

Construction Cost Estimator - Career Exploration

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Abstract

The construction industry is one of the most diversified fields due to the large number of products, systems, methods and processes that are involved to complete different types of projects. Therefore, a very wide range of expertise and skills are required for any successful business or project in this industry. People, specifically students, who have interest in joining this important industry need to understand the qualifications for these different expertise areas so that they can decide which one is of more interest to them. The purpose of this paper is to provide insight on the qualifications and skills required for a cost estimator in a construction company, as one of the critical site jobs, and to explore the relevant career potential. The paper also includes valuable information through the use of interviews with two of the professionals in this area of expertise.

Introduction

Within construction, there are various positions and specialties that aid in the formation and completion of a project. Of specific interest is that of a cost estimator. With every prospective project in construction, it is imperative to have professionals that are able to effectively estimate the costs and explain the reasons for such costs (US News). Cost estimators are responsible for collecting and analyzing data in order to estimate the time, costs, and materials needed to construct a building or provide a service. As they estimate expected production rates of various activities within construction, they often refer to historical data in order to understand how previous activities were achieved (Kiziltas & Akinci, 2009). Cost estimators also typically specialize in a particular area, but can be utilized in almost any field that offers goods and services. Therefore, it is imperative for those pursuing a career in cost estimation to understand the necessary skills and competencies to fulfill such an important role, specifically within the construction field.

While the current outlook for cost estimator positions appears to be on the rise, this may be a result of the lack of qualified individuals seeking this career. Furthermore, valuable experience and knowledge is being lost due to current cost estimators retiring (Alroomi, Jeong, & Oberlender, 2012). Therefore, it is important for emerging cost estimators to understand the various skills required to perform duties efficiently, such as analyzing what is missing, asking the right questions, being able to read and interpret drawings, and the ability to envision the larger picture of the project (Alroomi et al., 2012). This will allow the estimator to provide accurate cost estimations and fulfill other various duties. Cost estimators provide a valuable service to contractors, engineers, and companies by providing a detailed estimate of the overall cost of a project. Within construction, cost

estimators' duties are specific to the field, and as other careers, come with challenges to the job. For example, estimator bias, design complexity, and project size are just a few of the factors that can influence the work of a cost estimator (Akinci & Fisher, 2008). Furthermore, challenges often involve the drawings and specifications, which may not be clear or sometimes include contradicting information. In this case, the estimators must communicate with the architect/engineer or the client for clarifications. The availability of the materials needed for a project may also pose a challenge, especially if they are custom made or unavailable in the market. Project specifications are also sometimes written in a very stringent manner that leads to inflated prices of materials while the design intent and the client's actual objectives do not require this. This can lead to overpriced proposals that reduce the bidding success rate.

Regardless of the challenges of cost estimation work, the outlook for this career is promising, as it offers a wide-range of responsibilities, opportunities, and challenges that will allow for growth and experience.

Responsibilities of Cost Estimators

The cost estimator position is a very critical one in any construction company. In many cases, contractors have to submit a quote or a financial proposal to the clients before they reach an agreement or a contract to start a project. Cost estimators are the personnel responsible for reviewing the scope of work that the client is looking for. Following this, a cost estimator will typically make a quantity take off where he/she measures the exact quantities of materials, systems, or equipment that will be used in the project. This step is based on the design drawings issued by the client or the architect/engineer who did the design work for the client. After this, the estimators define the characteristics or properties (technical specifications) of these counted materials/equipment using the drawings or another set of documents called project's specifications, which should also be issued by the architect/engineer. Accordingly, the estimators would seek prices for each of these project components (materials or equipment).

Thus, the costing phase can take two forms. The first one is when the contractor intends to execute a certain scope of work with the company's own crews. This is called self-performed scope. The estimators would estimate the number of number and calibers of the crews that will perform the job and the construction equipment needed. A cost is then assigned for each man-hour and operation time for the used equipment to formulate a price for labor and equipment, which is then added to the cost of materials (directly supplied to the contractor) in order to formulate a total cost of these self-performed scopes. The other option is to delegate some of the scope to sub-contractors. In this case, the estimators would send drawings and specifications for the selected work packages and ask other individuals rather than just a sub-contractor to price these packages. One last step to formulate a price for a project is to add all packages together and then multiply by a percentage for overhead and profit that is agreed upon with the company management. These percentages need to be carefully considered, as they affect the competitiveness of the companies' proposals.

Becoming a Cost Estimator

As a rule of thumb, a Bachelor's degree is usually preferred to become a cost estimator. However, candidates with extensive work experience may be considered. A strong background in mathematics is essential for this career, as well as education in construction management or engineering if candidates would like to pursue a job in the construction field (Bureau of Labor Statistics, 2015).

