SECTION TWO

II

Project Management Topics

SECTION II: PROJECT MANAGEMENT TOPICS
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Section II Introduction

This section provides in-depth advice and direction on selected topics of importance to New York State Project Managers. It is anticipated that this section of the ***Guidebook*** will grow as the state's Project Managers identify and contribute advice on additional topics of common interest. The intent of this section is to provide a repository to share the lessons learned from the experience and expertise of the state's Project Managers.

Chapter 1 covers **Project Triage**, designed to assist Project Managers who have a project that is "going south." It outlines a specific process that can be employed to quickly identify project problems and define corrective action plans.

Chapter 2 discusses **Leadership**, one of the most important qualities for a Project Manager to have and to continuously develop and improve. The challenges and the many facets of leadership are explored and specific suggestions are offered.

Chapter 3 contains specific information regarding **New York State Procurement and Contractor Management**. Projects undertaken in New York State are increasingly complex, frequently involving multiple agencies and contractors supplying myriad products and services. This chapter provides references to available New York State Procurement Guidelines and existing state contracts, as well as guidance on when to use specific contracts and whom to contact for procurement advice and direction, and advice on managing contractor performance.

Chapter 4 identifies **Performance Measures** terms and concepts to orient Project Managers to this important aspect of organizational performance.

Chapter 5 describes **IT Project Capability** and provides an objective way to establish and predict performance of an agency's IT effort. It is designed to assist organizations improve the effectiveness of their software and business processes.

Chapter 6 provides a brief description of how **IT Project Tools** support the system development lifecycle. The discussion is focused on the value of tools and how a Project Manager may utilize them during a SDLC project.

1 PROJECT TRIAGE

Purpose

Project Triage is a process used to perform a quick evaluation of a project and to prioritize actions or corrective recommendations based on current project status. Triage is performed when a Project Manager is given a project in progress or when a project is determined to be "in trouble." Recognition that a project is in trouble may come from a number of different sources, including the Project Manager, the Project Sponsor, a Project Team member, an auditor, a fiscal analyst or others within the Performing Organization. The Project Manager must play a role in the triage, with support for the triage effort from the Project Sponsor.

While the emphasis of the triage effort is on a quick evaluation, speed is relative to the project size/scope. A three-year project may require a triage review lasting several weeks, while a project of several months duration may only require a triage review of several hours. It is important to spend adequate time to gather the information needed to analyze the problems and define the actions necessary to get the project back on track. The triage effort may be completed by an individual, or by a team, depending upon the size of the project and the time available.

An experienced Project Manager should perform a Project Triage. In some cases it may be more effective to secure a Project Manager from outside the Performing Organization, who is less likely to be influenced by organizational politics, history, or other factors. Inside knowledge can sometimes limit the effectiveness of a triage by prejudicially eliminating ideas without proper consideration. While having the triage performed by another Project Manager within the organization who has not previously been involved in the project may be more objective, it still may be difficult for anyone from within the organization to evaluate the work of a peer. In general, the less background related to the project and the Performing Organization the Project Manager has before taking on the project triage, the more likely it is that the effort will produce objective and effective results. However, the reality is that a Project Manager often triages his or her own project.

List of Processes

Project Triage consists of the following processes:

- Gather the Data
- Review and Analyze the Data
- Prepare Findings and Develop Corrective Action Plan
- Present Report
- Revise Project Plan

List of Roles

The following roles are involved in carrying out the processes of this phase. The detailed descriptions of these roles can be found in the Section I Introduction.

- Project Manager
- Project Sponsor
- Project Team Member
- Customer Decision Makers

List of Deliverables

Figure 6-1 lists all Project Triage processes and their deliverables.

Figure 1-1

Processes	Process Deliverables
Gather the Data	Collection of existing information (project repository)
Review and Analyze the Data	Assessment of current project status (Preliminary Problem Identification List)
Prepare Findings and Develop Corrective Action Plan	Findings and Corrective Action Plan
Present Report	Management presentation
Revise the Project Plan	Revised Project Plan, including remediation activities as required

1.1 GATHER THE DATA

The first step in Project Triage is for the Project Manager to gather all available information from the project repository. For example, start with the Project Plan or any existing pieces of the plan, and gather:

- a Project Schedule
- the work breakdown structure
- a task list
- a list of team members and role descriptions
- Project Status Reports
- a product description

If any of these items is not available, its creation should become a task in the corrective action plan. The End-of-Phase Checklists can be used for a more comprehensive list of project requirements for the phase the project is in and all preceding phases.

In addition to the documentation specific to this project, all existing standards, including templates and forms the organization has in place, must be collected. All written documentation should be reviewed – diagrams, electronic documents, blueprints, and other media.

For a troubled project, information will also need to be gathered through interviews with team members and stakeholders. The Project Manager must try to get a feel for the attitude and atmosphere surrounding the project by talking to a few key players.

The best place to start is with the Project Sponsor.

There isn't a Project Sponsor? Why is this project being done? To whom in the Performing Organization is it important? There may be more than one Project Sponsor, but if there are more than two, this is also a caution point. Too many sponsors may lead to conflicting directions.

Next, it is important for the Project Manager to talk to the technical or subject matter experts on the Project Team. If the project is a software development effort, this will probably be an experienced computer programmer or similarly skilled individ-

ual. If the project is a new building, this may be an architect or a construction engineer.

The Project Manager should next meet with some or all of the Project Team members. These interviews can be conducted in a group setting, or individually, if that might be more productive. The Project Manager should try to sense the mood of the Project Team to determine the proper interview settings. A team meeting, if practical, may allow more information to be gathered faster. Individual interviews can be conducted subsequently if participants were reluctant to contribute in a group setting. ("Starter" questions are provided in a sample interview agenda, see Figure 6-2. Any that are relevant to the project being assessed can be used, although additional questions may be needed to elicit the information required.)

If the Project Team interviews or the team meeting did not involve Customers or Consumers of the project's product, follow-up with those individuals is also required.

Don't forget that Customers or Consumers should be actively represented on the Project Team.

Sample Triage Interview Agenda

Figure 1-2

Interviewee: _____ Project Team: _____

Role: _____ Date & Time: _____

1. What do you view as the problems with this project?
   Response:

2. What would you do differently?
   Response:

3. What was/is your role is on this project?
   Response:

4. What is your current task? When did it begin? When will it be completed? Do you expect to meet that due date?
   Response:

5. Do you have a copy of the Project Scope statement?
   Response:

6. Do you have a copy of the Project Schedule? Do you know specifically which tasks you are assigned? Do you understand how they fit into the total project?
   Response:

7. Do you provide a Progress Report to your Team Leader or the Project Manager? Do you participate in a status meeting? Do you receive a Project Status Report?
   Response:

8. Do you have the resources required to complete your tasks? Are you assigned to this project exclusively? Do you have other assignments that are inhibiting your ability to complete the assigned tasks on this project? Has the relative priority of your assignments been clarified to you by your supervisor?
   Response:

1.2 REVIEW AND ANALYZE THE DATA

The Project Manager should quickly determine where the project is within the phase (Project Planning, Project Execution and Control, etc.) and process level. Major problems must be identified (e.g., behind schedule by 60%, over budget by 30%, lost resources, unstable bleeding edge technology). The End-of-Phase Checklists in this ***Guidebook*** can be used for each project phase (Initiation, Planning, Execution and Control, and Closeout) to evaluate whether each project phase is complete and to identify missing elements. The lists of Pitfalls and Measurements of Success for each phase will also assist in evaluating the current state of the project.

Analysis of issues begins during information gathering, when new questions may be raised. It is not necessary to wait until all information has been gathered to begin the analysis. Any assumptions developed as part of the triage effort must be documented in a Preliminary Problem Identification List and verified. Answers to the following questions will assist in determining the project's overall health:

- Is the available documentation an accurate reflection of what has happened?
- Does documentation exist or are the Cost, Scope, Schedule, and Quality moving or unidentified targets?
- Which deliverables have been completed? Reviewed? Approved?
- Which deliverables have been completed on time?
- Which milestones have been met?
- Where are the actuals in relation to the baseline? Is there a baseline?
- What percentage of the total project resources has been expended?
- What percentage of the total estimated work has been completed?
- What are the outstanding issues? Is there an issues log?
- What are the communications vehicles? (status reports, memos, etc.) What evidence exists of their use?

The Project Manager must identify causes of problems, not just symptoms. Reacting to symptoms without addressing problems often gets a project into trouble. For example, if there are excessive requests for scope changes and there is a lack of

understanding of the Project Scope by the Project Team, the cause may be that the Project Scope was not well defined or that no change control process exists.

It is important to recognize and acknowledge that some of the issues that could cause a project to run into trouble are external to the control of the organization. Examples of such situations include natural disasters, newly enacted legislation, acts of terrorism or war, etc. Risk plans cannot cover every possible contingency.

Also, major successes should be identified (user requirements are clear, planning was complete, status reporting has been accurate, team members are all getting along, etc.). This will help to eliminate causes of problems as well as provide a foundation for the remediation portion of the mission.

If at any point the Project Manager identifies an action that should be taken immediately in order to prevent further problems or to correct a problem, it should be documented and presented to the Project Sponsor for immediate implementation.

1.3 PREPARE FINDINGS AND DEVELOP CORRECTIVE ACTION PLAN

The output of a triage is a description of the findings of the triage effort, including the problems identified (symptoms/indicators), the root causes of the problems, and the specific prioritized recommended corrective actions. A prioritized list of action items must be created to get the project back on track as quickly and efficiently as possible. Some actions may need to stop to allow other processes to be completed. Most importantly, the Project Manager must not allow tasks to move ahead which are pulling the project further in the wrong direction.

