The Steel Estimator's Guide to Staying Competitive

Trimble

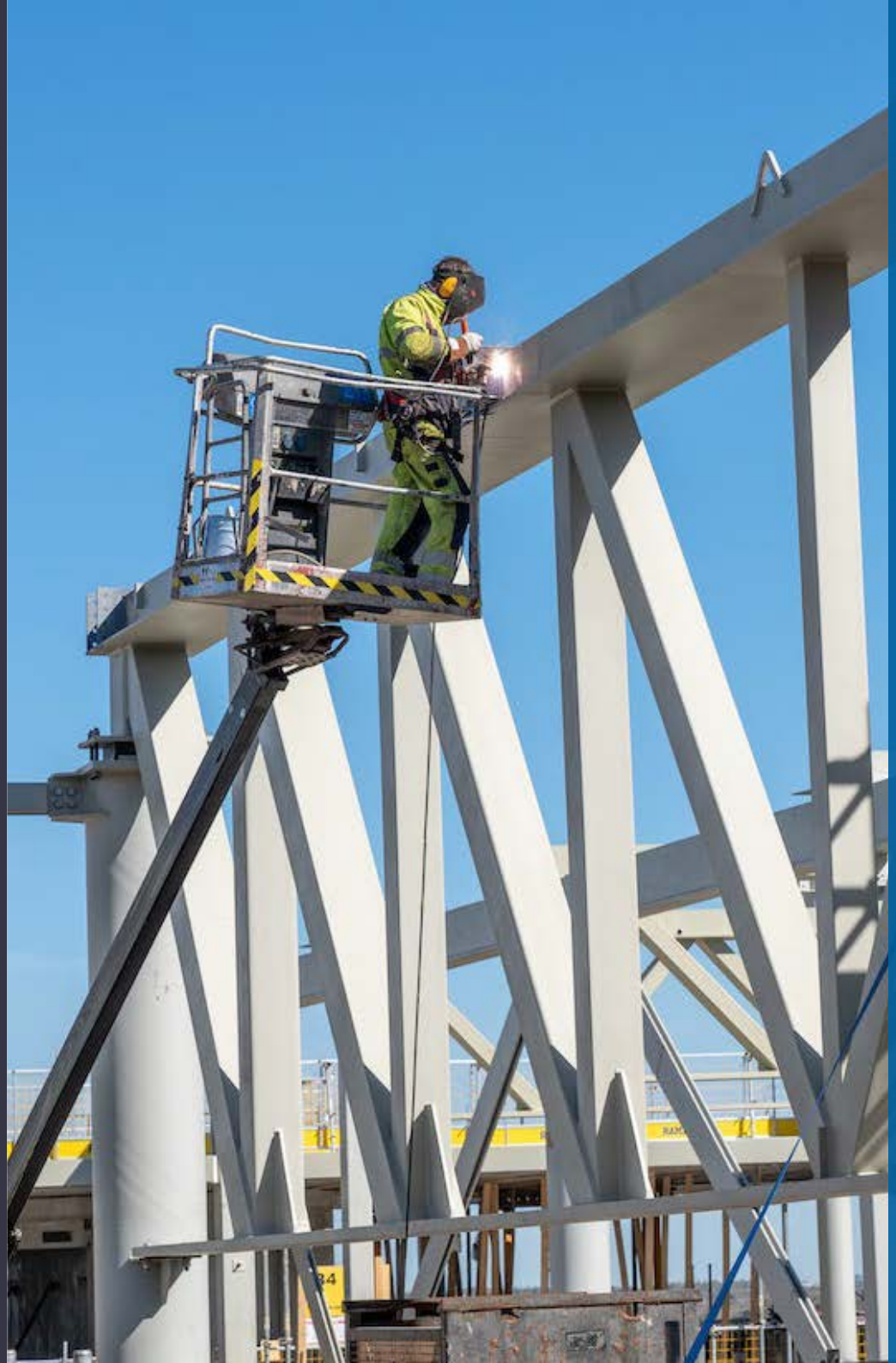
As an estimator, you're in a prime position to influence the competitive advantage your shop enjoys. After all, cost control and maintaining a healthy profit margin are keys to business success and that effort starts with you.

