

Of Benchmarks and Scorecards: Reporting on Multiple Projects

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Introduction

One of the best pieces of advice for any project manager is, “Divide and conquer.” Take a complex, large deliverable, and break it into parts. “Divide and conquer” creates a new problem though: answering the question, “How are we doing overall?” People want to see the forest, not just the trees. Creating an overall status report is a possible solution.

Benchmarks and scorecards are powerful tools for reporting status on any project, but they are especially powerful for projects composed of sub-projects. They can enhance existing status reports or serve as the primary status report.

Benchmarks and scorecards are never easy to implement, but the effort is well rewarded. Each manager has local control over his or her deliverable, and can set benchmark goals independently. Overall management can track progress towards the ultimate goal with confidence and precision. With a step-by-step approach, any project manager can apply these tools to his or her project work. Ultimately, these numeric tools can increase the maturity of an organization, helping a team or department learn from past experience and optimize future project results.

A note on terminology: Different organizations use the terms “programs” and “projects” very differently. This paper will avoid the term “program” entirely. Instead “sub-projects” are parts of a “multiple-project effort” or an “overall project”. “Project manager” means any project manager, while “overall project manager” is someone running the overall project. “Sub-project manager” is someone running a sub-project.

Step 1: Determine Senior Management Needs

The target audience for these benchmarks and scorecards is almost always senior management. Management typically wants to see regular progress reports, to ensure that goals will be met.

Set a meeting to gather a list of any key data they want to see, and to understand what questions they expect to have answered at each reporting period. This meeting is about senior management needs, and they will range widely, depending upon your management team and the larger organization’s goals. Be open to possibilities.

Step 2: Plan Sub-Project Metrics

Each sub-project contributes metrics to the overall scorecard. Find out what metrics the sub-project managers are planning to collect for their own use. Some sub-project managers may decide to collect no metrics of their own; at this stage nothing is required.

Step 3: Identify Common Metrics

Look for common metrics among all the sub-project managers. Sometimes two managers will call the same metric two different things, or calculate the same basic metric two different ways. For instance, a straight budget calculation of actual costs to-date will usually be greater than an earned-value calculation of actual costs, due to differences in definition of earned and unearned costs. Note areas of possible conflict as well as areas of agreement.

Compare the sub-project manager's metrics against the senior management needs. The metrics list may meet some management needs completely, while other management needs have no supporting metrics. Develop a strategy to meet management needs.

Step 4: Negotiate with Sub-Project Managers

With a list of common metrics, conflicting metrics, and missing metrics, it is time to talk to each sub-project manager. At this phase, negotiate changes. Changes at a sub-project level might include:

- new data collection methods
- adding more data elements to the scorecard
- renaming data elements
- changing data collection or reporting tools to achieve consistent results
- establishing concrete definitions of terms (i.e. what does "50% complete" mean?)

Any sub-project manager who decided to collect no metrics must now agree to collect a set of basic data. These negotiations can be difficult; some managers resist standardization. It is critical for the overall project manager to have a simple set of basic data needs, and to know exactly why each piece of data is necessary. The overall project manager should be prepared with advice and practical help to begin data collection.

Gaining passive acceptance at this phase is not enough; cooperation and understanding is required. Resistant managers can misreport or report late during the project execution, as a form of passive resistance. Wherever possible, try to generate goodwill and cooperation among the managers. Avoid creating situations where a single sub-project manager appears to win every negotiation, while everyone else loses.

Step 5: Set Standards

Create a list of standards for the overall project scorecard. Describe who collects what data and when. Responsibilities for each sub-project should be clear and precise.

Measurement methods should be exact. For instance, for “percent complete” for tasks, describe your method. Sample methods include:

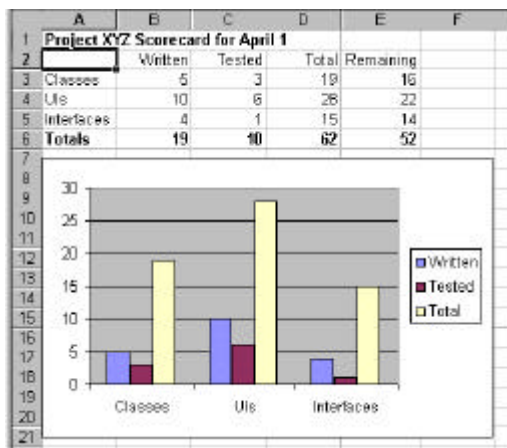
- Either 0% or 100% - complete or not yet complete
- 0% if not started, 50% when started, 100% when complete
- $(100 * \text{Act}) / (\text{Act} + \text{ETC})$
- Different percentages for each phase of completion: 0% not started, 10% in-progress, 75% almost done, 90% ready for review, 100% passed review

Clear standards are critical for consistent reporting.

While setting standards, beware of vague standards that are hard to enforce or audit. The overall project manager should be able to verify the sub-project scorecards, at least within some range of certainty, such as $\pm 20\%$.

Networked tools for project scheduling, defect tracking, and work tracking simplify reporting considerably. If the data is networked, the overall project manager can read and report on the data independently. This kind of transparency is a huge benefit in multi-project situations.

Step 6: Create an Overall Project Scorecard



Scorecards can combine tables and graphs to show a snapshot of current status

With a standard document in hand, designing the scorecard is straightforward. A few key questions will drive formatting and layout:

- What information is most important?
- What order will we discuss this information?
- How are we delivering the material (on-line, web, e-mail, text-only, print, projector, etc.)?
- What are the limits of the physical media (color, font size, etc.)?
- Do we need to highlight any key information?

