

# inside PROJECT management

*The Technical Professional's Guide to Project Management*

## Why technical projects fail: Avoiding disaster

by Glenn P. Kessler

Successful project management requires a carefully tailored blend of technical understanding, team building expertise, public relations know-how, political savvy and project management basics mixed with large doses of optimism, energy, creativity and perseverance. Given this broad range of required project management skills, it's not surprising that many project managers fail to deliver their projects on time, on budget and with the required functionality. What may be much more surprising is the enormity of the odds against success (over 80 percent of technical project efforts fail) and the reasons why most technical projects are derailed.

There's good news, though. The major barriers to success aren't a mystery. There's substantial agreement on those factors that make project management such a risky enterprise. In this article, we'll explore how six of the most common, and devastating, technical project management mistakes violate three fundamental project management principles. By understanding how these principles and violations

are related, you can anticipate and head off problems, beat the odds, and lead successful technical projects.

### Successful project management

To set the stage, let's survey the project management landscape. Figure A gives us a rough picture of the technical project management landscape. It uses approximate percentages pulled from an oft-cited report from The Standish Group International, called "CHAOS."

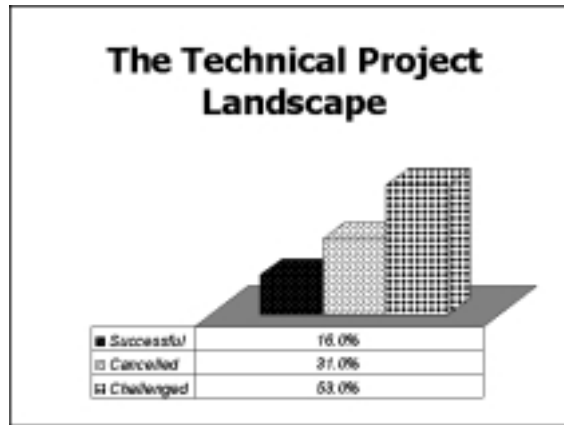


Figure A: According to The Standish Group International's "CHAOS" report, only a small portion of technical projects are economically viable.

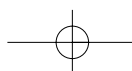
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According to the report, only 16 percent of technical projects are fully successful. These few fully successful projects are delivered on time, within budget and with the full complement of promised requirements. A total of 53 percent are *challenged* or unsuccessful. Of these, the average cost overrun was 189 percent. The average time overrun was 222 percent. Overall, only 61 percent of their required features were delivered. The remaining projects were cancelled at some point in the development cycle.

If technical project starts were distributed evenly across the contiguous United States, and if a region's economic stability depended on the success of those projects, 40 states would be in deep economic trouble.

A project leader embarking on a new technical project is facing an extremely difficult journey. He's covering territory littered with the evidence of past failure. If you're able to read and interpret these signs correctly, your chances of making it to the Promised Land (an on-time, on-budget, fully featured product) will increase. With this information in mind, here's an interesting exercise that you can try. Make a list of all the projects you've managed over the past few years. Classify them as successful, challenged or impaired (cancelled). Then, run the numbers and compare your percentages to those in the study we just mentioned.

## The basic axioms

Seen against a landscape strewn with project failure, it's striking that there already exists a substantial and very compelling body of knowledge that addresses both *why* projects fail and *how* to prevent their failure. As noted in another report from The Standish Group International, called "Unfinished Voyages," a much more vexing question, which we'll touch on only by inference, is why, given what we know, projects continue to fail.

To put things in perspective, let's lay down a few fundamental principles from which the bulk of project management knowledge flows. These principles share a number of traits with other fundamental principles, like Euclid's axioms for geometry or Peano's postulates for elementary arithmetic, for instance. These principles are intuitively obvious but their consequences aren't. They're powerful in their ability to both predict and explain things with which we're already familiar, such as the fact that projects are more likely to fail than succeed and why. And, these principles can also be viewed in terms of three main principles: the Context, Entropy and Society Principles. The specific principle violations we consider in this article derive from failures to

understand or deal with these very fundamental truths about project management. Keeping these straightforward principles in mind can go a long way toward avoiding their most debilitating consequences.

## Caution: Obstacles ahead

Any project manager reflecting on his own experience could create a list of the most frequently occurring and devastating project pitfalls he's encountered. We've drawn our list from a number of sources including published research, seminal articles and books, shared war stories with colleagues, a project manager survey conducted for this article, and first-hand experience. Not surprisingly, we've found a substantial overlap in our results. To better understand this, let's take a closer look at the three main principles and their implications.

### Principle 1: The Context Principle

#### **Technical projects take place in a broader context.**

Technical projects seldom take place in isolation from the rest of the organization, its customers or a broader environment. If they do, their value is likely to be limited. Most technical projects (and the most important ones) aren't just *technology* projects; they're *business* projects. Technical projects, no matter how complex and sophisticated the technology, are undertaken for business reasons. They invariably involve other aspects of the organization and, in the best cases, the customer as well. A corollary is that successful technical project management demands skills that extend way beyond the technology realm. Failure to adequately understand and attend to this broader context, treating a technical project as a technology issue, underlies a host of common and devastating technical project management pitfalls. Kathy Warden, senior vice president of consulting at Equient, expresses this principle as the need for a "holistic life cycle for managing the project—one which considers process, organization and technology change as components of the solution."

Although it's fairly obvious, violation of this principle takes first place among reasons why technology projects fail.

#### **Violation 1: Lack of adequate user input and involvement in the project**

The most frequent and devastating violation of the Context Principle is lack of adequate user input and involvement in the project. Inadequate downstream participation is a familiar, well-documented project management favorite. It's unusual to find a project manager who doesn't, based

upon personal experience, place it near the top of the list.

