Over the past two months, we surveyed the construction industry to better understand the use and effectiveness of construction estimating software. Our key findings include the following:

1. **Users of construction estimating software produce faster and more accurate bids.** Companies that use construction estimating software under- and overestimate projects less often than spreadsheet users. They also have shorter bid turnaround times.

2. **Construction estimating software users report fewer challenges with their system.** Specifically, 72 percent of construction estimating software users say their system rarely makes bidding on projects difficult. Meanwhile, 46 percent of spreadsheet users report their system often makes bidding on projects difficult.

3. **These results were more pronounced among medium- and large-sized companies.** We found that there is greater opportunity for construction estimating software to improve efficiency at larger companies. Meanwhile, for smaller companies, simple tools such as spreadsheets prove satisfactory for cost estimating.

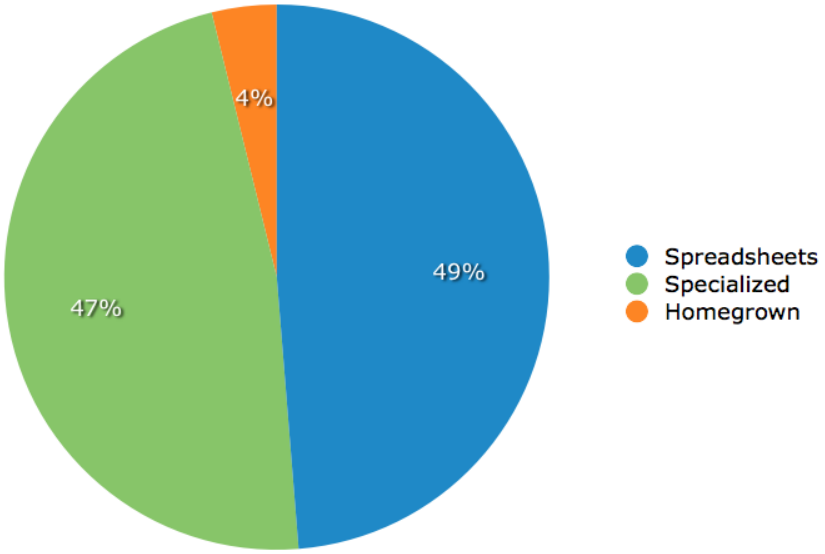
Roughly Half of Software Users Rely on Spreadsheets

We asked our survey participants to tell us what type of software they use to estimate projects. Their responses fit into three categories:

- **Specialized:** Estimating software designed specifically for the construction industry.
- **Spreadsheets:** Microsoft Excel or another comparable spreadsheet tool.
- **Homegrown:** Custom software tools developed by the company or a third-party.

Out of the companies in our survey that use software, here's the percentage that use each.

What Type of Software Do You Use to Estimate Projects?



Given the relatively small sample size of homegrown software, we decided to focus our analysis on the effectiveness of spreadsheets and specialized software (i.e. construction estimating software) for construction cost estimating.

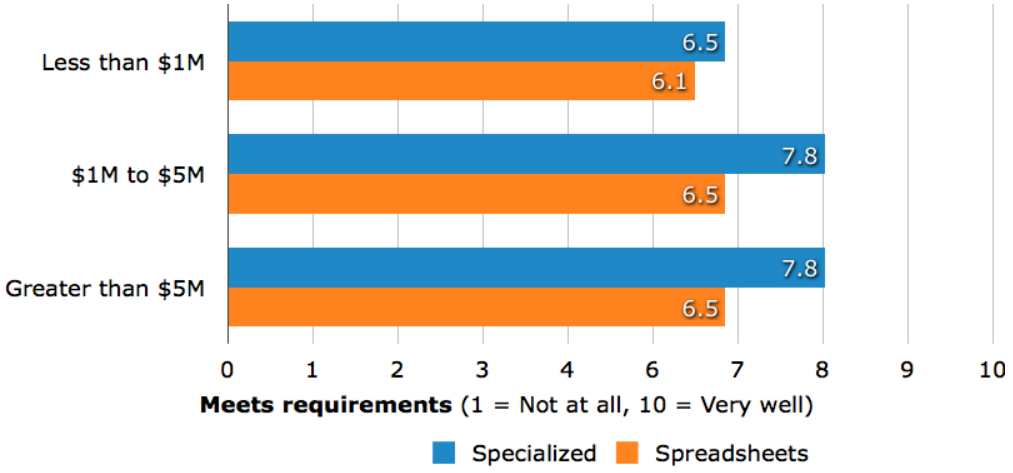
We also segmented our sample to get a sense of the effectiveness of these technologies for three different company sizes:

- Less than $1 million in revenue;
- $1 million to $5 million in revenue; and,
- Greater than $5 million in revenue.

We selected these size groups because very small (less than $1 million in revenue) and small ($1 million to $5 million in revenue) companies were overrepresented in our sample. As a result, aggregating the data made it difficult to evaluate the effectiveness of construction estimating software where it was most likely have to an impact–companies above $5 million in revenue. Segmenting this way made it easier assess the value of construction estimating software.

We then sorted our data by company size to see how well spreadsheets and construction estimating software met user's requirements.

How Well Does Your Software Meet Your Needs?