Examples of Problem Indicators, Causes, and Actions Recommended follow.

Figure 1-3

Indicator	Potential Causes	Actions Recommended
1. Behind schedule	**a.** Scope creep.	**i.** Ensure/create baseline scope statement. **ii.** Implement a change control system.
	b. Staff assigned does not have the same level of expertise anticipated when estimates were made.	**i.** Assign appropriately experienced staff (contract or in-house). **ii.** Adjust schedule to allow for training. **iii.** Additional staff assigned.
	c. Using not-ready-for-primetime software.	**i.** Replace with a proven product. **ii.** Adjust schedule to accommodate software maturity.
	d. Estimates made during Project Initiation have not been revised throughout Project Planning.	**i.** Revise initial high-level estimates in light of additional information gained through the planning process.
2. Over budget	**a.** Poor initial estimates.	**i.** Re-estimate, re-baseline, and gain approval for new plan.
	b. Technology cost increases.	**i.** Consider alternative implementations. **ii.** Justify budget increase and re-baseline.
	c. Project Budget charged with unrelated expenses.	**i.** Document and report to management. Update and maintain budget documentation.

Indicator	Potential Causes	Actions Recommended
3. Poor staff performance	**a.** Poorly defined Project Schedule.	**i.** Re-plan task breakdown, resource estimates, and assignments with team involvement.
	b. Poor communications.	**i.** Evaluate and revise Communications Plan. **ii.** Implement regularly-scheduled team meetings.
	c. Poor project management.	**i.** Assess project management competencies and identify weaknesses. Provide training and mentoring to strengthen Project Manager. **ii.** Assign new Project Manager. **iii.** Hire an experienced Project Manager.
	d. Lack of user involvement.	**i.** Cultivate mutually beneficial relationship
	e. Roles and responsibilities not defined or communicated.	**i.** Define and document roles and responsibilities. Review with team.
	f. Conflicting priorities.	**i.** Reschedule project consistent with actual priority.
	g. Lack of executive support.	**i.** Seek support through Project Sponsor. **ii.** Seek support through Performing Organization management, if appropriate.
	h. Changed priorities – project no longer needed.	**i.** Cancel project.
4. Poor project progress	**a.** Lots of activities, no definable deliverables and/or project milestones.	**i.** Organize activities into tasks with defined responsibilities and dependencies. Define relationship of activities to deliverables, and to key project milestones.
	b. Unrealistic expectations.	**i.** Manage user expectations.
5. Unexpected obstacles	**a.** Unforeseen issues possibly including external factors that are out of the organization's control.	**i.** Re-evaluate cost/benefit and determine if project should proceed.
	b. No risk plan.	**i.** Define a risk plan.

When prioritizing the recommendations, include any additional resources that will be needed, including who should be responsible for each item, by role if not by name. Provide alternatives along with the pros and cons of each, if possible. For example, hiring additional staff will add to the cost of the project but preserve the schedule as opposed to maintaining the budget by delaying the completion.

Examples of Prioritized Recommendations and Resource Needs follow.

Figure 1-4

Priority	Action	Resources	Owner
1.	Stop development until scope is defined.	None	Project Sponsor
2.	Document scope.	Customer Representative, Project Sponsor, Subject Matter Expert	Subject Matter Expert
3.	Define change control process.	Subject Matter Experts to develop a small system	Project Manager
4.	Clarify priorities.	Performing Organization managers	Project Sponsor
5.	Formalize schedule.	Need to purchase scheduling software	Project Manager
6.	...	...	...

A narrative report should be developed to explain the process undertaken to identify the problems and causes, identify the reasons for the prioritization, and to define the actions recommended. This will facilitate execution of the corrective action plan.

1.4 PRESENT REPORT

The report should provide an honest, accurate assessment of the current state of the project, what went wrong, and how to fix it. Whenever possible, the Project Manager should prepare a presentation of the report, which includes the corrective action recommendations. There may be multiple presentations – one at the management level and one for the Project Team members. The tone of the presentation should be positive, focusing on how the Project Plan can be revised. The Project Manager must ensure that management understands the exact current project status. The need for additional resources and changes to the Project Schedule should be made clear. The Project Manager must also maintain a constructive and positive tone with team members, since they are the ones who determine the success or failure of the remediation effort. Participants should be given an opportunity to respond and ask questions so that everyone understands the situation and the corrective action plan. Leadership skills play a vital role at this time.

Occasionally, the corrective action recommendation will be to scrap the work that has been done and start over. This may include complete re-planning and securing a new project approval. This should be a rare occurrence, but when it happens, starting over must be justified by a savings of time or money, improvement in quality, or preservation of scope.

1.5 REVISE PROJECT PLAN

The final part of the triage and remediation effort is to revise the Project Plan to include the activities resulting from the recommendations in the report. Optimally, the Project Team will implement the corrective action plan, with additional resources as required. The corrective action plan must be integrated into the Project Plan and managed as part of the ongoing project. The corrective action plan is designed specifically to get the project back on track quickly, not to address long-term organizational needs such as training, cultural changes, or methodology development.

Sometimes, project problems may be corrected with no-cost activities such as team building and re-alignment of priorities. More often, the remediation effort will require additional resources, either in time or money, or a decreased product, either in scope or quality. If the decision is made to create a new baseline Project Schedule, the original schedule must be kept for historical purposes.

Completing the triage and remediation effort requires ongoing diligence, continuing communications, tracking, reporting and commitment from all Project Team members. It remains the Project Manager's responsibility to coordinate all of these efforts. Often, reporting requirements are increased following triage because some managers want to be informed of more detail than would otherwise be required.

Measurements of Success

Figure 1-5

Process	Measurements of Success	Yes	No
Gather the Data	Did team members share information freely? Do you have enough information to do an assessment?		
Review and Analyze the Data	Does the data support the obvious problems with the project? If not, you may need to look further.		
Prepare Findings and Develop Corrective Action Plan	Do stakeholders agree with, or at least understand your findings? Are the action items reasonable and do-able?		
Present Report	Does management understand both the problems and the solutions?		
Revise the Project Plan	Have the resources required been allocated? Does the Project Team support the effort?		

1. Triage Questionnaire – Gather the Facts

Figure 1-6

Question			Response
Does the project have:	Consumer involvement?	Are the Consumers involved the correct ones and have you established and maintained a good working relationship?	
		Are you facilitating their involvement and are they actively contributing?	
		Who should be promoting the project and its priority?	
		Do you know who will use the product you are creating and what its impact will be?	
	Executive Management support?	Is there a Project Sponsor?	
		Is the Project Sponsor involved and supportive?	
		Does the Project Sponsor have a stake in the outcome of this project?	
		Does the Project Sponsor have the authority needed to address conflicts between projects and commit resources?	
		Does the project support the Performing Organization's strategic plan?	
	a clear statement of requirements?	Is there a vision?	
		Has the Business Case been defined?	
		Are the expectations realistic?	
		Are functional requirements defined? Has a risk assessment been done?	
		Are there measurements by which to determine the success or completion of the project?	
		Have the requirements been: - Documented? - Agreed to with signatures from all appropriate parties? - Communicated to the Project Team and all other stakeholders?	

Figure 1-6 (Continued)

Question		Response
Is the Project Manager assigned to this project?	Does the Project Manager have a clear understanding of the priority of this project? Is this consistent with the Project Sponsor's understanding and the priority stated by management?	
	Does the Project Manager have the experience and training necessary to be successful on his or her assigned tasks?	
Are team members assigned to this project full time?	Do team members have a clear understanding of the priority of this project?	
	Does this agree with the Project Manager's understanding and the priority stated by management?	
	Do team members have the experience and training necessary to be successful on their assigned tasks?	
Is project communication adequate?	Is everyone aware that the project exists?	
	Is project status clearly, frequently, and widely communicated to all concerned?	
	Do all team members clearly understand what is expected of them?	
Has planning thus far been adequate?	Review the lists of what should be included in the Project Plan at each phase. For example, Develop Initial Project Plan, Section I:2.4, includes a list of what pieces of information should be in the Project Plan by the end of Project Initiation: a. Project Charter b. CSSQ c. List of risks d. Description of stakeholder involvement e. Communications Plan	

Figure 1-6 (Continued)

Question		Response
Where do you need to be and what is driving the Project Plan?	Time: Do we need to complete the project by a certain time? If so, are additional resources (time, money, technology) available to the project?	
	Cost: Do we need to complete the project under a specified cost? If so, can the dates be moved to allow the project to be completed by less-expensive resources (provide time for a learning curve, use in-house staff rather than consultants, etc.)?	
	Scope: Do we need to deliver every feature defined even if means more time or more cost?	
	Quality: Can a "beta" version of the product be released and then anomalies fixed and features added later on? (sometimes possible for internal users, where there are no health or safety issues, or loss of assets, etc. involved)	

2 LEADERSHIP

Purpose

Over the last 20 years the role of the Project Manager has changed dramatically. The successful Project Manager of the 21st century is expected to have leadership skills as well as the traditional managerial skills.

As a manager, the Project Manager's role is focused on producing the outcomes or products of the project. As a leader, especially on larger projects, the Project Manager establishes the vision for and direction of the project. Defining project priorities, guiding and motivating team members and Stakeholders, the Project Manager inspires the necessary collaboration and participation of all involved in the project. Effective communication with the various individuals and groups affected by or working on the project and active management of change and conflict are crucial to the Project Manager's increased leadership role. Guiding and leading Stakeholders throughout the life of the project is essential not only to the success of the project, but also to the success of the Project Manager.