The principle is simple enough. Those who'll use a product have a valuable perspective on its design. And the cost of ignoring this perspective is extremely high. In the first place, incorporating end users early in the process significantly reduces their natural reluctance to embrace an unusual or new solution. This tendency, covered extensively in the change management literature, can easily torpedo a complex implementation effort. Of equal importance, is the fact that errors introduced early in a project, such as a mistake in requirements, get increasingly more expensive to correct as the project moves forward. In his book, "Software Project Survival Guide," Steve McConnell observes that an error can cost 50 to 200 times as much to correct late in the project than it costs to correct it early in the project life cycle. McConnell's observation suggests an equally important consequence of the Context Principle:

Downstream input, in the form of requirements validation, must be iterative.

Technical project managers are solving user problems rather than building systems. These solutions need to be honestly and frequently validated by users long before the final product is delivered. Without iterative validation the project manager runs a strong risk of delivering a product which either:

- Doesn't satisfy the requirements as understood by the end user, or
- Satisfies requirements that are no longer valid due to changes in the broader landscape.

What's the best mechanism for effective downstream input? There's extensive literature to choose from including the discipline known as contextual design, as discussed in Hugh Beyer's and Karen Holtzblatt's book "Contextual Design and Quality Function Deployment (QFD)."

**Violation 2: Lack of sustained executive management support**

The next violation of the Context Principle runs a close second to the first. This problem is almost always catastrophic and is often derived from a fundamental, but frequently overlooked, organizational parameter that we refer to as *Mean Time*

*Between Reorganizations (MTBR)*. We've found the following rule of thumb to be a particularly useful consequence of the Context Principle:

The elapsed time between significant project milestones shouldn't exceed the organization's MTBR.

In many organizations the expectation of sustained executive support for a complex and lengthy project simply isn't realistic. This is particularly true in turbulent economic times. Ask yourself whether today's management is likely to be around to see the completion of the project. Any realistic assessment of project risk has to include the possibility of a negative answer. Creating smaller well-defined project milestones, in addition to keeping the project on track, provides a mechanism for bridging executive level organizational shifts.

Lack of consistent executive support also often results in a reshuffling of organizational priorities. This can mean the outright cancellation of a project or the reallocation of crucial project resources such as time, funding, personnel and equipment from one project to another.

Remaining aware of organizational changes and acting to ensure that new executive stakeholders are informed of the project's progress can substantially diminish these consequences.

**Principle 2: The Entropy Principle**

**The amount of disorder in projects won't, of itself, decrease with time.**

As with any isolated system, a project, left to itself, drifts toward chaos. The project manager's task is to impose (or extract) order in the face of this natural tendency. This is the point of well-defined and repeatable project management processes.

There's now a vast body of knowledge which details the sort of order required for project success and the specific areas in which it must be imposed. The Capability Maturity Model (CMM), developed by the Software Engineering Institute, is one such example. Though designed mainly to help software organizations improve the maturity of their software processes, the CMM offers some good planning advice for all types of projects. We'll focus on the six key principles found in level two (repeatables) of the CMM because they most closely identify with a big project trouble spot: the establishment of basic management controls. To see how the key processes fit in, take a look at the

following brief overview of the five maturity levels of the CMM model:

- 1) **Initial:** Success is driven mainly by individual efforts since few processes are defined.
- 2) **Repeatable:** Processes related to cost, schedule and functionality are in place. Success is driven by repetition of processes that worked on past, similar applications.
- 3) **Defined:** Management and engineering activities are in place. All projects use an approved software process tailored to the software being developed and maintained.
- 4) **Managed:** Software process and product quality are looked at qualitatively and managed.
- 5) **Optimizing:** Quantitative feedback gathered in level four is used to improve existing processes and initiate new ones.

The six key processes that we're interested in for our purposes are requirements management, software project planning, software project tracking and oversight, software subcontract management, software quality assurance, and software configuration management. By making sure that each of these tasks is accomplished diligently, your project stands a greater chance of being completed successfully and you've also got yourself an effective remedy to project entropy.

#### **Violation 3: Unclear requirements**

The predominant pitfall in the project entropy category is our third overall violation. We noted before that failures introduced early in the development cycle are the most costly to correct downstream. Unclear, incomplete and inaccurate requirements are three frequent examples of these early life cycle errors. However, clear requirements really aren't enough. A related, and no less debilitating, entropy error is the lack of a well-defined process for managing changes to these requirements. Without such a process, the project invariably succumbs to "death by a thousand changes" frequently taking the form of the feature creep or even scope creep. These amount to an unauthorized (and sometimes unnoticed) alteration in the development plan. The requirements management Key Process Area in the CMM model provides a solid framework for avoiding this pitfall.

#### **Violation 4: Lack of proper planning**

The fourth major violation is probably the most obvious of all. The most interesting point about

this violation is that it's not at the top of the list. While project planning (as embodied in the CMM key process areas listed previously) is often considered the first job of a technical project manager, it isn't the reason that technical projects frequently jump the track. We need to look to *context* rather than *entropy* for the most frequently cited errors.

Of the specific problems related to lack of project planning unrealistic expectations, in the form of overly aggressive schedules and inadequate budgets, are cited most frequently. Once again, there's a wealth of literature in these areas. For a good informal discussion of realistic project schedules we suggest you see chapter three of McConnell's "Software Project Survival Guide."

When we think of project management and the ways it can fail, items in the Entropy Category are often the first to come to mind. This is the *technical* side of project management. This side of project management deals with formal methods and practices. While a lack of process is certain death for a project, the Context Principle tells us that an exclusive focus on these issues is also sure to result in failure.

### Principle 3: The Society Principle

#### **Technical projects are social undertakings.**

It's actually quite rare to encounter a project that doesn't require the collaborative effort of a group (or, more frequently, multiple groups) of individuals to achieve its defining objectives. Unlike some social enterprises (e.g., a church or a community service organization) projects have a very specific duration and objective. But this doesn't make them any less social or any less subject to the familiar political and interpersonal dynamics characteristics of the many dysfunctional organizations we've all come to know and love. Technical projects are social organizations in microcosm.

The Society Principle implies that, along with organizational agility (the Context Principle) and project management expertise (the Entropy Principle), a successful technical project manager requires appropriate people management skills. This is the *management* side of technical project management. Looking at the most common violations in this area clarifies where the developmental emphasis should lie.