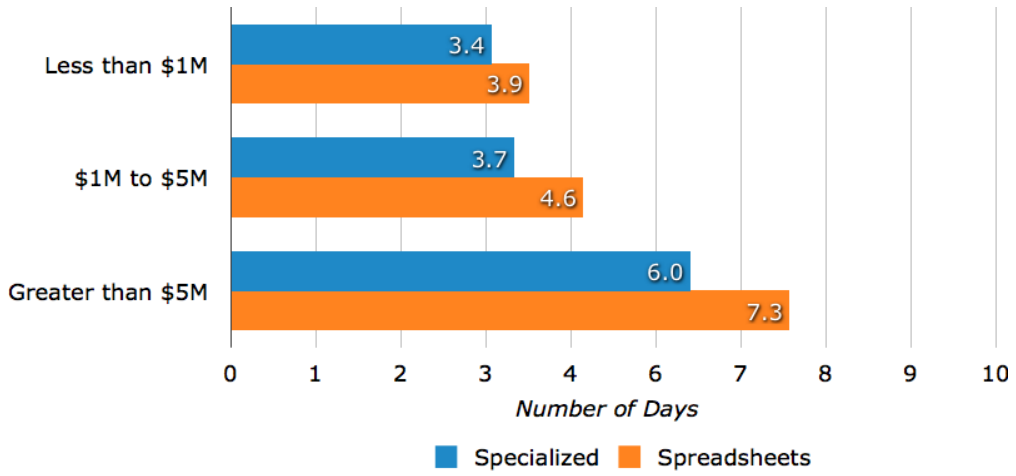
Construction estimating software users reported higher ratings than spreadsheet users, regardless of company size. However, medium and large companies (i.e. companies with annual revenue greater than $5 million) reported the highest ratings for how well construction estimating software meets their requirements.

We believe that companies below $1 million in revenue are less satisfied with construction estimating software because they aren't bidding on the same volume, or complexity, of jobs that larger companies bid on. In some cases, the functionality in construction estimating software more than a small company needs, possibly making them less efficient and therefore less satisfied with the fit of their system.

Estimating Software Users Create Faster, More Accurate Bids

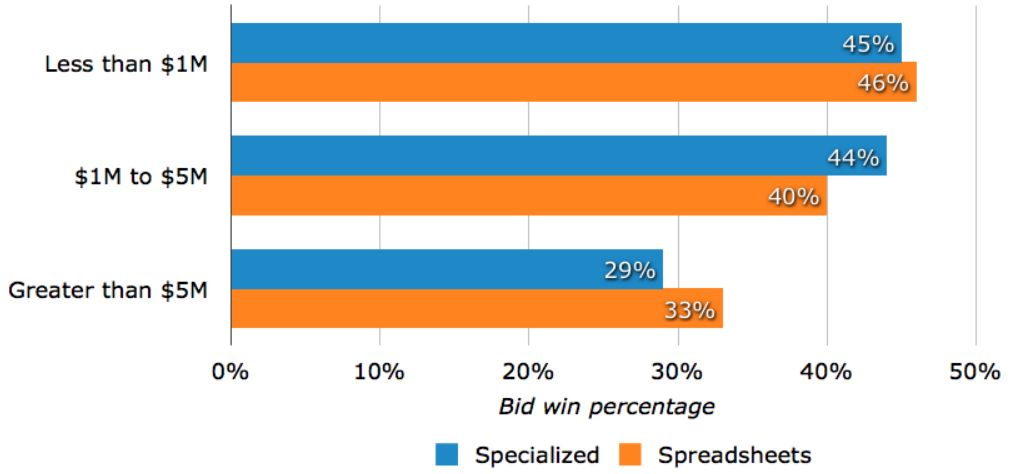
We then asked survey participants to report how long it takes them to turn around a bid, how often they under- and overestimate projects, and what percentage of bids they win.

On average, how many days does it take you to turn around a bid?



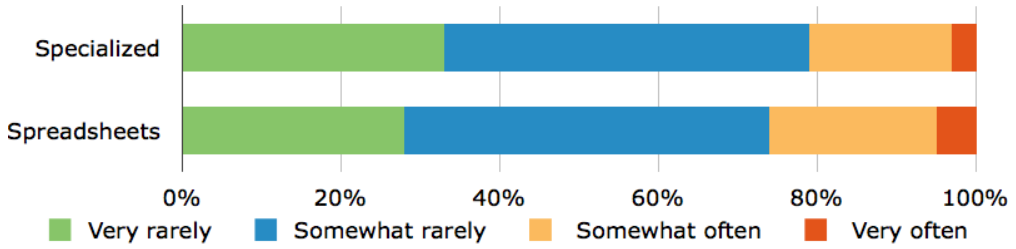
Construction estimating software users reported the shortest bid turnaround times. When looking at companies with less than $1 million in annual revenue, the difference was insignificant. However, construction estimating software users at companies with more than $5 million in annual revenue reported 17 percent shorter bid turnaround times, producing bids an average of 1.3 days faster than spreadsheet users.

What percentage of bids do you win?