The Project Manager performs multiple leadership and managerial roles, serving alternately as:

- **Catalyst:** Making things happen; identifying problems, fears, and resistance and initiating corrective action; instilling urgency and personal ownership; motivating others to step up and succeed.
- **Process Helper:** Acting as a "Super User," providing real time support for the Project Team and Stakeholders; answering process/technical questions, coaching, monitoring, and reviewing their progress, and looking for improvement opportunities.
- **Problem Solver:** Listening actively to all, contributing to problem resolution; promoting and sharing best practices within and across the Project Team and the Performing Organization; mediating and resolving conflicts; facilitating Project Team and Stakeholder communication; educating and coaching Project Team members and Stakeholders through the change.

- **Resource Linker:** Coordinating "right people, right place, right time;" identifying and utilizing resources; anticipating and responding to Stakeholder needs; networking and sharing information and resources across Performing Organizational boundaries.

This section of the ***Guidebook*** addresses key aspects of the leadership challenge facing the Project Manager.

2.1 COMMUNICATION

The effectiveness of the Project Manager's leadership is dependent upon his/her communication skills. Some project management theorists estimate that a Project Manager spends 90% of his/her time in communication activities. Communication is a critical component of every project management process, so the Project Manager must develop skills that ensure that messages are appropriately transmitted and correctly received.

While developing the project's Communications Plan, the Project Manager formally identifies and plans for the varying informational needs and appropriate methods and frequency of communication for each Stakeholder group. (See 2.4.2, 3.4.4, and 4.4.4 on the Communications Plan.) This is the blueprint for establishing effective communications, on which the Project Manager builds by cultivating and then nurturing relationships with all identified key project Stakeholders. These include the Project Sponsor, Project Team members, Customer Representatives and Customer Decision-Makers, and Stakeholders from other groups or organizations that may influence the project's progress and success, all of whom will have different interests and expectations for the project. Their ability to interact will determine how smoothly the project progresses. Positive relationships with these individuals will help the Project Manager achieve consensus among the project's Stakeholders when needed, and understand and resolve sources of conflict during the project.

It is up to the Project Manager to provide appropriate communication opportunities for each Stakeholder. The Project Manager should ensure that there are mechanisms, formal and informal, for obtaining Stakeholder feedback. Communication with Stakeholders should be bi-directional: listening to them, understanding their concerns and issues, and actively addressing their concerns through the appropriate project management processes (change control, status reporting, etc.) is as important as providing them with information. The Project Manager should also be pro-active in seeking input and feedback. Information should be received openly and with enthusiasm and gratitude for the opportunity to improve and ensure the project's success. The Project Manager should avoid being judgmental or defensive.

Effective use of active listening and questioning techniques can enhance the Project Manager's ability to be an effective communicator:

- Active listening techniques include seeking understanding through asking for clarification of the message, paraphrasing to make sure you have understood the message, encouraging dialogue through empathic remarks, and refraining from interrupting and making judgmental remarks.
- Examples of questioning techniques are using open-ended questions that call for more than a "yes" or "no" answer, using follow-up questions to obtain additional information, and avoiding leading questions that put the respondent under pressure to respond in a certain way.

The Project Manager should also be cognizant of the role played by informal communications. A conversation in the hallway, a chance meeting outside the office with a Stakeholder, even overheard conversations, may have a potential impact on the project. Since the Project Manager is responsible for setting and managing the "mood" of the project, he/she must pay attention to communication undercurrents, and be prepared to bring relevant issues to more formal communication venues when appropriate.

In the case of virtual Project Teams, in which team members work across time, distance and/or Performing Organizational boundaries, the Project Manager faces special communication challenges. The Project Manager should select appropriate electronic communication and collaborative technologies, e.g., phone conferencing, email, e-meeting, web conferencing, and intranet/internet. He/she should be adept at using them to build the team, motivate and inspire team members, give and receive feedback on performance, handle conflict and ensure that project goals are achieved. The Project Manager should make a special effort to supplement virtual interaction with face-to-face contact as often as possible.

2.2 LEADING THE CHANGE MANAGEMENT EFFORT

Increasingly, organizations are becoming aware that projects they carry out involve significant changes. The Project Manager then assumes the role of change leader, steering the Performing Organization and its Stakeholders through the change process. This is a role that is sometimes neglected or assumed to be within the purview of the Performing Organization. But lessons learned from successful projects demonstrate that the Project Manager can most effectively lead Stakeholders through changes to the Performing Organization's structure, systems, culture, and people. (See Section I:3 for additional information on the Organizational Change Management Plan.)

The Project Manager should promote widespread participation in the change process. In this leadership role, the Project Manager needs to be prepared to be the motivator and the cheerleader, to generate enthusiasm for the project and continually obtain buy-in, support, commitment, and participation from the various Stakeholders. To assist with these efforts, the Project Manager should identify and actively recruit change champions from the Performing Organization and the key Stakeholder groups. These individuals, along with the management team of the Performing Organization, will play a critical role in the change process and have great influence over whether the change will be interpreted as positive or negative by the organization and its Stakeholders.

The Project Manager should forge a partnership with the change champions and the management team to lead the change effort. The management team will collectively own the change initiative and set a strategic and organization-wide direction that encompasses the change. The Project Manager and the change champions will lead the management team in these efforts, coordinating effective communication throughout the Performing Organization regarding the need for change.

The Project Manager, along with the change champions and the management team, should do the following to support the change process:

- Serve as credible role models.
- Create a shared sense of urgency about the need for change.

- Effectively communicate the vision and strategy for change by creating and using a common vocabulary.
- Empower people to take action and to get rid of obstacles to change.
- Generate and implement immediate "wins" (visible improvements in performance to get people on board).
- Anticipate and handle disruptions during change.

The change champions within the Performing Organization should be given an opportunity to acquire the new skills and information necessary to sustain the change effort "locally." The Project Manager should coordinate all efforts to distribute responsibility for managing the change effort outward to the Performing Organizational units most affected by the change.

Because change is challenging for a Performing Organization, the Project Manager should assess the Performing Organization's capacity for change, or its "readiness for change." Change in technology, in particular, is a transforming event for a Performing Organization. It can trigger reactions that go well beyond the project to impact all parts of an organization's structure and systems, as well as its culture. If the transforming nature of the change event is not taken into account, even the best-designed technology can cause long and painful disruption to the activities of the Performing Organization, or can fail altogether.

At the individual or group level, resistance to change is to be expected, and indicates that the Stakeholders are actively involved in the project, but it must be managed and mitigated. The Project Manager can take the following actions:

- Identify changes in the Performing Organization's structure, systems, culture and people.
- Identify impacted users.
- Clarify the impact of the change on the users.
- Gauge reactions to the change; acknowledge and understand the sources of resistance to change.
- Manage negative reactions to change through selling and articulating the vision, creating a liaison with the local site transition team, involving the user, as appropriate, in the project lifecycle phases.

- Develop skills and knowledge, through training, discussions, roundtables.
- Support the transition of responsibility for the outcome of the project from the Project Team to the Performing Organization.

The Project Manager should also make plans for sustaining the project changes after the project's conclusion. People in the Performing Organization should share ownership of the changes affected by the project if the changes are to become permanent. Under pressure, it is common to revert to old ways of doing things. Changes also may not be perceived as complete because results are not yet visible or tangible. The Project Manager should ensure that proper education and training are offered to those affected by the project's outcomes before related new responsibilities are imposed, and arrange for assistance and support in implementing new work processes. Formal acknowledgement of people's resentments and losses arising from the change process can facilitate acceptance of the change and its adoption by the Performing Organization.

2.3 MANAGING POLITICS AND CONFLICT

While the Project Manager typically has a lot of responsibility for the project, he/she frequently has limited authority or control over human, material and financial resources for the project. This is especially true in a matrix organization where members of the Project Team are assigned part-time to the project and report to a line manager rather than to the Project Manager.

In order to achieve project goals, the Project Manager will often have to rely on his/her political skills to effectively influence others on the Project Team and in the Performing Organization. In attempting to do so, he/she will inevitably encounter people with different interests and approaches. This may lead to conflicts that should be resolved. Since a project is by definition temporary, the Project Manager cannot usually afford the luxury of waiting until a conflict "blows over," but must work to create a setting where the conflict can be resolved quickly and with as little damage as possible.

The following four steps can help the Project Manager develop political skills and anticipate and resolve conflicts:

Identify project Stakeholders: Stakeholders should be identified specifically by name and role so that there is a clear understanding of who is involved in the project. Potential project Stakeholders include: the Project Sponsor, Project Team, management of the Performing Organization, Customers, Customer Representatives and Decision-makers, the public, the media, regulators, vendors, and unions. In New York State government, the Division of Budget, the Department of Civil Service, the Office for Technology, and other agencies, commissions, and boards are often project Stakeholders.

Analyze Stakeholder interests: After the project Stakeholders have been identified, the Project Manager should assess the range of their interests and expectations for the project. The convergence or divergence of the Stakeholders' varied interests, goals, and values will help identify the sources of conflict that may occur during the project. Anticipating these potential conflicts, understanding their origins, and creating action plans to mitigate and diffuse conflict are an essential role for the Project Manager.

