

Practical Project Management – Tips and Traps Part Three – Resources & Cost – Tips and Traps

Note: This summer, I celebrated my 40th anniversary of project management involvement with the release of my 2nd book: “*Practical Project Management: Tips, Tactics, and Tools*” by *Harvey A. Levine, John Wiley & Sons, 2002*. Scattered throughout this text are some hundred or so Tips and Traps that are based on my experiences during these four decades of project management practice.

This is the third of a series of articles built around these tips and traps statements. It captures the essence of almost 400 pages of practical project management advice, in just a few short articles. Of course, you are invited to delve deeper into the material at a later time. Also, you will find selected excerpts of the book’s chapters on this website as separate papers.

Resource and Workforce Management

TRAP – Questionable leveling results

Warning! Most automatic resource leveling routines are not very efficient, leaving periods of unassigned resources where there is work that can be done. The result is a schedule that is longer than can be accomplished with the defined resources. Also, you might end up publishing a plan that shows underutilized resources while you are claiming that there are not enough resources to get the job done. (Ch. 1-1)

The bottom line is that user intervention is needed to produce an optimized resource-loaded plan. Software that allows you to preview a result before accepting, or that has an undo feature, can be helpful in this optimization exercise. (Ch. 4-4)

TOOL TIP – Excessive leveling time span

There is no justification for producing a resource schedule, to 4 decimal places, way out into the future, when we can usually be assured that significant changes to the task schedule, the available resources, and even to the work scope, will nullify the results of that effort. (Ch. 4-4)

With the likelihood of significant changes to plans, workscope, and resources, leveling resources to the end of a two-year long project may also be unrealistic. (*Sciforma added a “level until xx/xx/xx date” option in PS7 & PS8*). (Ch. 4-3)

TOOL TIP – Inputting resource usage data

It is important for scheduling software packages to allow the user to design a time capture input form or view which will allow time sheet data to be entered on a resource-by-resource basis, across multiple projects. (Ch. 4-3)

TRAP – Usefulness of float in resource-leveled schedules

Once you have adopted a resource-leveled schedule, the indicated schedule floats are no longer useful as a measure of allowed schedule slippage. Any deviation to the planned performance of a task, even those having float or even those not requiring resources (except non-resource tasks having free float), will cause a change in the resource loading plan. (Ch. 4-4)

TRAP – Productivity of skills

There has been periodic interest in a capability to define the proficiency of individual resources. Caution is advised when working with the productivity of skills. This is usually very sensitive information, which should not be available to the general public. Before attempting to add these data, the situation should be reviewed with the human resources and legal departments and approved at a high level of management. At the least, such data should be restricted to “need-to-know” personnel. In practice, most users do not use a productivity feature and many products do not support such a function, specifically to avoid legal complications. (Ch. 4-4)

TRAP – Resource overloads

If the Resource Aggregation data shows that there are extended periods of time where one or more resources are in a high overload condition, it would be a waste of time to continue with the resource leveling utility. Resource leveling cannot manufacture resources for you. If the indicated overload is small or sporadic, it should be possible to eliminate the overloads by such actions as shifting dates within float (done by the computer) or allowing some overtime (defined in the resource database). But, forecasts of extended periods of significant overloads will require other action. (Ch. 4-4)

TRAP – Shared resources

When managing multiple projects with shared resources, it is normal to re-evaluate project priorities to choose which project gets first pick of the limited resources. Such action will not resolve your severe shortages, but will only shift which project ends up with the short stick. (Ch. 4-4)

TOOL TIP – Insufficient resources

It is possible for there to be situations where the computer cannot find enough resources, at any time, to satisfy the defined demand. In such instances, the system will usually ignore the defined limits and leave the overload. It might send a warning notification. (Ch. 4-4)

TIP – Reasonable time spans

If the resource-leveled schedule is satisfactory through the first six months of the project, but indicates problems further out into the future, you may as well accept the result and move on. The future is likely to be too dynamic to try to lock-in a resource loading plan that far in advance. If your tool supports it, you can instruct the system to level the resources only out until a specified date, rather than until the end of the project. (Ch. 4-4)