#### **Violation 5: Lack of clear vision and objectives**

This violation has both internal and external consequences. A precondition for the success of any team is that it knows where it's going. Unclear goals create a domino effect. Without clear goals

both the project management process and team members' roles within that process are left ungrounded. Team members won't understand why they're being asked to do what the project manager requests. The consequence is invariably a divergence among team members about what the project is, what the deliverables should look like, and how they'll be implemented.

The vision must also make the project's relationship to the rest of the organization clear. Without an understanding of this broader context, the project team feels like it's working in a box. This invariably undermines team members' motivation. For the same reason, this vision also needs to be understood and embraced by the other members of the organization, in particular those who have a significant interest in the project's success.

It's a primary responsibility of the project manager to ensure that all the interested parties understand the project's impact and their responsibilities in realizing its mission. It's quite an undertaking, but one that's well worth the effort.

#### **Violation 6: Inadequate attention given to project momentum, harmony and rhythm**

Finally, the Society Principle highlights the danger of ignoring or minimizing the social dynamics surrounding the project; this is expressed as our last violation. For project managers with extensive technical training and experience, the *softer* social side of project management is often the least familiar. While this can make it tempting to ignore, it doesn't diminish its importance. This is where more general management and leadership skills find the most traction. There are three dimensions to consider: personal, team and collaborative. The results of neglecting any of them are familiar, well documented and, invariably, undesirable.

- **Getting personal.** The *personal dimension* recognizes that project participants are individuals who need to be recognized for each one's contributions. If you expect team members to excel, they need the tools and conditions required to do an excellent job (e.g., appropriate software and a quiet space conducive to focused software development). They need to be appropriately motivated and need to see how their participation in the project makes a difference. Team members also need to understand why the project is important.
- **Teaming with possible pitfalls.** The *team dimension* recognizes that the project team isn't simply the sum of the individuals that com-

prise it. The team is an organic entity with needs and a rhythm all its own. A project manager's failure to understand the basic stages of team development or the normal fluctuations in project rhythm can seriously hinder a team's ability to sustain the required forward motion. Other major pitfalls in this category include uncontrolled problem employees and a lack of the right blend of skills or experience on the team. Any project manager would benefit from at least a quick read of "Peopleware," Tom DeMarco's and Timothy Lister's classic discussion of the personal and team dimensions of project management.

- **Collaborative effort.** The *collaborative dimension* of the Society Principle recognizes that the project doesn't end with the project team. Failure to understand, incorporate, continually attend to or manage the needs of the key stakeholders in the project will undermine its success. As Kathy Warden says, "Leading the project team and holding the technical vision for the project are only portions of the job of project manager. Working with the business stakeholders to ensure the system meets business needs should be the primary objective." Seen from the perspective of the Society Principle, the primary function of a project manager is *not* to deliver a technical product but to manage and satisfy the commitments to his constituency. As Peter G.W. Keen puts it, "Successful software development and systems integration require commitment management, not project management. Companies should restart their IT processes around technical and organizational commitments and the relationships between them."

## Summary of the project life cycle violations

Only a small percentage of technical projects succeed, meaning they're completed on time, within budget and with all required features. But the causes of these failures are well understood. The most common and debilitating project management errors can be captured under three fundamental project management principles: Context, Entropy and Society.

The table in Figure B on the next page summarizes these violations against a simple project life cycle model. The chart indicates both the project stage(s) in which a violation can most effectively be addressed and the relative importance of attending to it in the stage. A filled-in circle (1)

indicates that it's critical to pay significant attention to the violation in that stage, in order for the project to succeed. A dotted circle (◐) indicates that appropriate attention to the item in this stage will substantially increase your chances of success. An empty circle (○) indicates *maintenance mode*: Check in frequently to ensure that entropy hasn't taken over. Note that the close-out stage of the project demands attention to *all* the pitfalls.

Principles & Violations	Initiate	Plan	Implement	Close-Out
<i>Context Principle: Technical projects take place in a broader context</i>				
1. Lack of adequate user input and involvement in the project	●	●	●	◐
2. Lack of sustained executive management support	●	●	●	◐
<i>Entropy Principle: The amount of disorder in projects will not, of itself, decrease with time</i>				
3. Unclear requirements	◐	●	◐	◐
4. Lack of proper planning	◐	●	◐	◐
<i>Society Principle: Technical projects are social undertakings</i>				
5. Lack of clear vision & objectives	●	◐	◐	◐
6. Inadequate attention to project momentum, harmony and rhythm	◐	●	●	◐

Figure B: Project life cycle violations such as these are an all too common occurrence.

Evaluating how these pitfalls were handled in the course of the project is an invaluable part of a project post mortem. As with other areas, experience, good or painful, is frequently the best teacher for a technical project manager.

### Selected references

1. Hugh Beyer and Karen Holtzblatt, "Contextual Design" (Morgan Kaufmann Publishers, 1998)
2. Peter G.W. Keen, "Let's Put Project Management Out of Its Misery" (*Computerworld*, 12/7/98)
3. Software Engineering Institute, "The Capability Maturity Model" (Addison Wesley, 1997)
4. Steve McConnell, "Software Project Survival Guide" (Microsoft Press, 1998)
5. The Standish Group International, "CHAOS" (The Standish Group International, 1995) <http://standishgroup.com/visitor/chaos.htm>
6. The Standish Report, "Unfinished Voyages" (The Standish Group International, 1996)
7. Tom DeMarco and Timothy Lister, "Peopleware" (Dorset House Publishing, 1979)\*

# Project kickoff: Put your coach's cap on and get ready to play ball!

by Nancy Wickmark

**P**roject kickoff is a lot like a pregame huddle; you want to prepare and psych your team up for success. As a project manager (PM), you probably find that scheduling the kickoff meeting and inviting the key players to attend is the easy part of the process. What may prove to be more difficult, and what ultimately separates the winners from the losers on the playing field, be it turf or project site, is the discussion and mood you inspire at this meeting. Why? Because your presentation will color the tone of all of your team's communications and work efforts for the duration of the project.

