

# PROJECT MONITORING FOR MAXIMUM IMPACT

BY JONATHON PORTER



## ADJUSTING THE COURSE

I love sailing. Being on the water. The fresh air. The camaraderie of working together with your friends against the elements. However, to get to where you want to go, you don't just set your sails, sit back, and do nothing. The wind will blow you wherever it wants. No, you have to continually adjust the tiller for the proper heading, ease out or sheet in your sails, and plan for when you have to cross the wind to get a better angle on your destination. Project monitoring and control is no different.

- Project Monitoring begins during the Planning Phase
- Measuring progress needs the right metrics & interpretation
- Effective Monitoring & Control results in Project Plan alignment
- Risk Identification & Response during Monitoring are critical to project success

### DEFINE THE PATH

Project monitoring and control is not some vague awareness that your project is progressing as time passes. Impactful monitoring and control begins before the project work even starts. During the project planning phase, the Project Manager (along with the Project Sponsor and other stakeholders) must not only define the project scope and baseline it, but also determine how that scope will be evaluated during the execution phase. What metrics and/or deliverables will be used to measure progress? How will that information be collected? When and how frequently will that information be collected and disseminated? During project execution, it is the Project Manager's responsibility to implement the planned measurements and resultant actions. The cycle begins with scope, schedule, and cost verification. Has the work been completed and has it been completed on time and within budget? The information gleaned from performing monitoring and control efforts may result in change requests (CRs), risk identification, and updates to the Project Management Plan (PMP). The purpose of all these plans, measurements, and evaluation cycles is not to create work for the

sake of work – but to maximize the efficiency and efficacy of project work and resources. Achieving project success on time and within budget while making risks, changes, and aberrations manageable is the ultimate impact of effective project monitoring and control.

### PLAN TO MONITOR & CONTROL

As with any project initiation, after project charter completion, or project authorization, the requirements gathering phase begins. The specifications (in features, functions, time frame, and resources needed) are fleshed out and the work to be completed (scope) is defined. Defining project scope also includes defining activities, documents, project approach, and, of course, when the project is complete (how you know when you're done). Project activity definition breaks down the scope into more manageable pieces. The importance of this scope decomposition is that it enables management that is more effective. Imagine trying to assess the status of a large project (like a skyscraper, an interactive website, or the implementation of a complex piece of legislation) if the only status you could assess was the entire project! How could you

Additionally, the Project Manager, through the PMP, must stipulate how this information is gathered and measured and how the information will be communicated to the project team and necessary stakeholders. All these actions, however, need to be planned for ahead of time. Often, the Project Manager and project planning team must rely on past experiences to anticipate what will or will not work with regards to activity definition, deliverable identification, and schedule and cost estimates. Industry research papers and journals may also be useful when selecting, gathering, and reporting evaluation metrics and other documents used in project monitoring. The “Baseline” is the yardstick by which we measure projects. After the Project Manager decomposes the scope to manageable tasks and/or work packages, applies resources, and estimates associated costs, the Project Manager must to codify these plans as part of the PMP. All of this work ideally must be done before the project work actually begins. For monitoring and control efforts to be effective, the planned-for assessments need something to measure against. Is the project ahead or behind schedule as measured by the planned-for deliverables against the baseline schedule? Is the project over or under budget according to the cost baseline? And, the critical follow up question to the preceding questions: By how much? Answering that question will inform the Project Manager about what type of CRs, if any, he/she needs to make. The key importance of measuring against a baseline is that it provides useful, actionable information. With accurate schedule and cost variance measurements, the Project Manager can make an informed decision regarding how to address the situation and inform necessary stakeholders. The first step in effective monitoring and control, then is establishing the Baseline. The Baseline must be approved by the Project Sponsor and/or appropriate stakeholders. Inclusion in the PMP will also touch the subsidiary Requirements Management, Cost Management, and Scope Management plans. Any changes to the Baseline, via CRs as defined in the Change Management Plan, must be approved by the sponsor or stakeholders.