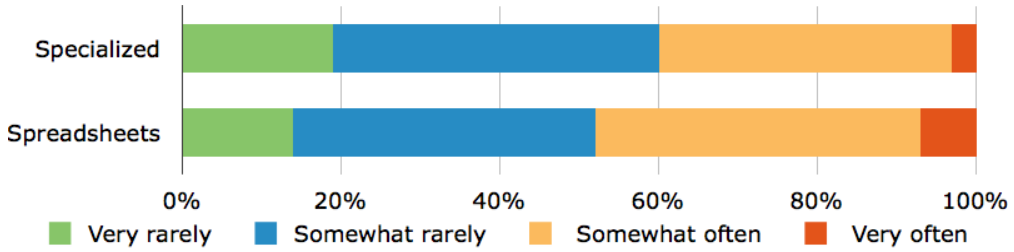
While construction estimating software users were more satisfied with their system–and created bids more quickly–they didn't always win more jobs. For small companies, the type of software used didn't have much of an impact on bid win percentage. Surprisingly, however, spreadsheet users at companies with more than $5 million in revenue reported a four percent higher bid win percentage.

How often do you underestimate bids?



Construction estimating software users had a slight edge in bid accuracy with 79 percent of construction estimating software users reporting they very rarely or somewhat rarely underestimate bids. For spreadsheet users, that percentage is 76 percent.

How often do you overestimate bids?

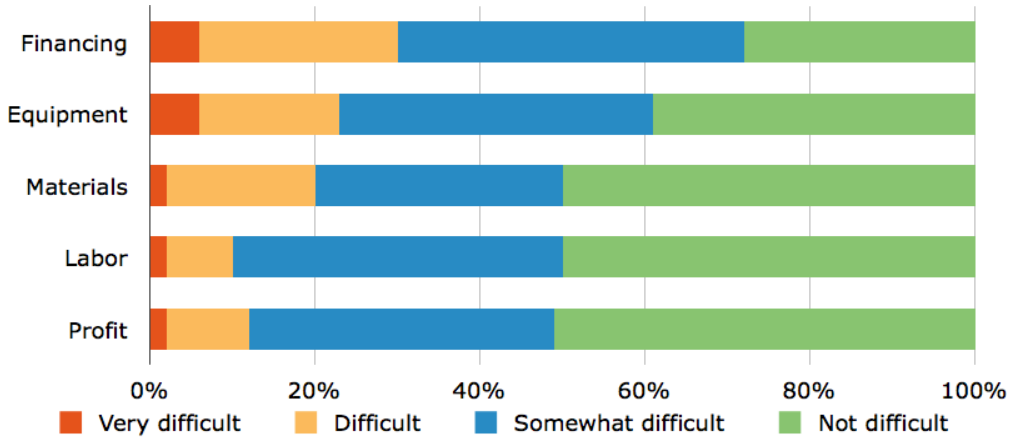


Construction estimating software users also reported overestimating projects less often with 60 percent reporting they very rarely or somewhat rarely overestimate projects. Only 52 percent of spreadsheet users reported similar bid accuracy levels. Meanwhile, seven percent of spreadsheet users reported they overestimate bids very often.

Estimating Challenges and Priorities

We presented respondents with a list of common project costs and asked them to rate the difficulty of estimating each on a scale from "Very difficult" to "Not difficult."

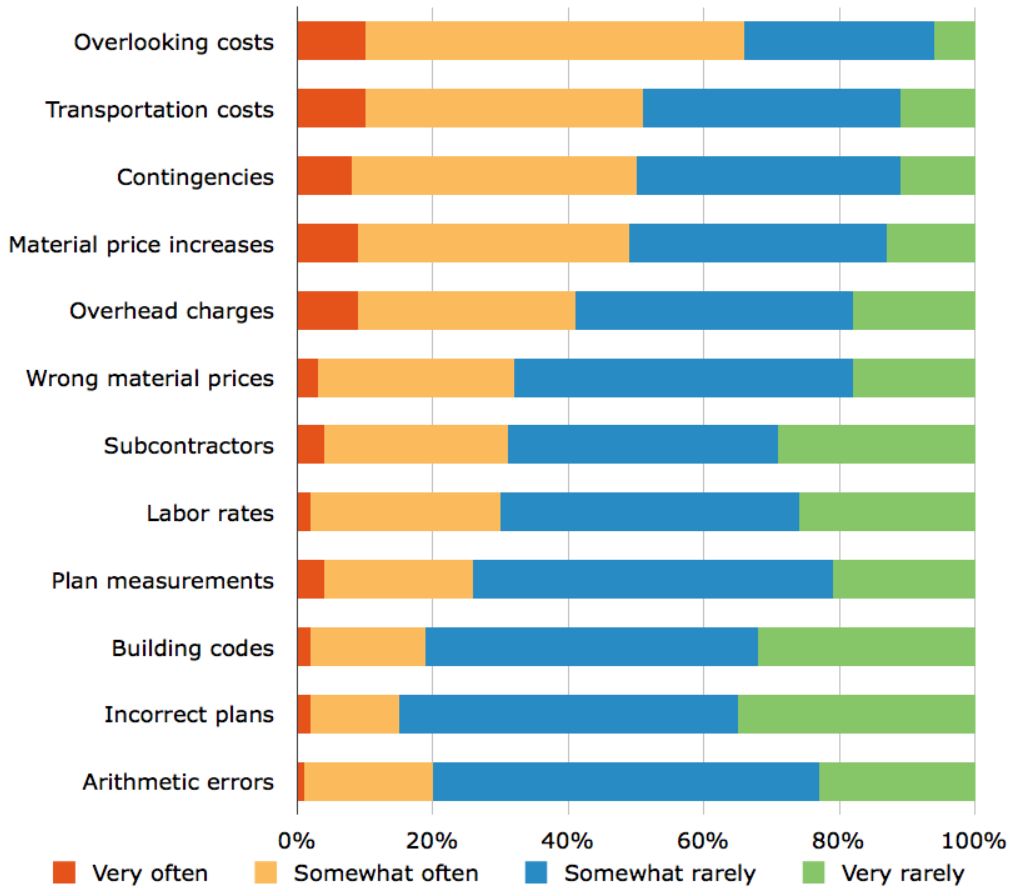
How difficult is it to estimate the following?