This being the case, we think there's a lot you can glean about preparing your team for a successful outcome to your project by putting to use the finely honed approach that coaches use to get their teams ready for the big game. So, now it's time to put on your coach's hat and have a little fun preparing your team for its big game!

### Knowing how the game is played

Like football and most other competitive team sports, projects have conditions to consider and reactions to those conditions that need to be crafted before your team even takes its first

step onto the playing field. As the coach (in essence) of your project team, knowing what these conditions are and calculating what your team's reaction to them will be is your first real challenge.

The conditions and goals are pretty much the same from game to game, project to project. You're out there to win with dignity by playing by the rules. But it's the subtle differences, such as team morale and business politics, that make this game (or this project) different from the rest. If you ignore these differences, no matter how small they may be, you run the risk of contributing to your team's potential failure. If you choose to address them and share what you know with your players as best you can, you'll find that they'll perform the best that they can and will be more likely to succeed with fewer time-, effort- and money-draining errors.

### Looking at the lineup

If you're worth the dirt in your cleats and the grass stains on your britches, there are some logistics, shown in Figure A, which you'll want to consider prior to addressing your team at the pregame huddle. First up is the condition of the players. Whether you're talking about ball players or project team players, the questions are the same. Are they well rested, fresh and challenged, or are they coming off of a string of losses? Who are the star players and who are the weakest links? Is the general attitude positive? Is cynicism an emotion to be dealt with?

How about the level of team maturity? A mature team is the dream of any coach or PM, but most likely you'll need to build that maturity as you go along. Question yourself, as a coach would question. Do you have many new players? Do they interact and communicate well—do they gel? Do they care about each other? Do they reach out as mentors to one another and bring each other along? Do they pick each other up from a fall? Do you have the right mix of skills, personalities and attitudes?

You also should take into consideration your team's history. What's your standing in the league? What's your track record? Do you have successes to draw from or holes to dig out of? Is the team floating on the wings of success or scrambling to prove its abilities?

### Scoping out the playing field

There are other considerations to take into account in addition to the players on your team, as shown in Figure B. One of the most important

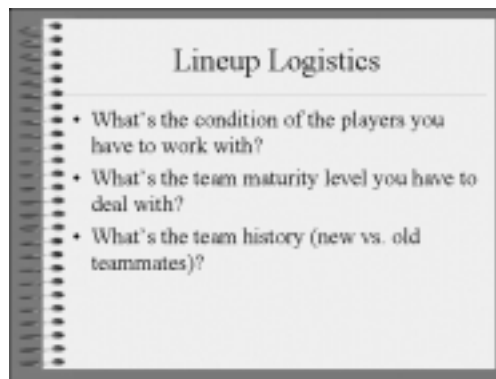


Figure A: These team logistics need to be addressed before the kickoff meeting.

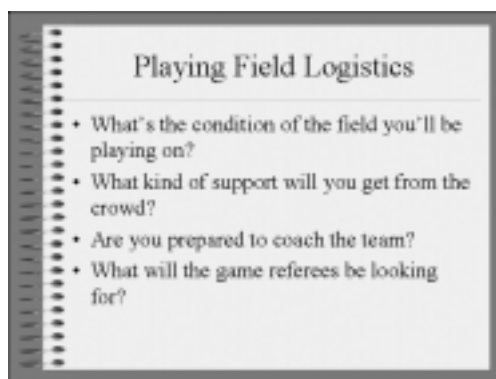


Figure B: It's a good idea to think about how you measure up in terms of these other project considerations as well.

of these is the condition of the field. Where a coach questions if the field is wet, level, pitted, well marked or properly lit, the PM needs to ask questions such as: What's the operating Capability Maturity Model (CMM) level? Are there processes and procedures? What's the technical infrastructure and the organizational structure, and what tools are available? Is the technology driving the solution or vice versa? Is the "vision" clear? Are there business opportunities driving the schedule? Is the budget predetermined and is it a constraint? And, are the technologies known or unknown?

You might not have thought about this, but it's important. Do you have the support of the crowd? To a coach, the presence of a supportive home crowd, cheering the team on to success from the stadium bleachers, fuels a team's desire to do well. For the PM, it's the presence and involvement of the stakeholders that fill the role of the crowd. Do you

have their support? What does it hinge upon? Are reputations at stake? Is there a strategically placed and long lasting investment in the project? What role do subtle business politics play? What are the dominating expectations of the stakeholders?

Who's up next? Why, it's you—the coach/PM. As the leader of this team, are you prepared to coach? What are your strengths and abilities? Does your style and approach bring out the best in your team? Are you prepared with the business, technical and interpersonal knowledge that you need to manage the project effectively? Can you give your team it needs to do its best?

And finally, who'll be around to monitor you? Why, of course, even in project management there are referees (Oh! The referees!). PMs need to think about Software Configuration Management (SCM), Software Quality Assurance (SQA), testing, and peer reviews. Should you expect resistance to formal project management? Is there a steering committee in place, and if not, should there be? And unfortunately, if the stakeholders are running multiple projects at once, is there bias for one team over the other?

### Let's talk strategy

Once you've gone over the above-mentioned factors in relation to your project, you can

develop a strategy that will take advantage of any favorable conditions that you've come across. While you're at it, you might want to prepare mitigation plans for those areas where conditions aren't favorable.

Here's an example. If your team is a "hand me down" lot, bearing only slight resemblance to the skill sets needed, you'll want to compliment them on their strengths and present a plan of action that will build the skill base required. Steps you can take to build your team's skill base include providing training, mentoring, job sharing and peer reviews. Another step you might want to take is to have your team participate in a team building exercise where everyone has a chance to address the group. This will help you establish an expectation for open communication between team members, right off the bat. This open communication policy should also include you. But don't worry, you're not expected to know all the answers all of the time, just how to get them as the need arises.