Analyze power relations: Power is usually attributed either to an individual's personal attributes, or to structural and positional sources including formal authority, control over resources and information, and interpersonal relationships. Where Stakeholders have equal power and compatible interests, decisions are obtained most easily when the Project Manager uses facts and data to support the development of a logical argument. Where there are unequal power relationships, the Project Manager must be prepared to deal with situations where interests conflict, relying on his/her instincts to know when it is time to capitulate or to continue to try to influence the Stakeholders to achieve the desired outcome. Concise and to the point discussions with the Project Sponsor regarding advice and direction are crucial at this time.

Some techniques the Project Manager can use to influence Stakeholders and mitigate conflict include:

- Reasoning – Using facts and data to support the development of a logical argument
- Consulting – Seeking input and ideas to generate a viable plan in order to meet common concerns
- Appealing – Connecting with the emotions, predispositions, or values of those involved, conveying that a request is not at the cost of their interests
- Networking – Actively including other Stakeholders who hold relevant information or authority to gain the support from the reluctant Stakeholder
- Exchanging – Offering an exchange of favors to convince the Stakeholder that a proposal can satisfy the needs of both sides
- Bargaining – Negotiating with the Stakeholder to reach an agreement that meets his/her needs
- Pressuring – Making direct and forceful demands to the Stakeholder, even through resistance on the part of the Stakeholder
- Counteracting – Blocking efforts of the Stakeholder or acting in the opposite direction

The way in which a Project Manager deals with conflict depends on his/her personal style as well as on the compatibility of interests among the divergent parties, their power relationships, and the length of time available for decision-making.

Develop negotiating style: Collaboration is often useful for finding a "win-win" solution that satisfies all parties involved in a conflict. In the collaborative negotiating style, all parties work together to find a solution that satisfies all concerns. (A compromise solution is less desirable because each party has to give up something, resulting in a "win-lose" situation for both.) While facilitating a collaborative approach, the Project Manager must actively confront issues of negativity and try to address them by articulating a common vision of the project and its benefits. When all parties participate in initiating ideas, investigating options, sharing information, and negotiating solutions, there is a better chance of reaching a collaborative decision on contentious issues.

In an emergency or when there is too little time available to reach a collaborative solution or even a compromise, the Project Manager may have to make a unilateral decision. This decision should be well documented in the project repository. When the Project Manager makes such a decision, Stakeholder interests must still be fully considered to ensure future buy-in for the project.

Managing politics and conflict is a dynamic process that occurs throughout the life of a project. Stakeholder interests and power may change; the individuals themselves may leave, causing new people to fill the ranks. Strategies and tactics used to build and maintain working relationships will have to be constantly re-examined and modified.

2.4 LEADING THE PROJECT TEAM

A key to project success is developing a high-performing Project Team, which should ideally have:

- specific, challenging goals, which have been agreed upon collaboratively.
- well-defined deliverables.
- proper mix of skills and personality types. (see Pitfall #1 – 'You have the wrong team' in Section I:3, Project Planning)
- adequate resources.
- sense of discipline and cohesion.
- ability to achieve the desired results.
- ability to work with Customers.
- ability to integrate diversity, e.g., contractors and staff.

Research has shown that most teams do not immediately become high-performing. In actuality they go through stages, beginning with the forming stage, in which the group decides on its purpose, composition and leadership patterns; a storming stage, characterized by initial conflict; a norming stage, in which trust and confidence are established, and finally the high-performing stage, in which project execution is smooth. The Project Manager's role is to use a leadership style appropriate to guiding the team through these various stages:

- A directive approach to organize and guide work in the forming stage
- A coaching approach to set high standards and work collaboratively at the storming stage
- A supportive approach to allow the team to structure work and find ways to work together and solve problems during the norming stage
- Delegating, to allow the team to carry out the work, in the performing stage.

In Project Closeout, sometimes referred to as the "adjourning" stage, the Project Manager should take a coaching approach to bring formal closure to the project and assist the Project Team members in transitioning from the project to their next opportunity.

Another important factor in developing the high-performing team is motivating individual team members and the team as a whole. The Project Manager's role is to:

- Try to determine what motivates individual Project Team members – the desire for challenging work, professional development, recognition, possibility for promotion, visibility within the Performing Organization, or collaboration with other team members.
- Identify the characteristics of the individual project that have an impact on individual motivation, e.g., the degree of innovation involved in the project, the level of support from senior management, the duration of the project, and the nature and frequency of interaction of Project Team members.
- Use appropriate techniques and style to enhance individual and team motivation, taking into account the above factors. For example, scheduling regular and ad hoc feedback sessions for individual team members, including recognition for good performance in the individual's formal performance appraisal, giving public recognition for team contributions, and creating team spirit.

2.5 BUILDING TRUST

In the final analysis, project Stakeholders must trust the Project Manager in order for the Project Manager to be an effective leader. Trust is developed over time, and is most easily inspired when the Project Manager exhibits a willingness and ability to:

- share information.
- discuss personal feelings.
- listen to and understand others' perspectives.
- admit mistakes.
- encourage others.
- confront others.
- keep promises.
- be credible and sincere.
- be responsible and accountable for actions.

Development of leadership skills requires a conscious effort. The Project Manager must continually examine his/her own effectiveness, be aware of shortcomings, and be willing to devote time and energy to improvement.

3 PROCUREMENT AND CONTRACTOR MANAGEMENT

Purpose

The purpose of Procurement and Contractor Management is to provide basic information and direction regarding procuring commodities or services within New York State and to recommend strategies for managing the resulting contract. Once the need for services and/or products has been identified, procurement activities should be initiated as soon as possible, since the process may take a significant amount of time to accomplish.

Roles

- Project Manager
- Project Sponsor
- Project Team Member
- Customer

The Project Manager may be responsible for the actual procurement of the services or products needed to develop and implement the project, or may be directing these activities through a contracting or procurement Team Leader. These activities may have a significant impact on the Project Budget and Schedule, so they must be integrated into the overall Project Plan and Project Schedule.

3.1 PROCUREMENT STRATEGIES

Once a determination has been made that outside resources or products are needed, a procurement strategy must be developed. In developing this strategy several options are available.

A ***turnkey*** procurement involves securing a complete vendor-supplied solution that is provided to the Customer "ready to operate" (just turn the key). The contracted vendor acquires all the necessary parts, products and services, and all required labor to construct and install the turnkey solution. This type of procurement requires the contractor to perform the day-to-day management of the Project Team and project processes, while the Project Manager focuses on contractor performance and management of the product transition to the Performing Organization. In a turnkey procurement, the purchaser generally takes ownership of all products purchased, either at time of purchase or at time of transition, depending on the contract terms.

While turnkey procurements are a possible option, it is more likely that the Project Manager will choose to procure several products and services, and to manage the resulting contracts. Examples of typical procurements associated with a project include:

Product Acquisitions: These may range from typical products such as furniture and personal computers, to highly specialized products for the project such as digital scanners, servers, and the software needed to operate them. Frequently, projects involve the purchase of a "Commercial Off The Shelf" (COTS) software system that may meet most of the functional requirements of the project. Such a system usually requires customization to provide all required functionality, or to meet specific technical requirements of the Performing Organization. Customization may be done by in-house staff, or by the contractor's staff as part of the contract to purchase the system.

Staff Augmentation: Frequently, while in-house resources are available to perform a significant amount of the project work, additional resources are needed to complete the project on time or to provide some needed skill. One strategy is to obtain outside resources, usually consultants, to augment the project staff. If consultants are hired to provide a missing skill, having them work along side in-house staff

facilitates acquisition of that skill by in-house staff during the development phase of the project. This, in turn, facilitates the takeover of system maintenance activities after the system is deployed and the consultants leave.

Selective Outsourcing: Outsourcing also involves contracting additional staff services, but in this case the contractor assumes responsibility for performing all aspects of a selected service, usually to specific standards and for a fixed cost. In this type of scenario, the Customer usually does not own the products associated with the production or delivery of the service, but purchases the specific service. Examples might include demolition services, disaster recovery services, and data conversion services.

3.2 GENERAL CONTRACTUAL INFORMATION

Every contract with a New York State agency must include Appendix A (Standard Clauses for all New York State Contracts), MacBride Principles, and Article 15A Provisions. Agencies may also have their own standard contract provisions. Agency staff should discuss with their Office of General Counsel the standard forms and language to be used.

Among the statutory and regulatory requirements applicable to the procurement of goods and services by New York State agencies are Section 112(2)(a) of the State Finance Law, which provides that a contract in excess of $15,000 must be approved by the State Comptroller before it becomes effective, and Section 163(6) of the State Finance Law, providing that a contract in excess of $15,000 must be awarded pursuant to a formal competitive process. The Office of the Attorney General must also approve such contracts. The NYS Procurement Council Procurement Guidelines and other general information concerning the statutes and regulations governing state contracts can be found at the websites maintained by the New York State Office of General Services (http://www.ogs.state.ny.us/purchase/) and the Office of the State Comptroller (http:// www.osc.state.ny.us/agencies/).

3.3 CONTRACT TERMS

The procurement strategy will frequently define the method by which the selected contractor's performance will be managed.