However, simply being aware of the influence you can have on the shop's profitability doesn't automatically equate to success. Gaining a competitive edge means having a process in place for quickly generating a large number of bids with accuracy. To make the most of the power you have, you need to take a conscious, active role in seeking out advantageous strategies and processes at every opportunity. And, you need to support others in the organization in doing the same.

You can likely exert a positive influence to boost your shop's competitive edge in several areas of the fabrication workflow. Those areas are:

- **Accuracy of estimates**
- **Timeliness of estimates, and**
- **Effective use of estimate information**

Let's break down each one of these categories, discuss the challenges you may face in trying to boost profitability and how to actively resolve these issues using some strategic processes and technologies.



Common Challenges for Estimators in the Standard Steel Fabrication Workflow

Obviously, many external challenges continuously impact how you do your job and your potential for success. Most of these are completely out of any individual's control (such as global economic trends, the supply of raw materials, etc.) and many fall far outside of your responsibilities (such as access to skilled labor or negotiating supplier contracts). Still, plenty of the internal challenges that arise during the fabrication workflow are within your sphere of influence. Let's focus on those.

Accuracy of Estimates

CHALLENGE: Lack of information causes guesswork

If your estimates are based on 2D, it's likely they're also requiring you to do some amount of guesswork. 2D drawings often don't provide everything an estimator needs to create accurate takeoffs at the pace required to bid competitively. When you base material quantifications on 2D for structures that will come to life in 3D, the risk for human error increases significantly because it's difficult to quantify every detail of a project when you can't see it from every angle. This means you can't catch potential constructibility issues early, and those can turn into expensive challenges during construction that risk project profitability. Even more challenging, 2D doesn't provide access to the cost information you need to generate an accurate bill of materials.

SOLUTION:

Often times, the ability to analyze a project's constructibility can provide the edge it takes to win a bid. Having this information in 3D improves accuracy and makes it easy to see if something is missing. With the confidence that quantities are accurate, complete and up-to-date, estimators can be better prepared to face the challenge of ensuring the data quality and generate the required information for the estimates within office hours.

Using a strategic estimating tool also enables you to include actual purchase costs into the final bid, as opposed to just 'adding a percentage of drop' to allow for waste. You'll be able to generate precise estimates and exact quantities that translate into competitive bids and more profitable projects. By combining and pricing all materials and generating a final number that includes actual drop costs, your workflow will gain a competitive advantage to estimators just going with an educated guess.

CHALLENGE: Balancing careful calculations with urgency becomes difficult

Anyone who has worked alongside an estimator knows that no two projects are the same. Extenuating circumstances — from variable client needs to volatile material costs — are in constant conflict with careful planning. When it comes to fabrication estimation, you have to expect the unexpected.

At the same time, you're challenged with getting as much as you can while spending as little as possible. Accurately determining the amount of steel needed, how long each phase of the project will take and the cost per project are nearly impossible to accomplish without the right information on hand.

And, your estimate not only has to be competitive and optimize costs, it also needs to ensure your company turns a profit. Effectively achieving this balance between cost and profit can seem like an impossible balancing act. Not to mention, improving your processes is difficult without visibility into how your estimates compare to real-time production costs or profit margins.

SOLUTION:

Despite the infinite variability of project needs, effective estimation comes down to two factors:

- **Balance — Estimation is all about balancing speed and accuracy. These factors are two sides of the same coin: who doesn't want to reduce the time commitment without sacrificing delivery quality? Striking a balance will help uncover project savings while still satisfying customer needs.**

- **Duplicatable — Carrying over successes from previous jobs is an invaluable estimator asset. If something worked well under certain conditions, it will likely work again. Truth be told, effective estimation is half adaptability and half self-plagiarism. Recognize productivity wins and attempt to duplicate them when possible.**

Any estimator worth their steel knows that, no matter the project, the above ideals are universal.