To help you organize your thoughts in preparation for your own kickoff, we've put together a kickoff strategy To Do list, shown in Figure C, that's made up of components we think are important parts of any successful kickoff strategy.

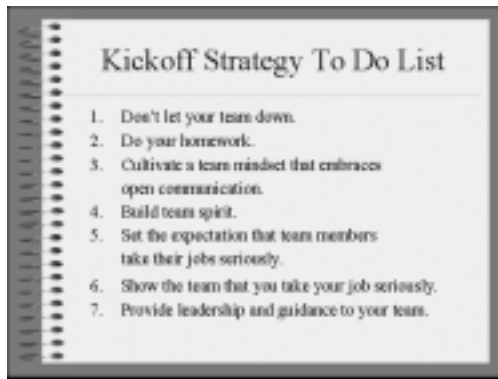


Figure C: This To Do list keeps your kickoff objectives in focus.

### Psych them up, coach!

The correlation between the project kickoff and the pregame huddle provides us with a great opportunity to put into practice the winning ways of those masters of pregame planning—coaches.

Do as they do. Before you address your team, take the time to sort out the logistics, develop your strategy, and finalize your game plan. Your project team is counting on you to lead them to success. Follow the lead of the zealous peewee coach and you'll feel good about the job you did for the team members before they even knew they were a team. Get them ready for the game, compliment them on their strengths, and give them what they need to prove they are winners. Psych them up, coach! \*

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# How to be a trailblazer ... on paper, that is

*The what, when and how of good project documentation*

by Jeff Bankston

Any good project manager will tell you how important creating and using documentation is toward having a successful project delivery. But how many have ever really thought about why this is the case? In this article, we'll review the types of documents you should be creating and maintaining along the project life cycle in order to ensure good project documentation is being kept. We'll also go over some of the more important reasons why good project documentation is such a must by stepping through a hypothetical project where the project manager and client value proper documentation. So pack up your project plan and prepare to blaze a trail to project delivery success.

## The great paper trail

All projects make use of a variety of documents during their tenure. At each major stage of the project life cycle, there are specific documents that the project manager needs to create and/or update in order to ensure proper documentation of the project activities and expenditures. In this section of the article, we'll introduce you to some of the most important and widely used documents in the field of project management.

## The SOW, our project compass

Of all these documents, the Statement of Work (SOW), shown in Figures A through C, is the guiding light for the entire project. This is a static document in and of itself, because both the consultant and customer must agree to the goals of the project that are indicated on the SOW. Once you've created the SOW, you'll likely find the need to make use of some standard life cycle project documents, especially if along the course of the project you find that you need to amend the SOW in any way.

## The path of the project life cycle, in print

Life cycle documents are normally dynamic, living entities that are subject to change without



Figure A: The SOW is the guiding light for the entire project.



Figure B: Providing an overview of project expectations, the SOW is helpful for both the PM and the stakeholder.

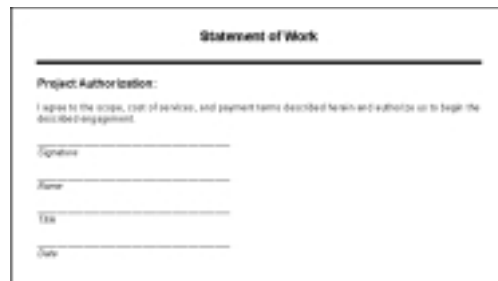


Figure C: The SOW must be signed off on before the project commences.

notice. Cumulatively, they leave you with a thorough paper trail of the project's problems and progress as you work to achieve the goals laid out in the SOW. Individually, they serve different purposes, as you'll see.

When you need to make amendments to the SOW, the *Change Control Form* is the one you'll use. As shown in **Figure D**, it requires the signature of both the customer and the project manager. Both signatures are required because the change may ultimately influence the time line and outcome of the project.

The *Project Plan* is a document that consultants adjust on a weekly basis (sometimes on a daily basis) as the project evolves. This is because the project plan is a dynamic record of the staffing, scheduling and budgeting of the work activities that need to be accomplished for the project to be completed; so as the project progresses, the project plan does also. It's sometimes created when the

SOW is signed, but it's usually created once the work starts. Our project plans are typically created using Microsoft Project 98 or 2000, depending on how our documentation needs to integrate with the customer's software; this is another important point to keep in mind. But, there are several other good project software tools besides Microsoft Project to choose from.

Long-term projects tend to have milestone reviews in which all parties discuss issues impacting the work on the project to date. This meeting usually results in a signed document, called the *Project Review*. The signed Project Review is important; it's tangible evidence that specific hours of work were completed to the customer's satisfaction and that the customer has agreed to pay the bill for services rendered up to that point in the project. As a matter of course, it's not unusual at all for the Project Review meeting to end with a discussion of the work to come.

Another group of documents that is essential to maintaining good project documentation is the *Project Recommendation Report*, shown in **Figures E** through **G**. In general, these are static documents that detail events, conditions or recommendations to events or conditions that could affect the project.

Next, we have the *Status Report*. This report can be generated daily, weekly or as a single file that's kept up-to-date and is used as a running report of project events for the life of the project.

Last, but not least, we have the *Final Report*. This report is usually framed early in the project because in terms of content and flow, it details the

Project Name	Client Name	Client Location	Client Manager
IT Business Evaluation	ABC Widget	Atlanta, Georgia	John Q. Doe
Customer's Title	Date	Site Location	Project Manager
	March 10, 2001	New York, New York	Jeff Robinson

**Type and Description of Change of Scope**  
In the process of analyzing the network architecture, we identified the network's hardware controls and configuration that were not in the SOW. The network did not have the ability to do the following: (1) ...

**Impact of Change of Scope**  
The final project objectives will have priority over the original objectives. The change of scope of the network requires to alter existing and/or new hardware, software, and/or services to meet the requirements for the change of scope.

**Customer Approval**  
This change will be performed in one hour of work of ITC, which includes analyzing the existing network and hardware.