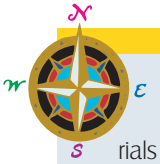
3.3.1 Fixed Price

Outsourcing and turnkey procurements are generally done on a fixed price or fixed fee for deliverables basis. This type of contract is best used when the specific service or product to be delivered can be fully defined and specified before the start of work. The contractor is required to successfully perform the specified work and deliver agreed-upon products or services. The specifications are described in detail, ensuring complete understanding of the requirements by both parties. The responsibility and risk for the delivery of the specific product/service is on the contractor. If the contractor exceeds the contract cost, he must still deliver the product for the agreed-upon amount. However, responsibility for the detailed specification and the management of scope change belongs to the Project Manager. If the scope of the project is changed, a change request must be processed and the cost of the changes, which may not exceed established limits, must be agreed upon. As long as scope can be adequately defined, this type of contract is good for controlling cost, but changes in scope must be managed.

3.3.2 Time and Materials

Staff augmentation procurements are generally done using a time and materials contract. These contracts pay for services rendered at a fixed rate and for materials at cost plus a handling fee. This type of contract is usually employed if the scope of the work to be completed is not well defined and does not permit a fixed level of effort or a fixed price to be estimated. A contract is developed to secure services for a range of technical skills, with negotiated hourly rates. The contract is usually assigned a maximum amount payable. This contract type is particularly well suited to situations where the principal "deliverable" is labor hours. The Project Manager must provide for the management of each individual contract staff person's performance, and specific performance standards for each type of resource must be established. This may be particularly difficult if different performance standards are being used for contract staff and for in-house staff performing the same functions. In

this type of contract, the burden is on the Project Manager to control Project Scope and cost by defining individual and ensuring performance standards and monitoring contractor performance.



If the scope of the project is not fully defined, some of the attributes of a fixed price contract could be used to try to minimize disadvantages of using the time and materials contract. The contract can be established with defined rates for specific technical skills, as in the standard time and materials model, up to a maximum amount payable ("cost not to exceed"). As specific deliverables are defined, specifications can be developed and a fixed price can be agreed upon for the delivery of these items. Once all parties agree to the scope and cost, this item would be treated as a fixed price deliverable.

3.3.3 Cost Reimbursement

In some cases, usually when there are such uncertainties of performance that a price cannot be estimated with sufficient accuracy to ensure that it is fair and reasonable, cost reimbursement contracts may be preferred. A cost reimbursement contract allows for payment to the contractor of all costs incurred, within a predetermined ceiling and allowable cost standards, after the work of the contract is performed. Cost reimbursement contracts place the least cost and performance risk on the contractor. They basically only require the contractor to use "best efforts" to complete the contract. These contracts are not often in the best interest of the state, but may be useful in certain circumstances. There are a number of different types of reimbursement contracts, including:

- Cost – This type involves the payment of all incurred costs within a predetermined total estimated cost.
- Cost Sharing – The agency and the contractor agree to split the costs of performance in a predetermined manner. No fee is given. This type of contract can sometimes create additional liability issues of which the Project Manager should be aware.
- Cost-plus-fixed-fee – This type allows for payment of all incurred costs within a predetermined amount, plus an agreed upon fee which will not change.
- Cost-plus-incentive-fee – This provides for an adjustment of the fee (up or down) using a pre-determined formula based on the total allowable cost in relation to total targeted costs.

- Cost-plus-award-fee – Provides for a negotiated base fee with an award fee that can be given based upon an evaluation of contractor performance and cost control.

The advantages of the cost reimbursement contract are better control of project cost while still providing some flexibility when scope has not been fully defined.

3.3.4 Indefinite Delivery Contracts

Indefinite delivery contracts are also known as "on call," "term" or "back drop" contracts. In general, they provide for delivery of goods and services upon the issuance of a delivery or task order when specific needs arise. Many agencies use these predefined contracts to simplify the procurement process. Utilizing an indefinite delivery contract minimizes the requirement to establish agency terms and conditions since it is only necessary to go through the process of defining the agency's requirements once. In many cases an agency will enter into a contract before the project starts. These contracts usually state the type of service to be provided, a length of time that the service can be requested (usually 3 to 5 years) and a maximum contract amount. The contracts can significantly reduce the amount of time it will take to secure services, but are normally only used on smaller, less complex projects.

Payment incentives and disincentives can be included in many types of contracts. They can be based on predetermined performance standards that are agreed to by all parties to the contract. For example, an incentive fee could be included in a contract and awarded to a contractor if the product is delivered ahead of schedule, and a disincentive fee could be assessed if the product is delivered late. To ensure that these items have a positive effect on the contract and to create a win-win situation, it is recommended that incentives only be used when the contract also includes disincentive clauses.

3.4 UTILIZING EXISTING CONTRACTS

There are existing statewide and agency contracts that may be utilized when procuring products and services. This is often the most efficient and cost effective method to secure the required goods and/or services, since it can reduce the procurement cycle time.

Within the Office for Technology, the Strategic Technology Acquisition and Assessment Team (STAAT) has established a consistent approach to technology procurements and manages a number of statewide technology contracts that provide significant savings due to anticipated quantity purchases/licenses. They can also assist agencies with predictive cost modeling tools and relevant market data on current and emerging technology trends to improve overall strategic planning.

Similarly, the Office of General Services maintains a number of statewide contracts for commodities and selected goods and services that agencies can take advantage of without conducting a full procurement. Procurement Guidelines have been issued by the New York State Procurement Council and endorsed by the Office of the State Comptroller (OSC), the Division of the Budget (DOB), and the Office of General Services (OGS). Full text of the Guidelines can be found on the OGS website at http://www.ogs.state.ny.us. As set forth in Section 5.B of the Procurement Guidelines, the statewide contracts that agencies may use include:

Statewide or Regional Single Vendor Contract: The agency may purchase directly from the contractor.

Statewide or Regional Multiple Vendor Contracts with Agency Selection Among Contractors: The agency may select from commodities, technology or services offered and then purchase directly from a selected contractor.

Backdrop Contracts with Agency Selection Based Upon a Mini-Bid: State agencies and the OGS Procurement Services Group may establish backdrop contracts with multiple vendors that require a subsequent bid process and award among the contracted vendors. Backdrop contracts are based on continuous recruitment and require all bidders to provide not-to-exceed pricing which establishes the ceil-

ing pricing for the term of the contract. The agency must conduct a mini-bid among the pre-qualified backdrop contracts. There are special options available to streamline this process even further, e.g., the "Fast Track" option, provided certain criteria are met. Complete information on these options is available on the OGS website noted above.

Centralized Contracts with One or More Contractors Allowing Subcontracts with Agency Specific Modifications: These centralized contracts contain general terms and conditions for services and/or technology with discounted pricing. An agency may obtain services directly from the vendor using the centralized contract or may execute and obtain approval of a subcontract with specific modifications to the terms and conditions.

Discretionary Purchases: In situations where a commodity, service or technology is not under a centralized contract, an agency may purchase goods or services directly from a responsive and responsible bidder, up to the discretionary limits established. The current discretionary limit for most agencies is $15,000, or $50,000 if the purchase is made from a New York State Small Business Enterprise (SBE), certified Minority-owned Business Enterprise (WBE) or Woman-owned Business Enterprise (WBE).

Depending on the contract used, and subject to State Finance Law, Article XI, the agency may have flexibility in defining the contract terms, and payment methodology, for the particular engagement (i.e., fixed fee, time and materials, etc.).

3.5 ESTABLISHING NEW CONTRACTS

If the required products and services cannot be obtained within existing state or agency contracts, the Project Manager will have to incorporate the establishment of the new required contracts into the overall Project Plan. New York State Finance Law, Article XI, "State Purchasing" and the Procurement Guidelines referenced in 3.2 above provide guidance to state agencies when establishing new contracts to procure commodities, services and technology. Pursuant to Section 4 of the Procurement Guidelines, the following choices are available when establishing a new contract to purchase commodities, products, technology, or services.

3.5.1 Preferred Source

In an effort to advance certain social and economic goals, some providers of commodities have Preferred Source status under the law. Any acquisitions from these providers are not subject to competitive procurement requirements. The Preferred Source status for commodities has been given to the NYS Department of Corrections (DOCS) Industries Program (Corcraft). The Preferred Source status for services and commodities is also given to qualified charitable non-profit agencies for the blind, qualified charitable non-profit agencies for other severely disabled persons, qualified special employment programs for mentally ill persons and certain veterans' workshops. State agencies must purchase from a Preferred Source if the commodity or service required appears on the List of Preferred Source Offerings published by OGS.

In addition to Preferred Sources, other statutes establish a policy to promote small businesses, women-owned businesses and minority-owned businesses in New York State. (See Section 4.A of the Procurement Guidelines; see also Appendix C of the Procurement Council Guidelines for additional information.)

3.5.2 Sole Source/Single Source Procurement

In Sole Source procurement only one vendor can supply the commodity, technology and/or perform the service required by the agency. This method of procurement requires a Procurement Record explaining a) the unique nature of the requirement; b) the basis upon which it was determined that

there is only one known vendor able to meet the need; and c) the basis upon which the agency has determined the cost to be reasonable. All of the above documentation is required by OSC to review the proposed contract.

A Single Source procurement is one in which two or more vendors can supply the commodity, technology and/or service required, but the agency selects one vendor over the others for reasons such as expertise or previous experience with similar contracts. This type of procurement requires a Procurement Record explaining a) the circumstances leading to the selection of the vendor, including the alternatives considered; b) its rationale for selecting the specific vendor; and c) the basis upon which it determined the cost was reasonable. All of the above documentation is required by OSC to review the proposed contract. (See Section 4.F of the Procurement Guidelines.)

