



**REVIEW AND
VALIDATE
YOUR
ESTIMATING
PROCESS**

**UNDERSTANDING YOUR
PROJECT'S SCOPE OF WORK**

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Review and Validate Your Estimating Process

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The estimating process begins with a comprehensive understanding of your project's scope of work. Whether it is scope prepared by an owner's designer or your own companies' scope recommendation, your estimating team must be able to visualize and mentally build the project, starting with the site mobilization through project completion. This estimating skill is best developed by having hands-on experience in the field, which gives you a better insight into the means and methods, materials, labor durations, and the challenges faced during installation.

A knowledgeable and well-trained estimating team is only one key component to your success. You must have solid processes and procedures in place.

Stage 1 – Pre-Estimate Stage

Reviewing Plans and Specifications:

In the initial review, you want to identify and note all items to be estimated. Pay special attention to the General Conditions and any Supplemental or Special Conditions of the specifications thoroughly. These sections contain information that may not be part of the actual construction, but they will include items that will be relevant in assembling your estimate.

Job Site Visit:

An estimator should always visit the project site to address any details that may not be evident from reviewing the plans. Look for site access, staging areas, and equipment needed and verify existing conditions. Take photos, measurements, and samples as required.

Stage 2 – Building Your Estimate

Build Your Estimate from the Ground Up:

The best approach to completing a quantity takeoff is to follow the order of the actual construction, from the deck to finished cap flashing. This will provide you with a clear mental snapshot of the project. If a project consists of multiple buildings, perform a separate quantity takeoff for each building for a more accurate project estimate.

Quantities, Keep Uniform and Consistent:

A quantity takeoff is a continuous list of items and measurements. Keep your quantity as consistent and straightforward as possible. If estimating in spreadsheets, this is especially important.

Getting the Scale Right:

Check the plans carefully for changes in scale and plans reduced from their original scale. Check for notes such as "NTS" (Not to Scale) or discrepancies between plans and specs. As you proceed through your takeoff, it doesn't hurt to do some mental arithmetic if a quantity or measurement seems off. Designers can make mistakes too. You should verify your plan scale and measurements with the detailed floor plan that has the dimensions on it. This is an excellent way to confirm that the roof plan scale is accurate.

Understand Your Products and Material Pricing:

Factors that can affect pricing to be considered.

- Availability and demand for a product.
- Delivery Challenges for materials.
- Is the product or material standard or custom order.
- Your project has lead times that fall outside the manufactures standard lead time guidelines.

- Your project has seasonal limitations that dictate logistics and adjustments to the price.

Sometimes there are products specified on projects you are not familiar with. Understanding how these products are installed will assist you with your preparation for labor unit costs.

Accurate Labor Units:

When you calculate how long it should take a worker or crew to complete a section or assembly of your project in hours, it is not advisable to calculate them on peak productivity rates.

In real-world construction, many factors impact the daily output of productivity, such as working long hours, which causes a decrease in productivity efficiency and increases costs of overtime rates.

Though you cannot account for abnormal weather events, weather can significantly impact your project and should be factored into your estimates.

Other Costs to Include:

Subcontractor Quotes

A good practice is to get more than one subcontractor for each specific scope of work on a labor and material basis so that you can compare quotes equally to uncover any missing items. Scrutinize your subcontractor quotes with the same evaluation steps you use for your estimates.

Determine Your Equipment Needs

Determine what equipment your project will need and whether you own them or be required to purchase or rent what is needed. Always evaluate the most cost-effective solutions and include them in cost preparation.

Other Costs to Include

Include additional project costs such as:

Mobilization

- Jobsite storage containers, required utilities, Portalets
- On-site supervision (if not included in your overhead)
- Safety costs
- Dumpster
- Clean-up
- Other miscellaneous items, etc

Stage 3 - Assembling Your Cost Data

Every item in your estimate must contain an associated cost. That's a lot of cost pricing to get together. There are many sources for you to obtain reliable costs. It is advantageous to identify them one at a time.

Historical Data from Your Previous Projects and Estimates

One of the best sources to look for cost data is your last job, provided the estimate for your previous project was accurate. Historical cost data should be used cautiously. Changes in prices and labor production efficiency may have substantial impacts on project costs.

Supplier Quotes

A good practice is to obtain a quote from two or more vendor sources. You will achieve a better understanding of the overall going market rate for items in your estimate. You do not want to lose your

advantage if you use only one supplier quote and lose a job because your competition had better pricing from supplier "B."

