PROJECT MANAGEMENT
METRICS, KPIs, AND
DASHBOARDS
A Guide to Measuring and Monitoring Project Performance

Second Edition

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The ultimate purpose of metrics and dashboards is not to provide more information but to provide the right information to the right person at the right time, using the correct media and in a cost-effective manner. This is certainly a challenge. As computer technology has grown, so has the ease with which information can be generated and presented to management and stakeholders. Today, everyone seems concerned about information overload. Unfortunately, the real issue is non-information overload. In other words, there are too many useless reports that cannot easily be read and that provide readers with too much information, much of which may have no relevance. It simply distracts us from the real issues.

Insufficient or ineffective metrics prevent us from understanding what decisions really need to be made. In traditional project review meetings, emphasis is placed upon a detailed schedule analysis and a lengthy review of the cost baseline versus actual expenditures. The resulting discussion and explanation of the variances are most frequently pure guesswork. Managers who are upset about the questioning by senior management then make adjustments that do not fix the problems but limit the time they will be grilled by senior management at the next review meeting. They then end up taking actions that may be counterproductive to the timely completion of the project and real issues are hidden.

You cannot correct or improve something that cannot be effectively identified and measured. Without effective metrics, managers will not respond to situations correctly and will end up reinforcing undesirable actions by the project team. Keeping the project team headed in the right direction cannot be done easily without effective identification and measurement of metrics.

When all is said and done, we wonder why we have studies like the Chaos Report, which has shown us over the past 15 years that only about 30 percent of IT projects are completed successfully. We then identify hundreds of causes as to why projects fail, but neglect what is now being recognized as perhaps the single most important cause: a failure in metrics management.
Metrics management should be addressed in all of the areas of knowledge in the PMBOK® Guide, especially communications management. We are now struggling to find better ways of communicating on projects. Our focus today is on the unique needs of the receiver of the information. The need to make faster and better decisions mandates better information. Human beings have a variety of ways in which they can absorb information. We must address all of these ways in the selection of the metrics and the design of the dashboards that convey this information.

The three most important words in a stakeholder's vocabulary are, "making informed decisions." This is usually the intent of effective stakeholder relations management. Unfortunately, this cannot be accomplished without an effective information system based upon meaningful and informative metrics and key performance indicators (KPIs).

All too often, we purchase project management software and reluctantly rely upon the report generators, charts, and graphs to provide the necessary information, even when we realize that this information is either not sufficient or has limited value. Even those companies that create their own project management methodologies neglect to consider the metrics and KPIs that are needed for effective stakeholder relations management. Informed decisions require effective information. We all seem to understand this, yet it has only been in recent years that we have tried to do something about it.

For decades we believed that the only information that needed to be passed on to the client and the stakeholders was information related to time and cost. Today, we realize that the true project status cannot be determined from time and cost alone. Each project may require its own unique metrics and key performance indicators. The future of project management may very well be metric-driven project management.

Information design has finally come of age. Effective communications is the essence of information design. Today, we have many small companies that are specialists in business information design. Larger companies may maintain their own specialist team and call these people graphic designers, information architects, or interaction designers. These people maintain expertise in the visual display of both quantitative and qualitative information necessary for informed decision making.

Traditional communications and information flow has always been based upon tables, charts, and indexes that were hopefully organized properly by the designer. Today, information or data graphics combines points, lines, charts, symbols, images, words, numbers, shades, and a symphony of colors necessary to convey the right message easily. What we know with certainty is that dashboards and metrics are never an end in themselves. They go through continuous improvement and are constantly updated. In a project management environment, each receiver of information can have different requirements and may request different information during the life cycle of the project.
With this in mind, the book is structured as follows:

- Chapters 1 and 2 identify how project management has changed over the last few years and more pressure is being placed upon the organization for effective metrics management.
- Chapter 3 provides an understanding of what metrics are and how they can be used.
- Chapter 4 discusses key performance indications and explains the difference between metrics and KPIs.
- Chapter 5 focuses on the value-driven metrics and value-driven key performance indicators. Stakeholders are asking for more metrics related to the project’s ultimate value. The identification and measurement of value-driven metrics can be difficult.
- Chapter 6 describes how dashboards can be used to present the metrics and KPIs to the stakeholders. Examples of dashboards are included together with some rules for dashboard design.
- Chapter 7 identifies dashboards that are being used by companies.
- Chapter 8 provides various techniques for the actual measurement of the metric and the KPI. Metrics and KPIs serve no viable purpose if they cannot be effectively measured.