**Project Approval**  
Using the change of scope, the final project will be able to give additional services and/or hardware. The network will be upgraded from existing hardware, and the existing hardware will be replaced.

**Customer Approval**  
The network owner and/or manager agrees that the change of scope will meet the goal stated above. Customer has authorized the change to the scope of work, and accepts the change in the project budget.

For Conditions	Date	For ABC Widget Company	Other

Figure D: The Change Control Form is used for recording and approving changes to the SOW.

Confidential and Proprietary Document

**ABC Widget Corporation**  
Project Recommendations  
and Completion Statement  
Submitted under contract ABC 999

Prepared by Jeff Robinson  
Systems Engineering Manager  
XYZ Consultant Corp.  
May 9, 2001

Figure E: The Project Recommendations Report customarily includes a title page listing the parties involved and the date of submission.

Confidential and Proprietary Document

**5.0 Project Overview**

This project was completed as a means to evaluate the ABC Widget network architecture, and identify a plan of action to upgrade the network to meet the business requirements of the client. This project was completed to identify the network architecture and physical configuration of the network.

Before this evaluation could occur, a review of the existing network was necessary. In doing so, numerous issues were identified that required a periodic network audit to determine the why and what to do to resolve the network architecture and physical configuration of the network.

As a result, a set of recommendations was made to guide the client. These recommendations are intended to assist in the evaluation process, and are not intended to be used as a guide to the project. Before any recommendations could be made, significant network audit had to be completed to provide documentation suitable for network planning purposes.

One of the project goals was to identify the network architecture, both hardware and software, of the client's network devices. The ABC Widget network architecture was reviewed from the middle level of network devices, such as routers and the middle area of routing and logical Ethernet network devices. These include the ABC Widget Core Router Layer 3 Switch, all 3Com routers, and some lower end Ethernet switches. While not immediately necessary, many devices have not been replaced and they are being replaced by the lower end of the network architecture in the very near future, and will continue to cause the network to be in a state of flux.

Because the core of the ABC Widget enterprise uses the 3Com 10000 and 100000 technology, replacement of the ABC Widget devices is not possible without upgrading the core network. This includes a total network replacement of all network devices of one time due to the aging of the network and the need to upgrade the network. This issue is further exacerbated by the fact that the 3Com 100000 is a 100000-based device, and will not be replaced by the 100000-based devices.

--- more report material of 10 pages removed for brevity ---

ABC Widget Project Recommendations - 2 - 05/09/01

Figure F: The purpose of the Project Recommendation Report is to detail events, conditions or recommendations for events or conditions that could affect the project.

actions taken and issues resolved that were outlined in the SOW, which you'll remember is the first document you'll create at the start of your project. The Final Report is the final proof that the project was completed according to the specifications outlined in the SOW. You can measure your current project documentation list against our list of document must-haves.

1. **Statement of Work.** The master guide for the project. This is the first and most important document to have.
2. **Change Control Form.** This document is used to make amendments to the original SOW and requires the signature of *both* the customer and the project manager
3. **Project Review.** Long-term projects tend to have milestone reviews in which all parties discuss project issues to date. This meeting usually results in a signed document acknowledging progress and completion of services rendered up to a specific point in the project plan. Some consultants use this document to invoice the customer at specific intervals during the project.
4. **Project Recommendation Report.** This is a group of static documents that details recommendations for project events or conditions.
5. **Status Report.** This can be a daily or weekly generated report or a single file kept as a running record of events during the life of the project.
6. **Final Report.** A static document, usually framed early in the project, that details actions taken and issues solved that were outlined in the SOW. This report is the final proof that the project was completed according to the specifications outlined by the project manager and the customer in the SOW.

**When to use what—mapping it out**  
 While every project has its own unique nuances, the documents that project managers need to use in order to maintain good project records are pretty universal. In the following section, we'll detail the use of these documents as they'd be employed by a project manager during the course of a three-month-long database design project for a fictional company, Corporation X.

**At the foot of the hill**  
 Let's say that our three-month-long database design project has been just approved by our fic-



Figure G: Both the consultant and the customer sign off on the Project Recommendation Report.

tional company, Corporation X. Now it's time to start our project. The SOW says that Corporation X wants their existing Oracle 8 database that contains their customer shipping information integrated into a private Web site. They've used Oracle since it was just a fledgling database, yet they'd never thought of using it on the Internet—until now.

Corporation X provides shipping and receiving facilities for dozens of businesses and they generate weekly paper reports for each of the corporation's customers. These reports let each customer know how much of what product is in storage, when products on hand fall below specified levels, and the dollar value of the total stored inventory. (This is important for insurance reasons, so the amount of product on site must be precisely accounted for to prevent excess inventory from being wasted on site.)

This new Web site our corporation wants to put up is designed to allow existing company employees to continue updating database information, while also allowing new and existing customers access (via the Internet) to this database. The goal is to eliminate the weekly paper reports, reduce excess overhead, and speed up the time it takes to deliver the product to the end site.

**Setting up our Web site**

Once we've established the business goals that must be solved by the Web site from reviewing the SOW, we need to create a project plan. In our project plan, we must set milestones so that we have concrete dates for completion of the tasks that make up the project. How do we do this? First,

we'll need to make an outline of the tasks we'll perform in setting up the Web site server. These tasks include how we plan to create the connections between the Web site and the database, and then also how we'll set up Web site and database security controls for the users.

### Exploring, testing and recording the doings at our Web site

Now that we've done the setup work, it's time to test it all out to make sure it works the way we intended. This amount of work is likely to take us about a week or two to accomplish, so this task is a good candidate for inclusion in our weekly status report. The testing of our connectivity work on the Web site presents yet another opportunity for us to make use of our newly acquired documentation skills. Here we'll need to create some form of project recommendation report that details the steps we'll need to take in order to accomplish the test. This is also the point at which we may need to draw up a change control form. If, for instance, Corporation X decides to release more information to its customers via the database, we'll need to document their request, in particular because a change like this would indeed impact and alter the SOW. In this case, the change control form needs to be signed by both our project manager and the project point person from Corporation X. Taking these steps keeps us covered for the extra time and expenditure we'll incur working on the change. Once the paperwork is out of the way, we can make the changes and get back to testing.