3.5.3 Emergency Situations

An emergency is an urgent and unexpected requirement by an agency where health, public safety or the conservation of public resources is at risk. An agency's failure to plan in advance does not constitute an emergency. When an emergency arises, an agency may let procurement contracts without complying with formal competitive requirements. Under these circumstances, the agency head must approve a waiver of the competitive bidding requirements.

The agency must document in the Procurement Record each transaction entered into as a result of the emergency, explaining the nature of the emergency situation, the potential effect on the health, safety or conservation of public resources, and a detailed description of the commodities, services or technology to be provided. (See Section 4.G of the Procurement Guidelines.)

3.5.4 Competitive Procurements

Competitive procurements utilize either an Invitation for Bid (IFB) or a Request for Proposal (RFP) process. Generally, commodities are awarded on the basis of lowest price, as a result of an IFB. While services or technology may be awarded on lowest price as well, they are more often awarded on the basis of best value as a result of an RFP process. (See Section 4.E of the Procurement Guidelines.)

All solicitations of $5,000 or above must be published in the Contract Reporter in conformance with applicable statutes and regulations. (See Section 7 of the Procurement Guidelines.)

The Project Manager should consult with STAAT and OGS prior to initiating a competitive procurement. These agencies may be able to save significant time and effort for the Project Team by providing references to other agencies that have already developed similar RFP's or IFBs, with evaluation and selection methods and processes, good contractual language, and performance standards. By utilizing established procurement best practices the Project Manager can more effectively and efficiently complete the procurement. The RFP process summarized here is described in greater detail in Section 7 of the Procurement Guidelines.

RFP Development:

The RFP should contain a comprehensive and concise statement of work (SOW) that clearly defines the products desired, their functional requirements, operating and performance characteristics and required interfaces with other agency systems and processes. The RFP process enables the agency to obtain and evaluate recommended solutions from a number of different vendors.

The RFP should also contain the invariable and mandatory terms and conditions of the contract. The agency counsel must participate in the development of this element of the RFP. This section will include such items as the method of payment, required Project Schedule, location of work, method of product delivery, warranties, and damages for non-performance, source code escrow, etc.

The RFP must describe the required qualifications for the responding vendors. It must also include a description of the evaluation and selection process and general criteria that will be used in the evaluation. Finally, the administrative aspects of the procurement, such as contacts, key dates, policy and bidding requirements, format of proposals, etc., must be detailed.

Independent Estimate:

An independent estimate of the time and cost to complete the project should be developed. This should be a realistic and not overly optimistic estimate that takes into consideration the technologies and skills involved in the project, especially if "bleeding-edge" technologies are involved. Sometimes this is done through an RFI (Request for Information) process prior to the decision to develop the RFP, to assess the available competitive field and state of the marketplace for the particular industry, as well as to establish a baseline for costs.

This independent estimate will provide a baseline for comparing proposals during the selection process. If there are significant variations between cost and schedule estimates in submitted proposals, the lowest bid may not always be the best value. If the low bid is significantly lower then the independent estimate, it should be looked at very carefully. If the contract is not profitable it can generate many problems for the contractor and the agency.

Selection, Negotiation and Award:

Generally, there are three independent panels or committees involved in the evaluation and selection process:

- A technical evaluation committee reviews and evaluates the technical and functional aspects of the proposals.
- A cost or financial committee reviews and evaluates the cost proposals.
- A selection committee receives the reports of both evaluation committees and recommends the final selection to the Agency Head, Commissioner, or other officer who must authorize the final decision.

Specific criteria, the evaluation instruments, the weighting of individual elements, the cost component, and the technical component must all be defined and sealed before initial receipt of offers (proposals). It is paramount that this process provides equal and fair opportunity to each proposal.

Ideally, the contract language included in the RFP will be of sufficient detail that limited negotiation is required after a proposal has been selected.

3.6 CONTRACTOR MANAGEMENT

After a contractor has been selected to provide commodities, technology or services, the Project Manager is responsible for managing contractor performance, either directly or through a Team Leader. The Project Manager must ensure that responsibility is established for contractor oversight, and that the contractor receives clear direction regarding all contractual matters. Wherever possible, the project management processes defined in this ***Guidebook*** should be required of all contractors.

The keys to successful contractor management are an unambiguous and mutual understanding of the contract and a good business relationship. The performance standards for the contractor must be articulated in the contract, and the contractor should demonstrate a complete understanding of the standards and show that a process has been established for meeting each of these standards. There are benefits to both the contractor and the state agency if a positive relationship can be established and maintained in which risks and benefits are shared.

The Project Manager should hold regularly scheduled meetings with the contractor to obtain information about how effectively the contractor is achieving the contractual objectives. Periodic reviews with the contractor should be established to ensure contractor adherence to standards and compliance with project processes and schedules.

4 PERFORMANCE MEASURES

Objective

Strategic, performance measurement-based management systems allow an organization to align its business activitities to its strategy, and to monitor performance toward strategic goals over time.

Definitions

Performance Measures should identify the population to be measured, the method of the measurement, and the data source and time period for the measurement. Each measure should also be:

- objective
- easy to understand
- controllable by minimizing outside influences
- timely
- accurate
- cost-effective
- useful
- motivating
- trackable

Performance Measures are quantitative or qualitative ways to characterize and define performance. They provide a tool for organizations to manage progress towards achieving predetermined goals, defining key indicators of organizational performance and Customer satisfaction.

Performance Measurement is the process of assessing the progress made (actual) towards achieving the predetermined performance goals (baseline). Measurement is managed using output measures and outcome measures.

Output measures are calculations of recorded activity or effort expressed quantitatively or qualitatively.

Outcome measures are an assessment of the results of a program compared to its intended purpose.

How does an enterprise (agency, business) know how well it's doing? As the vagaries of the stock market have shown us, there is more to a company's performance than just its financials. High-performing enterprises actively identify "key performance indicators," and measure their progress against established target values for those indicators, as a way of measuring their effectiveness. This is performance management, and the key indicators are the Performance Measures (or metrics) of the enterprise.

Performance management is used to track an organization's progress against its strategic plan and specific performance goals. While Performance Measures may be applied to individual projects to ensure that deadlines are met and costs are controlled, etc., it is essential for the Project Manager to understand how the project itself supports the organization's strategy, and how the project will impact or influence the organization's key Performance Measures. This chapter identifies key performance measurement terms and concepts to orient the Project Manager to this important aspect of organizational performance.

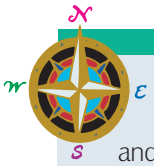
Purpose

The concept of Performance Measures may be new to many Performing Organizations. If Performance Measures do not exist in an organization, a Project Manager may want to develop a system to prove the effectiveness of his own project. In so doing, the Project Manager might also contribute to process improvements within the organization.

Project Managers should consider the following to ensure that projects align with the Performing Organization's mission and strategy:

- Does the agency have a mission and strategic plan?
- Is it clearly articulated?
- Does the organization understand how its activities contribute to mission success?
- Does understanding of the mission extend vertically throughout the organization?
- Are the measures of success focused (at least in part) on outcomes?
- Are the measures related to the mission and goals as reflected in the strategic plan?
- Are the performance data reliable?
- Are appropriate measures reported to individuals at different levels of the organization, and to external stakeholders?
- Are Performance Measures used to influence and/or inform resource allocation decisions?
- Is there any relationship between organizational performance and individual or group incentives to contribute to organizational performance?

In some organizations, projects are selected because they will enhance operational performance. For example, a project may be intended to reduce cycle time, improve time to market, or increase Customer satisfaction. The Project Manager must understand how and to what extent the performance of his/her project is expected to improve organizational performance, and how the project's effect will be measured.



Remember, performance measurements provide a mechanism for the organization to manage its financial and non-financial performance. Accountability is increased and enhanced, ensuring that projects support the organizational strategy, and that better services and greater satisfaction are provided to the Customer. Performance that is measured and reported will improve.

4.1 THE BALANCED SCORECARD

There are many different measurement frameworks, including the balanced scorecard, activity based costing, competitive benchmarking, and shareholder value added. Each of these provides a unique and different lens through which to view an organization's performance.

Most frameworks tend to be one-dimensional in perspective. For example, benchmarking tends to involve taking a largely external perspective, often comparing performance with that of competitors or other best of breed practitioners or business processes. This kind of activity is frequently pursued as an exercise to generate ideas for or obtain commitment to short-term improvement initiatives rather than to design a formalized performance measurement system. However, the balanced scorecard is a measurement framework which integrates multiple perspectives.

The balanced scorecard integrates four sets of measurements, complementing traditional financial measures with those driving future performance. An organization using this framework is encouraged to develop metrics that facilitate collection and analysis of information from the following perspectives:

- Financial
- Customer
- Learning and Growth
- Internal Business Processes

Implementation of a balanced scorecard presents an opportunity for a Performing Organization to look at its existing programs, services, and processes. Are the right services being provided to the Customers? (Are we doing the right things?) Are the processes implemented now the most efficient and cost

effective that they can be? (Are we doing things right?). Specific measures (metrics) are developed which can then be analyzed to provide answers to these questions.

Once appropriate metrics have been identified, data collection and tracking processes are put in place, the organization can begin to adjust its practices and evaluate its performance over time. A continuous feedback loop is formed, in which the organization can use measurement information to re-align initiatives as needed.

Scorecards are effective in aligning an organization's business areas and activities with its overall strategy, identifying critical financial and non-financial measures, identifying cause-and-effect relationships among measures that may aid in problem diagnosis and encourage accountability across the organization.

