Project Administration in Large Project Environments

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Introduction

Are you responsible for a large project or multi-project environment?

Large = Many unrelated single team projects.

Multi = One or more projects each with multiple project teams.

And:

- ☹ Are your project managers too busy to plan properly?
- ☹ Are your project managers too busy to plan when needed?
- ☹ Do your project managers use project management tools?
- ☹ Do you need to train project managers in the use of a project management tool?
- ☹ Do your project managers all like different project management tools?
- ☹ Do your project managers spend sufficient time with a project management tool to become expert in its use?
- ☹ Do your project plans all contain different terminology and formatting conventions?
- ☹ Do you need to train project managers in your planning and reporting standards so that your plans and reports contain consistent terminology and formatting conventions?
- ☹ Do your project plans have sufficient detail for effective project control?
- ☹ Do your project managers coordinate inter-project dependencies with each other?
- ☹ Do your project managers reconcile cross-plan resource conflicts?
- ☹ Do your project managers report status when you want them to?
- ☹ Is a staff person needed to compile, summarize, and interpret their reports?
- ☹ Do their reports help you to run the business?

This paper describes how to:

Build comprehensive detailed project plans on time regardless of how busy your project managers are.

Ensure that all planning is done using the same project management tool.

Ensure that your plans are built by someone expert in the use of the project management tool.

Ensure that your project plans and reports are consistent in terminology and formatting conventions.

Ensure that your project plans have sufficient detail for effective project control.

Ensure proper coordination of inter-project dependencies.

Ensure that your project managers reconcile cross-plan resource conflicts.

Eliminate the need for a staff person to compile, summarize, and interpret status reports.

Ensure that your status reports are timely and that they help you to run the business.

and reduce the cost of project management at the same time.

All of the above concerns that are so common in large and multi-project environments relate to the administrative functions that we ask our project man-

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agers to perform. Yet if one were to examine the primary qualifications which lead to the hiring of an individual to be a project manager, at the top of the list would be leadership and organization, ability to motivate and negotiate, ability to plan and communicate, technical knowledge of the work to be done..... At the bottom of the list would be the administrative skills like project management tool skills, planning and reporting, and organizational planning and reporting conventions and standards expertise.

For the project executive the administrative component is the life line that provides information and control. Why not hire a specialist to perform the project administration work for the project manager?

What is Project Administration?

Project administration is the administrative framework that supports project planning, resource scheduling, progress tracking, and status reporting. Most organizations expect the PM to spend some portion of their time performing the project administration functions (see Figure 1), and most project managers are too busy to do it comprehensively. A PM can spend up to 50% of their time in project management tool activities during the planning phase and up to 20% during implementation.

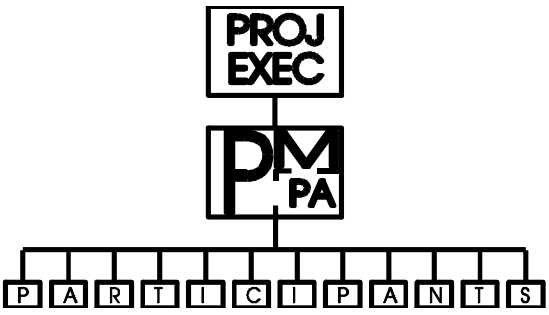


Figure 1

The Subordinate Project Administrator

Project mature organizations (ie. engineering and construction companies, general contractors, public sector agencies like NASA and the defense department) have always used project administrators (PA's) to handle project management tool work and the other administrative details, freeing the project managers to attend to the more direct project related activities. The project manager may assign a team member or subordinate the project management tool manipulation responsibilities. See Figure 2.

