

SAFE Project Handbook



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1 Introduction

Welcome to the SAFE™ Projects Handbook. This Handbook presents the information, tools and techniques necessary to create a winning project proposal and manage a successful project. What follows are Sybase Professional Services (SPS) Best Practices for managing projects in accordance with the SPS Quality Management System (QMS) and the SAFE Project framework.

1.1 Purpose

The SAFE Project Handbook was created to address the need for a set of guidelines and best practices to be used on SPS managed software development and solutions customization projects. In order for SPS to enjoy the benefits of standard ways of doing business, the time and cost savings of repeatable processes and solutions, and the rewards of continuous improvement, it is necessary to clearly define how SPS projects shall be managed. That is the purpose of this Handbook - to describe how to manage a SAFE Project.

1.2 Scope

To what areas of SPS consulting shall this Handbook apply? It shall apply to all SPS managed projects.

What is a project? For the purposes of this document, a project is as defined in QMS. **(See Appendix A for the QMS definition of a project.)** For projects, the Handbook describes the official, required means of managing an SPS project. Exceptions to this rule shall be noted in the project's approved Project Definition Document and/or Quality Plan.

However, the tools and techniques described in this Handbook have widespread applicability to non-project SPS engagements. In those cases, the use of the Handbook is strongly encouraged, but not required.

1.3 Distribution

The SAFE Project Handbook shall be widely available within Sybase, either in printed form, on-line, or as part of other media. There are no limits to its reproduction or use within Sybase.

1.4 References

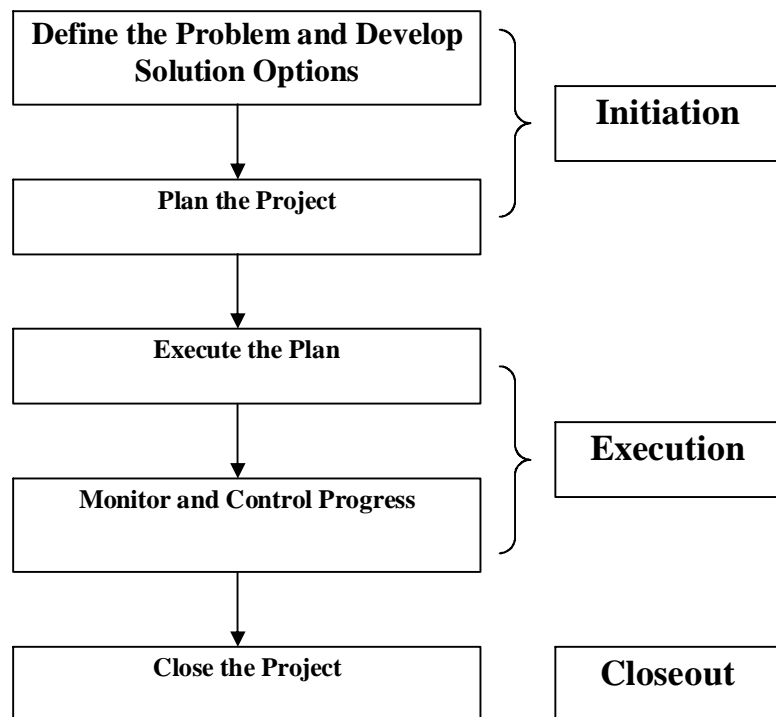
The SAFE Project Handbook derives much of its content from the following:

- The course, *SAFE/PM: Lessons Learned*
- SPS Quality Management System (QMS)
- The SAFE Family of frameworks
- The SPS WORD Kit
- The course, *Project Planning with SAFE/AD Workshop*
- ABT's Project Bridge Modeler and Project Workbench tools

2 The Project Life Cycle

Part of the definition of a project is that it has a beginning and an end. In fact, the most significant event in the life of a project is the final accomplishment of its objectives. Therefore, projects follow a life cycle. SAFE Project and QMS recognize three distinct phases within this life cycle: Initiation, Execution, and Completion. Within these phases there are certain steps to follow.¹

The Steps in Managing a Project.



¹ James P. Lewis, *Fundamentals of Project Management* (American Management Association, 1995), p. 7.

2.1 Project Initiation

Within each phase of a project life cycle is a miniature life cycle with a beginning and an end. Project Initiation begins with a project proposal of some sort be it verbal or written. Project Initiation ends after the completion of all of the start up tasks, including the formal acceptance of those documents that will be used to guide and govern the project. Many times, a Project Kickoff meeting signifies the end of Project Initiation and the beginning of Project Execution.

We will describe in greater detail the Project Initiation life cycle in Section 3.

2.2 Project Execution

Assuming that a proper Project Initiation has taken place, the Project Execution begins. It is important to the success of the project that all of the Project Initiation tasks and milestones are completed before the Project Execution phase begins. Project Execution literally means execution of, or according to, a plan.

A Project is a problem scheduled for solution. – J. M. Juran

Execution does not simply mean *work*. It means the planful execution of tasks toward a common goal. Therefore, when projects start working prior to the project plan being in place, the risks are obvious.

The Project Execution phase ends when the solution to the problem is delivered and meets the mutually agreed upon acceptance criteria. This is, by far, the most difficult challenge any project faces. In fact, it is so difficult – and yet so critical to the success of the project – that these final acceptance criteria must be defined and refined throughout the entire project life cycle.

Once the client accepts the final solution to the problem, the Project Execution phase ends. Then the Project Closeout phase begins.

The Project Execution life cycle will be described in greater detail in Section 4.

2.3 Project Closeout

The purposes for having a Project Closeout phase are to

- close out the financial aspects of the project,
- provide closure for the project team,
- transition the solution to the client's keeping,
- enhance the client's satisfaction with the outcome of the project,
- capture those lessons learned on the project that would help the client, the project team, and SPS to do an even better job next time.

The Project Closeout life cycle will be described in greater detail in Section 5.

3 How To Initiate a Project

3.1 Pre-Proposal

There are several activities that always precede the creation of a project proposal. These have to do with finding a potential client, identifying their problem(s), qualifying them, and so forth. These steps are all part of the normal “sales cycle.”

However, this is a time during which you must be very careful not to unintentionally set unrealistic and unrealizable expectations in the mind of your potential client. Care must be taken when “white-boarding” ideas, designs, and solutions. While it is necessary to talk about how you might satisfy the client’s needs and solve their problem, it is important to remember that, at this stage, you are not ready to offer a credible solution. Neither can you know with any confidence how long the project will take or how much it might cost. Those estimates have yet to be determined.

There are three primary ways you become aware of the need for a project proposal:

- The client issues a formal Request for Proposal (RFP) or Intent to Tender (ITT). This is the standard means of doing business in the Public Sector. Typically, an RFP is a very lengthy, detailed presentation of the problem, the background, and the constraints placed upon the solution. For example, an RFP typically spells out the client’s expectations about the overall cost of the project, their deadline for its completion, and the high-level requirements it must fulfill. An RFP can also stipulate the format the proposal must follow, mandatory meetings potential bidders must attend (called Bidder’s Conferences), and many other legal requirements that will be binding upon the RFP winner. The good news is that an RFP is usually for large dollar, long-term projects. An RFP will be responded to by many solutions providers and are, therefore, very competitive situations.
- The client asks you to give them a proposal. This solicitation is usually much less formal than an RFP. It may even be verbal. Typically, these types of solicitations have a much shorter turn-around time requirement. Meaning, the client may want your best plan and estimate in little more than a week! The key here, as with the RFP, is that the client knows what they want and are asking for specific help. This type of project is the easiest to win since you are requested by the client to present a proposal.
- There remains the case where you recognize a problem that the client has yet to fully appreciate. In this case, you might present an “unsolicited” proposal. In this type, you will not only have to propose a solution but you will also have to present the problem in such a way as to convince the client of their “pain.” While these are, perhaps, the most difficult to win, there is the advantage that we are often the only company bidding.

3.2 Proposal

Once you determine that you might wish to submit a proposal you are into the Proposal Phase. If you have done your homework properly during the Pre-Proposal Phase, then you can quickly move forward. If not, then you must take the necessary time to properly qualify the business.

Fortunately, you have the SAFE Proposal process and framework to guide your work. This framework lays out the tasks, milestones and approvals necessary to create and deliver a credible, fully authorized proposal.

The SAFE Proposal process will not be reiterated here, other than to say that the use of SAFE Proposal is required. When you properly employ the SAFE Proposal framework you are assured of a well conceived, adequately planned and estimated, fully reviewed and approved proposal. To present anything less to your prospective client does both them and Sybase a disservice.

The basic tenants of SAFE Proposal are:

- Proposals are created by a planned, properly resourced, disciplined approach.
- Creating a proposal is a small project. It has a deliverable, due by a certain date, of an acceptable quality, produced by a dedicated team.
- SPS Management, prior to submission to the client, must approve proposals.
- Go/No-Go decision points are necessary throughout the proposal process.
- Proposals must be profitable, technically feasible, solution oriented, achievable, and risk mitigating.

(See Appendix B the SAFE Proposal Process for a description.)

3.2.1 Estimating Project Cost and Schedule

On every project there are several key areas for concern. The more important of these are

- scope,
- cost,
- schedule,
- technology,
- quality, and
- teams and teamwork.

This handbook will address how to manage the scope, cost, schedule and quality concerns. It also touches a bit on managing teams. This handbook does not speak to technology concerns. For this you should seek assistance from Sybase's Certified SAFE Architects.

Yet, before discussing how to manage these concerns, you must first win the business. In order to do this, you need to produce a credible estimate of how much the project will cost, in terms of either effort or dollars, and how long it will take to complete. This estimate is included as part of the proposal sent to the client. Many times the client decides upon whom to award the business based upon the best price and schedule proposed. So it is important to keep the costs as low as possible while still providing quality service and products. The same is true of the schedule. The sooner the solution can be delivered to the client the better, provided it is still a quality solution.

This means that estimating project cost and schedule is of critical importance, not only for winning the business but also in being able to deliver it. Unfortunately, estimating project work is an inexact science. Recent statistics state that well over half of software development projects will overrun their budget and/or schedule. Nearly half of the world's large projects are never completed at all.

Estimating project work is so difficult for many reasons. Too few projects are able to make substantial use of reusable products. In the construction industry, a vast number of components are standardized to enable them to work together. Lumber comes in set lengths and dimensions. Nails likewise. Doors, windows, kitchen and bathroom fixtures, and on and on. Even when new products come to market, they adhere to common sizes and shapes so they can be easily integrated into a new home.

The same is obviously not true in software development and the computer industry. Components typically do not fit together easily and new components are no exception. Then too, clients are trying to solve much more complex problems than just building a house. Houses have been built for centuries in all styles, shapes, and sizes. By comparison, the computer industry is just getting started.

So, whereas clients might expect you to be able to accurately determine the cost and schedule for building a new n-tier, web-enabled billing system, the truth is you can not. Unfortunately, many times the client does not appreciate the difference. When he or she asks the local construction company how much it will cost to build an addition to their warehouse, the construction company has a very good idea of the answer. It has built warehouses before, using standard component parts, with labor pulled from a known source of experience and cost.

Is not building a new billing system the same as building a warehouse? Yes, but only at the most macro level. Ask the construction company to build the addition to the warehouse without the benefit of the standardized components in the construction industry. In this new addition, standard doors and windows will not fit. In fact, the technique used for building the warehouse is so new that the contractor must first send all his work teams off for two weeks of training. This, then, begins to approximate the difficulties of the typical software development project.

Estimating project cost and schedule is never easy. That is perhaps why the result is still called an *estimate* and not a guarantee. You should seek assistance from

Sybase's Certified SAFE Architects, Certified SAFE Project Managers, and other suitably qualified consultants.

3.2.2 Using SAFE Routes with ABT Corp. Project Management Tools

(A much more complete coverage of this topic is available in the Sybase University courses STP402 Project Planning with SAFE/AD and STP400 SAFE Information Technology Architecture.)

When planning any project, the best sources of reliable information are past experience and reusable components (i.e. a tried and true project plan). With these, you have both the benefits of the experiences of others who have done this before and the advantages of starting with a previously successful plan.

These are exactly the benefits and advantages that the SAFE Frameworks provide. Frameworks provide broad process guidance within a specific problem domain. Thus there are frameworks for SAFE Architecture, SAFE Development, SAFE Project, and SAFE Migration. Routes within the frameworks provide an additional level of specificity. They tackle particular types of problems within the larger domain. Subject Matter Experts (SME) develop a route by including appropriate framework tasks. Routes can also include tasks from multiple frameworks.

Each project type has an associated route. A few examples are a two-tier PowerBuilder project, a GAP Analysis project, and a SQL Server 4.9.2 to SQL Server 11 Migration project. There are others. Experienced project managers created each of these routes. They create each by calling upon their years of real-world project experience. These routes are not textbook ideas of how projects should be planned. They reflect the very best efforts of the people involved to capture the lessons and best practices they learned.

These routes provide you with much more than a list of tasks and deliverables. They also show you how tasks and milestones inter-relate. They provide guidance on how long each task might take, based upon the complexity of the task and the project. They even provide guidance on which role might best perform each task.

With all of this information to store and present, it is imperative that a project management tool be used. The tools of choice in SPS are ABT Corporation's Project Bridge Modeler and Project Workbench. With these two tools, you can quickly, easily, and credibly create a custom project plan. You start with Bridge Modeler where you identify the project, assess its complexity, level of risk, and other project-level information. You then proceed to creating your customized project plan by selecting whole or partial routes from the tool. In no time at all, you will have a project plan, with potentially hundreds of tasks, all based upon the experiences of other project management professionals. And since the routes are reusable, you reap the advantage of not having to start with an empty project plan.

From within the Bridge Modeler tool, you can run trial estimates of project cost. However, cost does not equal price. The reason is this. In Bridge Modeler, the

project tasks are assigned durations in hours but SPS prices projects on a daily rate. Thus, knowing what type of person (their role and hourly rate) is assigned to the task, the tool will quickly total a project cost estimate. One very important thing is still missing. You do not know how long the project will take, how many calendar days it will take. And this is how SPS determines the project's price. You must move your plan into the Project Workbench tool in order to determine the project schedule.

Therefore, the estimates that are created at this stage of your planning process should be used to assess the project's general feasibility. They can not be used to determine the true cost of the project, nor the price you wish to charge.

A proven approach is to triangulate in on your best project estimate. You should run both Top-Down project cost estimates and Bottom-Up project cost estimates. Then, use a third technique or tool. None of these estimates is a true reflection of the project costs or price, but they help in your planning effort. In order for your proposal to win, the client must find it credible, achievable, and affordable.

Bridge Modeler is a valuable tool, however, because it affords you the opportunity to make a quick determination of the overall feasibility of the client's request. Sometimes, the client's allotted budget simply is not enough. Using the Bridge Modeler you can easily conduct What-If analysis on your project plan. Perhaps you can find a way to reduce costs without significantly increasing risk. If done in the Bridge Modeler, you have the added assurance that your deliberations are at least based upon a sound project route.

Once the project plan is to your liking, it is time to move to the second tool, the Project Workbench tool. In this tool, you can further refine your project plan, but this time in light of the schedule in addition to cost.

The final project plan is produced from the Project Workbench tool.

3.2.3 Using SAFE Routes with the Duncan · Nevison Estimating Tool

(This tool contains a detailed set of user's instructions within it.)

This tool is simply another way of estimating a project's costs based upon a SAFE Route. While not nearly as customizable as the ABT tools are, the basic information necessary to derive a project cost estimate is provided. Again, just as with the Bridge Modeler, this tool can not determine the real cost or price since it does not factor in a schedule. It also does not produce a project plan, per se. It is possible, however, to copy the tasks and paste them into another project management tool.

The Duncan •Nevison Estimating Tool (named Estimating ToolV2.xls) can perform both the Top-Down and Bottom-Up estimates, the same as Bridge Modeler. The advantage of this tool over the Bridge Modeler (not the Project Workbench) is that it allows you to determine complexity on a task-level basis rather than at the project-level. This can, of course, also be accomplished in Project Workbench.

When might you wish to use this tool instead of the Bridge Modeler and Project Workbench? Rarely. You are provided much more detailed and reusable information in the SAFE Routes when using the ABT tool set. However, it is better to start with a SAFE Route than with no route at all. And it is better to use some credible automated estimating tool rather than no tool at all. Therefore, SPS is providing the SAFE Routes for use with the Duncan •Nevison Estimating Tool. The important thing is to utilize the SAFE Routes and recognized estimating tools. Remember the advantages of reuse. Do not try to create your own estimating spreadsheet.

3.2.4 What about using MS Project?

What if your client wishes you to use MS Project instead of ABT's tools? That is no problem. The Bridge Modeler supports transferring plans into MS Project, but MS Project can not do what Bridge Modeler can do. So, start with Bridge Modeler for creating your customized project plan. Do your planning and estimating analysis in Bridge Modeler. When your plan is ready, simply transfer the plan to MS Project rather than to Project Workbench. You will save hours and perhaps days by using a SAFE Route in MS Project rather than starting with nothing in MS Project.

3.2.5 Using the Project Management Estimating Tool

(A much more complete coverage of this topic is available in the Sybase University course STP402 Project Planning with SAFE/AD. The tool also contains a detailed set of user's instructions within it.)

It is important to accurately account for the time that the Project Manager and Project Administrator spend on the project. However, many of the project management tasks are continual rather than sequential. This makes it more difficult to include the on-going project management tasks in the Project Workbench project plan.

To assist with this, the Project Management Estimating tool was created. It is a Microsoft Excel spreadsheet. You use it as part of the project planning and estimating phase to ensure that you accurately account for the costs associated with on-going project management.

3.3 Contract Award

After your proposal is submitted, the client will typically convene an in-house review and selection committee. This body will review all of the proposals submitted and grade them in accordance with pre-established criteria, the details of which you may or may not be aware.

Assuming that your proposed solution is selected, and assuming that you properly employed SAFE Proposal, you should be ready to proceed with Project Startup.

Sometimes, however, the client will desire a modification to your submitted proposal. This is an acceptable situation so long as the entire proposal is subject to modification and not only certain portions. For example, the client may ask that another subsystem be incorporated into the final system. Before agreeing to consider their request you must make certain that the client understands the likely impact this will have on the project plan, schedule, and cost.

With this assurance, the project proposal team – the same people who worked on the original proposal – must evaluate the client's request and do a full review, perform a replan, redo the estimate, and go through the entire approval process again. To not do so does your client a disservice. They will trust you with their success.

You must do everything you can to warrant their trust.

3.4 Project Startup

After winning the business with a quality proposal, the Project Startup Phase is the second most critical phase of the project. It is during this short phase that the project management and control procedures will be defined and approved by all parties. The Project Startup is where the project gets off on the right foot.

How one conducts a Project Startup phase is clearly presented in the various SAFE Development routes, the SAFE Architecture routes, and the generic SAFE Project route.

The purpose of the Project Startup phase is to properly plan, define and decide exactly how the project will operate. There are various aspects to the operation of the project. Each project must deliver a solution, within a certain agreed to budget limit and by a specific agreed to deadline.

