CEN 421 S20 Week 3 Lecture

These lecture notes are meant to be a complement to the textbook. It is essential that the student reads the material in the textbook.

Profit

All companies are in business to make a profit. The owners in a sole proprietorship, the partners in a partnership, or the shareholders in a corporation expect a return on their investment of time and money. This return or profit has to compensate them for the risk and the opportunity cost of not using the money for current consumption or other investments.

Like other businesses, the profit for a construction company is the difference between their income and their expenses. Or as the text puts it Profit = Revenue – Construction costs – Overhead.

There are some differences with construction like retention and payment at the completion of the job that we will discuss later.

Overhead

Overhead can be broken down into fixed overhead and variable overhead. The fixed overhead goes on regardless of the volume of work. Variable overhead varies with the volume of work. My own experience indicates that it is better to keep the fixed overhead to a minimum.

It is essential to factor in overhead in the project estimate and budget. Each project must contribute its share to the company overhead.

Break-Even Volume

Since a large part of the overhead is fixed, the company must perform enough work to cover this fixed cost. The volume of work to just cover the fixed cost is the break even point. Additional work will add to the company profit; less work will be a loss for the year.

It is important that the management estimate the volume of work for the coming year and the fixed overhead cost. From this, they can set the overhead margin for each project for the coming year. An allowance for profit also needs to be added. Profit, after all, is why we are in business.

Specialize or Generalize

There is a question in the construction industry of how much should be subcontracted and how much should be done in-house. Should the contractor try and do everything or should he specialize.

The overall profit needs to be compared with the overall risk. It is often better to specialize and focus on your expertise. There will be less risk and probably a greater profit margin.

Profit in the Estimate

The estimator can save the project a lot of money by negotiating lower prices on materials and subcontracts during the estimating and bidding process. While it fine to get the lowest price possible, you cannot compromise quality. Your reputation is far more important than saving a few dollars on materials. It is not ethical to shop the for subcontracts after the bid has been awarded.

Profit on Labor and Equipment

The management of labor and equipment are things that the job superintendent can control. By using both labor and equipment efficiently, he can save or waste both time and money. Knowledgeable and experienced foremen and crews are invaluable. The job supervision as well as the crews must be rewarded both with praise and money for performing quality work on time and under budget.

Equipment is a major cost on many jobs. If the equipment is sitting idle or underutilized it costs almost the same as if it 100% utilized. At the same time, the schedule will be delayed at some expense if the equipment is not available when it is needed. Corporate management and the project manager should make sure the equipment is available when needed, but does not sit idle.

Profit Centers

Management must have a way to measure and compensate their employees. One way to do this is by establishing profit centers.

A profit center can be a work crew, a project, or a division. Remember, to measure the work should be believable, measurable, and believable (BAM). In order to hold a manager responsible, he must also have the authority to control the job. Also keep in mind that the way work is measured and rewarded is the way it will get done.

Types of Jobs as Profit Centers

By using the types of jobs as profit centers, management can determine what type of work is most profitable. It may be better to specialize and focus on the work that is most profitable rather than bidding on too may types of jobs. Certain customers may also be more profitable. Again, it may be better to focus on certain customers and keep them happy.

Cash Flow

Cash flow is important for all businesses. Because of the method of pa7yment and retention, construction companies must be very aware of their cash flows. Management needs to pay attention to when cash will go out and when it will come in. Once a company starts to run low on cash, it can be very difficult and expensive to get cash. Banks love to lend money to people who do not need it.

They are very concerned about lending money to people who really need it. You should arrange your line of credit and other financing well ahead of any emergency. Most small companies fail because they run out of cash.

Most construction contracts pay progress payments. The payments are made monthly or after a certain percentage of work is done. Most subcontractors and suppliers can be paid after the general contractor is paid. However, labor cannot wait to be paid. Therefore, the company must have enough working capital to pay the labor cost each week.

Since thee owner usually retains 10% of the billed amount until the final inspection, the contractor must also have enough working capital to cover this shortfall.

When the contractor is also the owned, like building speculative housing, he only has one payment at the completion and sale of the project. It can be even worse if the market slows down and takes some time to sell the house.

Make sure you have enough reserves to cover contingencies. Remember Murphy's Law – what ever can go wrong usually will go wrong. You should also have enough cash to take advantage of trade discounts from your suppliers.

Income Taxes

Your taxable income is your revenue less your deductions. Most deductions, like labor, are cash expenses. Some deductions, like depreciation, are non-cash expenses.

It is everyone's duty (and the law) to pay his fair share of taxes, however, you should do everything legal to minimize your taxes.

Because of the time value of money, you want to claim as soon as possible and defer some of the taxes until a later year.

An estimate of you federal and state income taxes must be paid quarterly. Income tax is a progressive tax. The more you earn, the larger percentage of your income is taxed.

The marginal tax rate is the rate paid on the last dollar earned. Usually this is the tax rate used in your analysis.

Capital Gains

The sale of depreciable property like equipment or real estate is taxed as a capital gain or loss. If the property is held for over one year, it is taxed as long tem capital gains at a lower rate.

On the sale of equipment, the basis or book value needs to be calculated. The basis is the original cost less all accumulated depreciation. If the sales price is greater than the basis, a tax will be owed. If the sales price is less than the basis, a tax credit is earned.

Estimating Taxes

The cash flow projections must include tax payments. The quarterly tax payments should be projected as accurately as possible.

Projecting Cash Flows

What if scenarios should be run for several cash flow projections. Try and anticipate various scenarios to see what will happen to your cash flow projections in each circumstance.

General overhead must be included with the project cash flows. This will also include inters, loan payments, and taxes.

Monthly Balance

By adding the expected income and expenses to the previous month’s cash balance, we can project each month’s cash balance. This will show management which months will require additional cash.

Various scenarios and sensitivity analyses should be run to try and avoid surprises.