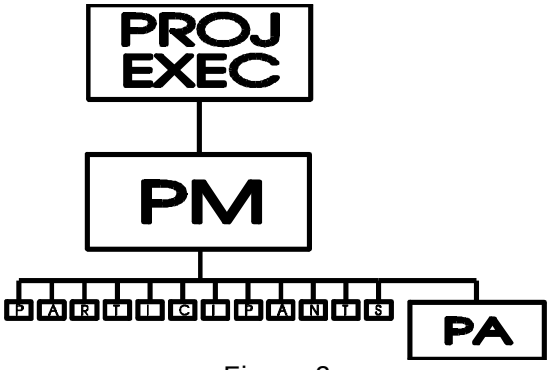


Figure 2

The project administrator uses a project management tool to document the project's plans, track progress, and provide the reports needed to support the project. The PA does not relieve the PM of the planning and reporting responsibility, only of the tool manipulation and administrative reporting burden.

A project manager teamed with a project administrator will have more time available for direct project management activities. However, the subordinate arrangement can result in "flavored" reporting. Pressures on the project manager influence the project administrator to skew reporting to hide negative or enhance positive information to improve the appearance of the project. Thus management cannot always rely on the information it receives and participants may miss information critical to keeping the project on schedule.

The Peer Level Project Administrator

The peer level implementation (Figure 3) is recommended over the subordinate (Figure 2) because working for the project executive instead of the project manager affords the project administrator the independence needed to be totally

honest in his/her reporting. It also provides a larger skills pool, the project executive's entire organization, from which to select the most suitable candidate for project administrator. Project managers may object to the loss of direct reporting authority over the project administrator because he/she cannot be assured that the PA will be available when needed.

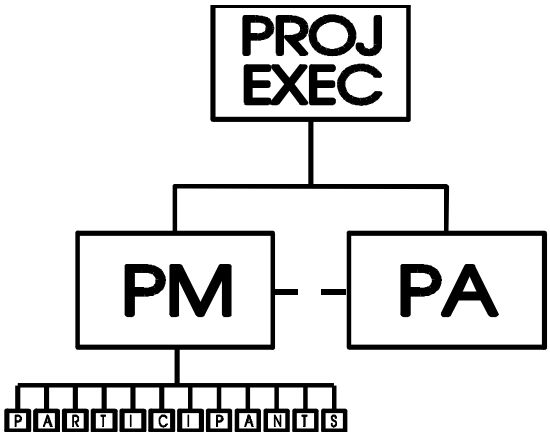


Figure 3

The project manager's concern highlights the need for management to ensure the PA's availability and dedication for project administration to work.

In large and multi-project environments a peer level project administrator dedicated to a single project cannot be justified as a full time job. The PA will therefore perform other duties as well, reducing their availability and dedication to project administration activities and diluting their tools skills with other skills requirements.

The Shared Project Administrator

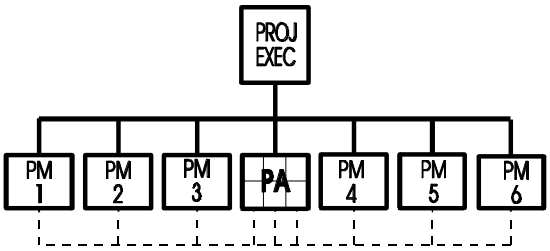
A peer level project administrator shared by multiple projects could be dedicated full time to project administration activities as shown in Figure 4. The shared project administrator implementation builds upon the advantages of the part time subordinate and peer level PA. Experience shows that a single PA can handle the planning and reporting requirements of from 15 to 25 PM's in either the large project or multi-project environment. The project administrator can provide a project organization with significant quantitative and qualitative benefits:

Figure 4

Quantitative Benefits

1. Planning can start immediately because there is no delay waiting for PM's to get up to speed on the project management tool.
2. 1/15 to 1/25 the number of project management tool licenses are required.
3. 1/15 to 1/25 the number of people (PA's instead of PM's and team leads) require tool training.
4. 1/15 to 1/25 the number of people (PA's instead of PM's and team leads) require training in the company's planning and reporting standards.
5. Full time PA's never require refresher training courses. They go from one project to the next and handle several projects at a time, focusing on the project management tool, planning, reporting, and the organization's standards, and develop great exper-

The Shared Project Administrator



tise.