In order to achieve these goals, there must be a clear understanding of how the project will be managed and controlled, status and issues reported, change requests addressed, personnel and equipment utilized. None of this happens by chance. It takes time, technique, and expertise to do a credible job of laying out how a project will operate. Not only is the Project Startup phase time well spent, it is also not optional.

3.4.1 QMS Deliverables

The basic project deliverables from the Project Startup phase are:

- A legally binding and executed Contract and Project Approval Form.
- A Project Startup Checklist¹ that guides the project through the necessary startup activities and provides a means of ensuring all is completed.
- A Scheduling Checklist² that ensures a high quality project schedule.

¹ May be incorporated into the PQRAT in the near future.

² May be incorporated into the PQRAT in the near future.

- A Staffing Profile used to help determine the skills necessary on the project and the qualifications necessary for the project team.
- An Individual Assessment used to determine the skills and qualifications of individuals assigned to, or potentially assigned to, the project team.
- A Project Definition Document (and Quality Plan where separate documents are produced) that defines and declares the
 - scope of the project,
 - roles and responsibilities of the people on the project,
 - major deliverables, assumptions and constraints, and success factors,
 - tasks and milestones and resources,
 - management and control procedures for the project, and
 - project plan and schedule.

3.4.2 Team Building

Your project team is the heart and soul of the project. The Project Manager has no more important task than that of building an effective project team.

3.4.2.1 Project Kickoff Meeting

An important Project Startup event not to be overlooked is the Project Kickoff Meeting. This meeting has proved to be a valuable technique contributing to overall project success.

Usually held within the first week or two of the start of the project, this meeting serves to familiarize the project team with the project's mission, charter, challenges, constraints, operating and reporting procedures, standards, and project plan and schedule. It also is a fun social event useful for introducing people, their role, background, etc. It is a quick and effective means to energize the project team for success.

3.4.2.2 Team Building Activities

One suggestion is to take a full day to do nothing but team building activities. Consider hiring a consultant to teach your team about their personality types (ala Myers-Briggs.) When the team members understand how each person views the world differently they can work together more effectively.

Newly formed teams sometimes need help breaking the ice. When things get busy on the project, it is easy to forget that your teammates are people too. Have a team lunch and ask each person to answer the following questions:

- General demographics (marital status, children, location, how long with the company, previous employer, etc.)

- Where were you born?
- Tell us about your pet(s)? Name and Species.
- Your hobby(s)?
- The book(s) you are currently reading?
- Your favorite movie?
- Your favorite type of music or favorite musical group or favorite song?
- Career-wise, where do you want to be in 3 years?

Below are some other suggestions on how to forge an effective project team.¹

- Encourage team members to treat each other as if they were their clients.
- Get people to trust each other. Encourage honest feedback, hold candid team meetings, and share outside interests with each other.
- Encourage team members to share ideas.
- Allow for physical proximity among members.
- Get the team to spend time together. Consider events such as group breakfasts, lunches, and after-hours parties.
- Make frequent use of terms and phrases that support teamwork. Words like *team members* and *teammates*. Make frequent use of *us* and *we*. Downplay the words *they*, *you* and *me*.
- Emphasize the fact that yours is a winning team.
- Reward contributions to team goals.
- Emphasize group recognition. Make use of display walls and electronic bulletin boards. Have a team logo, hat, and T-shirt. Celebrate!
- Create opportunities for others. Delegate authority as much as possible, not as little. Share the limelight with the team, improve their exposure to senior management.
- As the project manager, engage in tasks performed by the team.
- Introduce humor with appropriate frequency.
- Encourage the use of in-group jargon.
- Use team incentives. Reward the team as well as the individual members.

¹ Andrew J. Dubrin, *10 Minute Guide to Leadership* (Macmillan Spectrum/Alpha Books, 1997), pp. 80-86.

4 How To Execute a Project Plan

A project is a journey. It has a starting point, a distance to travel, and a destination. It has a starting date and an ending date.

The analogy of a cross-country road trip will be used to try to explain the operation of a project during the Project Execution Phase. While this analogy is lacking in many respects, it serves as a unifying theme to facilitate your understanding of the project execution process.

4.1 Plan your Trip

This section is all about the vital importance of adequate planning.

4.1.1 You have a problem.

You are in Emeryville and you need to get to Burlington. You have to be there no later than 7 days from today, but this is the first you have heard of it.

- Your manager is requiring that you drive a company car from here to there.
- She has provided you with a small budget for yourself and your passengers to pay for gas, food, overnight lodging, and incidentals along the way.
- You are cautioned against breaking any traffic laws in the company car, since that would reflect badly on the company.
- The car is small and you have to take three other people along with you. None of them has a driver's license.
- It is March, the worst time of the year to try to drive over the Rocky Mountains and through the Midwestern states due to the frequent snows and cold temperatures.
- Your driver's license restricts you from driving at night due to a vision problem.
- The company car has well over 100,000 miles on it, no audio system, no snow tires, and the heater is questionable. An additional concern is the fact that the fuel gauge does not work.
- Your manager does not, yet, know exactly where you are to go when you arrive in Burlington. She will find this out during your trip and inform you.
- Lastly, your manager requires that you telephone her every day at 10:00 a.m. PST to give her an update on your progress. You have no cellular phone.

You need a plan.

4.1.2 The importance of the Project Plan

Assuming you have properly completed the Project Startup phase, you should have a detailed project plan. It should list the tasks, durations, dependencies, resources, milestones, calendar, and deliverables necessary in order for your project to progress in an orderly fashion toward delivery of the final solution.

A project plan might be called a roadmap. A good roadmap shows you where you are, where you are going, and the numerous optional routes for getting there. *You have something more than a roadmap.* You have taken a good roadmap, and based upon the skills and experiences of your team, you have created a specific “Route.” A Route is a roadmap with the *exact* roads for travel highlighted upon it. Now, rather than having numerous optional roads to choose from, you have chosen the opportune Route for your trip – your project.

Good project planning recognizes two important facts. First, that the best laid project plans seldom come off without a hitch. And second, no project ever succeeded without a detailed project plan. The point being that even though everyone knows the project plan will be “wrong” and in need of revision from time to time, it is still necessary to have one.

It is better to follow a less than perfect project plan than no plan at all.

4.1.3 What does it take to create a good project plan?

What does it take to make a good project plan? At least the following things:

- An understanding of the Problem.
- An idea of the Solution.
- An orderly means, a Method, of moving from the Problem to the Solution.
- This Method needs to be further broken down into discrete activities, tasks, and milestones.
- Tasks and milestones have relationships with each other, so these must be known. It makes no sense, for example, to stop for gas when the car’s gas tank is full.
- It takes people with the proper skills and training to accomplish these tasks.
- An assessment of potential risks must be performed and mitigating strategies put in place. What if the highway you are on is suddenly closed in a severe snowstorm?
- There needs to be a way to tell if you truly are moving from Problem to Solution. There need to be frequent, tangible signs of progress.
- And, it takes an assessment of the length of time it will require to accomplish each task.

- Or, put in project management terms, your project plan needs to solve a problem ... and a project plan consists of activities, tasks, durations, dependencies, milestones, deliverables, resources, and contingencies.

All of these make up a project plan. Fortunately, the SAFE Frameworks provide guidance, default information, practical methods and much more. Project Planning need not be viewed as an act of Creation where you must start with nothing and come up with a project plan. Rather, through the proper use of SAFE Architecture, SAFE Development, SAFE Migrations, and other SAFE frameworks you need only modify and enhance already existing project plans.

Fact is, people have driven from California to Massachusetts before you. The routes are known. Sure, every trip is different, but the similarities far outweigh any differences. Do not draw your own roadmap. Take an existing roadmap off the bookshelf and derive from it your most expedient Route.

Yet, even in the simple road trip example the challenge is not just in finding the best combination of roads to follow. There are numerous other supportive tasks that must be address. That is why it is so important to make project planning a team effort. Call upon the skills and experience of others. Get assistance and advice from as many knowledgeable people as you can. Share the burden of coming up with a credible project plan with others who understand the challenge.

The project is only as good as the people who plan it.

4.2 Get Everyone Involved

This section is all about the project's most valuable asset – People!

4.2.1 The Importance of Leadership

The project is managed and led by the Project Manager. Management is made up of planning, organizing, leading, and controlling. So, being a leader is part of the Project Manager's job, but only a part. The other aspects of the job are equally important to the successful operation and completion of the project.

What does it mean to be a leader? One definition¹ of a leader is a person who creates a sensible, shared vision (e.g. a solution to a problem) for others, and then directs them toward achieving that vision. The best leaders develop this vision only after receiving input from their partners.

Once there is this shared vision, created with the participation of the project team and other partners, the project team should then be called upon to assist in the planning and organizing of the project. Through this collaborative yet leader-directed effort, the project plan and organization are derived. You now have more than just a project plan and organization. You have a project plan and organization fully endorsed and enthusiastically supported by your project team.

¹ Andrew J. Dubrin, *10 Minute Guide to Leadership* (Macmillan Spectrum/Alpha Books, 1997), pp. 1-4.

There is no substitute for gaining personal buy-in from each project team member.

This is true leadership. To guide and direct individuals to work collectively toward a common goal. Leaders who lead through collaboration are more likely to enjoy the level of honesty, enthusiasm, and quality they desire. Leaders who lead through mandate and coercion are less likely to enjoy these qualities.

Every project team needs a leader. And every project needs a project manager. This should not be seen as autocratic or threatening, but rather as empowering and enabling. So long as the leader is solicitous of input from the team, the leader then becomes the team's spokesperson and guide, rather than its dictator.

Projects need good Project Managers.

4.2.2 The Importance of Teamwork

A project is a unique creation. A project is the deliberate, voluntary collaboration of many individuals toward a shared goal in which few have any personal stake. This means that people work on projects to solve problems they otherwise might not care about in the least.

This is different from herd or mob behavior. In the one, blind instinct is at work. In the other, the collective goal is also one of intense personal interest. Projects are, therefore, unique. Building a new billing system for a utility company is hardly something the project team members feel strongly about one way or the other. If they were not on the project, they might not give it a second thought.

However, by consciously and voluntarily collaborating on the project, they make the project possible and the solution achievable.

The importance of teamwork, therefore, can not be overstated. The typical project will have several teams of people all working on different aspects of the project solution. These teams must work together. The team leaders must work together. They must all work together with the Project Manager.

Projects need good Project Teams.

4.2.3 The Importance of Peer Review

The project is only as good as the people who plan it. It is best, therefore, to have numerous knowledgeable people involved in the planning process. This planning process, however, is never done. The project plan continually needs refinement and adjustment. So, it is also true that the project is only as good as the people who *replan* it.

Project peer reviews are a project management technique with widespread acceptance due to its ability to improve project quality and performance. People knowledgeable and experienced in projects and project management conduct a project peer review (hereafter referred to by its QMS name – Project Quality Review). These reviewers offer the project a new perspective, a fresh point of view. Project members can get too close to the issues and challenges faced by a

project. They lose their objectivity, their view of the larger picture. A Project Quality Review team benefits the project by helping the project team see things in a different light, from a different perspective.

4.2.3.1 The Importance of the Project Quality Review

The Project Quality Review (PQR) is so important to the overall success of the project that it is mandatory on all projects. Some of the reasons why a PQR is so important are:

- Provides a new perspective and enlightened subjectivity on the project.
- Provides SPS senior management visibility into the project.
- Audits the project for conformance with SPS standards and procedures.
- Enhances the prospects for the project's success by bringing in additional resources to address issues and challenges.
- Facilitates mentoring of the Project Manager by persons on the review team who might have more experience.
- Demonstrates to the client SPS' corporate support and backing of the project.
- Partners the Project Manager with the review team to better address issues that are applicable to other SPS projects.
- Enables the sharing between projects of their lessons learned and best practices.

4.2.3.2 The Project Quality Review Process

Typically, a PQR is conducted quarterly throughout the life of the project. Since a PQR is a regularly occurring task, each one should be part of the project plan. In QMS, there is a checklist used for guiding the PQR and a template for the final report.

There are two types of PQRs, call them Internal and External. Experienced Project Managers from the local practice conduct an Internal PQR. As long as the reviewers are knowledgeable about projects and project management, are experienced at both, and are not directly assigned to the project, they are qualified to conduct a PQR. Using the standard checklist and template, the Internal PQR can be accomplished in a day or two.

An External PQR is one conducted by Certified SAFE Project Managers under the auspices of the SPS Project Management Office. Only those projects that are at higher risk are scheduled for an External PQR. The review team will use the very same checklist and report template, but the scope of the PQR often focuses on a few particularly worrisome problem areas. An External PQR usually takes two to three days to complete because the project being reviewed is larger and more complex, and because the review team will be delving more deeply into the project. **(See Section C for a description of the PQR Process.)**

4.2.4 We only get there together!

Given that a project needs a good project manager, a good project team, and good PQR teams, the only way in which a project can be successful is to have them all.

A good Project Manager needs his or her Project Teams in order to ensure quality products are delivered according to the plan. Likewise, the Project Team needs a good Team Leader in order to stay on target, focused on the immediate task. All the Project Teams need the Project Manager in order to stay within scope, adequately funded, controlled, and managed. The Project Manager needs the PQR teams in order to maintain perspective and provide the benefit of other's experience to the project.

Projects only work because of their team structure. Why? Because the project becomes more than the sum of its parts (teams). It benefits from the sharing of a common goal and approach.

Project Teams all arrive together or they do not arrive at all.

4.3 Follow your Plan

This section is all about the vital importance of following your project plan.

4.3.1 Why Project Plans Fail

The second obvious part of the Project Execution process is to follow your project plan. It does no good to spend a great deal of time creating the right Route and then not use it.

However, this is too often the case. There are several potential reasons why this occurs.

- *The project plan is at too high a level.* It needs more detail to be truly effective in guiding the course of the project. A Route that only lists the names of cities on it but not the roadways between the cities, or the distances involved, is of little practical use.
- *The project plan is too detailed to understand and maintain.* The project plan is so detailed that it becomes too complex to understand and follow. It also takes an inordinate amount of time to maintain it. In short order, the project plan will be more trouble than it is worth. A Route that lists every cross-street, stop sign, gas station, and restaurant would be too large and difficult to use. The Route for the trip would be lost in the details. It takes experience to know the proper level of detail necessary to adequately guide while not hindering progress.
- *The original project plan was seriously flawed, but to correct it would be embarrassing, difficult, unpopular, or all three.* However, to not correct it is hardly the solution either. What is worse than no plan at all? Having a plan that can not or should not be follow. The Route that fails to list the proper highways and street names can not possibly guide you to your desired

destination. It is best to pull the car over and come up with a workable Route; otherwise, you may be driving miles out of your way, completely unaware.

- *The project team or the client does not wish to follow the project plan.* They find it too confining and limiting. They would prefer to work more informally, with less structure and more freedom. This is analogous to wanting to enjoy the cross-country trip more, at the expense of ever arriving at your destination. Projects should be fun to work on, but they exist to solve a problem within certain boundaries of time and cost. Just as on your cross-country trip, you only have so much money allocated for gas, food and lodging, and you have a limited time in which to reach your destination.

4.3.2 Why Project Plans Succeed

Project management is an inexact science. The project plan is prone to revision because of mistakes, oversights, newfound efficiencies, and a host of other factors. This does not mean it is of little value. It is, in fact, a testament to the efficacy of the project plan that it needs to be maintained. It proves that the project team knows where it wants to go and knows where it is at any point in time. It proves that the project team recognizes when they need a course correction.

Just because your Route could not warn you of the detours ahead, does not mean it is not necessary for your trip. Just realize that a Route is merely an intention toward a goal. Follow the Route where it makes sense to and modify it when the need arises. Detours happen. The benefit of having a plan is in knowing how best to navigate the detour in order to stay on track toward your destination.

Knowing and accounting for the fact that your project plan will change over time is a sign of a well-run project.

A project is only as good as its project plan.

4.4 Mark your Trail

This section is all about the importance of the Requirements Traceability Matrix (RTM). Keeping track of how your daily actions work to satisfy your project requirements is a very easy thing to do on your cross-country road trip. It is difficult to accomplish on a project of any size. However, the more difficult it may be to accomplish only proves how greatly it is needed. A well-maintained RTM is the life's blood of a project.

4.4.1 The Requirements Traceability Matrix

Just what is a Requirements Traceability Matrix (RTM)? The simplest way to define it is to describe it in use.

An RTM is a mapping between project deliverables such as documents, designs, specifications, source code, test procedures, and test reports. The RTM grows in size and complexity as the project grows in size and complexity. The RTM starts with the Business Requirements document, or equivalent. This document lays out the problem to be solved. It discusses the problem in terms the client uses and understands. This is the first echelon or first level of the RTM.

The second level of the RTM is the next deliverable produced in the project life cycle that either further decomposes the Business Requirements or begins to design a solution for them. Sometimes this is called the System Requirements document, but different methodologies take different steps and use different names. That is why the RTM uses the term Levels. Levels are related to one another. Each new level further defines, refines, implements, or validates the previous level.

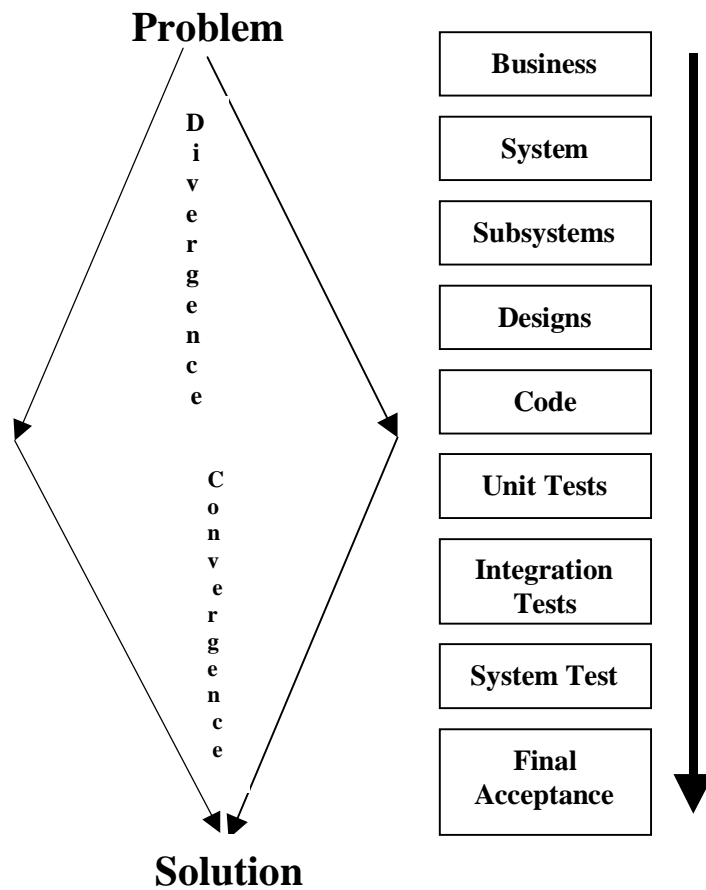
The third level, whatever this deliverable is called, further defines, refines, implements, or validates the System Requirements deliverable. And so on.

