

CS473431

Risk Adjusted Estimating & Bid Management for General Contractors

Laura Watts
Autodesk

Learning Objectives

- The reasons why estimating is so difficult in today's construction industry
- The importance of connecting the bid and risk management processes
- How to implement your own effective risk adjusted estimating workflows
- How to start applying risk data throughout the entire project lifecycle

Description

Successful general contractors understand that accurate cost estimates are essential to both project and organizational success. For decades, the cost of construction has been a function of marketplaces: labor, materials, insurances, and fees. However, given increasing project complexity and greater technological capabilities, this reality is changing. The need to both understand and also quantify the risk in performing complex projects will shape the way cost estimates evolve in the very near future.

About the Speaker

- Joined BuildingConnected in early 2019 as a Customer Success Manager focusing on helping general contractors enhance their preconstruction and prequalification workflows.
- Previously, spent the last 6+ years working in a variety of roles focused on the customer experience for software companies.
- Developed a strong passion for helping customers understand how innovative technology can help solve their problems and have a positive impact on their business.
- Has helped over 100+ general contractors implement Autodesk Construction Cloud solutions across their organizations and specifically, over 50+ TradeTapp customers.

Why is estimating so difficult?

When bid management teams quantify potential risk in order to shape their cost estimates more accurately—company profits are more likely to be protected. Budget and timeline overruns will be less likely and Estimators will have more data at their fingertips to find the most qualified subcontractors before awarding a project.

The reality of construction today...

20% of projects overrun their timeline





80% of projects are over budget

31% of all construction projects in the last 3 years have been completed within 10% of their initial budget

- > COVID19 related layoffs & increased safety precautions
- > General labor & supply chain shortages
- > Devastating weather conditions

McKinsey 2016 Study: Imagining construction's digital future
KPMG 2015 Global Construction Survey

Top challenges & technology investments

	 Challenges	 Current Software Investments	 Planned Software Investments	 Innovative Tech Investments
1	Data security	Enterprise resource planning	Client relationship management	Predictive analytics/big data
2	Effectively managing risk	Project management	Estimating	Internet of Things
3	Lack of effective technologies/outdated technologies	Project scheduling	BIM-based workflows	Augmented reality/virtual reality

Source: IDC 2019 The future of connected construction pulse survey (worldwide n=835)

The importance of connecting the bid and risk management processes.

Currently, there are various approaches to the prequalification and bid management processes. We believe it is crucial to integrate the bid management and risk management processes together and want to help estimators understand that the lowest bidder may not always be the best choice. Many times, estimating teams are awarding bidders and then initiating the prequalification process to review potential flagged risk they might bring to the project.

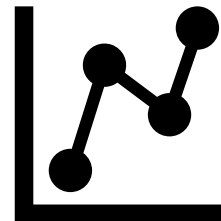
Workflows seen today

Bid Management

1. Pre-construction teams inviting subcontractors to bid on a project
2. Analyzing bids and performing bid leveling
3. Putting together a cost estimate (including both direct and indirect costs)
4. Finding that subcontractors are largely being chosen based off of labor, materials, and overhead
5. Award subcontractors

Risk Management

1. Sub is invited to qualify (often times once the award decision has been made)
2. Sub completes questionnaire
3. Risk team analyzes potential risk and provides recommendation on capacity the sub should be worked with in (risk analysis performed)
4. Risk team communicates decision back to sub with a potential risk mitigation plan



Challenge with current process

Risk data is not incorporated into how Estimators analyze bids and choose the best subcontractors for the right jobs.

Leading to increased unforeseen costs, change orders, and safety issues in addition to extended project timelines.

Integrating the two processes

- Smart bid lists
- Identifying subs based on qualification status
- In depth financial, safety, and health analysis
- Setting statuses and limits
- Optimized bid leveling

How can we put risk adjusted bid management into action?

Financial risk

Reviewing financial information and analyzing potential risk the sub may have by benchmarking a subcontractor's prequalification information with others to help provide further insight into the position of that subcontractor compared to their peers. After review, risk teams can provide important details, including:

- Qualification status
- Single and total project limits
- Risk mitigation plans if the subcontractor is brought on to a job

With shared risk data, estimating teams can make informed decisions. They can easily filter by those who are already qualified and ensure they are matched to the appropriate sized project. Also, if the subcontractor has a recommended risk mitigation plan, such as needing lien waivers or joint checks, they can apply those administrative costs into their bid at the time of bid leveling. For more context, view the current backlog with a subcontractor and provide an alert notification when it's approaching the total project capacity.

Safety risk

Making sure that the subcontractors and vendors you bring onsite are not going to cause any safety issues while on the jobsite. Risk teams should collect important information about a subcontractor's safety history and standards, including:

- EMR
- OSHA Records
- Internal safety programs and procedures

With the integration of metrics, such as EMR back into the bidding platform for estimating teams to see, it can help them make more informative decisions about the risk they would be willing to take for a job.

Project approval workflows

Provide an approval workflow for situations in which a project team wants to award a subcontractor that has potential risk, such as a high EMR. Set an automated workflow that allows a project team to indicate their project and desired subcontractor and have their risk profile reviewed by anyone else at the company.

Covid risk

Leverage more ways to protect yourself against the risk that COVID poses on the subcontractors that are brought onto jobs. Asking for updated financials, new jobsite safety procedures, current depth of workforce can all help provide additional context for the current times. Ask additional questions and sections of their pre-qualification questionnaires to get deeper analysis of how COVID has impacted their subcontractors and better understand the best capacity to work with them in.

How can we apply risk data across the entire project lifecycle?

With integrated data, systems, teams, and workflows—the possibilities of minimizing your risk upfront do not stop here. With the use of connected tools past the office and out into the field and capturing what is actually happening on your job site and in the world, we can think about furthering our predictions and insights to make even more effective decisions about the teams you are putting together for your jobs.

Further your predictions and insights to make more effective decisions

- Tie subcontractor quality and safety performance back to their risk profile
- Match labor hours submitted to a historical project and adjust
- Flag risky bidders during submission

Feel empowered to implement a risk adjusted estimating culture

- How can you get project teams to be think more like risk teams?
- How is the technology you are using helping you adapt to the today’s current complexities?
- How can you start better predicting potential risk to protect your profit margins?



Apps	DESIGN	PLAN	BUILD	OPERATE
Workflows	<ul style="list-style-type: none"> • Design Authoring • Design Collaboration 	<ul style="list-style-type: none"> • Model Conditioning • Model Coordination • Quantification • Bid Management • Qualification 	<ul style="list-style-type: none"> • Project Management • Field Collaboration • Quality & Safety • Cost Control • Commissioning 	<ul style="list-style-type: none"> • Facilities Maintenance • Asset Lifecycle
Shared Data	Data Models · Drawings · Issues · Specifications · RFIs · Cost · Assets · As-Builts			
Insight	Predictive Analytics & Risk Management Predictive Analytics · Benchmark Reports · Mitigation Strategies			
Network	Builders Network			