6. PM's and team leads have 20% to 50% more time for direct PM activities. Therefore you need 20% to 50% fewer PM's to accomplish the same amount of project management.
7. PA's cross team boundaries to ensure that inter-plan dependency relationships are reconciled.

8. PA's cross team boundaries to ensure that cross-plan resource conflicts are reconciled.
9. The PA becomes a focal point for all project information, eliminating the need for someone else to collect information and compile reports.

Qualitative Benefits

1. Planning is of higher quality because the plan building interview process discipline requires the planner to describe his/her plan to the PA who will ask questions the planner may, if planning alone, overlook.
2. Full time PA's, without the distractions that plague PM's, develop project management tool expertise.
3. Planning and reporting is consistent in format and content across all projects.
4. Reports are timely because one doesn't depend upon the busy PM's to find the time to collect the data and report.
5. PA's supplied by an organization's project office provide an organization-wide view of project status.
6. The PA's continuity of experience enables them to refine the reports to help run the business.

The quantitative benefits may be assigned hard dollars for your environment, and the qualitative benefits will improve the relationship between PM's and the project executive.

Project Control in the Functional Environment

The functional organization does not perform projects as its primary activity but instead performs repetitive activities like making or distributing products or performing a service (ie. the majority of the corporate and public sector world). In recent years functional organizations have found themselves forced to re-engineer products, operations, and services at an ever increasing rate to be competitive. This increasing change has translated into an increase in the size and number of projects (ie. consolidating data centers, moving people, changing assembly lines, developing a new product, writing software, etc.) they must manage. The increase in demand for project management capabilities has dramatically increased interest in project management literature, seminars, and education.

In the functional environment projects are usually staffed with people borrowed from functional jobs. The PM cannot hire or fire project participants. Project participants usually continue to report to their functional manager and split their time and responsibility between the project and their functional duties. This dual allegiance can cause a serious control dilemma for the PM. Project plans committing a specific individual on a specific date may be preempted by the functional manager for what he/she considers a higher priority department activity.

The project administrator can help the PM obtain better control as illustrated in the following example.

Example

A shared project administrator was used at IBM to manage a project to prepare five new office buildings in Somers, N.Y. for a 58,000 square foot raised floor computer installation and its associated communications and remote computing facilities, and to move 18 mainframe computers and 2300 headquarters executives with their PC's and their staffs into the new buildings.[1]

A single project administrator supported 150 participants on 26 project teams, each team reporting to a different functional manager. The project completed 30 person-years of work in 14 months. The usual startup delays while an organization decides what project management tool to use and how to plan and report were avoided. Planning began immedi-

ately. As a result of comprehensive detailed plans and weekly high visibility status reporting against those plans, project managers and participants were able to respond quickly to delays against original commitments, and all 50 project milestones were completed on their original plan dates without one schedule slip.

The project administrator eliminated the need for PM's to learn a project management tool and to provide reports to management. Planning was done during one or more interviews with the project administrator and status reporting consisted of one representative from each team returning an E-Mail document once a week updating the status of those tasks that were active that week. The project administrator did the rest. Inter-plan dependencies were reconciled, inter-plan resources were balanced, reporting was timely and consistent across all teams, and the project executive was comfortable with his level of knowledge about the project and in control at every point along the way.

The Somers project illustrates all of the quantitative and qualitative advantages of using a project administrator listed above plus two additional points:

1. The project administrator can control the project by using the project status reporting system to focus the attention of the project executive on the areas that are critical to project control.
2. In an environment where the functional manager controls the PM's resources, the PA can help the PM's achieve control over their resources by using the reporting process to expose plan lateness caused by withdrawal of resources. For a sensitive project the project executive will be extremely responsive to deviations from the plan if he/she can see them in the reports and will ensure that functional managers comply with their original resource commitments.

Project Administration Reports that provide Project Control

Task Status Metrics

Before we examine some sample reports we need to look at task status metrics that can provide both

- Detailed information that PM's and participants will need to highlight what must be done to keep the project on schedule, and
- Summary information that tells functional managers and the project executive whether there are problems and if so, where to look and who to ask about it.