Therefore, an RTM is a mapping between the deliverables of the project. *What* each deliverable is and *How* it is produced is captured in the project plan. The RTM maps the relationships between each deliverable. You might think of the RTM as specifying *Why* each deliverable is being produced, in the context of the overall project solution.

4.4.2 Using the RTM Front to Back

It is a characteristic of most software development methodologies to do what is called Divergence, followed by Convergence. Divergence occurs when you take a list of macro Business Requirements and decompose, or diverge, these down to the very smallest software routine, table/column, index, etc. Convergence then begins when you test these software products in unit tests, integration tests, system tests, and stress tests. Ultimately, these tests converge into a final test report that talks specifically about how the software delivered solves the problem stated in the Business Requirements document. This, then, ties the project together, end to end. The solution to the client's problem is presented in terms they use and understand.

Requirements Traceability Matrix Front to Back



4.4.3 Using the RTM Back to Front

One of the uses of an RTM is in determining and assuring that your project is doing all it must do, and only what is must do. This is accomplished by having the ability to audit the matrix.

For example, suppose your Business Requirements document lists 200 specific requirements. The RTM is invaluable as you develop the second level document, the System Requirements. With it you can ensure that all the Business

Requirements are being addressed in the System Requirements document. Imagine the trouble later if you miss a critical requirement at this stage of the project.

Taking the example a few steps further, there will someday be a host of software objects created. The RTM helps you ensure that each of them addresses a legitimate requirement and implements a legitimate design specification. It can also help you determine if programmers are working on things that are not required on the project. This happens more often than you might think.

4.4.4 Using the RTM Every Which Way

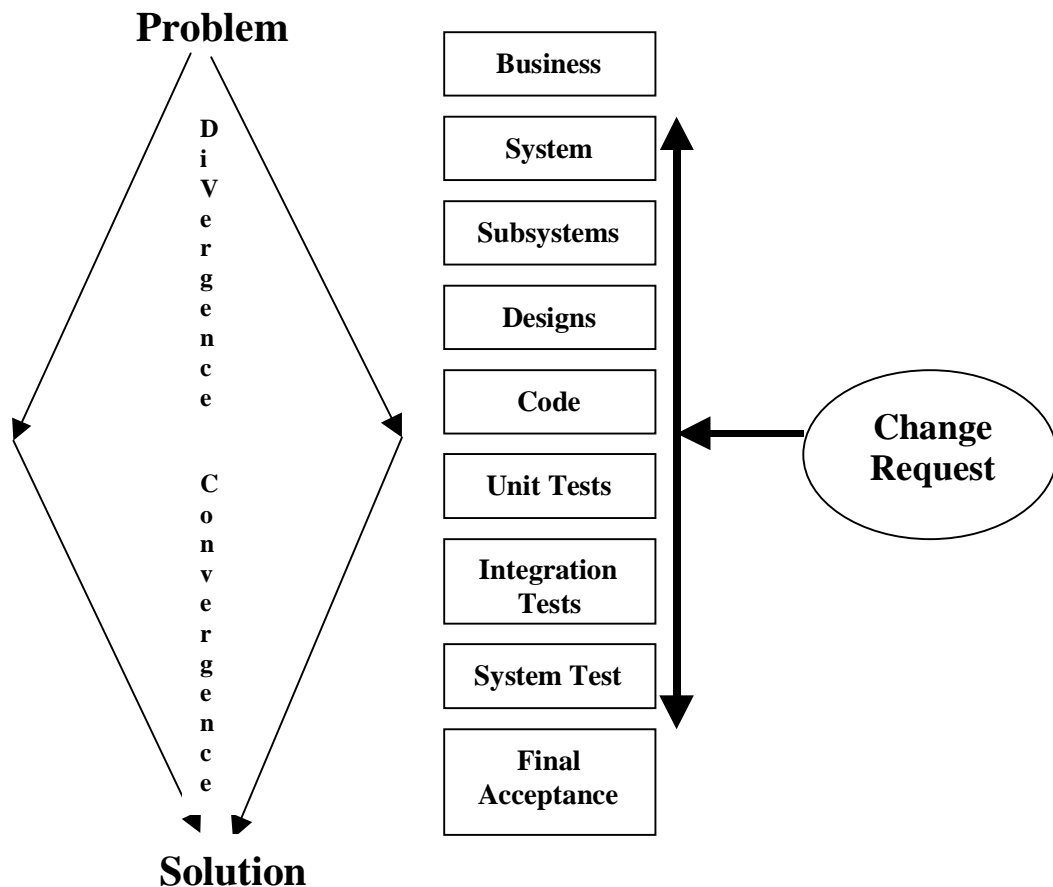
Another, not so obvious, benefit of the RTM occurs when there is a Change Request. A critically important activity in the change control process is the assessment and evaluation of the impact a Change Request will have on the project. (See Section 4.8.1.1 The Change Control Process.)

For example, suppose you are in the final testing phase of your project and everyone agrees that a particular piece of the solution is not working adequately. Response time is too slow, or the process flow is too cumbersome for the users. So, a Change Request is created and goes before the Change Control Board.

How might you go about fully assessing the impact of this necessary change? How could you get a clear picture of all of the deliverables that might need to be modified to incorporate this change?

Answer – the RTM. The RTM, when properly employed, will clearly show the mapping between the software objects that need to be changed. Not only that, it will also identify the test procedures, design specifications, and perhaps even the original Business Requirements that also might need to be changed. Certainly each must be evaluated as to how the Change Request will impact them.

Requirements Traceability Matrix Every Which Way



4.4.5 The RTM – Your Only Way Out!

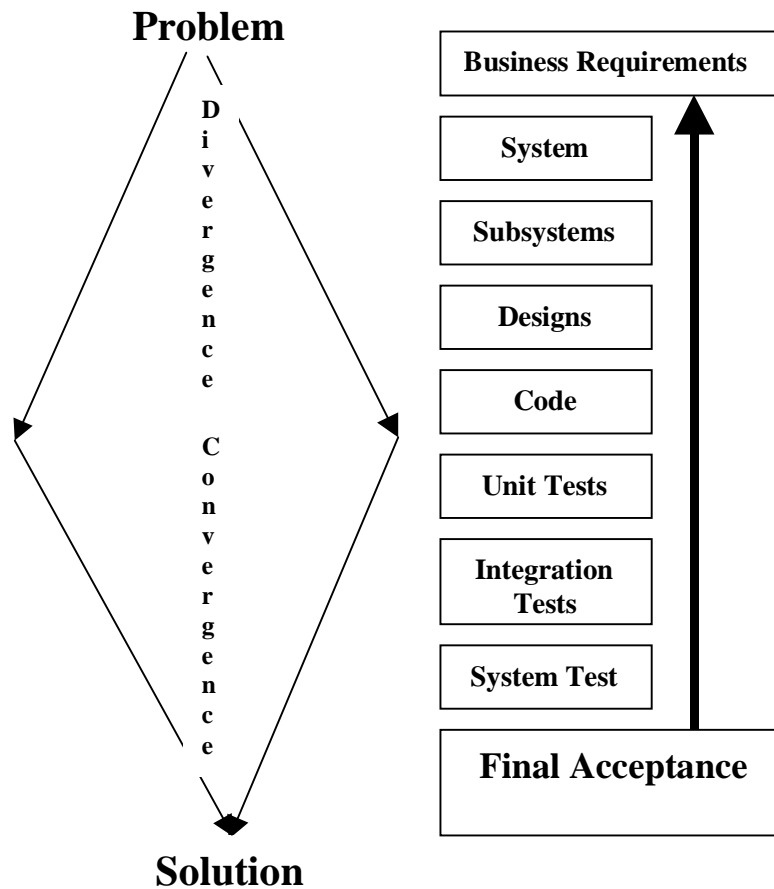
Every project must be able to recognize and demonstrate the achieving of its destination.

- Without an RTM, the project is challenged to demonstrate this achievement accurately and adequately.

- Without an RTM, the client is hindered in being able to recognize that, indeed, the project has accomplished its mission.
- Without an RTM, the success of the project is left open to conjecture, personal opinion, and how the client feels about or perceives the solution.

With an RTM, success is based upon tangible evidence.

Requirements Traceability Matrix Your Only Way Out



4.5 Focus on your Destination

This section is all about the purpose behind every project – reaching the project’s destination.

4.5.1 The Team is not the Destination

Projects run a terrible risk. They run the risk of becoming an organizational unit rather than a temporary team brought together to solve a specific problem. This happens many times, particularly when the team members like working together or like the type of work they do on the project. They might not wish for the project to end.

Be that as it may, a project team is a means to a destination, not *the* destination. No one ever created a project to deliver itself. Projects exist to solve a problem. The solution to the problem is the destination. The project, while vital to achieving the solution, is not the solution.

This is not to say that a project team might not stay together to work on other problems. Certainly, there are good reasons for doing this. The fact remains, however, that each instance of the project needs to solve a problem, not just be a convenient means for keeping a group of people together.

So, the project is not the Destination. Yet, what you focus on tends to be what is accomplished. If you focus too much on the team and their needs, likes, dislikes, etc. then that will be your chief deliverable – a well-functioning team – rather than a solution to a problem.

Focus on the Destination. Focus on solving the problem. Get everyone focused on the same outcome. Then, not only can the project be successful but the project team can have fun doing it.

4.5.2 The Plan is not the Destination

It can happen, and all too often does, that the project plan becomes “sacred.” Sacred in the sense that any departure from it, for whatever reason, is viewed as a failure of the project. Somehow or other, the parties involved forget that the project plan is merely a plan, an estimate of what tasks will need to be accomplished on the project, in what order, for what duration, etc. It is never anything more than the best plan at any given time. It can not be guaranteed. It is prone to refinement. In fact, you should be suspicious of the project plan that never needs changing, improving, or refining; not the other way around. It is likely such a plan is at so high a level of extraction that it is useless for guiding and measuring progress.

On the other hand, the project that needs to be modified in some fashion every month or so is probably doing its job well. It is sufficiently detailed to guide and measure the work on a weekly basis, and because of this, is prone to refinement based upon actual project team experience.

When the project plan becomes so important that you are ignoring project realities born of project experience, then the entire project is at dire risk of implosion and failure.

Instead of focusing on the plan, focus on the project's destination. What is the problem to be solved? What is the project's solution? Is the project making real progress toward implementing this solution? Does the project plan effectively guide and direct the project team toward this solution? Does the project plan accurately reflect the reality of the current project situation? Can the project plan be improved based upon new information?

These are the questions to be asking. To do otherwise is deliberate mismanagement of the project. There can be no excuse. To have a project plan and hide or ignore the fact that refinements are necessary, in some misguided hope to make the project "look good," violates SYBASICS, professional etiquette, the QMS, and sound judgement.

4.5.3 The Methodology is not the Destination

Seeing as projects, as discussed here, are for developing technological solutions to a business problem, there is the need for a structured method of work. These software development methodologies have proliferated in recent decades to help project teams better organize their work, use consistent concepts and terminology, standardized deliverables, and enable repeatable techniques.

However, as beneficial these software development methodologies have been in promoting project success, a few negative practices have sprung up.

- One has to do with the unfounded belief that the secret to the project's success is strict adherence to a methodology. Some believe that if the methodology is followed religiously, the appropriate solution must materialize at the other end. Of course, this is untrue. Nevertheless, the practice continues. Many organizations have "standardized" on a particular methodology, trained all their people in its use, purchased all the supporting automation, and mandated its use on all projects. Yet, there is still no one-size-fits-all methodology on the market. It is far better to espouse a particular methodology on a project until such time as you have practical evidence that it is not appropriate for the task at hand. Then, an informed decision can be made to modify or change the methodology used. To force-fit the methodology to the project adds unnecessary risk.
- The second negative practice is the tendency for Project Managers and project teams to use the methodology they know best – not the best methodology for the problem at hand. If the project team is more familiar with Information Engineering (IE) than with Rapid Application Development (RAD), their comfort zone is with IE, not RAD.
- A third negative practice is embracing a new methodology that promises to make system development faster and cheaper. The problem here is in the methodology being new. If it is new to the project team, their use of it will be

slow and inexperienced early on, thus negating much of the hoped for efficiency. Also, the newer the methodology the less real world exposure it has enjoyed. How many referable accounts are there where the methodology was effective at helping solve your project's particular problem?

Because of these reasons, and others, the selection of a methodology for use on your project is of vital importance. Make every effort to choose a mature methodology, one that is appropriate to your project situation, and one with which the project team is already experienced or has been allotted time in the project schedule to become experienced.

Methodologies are often sold as sort of Black Box tools. Just enter the answers to a bunch of questions, turn a crank, and the only right answer will come out the other end. This is ridiculous. Projects require intense study, planning, forethought, experience and expertise ... things no software tool or methodology can provide.

Methodologies are excellent for guiding the work on a project, standardizing processes, technique and deliverables, and for providing excellent tool support. Use them appropriately and effectively on your project to achieve your goal. They are not a replacement for hard work and intelligence.

4.5.4 The Project is not the Destination

In the consulting business, where billability is so important to the fiscal health of the corporation, there can be the tendency to want to prolong the project rather than reach its destination. More often, this desire takes the form of welcoming and even encouraging scope-enhancing requests from the client. Provided these enhancements are adequately evaluated and estimated, and provided the client is willing to add to the project's cost and/or schedule, this can be good business.

However, a caution is necessary at this point. Ask yourself the question, "Will this enhancement serve to solve my client's original problem better or simply serve to enhance the district's utilization or margin/contribution?" Many times the additional work does not materially bear on the original problem. So, why delay the original solution?

Here is the paradox. The client always wants more, but sometimes does not understand, or wish to accept, the tradeoffs. For example, your manager suddenly decides that she wants you to stop by every Sybase office along the way and ask the practice manager for their top three suggestions for improving profitability. This is a legitimate need and your efforts could help solve a nagging problem. It is just that the original problem is far more important than the other.

Someone must apprise the client (your manager in this case) of this situation. That to add in the suggestions gathering as part of the current project will mean a delay in the team arriving in Burlington. Someone needs to offer them alternatives. Make them an offer to gather these suggestions from the field as a separate project, so as not to jeopardize or slow down the current project. This

demonstrates the truth of the situation. You want their business but not at the expense of their success.

Who should be doing this appraising and offering? Typically and ideally, the Project and Practice Managers have these conversations with the client. However, the temptation exists to simply expand the current contract, the current project. This is focusing on the project and its longevity rather than the destination. It places the entire project in peril by compounding the project's complexity as well as confusing and de-focusing the project team.

It is far better to keep the project on track, aggressively moving toward its goal. Remember that the client originally wanted and needed the solution you are currently working on. Unless their strategy has changed significantly, they still need that solution. Now, they are so pleased with the quality of your work that they wish to give you more of it. Great! Just do not jeopardize the current project at the expense of the new one.

Besides, each project has its own life cycle to go through. It does a disservice to the project team and the client to short-change the process. Do not try to add another project to your project. You have a full life cycle of activities to accomplish. Far too many times, projects are victims of the easy fix. It is easier to just "assume" the new project under the old contract, project plan, etc. No one wants to do all that paperwork anyway. Hopefully, you have seen from this Handbook that there is no such thing as worthless paperwork when it comes to projects. Since this is true, the next statement is all the more powerful.

Failure to follow SAFE and QMS constitutes gross mismanagement.

Bottom line: never refuse a client's request to give you more work. Just make sure you take the time and effort necessary to do a credible job. In this example, that would mean the gathering of suggestions from the field about how to improve profitability would be its own project. That is not to say that many from the current project team would not help estimate and plan it, and even to work on it as the current project entered into the Completion phase. You just decide to stay focused on the destination.

4.5.5 It's the Destination, Stupid!

Why are you here? Why does the project exist? If not for *what*, would the project team members all be somewhere else doing something else?

The only legitimate reason for the existence of a project is that the final solution to the targeted problem has not yet been delivered. Any number of different people, teams, or companies could have been assigned to the problem. There are numerous project plans that would work as well as various methodologies and technologies that would provide a credible solution to the problem.

Why does the project you are working on exist? Your proposed SOLUTION was the most agreeable with the client. They hired you and your team to solve their problem. You studied the best approach, planned the best development process, and then convinced the client of its efficacy. The client feels most comfortable

with you and your team, the most comfortable that you will truly be able to solve the problem.

The problem ... the destination. Focus on it. Use your very best skills, techniques, tools, methodologies, talents, and experience to solve your client's problem. Focus on the destination and make sure your daily actions all serve to achieve that common goal.

4.6 Drive!

This section is all about the “real work” on a project – designing and building technology solutions to business problems.

Many projects believe this is the only legitimate work on a project. Nothing could be farther from the truth. Coding and testing are vital parts of the project, but not the only parts, and not even the only vital parts. Yet, without these parts, the client will never see the solution to their problem. Too often, the client values this “real work” more than the rest. They fail to see, and sometimes you might too, that without the other parts – the planning, managing, leading, and controlling – the solution would never be completed with the requisite quality, on time, and within budget.

However, projects exist to build something, to solve a real world problem. That is the destination. Drive toward it!

4.6.1 Execute the Plan

You have a project plan. It is detailed enough so that every project team member knows what task they will be performing at least several weeks ahead of time. The plan is granular enough that no tasks have an assigned duration of longer than one-person week. The plan is detailed enough that every project team member can report his or her time expended and time remaining on a task. All tasks support a deliverable. All deliverables have quality control (review and approval) steps surrounding them. All deliverables have due dates and milestone events established.

Where required, specific guidance is provided the project teams on naming conventions, coding standards, documentation standards, and the like.

All project team members are adequately trained for their assigned tasks, and have team leaders overseeing their activities.

All project team members are aware of the total project objective, schedule, major deliverables, and milestone dates. They are also aware of how their assignments fit into the big picture.

All that is left to do, then, is WORK!

There comes a time on a project when the Project Manager must sort of “sit back” and let others lead. The majority of a Project Manager's time on a project is spent up front during the Project Initiation phase where the project plan, standards

documents, project definition document, and the like are created. Once these are in place, it is up to the project teams to do their part.

The principle activity for the Project Manager at this phase of the project is to be on-guard, manage the processes, and monitor progress. The Project Manager, more than anyone else, must constantly focus on the destination and make adjustments in order to stay on target.

4.6.2 Validate the Plan

As the project teams work against the project plan, it will quickly become evident that some of your planning assumptions were too optimistic while others were too pessimistic. You originally thought the creation of the business requirements document would take at least six weeks. Now it is clear that only four weeks will be required. However, the proof of concept is taking far longer than expected to complete. The team feels that the concept is sound. They are just having trouble getting parts from the vendors.