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The way we managed projects in the past will not suffice for many of the projects we are managing now, as well as for the projects of the future. The complexity of these projects will place pressure on organizations to better understand how to identify, select, measure, and report project metrics. The future of project management may very well be metric-driven project management.

- To understand how project management has changed
- To understand the need for project management metrics
- To understand the need for better, more complex project management metrics

**KEY WORDS**
- Certification Boards
- Complex Projects
- Engagement Project Management
- Frameworks
- Governance
- Project Management Methodologies
- Project Success

**1.0 INTRODUCTION**

For more than 50 years project management has been in use but perhaps not on a worldwide basis. What differentiated companies that were using project management in the early years was whether or not they used project management, not how well they used it. Today, almost every company uses project management, and the differentiation is whether they are simply good at project management or whether they truly excel at project management. The difference between using project management and being good at project management is relatively small, and most companies can become good at project management in a relatively short time period, especially if they have executive-level support. A well-organized project management office (PMO) can also accelerate the maturation process. The difference,
however, between being good and excelling at project management is quite large. One of the critical differences is that excellence in project management on a continuous basis requires more metrics than just time and cost. The success of a project cannot be determined just from the time and cost metrics, yet we persist in the belief that this is possible.

Companies such as IBM, Microsoft, Siemens, Hewlett-Packard, Computer Associates, and Deloitte, just to name a few, have come to the realization that they must excel at project management. This requires additional tools and metrics to support project management. IBM has more than 300,000 employees with more that 70 percent outside of the United States. This includes some 30,000 project managers. Hewlett-Packard (HP) has more than 8000 project managers and 3500 Project Management Professionals (PMP’s). HP desires 8000 project managers and 8000 PMP’s. These numbers are now much larger with HP’s acquisition of Electronic Data Systems (EDS).

1.1 EXECUTIVE VIEW OF PROJECT MANAGEMENT

The companies mentioned previously perform strategic planning for project management and are focusing heavily on the future. Several of the things that these companies are doing will be discussed in this chapter, beginning with senior management’s vision of the future. Years ago, senior management provided lip service to project management, reluctant to support it to placate the customers. Today, senior management appears to have recognized the value in using project management effectively and maintains a different view of project management as shown in Table 1–1.

<table>
<thead>
<tr>
<th>OLD VIEW</th>
<th>NEW VIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project management is a career path.</td>
<td>Project management is a strategic or core competency necessary for the growth and survivability of the company.</td>
</tr>
<tr>
<td>We need our people certified as Project Management Professionals (PMP’s).</td>
<td>We need our people to undergo multiple certifications, at a minimum, to be certified in project management and corporate business processes.</td>
</tr>
<tr>
<td>Project managers will be used for project execution only.</td>
<td>Project managers will participate in the portfolio selection of projects and capacity-planning activities.</td>
</tr>
<tr>
<td>Business strategy and project execution are separate activities.</td>
<td>Part of the project manager’s job is to bridge strategy and execution.</td>
</tr>
<tr>
<td>Project managers make solely project-based decisions.</td>
<td>Project managers make both project and business decisions.</td>
</tr>
</tbody>
</table>
Project management is no longer regarded as a part-time occupation or even a career path position. It is now viewed as a strategic competency needed for the survival of the firm. Superior project management capability can make the difference between winning and losing a contract.

For more than 20 years, becoming a PMP® was seen as the light at the end of the tunnel. Today, that has changed. Becoming a PMP® is the light at the entryway to the tunnel. The light at the end of the tunnel may require multiple certifications. As an example, after becoming a PMP®, a project manager may desire to become certified in:

- Business Analyst Skills or Business Management
- Program Management
- Business Processes
- Managing Complex Projects
- Six Sigma
- Risk Management

Some companies have certification boards, which meet frequently and discuss what certification programs would be of value for their project managers. Certification programs that require specific knowledge of company processes or company intellectual property may be internally developed and taught by the company’s own employees.

Executives have come to the realization that there is a return on investment in project management education. Therefore, executives are now investing heavily in customized project management training, especially in the behavioral courses. As an example, one executive commented that he felt that presentation skills training was the highest priority for his project managers. If a project manager makes a highly polished presentation before the client, the client believes that the project is being managed the same way. If the project manager makes a poor presentation, then the client might believe the project is managed the same way. Other training programs that executives feel would be beneficial for the future include:

- Establishing metrics and key performance indicators (KPIs)
- Dashboard design
- Managing complex projects
- How to perform feasibility studies and cost–benefit analyses
- Business analysis
- Business case development
- How to validate and revalidate project assumptions
- How to establish project governance
- How to manage multiple stakeholders
- How to design and implement “fluid” or adaptive enterprise project management methodologies
- How to develop coping skills and stress management skills