Figure 5 (Figures 5 through 11 are at the end of the paper) shows two tasks, Task 1 and Task 2, before and after status reporting. Task 1 is 8 days duration and 16 person-days of work effort. So on each day of duration two person-days of work effort should take place. Task 2 depends on Task 1 and is 2 days of duration and 4 person-days of effort. The Gantt calendar shows a 5 day week with Friday the 13th as the end of the reporting period denoted by the vertical line, and Monday the 16th is the beginning of the following week. Equal signs are the project management tool's representation of the completed portion of a task. Dashes are the open portion. One can see that after 4 days of execution, at the end of the reporting period, Task 1 should be 50% complete, with 4 days of equal signs up to the reporting line, and 4 days of dashes following to indicate the amount of work remaining.

The bottom of Figure 5 reflects the team lead's report that as of the reporting date Task 1 is only 25% complete. The completed portion of the task is shown by equal signs and the remaining open portion is dashes. The project management tool, when told that the task is 25% complete after 4 days of effort, calculates that task will take 16 days instead of 8 and projects a new completion date for the

task based on this information. The "v" indicates the originally planned completion date for the task. Note that the project management tool calculated a new completion date for the task and pushed the dependent task out 8 days.

The recalculation of Task 1's completion date can ripple through the entire project schedule disrupting future milestones and deliverables. Seeing their tasks shifted as a result of the delay resets everyone's expectations and those affected now strive for later target dates.

Recalculating the project schedule based upon reported task lateness reflects a philosophy of project management known as "Project Tracking." This approach helps to analyze the effects of lateness on future dates. To bring the project back on schedule it is now necessary to rework the plan and reschedule many people's time. Using the project management tool in this manor reflects reality. However it requires a great deal of tool manipulation, disrupts people's calendars when they need to look every week to see if the plan changed, and it is easy to miss fixing some of the dates that were rescheduled.

The Project Administration methodology instead uses the philosophy of "Project Control." The bottom of Figure 6 illustrates how this works. When Task 1 is reported as 25% complete 2 equal signs represent 25% of progress and 4 person-days of work is considered completed. One can see that the two remaining dashes to the reporting date line represent 4 person-days of effort that should have been completed by report time but were not. Thus the task is two person-days behind (PDB). Also, since the incomplete portion of the task should have been started two days ago the task is two days late (DL). The "4/2" to the right of the task is the task's status, 4 PDB and 2 DL. Note that the task has not been projected to complete later than originally planned. The Project Administration philosophy says the owner of that task is expected to do what is necessary to keep the project on schedule without affecting the rest of the plan. Only when all managers who's milestones would be affected agree to a slip is a change in schedule allowed.

Figure 7 illustrates the need for both person-days behind and days late to denote task status. All the tasks in this illustration are two person-day tasks with a duration of four days, so each day of duration represents 1/2 a person-day of work effort. Since no progress has been reported on Task 1 as of the reporting date (no equal signs) the task is two person-days behind. Counting back to the beginning of the incomplete portion of the task, which is the beginning of the task in this example, it is 14 days late. Task 2 is the same task but now it is scheduled to start a week later. It is also two person-days behind but only 9 days late.

Task 3 is 50% complete. Thus 1 person-day of work remains and it is one person-day behind. Counting back to the incomplete portion it is 10 days late. Task 4 is complete and its status therefore is zero person-days behind since there is no work remaining to be done, and zero days late since there is no incomplete portion to count back to. Note that it doesn't matter when the task is done, once it is done its status is 0/0. Task 5 is supposed to be 50% complete at reporting time and it is. Therefore it is on schedule and its status is 0/0. If it were ahead of schedule the equal signs would go past the reporting date line and it would still be 0/0.

Status of individual tasks can be added together to produce summary reports for a sub project, the entire project plan, or the project status for all projects in the organization or company. And status can be applied to task owners and rolled up through the management chain to report on how much lateness is owned by any level of management. We will see examples of this later on.