All of these activities are working to validate the project plan. Remember that the project plan was just the best estimate at the time. Now, with the passing of time, you have better information and can make better estimates. You are also completing activities. Now you can see whether the quality control and change control procedures you instituted in the project definition document will truly be effective or not.

Do not be concerned at the amount of change the project plan must undergo. Do be concerned if the magnitude of the change jeopardizes the project cost and/or schedule. Some correction is normal. Too many corrections, however, are disastrous. Assume that your original estimate was for a 12-month project. Three months into the project you realize that a major assumption is proving invalid. This situation will extend the end date of the project another four months. What to do?

4.6.3 Adjust the Plan

Many Project Managers find this the most difficult part of their job. When they have to go to the client and ask for an extension to the project schedule, or ask for more money. They seem to view this as a personal failing, as if the project schedule and budget estimates were ever anything more than an estimate. To be sure, it was an estimate based upon the best information and experience SPS could bring to the proposal, but it was never more than an estimate. (The exception is the Firm, Fixed Price project where SPS accepts the risk for the estimates being grossly wrong. Yet, even in this case, the following applies.)

The well-written project proposal will have specified in considerable detail the assumptions and constraints upon which the project estimates were based. When one of these assumptions or constraints proves to be in error, the project estimates have legal grounds for adjustment.

This is all just part of normal project management. No one can see into the future. The client, in reviewing the proposal, is aware of the assumptions and constraints upon which the project estimate was based. When these change, other things need to change. The reasonable client understands this and will work with the Project Manager to do whatever is necessary to remain focused on the destination.

The less-than-reasonable client is harder to negotiate with, but projects are governed by contracts for this very reason. If the severity of the revised project estimate is too great for parties to agree to, the contract can be terminated in an equitable fashion. Software development projects are prone to significant budget and schedule overruns. This is principally due to the inexact nature of problem identification, business requirement management, and effective solution development. Suffice it to say that the very best Project Managers using the very best tools and methods, with experienced designers and programmers, have all “failed” at this at one time or another ... or will eventually.

You can avoid or minimize the situation through careful, collaborative planning and attention to detail.

Denial is the real enemy. If the Project or Practice Managers choose to deny there is a problem, then there is a worse problem. If the client chooses to ignore the problem, then there is an even worse problem. And do not give in to “Hope or Luck.”

Hoping things will work themselves out is project management malpractice.

Adjusting the plan can be difficult. There are many pressures working on the project team at once. There is the pressure to “stay busy” even though there is a need to rethink the entire project plan. There is a pressure to “do it anyway” to keep the client happy. There is a pressure to “do more for less,” when clearly there is a project-wide matter to be resolved not just an SPS problem. And, there is a pressure to hurry to a solution.

A key thing to remember at this point is the old saying, “Measure Twice, Cut Once.” If you are going to have to perform a major adjustment to the project plan, then take the necessary time and effort to do it right. What you do not want to have happen is that another two months down the life cycle you have to adjust again for the very same reasons.

So long as all parties deal with each other with honesty and frankness, almost any such situation can be overcome.

4.6.4 Keep Moving!

While some might find it hard to believe that adjusting the schedule is “real work”, in fact it is. Without a credible project plan to work from, the project will quickly lose direction and fail. It is not enough to just stay busy churning out documents or code. There has to be a sense that the work being performed actually moves the project towards its destination. If it does not, then what was the purpose? Hopefully, not just to keep people billable or busy. **J**

Nonetheless, continuing to make progress is paramount. There will almost always be certain teams or team members whose tasks are little or little enough effected by the adjustment activity. Also, if you take this time to engage the project teams in the rescheduling of the project, you will reap the benefit of their collective experience on the project to date as well as gain their collective support for the new project plan. This is all good news.

You will find that when all is said and done, the adjustment activity actually helped some people to better understand their tasks and provide you with better estimates for them. The team will also be more integrated and harmonious, having faced a crisis together. It is simply the way teams work.

So, while it is never something a Project Manager wishes upon his or her project, the fact that a major adjustment must be undertaken can have its bright side. It is a major obstacle, but it need not mean the end of the project. Deal with the situation quickly, honestly, openly, and positively. If all parties do the same, the benefits will far outweigh the deficits.

4.7 Track your Progress

This section is all about tracking and reporting project status.

What is the use of tracking your progress if you never use the information? How might you use the information? You might use it to:

- Justify the shortening of the project schedule, thus earning the project dollars in less time, increasing profitability, and demonstrating the team's integrity.
- Free up resources to work on other billable activities.
- Get for your team the acknowledgement and accolades they deserve.
- Justify an increase in the budget or an elongation of the schedule.
- Justify the assignment or continued assignment of critical resources to your project.
- Report and affix responsibility for delays and overruns.
- Convince your management you are doing your job in a credible fashion.
- Document the state of the project on a regular basis.

So, it is important to not only track your project's progress, but to also share this information with other interested parties. This is typically done with a regular Project Status Report, and sometimes followed up with a Project Status Meeting.

The purpose of the Project Status Report is to provide sufficient detail about the past, present and future states of the project so an intelligent judgement can be made about the over state of the project, its accomplishments, challenges, and chances for success.

This is accomplished by filling in the various sections of the Project Status Report template. When appropriately employed, this report will clearly and concisely

document the project's progress. It also provides an auditable record of the project's history, decisions, and directions. It is an invaluable tool on any project and therefore is not optional.

4.7.1 What data should you track?

As much as possible, you need to establish measurable parameters on a project. A project plan is one such measurable parameter. The plan tells you what you should be doing on a given day. Then, you can tell whether you are ahead of schedule, behind schedule, or on schedule.

Unfortunately, the project plan is really too large and detailed to provide meaningful information to upper management. They need a more concise view. That is why the project plan is laced with deliverables, milestones, and durations (effort). These three aspects of a project plan are discrete enough, yet broad enough, to provide an accurate and complete assessment of the project's status.

4.7.1.1 Deliverables and Milestones

Project deliverables are those tangible products for which the client contracted with you in the first place. Every project will have a list of what deliverables are required on the project. Additionally, each deliverable will have an accompanying due date, established by the project plan. It is a relatively simple matter to report progress toward the production of a deliverable. It is also easy to know and report when a deliverable is late, and how late it will be.

Tracking project deliverables in this way shows the client exactly how the project is progressing, in terms they can understand.

Project milestones are points in time when certain aspects of the project are started or completed. Typically, milestones signify the completion of an activity or phase. These activities or phases are usually comprised of one or more deliverables. So, tracking milestones is another way of tracking progress on a deliverables. When all the deliverables are completed, the milestone is complete.

Occasionally, a milestone is not defined by project deliverables. Perhaps the milestone has to do with the completion of work by other resources not assigned to the project. Or, the milestone signifies the latest possible date a problem or issue must be resolved before there are impacts to the project schedule.

The following table, taken from the QMS Status Report template, is easy to use. Simply fill in the name of the "Milestone" (which could signify the completion of a deliverable). Fill in the "Original Planned Date" for completion of the milestone. The "Current Forecast Date" for completion should match the "Original Planned Date" until circumstances dictate otherwise. When this happens, fill in the "Status/Comment" field with sufficient detail to give your readers a clear understanding. All of this information is already part of your project plan. You are simply presenting it in condensed form here.

Milestone	Original Planned Date	Current Forecast Date	Status/Comment

4.7.1.2 Effort

Project Effort is the time required for a resource to accomplish a project task. For example, your Route specifies that it will take 8 hours for you and your team (passengers) to drive from Emeryville to Reno. That means a duration of 8 hours.

A project is a box that is already full.

Why is tracking effort so important to a project? Because a project has only a limited amount of time and/or resource within which to deliver the solution. This total time is broken down into smaller efforts devoted to the various project tasks. So, for example, if the trip from Emeryville to Reno actually took 12 hours, due to bad weather and traffic – then the total time for the project is now 4 hours too long. Either other tasks will have to take less time than planned, or the total project time must be increased.

Of these measurable factors, the Effort is the most detailed and, therefore, the most useful in terms of guiding and controlling the project on a week to week basis. To only track Milestones does not provide the necessary visibility to take preemptive corrective action. Yet that is the very type of action that can keep an otherwise out-of-control project under control.

This table, taken from the QMS Status Report template, is used for reporting the actual effort (hours) expended on the project. The fields should be self-explanatory. The “Var. % from plan” and “Complete %” fields are calculated fields, as are all the fields on the “TOTALS” row.

EFFORT SUMMARY							
Units = Hours							
Activity	Original Planned Effort	Effort as at last report	Since then	Forecast to go	Current Forecast Total	Var. % from plan	Complete %
Definition	50	55	0	0	55	10%	100%
Coding and Testing	25	20	5	5	30	20%	83%
Implementation	25	0	0	25	25	0%	0%
TOTALS	100	75	5	30	110	10%	73%

4.7.2 Know Where You Were Yesterday

When evaluating your project's progress it is necessary to know where it was before. The word 'progress' means to move from one, inferior state to another, superior state. This is a judgement that can only be made based upon a comparison between what is and what was.

Therefore, each time you produce a status report or present a status at a review meeting you must be able to report where the project was at the last reporting period. This is important information. Without it, it is generally unclear to your audience exactly what progress you have made. Yet, if you can make statements such as,

“Last time we spoke, the project was just leaving Reno for the drive to Salt Lake City. Today, not only have we arrived in SLC, but due to a favorable tailwind and light traffic, we did so on \$25 worth of gas instead of the budgeted \$40, and 4 hours quicker than planned. This means we are currently \$15 under budget and back on schedule.”

This is the type of status reporting statement that not only reports the facts, but also provides the proper context while advertising the project's most recent accomplishments.

Always be aware of where you have been.

4.7.3 Know Where You Are Today

The only ones who can tell you where the project is at any point in time are your project team members. Therefore, it behooves you to provide them with the tools and terminology to be able to communicate this information with you.

To that end, you created a sufficiently detailed project plan. Your project plan is detailed enough so that every member of your team can tell you in more or less explicit terms how they are progressing against their assigned tasks.

Here is the problem you avoid with such a detailed project plan. Say that you broke the cross-country trip down into only two tasks. 1) Drive from Emeryville to Chicago, and 2) Drive from Chicago to Boston. You plan on it taking you 3 days to get to Chicago but you must call your boss with a status report every day.

On day one, you make it as far as Reno and, not knowing better, report you are on schedule for arrival in Chicago on day three. On day two, you make it as far as Salt Lake City and, again, report you are on schedule. But, on day three you call your boss from Kansas City. You are unable to continue on to Chicago due to your inability to drive in the dark. Now you finally know that you will not make it to Chicago in three days.

No More than One Week Per Task.

It is a fact that humans are unable to look too long into the future with any sort of accuracy. This means that when the team has been working on the three week task for one week, and you ask them how they are doing, the very best they can do (unless they are nearly completed with the task) is to say that they are “about on schedule.” They really have no way of knowing how much more work there is

to do. It is not their fault. People are near-sighted when it comes to project planning. Humans can only see the end of a task when they are very close to the end of it.

So, in the cross-country road trip example, you knew on day three you were not going to make it to Chicago that day. You probably knew this fact sometime early in the morning. However, given the type of project plan you used, this was information you could not have known any earlier.

What does this mean to you as the project manager? Your team is not to blame. The Project Manager must provide them with the ability to effectively communicate their status.

How? Ensure that all task durations are shorter than your standard reporting period. If you wish to report project status weekly, then no task durations can be more than the length of your standard workweek. In this way, the teams can easily tell you what you need to know. How are you doing on your current task? When the task durations are short enough people have a better sense of the overall duration required to accomplish it.

Always be aware of where you are.

4.7.4 Know Where You Should Be Today

As you have produced the project plan and followed the guidelines outlined above, you will inevitably come upon the situation where your plan says you should be at one place, but your teams tell you something else. It could be because they are ahead of schedule, or behind. Both cases can cause problems for you.

The typical project plan has numerous complex dependent relationships between tasks. When a certain task is late, other tasks are delayed because they are dependent upon it. When another task is completed early, other tasks it depends upon might not be completed early so you have to wait for them.

Since this is going to happen on your project, it is important that you track it. You do this by keeping the project plan up to date. Just as it is important to know where you have been, and where you are, it is equally important to know where you thought you would be.

Too many projects ignore this. They reason that reality is reality. Why be concerned with the past? The reason why has to do with the future. The task that gets finished late is causing a ripple effect into the future. If you do not take steps to address the situation, to update the project plan to reflect the current reality, then other tasks and teams can be overly or unnecessarily impacted.

Status reporting does not mean snapshot reporting, where you simply give a point-in-time portrayal of the project. Status reporting is concerned with managing the project life cycle. Status reporting is not just covering your bases, just in case things go sour later on. Status reporting is a management function where those empowered to take corrective action are informed of the situations

facing the project so they can take action. If you are not using status reports for these purposes, they are of very limited value.

Always be aware of where you intended to be.

4.7.5 Know Where You Want To Be Tomorrow

This next point is obvious. Once you know where you were last week, where you are today, and where you should be today, you next need to look ahead to tomorrow. This is what management is all about. You guide the project around the obstacles and unavoidable, keeping to your course, focusing on your destination while keeping the project team in good running order and demonstrating clear progress to your client. Easy, huh?

The idea is to make it look easy. Good project management tools and techniques will help. Create a detailed project plan that facilitates accurate progress reporting. Track project deliverables, milestones, and effort. Track and report progress frequently (weekly). In this way, the client will have confidence in your ability to manage and control, the project team will have confidence in what they are doing, and the project will make steady progress toward its destination.

Always be aware of the project life cycle, past, present and future.

4.7.6 Today is Yesterday's Tomorrow

Some projects only produce a status report when things are going wrong or there is a special event coming up. This is a sure way to lose control of the project. How could this happen? One example should illustrate the problem.

The project puts out a status report about every 4 to 6 weeks, depending. Due to the length of time between reports, the Project Manager has a hard time communicating where the project was last time. Since the project takes a status so infrequently, the project plan is of little use and, in fact, was discarded as unnecessary months ago! The project, now, does not know where it should be today or tomorrow. All the project status report can address is where things are today, without the proper context of the overall project life cycle. The project is off course. In fact, it no longer knows what its course should be. Troubles lie dead ahead.

I'm not lost; I just don't know where I am.

4.8 Stay Alert!

This section is all about Scope Management.

The Project's Scope is one of the more difficult aspects of a project to control. What is meant by Project Scope?

A Project's Scope is all the work required, and only the work required.

In the context of software development, this typically entails managing the *Product Scope* – the solution is a software/hardware product that the client will use to solve a business problem.

It is a fact of life that the longer a project life cycle continues the greater the pressure to increase or change the Project Scope. Sometimes a change is necessary. Sometimes it is not. How do you know when a change in Project Scope is a good idea? How do you refuse the client their wishes? How do you know the original Project Scope was correct in the first place?

The important thing is to always focus on the destination, the solution to a business problem. This helps to stay on course. It also helps in determining whether a change is truly necessary, that the original solution (scope) is insufficient. By managing to a particular problem's solution, you can keep the project on track.

Most “scope creep” (which, today is generally more like “scope leap”) is born of one of two reasons.

- The desire to solve additional or different problems.
- The desire to solve the problem in a different, “better” way.

However, there is a third danger. That is when a project does not have an adequate understanding of the problem, the constraints on the solution, and the technology proposed in the solution. In this case, which is quite common, it is wrong to say the project is suffering “scope creep.” The project's scope was never clearly defined enough in the first place.

Projects that suffer from this are destined for difficulties. The only remedy is to recognize the situation during the proposal and startup phases, and to clearly state your assumptions about everything. These assumptions, which are the basis for your plan, schedule, estimate and solution, are part of the project scope. They may prove to be wrong. When that happens, the proposal and project definition documents have already laid out the process for addressing the issue through consultation, negotiation, and replanning.

Do not be afraid of the project where all the answers are not known up front. This will never be the case. How you manage the situation is by clearly stating what you believe the project scope is, and having a process in place to deal with the situation when this is found to be in error.

4.8.1 Drive Defensively

Assuming that your client has your best interests at heart, is fully aware of the situations the project faces, and backs you 100% is a sure sign of an inexperienced project manager. Sad, but true. Sure, during the honeymoon period at the start of the project, everyone is attuned and enthusiastic. After the honeymoon period, however, the project becomes more complex, more business-like, under greater pressure, and less focused. This is no one's fault, necessarily. It is just the way projects work.

Why might this happen? Simple. During the early stages of the project, you are much more solicitous of the client's needs and wants for their project. Everything they ask for is, of course, doable so long as you put it in the project plan and contract. But the time soon comes when in order to meet the client's expectations for functionality, quality, cost and schedule, you have to start pushing back on their ideas and requests. Where earlier you were their best friend, willing to do anything for them, now you need to guide and manage them for their own good. Remember that the client will only be successful if their problem gets solved. And, unfortunately, sometimes they too lose sight of the destination.

4.8.1.1 The Change Control Process

So, one needs to drive defensively. Continue to assume that you and the client will prioritize and value things the same way. However, also assume that this will not always be the case. Therefore, you institute a change control process on the project – from the very first day.

This is important. Too many projects say they will institute a change control process *when* the need arises. This is the evidence of inexperience. The experienced Project Manager knows that the need will arise. He or she also knows that it will only make things worse to, at that time, start insisting the client follow a formal change control process.

You should, instead, publish and implement a change control process from the very first days of the project. You use it continually to capture and manage any sort of question, change, problem, or defect. In this way, your project partners are accustomed to using the process. It is the way the project is run, it is not something added later when things get difficult. It also serves to document issues and decisions made on the project. A project that takes many months to complete can suffer from forgetfulness. When someone wants to know why the project did this instead of that, you can go back to the change control process and revisit the issue. Without this process in place, you have to rely too much on people's memories.