4.2 PERFORMANCE MEASURES IN THE PUBLIC SECTOR – A SUCCESS STORY

While executing a large initiative to improve organizational business processes, the New York State Workers' Compensation Board recognized the need to measure performance within its organization. The project was expected to dramatically improve operational effectiveness, but how could that be proved? The volume of work performed was the only measurement being calculated, and this did not reflect other aspects of organizational performance. By identifying and implementing Performance Measures the Board would also be able to measure the effectiveness of its organizational business process improvements.

Because the business process improvements being implemented were going to affect the entire organization, the Board was challenged with identifying and developing Performance Measures that would be widely applicable. Appropriate metrics were needed for Executive Management, Performing Organization Management, Project Management, and individual Project Team members. It became apparent that implementing Performance Measures to the level of detail required would become a project in and of itself! The Board assembled a Project Team that was charged with:

- Defining Performance Measures - Team members quickly realized that while many ideas and methods for performance measurement already exist, it would require some effort to find the ones that would work best for them.

- Formulating the Project Scope - The team needed to identify business areas that would be involved in or affected by the project and obtain buy-in from the appropriate members of Executive Management.
- Identifying the Project Approach - Two teams were formed. The Measures Team was responsible for developing measurements, analyzing measurement results, recommending processes for improvement, and producing deliverables. The Strategy Team was the liaison between the Measures Team and Executive Management and ensured regular communication and contact among all involved parties.
- Developing a Plan - The team assembled a plan that documented a phased approach to implementing Performance Measures within the organization. Earlier phases concentrated on measurements at a conceptual level. Detailed measures, measurement targets, data, and required reports were defined during subsequent phases. The outcome of the project was to be a set of detailed reports containing the information that would drive process improvements that would be consistent with the strategic vision of the organization. To enable the integration of performance measures into management programs within the organization, these reports would need to be readily produced and easily available to managers and staff.
- Identifying Risks - Early in the project, the team identified and documented potential risk events that might be barriers to the success of the project, and formulated plans to mitigate the risks should they occur. Some of the risk factors included:
  - Organizational inertia
  - Fear
  - Availability of funding
  - Availability of data
  - Lack of skills necessary to implement process improvements
- Evaluating Best Practices - The team contacted state agencies and other public sector entities to gather and evaluate existing best practices for Performance Measures. During the beginning stages of the Worker's Compensation Board project, however, very few successful implementations existed in the public sector.

Without a system of Performance Measures available "out of the box," the team formulated a methodology that drew heavily upon the concepts of the balanced scorecard. The team discovered that there are a number of factors affecting measuring performance in a public sector enterprise that require a customized approach to implementing the balanced scorecard. Most public sector organizations are in the business of policy, not profit, whereas for-profit organizations would supplement extensive and standard measures of financial performance with the other perspectives of the scorecard. In addition, it was difficult to reconcile the business process improvement notion to "measure the process, not the people" within a system of measuring performance that encourages the linkage between strategy, process and individual performance. Also, the limited number of measures recommended by the methodology may not necessarily allow a public sector organization to meet the public's demand for information on how the organization was performing.

Once the upfront planning was complete, the team categorized the business and functional areas that would be measured and developed a mission statement for each. Team members then agreed upon the criteria against which all proposed Performance Measures would be assessed. Depending upon the factors determining success of the business or functional areas being measured, potential measurement criteria were narrowed down to a key set. The team refined the key set of measures by defining and expressing them in terms of target goals, based on the long-term vision of Executive Management. These were refined throughout the course of the project.

The list of measures numbered only 50, but when the data was leveled, trended, sliced, and diced, it translated into 300 reports! It was then necessary for the team to define a way to deliver the information contained in the reports in a way that would be meaningful and could translate into process improvements. Data were grouped into reports appropriate to the selected audience: Executive Management, Performing Organization Management, Project Management, and individual Project Team members. Standards were defined to report data in a valid, user-friendly way, displaying information as it related to defined target goals.

With the support of Executive Management, business process improvements based upon the data collected and reflected in

the reports were introduced in the organization. Measurements translated into results! For example:

- As a result of re-engineering, the average time required to index a case at the Board dropped from 31.4 days to 16.5. After implementing Performance Measures for this process, the average days dropped again to 6.7, with the best practices district achieving an average of only 3.4 days.
- The number of cases resolved through informal processes increased from 2100 per month to 3750 per month. Shortly after implementing Performance Measures, with fewer claims examiners, the number increased to 5000.
- Despite a 300% increase in the volume of Administrative Determinations produced by Worker's Compensation Claims Examiners, the approval rate for Administrative Determinations remains above 95%.
- Every area of the Board's operations related to handling claims for benefits saw improvement almost immediately after implementing Performance Measures.
- Although the Board's Electronic Case Folder (the technological cornerstone of the OPTICS project) is nearly 4 years old, through continuous improvement activities and Performance Measures the Board continues to see improvement in its business processes.
- Areas not yet measured continue to provide opportunities for improvement.

The following were noted by the Worker's Compensation Board as important lessons learned as a result of successfully implementing a Performance Measures system:

- Strong executive sponsorship is critical in order to resolve policy and strategy issues that arise when an organization attempts to implement a successful Performance Measures system. In fact, some propose that "Leadership" should be added as a fifth perspective to the balanced scorecard for public sector organizations.
- Measures should come in sets. Measures drive behavior and, therefore, balance must exist not only between the components of the framework but within each component.
- It is easy to develop measures – the challenge is defining the right set of measures that tie directly to the strategic vision for the organization.

- Measures must be few in number, have quantifiable goals, and be derived from what drives operational success in the organization.
- Set targets! If you cannot establish a target for a proposed measure you must ask the question "Why do we measure this?"
- If meeting the performance goals of the strategic vision is not possible at the outset, establish pragmatic targets for today. Review these targets periodically and increase them over time until they meet the vision. If you do this, you will establish a culture of continuous improvement!
- Measures must be produced more frequently than an annual report.
- Reporting standards reduce the learning curve and ease the process of implementing Performance Measures in the field.
- Measures should, wherever possible, involve the individual performer; but supervisors and managers must not confuse a scorecard with a report card. Performance Measures supplement the traditional performance evaluation process.
- When implemented correctly, an organization should see improvements in every area measured.

The success of the efforts of the Worker's Compensation Board did not go unnoticed. The MIRROR Project (**M**anagement **I**nformation, **R**esearch, **R**eferences and **O**perational **R**eports), which has been described as one-stop shopping for performance data and information about the performance measures project, has won the following prestigious awards:

Winner - Workforce Champions 2001

New York State Governor's Office of Employee Relations
http://www.goer.state.ny.us/Train/wfc/2002

The annual Work Force Champions Award recognizes teams of New York State employees for their exceptional efforts in making their respective agencies better at achieving their objectives. The Work Force Champions Award was established at the direction of Governor Pataki to recognize Executive Branch employees for their noteworthy accomplishments within State

government," said Acting Director Currier. "This award program publicly acknowledges employees for their outstanding contributions, and showcases their achievements so other agencies can learn about the creative initiatives and solutions that exist throughout State government."

Winner - Prize for Public Service Innovation 2002

Citizens Budget Commission
http://www.cbcny.org

Through the Prize for Public Service Innovation the Citizens Budget Commission (CBC) seeks to identify and highlight a New York State government agency that demonstrates an innovative approach to providing government services. The CBC awards this prize both to celebrate creative thinking and to share government achievements with the public and other agencies.

The CBC Prize for Public Service Innovation was established in 1997 to recognize and promote successful innovations in the delivery of public services. The Trustees of the CBC instituted a prize schedule that alternates annually between New York City and New York State agencies.

Winner - 2001-2002 Best Practices Award

New York State Forum for Information Resource Management
http://www.nysfirm.org/index.html

The Forum recognizes outstanding work done during the past year in the area of Information Resource Management by New York state and local government organizations.

Winner - Computerworld Honors Program Laureate 2003

Computerworld Honor Program – A Search for New Heroes
http://www.cwheroes.org

The Computerworld Honors Program brings together the Chairmen or Chief Executive Officers of the foremost information technology companies in the world and the world's leading universities, libraries and research institutions to document a revolution in progress: the global information technology revolution. Established in 1988, the Program is dedicated to identifying the men and women, organizations and institutions, that are leading this revolution and to recording the impact of their achievements on society.

The MIRROR is also under consideration for a Computerworld Honors Program Worldwide Finalist and Computerworld Honors Program 21st Century Achievement Award to be selected in June, 2003.

Semi-Finalist - 2002 Innovations in American Government Competition

Harvard University John F. Kennedy School of Government
http://www.innovations.harvard.edu

Launched in 1985, the Innovations in American Government is an awards program of the Institute for Government Innovation in partnership with the Council for Excellence in Government funded by the Ford Foundation. It has become a significant force in identifying and promoting excellence and creativity in the public sector. Through this annual awards competition, the program has recognized 295 innovative programs, which have received $17.9 million in Ford Foundation grants. By highlighting exemplary models of government's innovative performance, the Program serves as a catalyst for continued progress in addressing the country's most pressing public concerns.

The MIRROR continues to be under consideration for winning this award to be determined in April 2003.

In addition to these awards, the MIRROR's technical achievement, based on an early prototype, was recognized by Sybase, Inc. and presented at the company's annual international technical conference Tech Wave 2000 - Los Angeles, California.

5 IT PROJECT CAPABILITY (CMM)

Purpose

One way to measure an organization's capability to perform IT projects is through a tool such as the SEI Capability Maturity Model. The Capability Maturity Model (CMM) provides a framework for improving the performance of an IT organization.