The three most difficult costs to estimate, according to respondents, were financing, equipment and materials costs. For financing, 30 percent reported these costs are very difficult or difficult to estimate. For equipment and materials costs, these percentages fall to 23 percent and 20 percent, respectively. Meanwhile, 51 percent of respondents said estimating project profit was not difficult.

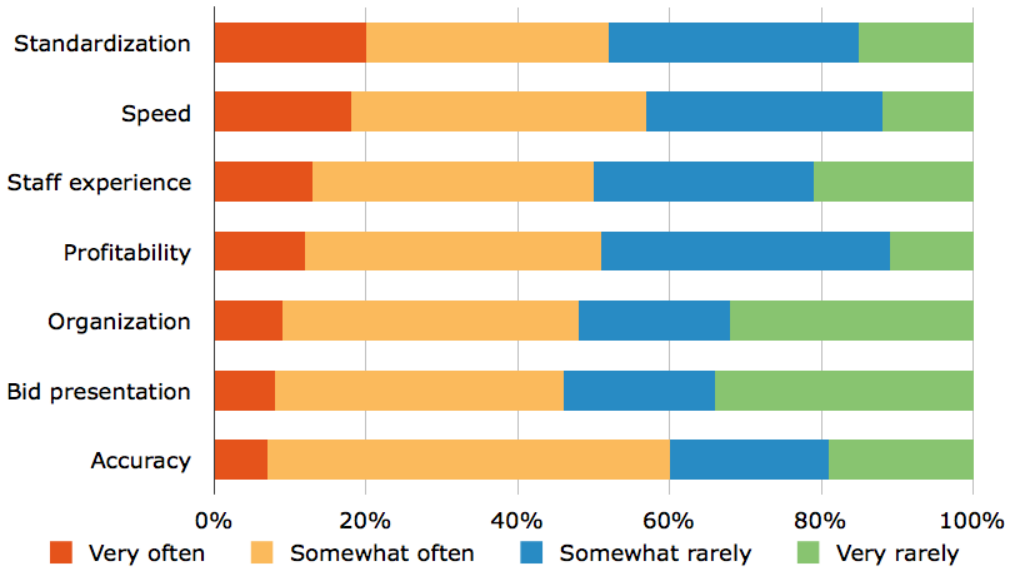
Next, we presented survey respondents with a list of common project costs and asked them to rate (on a scale from "Very often" to "Very rarely") how often different factors lead to an estimating error.

How often do you make estimating errors based on these factors?



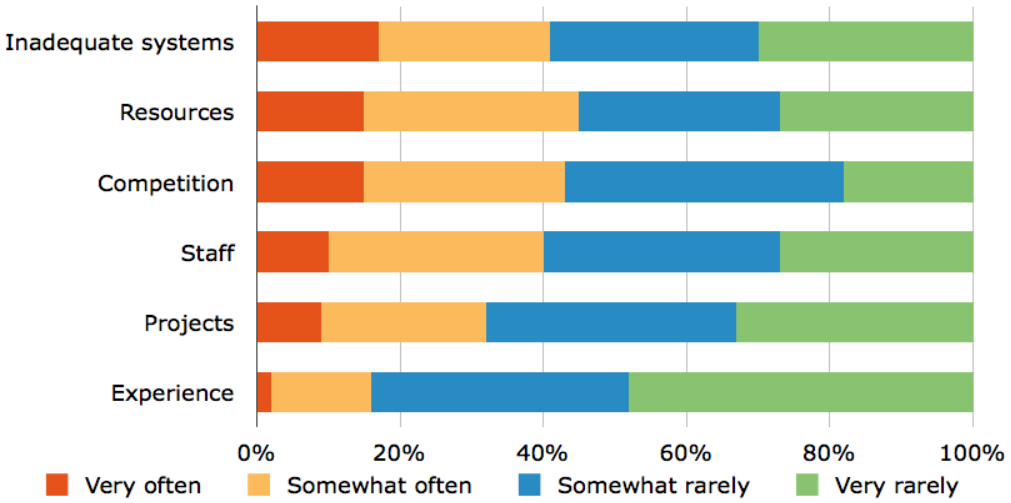
A majority of respondents (66 percent) reported that overlooking costs (e.g. scaffolding) very often or somewhat often led to an estimating error. After that, respondents reported that miscalculating transportation (51 percent) and contingency costs (50 percent) caused errors at a similar frequency. In contrast, receiving incorrect project plans was the least common cause of an estimating error with 35 percent reporting that this very rarely led to an estimating error.