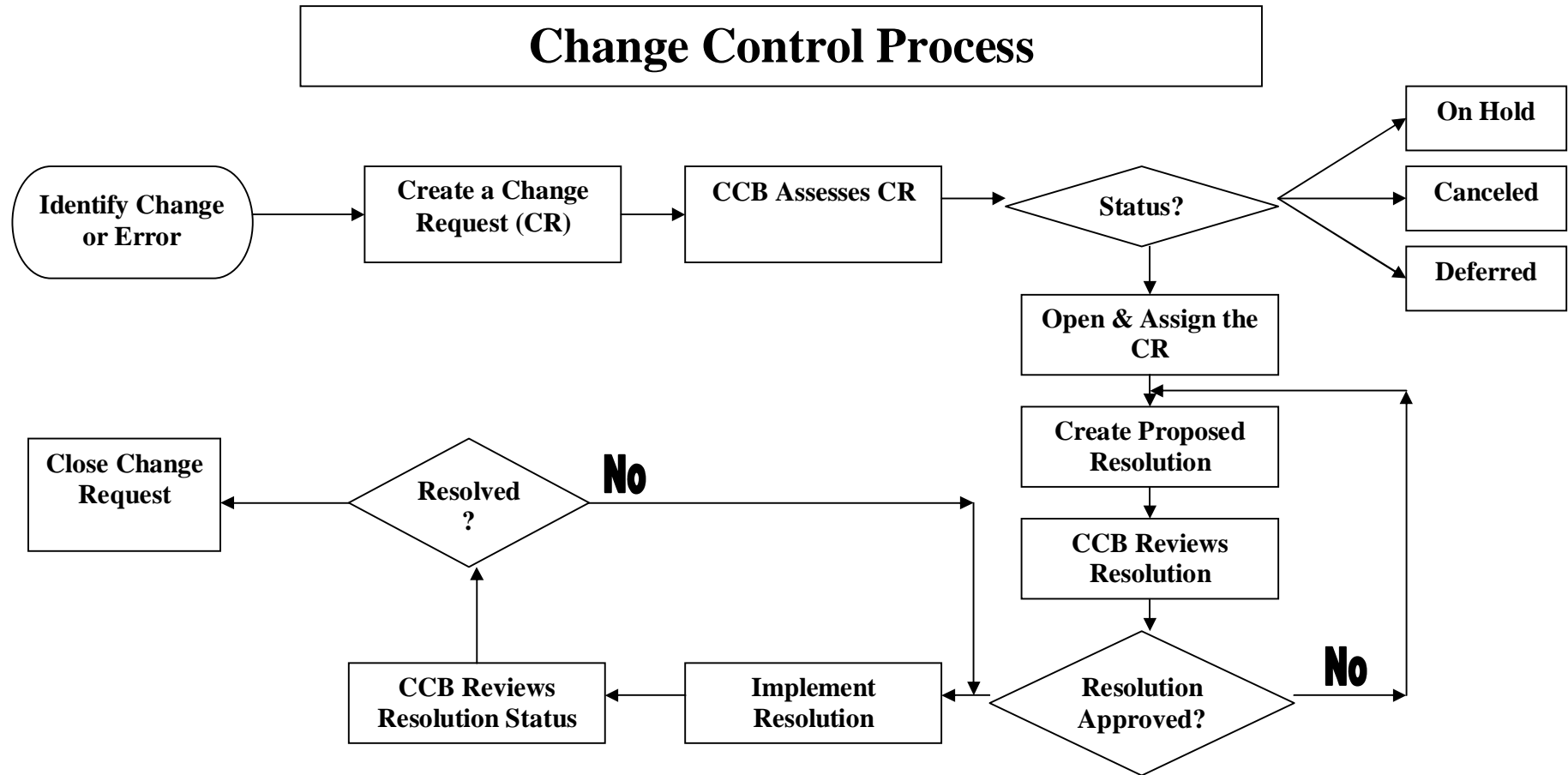
Just what is a change control process? A change request has the following main elements.

- A means of referencing a change request.
- A description of, and justification for, the change requested.
- The name of the person making the change request.
- The date the change request was made.
- The name of the person assigned to assess the change request.
- The assessment of the change request.
- A due date by which the change request must be in place or the project will suffer.

- The name of the person the change request was assigned to for resolution.
- A description of the final resolution.
- The date the change request was closed.

Typically, a change request can be of three types. It is either an In Scope change, an out-of-scope change called an Enhancement, or a Defect/Error. The need for a change request can be discovered through various means. Once it is identified, it is communicated to management either formally – via a change request form or system entry, in a meeting, or in a status report – or informally through conversation, email, etc. In any case, the Project Manager makes certain a formal change request is opened in order to capture it and to more effectively manage it.

Once the action item is opened, the Project Manager starts including it in the weekly status reports and to discuss it during the project status meetings. The purpose of these discussions is to assign the change request to the appropriate person for resolution. Next, the Project Manager gets the change request's status from this responsible person every week until it is resolved and closed. In this way, the change request is captured, communicated, properly assigned, effectively resolved, and closed.



4.8.1.2 The Change Control Board (CCB)

The other great strength of the change control process is that a Change Control Board (CCB) governs it. This board is made up of a representative from each partner area on the project. The typical members of a CCB are the Project Manager, the Project Sponsor, a representative from the client's IS organization, and a representative from the client's user group(s). The CCB can ask others to participate, as appropriate.

The CCB manages the change control process. Therefore, the client owns the process as much as you do. This helps to overcome much of the resentment such a formalized system can cause, particularly where there is a formal process but no CCB. The change control process protects everyone, while doing so in a professional, courteous manner.

Always be courteous, but always drive defensively.

4.8.2 Beware the Detours

What might a detour on a project be? Detours are generally unforeseen and, therefore, unplanned for obstacles and hindrances. One example might be that your chief system architect, whom you planned to be full-time on the project with you, is suddenly called away on another project, or takes a new job, or becomes seriously ill. Where you thought you would be able to make great progress, you find you are delayed and might even have to take a longer, slower route.

Another example is when you have a strong, knowledgeable Project Sponsor. This individual is fully empowered to make decisions and represent the interests of the client on the project. This single point of contact is a tremendous asset for the project. His or her presence, again, is going to be like driving on an interstate highway as opposed to crowded city streets. How about if this person is removed and is replaced by a committee? Worse yet, how about when the person leaves and is not replaced at all? It means the project will move ahead more slowly, take longer, and have greater difficulties.

How do you deal with a detour? Of course, in the first example, you will have to find a replacement for your system architect and no doubt adjust the project plan. In the second example, you need something more. You need a way to clearly identify the issue and the difficulties it poses. You also need to be assured of its timely resolution.

4.8.2.1 The Action Item Process

A useful technique is to create an action item and assign it to the appropriate person(s) for resolution. The action item process is used in these instances instead of the change control process because the detour is not directly related to the scope of the project. Rather, it relates to the inner workings and management of the project.

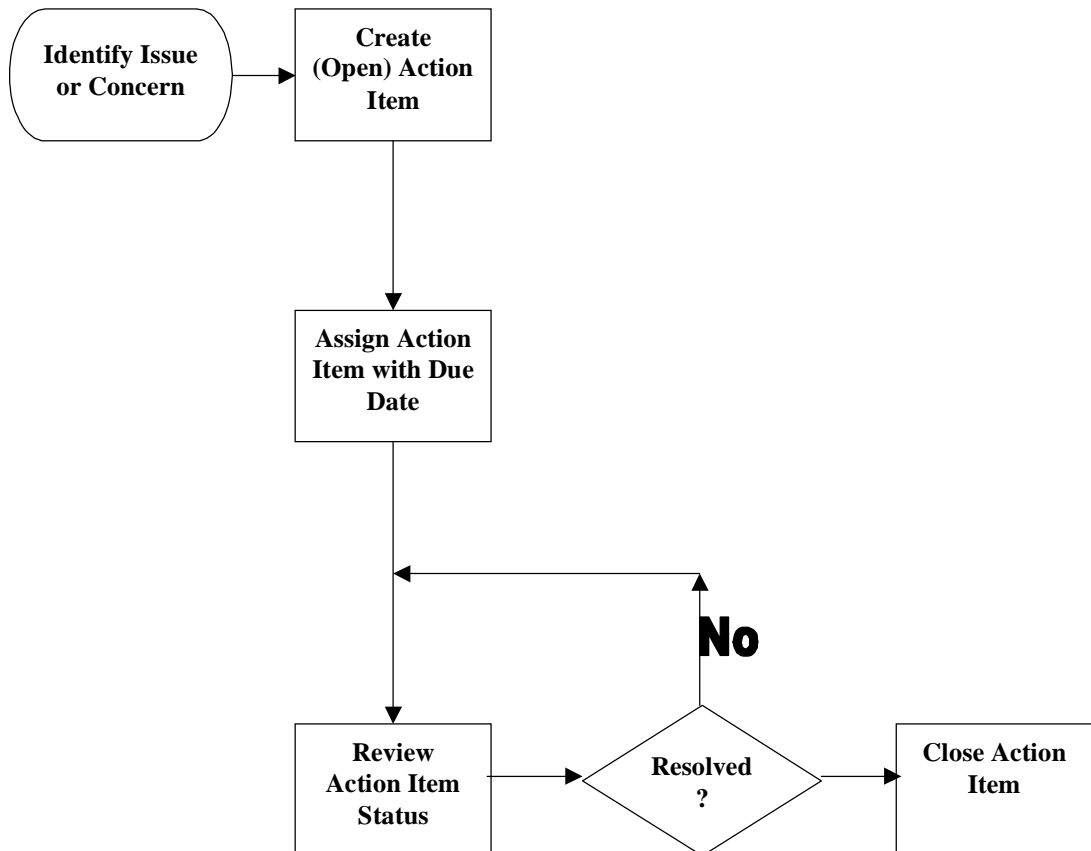
Just what is an action item process? An action item has 6 main elements.

- A means of referencing the action item.
- A statement of the issue and impact if left unresolved.
- A person assigned to be responsible for resolving the action item.
- A due date by which the resolution must be in place.
- A description of the resolution.
- The date the action item was closed.

Typically, an issue or concern is identified and raised to management either formally – in a meeting or status report – or informally through conversation, email, etc. In any case, the Project Manager opens a formal action item in order to capture it and to more effectively manage it.

Once the action item is opened – meaning a reference number is assigned, the issue is described and a due date established – the Project Manager starts including the action item in the status reports and discussing it during the project status meetings. The initial purpose of these discussions is to assign the action item to the appropriate person for resolution. Afterward, the Project Manager gets the action item's status each week from the responsible person until it is resolved and closed. In this way, the issue or concern is captured, communicated, properly assigned, controlled, resolved, and closed.

Action Item Tracking Process



4.8.2.2 The Project or Executive Steering Committee

What happens when the action item process fails to resolve the situation?

Projects almost always start off with high hopes, a shared vision and commitment, and good working relationships. However, this is destined to change. The longer the project life cycle, the more likely this situation will deteriorate. Again, it is no one's fault – just a reality of projects.

Therefore, the project must put into place safeguards and mitigating procedures. One of the most important safeguards is the establishment of a Project Steering Committee. This committee will be able to make the tough decisions, settle disputes, set strategy, and work to overcome obstacles. This type of a committee almost always exists, sooner or later, on every project. Unfortunately, many projects wait until there is a crisis before establishing the committee. Then it is

seen as an unfortunate necessity rather than what it truly is – a proven best practice in project management.

The Executive Steering Committee (ESC) is made up of a handful of very senior managers representing both the client and SPS. Whenever possible, the chair of the ESC should be the client CEO or CIO. The ESC should meet at least monthly to receive a project status and to be made aware of issues they need to resolve. It is unwise to only call an ESC meeting during a crisis. A regularly meeting ESC will preclude many crisis situations from ever occurring.

The bottom line is to establish an ESC during Project Initiation and have it start holding regular meetings immediately. Then, when the inevitable escalation becomes necessary, the project team knows how it all works and the ESC has a good understanding of the project. Further, the members of the ESC will have grown to know each other better, making them more effective in their roles.

4.8.3 Avoid the Scenic Routes

As you are traveling cross-country toward your destination, you or your passengers may be tempted from time to time to try something new, something different, and something unplanned. It could be as innocent as wanting to try a new road that is a supposed shortcut. It could be something more severe like wishing to trade in your company car for something newer and faster. Or it might be that you just want to take a more scenic road. Watch out!

4.8.3.1 New Technologies

Technology is changing and improving quickly. Any project that takes more than about 18 months to complete will be using some technology that is obsolete or rapidly becoming obsolete. This is unavoidable. A project can not succeed by promising to always use the latest and greatest release of a product. You will never reach your destination by having as part of your scope statement that you will drive on all the new roads as they become available, stay in every new motel, etc.

Yet, your project team and the client will both be aware of these new innovations in the marketplace and want to try them. How to cope with the situation?

First, remind your partners that at the beginning of the project they all agreed with the proposed solution. They agreed that it would be adequate to solve the problem. Therefore, unless the problem has changed significantly, there is no urgent business-driven need to change the solution just to embrace newer technologies.

Second, remind your partners that even if the project embraces these new technologies now, these too will be facing obsolescence in the near future. It is a never-ending battle to keep up with technology. Would it not be better to have a workable, stable solution in place, first? Then, the client can move ahead with their business and take a more orderly approach to upgrading to newer technologies.

4.8.3.2 Career Enhancing Work

This may sound easy to do, but as the Project Manager you will be faced with these pressures often. No one likes working every day on the old technologies. Your project team will probably make the point that to do so is not enhancing their career. They are probably right. And yet, the project's main focus must be on the final destination. You must solve the intended problem, by a certain date. After that, people can go to work on the next project, which will be using the newer technology – but before too long even that will be “the old stuff.” Keep the project focused on its destination. It is the only way to ever achieve anything worthwhile.

Of course, these issues about using new technologies will be documented in your change control process to ensure they are adequately addressed and their resolution is documented for future reference. Also, when the need arises, the project steering committee may need to be asked for a decision. It is, after all, ultimately their project. They have the right and responsibility to make these hard choices.

4.9 Be Prepared to Back Track

This section is all about version control, quality control procedures, and records keeping.

4.9.1 Unplanned Progress = Sanctioned Chaos

Projects all too quickly experience a crisis. Sometimes the crisis is what gives birth to the project in first place. Sometimes, the crisis occurs or is fully realized during the project life cycle. In whatever case, the project will then face a very real temptation to “get busy.” The client will want to show some tangible progress. The project team will wish to accommodate, under the slogan of Client Satisfaction and Customer Service. Everyone will be tempted to believe that real progress can be made without all that useless overhead of planning, scheduling, and controlling.

For a time, the project looks to be successful, on track, progressing nicely toward the goal with a happy client. Unfortunately, this euphoria is short lived. Eventually, the unplanned work becomes disjointed. One team member is making decisions that adversely effect another's work. The project team does not share the client's ideas about project scope. The project budget is being burned at an aggressive rate, but no one can answer the question as to whether it is enough or will last to the end of the project.

Most disturbing of all, there is no clear definition of the final destination. The project team will find it difficult, if not nearly impossible, to recognize the final solution and to communicate it to the client. When you are unable to do this, then the client has every right to be reluctant to accept your final solution.

A Project is like a Marathon, not a Sprint.

The marathon runner, who sprints out at his or her fastest speed, refusing to slow down to take on fluids, may very well lead the race for a while. But in the end, he or she will lose the race and perhaps not even finish. Such disastrous behavior would seem to be common sense – something everyone understands. Such is not the case. All too many times, Practice and Project Managers make what they believe are sound business decisions to do things in a less formal, more “rad”-ical way. The only thing radical about it is its disregard for common sense. Typically, these decisions are based more upon trying to win the business, or being perceived for a time as a good project, than in adopting a better way of doing business. This is truly unfortunate. The end result will be an unsatisfied client, a frustrated project team, and an embarrassed project manager. There is a better way.

The better way is to have your project guided and measured by two important tools.

- The project plan, including the schedule, details what must happen, when, following what task(s), followed by what task(s), and performed by which member of the project team, for how long.
- The Requirements Traceability Matrix influences the project plan, defines and controls the scope of the project, and provides a context for the day-to-day tasks performed by the project team.

These tools, in effect, provide you with both a route to follow and an audit trail of your progress. So long as you employ these tools effectively, your project’s progress toward its final destination is assured. With them, you will be able to gain your client’s acceptance of the final solution. With them, you will be able to manage the project not just go along for the ride. With these tools, you will be able to discuss whether the budget is sufficient and whether the schedule is attainable.

Busy ¹ Progress

If your project is in a crisis, the only way to truly resolve it is through proper planning. Doing more things in parallel, with less formality and structure in your quality control procedures, is a recipe for ultimate failure. “Just Do It” is a slogan for selling shoes, not for managing professional projects. Giving in to unplanned progress really means you are managing for the moment rather than the final destination. Remember to focus on the final destination at all times. Your actions today either facilitate the final solution, or they undermine it. It is that simple.

4.9.2 Whose idea was that?

It is going to happen on every project that people’s memories will fail. That is the risk. How do you mitigate it? There is no substitute for recording and filing everything of importance to the project. The project has several vehicles useful for recording the project: the project plan, the RTM, status reports, the change control process, the action item process, the configuration management process,

meeting minutes, and quality control documents. These serve to guide and control your work, but also to record the project's history.

Why is this important? Well, since people's memories fail or their memories can be somewhat less than accurate, it is necessary to keep a historical record of the project for several reasons.

- To keep from going over the same ground again and again. "Why didn't we do that earlier?" "Whose idea was that?" These are common questions. Do not try to answer them from memory. Review the historical records.
- To learn from the past. *Those who do not learn from the past are destined to repeat it.* This repeating history can be good or bad, but usually it is bad.
- To replay for others the sequence of events. Many times senior management wants to know how something happened, what led up to it. Their intention is to fix the situation.
- To demonstrate to others the circumstances surrounding the project. Every project is unique. When a project gets in trouble, people want to study it to learn how to avoid it in the future. When a project does well, people want to study it to learn how to repeat it.

The keeping of these historical records, however, is really a side benefit of good project management. Each of these records is first and foremost useful in managing the project. Without them, the project is out of control and destined for great difficulty, if not outright failure. With them, the project is under control – still challenged and at risk – but with the tools and techniques necessary to reach the final destination.

Both the QMS and the SAFE Frameworks provide detailed guidance on how your quality control process should work, and on how to maintain your project records.

4.9.3 Going back where you came from might be your best way forward.

Sometimes the very best intentions, plans, and personnel are simply not enough. Sometimes you need to backtrack on your decisions and plans. Backtrack does not mean start over. A properly maintained project plan will be under version control. This means that should you need to backtrack on a decision, you can go back to the version of the project plan where this decision had not yet been included.

This is called versioning and is part of a configuration management process. Numerous project deliverables must be version controlled. Obviously, the project plan and RTM need versioning, but status reports, typically, do not. Deliverable documents such as the project definition document and quality plan, design specifications, and test plans require versioning. So does source code, test data, architectural designs, and even hardware/software configurations.

A version is the Solution at a particular point in time.

Over time, the solution changes. Sometimes, a proposed solution is wrong and you need to backtrack. On the software development project, the classic example is this. Version 1 of a particular software object has a small problem with it. The programmer fixes the problem and delivers Version 2 of the object. Unfortunately, Version 2 harms the application more than did Version 1. You must be able to rollback, or backtrack to Version 1 until Version 2 is truly fixed. To do this requires a configuration management process and, usually, an automated system.

Take the cross-country road trip example. After you reached Salt Lake City, you originally planned to take a certain route east. However, during your daily status phone call your boss asked if you could include a quick trip down to Moab to pick up something or other. You agree, reroute your trip, and set out the next morning for Moab. However, when you reach the town of Richfield, you see a disturbing road sign. It says that the road ahead is under construction, so expect long delays. The sign also says that the next gas station is over 200 miles away.

You suddenly realize that the car you are driving can not go 200 miles without fuel. [How would you know this? Because you have been taking accurate measures of how many miles per gallon your car was achieving.] Additionally, your car will certainly run out of gas if there are lengthy delays enroute. Lastly, you had earlier determined that your project schedule had enough reserve in it to accommodate the trip to Moab at normal highway speeds. This assumption is no longer true. Therefore, the trip to Moab would now mean an overrun of the schedule. In order to proceed, you at least need your boss's agreement on the schedule slippage.