The detailed and summary reports that use these metrics are described below

and illustrated with sample reports from the IBM Somers project.

A Word About Automatic Generation of Metrics

The Somers project used a DOS project management tool. The person-days behind (PDB) and days late (DL) metrics were calculated by extracting data from the project management tool and using a separate program. Most project management tools provide earned value calculations which include Schedule Variance (SV). If one defines all resources as billing a dollar a day all earned value calculations will be in person-days (PD's) instead of dollars and SV will contain PDB. However, I know of no tool as of this writing that provides DL unless it has the ability to let the user define their own formula for a new field. There are other useful metrics available in most tools that don't substitute for DL but will indicate other aspects of the status of a task and the entire project. This is a subject for another paper.

Detailed Reports for PM's and the Participants

Figure 8a through 8d is a detailed status report from the Somers project week "g", week ending March 19. It is the system relocation Gantt plan for the WPLIC1 computer system (IC1 for short) which will be moved to Somers the weekend of April 2 and 3. The Gantt is a very powerful reporting format because so much information is displayed in such a small space, and one can see which tasks are behind in the context of the tasks around them that are affected.

The vertical line just to the left of the March 20 date represents the end of reporting week "g", Sunday March 19. The week ID letters appear just above the calendar dates. Note the names of the participating organizations' sub projects, HARDWARE PLANNING, OPERATIONS, etc. The numbers to the right of some of the tasks are the status values of those tasks. Tasks status values were only shown on a Gantt report if a task had progress reported against it that week or it was behind. Tasks without status values were either completed in a prior week or are scheduled for some time in the future and no progress was reported against them. On the first page of the report you will see some 0/0 status figures for tasks in the VM SOFTWARE plan. Notice that there are hand written notes providing additional information that the reader should be aware of, like which sub projects are already closed.

On the second page of IC1, Figure 8b, you see the VM SOFTWARE status total of 0/0 circled. And just below, the INFORES sub project with no status but a note reminding the reader that this sub project is active this week and will be expected to report status next week. Notice the CUSTOMER SERVICE END USER SUPPORT sub project has some lateness. The first two tasks circled are one person-day tasks and, even though there are no equal signs to show partial completion, you can tell they are 10% and 30% complete because they are .9 and .7 person-days behind. And you can see that they are almost 15 days late as well. The third late task is 5 person-days behind and 5 days late and so the total status for this sub project is 6.6 person-days behind and 34.6 days late.

Continuing to Figure 8d, you can see the total "Project status for week "g" = 6.6/34.6" for this plan. Below the status total is the resource summary indicating how hard people are expected to be working each week of this plan.

Summary Reports for Managers and the Project Executive

Project Status by Plan

Status information from all active Gantt plans was tabulated on a spread sheet which produced all the summary reports. Figure 9 is the Status Summary by Plan report for the same week as the IC1 Gantt. The report shows plan status for weeks "e", "f", and "g". The current week ending March 19 is week "g". The left two columns contain the plan sequence

number and the plan names. The "SEQ NO." column contains either the plan's sequence number assigned in the order that plans were built for the project, or the sub project identifier. The sequence number for a parent plan containing sub projects has a "/" followed by the number of sub projects in the parent plan. For example, the WPLIC1 plan is sequence number 39 with 12 sub projects. Nine of the 12 sub projects are active some time during the last three weeks and appear on this summary report. Week g only 5 of the 12 were active, 3 were closed as indicated by the "C", and one is to become active in the future and indicated by the "*". The top line of the WPLIC1 plan section is the status total line for the plan, the sum of the sub project status totals. You can see the IC1 CS status of 6.6/34.6 from the IC1 plan we looked at, and the WPLIC1 total status of the same value. The project status totals for the week at the bottom of the "Week g Mar 19" column are 14.88 person-days behind and 506.8 days late.

The right-most column contains the percent of the total project status that each plan and sub project contributes. For example, WPLIC1's 6.6 person-days behind is 44.4% of the 14.88 person-days behind total. And its 34.6 days late is 6.8% of the 506.8 days late total. So by glancing down the PERCENT column the reader can very quickly determine which plan is making the greatest contribution to lateness this week. And it happens to be WPLIC1, with CHQVM just behind it.