### Meeting at base camp

Look how far we've come! At our project review we discussed which milestones we've completed and which ones we've yet to reach. For the most part, Corporation X was happy with our progress, but toward the end of the meeting, they broached a subject that we thought had been put to rest.

### X marks the spot

The subject that Corporation X felt needed more discussing revolved around an incident that occurred earlier in our project time line. What had happened was that when our designers tested the new Oracle application independent of the Web site, it ran fine. However, when the custom Oracle application was installed on the Web site, even though it was correctly written, the application used the wrong ODBC drivers and this resulted in not only the wrong data being returned to the Web site user, but in the system's security being compromised as well. This upset Corporation X and rightly so. They were

concerned that this sort of problem would creep up again if we kept the site design as it was.

### Our coordinates line up properly

We told them that we'd solved the problem and their system was fine, but they still had concerns. Lucky for us, we'd kept good, detailed documentation of all the events and conditions that had come up on the project so far. One document, a test recommendation report signed-off on by Corporation X prior to the application installation, proved to the Corporation X team that we'd addressed the problem, just like we'd said. As you can imagine, without creating and maintaining the proper and accurate documentation, this type of dispute is very difficult to solve.

### Upon reaching the summit

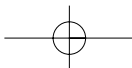
Let's presume that this project has evolved pretty much as planned and where it strayed, we made changes using the proper channels. Now, our astute project manager needs to prepare the final report, which he's actually been compiling since the Web site project began. How could he do this, you ask? Well he's found that in 90 percent of the projects he's either managed or evaluated for deployment to a customer, the outline for his final report could be extracted directly from the SOW. Sure, he knows that changes are inevitable, but the backbone of the report can be thus outlined. As such, with a little technical writing expertise applied, any project manager can be filling in the final report's draft form as the project itself evolves.

Working on the final report this way has two primary benefits for the project manager. Number one, it reduces the time needed to complete the final report; and number two, it helps compensate for any loss of brain cells due to overwork that may impair your ability to recall the details of each part of the final report.

Think of the *draft* final report as a book outline. It has major sections (which should directly map to SOW objectives), minor objectives (which should map to the project plan milestones), and supporting documents, like the test plan results, (which clearly show that the Web site passed acceptance testing).

### Packing up and heading out

Granted, this may only be the basic Web site and database connectivity, but it's completed and in operation. This is a major accomplishment, and should be well documented so that each group involved in the project knows when these milestones have been reached.



### It's only natural

Getting paid is nice; avoiding harmful and distasteful disagreements is useful; but there's a much more important reason for producing accurate and concise paperwork: so you can pick up where you left off when you come back to work for this customer in the future. And, if you've done a good job, it's only natural to assume you will.

Yes, indeed, we've all come in contact with the age-old problem of facing a new project at a former project site and saying to ourselves, "Now what did we mean when XYZ was done?" Talk about time-consuming. But now, if you were to start maintaining good, thorough paperwork on projects as you went, you'd find that you'd spend less time on guesswork and more time on actual project work. Sure, it's true, we know, setting traces and debugs would help get us up-to-speed if we didn't have all the necessary paperwork, but do we really have the time to do this?

### Back to the site: Plotting our new course with the help of earlier paperwork

Suppose Corporation X wants the Oracle database extended to allow third-party customers limited access to the same data, but in read-only mode? The problem is, the database tables were altered by the customer's own people since we last worked on the site, so our previous work isn't in the same format as it was before.

How can we get started on the short three-day project without spending five days getting reacquainted with the code? Our previous documen-

tation, both written and in the code, would be quite the lifesaver here. Why? Well, when we can come back to this same customer, spend next to no time in the organizational aspect of the new project, and turn out the same high quality project as before (thanks in part to our "notes"—our past project documentation) our customer will appreciate us more and will most likely invite us back for additional projects as well.

### Navigating and managing your project documentation

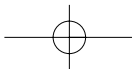
It used to be that project documentation was all kept together in a series of labeled binders that could be found in the project manager's office. Nowadays, though, binder-bound printouts are still a common enough sight, internal and private Web sites have become a more pervasive method of sharing and delivering project information between the parties involved. Flexible enough to be updated even from the most remote location, and easy enough for anyone to create, Web sites help coordinate and deliver documentation to everyone involved in the project in a timely and efficient manner. Whether you opt for the binder, the computer or even some amalgamation of both, the bottom line here is to be sure you have the documentation. If you do, you'll find that the project trail you're on is paved with more than good intentions; it's lined with ironclad, fact-backing gold. To access the sample documents included in this article, visit our FTP site at [ftp.elementkjournals.com/tpm/200108.zip](http://ftp.elementkjournals.com/tpm/200108.zip). \*

# Your project communications plan—far from a game

by Nancy Wickmark

**H**ave you ever played the whisper game? It's the one where one person starts a tale by whispering in another's ear; the listener then whispers to another, who whispers to another, and so on. Have you witnessed your carefully worded tale deteriorate before your ears as each well-intended link in the pass-it-on chain reiterates her rendition of the "facts?" Eventually

the resulting tale has little or no resemblance to the original. How about a good game of Pictionary™ where cryptic figures are frantically sprawled on a flip chart while others rush to grasp the meaning without a word being spoken? These communication games provide challenge and enjoyment in a social setting but when it comes to project management they're exactly the games we



strive to avoid! In this article, we'll show you how a good communications plan can keep you from feeling like you're playing the whisper game.

### In good company

Project communications have to be taken seriously and they need to be planned just as you plan the project's scope, approach, budgets and schedules. As in all of these areas of planning, the success of your project is heavily dependent on your ability to pull foresight and experience into your plan. You go to great lengths to make sure it's comprehensive and relevant to your project. However, the best budget, schedule and scope statement are inadequate if not appropriately communicated during execution. Because of this, communication plans need to go hand-in-hand with all of your other plans.

