

## Ten Tips for Effective PM in Design Organizations Doug Russell

Engineering design organizations are well known within the Project Management community as among the hardest places into which to bring effective project management. Technology market demands are fluid, with dynamic requirements that quickly ebb and flow. These changes are hard to control, yet schedule end dates are often fixed and always too soon. Finally, many technology companies have a pervasive engineering mindset and these managers often believe that technical innovation is the key to business success, not operational efficiency or good people management. In fact, good people management practices are often dismissed within technical companies, by statements such as “I don’t do touchy-feely,” or “we don’t have time to waste on that stuff.”

Previous to my time in the semiconductor industry, I spent a long time in the defense industry. Unlike defense-related enterprises, which tend to give their project/program managers overt power, semiconductor companies--like many commercial technical organizations--uses the so-called “weak matrix” structure, where the Project Control person has to use influence skills to get things done. This article is aimed at those types of organizations.

Per the New York Times On The Web, in 1999: “46 percent of big corporate software development projects were either late or over budget, and 28 percent failed completely, according to a survey of 7,500 projects by the Standish Group of research advisers in Dennis, Mass.” While scheduling tools like ProChain's TOC, Earned Value, risk management and a host of other “hard” tools and techniques are important; this article will not focus on them. These types of tools and techniques are an ongoing and basic requirement, but clearly, with 46% of projects not finishing on time, more than the standard tools of the trade are needed to generate success. Here are 10 guidelines that represent 80% of the tasks I focused on during a normal working day as a hands-on Program Manager.

**Guideline #1: Get an understanding with key management stakeholders very early on in the project as to how to define project success.**

How is success measured on your project? Is success defined as hitting a date right on the nose? That is certainly often the case in the semiconductor markets that Intel competes in, where market windows close quickly on products late to market. On those projects, new requirements have to be verrrry carefully screened and more often than not refused (with grace and a smile to the customer). Probably along the way existing scope will have to be dropped and resources added.

If, on the other hand, the project is one of requirement definition and exploration, i.e. the customer doesn’t know exactly what he wants and will pay both in money and time for you to do so; a completely different management style is called for. You take on additional requirements, while capturing and communicating the cost and schedule impact. Cost Plus development contracts for the US Department of Defense often are structured this way.

Finally, rarely is cost the primary driver on an engineering design project, but if it is, then requirements must be very clear from the beginning and managed through a strict change control process for the entire project. The same is true with the schedule. This is critical because cost always goes up when a project stretches out. If cost is your prime driver and you don't do this, you will get killed.

Not knowing which of these three situations you are in is a sure recipe for disaster. All three **are** important, but one of these three is always **more** important than the other two.

A great example of a leader taking the initiative on this was the now famous statement made by President Kennedy in May 1961 that we would "put a man on the moon before the decade was out." That removed all ambiguity about what was most important: it was schedule. Cost was relaxed as a constraint. The rest is history.

Practical tips:

-Try probing around this subject at every review or appropriate meeting you have with management. Listen with active ears to what they say and to what they don't say.

-Find out what management's stakeholders/customers are saying: What would your project slip do to **their** business plan?

**Guideline #2: In your approach don't go beyond what your management stakeholders will support.**

Management just wants improvement and results, and almost always a host of complex tools are not required to get those results, even though there is a multi-million dollar industry that sells these tools. Resource management, scheduling and risk assessment tools of course have their place, but are only a portion of the PM's job. Too often they become **the** job.

Practical tips:

-Instead of a huge multi-line schedule that will exhaust you and the team, at first use a list of the key 20 or so milestones on the project.

-Instead of creating a multi-page risk assessment document, spend your time talking with your team members and distill down the top 5 risks and their mitigation plans.

But enough about management, what about the most important group you have to influence and convince, the design team? This leads us to:

**Guideline #3: Adjust your approach to the design team's maturity around project management.**

Early in the project you must get to know and understand how your team thinks about project management. You will have to convince them that you offer them something useful for the time they invest. Communication and sensitivity to the viewpoints of others is key here.

You only get one chance to make a first impression and if you lose your team early in the process because you misunderstand where they are at from a PM maturity standpoint, it will be very difficult or impossible to reestablish authority and credibility, thus greatly diminishing your effectiveness.

Practical Tips:

--Meet one-on-one with the design manager, and other key team leaders. Adjust your approach to the feedback you receive.

--If you are a technically trained person you probably don't spend much time thinking about "soft" things like how to communicate with others and how to listen. Change that in yourself. "Work" is more than figuring out the right answer on a spreadsheet; people and skills to influence people are required to make things happen.

#### **Guideline #4: Don't compete with your team on what they know.**

Although good PMs often have engineering backgrounds, Project Management skills are a separate skill set from engineering skills and PMs or Project Controls people must not try to out engineer the engineers. Of course, an effective PM **must** be the expert on risk id and mitigation, scheduling approaches, ways to brief important information and so on, but the minute you try to compete with the team over who knows more about the technical subject you will become an object of scorn and will lose effectiveness.