### DEFINE THE METRICS

Monitoring and controlling depends on some form of metrics. What are the metrics a doctor immediately collects to assess the general well-being of a patient? Blood pressure, heart rate, and body temperature, perhaps? Those metrics aren't exhaustive but they provide the doctor an initial assessment, or baseline. Why does the doctor use those types of metrics? Because they can be indicators of where to look more closely. If a patient is running a fever, the doctor will pursue a different path of inquiry than if the patient has high blood pressure. A Project Manager must plan and monitor metrics appropriate for their project.

The type of metrics used depends on the project type. They can consist of schedule and cost variances. Additionally, some projects incorporate “estimates to complete” (both schedule and cost). Still other projects may depend on specific deliverables as a phase gate for progress or various other earned value metrics. Regardless of the type of project, though, the metrics must be defined prior to beginning the project. Good project monitoring begins before the work starts. The definitions of these metrics must also be reported to the team and recorded in the PMP. From the initiation of project work, the team will understand expectations and

the necessity for recording relevant statistics and status.

There are many ways and some general considerations in selecting a metric. Ideally, the metric should be comparative or repeatable. By making a repeatable measurement, the Project Manager can gauge progress. For example, if a Project Manager was building a house and selected “Number of foundations laid” as a metric, the Project Manager would not be able to measure any further progress beyond the laying of the foundation. However, if the Project Manager measured “square footage completed per day,” or even a more general metric such as “stages completed (e.g., foundation, frame, plumbing) in status period,” the Project Manager would now have a more useful piece of information.

Your metric should be actionable. It should inform you and the team what must be done and how much must be done. Many times, this action can even be anticipated in the planning stages of a project. If the cost/schedule baseline is exceeded by X% on date Y, then take action Z. An actionable metric may also clarify the need to make a change and set in motion the planned CR process. While exhaustive papers can be written regarding metrics and indices, and the appropriate selection, it is often helpful (especially when planning for a deliverable-based project schedule) to remember the acronym S.M.A.R.T: make goals/deliverables/metrics Specific, Measurable, Achievable, Relevant, and Time-bound.

The application of metrics can also vary depending on the type of task. Some metrics can be easily measured (dollars spent, number of items produced) but some metrics may require a less tangible form of evaluation. Expert analysis may be required to assess status. The expert may have prior and extensive experience with similar types or projects. Or, the expert may be an academic authority on the subject. Projects that require expert analysis to assess progress need to plan for regular examinations and consult closely with the expert to create a project plan that will be useful. Regardless of the solution, the Project Manager must record the decisions in the PMP so that during project execution, there is precision regarding how the project will be measured and monitored.

Quality of the product or deliverable at various stages of or at completion is yet another metric the Project Manager can use. As always, though, the levels of and methods for evaluating quality must be addressed in the planning phase and recorded in the PMP and the subsidiary Quality Management Plan.

### FREQUENCY

As with the selection of a metric, selecting the frequency of data collection or progress evaluation is subject to the type of project. Building an aircraft carrier vs. creating a SharePoint site will necessitate different reporting periods. The most important consideration regarding frequency is the amount of time needed for and ease of correction should an error or aberration be identified. For example, if an error occurs Day 2 of an aircraft carrier's construction, but a monitoring cycle isn't initiated until the end of Year 5, how much rework will need to be done to correct the error? But if a monitoring cycle is initiated biweekly, how much less work will need to be redone to the correct the error? Granted, it's an extreme example, but think of it in terms of different project types and, specifically of the projects you're currently working.

## TAKE NOTE

- Plan for possibilities and anticipate changes.
- Failure to plan for the “how” of Project Monitoring will result in scrambling for solutions and responses.
- Find resources, articles, lessons learned documents, and other resources to help you plan for successful and impactful Monitoring and Control.
- The better foundation laid for Project Monitoring, the more effective its implementation will be.
- Don't go it alone.