CHALLENGE: Project changes and fragmented workflows affect bid accuracy

Every estimator knows that change orders are an inevitable part of the estimating process and that if not managed well, create a number of challenges that will ultimately impact success. Managing change orders in 2D can make it difficult to track or "show your work." This can lead to unanswered questions such as "what is associated with this cost code?" or "how was this quantity calculated?". They also require repetitive rework to ensure numbers are accurate. Without the ability to show your work, stakeholders downstream might hesitate and recalculate quantities instead of using your numbers, even if they're accurate. This means both the time you invested in the estimate and the information you generated go to waste.

In addition to change orders, steel estimators routinely face the challenge of needing to communicate with stakeholders across the construction workflow to address those changes. Work often tends to be siloed or diluted as it transitions from one person to the next, and from one format or style to the other. When working this way, errors and inefficiencies are almost always guaranteed.

SOLUTION:

In a 3D, model-based workflow, all quantities are directly linked to and calculated from the model. When a change is made, costs and quantities are automatically updated throughout the model. You can easily trace your work without additional calculations, giving stakeholders downstream confidence in your numbers that ultimately saves time and reduces waste. However, simply using a 3D model as your information source alone doesn't give you the ability to trace the origin of your quantities. Magic needs to happen in both directions – from the model to the takeoffs and from the takeoffs to the model.

To mitigate the effects of a fragmented workflow, it's important for the steel estimator to always be on the lookout for ways to streamline and manage the process. Doing so can eliminate human error or faulty data that negatively impacts the estimating process. Adopting a technology solution that integrates seamlessly with the estimating, detailing, fabrication and erection is the most effective way to synthesize the entire process.

Timeliness of Estimates

CHALLENGE: Limited expertise causes bottlenecking

Estimators provide an invaluable service to the steel fabrication process and few on the team match their specific expertise. However, many fabricators face the challenge that there are too few estimators for the amount of work that is coming into the shop. These lead or senior estimators are often armed with the years of experience and specialized knowledge it may take to quickly and accurately estimate a job to make a fabricator profitable. But, if that skill resides solely in the minds of your most talented estimators, you run the risk of bottlenecking. This lack of quality, coordinated and timely information results in too many projects for bid and not enough estimators to process the request. This means lost jobs or potential for risk of over/underbidding.

SOLUTION: Knowledge democratization

Overcome bottlenecking by extracting tribal knowledge from the most experienced estimators and making that information available and understandable to everyone on the team. Sharing knowledge helps make the estimating process more comprehensible and therefore, more transparent. This promotes ongoing collaboration and exposes the process to a new diversity of scrutiny which helps reduce errors. This can be accomplished through simple, standardization efforts:

- **Standardize bidding forms**
- **Log material and labor rates in a central location**
- **Integrate historical values**

One of the greatest benefits of demystifying project estimating is that the process eventually becomes duplicatable. Establishing repeatable processes from the outset might require a little extra work, but will make your job far easier in the long run. You and your team no longer have to reinvent the wheel with every project. Create the necessary templates, databases and swipe files to streamline repetitive tasks and you'll soon uncover improvements in workflow speed, accuracy and profitability.

CHALLENGE: Evaluating options to maximize profitability takes too long

So often, finding the best route to a competitive and profitable estimate means testing different scenarios, connections or materials. Especially if done in 2D, the weighing of options can be time consuming, requiring you to draw by hand and recalculate quantities and costs. As an estimator, this takes time you can't afford to waste and diminishes the potential for quickly creating a competitive bid.

SOLUTION:

Working in 3D simplifies the process of evaluating alternative structural solutions. Estimators can quickly drag and drop various materials, connections, etc. into the model. With this automation, you can easily and quickly explore options to find the most competitive and cost effective solution.

CHALLENGE: Continued growth of the industry

It may seem strange to consider the steel industry's predicted growth as a challenge, but along with the potential increase in opportunities and revenue, ongoing industry growth also means more fabricators are entering the market, more bids need to be evaluated and acted on, and there's generally more work that needs to be done, all while margins remain relatively thin.

With more providers seeking out a slice of that continually diversifying pie, the bidding phase of steel fabrication is going to face an exploding volume and complexity of work. If you're not careful, that explosion can directly impact the fabrication shop from a quantity and quality perspective.

