

# Effective Project Management Practices as a Key, Risk Management Strategy.....minimize business risks with effective project management practices.

By

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## Introduction

As architects, engineers and consultants (AEC's),"projects" are simply what we do in this business. If we do them well, we succeed; if we don't we'll surely fail. Consequently effective project management should be considered one of your firm's top business and risk management strategies.

Risks are literally everywhere and we all manage risks every day, in everything we do. We wear seat belts, we buy insurance, we take our vitamins and we try to exercise. In fact, if you really thought about all the risks that are out there you might not want to get out of bed in the morning! However, we do get out of bed and we manage our life and the risks it presents. As far as an AEC business goes, risks can really be broken into two categories: General business risks and project risks. General business risks are things like the general ups and downs of the markets we serve, our competition, personnel safety and maybe business continuity during a disaster. Although general business risks need to be addressed and managed, for this discussion, let's concentrate on the project risks we need to be aware of and deal with.

As a firm, you need to first recognize project risks and manage them through effective project management practices to be successful. Consequently then, effective project management IS effective risk management. In fact, since projects are essentially our "product", effective project management should be our most important risk management strategy. So what kind of project risks are we talking about? How about these:

- Clients. Do you have some previous history with this client? Are they financially stable? Do they pay their bills? Did they sue their last consultant?
- RFP's and Go/No Go decisions. Are the RFP criteria within our capability? Are they reasonable? Is this project adequately funded? Is the schedule realistic?
- Contracts. Can we live with this client contract? What needs to be changed?
- Financial. Is the project budget adequate? Will we make a reasonable profit?

- Subconsultants. If we're a sub, what's at risk with this prime? If we're the prime, what risk am I taking on with my chosen subs?
- Schedule. Is it reasonable? Can we really do it in this time frame?
- Delivery mechanism. Design-bid-build? Design-build? GCCM? Are the design and construction risks distributed appropriately? What's the risk/reward ratio?
- Health & Safety. Will our staff be safe on this project? What about the general public?
- Political. Is this project politically supported? Are their political landmines out there?
- Quality. What are the project quality expectations? Error free?

One could probably write a couple pages on each one of these but let's concentrate on the top five project management strategies to minimize these and other project risks.

1. Develop and follow a clear Project Management Plan.
2. Judiciously manage your project's scope, schedule and budget.
3. Ensure frequent and effective communications at all levels of the project.
4. Make sure you deliver a quality project.
5. Carefully monitor and manage all project specific risks.

## **Project Management Plans**

It's been said that effectively planning a project may not guarantee success, but failing to plan a project will certainly guarantee failure. It's just like a driving vacation; you wouldn't leave home without a planned route, a map or maybe your GPS. So it's no different for a project; you need a plan and you need to follow it; not that the plan can't or won't change, but you need to start with a plan.

Project management Plans (PMP's) should be scalable and fit the project size and/or complexity; there is no "one size fits all" PMP; they are unique, project specific documents. The PMP may refer the reader to (and append) standard policies or procedures though rather than creating project specific procedures (e.g., Quality Assurance/Quality Control procedures). However, a typical PMP should contain the "ten essentials", or sections covering:

1. Project Goals and Objectives. Why are you doing this project? What will make this a successful project for your client and your firm?
2. Team Organization and Management. Do you have the leadership and the right team to accomplish the project? Are you organized to efficiently manage and deliver the project?
3. Scope and Work Breakdown Structures. Is the total scope of work clearly written, approved by the client and logically organized to accomplish the work? Are deliverables clearly defined?
4. Schedules. Is the schedule clearly defined? Is it realistic and follow the scope and work breakdown structure?
5. Budgets. Is the budget realistic and also follow the work breakdown structure? Does the team know what their budgets are for each task?
6. Change Management. How will you handle project changes and their potential effect on scope, schedule and budget? Who approves project changes?

7. Quality Management. What procedures are in place to assure you deliver quality work products and meet the industry's "Standard of Care"?
8. Risk Management. Are their project specific risks (technical, political, etc) that could have a positive or negative effect on the project? What will you do about them?
9. Communication Management. How will you regularly communicate with the project team? The client? Other project stakeholders?
10. Document Management. How will you prepare, distribute, file and archive the project's essential documents? Both hard-copies and e-copies?

Further, the PMP should be drafted with input from the project team since they'll be the ones carrying out the plan. The draft PMP should be then reviewed internally and then, preferably, by the client to make sure that your firm's approach to the project and project management is in keeping with client expectations. Once finalized though, the PMP should be fully communicated to the client, project team and other affected project stakeholders as appropriate.

### **Scope, schedule budget**

Scope, Schedule and Budget, are often also referred to as the "three legs of the stool" in the practice of project management. In other words, they need to be equally balanced; change one leg of the stool and the other two are affected and also need to change. However, project scoping and development of the project's Work Breakdown Structure (WBS) is the key part of these three efforts. The scope and WBS sets the stage for project scheduling, budgeting, project tracking, performance monitoring and responsibility assignments. WBS development is not a small subject either; numerous books have been written about developing WBS's; and the Project Management Institute (PMI) has even adopted a "Practice Standard" for WBS's.

The scope of work should be an accurate, written description of the work to be performed, broken down into discrete phases, tasks and subtasks as necessary to describe exactly what will be done and delivered as a work product. Typically, scoping follows a WBS numbering system similar to that below:

- 1.0 Phase level scope descriptions
  - 1.1 Task level scope descriptions
    - 1.1.1 Sub-Task level scope descriptions
      - 1.1.1.1 Work Package level scope descriptions
- 2.0 Etc.
- 3.0 Etc.