Subcontractor Quotes

Subcontractors quotes for specialized work on your project that you don't perform in-house is a great way to lock down costs for that scope of work. Whenever possible, obtain your quotes from a subcontractor you have worked with previously and have a mutually beneficial relationship.

Published Cost Data

Cost databases are well researched and maintained by professional cost engineers experienced in the industry. Although I am not a fan of randomly using cost data from third party sources, they do have their use in estimating. If you are unable to obtain a qualified subcontractor or supplier quote, you can rely on these sources for average itemized costs when needed.

Organizing Your Data

During this stage of the estimate, you have a large amount of data, and all that information must be assembled, organized, and analyzed. That's a lot of information to get one's arms around. You need to put a system in place to handle it all efficiently. Remember, the goal is to transfer everything from the takeoff to your cost summary once, without reworking.

The Summary

Once you completed the pricing of direct costs and reviewed your pricing on the cost analysis or consolidated estimate document, you are ready to transfer total costs for each section of your estimate to the Estimate Summary, where you add your markups. During this process, be sure to double-check your steps because errors are easy to make.

It is good to create a standard Estimate Summary document that lists items repeatedly estimated to save time. Your column headings or categories for your Estimate Summary include:

Material	Labor	Equipment	Subcontractor	Total
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You are now at the point of the process where you apply the appropriate markups to the total dollar values. In general, different percentages are added to the sum of each column to account for indirect costs, including:

- Sales Tax
- Company Overhead
- Profit
- Contingencies

Stage 4 - Establish an Estimating Review Process

The primary purpose of an estimate review process is to present information about the estimate and the project in such a way that it allows the reviewer to evaluate the quality of the estimate to verify it sufficiently meets its intended purpose. The review process should comprise of a series of estimate reviews, starting with internal estimating department reviews, project manager reviews, with final reviews by management or ownership depending on the structure of your organization.

Estimating Team/Estimating Department Review

The first review of the estimate should be conducted by the estimator that prepared the cost estimate. This is essential screening

to ensure that the math is correct and that the estimate is documented correctly and adheres to estimating department guidelines. In the next stage of the review, it is checked by the lead or head estimator for accuracy and compliance.

Project Manager Review

Once the estimating team has reviewed the estimate closely, it is ready for review by the project manager. The objective now is to gain the project manager's support of the estimate. This is also the first point where the estimate needs to pass an overall validation test, as well as a quality review.

The project manager should also review the risk basis of the estimate and agree with the analysis of cost risk associated with the project and should agree with the risk assessment provided by the estimating team. The project manager and estimator must be able to defend it in subsequent review to upper or corporate management.

Lastly, the project manager should reconcile the current estimate to previous successful estimates of similar projects. This is an important aspect of the overall estimate review process but often overlooked.

Management/Ownership Reviews

The company management or ownership conducts the last series of reviews. These reviews are conducted at a very high level of analysis and usually do not involve the details of the estimate. Management will be interested in the cost risk assessment. The estimator should be able to clearly and concisely explain how the contingency amount was developed, and what the levels of risk are. It is the responsibility of management to accept the level of risk indicated or change the amount of contingency and accept more or less risk for the project. When reviewing the risk analysis, it is always important to discuss the areas of high risk and how to mitigate those risks.

The goal of an estimate is to predict the cost of a project accurately. The purpose of an estimate review is to determine that an accurate and high-quality estimate has been prepared. The review process should ensure that the proper estimating methods, procedures, techniques, data, and guidelines have been engaged in the preparation of the estimate. By using a structured estimate review process and review techniques, you are ensuring that quality estimates are consistently prepared, which effectively supports the decision-making process by management.

Stage 5 – Calculating Gross Profit

Understanding that Gross Profit or Gross Margin is not a markup is key to properly calculating it on your estimates. The gross profit margin is present on the income statement every company prepares as a part of its accounting process. Gross margin is the amount left over a business subtracts the cost of goods sold from the net sales revenue for products or services sold. As such, the gross margin of your estimates to determine your selling has to be greater than your companies operating expenses, or you will achieve the goal of a successful business; Profit.

Profit margin goals are set by a companies management or ownership, then provided to estimator or estimating team as either a range or minimum percentage to achieve. You may receive this as either gross profit or nets profit targets depending on your companies strategy, and you will need to know ways of achieving these goals during the estimating process.

Expressing the Margin as a Percentage

It is useful to express the gross or net margin as a percentage. For instance, if you want to compare the margins of two projects of different types, the margin percentage is a more applicable and useful comparison.