SOLUTION: Clearly established standards for bidding

To effectively mitigate the negative impact of steel sector growth, fabricators need to establish more focused and stringent standards for which jobs they're willing to bid on, and which fall outside the "sweet spot" where the shop's abilities and profits intersect.

You can and should work directly with the fabrication manager to spearhead the identification of that "sweet spot" and make sure those responsible for vetting bid opportunities are continually aware of it. Once that's accomplished, the narrowing of focus will subsequently make your estimating job easier and more effective.

Again, an integrated technology platform that can successfully bring together all phases of the fabrication workflow has proven to be a highly effective tool for identifying a shop's optimal job situation. By adopting such a platform, you could see vast improvements almost immediately.

Effective use of estimate information

CHALLENGE: Estimate information dies in the bidding phase

You put a lot of effort into building an estimate and ideally, that information and work would continue to deliver value after the bid is won. However, if you're working in 2D, the estimate information often dies after the bidding phase and collaboration among parties as the project progresses requires each party to start over when building out project information. If you're not using a model-based estimation workflow, you aren't able to use information built in an estimation all the way through to fabrication and erection. By losing this information, you're exposing your company to rework and increasing the potential for errors downstream.

SOLUTION: Utilize information from your estimate in the production schedule

Everyone who 'touches' a job has the power to make or break it. With a 3D process, everyone becomes more successful and the estimate you worked so hard to build lives on through production. Stakeholders can track and compare your estimate to the project schedule and use that visibility to target shop problem areas.

Linking the estimated job to the actual production control job provides budgeted labor hours by piece. Planned hours can be fed into a production schedule which allows everyone involved to see the hours needed for all jobs and plan labor application by calendar day. Not only does this allow you to maximize labor during production, it also means less material taking up space on the shop floor waiting for fabrication.

CHALLENGE: Identifying where issues arose and resolving them before the next job

The final step of every project should be a post-mortem analysis of what went right and what went wrong. After all, merely solving the previously described challenges won't ensure an ongoing competitive advantage for future work. The construction industry is constantly evolving. Staying competitive requires a strategy centered on continuous improvement.

SOLUTION: A fully integrated software platform to facilitate thorough analysis

Analyzing the ins and outs of a completed project can be handled in many different ways, but it's going to be easier if you have records from all phases of the project organized and accessible in a central location.

Again, choosing the right modeling and fabrication software solution comes to the rescue. With all phases of the project housed in a centralized solution, analyzing the timeline, quality and profit of the entire workflow should be a breeze.Being able to link back to what the estimator had for time and materials enables a real time review of a project through a post-mortem aspect. And, with the next project set up to be managed using the same solution, any insights you glean from this analysis should translate quickly and easily to the next project, leading to opportunities for continuous improvement.