How often are the following a challenge when creating estimates?



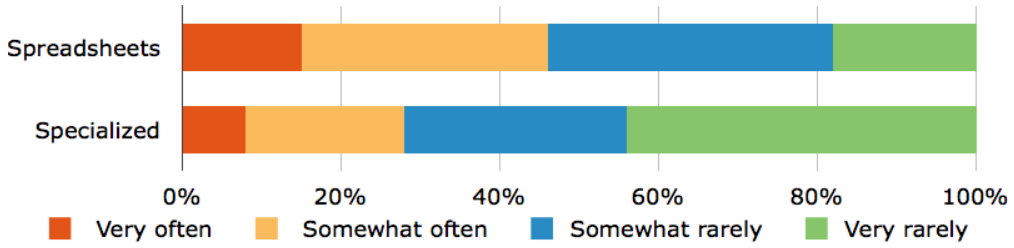
While 20 percent reported that standardizing estimating processes was very often a challenge, the most frequent challenge was actually estimating accuracy with 60 percent reporting that this was very often or somewhat often an estimating challenge. Meanwhile, it was surprising to see that respondents cited staff experience as a top challenge since hiring new staff ranked last among priorities for 2014, which we cover in our section on estimating priorities.

How often are the following a challenge with regard to bidding on more projects?



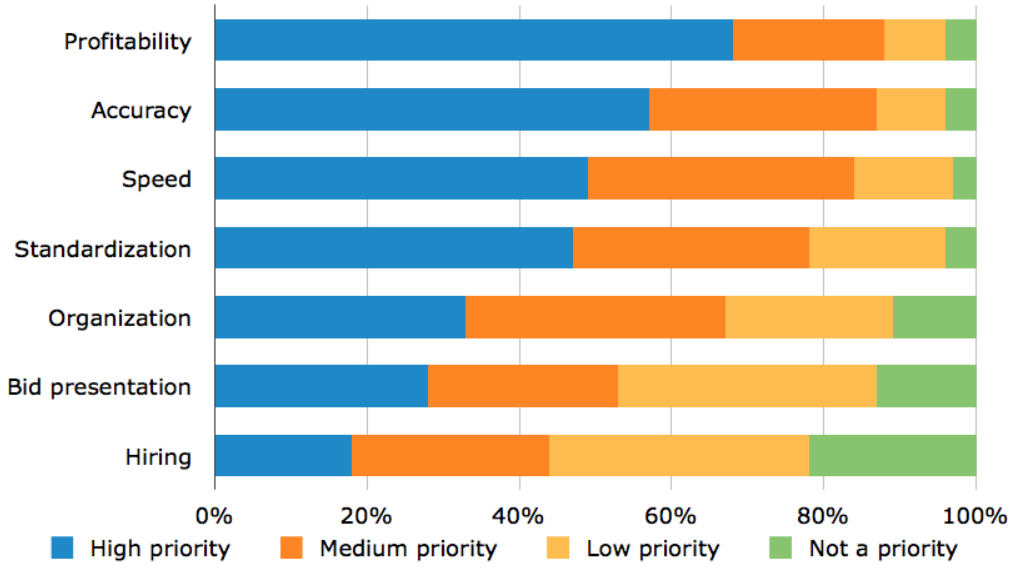
Nearly half of respondents reported that they very often or somewhat often experience four common challenges to bidding on more projects: lack of an adequate estimating system (41 percent), insufficient resources (45 percent), competition from other construction firms (43 percent), and too few staff members (40 percent). Experience with estimating certain types of projects, however, wasn't a challenge with 48 percent of respondents reporting it very rarely kept them from bidding on more projects.

How often is your estimating system a challenge with regard to bidding on more projects?



Importantly, the top challenge to bidding on more projects (lacking an adequate estimating system) was a much bigger issue for spreadsheet users than it was for construction estimating software users. 46 percent of spreadsheet users reported that lack of an adequate estimating system was very often or somewhat often a challenge to bidding on more projects. In contrast, 72 percent of construction estimating software users reported that this was very rarely or somewhat rarely a challenge.

How high of a priority are the following for your company in 2014?