Then, just as the WBS scope descriptions define WHAT will be accomplished, the same WBS is used to schedule and budget the project. In other words, the WBS becomes the left side of the typical budget spreadsheet as well as the left side of the typical project schedule (Gantt) chart.

So what are the risks associated with the scope/schedule/budget? One word: Change. This can be a change in scope (most typically), a change in schedule or a change in budget. But remember, you can't change one of these elements without affecting the other two and rarely, if ever, is a project completed without changes! Some changes can be easily identified and incorporated, but some are insidious (it's

also called “scope creep”). Some are client generated; some are consultant generated; some are generated by outside influences (e.g., stakeholders or the public). But project changes are simply inevitable and must be managed or the project can easily slip into chaos. Consequently, change management regarding the scope/schedule/budget is typically a project manager’s greatest challenge.

A couple of tips:

- Be diligent in identifying, quantifying, and obtaining client approval for changes as expeditiously as possible to keep the project moving forward and NEVER perform work on a project change without obtaining the agreed upon (e.g., client) approval.
- NEVER wait until the end of the project to discuss changes and expect to gain client approvals.....it rarely ever happens at this point and the firm typically has to absorb the project overrun resulting in lost profits.

## **Communications**

Effective communications is a critical component of the project delivery environment. For all of the reasons that projects can get into trouble or actually fail, some practitioners believe that poor or ineffective communications is the primary reason. Project communication channels include written and verbal communications between the client(s), the client organization, the PM, the project team (including subs), the PM’s firm or organization, all of the project stakeholders and even the public. Small projects can often rely on informal communication channels to get the job done and ensure success. Larger projects will require formal Communication Plans as part of their PMP. Regardless of the project size though, it’s essential to give some thought to communication planning and think about the following ten communication essentials:

1. Formats and style guides for all written communications
2. Project team/client contact lists (regularly maintained)
3. Distribution lists for specific types of communications
4. Capturing project emails with project specific folders for all team members
5. Establishing email protocols
6. Regular project team meetings
7. Discipline specific team meetings
8. Regular client meetings
9. Informal client meetings and client communication
10. Established protocols to communicate with outside stakeholders (community leaders, political officials and the media)

In addition, the project manager MUST plan on devoting time to regular client communication, both written and verbal. Client’s need to be kept informed and they never like surprises. Frequent, consistent and open communication builds the trusting client/consultant relationship that all project managers should strive for. A project manager can probably never “over-communicate” with a client.

## **Quality**

Ensuring quality in every aspect of project delivery is, in itself, a fundamental risk management strategy. The quality of the project and project deliverables will be remembered much longer than the project's schedule, budget or even the project manager!

Quality Assurance (QA) and Quality Control (QC) have always been, and will continue to be, a significant factor in the viability and sustainability of an AEC firm's practice. Although QA/QC practices continue to evolve, clients today associate a well-founded and managed QA/QC program within the firm, also referred to as a Quality Management Program, as the basic "Standard of Care" in the AEC industry. Although quality management is normally associated with delivering quality documents and designs, a "quality project" in the eyes of the client may also apply to other things such as their perception of the quality of communications, stakeholder management, and meeting budgets and schedules.

The application of a firm's Quality Management Program, and perhaps a project specific Quality Management Plan can have legal implications as well. If, for example, design errors or omissions are discovered during or after the project is constructed, the discovery process proceeding possible legal action will always investigate the firm's or the project's Quality Management Program and the quality processes used (or not used) on the project. Further, if a Quality Management Program was in place and not used, it puts the engineer, and engineering firm, in a very precarious legal position.

### **Project Specific Risks**

Project specific risk is defined by the Project Management Institute as *"...an uncertain event or condition that, if it occurs, has a positive or negative effect on the project's objectives...a risk has a cause and, if it occurs, a consequence"*. Every project comes with a set of project specific risks; some good, some bad, some even with the potential to completely upset the project before its completion. Consequently, project specific risk management is an essential part of effective project management.

Thinking about and planning for project specific risks should be done on every project. However, the more critical the project objectives, the more important it is to systematically manage the project specific risks. Further, if not managed or mitigated properly, project specific risks can turn into real potential liabilities for an AEC firm. Typical sources of project specific risk may include:

- The use of complex, unproven or evolving technology on the project
- Unknown project conditions (e.g., underground or underwater)
- Uncertain or interruptible project funding
- An uncertain legal or regulatory environment (e.g., permitting)
- Weather
- An uncertain construction labor market and/or bidding climate
- Political instability or uncertainty
- Community acceptance
- Cost escalation
- Changing client/sponsor organizations
- Expedited schedules

Seasoned project managers always maintain a project risk register on their projects and update it regularly. Risk registers contain, in some form, all of the following elements:

1. Risk identification. A determination of all potential project specific risks. Some risks may ultimately disappear as the project evolves; some may not be revealed until the project is well underway.
2. A qualitative risk assessment. This captures, based on the probability of occurrence, the potential qualitative effects of the risk if it is realized.
3. A quantitative risk assessment. This captures, based on the probability of occurrence, the potential quantitative effects of the risk, if it is realized. For example, its effect on the project schedule, design budget or construction costs.
4. Risk response. This defines what can and will be done to respond to the risk if it is realized. In general, risks can be avoided, mitigated, transferred or simply accepted.
5. Risk response control. This involves the on-going tracking of identified risks, monitoring residual risks, identifying new risks and evaluating risk response effectiveness.

In summary, effective project management should be considered your first and most important risk management strategy. The firm's leadership is responsible to ensure that, 1) effective project management is embraced as a fundamental core value of the firm, 2) that project management procedures, processes and tools are in place and fully support the firm's project managers, and 3) project staff, through on-going training and experience, are knowledgeable and familiar with project management principles and practices. These are the three, key dimensions of an effective project management, and risk management strategy.