Description

In the 1980's, the United States Air Force funded research at the Carnegie-Mellon Software Engineering Institute (SEI) to create a model for the military to evaluate software subcontractors objectively. The result was the Capability Maturity Model, published as *Managing the Software Process* in 1989. The CMM has since been revised and updated. More information is available at the SEI website:

http://www.sei.cmu.edu/cmm/cmms/transition.html

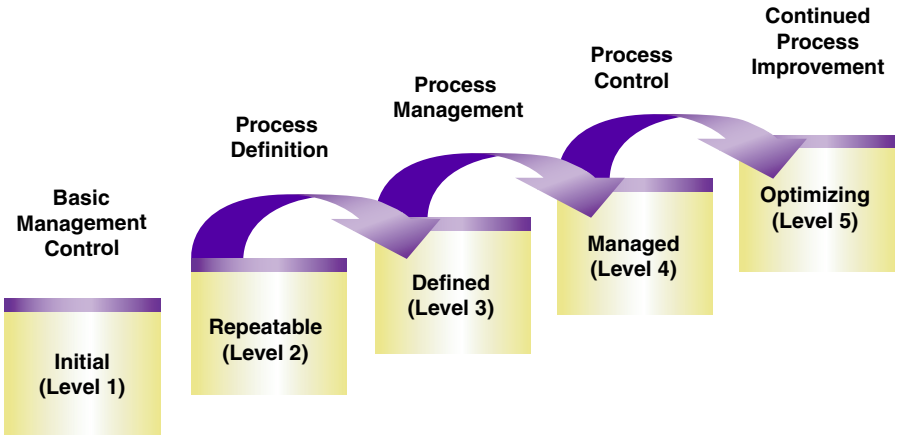
The underlying principle of the CMM is that software development is a management discipline undertaken as part of an organization's mission and strategic plan to achieve its business goals. To ensure success in using the CMM, management must first understand the needs of the organization, and accurately predict its ability to meet those needs.

The most widely accepted model for measuring the effectiveness of the software development process, the CMM has been used successfully by many organizations to identify the key areas on which to focus improvement initiatives. Although it is geared to large organizations, many of the processes involved are appropriate for organizations of any size.

The CMM is organized into five levels of organizational maturity, with each level representing a higher evolutionary stage of process capability and a progressively greater likelihood of producing quality software.

The five-stage CMM roadmap, through which an organization can mature its processes and practices, is illustrated below.

Figure 5-1 Capability Maturity Model



These levels are described in terms of Key Process Areas. A Key Process Area is a group of related activities considered important for an organization functioning at the appropriate process maturity level.

Many organizations may find themselves operating at Level 1, with movement towards Levels 2 and 3 posing a major challenge. Each level is described in more detail below.

LEVEL 1 - INITIAL

This level has no Key Process Areas. There may be minimal formal processes and project management disciplines, but they are typically very lax with limited controls in place. Results are unpredictable and successes are due to the efforts of individuals rather than the performing organization. Many organizations begin at this level.

LEVEL 2 - REPEATABLE

The Key Process Areas in Level 2 require the definition of and enforcement of project management practices. These practices are utilized to assist organizations control project cost, time and deliverable commitments. Successfully repeating previously mastered tasks, to avoid repetitive failures brings an organization to Level 2.

LEVEL 3 - DEFINED

The Key Process Area to Level 3 is defined process management. This level focuses on processes that relate to management and software engineering activities across the Performing Organization, that are formally defined, documented and integrated into a standard process that is understood and followed. Once the Performing Organization has reached this level, and the management and software engineering processes are established successfully, continuous process improvement will have been achieved.

LEVEL 4 - MANAGED

The Key Process Area to Level 4 focuses on the process controls in place to measure quality. Detailed measures of the management and software processes are collected and used to identify and correct issues with process performance. As new tools or processes are added or introduced to an existing environment, the measured data enables the Performing Organization to assess the success of the adjustments made. A managed process for these continuous improvements helps to establish and maintain a high performing organization.

LEVEL 5 - OPTIMIZING

This level has only been achieved by a handful of organizations. The Key Process Area for Level 5 is to maintain continuous improvement and optimize existing processes. The Performing Organization at this level will be equiped to proactively address the strengths and weaknesses of the business processes and software engineering practices. Instead of correcting defects as they occur, quality efforts will focus on prevention and will also anticipate possible root cause scenarios. Level 5 is the premier level of optimization.

The Benefits of the CMM

The benefits to moving up the CMM scale are major performance improvements, including:

- Improved Stakeholder and Customer satisfaction
- Improved quality and robustness of deliverables and products
- Shortened and more predictable delivery times
- Cost reductions in development and support
- A shift in organizational culture from reactive to proactive
- Implementation of performance measurements organizationally, as well as by project

The CMM helps organizations meet mission and strategy goals, better align projects to Customer needs, and better align people and processes to technology. As organizations move through the levels of the maturity model they become more efficient. At the same time, their understanding of tools and techniques and when to use them to solve a business challenge increases. Higher levels of maturity result in organizations that are better equipped to predict the impact of introducing new technology, new techniques, and new tools, enabling them to bring products to market faster, with higher quality and with more Customer satisfaction.

6 IT PROJECT TOOLS

Purpose

Over the last ten years, there has been a proliferation of software to assist in the management of IT projects and IT operational processes. New software has been introduced to support all phases of the System Development Lifecycle (SDLC). Although these tools can and do provide much needed support for the application development process, it is important to remember that the tools are there to support the SDLC process, not to provide the process. As the Gartner Group emphasizes, "Methodology before Technology – technology changes frequently, solid methodologies are flexible, adaptable and age well."

Implementing automation into the SDLC process is a serious commitment. Without a clear understanding of what it will take to be successful, from the fiscal commitment to the resource commitment, the software becomes shelfware.

There are a number of concerns regarding automation in the SDLC, including selecting the right tool for the job and lack of management support for the automated tool that is chosen. Because the use of automated tools in the SDLC process is a relatively new and expanding area, it often does not gain the attention it deserves until something goes wrong. Many agencies lack effective automation architecture and the specialized competencies required to implement and use the automated tools. Adding new tools requires new skills, training, and expenditures for the software and equipment, all of which drain existing resources.

It is important, therefore, to address several key factors in the automation of the SDLC, including:

- Senior management support
- Adequate resources with appropriate skills
- Clear and effective ownership and integration of technology with SDLC processes
- Proper training
- Performance Measures

6.1 TOOL SELECTION

Selecting the correct software to assist in the SDLC process is the key to its effectiveness. Purchasing and implementing the correct tool for the job is as important in application development as it is in building a house. Defining the requirements and functionality that the tool is expected to provide is similar to working with the architect in the design of a new building. After the building has been designed and agreed upon, you have a better understanding of what tools to use. Using 10 laborers with shovels is one way to dig a foundation. Bringing in a worker with a backhoe would be considered an automated way to dig the foundation. For a house, a bulldozer would be appropriate, for a doghouse, it would be considered overkill. With so many tools on the market and so many companies buying each other out and coming up with new ideas, it is important to accurately define what is to be accomplished with the software.

When implementing automated solutions, keep it simple. If the tool gets in the way, people won't use it. The tool should be integrated into existing work processes for Customer support and documentation. Then purchasing software ensures that a definite business need has been defined.

There are many different types of automated software that sound good, but will using them make the development faster or the quality of the software better? The best idea is to start small and build on successes.

When purchasing a tool, continue to refine and prioritize requirements based on the initial round of investigation. Quiz the vendors and read the literature, and narrow the list to no more than three options. To evaluate the finalists, develop a list of real tasks that the tool would be required to perform and have someone who will be an actual user of the tool perform the hands-on analysis. Other evaluation steps would be to find the local user group and attend a meeting, determine the extent of the on-line community for the tool and consider the stability of the vendor (how long have they been in business?). Once the selection has been made, a plan should be developed for introducing the tool. Make sure that training is available for the users and that the effects of the change are considered. (from *Making the Right Choice–A "How To" Guide to Choosing Tools* by Elisabeth Hendrikson, www.qualitytree.com. Automated Testing Conference, Boston, MA. August 2001.)

Six key ingredients to help avoid the chance that the tool will become shelfware:

- evaluate,
- implement and deploy well,
- use wisely,
- overcome problems, and
- reap the benefits!

Implementing an Automated Regression Test Suite by Lloyd Roden, Grove Consultants Automated Testing Conference, Boston, MA. August 2001.

There are many tools, suites and packages to choose from. Some tools are specific to the type of job you require, some tools address all aspects of a particular phase in an SDLC, and then there are tools that are comprehensive for an SDLC and are packaged as a suite. If the need has been thoroughly identified, it is easier to determine the level of tool to analyze. It will be helpful to visualize the phases of the lifecycle and the deliverables in order to determine which tool is required.

Some tools available are packaged to provide functionality for both business and data modeling. For example, within System Requirements Analysis it is possible that both a business modeling tool, and a data modeling tool may be required. Tools that can help capture information, perform modeling, and generate test scripts can be especially helpful in keeping data in one repository, and for tracking how it is processed.

To summarize, the Project Manager should determine if there are any tools that will assist the Project Team in their SDLC efforts. It is important to note, however, that many tools, and especially tool suites, may require a change in the way work is performed, which may or may not be beneficial. The final measure of a tool is how well it assists the Project Team in accomplishing the goals of the project. Knowing which tools provide which service will allow you to select the right tool for the job!