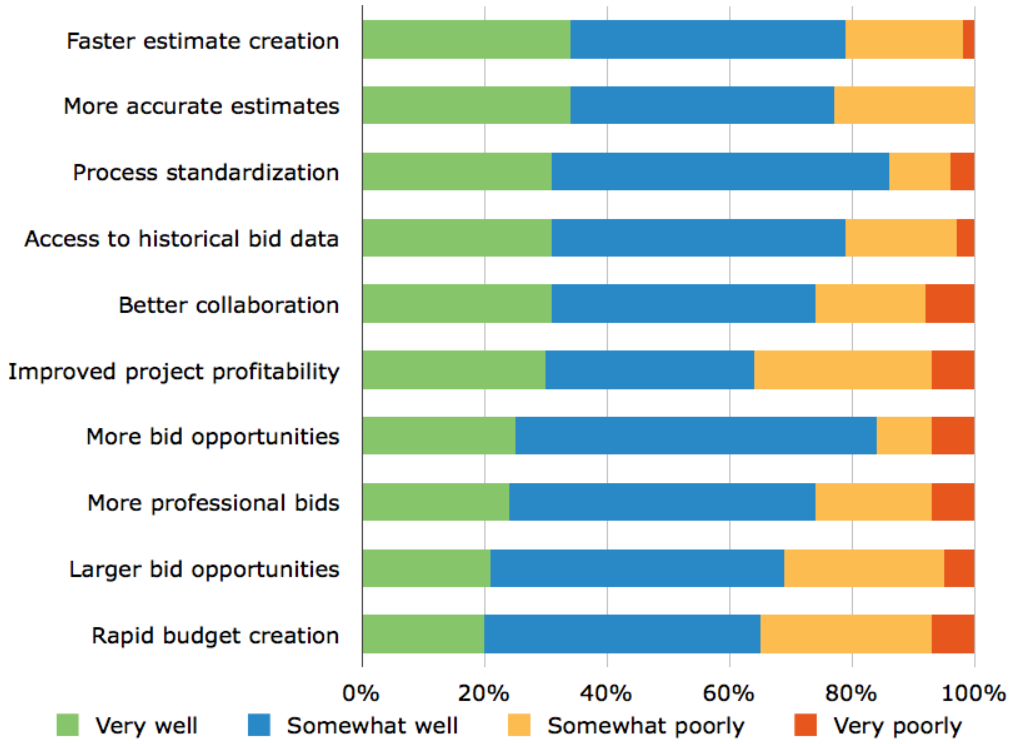
As noted above, hiring ranked last in terms of priorities with only 18 percent reporting that it was a high priority even though respondents reported that a lack of experienced estimating staff was a top estimating challenge.

User Satisfaction with Construction Estimating Software

Finally, we wanted to know how well construction estimating software delivered common benefits and how satisfied construction estimating software users were with the software features and services provided by vendors.

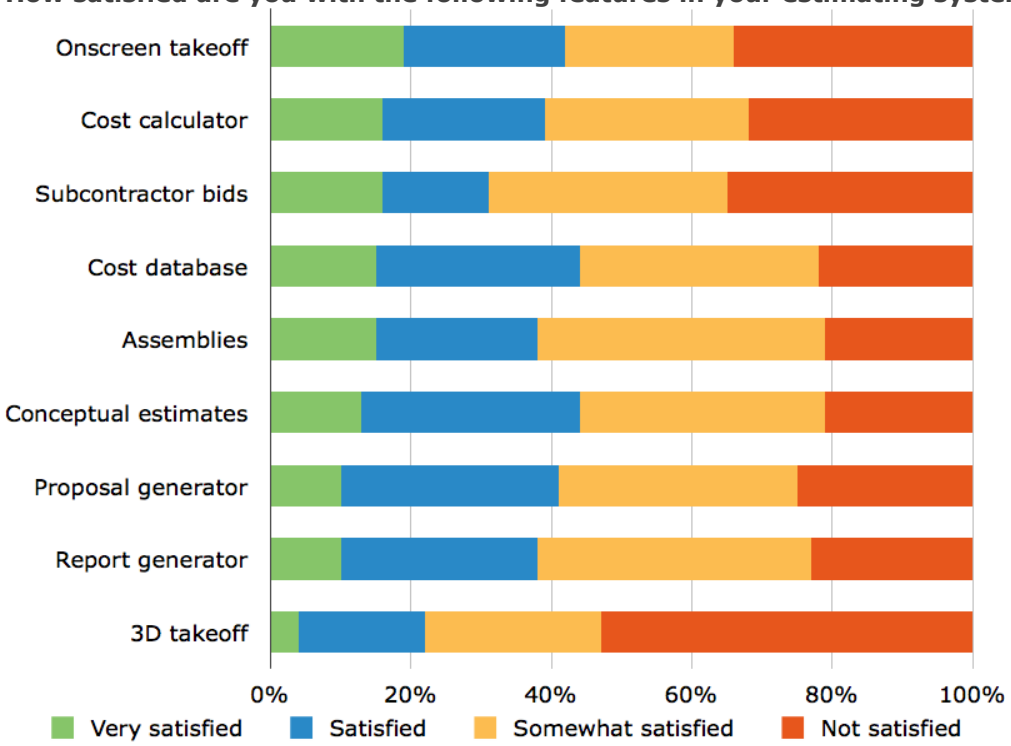
Survey participants were presented with a list of commonly-cited benefits of construction estimating software and asked to rate how well their system delivered each benefit on a scale from "Very well" to "Very poorly."

How well does your system deliver the following benefits?