A project executive reading this report will scan the percent columns and focus on the projects and sub-projects with the greatest percent of the total lateness that week.

Project Status by Organization

This report, Figure 10, is the most compelling to management and probably the greatest contributor to schedule control. It shows the organization hierarchy that is participating in the project, up to and including the director or project executive, and it allocates each component of this week's 14.88 person-days behind and 506.8 days late to the managers responsible. As you can see Daddona is the project executive and he owns all 11 active plans and all 14.88 person-days behind and 506.8 days late, or 100% of this week's lateness. He has three third line managers under him, Green, Kublano, and Divers. Green's organization owns 8 of the 11 plans and 55% of the person-days behind, and Divers owns 2 of the plans and 45%. When this report comes out Daddona will be calling Green to ask him some questions.

Green can see from this report that Dath, Southworth, and Tartaglia, his 2nd lines, all have active plans. Dath owns the biggest piece, 40.9%, of Green's 55% so Green will be calling Dath first to get the story. And Dath has 1st lines Curren, Phung, and Kersten. And he can see that Phung owns the whole 40.9% so he will be questioning Phung, etc.

Figure 11 is the first page of a seven page extension of the Project Status by Organization report (the rest is not shown) that tells each manager which of his plans are active this week and accounts for his numbers on the STATUS BY ORGANIZATION report. The first list is Daddona's with all 11 active plans. Then Green with his 8 plans. Green can see that OPERATIONS and the CHQHWP sub project are responsible for his entire late status. Below Green, Dath who works for Green, can see his 5 plans and the CHQHWP sub project that makes up his entire lateness.

The reader should be able to see that, if he/she owned lateness on the IC1 plan, this list of plans would point directly to the IC1 Gantt where one can quickly see which tasks are in trouble. The intent was to make it so easy for everyone to see who owned the lateness and what plans it came from so that functional managers would be extremely sensitive to any lateness that might be traced to withdrawal of previously committed resources.

The Project Administration Process

The following is a brief outline of the activities a project administrator performs from planning to shutdown for the multi-project environment. The large project environment is similar.

Planning

- When the project is identified the PA contacts the senior PM and schedules the initial plan building interview.
- During the initial interview the PA captures the PM's high level view of the plan using the project management tool.
- The PA schedules interviews with each PM or team lead and performs the plan-building interview process, taking the plans down to the detail activity level, identifying resources, work effort and duration, and dependencies.
- Interplan dependencies are identified and reconciled and a multi project schedule is built tying all the plans together.
- Each planner is given a copy of their plan to review. If no changes are required, this is their committed plan.
- The schedule is reviewed with the senior PM and project executive and reconciled with the client's schedule requirements.
- If the schedule must be compressed the senior PM and or project executive examines the plans for "padding" and negotiates shorter durations for some tasks and more parallelism where possible. The PA reflects the changes and reschedules. If the plan requires more compression the PM and planners continue to negotiate until all agree. The PA baselines the final plan and distributes it in preparation for execution.
- During the planning phase the PA is available and helpful to the planners so that they prefer the services of the PA over access to their own copy of the project management tool.
- At the close of the planning phase before execution there may be a kickoff meeting hosted by the project executive. At this meeting PM's and project participants are provided with an overview of the project and its importance to the organization. this is also the appropriate time for the PA to describe the progress data gathering and reporting system to be used during implementation.

Implementation

- The PA collects progress information from the planners weekly.
- The PA produces weekly detailed reports that show which tasks are behind, how much work effort is required to catch up, and whether the late tasks are critical or non-critical to the success of the project.
- The PA produces weekly summary reports that show the work effort lateness of each plan within each project and what percent of all the organization's lateness each project contributes. They also show which managers' resources contribute the most lateness.
- The reports are distributed to the project executive, all participating functional managers, and PM's, and are available to all participants.
- Project schedules are never revised as a result of task lateness. The focus instead is on what must be done to bring late tasks back on schedule. The decision to slip a schedule (ie. reprint the plan with different dates) or to apply sufficient resources to bring a project back on schedule is reserved to those responsible for the client interface and the profitability of the project.