What to do? Backtrack! After an emergency phone call to your boss to explain the situation, you get her approval to forget the trip to Moab and resume travel on your original course. She was not happy by the failure to include the Moab trip, but agreed with you that getting to Burlington on time was more important. The slight detour has already cost you time and money, but because you have a plan, you can backtrack to it and quickly start making progress again.

The example is admittedly weak but the truth is not. Project plans not only show you the way ahead, but also show you the way back. Sometimes, backward is the best way forward.

4.10 Announce your Arrival

This section is all about your exit strategy. An exit strategy is how you intend to complete the project. This will involve delivering all the project's deliverables, proving that they satisfy the business requirements, and ensuring they meet with the client's approval.

The danger of not having an exit strategy is this. It leaves the project's completion dependent upon subjective decisions based on how the client "feels" about the solution and whether they received enough value for their money. This is a dangerous situation. It is far better to begin building toward your exit strategy

from the very first day of the project. It is essential that the final acceptance of the solution be based solely on the achievement of quantifiable requirements. Do not leave the final acceptance open to interpretation. Make it as binary (passed/failed) an event as possible. Does the delivered system solve the business requirements as defined in the system design documents and demonstrated in the system test plans or not? If so, the project is complete.

4.10.1 Recognize the SkyLine

It is important to recognize the skyline of your destination. Then, from far off you will be able to see the final destination and more easily move toward it. The longer the skyline remains obscured, the more difficult it is to focus on the destination.

What is the skyline? In a typical project life cycle, you could say the skyline is defined by the project's various test plans. Software development projects prove their solution via testing. Just how much testing and what types of testing are required for your project? It is different for every project. This is why the skyline for every project will be different. Yet, when the skyline is defined and visible on the horizon, the project can have some confidence of reaching its destination.

This can be said because the tests the project software must pass are the key to the exit strategy. If the software can not pass the tests, the project is not complete. When the software passes the tests, the project is complete. The skyline always matches the destination. You don't see the skyline of Denver when you are outside of Chicago. So too, the passing of these project tests must mean the project is complete. It is your job as the Project Manager to make certain this exit strategy is explicitly stated and agreed to by the client. And you need to start doing this from the very beginning of the project. If you wait too long, you will never be in a position to recognize the skyline because your destination will be unknown.

I'll know it when I see it. NOT!

4.10.2 Arriving vs. Just Driving Through

It is not enough to simply pass all the tests, as stipulated in your exit strategy. You have to recognize you have arrived at your destination, and then stop the car.

On a project, this can be accomplished through various means. Since you want to have a record of the event, you will at least have some formal document to be signed by the client, announcing the completion of the project. This document could take the form of a Final Test Report. In this report the Requirements Traceability Matrix is used to demonstrate how successfully passing the tests means you have successfully implemented the solution to the Business Requirements. You must explicitly state these facts and gain client agreement. You can not leave this to interpretation or implied agreement.

This also signifies the beginning of the Project Closeout phase. It is, therefore, a good idea to clearly announce the completion of the project, your arrival at the

final destination. Otherwise, your client may feel as if you are abandoning the project rather than simply moving toward project termination.

4.10.2.1 Implied vs. Explicit Agreement

One more word about implied agreement¹. When the project team and the client have a cordial working relationship, occasionally there is push back on being so formal. There is some feeling that asking for explicit agreement and approval on deliverables somehow sends a message that the client is untrustworthy. This is obviously not the intent nor the truth.

The intent of a strong quality control process is to drive for consensus and agreement. There is tremendous power in agreement. The project on which everyone knows and agrees with the mission, direction, performance standards, etc. is much more than the sum of its various parts. It is a force to be reckoned with. It has the ability to focus on the destination with ease, to quickly navigate the detours and avoid the counterproductive scenic routes. It is also a pleasure to work on.

The project that fails to drive for explicit agreement is in serious jeopardy. There can be no confidence whatsoever that everyone knows or agrees with the project's mission, direction, or performance standards. The project soon becomes factionalized. Cliques form on the project team, each espousing a different vision of the project. There is no singleness of purpose. The project becomes tedious and tiresome to work on. The factions start distrusting each other.

The best way to demonstrate your trustworthiness and your confidence in the trustworthiness of others is to consistently drive for formal consensus and agreement. Follow the project's quality control procedures. Keep the relationship on the project both cordial and formal. Meaning that agreements and approvals will be explicit, recorded, and stored in the project file. This is done so as to leave nothing to chance. It is not done because you distrust someone.

How does this relate to the project's exit strategy? In every way. The quality control process must govern all the documents and other deliverables used to guide the project. These, of course, include the Final Test Report where you will demonstrate, report, and announce the completion of the project. If you are already using the quality control process of review and formal approval (the client's signature on a document signifies approval), then you not only have the basis for a strong Requirements Traceability Matrix, but your client will also be accustomed to the process. The project, too, will enjoy more agreement and less factionalism.

The benefits of using a quality control process are impressive. So much so, that there are no grounds for a failure to have and follow one.

¹ **Implied agreement** means that you assume a deliverable is correct and acceptable unless the client tells you otherwise. **Explicit agreement**, on the other hand, requires the client to formally accept these deliverables, generally through placing their signature on the document.

4.10.3 Celebrate!

SPS professionals always do an outstanding technical job for their clients. However, doing quality work does not always immediately equate with *quality service* in the mind's of your clients. There is the need for some advertising, some marketing, some fanfare, some context setting, and some celebration in order for the client to fully appreciate what you have done for them.

This is a common mistake made in the consulting business – to fail to manage a client's expectations and perceptions. Your good work will be ill served if you do not effectively manage the client's expectations and perceptions. You must ensure that what the project delivers (the work) is viewed or perceived by the client as meeting or slightly exceeding their expectations. This has nothing to do with the work and everything to do with the client's psychological state of mind.

How do you ensure that the quality work performed by your project team is perceived as such?

- By paying continuous attention to your client. You must make them feel as if their problems are your problems. That you share in their sense of urgency.
- By frequent and detailed communication with your client. Do not insult their intelligence by assuming what you do is too technical for them to understand. Assume they know more about what is going on than you do. Your mindset should be that you need to continually demonstrate your understanding of the situation. You are, after all, working for them.
- By asking for their advice on issues. Many times they have the answer! Every time you ask for their advice you make them feel more a part of the team, more highly valued, and more comfortable with your management style.
- By advertising the project's successes. Sometimes the significance of a bit of project work is less than obvious, even to the project team. It is important, therefore, that the Project Manager provides the proper context and applies the appropriate amount of fanfare. What good is a cure for cancer if no one ever hears about it? Do not be afraid to recognize accomplishments.
- Celebrate your successes. If you make a big deal about them, everyone else will believe they are important too. As a leader, it is your job to set the tone and inspire the team.

Helping the client to better understand the context of the project's achievement, and the significance of the accomplishment, are how you ensure your good work is viewed as quality service.

Quality Work¹ Quality Service¹

¹ David H. Maister, *Managing the Professional Service Firm* (New York: Free Press Paperbacks, 1997), p. 69.

5 How To Close Out a Project

Now that the trip is over, the team has arrived at their destination, it is necessary to bring the entire engagement to an orderly conclusion. This is the time the project has been looking forward to for so long. The time when the system goes into operational use, the project team can move on to newer things, and the system can begin the maintenance and enhancement phases of its life cycle.

There are several activities to accomplish during the Project Closeout Phase. To guide your work, there are several deliverables to be produced.

- A Project Closeout Checklist¹ that will guide the project team through this phase.
- An Appraisal Input Form, one for each SPS project team member, that provides performance appraisal information into the SPS personnel management system.
- A Client Survey Form that will, for a final time, solicit of the client their overall impression and satisfaction with the project.
- A Project Debriefing Report that shares with all interested parties the things that went well on the project, the things that could have been improved, and the strategic actions (such as changes to QMS) this project experience might suggest.

5.1 Close out the Budget

5.1.1 Final Time and Expense

Once the project team has submitted the final Time and Expense sheets, the final invoice can be prepared.

5.1.2 Final Status Report

Part of closing the budget is in reporting the fact that no additional work will be done on the project. Therefore, the Milestone and Effort Summary tables of the status report should show that the project is complete, no additional work will be performed. The final invoice can then be processed.

5.1.3 Final Project Status Meeting

It is a good idea to have a final Project Status Meeting with the client. During this meeting, you can articulate the contents of the final status report, project the date the client should receive the final invoice, etc.

It is also a time to celebrate the project's successes, talk about the lessons learned during the project, and to discuss additional work. This should not be viewed as

¹ May be incorporated into the PQRAT in the near future.

the end of your relationship with your client. It is just the termination of the current project. Other work and other projects for this client may be in your future.

5.1.3.1 *Enhance the Client's Satisfaction*

As discussed in **Section 4.10.3 - Celebrate!**, it is your job as the Project Manager to present the project team and their solution in the proper context. Without the proper context, project partners can get bogged down in discussions about relative beauty, speed, size, complexity, usability, etc. These are all part of the context. Yet, none of them is all that important when considered by itself. After all, what is beauty? How fast is fast? Big, compared to what? Without a context, a perspective, from which to view the whole, your partners will be forced to find their own context upon which to judge the project.

How can you present the proper context for the project? Here are some ideas:

- **Look Backward** – Remind everyone of what the situation was back before the project started. How there was no automated solution and everything was being done on paper, by hand. Remind them of how many more people it took to accomplish the same amount of work, and how much more fulfilling to the employees the job is now. Relive the pain of the prior situation.
- **Project Challenges Faced** – Remind them of the many challenges you all faced and overcame together. Review the situations that were so frustrating at the time but are now comical to recall. Stress the importance of the team, what the team accomplished. “This is not just SPS’ system, it is **our** system.” It was a worthy endeavor. The solution represents everyone’s best efforts. Sure, there were setbacks. And some things in the system need immediate changing. Yet, all in all, the project is a significant accomplishment.

The Perfect is the Enemy of the Good. -Voltaire

- **Project Accomplishments** – Remind them of the Firsts enjoyed on the project.
“This is the first time...”
“This is the only time...”
“Never before has...”
“Never again will...”
- **Look Forward** – Acknowledge the fact that while the system is good, even very good, it is far from perfect, and getting farther every day. Technology is progressing at such a fast pace that it is impossible to keep up. Yet, you must try. Remind them that back when this all got started, version 5 of that software *was* the latest release. The fact that version 7 is now out only means that better functionality is possible today than back when the project started. This is good and bad news. The good news is that technology continues to improve, to help the business be more efficient. The bad news is that the

system, new today, will need to be made anew every year or so, to be able to take advantage of these improvements.

So, don't focus on what the system is lacking today. It is the best that could be produced given the time, budget, technology and talent available. Focus instead on the next destination, the next phase, the next release. While each project's life cycle is finite and temporary, a business's application development life cycle is never ending. Sooner or later there will be another problem in need of a project to solve it.

5.1.4 Final Invoice

This will typically be sent to the client some time after the project is terminated. When this final invoice is paid, the budget is closed and the ISIS code for the project should preclude any additional billable charges.

5.2 Provide Project Team Closure

Members of the project team will have been together for quite some time. They will have grown close. They will have shared the highs and lows on the project. These experiences typically bond people together. Some team members may be staying behind to work on the transition or maintenance phases of the project while others will be moving on to other projects. They will need an opportunity to celebrate their joint success and their personal feelings about the project and each other. They also deserve to be recognized and congratulated for their hard work and sacrifice.

5.2.1 Celebrate!

There is ample cause for celebration. If you have properly managed the client's expectations, remained true to the project's final destination, and did so in a courteous and professional manner – then the project team members are justifiably proud of their accomplishments. Any software development project that solves a real business problem in a quality manner is worthy of celebration.

Even more worthy of praise and celebration is the team itself. Projects are team efforts. Winning the game is important, but the existence of, and relationships on, the team are equally important. So, celebrate the team's accomplishments. Praise their performance. In 10 years, the system they built will be obsolete. Their memories and friendships need not be.

5.2.2 Bring Closure and Perspective

While celebrating the project's successes, you need to focus attention away from the project and back on the bigger picture. Before the project team was formed, everyone had lives and careers elsewhere. That will be the case now. This project will someday be remembered as "the good old days." But it is important for people to move on, to grow, to learn, to experience. While it is perhaps sad to

see a good thing end, there are more good projects out there in need of good people.

5.2.3 Acknowledge and Congratulate

While teamwork was the key to ultimate success, the fact remains that individuals contributed their parts to the whole. It is now time to clearly and publicly acknowledge and congratulate people for their individual contributions.

This can be both serious and fun. Try giving out awards for the Most Cheerful person as well as for the Most Innovative Thinker. Keep the mood light. This is not a competition. Everyone contributed so everyone is rewarded. The idea is to bring closure to the project; to give people a time and a space to grieve. May sound strange, but long-term projects become a sort of home for people. They find it sad to have to leave. Recognize this and allow people the opportunity to close this chapter of their lives. They will appreciate it.

5.2.4 Evaluate and Appraise

The last step is done in private. The Project Manager owes each project team member an evaluation and appraisal of their performance. This appraisal is shared with both the individual and that person's line manager.

Many times, line managers lose touch with their people who are assigned to work on projects. They are not involved with them on a day-to-day basis. They are not in a position to offer constructive feedback on performance. As the project manager, you alone enjoyed this perspective. You owe it to your team members to perform this valuable service for them. To not do so would be disrespectful to the very team members who helped make you a successful Project Manager.

5.3 *Transition the Solution to the Client*

5.3.1 Start at the Beginning

It should come as no surprise to anyone that one day the client will have to own their system. Therefore, it is prudent to begin planning for that inevitable day from the very beginning of the project.

The best way to handle it is to put the transition process into the project plan. That way, as resources are assigned to work on solution tasks you know they can not work on transition tasks, etc.

Do not neglect to do this. It can be the source of considerable frustration, not to mention non-billable time, when it is forgotten until the end of the project. The day will come ... best to plan early for it.

5.3.2 Engagement Throughout

Once the project plan contains the transition tasks in it, the Project Manager can manage the effort just like all the rest. Typically, the transition tasks include sending client personnel to product specific training. This takes them away from any solution tasks for which they might be responsible. While it is unavoidable, there will probably be times during the project life cycle when their time away for training would be more convenient to the project. You need to manage to these times.

Just remember that the greatest technique for transitioning ownership of a system is through on-the-job training and mentoring by your SPS staff. Make sure that the client's people are scheduled time to just watch and learn. When everyone is too busy working on their own tasks, these critical transition tasks can be easily overlooked.

5.3.3 Provide a Safety Net

Because the transition of ownership takes so long and is so prone to disruption by the solution tasks, projects typically add a separate mentoring phase to the project plan. This mentoring phase follows the Project Closeout phase. It also should not be dependent upon the final destination, the solution of the problem.

It is a time for one-on-one instruction of the client's staff. It is a time when SPS resources gradually move farther and farther away from the day-to-day maintenance of the system. Ultimately, the SPS staff provides a safety net – just in case something goes terribly wrong. When the SPS staffers are seldom called upon for assistance, then everyone knows that full-time mentorship is no longer needed.

5.3.4 Graduation Day!

Here again, at the end of the transition, quality work does not equal quality service. Try to hold a party on your last day on the project. It is important to remind everyone the problems and challenges the business was facing when this phase started ... and how far they have come. It is important to provide closure. It is important to acknowledge and celebrate. Do not just quietly slip out the door on Friday afternoon. Make an exit!

A. The Quality Management System

(This is copied from the On-Line documentation.)

Introduction to the Quality Management System

Version: 1.2, Date: 01/19/96

Introduction

This chapter of the Sybase Professional Services (SPS) InfoSource Quality Management database provides information about the framework for the SPS Quality Management System (QMS). It describes the other chapters in this database and sets out procedures for the maintenance and control of the QMS. A cross reference between the QMS and the relevant clauses of ISO 9001 is also provided in this database (see ISO Cross Reference view).

The Quality Management System

The purpose of the QMS is to document the policies and procedures required to ensure that SPS provides services to its clients that are of the requisite quality in accordance with the overall quality policy as documented in this on-line Quality Manual . The QMS is the means by which SPS adheres to the requirements of ISO 9001.

Compliance with the policies and procedures set out in the QMS is mandatory for all staff operating under the scope of the QMS.

Note that our business drives the QMS and not vice-versa. Therefore the QMS will be regularly reviewed to ensure it remains relevant to the business. Improvements to the QMS must be submitted as Change Requests .

For further guidance on how to use this on-line Quality Manual please refer to the 'about' and 'using' documents for this Notes database, which are always available from the help menu.

The remainder of this chapter contains information about the following:

- SPS quality policy and principles .
- QMS Structure .
- SPS Quality Organization .
- Control of the QMS .
- QMS Management Review Policy .
- Cross reference to ISO 9001

The other chapters of this on-line quality manual are:

2. Service Delivery - Consulting .
3. Service Delivery - Education .
4. Corporate Quality Policies and Procedures .
5. Quality Standards/Guides .
6. Business Operations Policies and Procedures (Consulting) .
7. Business Operations Policies and Procedures (Education) .
8. Local Standards .

Sybase Quality Policy

Version: 1.2, Date: 10/30/97

The Quality Management System (QMS) for Sybase Professional Services (SPS) is one component of the overall Sybase approach to quality. The Corporate Quality Policy is the foundation upon which the SPS QMS is built.

Sybase Quality Policy

High quality in our products and services is vital to the success of our customers. In helping our customers become successful, employees are our most valuable resource. Therefore, it is our policy to involve all employees in programs which will improve our products, services, and the productivity of our internal processes.

Mitchell Kertzman,
Chairman and CEO, Sybase Inc.

With respect to quality, this policy statement is setting out what Sybase wants to achieve and it reinforces the commitment to quality from the very top of the company. Quality is regarded as vital to our customers' (and hence our own) success.

The importance of Quality to Sybase is further reinforced through SYBASICS - the basic set of principles that the company upholds:

- ETHICS
- TEAMWORK
- INNOVATION
- QUALITY
- RESULTS

The SPS Quality Management System documents how the Sybase corporate quality policy will be implemented within the SPS business unit.

Service Delivery - Context and Definitions

Version: 1.3, Date: 10/01/97

Sybase Professional Services - Context

SPS is a business unit within Sybase, responsible for the supply of consultancy services to clients based around the implementation or application of Sybase software products. SPS is also responsible for the delivery of education services to clients.

The range of consulting services provided to clients by SPS is very wide, ranging from small technical support engagements of one or two days to full-scale development projects.

In considering the context within which SPS operates, the following points should be noted:

- 1) The primary responsibility for sales of Sybase software products lies with Sybase Sales. In many cases a package of products and services is sold to our clients, therefore the relationship between Sales and SPS is necessarily very close.
- 2) SPS is not responsible for the development of Sybase proprietary software products. Production of software product is the responsibility of the various Software Engineering divisions of Sybase.