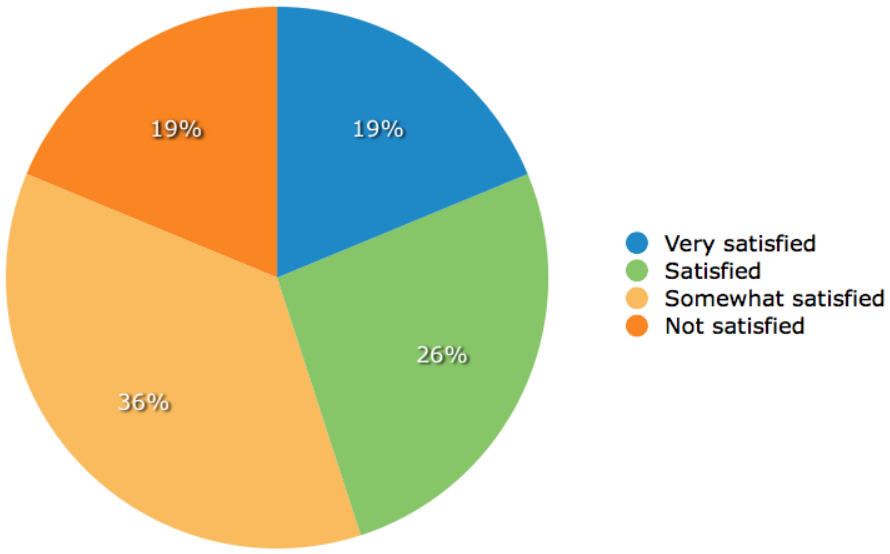
Overall, construction estimating users were most satisfied with how quickly and accurately they were able to create bids with their system. Meanwhile, 33 percent of respondents felt their system standardized estimating processes very well. This seems to be an important advantage of construction estimating software given that all respondents, including spreadsheet users, reported that process standardization was a top challenge to estimating.

How satisfied are you with the following features in your estimating system?



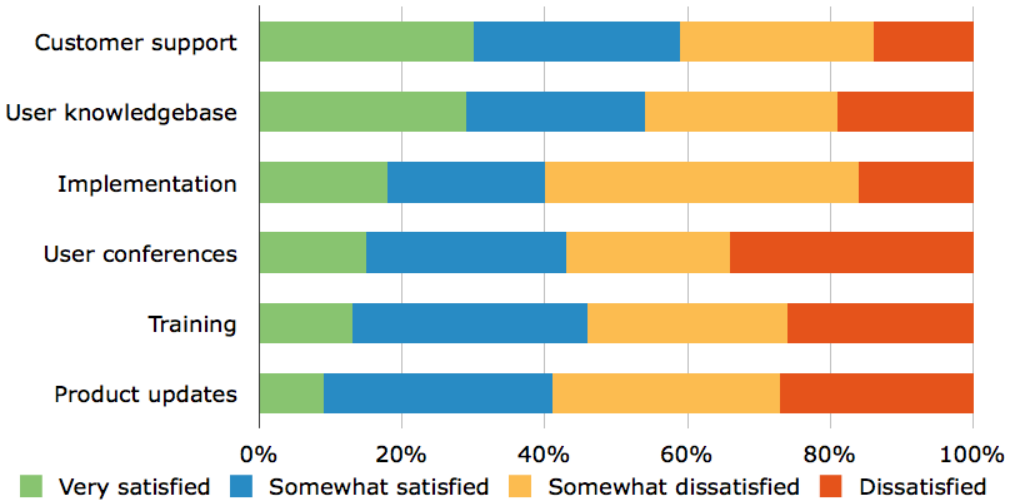
Construction estimating software users expressed the highest satisfaction with the onscreen takeoff, cost calculator and subcontractor bidding functionality of their software. They also reported high satisfaction levels with the cost database of their software. However, 3D takeoff received relatively low satisfaction scores, possibly because this is a challenging takeoff process and less common functionality to work with.

How satisfied are you with your system's ease of use?



Overall, 45 percent of construction estimating software users reported they were very satisfied or satisfied with their system's ease of use. This indicates construction estimating software vendors have improvements to make to the ease of use of their system.

How satisfied are you with the following vendor services?