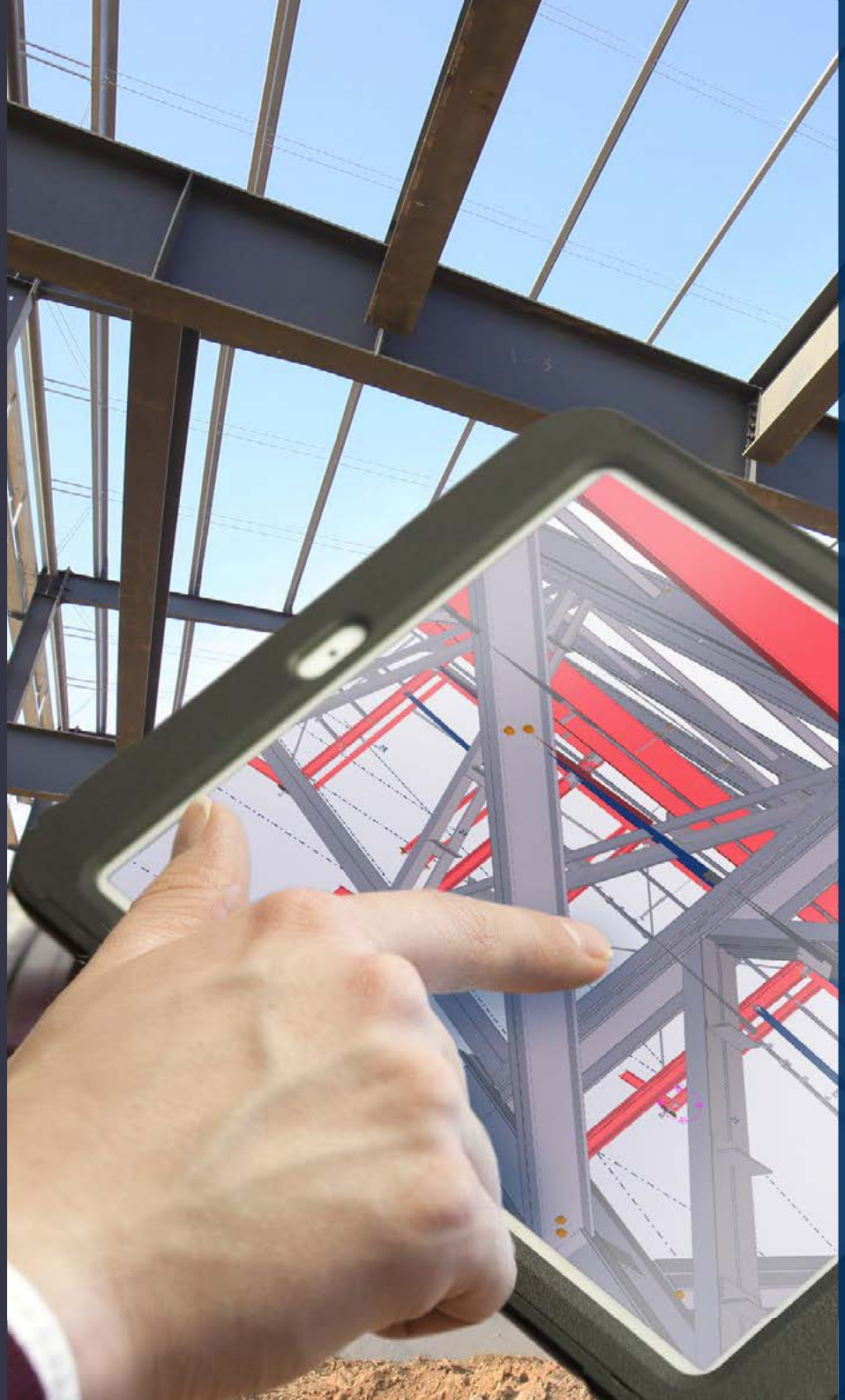
Where Do You Go From Here?

This may seem like a no-brainer, but accurately estimating steel projects can lead to cost control and improved profit margins. As the steel estimator, this is where you have the most agency to flex your forecasting skills. However, don't take this challenge lightly. There are strategies you should implement to help keep material costs down, avoid erroneous charges and improve the accuracy of labor predictions.

Here are a few examples:

- Utilize a BOM that also includes labor
- Keep your PM in the loop: Talk to your project manager. It's better to keep them abreast of sourcing materials to ensure adequate supplies are on-hand and avoid costly delays.
- Benchmark: Industry benchmarking helps establish a standard against which to measure materials costs. By doing thorough industry research, you can ensure you're not overpaying for steel.
- Adopt the right software: Developing estimates using the right software solution will not only make your job faster and more efficient, it will improve the detailing, fabrication and erection phases as well.

The selection and adoption of effective software and hardware solutions are the keys to staying competitive as steel fabrication and the larger construction industry continue to evolve. No matter which phase of the project you're most interested in, that fact remains consistent. And, if your goal is maximum profitability across the entire steel workflow, choosing a solution that covers all stages effectively and working with others on the same platform makes the most business sense. Nonetheless, there are certain strategies you can use to mitigate the effects of factors outside of your control.



There are very few universal solutions available on the market today, and only one industry leader. If you're interested in moving toward optimal profit and competitive advantage by addressing and resolving the challenges laid out in this guide, explore Tekla software offering today.

If you would like to see how to implement a model-based estimating workflow with some of the suggestions given in this guide, be sure to check out the webinar:

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