Definitions

The following terms are used throughout the QMS documentation and must be clearly understood in order to ensure consistent application of the QMS throughout SPS.

Service Delivery	For SPS 'service delivery' is the process of providing specialized consultancy services on an engagement basis to clients (which may include other divisions of Sybase) based around the implementation or application of specific Sybase products. In some cases these consultancy services may include non-product specific engagements, such as system audits, performance reviews etc. that are deemed to add value to client installations.
Engagement	<p>An 'engagement' is defined as the work required to fulfill a discrete client requirement using one or more resources as specified in the contract with the client. The term 'engagement' is generic and all work for clients is carried out under the terms of an engagement.</p> <p>New engagements arise in the following ways:</p> <ol style="list-style-type: none">SPS currently does not have an open engagement for this client, either because the client is new or because all their previous engagements have been completed;SPS has an active engagement for this client, but the work is sufficiently discrete that it merits setting up as a separate engagement for control purposes.
Project	<p>Engagements are regarded as 'projects' for the purposes of the QMS if they fulfill one or more of the following criteria:</p> <ul style="list-style-type: none">- contracted deliverables and/or specific contracted system performance requirements- multiple consultants working under the direction of a Sybase Project Manager <p>Projects have specific requirements from the point of view of the QMS.</p> <p>In some cases small engagements are extended and may increase significantly in value over time - such engagements should be regarded as 'projects' when and where appropriate and project procedures introduced to control the engagement.</p>
Supplemental Staffing	<p>Engagement where SPS supplies staff to work under the client's direction and quality procedures.</p> <p>Note that any engagements which have one or more of the following attributes may not be regarded as "Supplemental Staffing" within the SPS QMS - these must be regarded as "projects" and require a Project Definition and Quality Plan (which may be combined into one document if appropriate):</p> <ul style="list-style-type: none">- contracted deliverables and/or specific contracted system performance requirements- payment schedule linked to specific milestones- fixed price contract- supply of multiple staff where Sybase proportion of total team > 15%- projected monthly revenue exceeds \$100K and duration of contract > 2 months
Project Manager	Every engagement must have a manager assigned to it. For the purposes of the QMS the term 'project manager' is usually used to describe the manager of an engagement. Depending on the nature of the engagement the role of project manager may be assigned to any consultant (regardless of grade), a Practice Manager or any other line manager.

QMS Procedures for Consulting Delivery

The QMS contains the following sets of procedures to control consulting service delivery as follows:

- ASG/Small Engagement Procedures
- Project Procedures
- Supplemental Staffing Procedures .

Project Quality Reviews are required for all engagements > \$100K.

Fixed price projects greater than \$250K and any fixed price project, regardless of size, that contains application development must follow the process/procedures for **Fixed Price Projects Bid Development and Reporting**.

Initiation of Projects

Version: 1.4, Date: 10/01/97

This document covers the initiation of SPS projects. During initiation the project is identified, evaluated, planned and formally authorized for implementation.

The key components of this phase for projects include:

- a) the proposal;
- b) the Project Approval and Setup form;
- c) the contract;
- d) the WIN report
- e) the Project Definition Document;
- f) the Quality Plan;
- g) the Project Management checklists as defined in the Project Management Handbook:
 - i) Scheduling Checklist;
 - ii) Staffing Profile;
 - iii) Project Start-up Checklist.

Items a) to d) are the responsibility of the Business Manager, the remainder are the responsibility of the designated Project Manager.

The Project Approval and Setup form is a critical quality record, which demonstrates contract review, risk analysis and authorization based on the value and risk of the project.

The Project Definition Document and Quality Plan must be approved by the same level of management as the Project Approval Form, which is determined by the Project Approval Matrix .

A Project Approval Form must be completed and signed off for all contractual offers. All proposals should be issued subject to contract.

Fixed price projects greater than \$250K and any fixed price project, regardless of size, that contains application development must follow the process/procedures for Fixed Price Projects Bid Development and Reporting.

A key element of the initiation phase is the definition of the objectives, deliverables and acceptance criteria which the project is intended to achieve. This focuses the attention of all parties involved, including participating consultants.

The initiation phase is also the appropriate time to determine and establish locations for electronic records that the project team will generate. The Project Manager creates the necessary records in the SPS Client Projects database, and may elect to utilize the SPS Project Team Template database for work in progress.

The Project Manager should consult with District Management and seek to ensure that the staff allocated to the engagement are suitably qualified by knowledge and experience to meet the project's needs. Where a consultant assigned falls short of the project requirements it may be necessary to provide special training, back-up or additional supervision. The Staffing Profile will assist the Project Manager with this determination.

Execution Phase - Projects

Version: 1.2, Date: 04/10/97

Overview

During the execution phase of an engagement or project, consultancy work is carried out and the deliverables are developed. For each project its quality plan describes the quality control measures that will be taken to ensure the quality of project deliverables. In effect, the quality plan defines the application of the QMS for the project concerned. Quality plans are the subject of a separate quality standard .

Project Progress Monitoring and Reviews

Regular status reporting, backed up by independent review of the project are key components of the SPS approach to managing quality on projects.

Regular status reporting in accordance with the SPS Standard for Status Reporting is mandatory.

The Quality Plan for each project must specify the approach and schedule for formal Project Quality Reviews (PQRs). The frequency of these reviews is dependent on the size and risk associated with the project. See the document Project Quality Reviews for further details.

QMS Compliance Audits

All projects are liable to be subject to internal quality audit as part of the Internal Quality Audit process required by the ISO 9001 standard. In addition to the regular schedule of audits, SPS line management may request audits of projects at any time.

Quality Considerations for Projects

- 1) Throughout the project, work in progress must be reviewed appropriately in order to verify that the client's requirements are being met. It is the project manager's responsibility to make sure that these reviews take place and records are kept. The approach for these reviews will be documented in the project's quality plan. A general purpose Quality Control Review Form is provided as part of the QMS documentation .
- 2) Throughout the project, documents and records must be maintained and managed in good condition and with an appropriate level of security. The SPS Client Projects database is an appropriate location for electronic copies of deliverables. The project team may utilize the SPS Project Team Template database for their work in progress.
- 3) Any changes in the client's requirements must be managed through a formal change control process. Any change in the project scope must be agreed with the client including the impact on work completed or in progress, together with the impact on time and cost. The SPS Change Control standard must be followed to manage changes in client requirements or project scope .
- 4) Where software provided by the client has to be included in a system being developed by SPS, it is required that any problems encountered with such software be documented and reported to the client. It is the project manager's responsibility to ensure that this happens.
- 5) In order to facilitate the resolution of any problems with SPS work for clients, all deliverables must be itemized, confirmed in writing and packaged appropriately. Where feasible (for example where documentation is provided for the client) the author or originator of the deliverable must be clearly identified.
- 6) Deliverables may not be released to clients until the project manager is satisfied that the client's specified requirements have been met and the appropriate level of review has taken place.
- 7) Work that does not conform to the client's specified requirements must not be delivered to the client. It is the project manager's responsibility to ensure that appropriate action is taken to correct any nonconforming work prior to delivery to the client.
- 8) During the course of the project the project manager is responsible for ensuring that any materials and papers supplied by the client are maintained in good condition and with an appropriate level of security. Items supplied by the client will be checked by the project team to confirm their validity and accuracy

to the extent required by the project definition. If required, the project manager will ensure that client materials and papers are returned to the client at the end of the project.

- 9) In the event of damage to any client property, both the client and the SPS project manager will be informed and any necessary action taken to repair or replace the damaged item.
- 10) All formal meetings with the client must be documented including details of action items agreed, together with responsibilities and due dates.
- 11) It is the project manager's responsibility to ensure that any client complaints are dealt with in accordance with the SPS Client Satisfaction Policy.

Project Quality Reviews

Version: 1.1, Date: 04/10/97

Project Quality Reviews (PQRs) are one of the key mechanisms by which SPS is able to assess and assure quality for projects.

Objectives of Project Quality Reviews

The purpose of carrying out PQRs is to gain an independent assessment of the state of a project with respect to its defined goals (especially time and budget objectives), a reevaluation of project risk factors together with an assessment of the 'quality' aspects of the project including the quality of specific deliverables and the client's satisfaction with project progress.

Specific key objectives of PQRs include:

- 1) Assessment of whether or not the project can realistically be completed on time and to budget.
- 2) Evaluation of the performance of the project with respect to quality issues. Is there evidence that the quality plan is being followed and are deliverables subject to documented review?
- 3) Reevaluation of the risk factors related to the project.
- 4) Assessment of the relationship with the client and client satisfaction with the project.
- 5) Confirmation of the use of SPS methods - in particular, are standard methodologies actually being followed (if appropriate).

Conduct of Project Quality Reviews

PQRs should always be carried out by an independent reviewer - that is someone not directly involved in or responsible for the project. The approach to conducting PQRs, including who will carry them out and the schedule, will be detailed in the project's Quality Plan.

For large projects it may be appropriate for PQRs to be carried out by a resource from outside the practice (e.g. another Practice Director or the SPS Quality Manager).

PQRs must be conducted in a professional and impartial manner with a strong focus on mutually agreed action items to resolve any issues which arise.

PQR Reports and Follow Up

PQRs must always be documented in the form of a PQR Report containing details of what was reviewed together with issues arising and specific action items arising from the review.

It is essential that action items arising from PQRs be followed through to completion, with their status being tracked through the regular status reporting mechanism.

Review Requirements

PQRs must be carried out for all projects (ISIS Service Code ARCH, ANLDES or DEVL) with a value in excess of \$100,000.

PQRs may be linked to major project milestones or simply scheduled at specific intervals. In general, PQRs for projects which meet the above criterion should be held at least quarterly during the life of the project. The Quality Plan for the project will contain the details of the approach and schedule for PQRs.

Completion Phase - Projects

Version: 1.1, Date: 03/01/96

During this phase the project is formally completed. Deliverables are handed over to the client and remaining tasks on the work plan are completed. All housekeeping is also completed to formally complete the project.

Project Completion

1) It is the Project Manager's responsibility to formally inform the client that, from Sybase's point of view, the project has been completed successfully and is ready for acceptance by the client.

- 2) The client should give written confirmation of the acceptance of contractual project deliverables. However, as a last resort, payment of invoices in full will be regarded as implicit acceptance by the client.
- 3) If there are any opportunities to sell further work they should be identified at this stage and action taken by the Business Manager to convert these opportunities into new engagements.
- 4) The Project Manager must complete a Project Close-out Checklist , which addresses the key items that need to be done to complete the project, including:
 - a) client acceptance;
 - b) final organization and archiving of project files, including making requisite entries in the SPS Client Projects database and cross-references in the Engagement File;
 - c) Debriefing Report;
 - d) staff appraisal input.

The Project Close-out Checklist must be reviewed and signed off by the appropriate line manager responsible for the project.

- 5) In order that we can determine the level of satisfaction with our performance on the project, the client must be requested to complete a Client Survey Form.

B. The SAFE Proposal Process

By Kay Pryor, Project Management Office

Introduction

Sybase Advanced Framework to Enable Proposals, or SAFE Proposals, is a process for developing successful and repeatable project proposals at Sybase. It is a tool kit for the Proposal Team to utilize a process that incorporates all of the best practices and required procedures for proposal submission to a client.

This document describes the activities involved in generating a solution proposal using the Sybase Advanced Framework to Enable Proposals, or SAFE Proposals.

Phase I: Proposal Planning and Start-Up

Prepare Proposal Plan is the first occasion to assess the business opportunity presented to SPS. The overall risk is assessed and the effort for developing the proposal is determined. If the proposal manager and local management decide to continue, resources are assigned to develop the proposal.

Finalize Proposal Plan allows for the newly formed team to make modifications to the plan, create an ISIS code to track the proposal development effort, and hold the initial meeting of the team to discuss the opportunity.

Prepare Proposal Development Effort is the endeavor of determining and establishing the technical environment necessary for the proposal development activities.

Phase II: On-Going Proposal Management

These activities begin after Phase I when the first go/no-go decision is reached, and continue through the life of the proposal development effort. They include status review meetings, maintaining correspondence with all pertinent parties, issue resolution, and day-to-day management.

Phase III: Research / Draft of Proposal Components

This is the largest phase of the project and the activities occur concurrently.

Legal Research and Draft provides an opportunity to discuss the business goals with a representative of the legal department. This may provide some insight into legal risks or issues that should be dealt with later in the project planning activity. Also, the contract may be modified due to specifics of the engagement. The second go/no-go decision is made at this point with input from the legal department.

Research and Draft Client Scope begins with a client meeting in order to continue to investigate and understand the business opportunities and needs identified by the client organization. As a result of the knowledge obtained by the proposal team, a scope of the project engagement can be drafted and another go/no-go decision made.

Research and Draft Technical Approach begins with another client meeting but probably with a different audience. The objective in this meeting is a better understanding of the technical issues and challenges, including constraints that SPS is evaluating. The product options, technical alternatives, and reusable solutions are researched and evaluated in this activity. The output is a draft of the technical section of the proposal document. At this time, the Area Lead Architect is involved for review and concurrence of the proposed technical solution. His input helps determine the outcome of another go/no-go decision.

Research and Draft Delivery Approach also begins with another client meeting. Each subsequent client meeting should be used to get affirmation of our approach so far so that when the final proposal is submitted, it is appropriately in line with the client's expectations. This activity primarily is focused on developing the project approach, work breakdown structure and estimates. The output is a draft that includes the staffing and implementation plan and education and training sections of the proposal. The Project Management Office (PMO) reviews the documents for viability, likely success and profitability. Once again, the input from the PMO will aid in the decision of whether to continue with the proposal.

Financial Research and Draft is the opportunity for the team and SPS management to evaluate the overall profitability of this project engagement. The risks are identified and contingencies determined. Financial models are developed and evaluated by the local management, the Area Finance Manager, and any other management required based on the SPS policies. A draft of the product investment, services investment, and education investment sections of the proposal are produced, and a financial go/no-go decision is made.

Final Reviews by all involved occur now that all decisions have been made on the approach to the engagement. The identified business goals are reassessed against the proposed solution for reasonability, feasibility and profitability, and another opportunity to decide the continued involvement is reached.

Phase IV: Final Proposal Production

Complete QMS Initiation Documents provides an opportunity for the team to enrich the previously drafted Project Definition Document (PDD) and Quality Plan documents with accurate and up-to-date information. The PDD should be included with the Project Proposal.

Gather and Publish Draft collates the sections of the proposal, probably from multiple locations, and creates one proposal draft document.

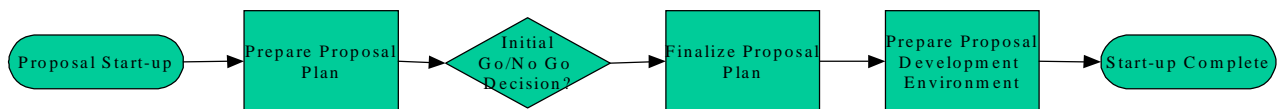
Review Proposal provides the proposal team, including all previously involved reviewers, one last opportunity to review the entire document and provide feedback.

Approve Proposal is the last opportunity to decide the SPS position regarding the viability of the business opportunity, and assess any new information. If it is decided to continue, then the proposal is reproduced and delivered to the client.

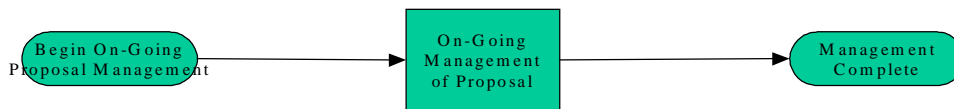
Phase V: Project Closeout

Project Closeout Activities is a clean-up phase. All hardware and software will be de-installed, and proposal materials archived to CLIP for reuse.