Pay and Benefits for a Cost Estimator

According to Truity.com, the median salary for a cost estimator was \$58,860 in 2012. However, the top 10 percent of those working in cost estimation earned over \$96,000 as of 2012. This salary difference provides further evidence for the growth that is possible within this position.

Job Outlook for Cost Estimation

According to the Bureau of Labor Statistics, the opportunities to become a cost estimator appear to be on the rise. Specifically, it is projected that employment in this career is expected to grow 9 percent from 2014 to 2024 (Bureau of Labor Statistics, 2015)

Interviews with Korey Collier and Garrett Homan, Current Cost Estimators

In the following section, you can read the questions that Korey and Garrett were asked about their career, as well as their responses:

1. How long have you been involved in cost estimating?

Mr. Collier stated that he has been a cost estimator for almost 10 years, while Mr. Homan stated that he has been working in the profession for almost 2 years. Both of these estimators stated that they did internships prior to starting their careers.

2. Can you provide a snapshot of your daily tasks?

The cost estimators described a similar process in regard to their daily tasks, including quantity take-offs, using software to calculate materials and estimates, and being in constant contact with contractors and vendors. Furthermore, each described that the work they do varies day to day depending on the project. Korey stated, *"My daily routine consists of many things. Each job is different. A typical estimate takes 5 to 7 days, depending on the size of the job. My daily tasks will depend on where I am in the estimate take off."*

Similarly, Garrett notes that, *"Daily tasks are always changing for me, it just depends on the project and what stage of the project I am working on. Every project is different in size."* Furthermore, interpreting and analyzing the drawings from the project design is a crucial task that both estimators stated was of great importance in their jobs.

3. After working in the industry, what are the skills or competencies you would recommend that every CM student should focus on before graduation?

Korey and Garrett both stressed the importance of communication skills, in that it is vital for a project's success to be able to effectively communicate with those involved in the project. Korey also stressed the importance of being able to work effectively with others in teams of 2 or 3 and is "detail oriented." Similar to this point, Garrett stated the importance of organization, noting that *"If you aren't organized, you aren't efficient, and you will not be productive. Anyone can estimate, anyone can be a project engineer or manager; but if you aren't organized, it won't matter what your job is because you won't be able to get anything done."*

4. What are the challenges meeting a cost estimator?

The main challenges stated by Korey consisted of time constraints, catching small details that may not be present in the drawings, and unclear drawings. Therefore, assumptions about drawings or specs may have to be made due to time constraints and the lack of timely responses from architects. Garrett also discussed the challenge of meeting each customer's needs, given the variation of each project. Garrett stated that, *"sometimes estimating turns into "guesstimating", which means that sub-contractor and supplier quotes can be extremely different when receiving multiple quotes for something on one specific item."*

5. What is the best thing you like about your job?

Korey and Garrett both discussed the excitement of getting to work on different projects. Even though the process of their work is similar, both estimators stated that no two projects are the same. Furthermore, Korey expressed the fact that he loves the people he works with, stating that they have a "great team." Garrett also stated that he sometimes gets to work with other co-workers, but also enjoys the challenge of working on projects independently.

6. How important are interpersonal skills in your area of work?

Korey and Garrett stressed that interpersonal skills are of critical importance. They often work in teams, and thus stated that you must communicate clearly so everyone is on the same page. Furthermore, Garrett stated that, *"listening, negotiation, problem-solving, decision-making, and assertiveness are a few examples of skills that every CM student should attain upon graduation"*. The estimators also stressed the importance that interpersonal skills play in forming good relationships with coworkers. Without communication, productivity can be effected.

7. Do you consider thorough review of drawings and specs to prepare a cost estimate a mentally exhausting activity?

Both of the cost estimators interviewed discussed that reviewing drawings and specs can be exhausting and difficult to understand. However, Korey stated that while it was more difficult to digest all of the information his first few years on the job, it became less overwhelming with experience. However, Korey stated it is most exhausting when he has to work on multiple estimates at a time, as it is difficult to juggle, but sometimes necessary.

Similarly, Garrett expressed that it can be very difficult to understand the specs from project to project. He stated that it is often difficult due to the varying set of specifications of each project from the architect/engineer. However, Garrett noted that “*all in all, every project has different characteristics, but the process of estimating is usually very similar.*”

Conclusion

Cost estimating in the construction industry is a very essential task in both pre-construction and post-contract phases. Therefore, there is a continuous demand for cost estimators who have the skills to work on securing projects or manage budget and cost during execution of projects. This job requires high level of attention to details in addition to accurate soliciting and reporting of cost data along with the technical capabilities to deal with project documents including drawings, specifications and contracts. Cost estimators are always expected to address uniqueness of each project and at the same time align with the company’s standards and procedures for estimating and bidding processes.

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- Note: Interviews with Mr. Korey and Mr. Garret were done during December 2016.