TRAP – Optimizing resource schedules

No combination of resource scheduling optimization capabilities can be assured of delivering the best results for any situation. There are subtle conditions that cannot be considered by any software, especially far in advance of the assignment time. The various smoothing capabilities will usually deliver better utilization of resources (on paper). But the computerized solution might not actually represent the best use of the resources. For instance, splitting assignments on tasks could result in fragmentation of the effort, with loss of efficiency or quality. Splitting and profiling functions, if available, must be applied on a case-by-case basis, with expressed parameters. (Ch. 4-4)

Budgeting & Cost Control

TRAP – Integrating schedule and cost

I have often run into situations where the schedule is being processed using a CPM tool, while the cost plan is processed in a spreadsheet. This continually leads to a mismatch of data. For instance, I have seen instances where the schedule was deliberately slipped by two months, but the cost spreadsheet did not change. Of course, the costs are driven by the schedule. So the spreadsheet-based budget was now totally out of synch. But nobody seemed to know or care. This is not an acceptable practice. The schedule and cost plan must be integrated. (Ch. 5-1)

TRAP – Including all costs

A common error in cost management is to exclude some sources of cost from the project cost database. If the project charter initiates the authorization to charge costs to the project, what happens to the costs that were associated with developing the project opportunity? Costs that are associated with preparing proposals or developing offerings should be accumulated and inserted into the project cost database. Likewise, there are often costs that are associated with the project closeout that are not accounted for. The budget should allow for project closeout costs, including punch list items and disposition of resources and assets. (Ch. 5-1)

TRAP – Differing objectives

The cost objectives and the definition of cost success can be very different for project managers and functional managers. The project manager is interested in getting the resource on the job that can perform the work (up to standards) at the lowest cost. The functional managers' emphasis is on getting the maximum applied hours for their staff. (Ch. 5-1)

TIP – Overtime does not always cost more

There is a general misconception that overtime work costs more than regular time work. This is not necessarily accurate. For instance, if a person's regular billing rate were based on a wage cost of \$15/hr plus overhead of \$15/hr plus 10% profit, we would bill \$33/hr for normal time. If that individual was paid a 50% premium for overtime, the billing rate would be \$24.75/hr (\$22.50/hr plus \$2.25 profit). There is no need to include a charge for the overhead, which is covered by the charges for the first 40 hours per week. (Ch. 5-1)

TRAP – Reasonable budgets

Try this one on for size. The development team develops a proposal with an expected cost of \$2,000,000. With profit, the project should be priced at \$2,300,000. However, the sales group sells a project at a reduced price of \$1,900,000. Senior management now expects the project team to hold costs to \$1,650,000 (to retain the expected 15% margin). The project team prepares a plan, with a budget of \$1,950,000 (already attempting to squeeze a few bucks out of the budget – recognizing that the job was sold at too low a price). With a high awareness of the pressures on costs, the project team delivers at a total cost of \$1,875,000. This is six and a quarter percent below the original estimate and almost four percent below the already reduced budget. Yet, it is thirteen and a half percent above the management target (based on the sales price). Should the project team be commended for their excellent cost performance (I think so) or should they be criticized for missing the (artificial) target? If you want to have a valid budget for performance analysis, that budget should be tied to the full identified workscope, rather than an artificial, sales price basis. (Ch. 5-1)

TIP – WBS for budgeting

It is a good idea to try to use a common WBS for estimating and developing the schedule. However, this is not always practical, because estimating is often based on common quantities, involving several individual tasks. Try to compromise by having at least one or two common levels in the WBS and the estimating structure, before branching out as needed to facilitate each function. (Ch. 5-1)

TRAP – Invoice data

Invoices rarely have information on them that provide detail on which tasks to apply the costs. For purchasing and CPM integration, the buyer should note the reference task ID's on the purchase order. PO's are often issued for items that involve more than one task. In such cases, the buyer must allocate the costs to the tasks (by percentage or actual values). (Ch. 5-1)

TIP – Progress payments

If your contract calls for Progress Payments, you should tie the billing to the measured accomplishments, rather than the actual costs. Measured accomplishments are a product of the Earned Value Analysis method. (Ch. 5-1)

TRAP – Maintaining cost data

There is a consensus that about half of the value of planning and control comes from developing the plan. The remaining half is divided between maintaining/progressing the plan and the final analysis and recommendations. When we terminate the cost management process at the end of the project (or a bit before the end) and we do not prepare a final analysis and recommendations, we are throwing away at least a quarter of the total value of the planning & control efforts. (Ch. 5-1)

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