Key Takeaways of Gross and Net Margins in Construction

- Gross profit refers to a company's profits earned after subtracting the costs of goods purchased, labor to install, subcontractors or equipment used, and furnishing and installing its services.
- Net income indicates a company's profit after all of its operating expenses that have been deducted from gross profit revenues.
- Net income is what is leftover at the bottom of the income statement and referred to as the "bottom line."

Condensed Financial Statement Example:

Revenue	\$ 1,500,000.00	
Cost of Goods Sold	<u>\$ 1,000,000.00</u>	
Gross Profit	\$ 500,000.00	33%
Operating Expenses	<u>\$ 425,000.00</u>	
Net Profit	\$ 75,000.00	5%

Formulas For Calculating Gross and Net Margins

Gross Margin Dollars

(Sell Price) minus (Estimated Cost) equals (Gross Margin Dollars)

Sell Price	\$ 257,000.00
Estimated Costs	<u>\$ 175,000.00</u>
Gross Margin	\$ 82,000.00

Gross Margin Percentage

Gross Profit Percentage = (Total Revenue – Cost of Goods Sold)/Total Revenue x 100

$$(\$257,000 - \$175,000) / \$257,000 \times 100 = 31.90 \text{ or } 31.90\%$$

Net Profit Margin and Percentage

Net Margin Dollars = (Gross Profit Dollars – Operating Expense Dollars)

Gross Margin	\$	82,000.00
Operating Costs	\$	<u>75,000.00</u>
Net Profit	\$	7,000.00

Net Profit Margin Ratio = (Net Profit / Revenue)

Net Profit	\$	7,000.00
Revenue	\$	<u>257,000.00</u>
Net Profit %		0.03 3%


Understanding Profit

I have always found it best when calculating the profit on estimates; you should know the companies net profit goals to assure you are selling at the proper gross profit margin. This will ensure you are meeting the company's bottom-line goals. To further explain and expand upon this, you need to understand that burdened overhead mark on a project estimate can vary depending on the ratios of labor to materials and overhead recovery methods.

Proper overhead recovery in a construction business is a detailed and sometimes complicated subject depending on whether you use a straight line or dual overhead recovery methods. That is another subject we will cover in a further Roof Report.

If your company has set a net profit goal of 6% as a minimum that they will accept for any project you estimate, then the net profit

becomes the determining factor over gross profit is setting your lowest acceptable sell price. All numbers are driven backward off the bottom-line requirement. See the below example.



Selling Price	Total Direct Cost	Gross Profit Received	Gross Profit %	Net Profit \$	Net Profit %
\$ 144,535	\$ 108,625	\$35,910	25%	\$ 8,336	6%

Stage 5 – Developing Your Sales Strategy

Developing a profitable selling strategy involves more than estimating the costs, applying markups, and calculating your profit margin. You need to interpret how your customer thinks, not only how they feel about your price in relationship to your services but also what they may think about your competitors' prices.

Your goal is to make more profit while performing fewer projects over the year. Just raising your rates is not a strategy to accomplish this, that alone will fail. The key is to change the level of service you provide. Your clients are willing to pay for value-added pricing. To sell value instead of price, you have to be prepared to make operational changes.

Operational Efficiency

Systems and procedures you need in place (Standard Operating Procedures – SOP)

- Client prescreening/qualifying process (Estimating Filter)
- Sales process and funnel
- Accurate estimating and quoting process
- A systematic and prompt proposal process
- Project scheduling procedures

- Contract review and execution process
- Invoicing process system
- Change order and document-control process
- Field production/operations procedures
- Project closeout procedures
- Warranty program

Change is never easy, but it can be straightforward. Changing the way you do business and implementing these procedures will not be easy, but it will be a clear-cut process. If you make these changes in your business, it is a win-win strategy. Your customers will be pleased about their purchase when you deliver on the value you sell, making more money.

John Kenney has over 45 years' experience in the roofing industry. John started his career by working as a roofing apprentice at a family business in the Northeast to operating multiple Top 100 Roofing Contractors. As Chief Operating Officer, John is intimately familiar with all aspects of roofing production, estimating, and operations. During his tenure in the industry, John ran business units associated with delivering great workmanship and unparalleled customer service while ensuring strong net profits for his company before joining Cotney Consulting Group. If you would like any further information on this or another subject, you can contact John at jkenney@cotneyconsulting.com