

White Paper

The Small Business Project Organization Requirements

By Richard Ewing
Scadex Business Solutions
www.scadexonline.com

As the small business develops, bids and performs work in a project organization, there are certain key elements required to stay organized. This article describes some helpful hints outlining the requirements of any software program to accomplish this. The amount of information required to keep track of project data can be daunting. As minimum the software should be a database type program with interrelated tables.

This article also describes the different project types that contractors will encounter and the pros and cons of each. With the proper software the contractor can minimize the requirements of clerical staff in keeping track of the information. Also, and most important, the contractor can get status updates about where the project is fiscally and take corrective action before disaster strikes. The ultimate goal is make sure all time and materials are properly budgeted, billed and collected.

To get maximum benefit from this type is software the contractor must have procedures in place to make sure the software is properly used and kept up to date.

The software should be organized to include modules that work to together and can interface within their own structure. The Modules should include:

- ?? Human resource Module
- ?? Timecard/Expense Module
- ?? Costing Module including:
 - Function classes of Employees
 - Task classes of Employees
 - Expenses classes for Travel, etc
 - Common Material items that are bid routinely
- ?? Automatic Billing and Invoicing
- ?? Automated Purchase ordering
- ?? Project Bidding
- ?? Customer Contact Management system
- ?? Supplier Contact Management system

Each one of these areas will be discussed in the following sections.

Human Resources:

As a business owner you are expected to keep certain records concerning your employees. The basic information includes, address, emergency contacts, tax

information, date of hire, date of reviews, status of employment termination date. It is suggested that all information be kept in hardcopy as well as software incase software failure or loss.

Timecards and Expenses:

It is most important to keep track of time and expenses of individuals working on projects. In a project office people are your resource. Every hour and expense dollar must be accounted for and must be billed correctly. A paper time card system works but somebody must enter this in a database at some point for project reports. Many companies utilize spreadsheets for this task using macros to calculate time and expenses. This suffers from the lack of generating easily retrievable data for anything from customer disputes to project reporting. A database is best for this use. Microsoft Access database has an already configured demo for this use. It is simple, but many firms use it.

It is also advisable to have the employee include what they did for each task in the database for historical record and customer dispute. It is helpful to be able to go to any date and project to be able to say what the employee was doing.

Costing Modules:

As part of the company organizational structure certain classes of costing modules make up the project organization.

Employee Function:

The employee function is the level of the employee in the firm, which can be broken down into many sub classes as required such as:

- Project Manger
- Engineer
- Sales
- Accounting

Typically these will be broken down further into for example, Senior Engineer or Engineer I, Engineer II etc. The point being each level will have a defined pay range that can be assigned with a description of that type of employee levels duties, experience and competencies. When bidding work or looking for a resource this is what would be cross-referenced. The person doing the looking does not care who, but what level of skills.

Employee tasks:

The employee task is a question of who, at what kind of work, they will be performing. For example the engineer I could be tasked to do a drawing, or perform an inspection or make sales call. This, in the matrix of what goes into organizing a project, determines the functional description of what the resource is performing and what task, in the order of project execution.

Expense Classes:

As part of most projects, out of pocket employee expense often occur. Keeping track of these expenses for reimbursement and or billing is very important. Company policy should be clear on what expenses are reimbursable to employees, limits for retaining receipts and spending amounts. Again many companies use spreadsheets for this purpose but a database is much better suited to keeping track of expenses. Examples of expense classes are Air Travel, Personal car, Hotel, Food, entertainment. Often times these are not entered into the project during the bidding period unless the project is a lump sum fixed price and the expenses can be predicted.

Common Material items:

Another cost center that must be managed is the material cost or cost of materials. For engineering firms this can be negligible but, for contractors this can be significant. Most firms do projects of similar types for example, pipelines, commercial buildings and houses. Over time a good history of historical costs can be (should be) developed so future work can benefit from this learning curve and applied. This is an absolute requirement for areas with a lot of competition. A good software package should allow for this development of historical knowledge. Some software comes packaged with canned databases with specialized cost data like electrical, or mechanical based on national surveys or pricing guidelines. This is acceptable but doing a little shopping with a good purchasing agent to refine these make the difference between winning and losing a project.

Automatic Billing and Invoicing:

OK, so you have all the timecard charges that have been approved and all the expenses and other material that are ready to be billed to a client. Many contractors have got into trouble by leaving this to a clerk to put all this together. Can you trust your accounting staff? This is where the software database system pays for itself. The software should get all the time charges, material charges and closed purchase orders and enable you to bill your client based on initial estimate markups and costs as reference.

Automated Purchasing

The software package should be able to get data from your initial estimate and cross reference it to the item on your purchasing system database to produce a purchase order that has all information required to buy from an approved supplier database. Do not use verbal purchase orders if possible.

Project Bidding:

Here we are at the core of the problem. The estimate is the beginning of source of the project system. The estimate must cover each identifiable deliverable. The four main areas are.

Direct labor marked up a certain percent

?? Labor directly associated with a definite quantity of material. Unit labor cost against a defined quantity. For example to installation of a light fixture of x dollars will take .2 hours at labor rate of y. Cost will be (quantity * x*y).

Indirect labor

?? This is labor not directed to any material quantity, such as Project management, engineering or clerical tasks

Material

?? Any other material item not associated with a unit labor item.

Subcontracts

?? Any other tasks or items that are subcontracted, of which the cost is simply marked up a certain percentage. Travel could be enter here or inspection services. The software should be able to supply a historical perspective on preparing the bid and should be able to handle any of the three basic material tax situations.

For resale

Tax Paid

OEM

The software should be able to produce and describe the profit margin expected and track earned value information based on timecards and material purchase orders.

The software should be able to track the project criteria and log:

?? Billing information

?? Bonding information

?? Relevant Project Dates (Start, end< milestones)

?? Bidder Identification

?? Archive job when completed

The software should know how to treat the 3 main forms of projects. Below are the three main types and a comparison of pros and cons of each type in terms if risk.

?? Time and Material- Projects with loose defined scope such that indeterminate quantities are expected.

Pros

Low risk for contractor
Open-ended
Customer can pay as he goes
Customer can pull the plug at will
Customer will like quality but not like price

Cons
High risk for customer
Limited fixed income for contractor
Customer can be intrusive
Customer will complain about price

?? Lump sum- fixed scope and easily determined quantities of material are defined.

Pros
Safe for Customer
Little Customer interference
Contractor that is smart can make higher margins
Probable change orders, which can increase margins
If job well defined, customer will generally be satisfied
Customer will like price but complain about quality

Cons
Risk is on Contractor
Contract negotiations with tough customers can result in problems
Contractor must clearly understand scope
Customer will complain about quality

?? Not to exceed- Undetermined scope but the customer wants to put a limit on expenditures.

Pros
Relative Safety for Customer
Little Customer interference
If job well defined, customer will generally be satisfied
Easy to bid for customer, job does not have to be well defined

Cons
Hard to bid and get apples to apples
Limited fixed income for contractor
Customer can be intrusive
Customer will complain about price
Risky for contractor

Customer Contact Management system:

The software should track your customers and allow for contact management to ensure timely response to customer questions and follow-up on business opportunities.

Supplier Contact Management system:

The software should be able to track all your suppliers to track contact info how much material or business was conducted with each and other relevant information.

In conclusion, the amount of data for the project oriented firm can be overwhelming and daunting. The contractor can use spreadsheets to do timecards, employee expenses and estimates but a good general-purpose database program designed to link these tasks will pay for itself in months.