Practical tips:

--Listen more than talk. Seek information that helps you lead the team in the areas you are responsible for.

--Resist the temptation to show how smart you are. It's ok to paraphrase for clarity what a technical expert just said, but never try to state the next step in what he/she is saying. You will almost always be wrong.

#### **Guideline #5 It isn't extra work, it is the work.**

Guidelines 1 through 4 get at making sure you understand management and your team, and they are critically important. But it is equally important to convey that good risk mitigation, adequate planning and scheduling, a good resource plan and the other tasks that PMs spearhead within their teams aren't **extra work**, but rather **they are the work**. Too often teams and management complain about the time it takes to do good PM. If you have correctly done your homework in guidelines 1-4 you should be in a strong position to drive the necessary work. Don't be afraid to be firm.

Practical tips:

--To be taken more seriously, stand in front of a mirror and watch your face as you state something that your team may resist. Do this until you look (body language, facial muscles) and sound relaxed and confident. For example, Winston Churchill, a childhood stutterer, used to stand in front of a mirror and imagine the English Parliament

in their underwear. This, along with a marvelous mind and a great deal of preparation, helped him to eventually be viewed as a world-class orator.

### **Guideline #6 Be able to say “no”.**

A PM’s job is not to make everyone happy, it is to drive the team to generate the needed results. Knowing when and how to say “no” to what seem like innocuous requests for additional scope or analyses or action items that defocus the PM or the team from the task at hand is an absolute requirement. If done with a clear and logical explanation and in a non-threatening and low-key manner you will build credibility much more often than not.

### **Guideline #7 Change control must be used**

Engineers hate paperwork. They want to design. Even simple change control sounds a lot like paperwork to many engineers and they will resist it.

Nevertheless, modern development schedules are usually so tight and our resource base so stretched, that we just cannot allow ourselves to take on additional scope. “Commit” management, which essentially says “work as many hours as necessary to do whatever tasks are assigned”--without adequate change control--is a recipe for disaster. This leads to burned-out and dysfunctional teams, as people struggle mightily.

Practical tips:

--Tell the team, stakeholders and customers early on what the process is going to be, so you can get their buy-in and they won’t feel surprised.

-- When customers or management ask for additional scope explain the impact. State that you very much want to deliver their requested results if they can accept the impact.

--Start simple. Use a three-person change control board: yourself, the Design Manager and the Senior Architect or team member. Don’t have an elaborate change control form, just the basics will do: what is the change, why is it necessary, what will happen if it is and what will happen if it isn’t approved.

--Communicate decisions quickly or the team will drift in indecision.

### **Guideline #8: Keep a close eye on your support and offsite teams**

Many otherwise good PMs fail because they are too focused on their on-site teams. Often we will make one trip (if that) to an offsite team, demand a schedule and then assume they will run themselves. Also, often we view offsite or support organizations as “the problem,” usually because we don’t understand their issues.

Practical tips:

--Strongly insist on weekly teleconferences, as well as risk assessments and mitigation plans from these external groups, don’t just allow them to be buried within the local project risks and mitigation plans.

--Get to know them from their frame of reference, not yours. Don't always call them when the time is convenient for you, set up a call during **their** normal working hours, even if it is 11PM for you.

**Guideline #9: Keep a close eye on the amount of time you spend creating, sifting, sorting, collating and reporting on the project data.**

PMs should know they have failed when they are in management's office once or more a week reporting on minute project details (and spending the rest of their time gathering that data). Data is important in a project setting, but only for the decisions it helps you make or you can get others to make. A PM's job is not data management, yet many people spend their days gathering and playing with data, without ever driving a decision or an action item or talking to another person.

Practical tips:

--A rough guideline: Spend no more than 1/3 of your time gathering/playing with/reporting on data. Track this for a few weeks.

--Make sure you and others are using the data you collect for a useful purpose. If not, stop collecting it.

**Guideline #10: Adjust your approach throughout the project.**

Being an effective PM is a lot like being a good coach or a parent. A good baseball manager doesn't manage his team the same way in the seventh inning as he does in the first. A good parent doesn't treat an eight year old the same way as a two year old. Same thing applies for you with your team, customers and management. For example, development projects are notoriously hard to schedule in detail for the duration of the project. So, don't try. Use rolling wave quarterly scheduling. Or, early on, develop 20 or so high level milestones, but as you get close to the end of the project, develop a very detailed schedule of the last several weeks' worth of tasks. The team will have the insight at that point to do detailed planning.

Daily 10-minute stand-up meetings to look at the detail of the day's accomplishments and near term risks are a great use of time towards projects end. Doing this too early in the project will likely frustrate the team. Adjust your approach to the situation at hand.

Be consistent in your messages to the team, customers and management but be flexible in your approach. Getting the job done is what's important. Good luck!