Project Administration Support Shutdown

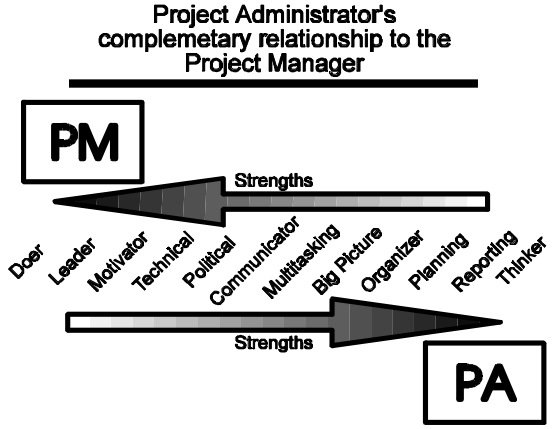
- Project Administration support for a project is terminated after all major deliverables are completed and the remaining activities do not justify continuing the reporting process. An example might be when only four non-critical tasks remain and they are scheduled for completion over the next six months.
- The PA provides project statistics, ie. total number of tasks executed, total work effort, average number of tasks executed per week, average work effort executed per week, aggregate lateness, etc.

Project Administrator Qualifications

The skills required of a project administrator are a function of the level that the individual will operate at. The project administrator may either:

a. Support projects by helping PM's plan and report and help project executives obtain the information they require, or

b. Control projects by using the status reporting system to focus the attention of the project executive on the lateness that will impact schedule control and the people who own that lateness.



The support role may be filled by a relatively inexperience PM or a person aspiring to become a PM. See the Project Administrator Job Description in Appendix A. The control role requires a senior level person with PM and political experience who is comfortable communicating with all levels of the organization.

Figure 12

The PA's skills compliment those of the PM as illustrated in Figure 12. Where PM's lean towards the "do" end of the scale, PA's should be more "think" oriented, and thus better suited to the planning and reporting aspects of project management. The candidate should be PC literate, well organized, and a reputation for attention to detail.

Project administrators require a variety of specialized skills as outlined in Appendix B, the Project Administrator Training course description. One might allocate some of the savings accrued from avoidance of project management tool training all project managers to providing formal Project Administrator training to ensure that PA's are properly prepared.

Conclusion

An increasing number of functional organizations recognize the value of project administrators and use them to control their projects. Savings associated with shared project administration are the result of both specialization and consolidation.

Specialization

The project administrator is chosen for his/her organizational skills and attention to detail, while project managers are selected for their ability to motivate people and get the job done. A shared project administrator exercises the tools and techniques full time thus bringing greater tool, planning, and reporting skills to each project than might otherwise be available, while the project manager now has more time to perform the direct project management activities critical to project success.

Consolidation

Consolidating the project administration responsibilities of many PM's into a single individual provides consistent planning and reporting across all projects. It eliminates the need to train each project manager in the organization's planning and reporting standards, to train them in the use of a project management tool, and to have a software tool license for each one. The project administrator ensures that cross-project dependencies, resource conflicts, and other cross-project issues are reconciled, and provides upper management with a single focal point for information and control.

A New Leadership Paradigm

The project administrator operating in project control mode described above creates a new leadership paradigm, using information to both leverage the influence of the project executive(s) and support the project managers to achieve schedule control. The project administrator as the focal point for information and the project manager as the driving force of project execution together are an unbeatable team.

The project administrator enhances the efficiency of both project managers and management, saves time and money, and is a practical solution to the difficulties that organizations have harnessing the best in their project managers while maintaining their high planning and reporting standards.

References

1. "Project Administration Methodology: Achieving Schedule Control on a Large Project - The Somers Project," pmNETwork, magazine of the Project Management Institute , July 1991, pp 9-33.