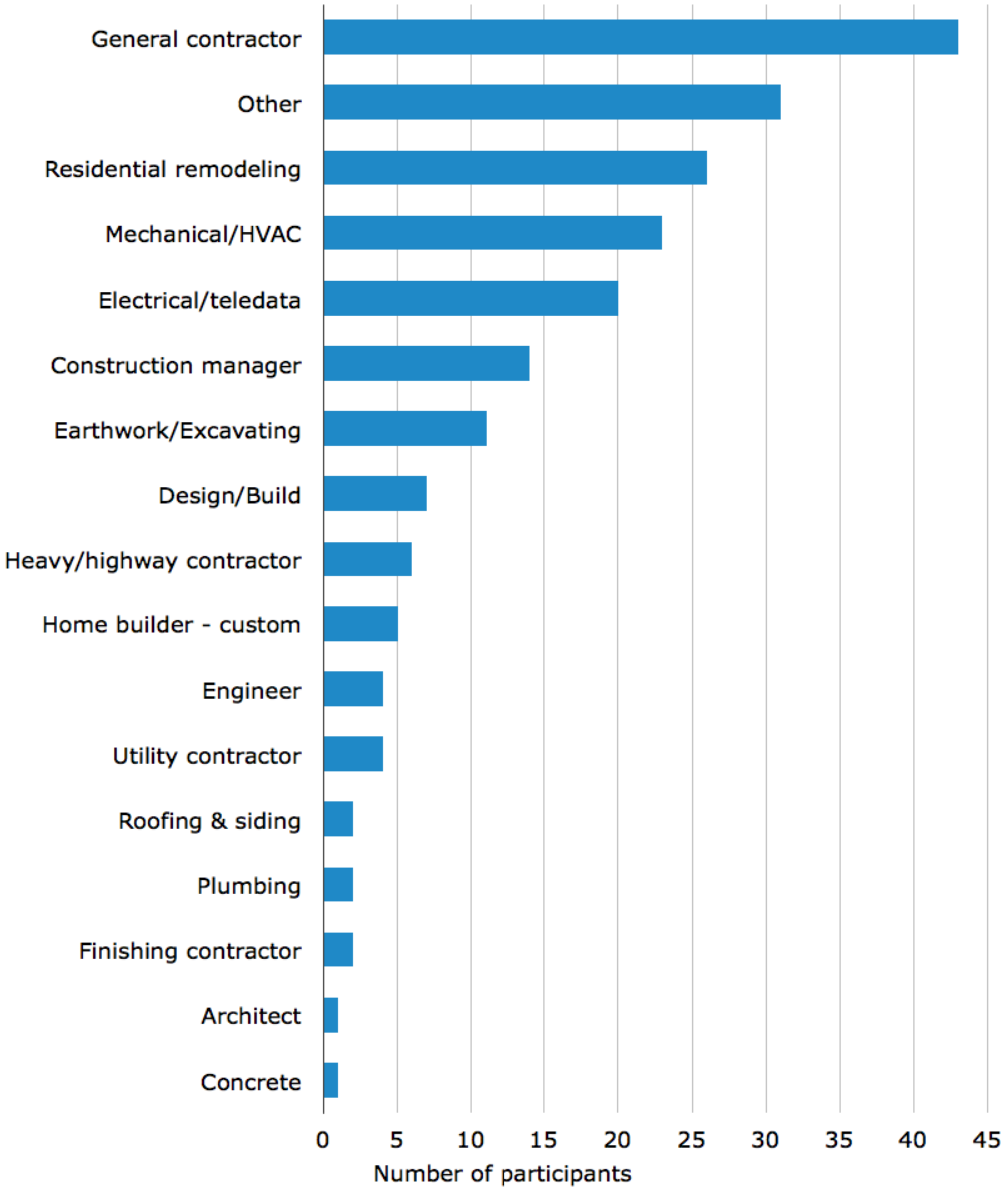


On the services front, 58 percent of estimating software users were very satisfied or satisfied with their vendor's customer support while 54 percent reported similar satisfaction with their user knowledge base. Meanwhile, 35 percent of estimating software users were dissatisfied with user conferences. In addition to ease of use, this could be an area of improvement for software vendors.

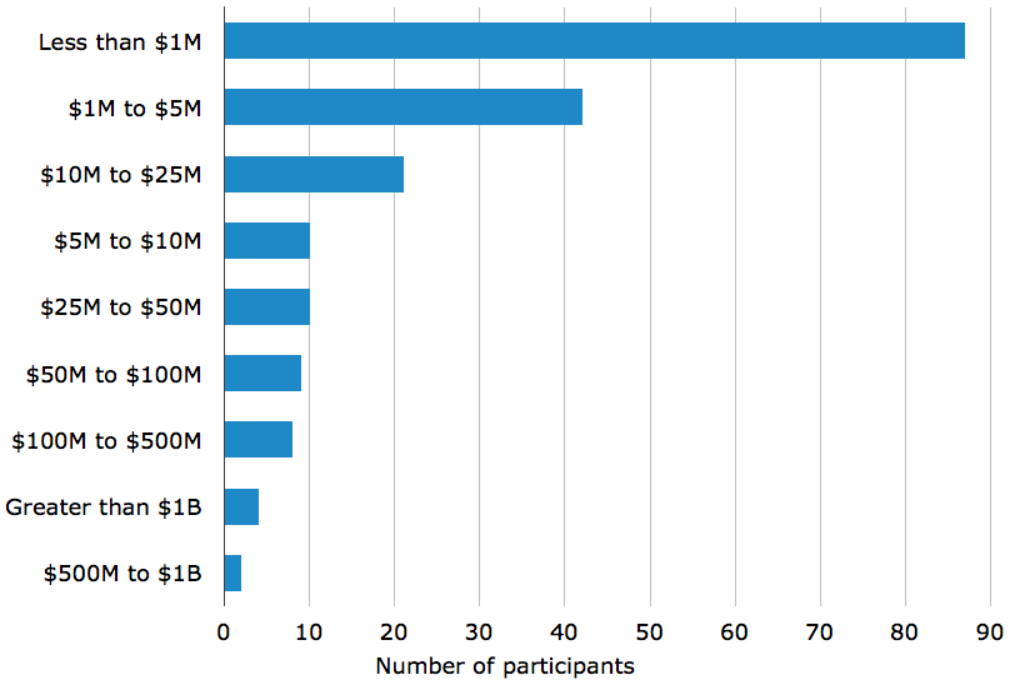
Participant Demographics

We heard from 202 construction professionals from a variety of trades and company sizes, though small businesses under $1 million in revenue do make up a large set of our data sample. Below you'll find the industry trades and company sizes of our participants.

What is your industry or trade?



What are your company's annual revenues?



If you're involved in the construction industry, please feel free to share these survey results and charts with friends and colleagues. If you have any questions about how we created this report, don't hesitate to contact me at derek@softwareadvice.com or give me a call at (512) 364-0130.