to less animosity in the workspace and project schedules are often even beat.

In addition, while the project is underway the field staff often needs access to the latest information pertaining to the project. This includes Approved Submittals, Request for Information (RFI) responses, the latest set of construction specifications and drawings (if a BIM model is not used) to name a few.

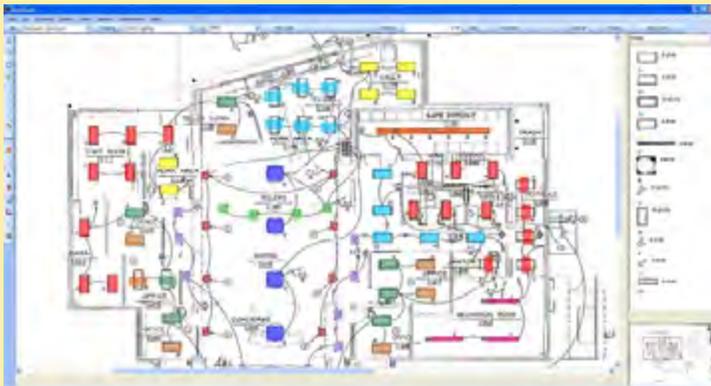
Unapproved materials may be purchased and installed by the field staff, if they are not aware of a submittal response that may have rejected the use of the product.

An RFI response may indicate to offset the installation of an item.

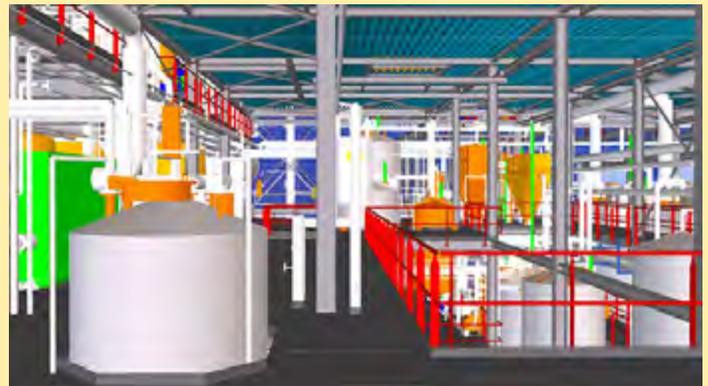
A revised drawing could be issued by the Engineer and the field staff may not receive the updated drawing prior to proceeding with the installation of products on that drawing.

The lack of accurate, timely information can often delay a project or even directly cause installed items to be removed and reinstalled.

Several commercially available software applications have solved for these problems. Most can run on a variety of today's technologies such as a laptop, tablet or even a smartphone. All of which are standard issued technologies for field supervision.



Sample construction print that used OST for a takeoff that fed into an estimate



Sample BIM model

Keep Score

During the construction of the project, there is a variety of information that needs to be collected from the field.

Submission of daily or weekly payroll timecards is a necessity for every company and comprises anywhere between 50-70% of the direct job costs. Handwritten paper timecards or even a spreadsheet timecard, simply doesn't work in today's information age. They are a cause of great waste within a construction firm.

A field supervisor hand writes or enters the time for his crew and himself in a spreadsheet. Sometimes it's legible and often doesn't contain a valid cost or phase code for the project. Perhaps the timecard indicates a total of 48 regular hours. In any case, the payroll administrator stops their manually entry of the same data to contact the field supervisor who may or may not answer the phone. Sound familiar?

There are several commercially available timecard capturing software systems that virtually eliminate all the typical problems that come from handwritten or spreadsheet style timecards. All of which can be used on a laptop, tablet or smartphone for ease of access. Most synchronize with the back of house Enterprise Resource Planning

(ERP) software in use at the construction firm. Simply select a job, a budgeted cost code that exists on the job, the employee and number of hours worked on that task. Single point of data entry and the payroll administrator simply is reviewing the information entered prior to it being processed.

Most of this software also incorporates production tracking, which then allows for a clear picture of the status of the project compared to the budget. Most importantly, it affords the project management staff the ability to react to a problem in production early on instead of waiting until almost all the budgeted hours have been consumed.

To conclude, employing the latest technology innovations in estimating allow for more work to be estimated by the same staff with less chance for human error of counts or data entry.

Making the investment into virtual construction technologies reduces the possibility of costly installation errors and provides the field with the latest information required to build the project within budget and timely.

Using digital timecards reduces duplicative efforts in a process that occurs every week inside of every construction firm. Add in production tracking and visibility on the labor status of the project allows for adjustments to

be made to production shortfalls prior to the project being complete.

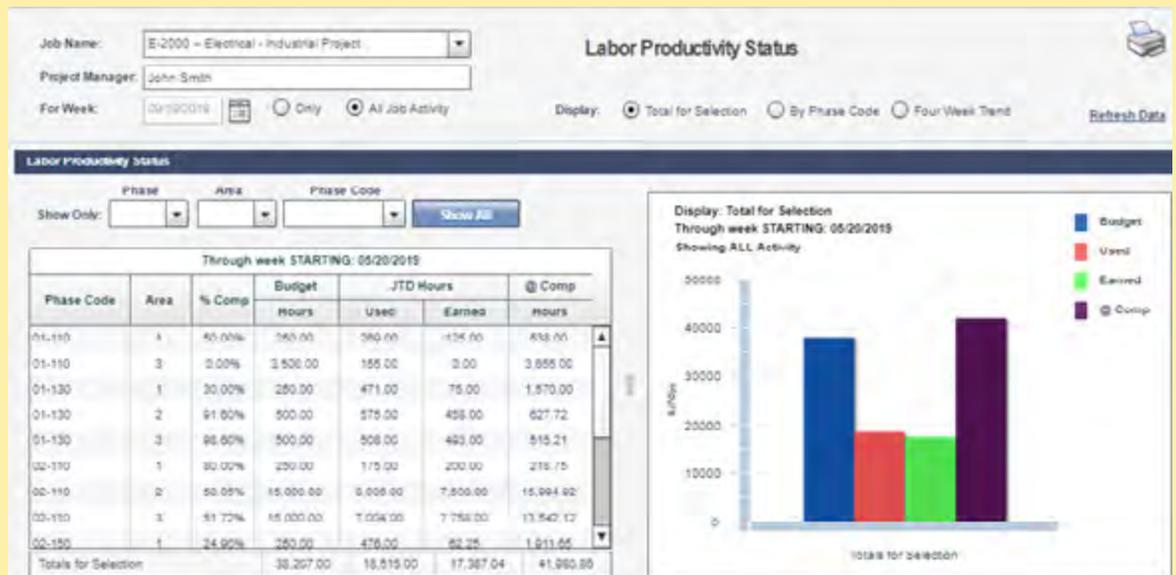
These are just a few examples of how adopting and implementing the latest technology can help your firm gain an edge over your competition. If you are not innovating, you are trailing your competitors.

The great American engineer W. Edwards Deming summed it up best when he observed and stated "It is not necessary to change. Survival is not mandatory." Is your firm going to survive?

Brian Chickowski, Director at Maxim Consulting Group, is responsible for evaluation and the implementation processes with our clients. He has worked with construction firms of various sizes to evaluate business practices and assist with the business process changes. Having worked in the industry for over 15 years, Brian brings practical experience, an enthusiasm for success and leadership to help his clients improve and succeed. Areas of specialization include: organizational assessments, project execution, productivity improvement, and automation of processes. If you have additional questions, or for more information, you can contact Brian at brian.chickowski@maximconsulting.com or www.maximconsulting.com



Sample timecard entry screen



Sample Labor Productivity Status made possible using electronic timecards and production tracking.