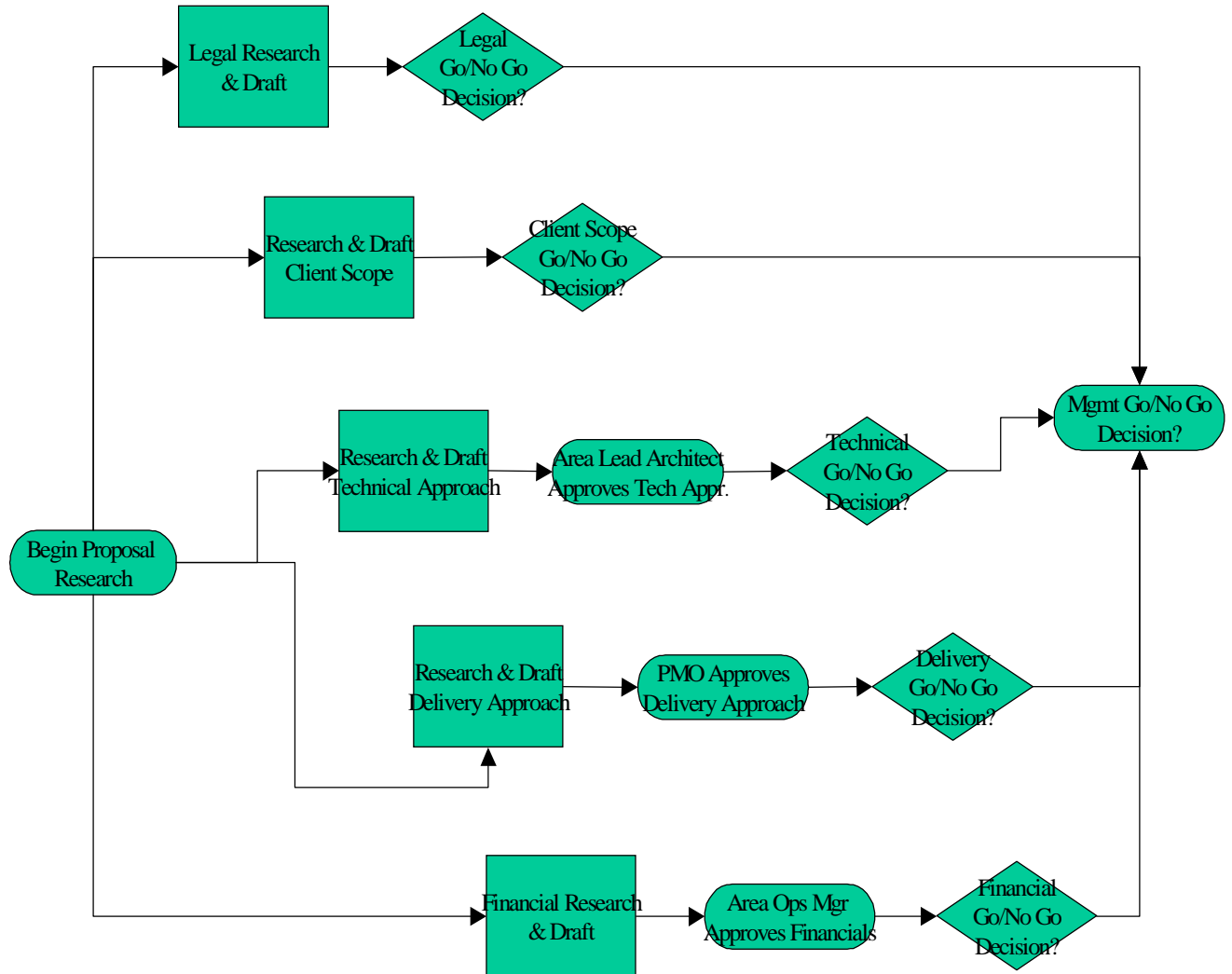
Phase I: Proposal Planning & Start-up



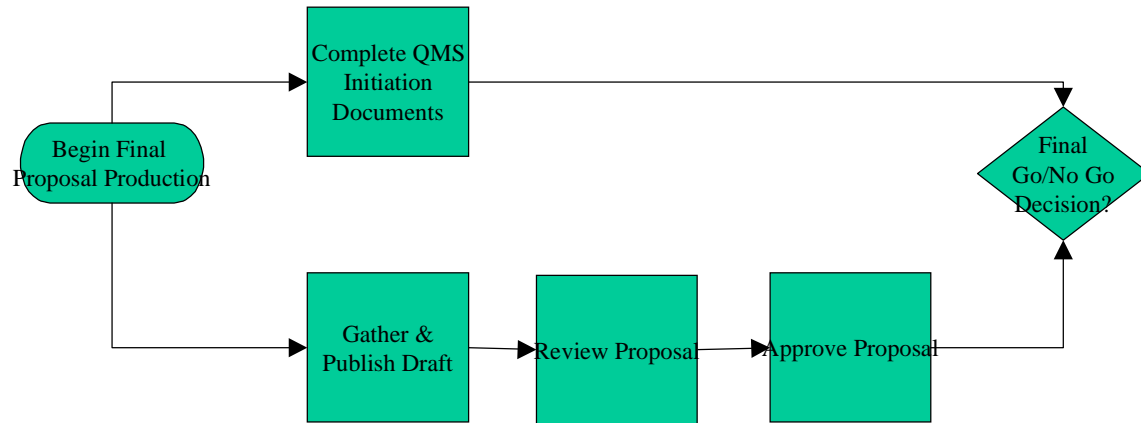
Phase II: On-going Proposal Management



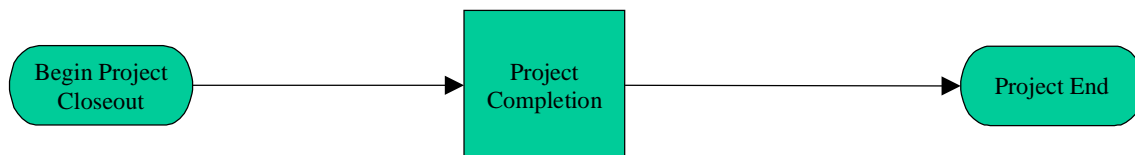
Phase III: Research & Draft of Proposal Components



Phase IV: Final Proposal Production



Phase V: Project Closeout



C. The PQR Process

What is a Project Quality Review?

A Project Quality Review (PQR) is a review of the project management and project control processes used on a project. It is performed by persons not assigned to, nor responsible for, the reviewed project. The purpose of a PQR is to ascertain the general state of health of a project, focusing on the project management function as well as the project control processes.

A PQR is not intended as a review of the client's operations or their own management and control processes. A PQR is also not a technical review. The PQR is not intended to review architectures, do code reviews, or perform walkthroughs on design documents. These types of reviews are expected to be part of the development methodology. The PQR is a review of SPS' project management and control process.

How often is a PQR conducted?

A PQR is conducted at least once quarterly on all projects. All PQRs are typically scheduled during the project initiation phase, documented in the Project Definition Document and/or Project Quality Plan, and reflected in the project plan and schedule. PQRs are a recognized SPS best practice and are also required for compliance with the SPS Quality Management System (QMS).

How is a PQR performed?

The PQR is performed using a QMS standard checklist, the Project Quality and Risk Assessment Tool (PQRAT). It can be found in the SAFE 4.0 version of the WORD Kit.

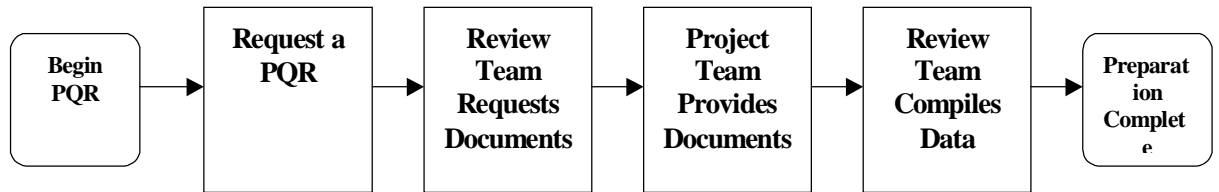
The PQRAT performs several functions at the same time. It first of all helps to determine the areas of risk on a project. The overall health of a project is determined by how effectively the project management and control processes minimize or remove these risks.

It next provides an overall evaluation of the relative level of risk the project poses. This is useful in highlighting the necessary amount of management involvement and oversight that might be necessary, as well as in accentuating the dangers facing the project.

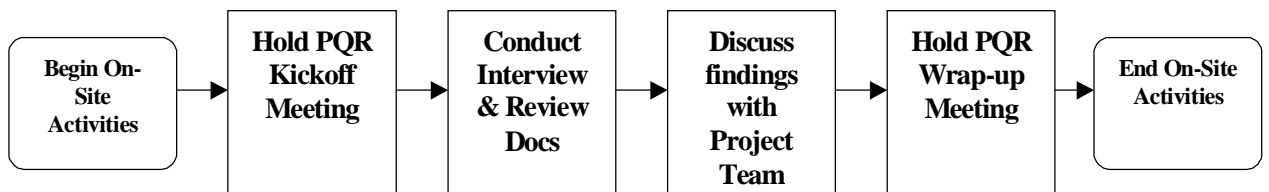
Lastly, the PQRAT, by way of its structure, clearly identifies where action needs to be taken to solve very real problems. As much as possible, the PQRAT tries to define the project in binary terms – where a negative answer to a checklist question mandates that corrective or mitigating action is taken.

Project Quality Review Process

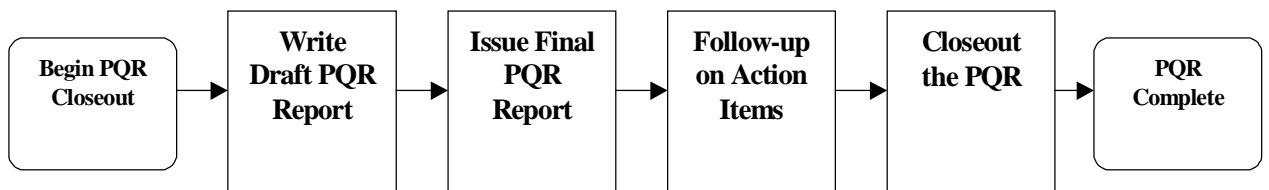
Stage 1: Prepare for PQR



Stage 2: Conduct the PQR



Stage 3: Closeout the PQR



Who performs a PQR?

There are two types of PQR. The difference between the two is determined, primarily, by who it is that performs the review. While a PQR is required on all projects at least quarterly, it is general practice that most or all of these are Internal PQRs. Where a project is required to have an External PQR, it is likely that this External PQR will be performed only once per year or, at most, once every six months. An Internal PQR will be performed in the other quarters.

Internal PQR: An Internal PQR is one where a person(s) from the project's own district performs the review. This is the most common type of PQR. An Internal PQR usually takes less time to complete than the second type, an External PQR, since people in the district are more familiar with the project, district practices, the people involved, etc. This is not to say that an Internal PQR is less thorough or rigorous. It is generally more quickly completed due to the greater familiarity about the project enjoyed by the district-level project reviewers.

External PQR: An External PQR is one where the SPS Project Management Office (PMO) conducts the review. This type of PQR is typically required on those projects where the risk to SPS and the client is high. This determination could be based upon technical complexity, size of the project team, cost of the project, client satisfaction issues in the past or present, and the like.

The PMO Rules of Engagement

As stated above, an External PQR is generally one conducted by the Project Management Office (PMO). There are certain procedures to follow to ensure the PMO is able to perform these PQRs.

1. The PMO shall only be expected to perform Project Quality Reviews on high-risk projects. A project may be considered high risk for any of the following reasons:
 - scoring as a high risk or extremely risk project on the Project Quality and Risk Assessment Tool,
 - fixed price solution of at least \$500,000 known value,
 - inexperience or hostility of the client toward industry standard project management and control disciplines and/or QMS,
 - poorly defined or highly volatile requirements,
 - invoices are tied to project deliverables rather than hours worked,
 - the use of a large, diverse project team, or
 - engagement that otherwise fits the definition of a high risk project as defined in QMS.
2. The PMO shall be expected to perform Project Quality Reviews only on projects that are based upon deliverables. The PMO should not do a PQR

on engagements where SPS staff is paid merely for technical expertise and advice; where we are not designing, building, testing, or delivering any solution or part thereof.

3. The PMO shall be notified, in writing or email, at least one month prior to a scheduled PQR date. Failure to do so will jeopardize the original PQR schedule date, and thereby perhaps cause other inconveniences for the project team.
4. In the rare case where an emergency exists on a project, and the PMO is requested to perform a PQR, the PQR shall require at least two weeks notice. It also shall be the prerogative of the PMO, in such cases, as to whether to perform the PQR at the project's Sybase office or to perform the PQR remotely via conference calls and email.

Where is a PQR conducted?

Typically, a PQR is held at the Sybase office out of which the project is staffed. It is generally unwise to conduct a PQR entirely at the client site since the review team needs a dedicated space in which to work. Also, a PQR is intended for SPS purposes only, to evaluate the project management and control processes in use on the project. A PQR is not intended as a review of the client's operations or their own management and control processes. For these reasons, a PQR is best conducted mainly from a conference room or office at the local Sybase office.

How to prepare for a PQR?

The following tasks must be completed, and the listed documents made available, prior to the start of the PQR.

1. Notify the review team of the need for a PQR. For an internal PQR, a week or two may be enough time to prepare. However, for an external PQR (to be conducted by the PMO), notification must be sent to the PMO at least one month prior to the scheduled date. Failure to do so will jeopardize the PQR's original schedule date, and thereby perhaps cause other inconvenience for the project team.
2. Schedule the exact date(s), time, place, and participants for the PQR. All PQR participants must be informed of the upcoming PQR.
3. Arrange for a small conference room or large office to be used by the review team. They will need to have a place to work for the duration of the PQR. This place should be private, have a whiteboard or flip chart available, power and network access, chairs with desks or a table, etc.
4. Review the PQR Report and Action Items from the last PQR. Ensure they have been acted upon and closed, rescheduled for further action, or closed in some other way.
5. Conduct a Self-Evaluation PQR using the PQRAT tool. Both the Practice Manager and the Project Manager should do this.

6. Send the most recent copies of project documentation to the review team for receipt at least one week prior to the PQR. This can be done either through email, regular mail, FedEx, etc. It may also be possible to notify the review team of the location of these documents on a project server accessible via Lotus Notes or SYBerspASE. However, it remains the prerogative of the review team as to how this documentation is made available to them.

Documents for potential review:

- Proposal
- Contract with any Modifications
- Engagement Letter(s)
- Project Definition Document, approved current version
- Quality Plan, approved current version
- Project Plan, approved original baseline
- Project Plan, approved current baseline
- Invoices, all to date
- Status Reports, all to date
- Meeting Minutes, all to date
- Change Requests, all to date
- PQR Reports, all to date
- Client Satisfaction Issues, any to date
- Standards Documents (coding, naming, testing, etc.) approved current versions
- Self-Evaluation PQRAT, most recent

How to conduct a PQR?

The following steps are the general progression of a PQR. However, based upon the particulars of the project under review, certain steps may be expanded while others minimized; additional steps may also be added where the review team feels they are warranted.

1. Review team is notified of a need to conduct a PQR.
2. Review team notifies the Project Manager of the project documentation needed for the review.
3. Review team receives the project documentation at least one week prior to the PQR.
4. Review team reviews the project documentation, compiling a list of questions, concerns, issues, etc. Review team pays particular attention to the Self-Evaluation PQR provided by the Project Manager and Practice Manager.

5. Review team travels to the PQR site, probably the Sybase office responsible for the project.
6. Review team and the project management team meet to kickoff the PQR. At least the following people are required to attend this kickoff meeting:
 - Senior Practice Manager, Practice Director, or equivalent
 - Practice Manager
 - Project Manager
 - Project Technical Lead(s)
 - Project Quality Manager
 - Project Administrator
7. During the kickoff meeting, the Project Manager and/or Practice Manager will provide a brief overview of the project. The review team will go over the agenda for the PQR, establishing the times for interviews, other meetings, and the final meeting at the end of the PQR.
8. The review team will use the PQRAT instrument to guide their work. Having reviewed the PQRAT completed by the project team prior to the review, as well as other project documentation, the review team will be able to focus in on areas of key concern for the project. The review team will, prior to the final PQR meeting, fill out the PQRAT. It is not expected that a PQR will take more than two days and no more than one day in many cases. However, when serious concerns are raised during the PQR, then whatever time is necessary to formulate the corrective action plan must be taken.
9. Just prior to the final PQR meeting, the review team will meet with the Practice and Project Managers to discuss their findings and recommended corrective actions. During this meeting, a list of mutually acceptable and agreed to Action Items will be created.
10. During the final PQR meeting, held with all interested parties in attendance, the review team will summarize their findings, review the list of Action Items, and provide a due date for the PQR Report. After this meeting, the PQR review team will leave.
11. Within one week, leader of the PQR review team will write up the PQR Report and provide it to the project team for review. This review shall be completed within one week, and the PQR Report then finalized.
12. The final version of the PQR Report is distributed to the project team, the PMO, and senior management up to and including Mike Forster.
13. Based upon the PQR Report and the nature of the findings, it may be necessary to schedule another meeting or conference call with senior management to discuss the project further, and to ensure that the Action Items are completed expeditiously. It is up to the leader of the review team to decide.

14. The review team will follow up with the project team at least monthly to ensure that assigned Action Items are being worked off and closed. Failure to do so will result in the escalation of the matter to senior management. Failure to close Action Items is a violation of QMS and jeopardizes the worldwide SPS ISO 9001 certification.

The PQR Report

The PQR Report is created using the QMS PQR Report Template. It can be found in the WORD Kit. This template has four sections.

- a) Review of Work Performed and Review Summary – a brief summary of events and trip report.
- b) Deficiencies Identified – a synopsis of the concerns, issues, risks, etc. noted by the review team.
- c) QMS Change Requests Identified – a list of the proposed changes to QMS that this PQR identified.
- d) Agreed Action Items arising from Review – the list of correction actions, who each is assigned to, and the due date for its completion.

It is also helpful to attach the completed PQRAT instrument to the PQR Report.

This report is first provided to the project team in draft form. It is policy that the draft PQR Report is presented to the project team for review within one week of the PQR date. It is the job of the project team and the review team to quickly come to agreement on the content and tone of the PQR Report. It is policy that the final version of any PQR Report, from either an internal or an external PQR, is presented to the project team, the PMO, and senior management for review within one week of receiving the draft version.

The Importance of Action Items

Action Items are the tangible means of improving the project's performance. Through the use of powerfully conceived Action Items, the right people and organizations are brought to bear on the problems facing the project. Therefore, it is not enough to merely assign Action Items. They must be aggressively worked and effectively completed. To that end, the assignment of an Action Item is a serious matter. Those assigned Action Items must view them as one of their highest priorities to complete.

It is because the Action Items are so important that the review team only assigns Action Items that are mutually agreed to by all parties. However, once they are agreed to, they become part of the list of the project's Critical Success Factors. Therefore, failure to act upon them becomes a matter of the gravest concern to the project, the Project Management Office, and senior management.

Action Item Escalation Procedure

As discussed earlier, the importance of aggressively and effectively closing Action Items can not be overstated. And, in the vast majority of cases, the project

team or others assigned to these Action Items will do all in their power to resolve them quickly.

However, in the rare case of an Action Item not being adequately addressed by the assigned party, the following escalation procedure shall apply. It must be stated that this escalation procedure should never need to be used. All parties to the Action Item are able to make adjustments for extenuating circumstances, change due dates, etc. with proper approval. To allow the situation to deteriorate to the point of needing to escalate it is so unprofessional and irresponsible, that it alone is grounds for the severity of the final step.

The following escalation procedure shall be superceded by the QMS Audit Action Item Escalation Procedure.

Step 1. The PMO shall notify the Project and Practice Manager of the problem, in writing or email, and ask that the situation be remedied immediately. The Project and Practice Managers have **one week** in which to respond.

Step 2. Assuming insufficient action in Step 1, then the PMO shall notify senior management (up to and including the Executive Vice President responsible for Sybase Professional Services) of the problem, in writing or email, and ask that the situation be remedied immediately. The Project and Practice Managers have **one month** in which to respond.

Step 3. Assuming insufficient action in Step 2, then the PMO shall notify SPS Finance of the problem, in writing or email. SPS Finance shall then immediately impose a moratorium on revenue recognition on this project by any responsible party (the Practice Manager, in most cases) until the situation has been remedied to the PMO's satisfaction.

Step 4. Should this situation still not then be resolved, or if over time there appears to be a tendency to disregard assigned Action Items, the individual(s) responsible shall be subject to further disciplinary action and/or dismissal, as deemed fit by senior management.

For Help and Assistance with a PQR

It is recognized that conducting a PQR for the first time can be confusing and frustrating. The checklist used, the PQRAT, contains over 100 detailed questions. Further, projects are complex and difficult to understand. Every project is unique. Yet, certain disciplines and techniques are relevant and beneficial to all projects. These are commonly termed Best Practices. The PQR, itself, is one of these Best Practices. The PQRAT instrument is another Best Practice.

It is not assumed, however, that just anyone can pick up the PQRAT instrument and perform a credible PQR on a complex project. Training, experience, and mentorship are required to ensure the PQR is a value-add for the project and SPS.

To that end, the Project Management Office (PMO) is here to help. Through a worldwide network of Sybase certified Project Managers, the PMO offers many types of support to anyone performing a PQR. The PMO can participate in your preparations for a PQR, in PQR-related conference calls, in discussions about

particular aspects of the reviewed project, and even in the Action Item Escalation procedure. The PMO can help you to accurately report the severity of the risks you have identified. The PMO can help you make sure that senior management is aware of the situation. The PMO reviewers can add their knowledge and expertise to yours and that of the project to make sure that your clients always receive a quality solution, on time, on budget, and with few surprises. This, after all, is the ultimate goal and sole justification of a Project Quality Review.

To contact the PMO:

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Or contact your local QMS Coordinator