- Do any readers need the data in a particular format (graphical, percentage, table of results, etc.)?
- What formatting or aesthetic standards should we follow?
- Is this report too expensive to deliver?

In general, a good scorecard flows clearly from one set of information to the next, in the order that management wants to see and discuss it. Data is clear, formatting does not get in the way, and it is easy to scan the page for critical information. Totals are obvious and meaningful.

Time and time again, I have found that management appreciates a one-page scorecard. Sometimes this single page just has summary data. Additional pages can always show the detail. A single-page summary delivers project status at a glance.

Step 7: Create Overall Benchmarks

	A	B	C	D	E	F	G	H
1	Project XYZ Benchmarks for April 1							
2	Written & Tested		1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun
3	Classes	Goal	0	0	5	7	10	12
4		Act	0	1	3	3		
5		Variance	0	1	-2	-4		
6								
7	Uis	Goal	0	1	5	15	20	20
8		Act	0	2	3	6		
9		Variance	0	1	-2	-9		
10								
11	Interfaces	Goal	0	0	1	3	5	7
12		Act	0	0	0	1		
13		Variance	0	0	-1	-2		

Benchmarks show progress over time, measured against concrete goals. Color helps show that this project is falling behind, and is ready for new benchmarks.

Certain scorecard metrics will be expected to steadily increase or decrease over time. These metrics are good candidates for benchmarking. Imagine benchmarks as a snapshot of expected values over time, with one expected value for each reporting period. Earned value analysis is a type of benchmarking. Regular status reports show the actual values compared to the benchmarks.

Use this technique for any metric on the scorecard. Set goals for each metric for each reporting period. Management can see with every report whether work is on schedule, ahead or schedule, or behind schedule, without reviewing hundreds of tasks.

Some advice for creating benchmarks:

- Only benchmark values that change predictably over time
- Benchmark only a few values
- Benchmark values that predict project success and show progress
- Estimate benchmark progress rigorously
- DO NOT assume a linear progression, like “2 per week”
- Publish the benchmarks widely
- Let benchmarks become a motivational tool for teams
- Give sub-project managers control over their own benchmarks
- Total their goals to set the overall project benchmarks

Step 8: Senior Management Approval

Each organization has its own protocol regarding senior-management communication and involvement. No matter what your organization’s style, it is essential to present the draft scorecard and benchmarks to management before using them.

This meeting is typically quite formal. The overall project manager distributes the benchmarks and scorecard ahead of time, then reviews it step by step with management. A face-to-face meeting is highly recommended. People need to discuss the documents. Different senior managers may need different information, and it helps them to hear each other defend each part of the report. Removing or changing a scorecard section requires group discussion and everyone's approval.

Changes may be needed in format, benchmark values, or even base metrics collected. Usually the overall project manager can begin using the new report for the next project-reporting period. Management usually is ready to adopt the new report.

Step 9: Update Scorecards, Evaluate Actuals vs. Benchmarks

With each reporting period, metrics change. The overall project manager should set a reporting schedule with all sub-project managers. Report all data as of the same date. Assembling and reporting data for a complex project often takes several days. Data may be old by the time it is published; balance the need for timely data against the need for accurate, well-reviewed data.

The whole project-management team should review the overall results together, before publishing them to senior management. This step ensures that no one is surprised by the results in the report. The overall project manager can reconcile any conflicts between sub-project managers and can make last-minute corrections.

The overall project manager fills in the actuals for the week and compares them against the benchmarks. Any variances should have an explanation.

The overall project manager publishes the scorecards and benchmarks to management. The cycle repeats for every reporting period until the project is complete.

Step 10: Refine and Update

Even the best project manager will have trouble predicting the course of an overall project. Benchmarks are the first to change. Changes in staffing levels, unexpected project events (positive or negative), changes to scope, or changes to estimates all should trigger a review of benchmarks. Benchmarks lose their value as a management and motivation tool if they become too easy or too difficult.

Often the project's metrics change as the project goes through different phases. The overall project manager should monitor overall project activities, to see when a particular metric is no longer relevant or when a new one should be captured. The overall project manager may choose to design a new scorecard for each phase or to keep a single scorecard for all phases.

During project close-out, the project scorecards become part of the lessons learned for the project. The history of scorecards and benchmarks will help the managers of future

projects develop their own templates and standards. Often the final scorecard provides useful data for estimating future project work.

Putting Scorecards and Benchmarks to Use

Following these ten steps, a project manager can build useful metrics and tracking tools. Certain principles are important through the whole process:

1. Keep the metrics simple and easy to understand
2. Choose sub-project metrics “scale up” to the overall project
3. Do not force metrics that work for one sub-project onto all sub-projects
4. Watch your math, because not all metrics sum up through simple addition; standard deviation adds using squares, for instance
5. State the uncertainty of the numbers clearly, from the first scorecard onwards
6. When benchmark values and actual values diverge, do not panic; figure out if the project is off-course or if the metrics are deceiving
7. Never, ever adjust the scorecard numbers in order to appear to meet goals
8. Do adjust metric calculations and benchmarks as needed; do so openly, with the consent of senior managers and sub-project managers
9. Use articles, research, and experts from your projects domain and from project management research to select appropriate metrics
10. Only use sophisticated metrics after gaining experience with simpler metrics, and only if the audience of the reports understand the complex metrics thoroughly.

To summarize: FOCUS ON COMMUNICATION. Ultimately the scorecards and benchmarks are about seeing the forest, despite all the trees. Managers who remain focused on communicating the state of the project “forest” will not get lost in the “trees” of numbers in their reports. Giving senior management the right level of vision, supported by accurate, demonstrable facts, is the ultimate goal of the exercise.

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