## EXTRAS

- Remember, you cannot measure or monitor what you haven't defined.
- Expect change because reality will always intrude on the perfect plan.



Think of the time wasted in correcting the implementation of legislative projects because quality metrics were not in place regarding document creation. Or think of the expense in adding resources to fix programming bugs that could have been caught earlier had requirements been accurately identified, measured, and monitored. There is no one solution to how frequently project progress should be monitored. A general recommendation may be weekly or bi-weekly assessments.

These assessments can take be status reports, time sheets, or some other measure of deliverable completion. The most important action, however, is to plan, record the decision in the PMP, and communicate that requirement to the team.

### REPORTING

Status reports are the official collection of project data and task completion. Project team members report assignments or task status to the Project Manager. The Project Manager will then collate this information and extrapolate the overall status utilizing metrics and/or measurements against the baseline. Frequently, the Project

Manager will also need to report the overall status to the sponsor and/or stakeholders. The format, content, and reporting avenues must all be planned during the project planning phase.

Reporting should not happen accidentally or haphazardly. The entire point of collecting status reports and evaluating metrics is so project progress can be accurately evaluated and communicated. The lines of communication established in the Communications Management Plan, as a subsidiary plan of the PMP, allow the Project Manager to provide actionable information to the sponsors and/or stakeholders who hold the authority to change the project parameters if necessary. There may be instances where the sponsors and stakeholders cannot change the scope, schedule, or budget. It is still the Project Manager's responsibility to keep them informed. Managing expectations is a critical part of project management.

The Communications Management Plan, created in the planning phase of the project, delineates who should receive what information and how and when they should receive that information. Some project plans go so far as to specify thresholds for

various metrics and anticipate the corrective actions based upon those metrics and reports. Your project specifics may not necessitate such a detailed response plan, but it is important to ask sponsors and stakeholders during the planning phase and incorporate decisions in the PMP.

**MONITORING & CONTROL DURING EXECUTION PHASE**

The actual process of monitoring and controlling a project begins with scope verification. The Project Manager evaluates (controls) the schedule and costs. This information is compiled in performance reporting, which in turn, informs the risk control process. The Project Manager closes out the monitoring and controlling cycle by the completion and implementation of CR.

Scope verification begins with the Project Manager collecting status from project team members or task leads and reviewing scope definitions and documentation from the planning phase of the project. Remember, the scope is the work to be completed as authorized by the sponsor and/or stakeholders. The work recorded in the status reports should conform to what is anticipated or planned for in the PMP. Status reports should be designed in the planning phase as well. Information contained in the status reports, though, may consist of reports regarding completed deliverables, schedule status, and/or expended costs. Each of these pieces of information may also be associated with a predefined metric. The Project Manager, or an assigned delegate, must compare the information against the planned scope to confirm alignment.

However, reality will always intrude on the perfect plan. Even well managed projects will likely face changes. So, it is necessary for the PMP to address the process by which changes can be evaluated, implemented, communicated, and recorded. Not all changes to a project involve scope, cost, or schedule. In some cases, there may be changes that require alterations to policies, procedures, or documents outlined in the original PMP. These kind of changes may stem from lessons learned reviews or from the identification of a previously unidentified risk or requirement. There are three possible sources for the generation of CRs: Corrective Action, Preventative Action, and Defect Repair.

Corrective actions involve any action that will align future project performance with the project plan baseline. The addition of resources, changes in scope or cost, or any alteration to the project management operations of a project are some of the types of corrective actions that can be taken. However, to make effective and impactful changes, the Project Manager must understand and recognize the deviation from the project plan and correctly identify the root cause or source of the deviation. Corrective action is the reason that so much planning and preparation must be done before the work begins. Without a baseline, informative metrics, or methods to collect project information, the Project Manager will not have the necessary information to effectively manage change and deliver the intended project result by selecting the best corrective action.

While corrective actions address immediate or actual deviations from the baseline, preventative actions attempt to address potential or future deviations. For example, a specific task may be behind schedule but within the planned, acceptable threshold during a status period.