### First, you need to believe

Why plan for communications? We often blame a lack of resources, or *scope creep*, or unexpected events for missed project deliverables and over-run budgets. It's pretty safe to say that if you took a close look at the reasons (i.e., if you did some root cause analysis), you'd find that miscommunication at some point along the way sparked the problem. Just ask yourself: How many hours are spent correcting misconceptions, missed expectations, under-delivered functionality, rework or rekindling team morale? How many of these hours could have been avoided if communications were effective the first time around? Every hour spent on corrections or in a reactive mode pulls away hours earmarked for productive work. In addition, consider the erosion caused to management confidence and customer satisfaction. So, why plan for communications? *Because you can't afford not to.* In this age of Web development with short, aggressive schedules, heightened customer expectations and loosely coupled third-party rela-

tionships there's no room for rework or customer dissatisfaction.

### Then, you've got to be proactive

Preparing a sound communications plan is a proactive effort that ensures quality throughout the life of your project. By taking one step at a time you'll be able to sort through the complexities of your particular project, as suggested by Figure A, and fit all the pieces together to create a workable plan.

### Next, get to work

Coming up with a comprehensive communications plan doesn't have to be a big chore. To help you get started, we've come up with a five-step communications planning process that makes communication planning straightforward and provides you with a comprehensive plan when you're done.

#### Step 1: *Who* needs to be in the know?

**Define your stakeholders.** A good communications plan identifies all of the individuals that play a role during the orchestration of your project from start to finish. All of the names of the individuals involved in the project may not be known during the planning stage, but a placeholder should be included to indicate future involvement. You should try to keep your information simple and include qualifiers such as *relationship* (business, technical, end user, third-party, etc.), *organization(s)* (which ones are represented), *roles and responsibilities* (at a high level), and *contact information* (phone, fax, cell phone, email, mailing address) for each stakeholder. We suggest you store all of your stakeholder information in an easy-to-read table format created in an application such as Microsoft Excel.

#### Step 2: *What* do you need to share and *when*?

**Identify communication points (in content and time).** A typical shortcoming of most projects is that the scope of communications is limited to status reports and formal documents (requirements, design, test plans, schedules, etc.). These communication points are important, but expand your thinking to include less obvious project controllers such as acceptance criteria, project repositories, procedures, task work breakdowns, common terms, exception or problem reporting, and configuration management components. Once you've created a list of all the communication points, assign attributes to each point to give it definition. Some universal attributes are listed in Figure B,



Figure A: You can benefit from fitting all the pieces together to create a workable communications plan.



## Coming up...

- Recovering from project failure
- Better team communication via your Web site
- Keeping the lines of communication open with status meetings

identify those individuals who play a key role in decision-making and make sure that you're getting *their* attention too.

To do a good job of custom fitting communications to the message recipient, you need to do your homework. For starters, you can ask each of the key players what specific types of project information they'd like to be kept apprised of. You should also check with them to see how they'd like to receive the information (meetings, phone conferences, Web site updates, etc.) Next, marry all that they've told you to the resources you have at your disposal. In creating your overall communications plan, don't forget to take into consideration cultural differences, language barriers and time zone differences as well! These can be real "gotchas" if you haven't taken them into account from the beginning.

Knowing what's appropriate for your target audience will help you define your communications so that they're effective and efficient. The preparation and delivery of communications shouldn't be a drain on project resources. When deciding on the options you have for delivering your communications, be a little creative. Ingenuity may serve you well when it comes to preparing information for a varied audience. Consider using forms or templates that identify the areas that pertain to various stakeholders. Utilize the power of tools like the Tracking option in Microsoft Word or the book and tab feature of Microsoft Excel to help organize and present information. There are cautions with email, but it can make your communications tremendously efficient if used with some forethought. Use of the Web as a project bulletin board offers attractive global, around-the-clock access that might be just what you need to keep a busy executive in the loop.

### Step 4: *Where* should you communicate your message?

**Pull it all together.** Now that you have the *who*, *what*, *when* and *how* of your communications plan answered, you'll need to pull it all together and decide *where* to put it so that the people who need to access it can do so with little trouble.

We mentioned at the beginning of this article that the communications plan works hand-in-hand with the scope, approach, schedule and budget, so that's where it



Please include account number from label with any correspondence.

should be documented, right alongside of these other plans. Whether your project and communications plans are kept online at a project Web site or distributed as part of a mailing or handout, that's up to you. (If your communications plan is significant in size, at the very least, make reference to a separate communications plan document in your primary project plan document.) By including your communications plan with the overall project plan, your stakeholders will have a handy reference guide at their fingertips for knowing how, when, where and who to go to for project information updates.

### Step 5: *Welcome* stakeholder feedback and support

**Get buy-in.** Once you have your communications plan documented and distributed to your stakeholders, your last effort is to get buy-in. By approving the communications plan each stakeholder declares accountability for the success of the project. Without your stakeholders' understanding and acceptance of the strategy and approach you're taking with communications, you won't get the results you've so carefully planned. Present the plan as a draft and let them know that you welcome their feedback on its contents. Work out the final details together. Once you've agreed on the final communications plan, publish it as a living document and redistribute it to all of your stakeholders. You can then revisit your communications plan throughout the project, using it as a guide, to make sure you're still on target. Also, don't be afraid to make mid-course corrections to the plan as warranted. As long as you keep your stakeholders apprised of the changes and why you've made them, you'll be all set.

### So there you go!

Communication games are great; we love a good game of Balderdash™ or Cranium™ just as much as the next person, but when it comes to communicating vital information about a project to our stakeholders, we prefer to take a much different approach. Using the five-step process we've outlined above for putting together a successful project communications plan at the start of your project will save you time, frustration, and, who knows, it may also leave you enough time to fit in a game of Pictionary™ somewhere along the way! \*