However, the Project Manager may recognize the trend of the task's status will exceed the threshold at a future date. A preventative action would then be required. It is important for the Project Manager to remember that an actual deviation or aberration from the baseline may not exist at the time that he/she implements a preventative action. Corrective actions arise from identifying an issue while preventative actions are the result of identifying risk.

Defect repair and re-work are synonymous. Unfortunately, re-work involves correcting already completed work. The negative impact of loss of resource effort, time, and cost should be immediately apparent. However, sometimes re-work is unavoidable. Perhaps the sponsor changed the scope of the project, necessitating a task to be redone. In this case, the sponsor must formally authorize the CR according to the Change Management Plan, once the Project Manager has informed the sponsor of the potential impacts resulting from the change. Or, perhaps the final product does not align with the quality standards and quality metrics planned for in the Quality Management Plan. The Quality Management Plan and the overall PMP must address this possibility and incorporate contingency plans should the need arise.

Many people are scared to talk about risk. Typically, this aversion to discussion is because they have confused issues with risks. An issue is an immediate and/or actual problem or deviation from the project baseline. A risk is always in the future; a potential issue. The more comprehensively a Project Manager or project team plans for risks and develops response strategies and plans, the less impact an identified risk will have when, or if, it becomes an issue.

Risk monitoring is the practical application of all the metrics and measurement planning that preceded the execution phase. After a Project Manager receives task status from the project team, he/she will apply that status to evaluate and identify any deviations from the project scope, schedule, or cost baselines. The Project Manager can then use this information to forecast any further deviations. These forecasts, or projections, may reveal new risks or when an identified risk could become an issue.

The Project Manager will initiate the appropriate risk response plan (which may consist of risk mitigation, prevention, transfer, or acceptance). Each of these alternatives may have an impact on the project finances and schedule. The Project Manager must understand implications of each alternative and communicate them to the team, sponsor, and stakeholders. No evaluations or communications should be made "on the fly." During the planning phase, the Project Manager and project team must codify in the Risk Management Plan how to identify, manage, and report risks.

**PROJECT MONITORING & CONTROL IMPACT**

The purpose, then, of detailed planning, determination, and application of metrics and development of corrective or preventative actions is to maximize the alignment between planned work and actual work to deliver the intended product or service.

Effective monitoring and control affects the project's financial, schedule, and quality results. Financially, there may be no bigger waste than re-work. Project work monitoring, by collecting status, applying appropriate

metrics, and managing risks and risk responses will, ultimately, save money, possibly prevent cost overruns, and more satisfactorily achieve planned outcomes. Likewise, monitoring project work and controlling risks enables conformity to the planned project schedule. The impact of meeting the scheduled deadlines can be extremely critical. Think of legislatively mandated deadlines. Or the importance of meeting deadlines in lean project management, or just-in-time production. Project monitoring enables the Project Manager to achieve these goals. Additionally, consistent and planned monitoring and control prevents deviations from getting too large. By regularly planning for monitoring cycles the Project Manager can sooner identify aberrations and risks, and more quickly respond to them. Keeping deviations in schedule, cost, or scope to a manageable or

reasonably correctable size assures the project a greater likelihood of successful completion.

Project Monitoring and Control must be planned in advance of project work commencing. The Project Manager, project team, and other stakeholders must identify what will be measured, how progress will be measured, and when the monitoring cycle will occur. The Project Manager must actually implement the plan, though, and follow through to identify new risks and continue the iterative process of project plan refinement through change requests. To maximize impact for successful completion, project monitoring and control must be planned for and implemented consistently. There is no guarantee for success in every project. But better planning, preparation, monitoring and application of plans can result in smoother sailing along the way.



**Jonathon Porter**  
*project manager*

## LET'S TALK.

For more information about Edwards solutions, contact  
[Info@EdwPS.com](mailto:Info@EdwPS.com).

