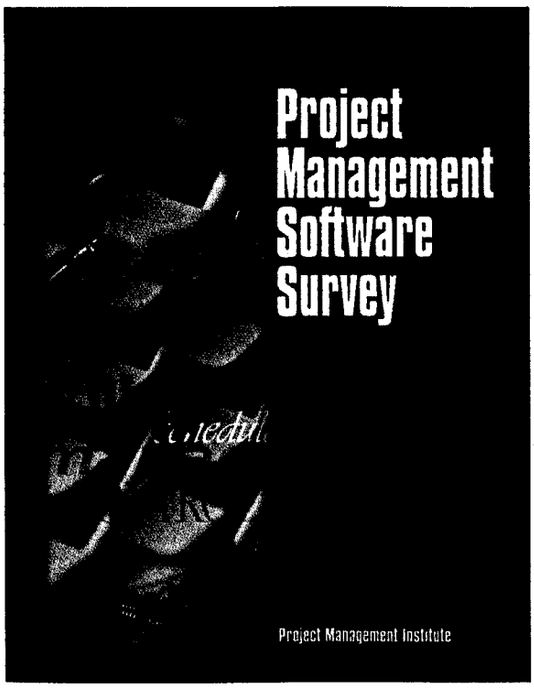
Evaluating Project Management Software

An Excerpt From the *Project Management Software Survey* (PMI, 1998)

Simply picking a software product out of the hundreds listed in PMI's new book-length software survey isn't going to land you in project management heaven. A project management software implementation expert gives tips on evaluating what's right for your company.

by Linda Williams



PMI's *Project Management Software Survey*, scheduled for release this month, is a comprehensive survey of the software tools that make your job easier. Developed through a nine-month project that involved a team of subject matter experts in the survey questionnaire design and data analysis (see "What's Out There . . . And What Could Be," *PM Network*, August 1998), the book includes, in addition to a set of survey matrices covering six categories of project management software, additional text that analyzes the changes in the software marketplace, helps project managers develop requirements lists, and suggests how to use the survey as part of an evaluation program.

SOFTWARE IS A TOOL that makes the job of project management easier—but project management software can also be a nightmare for you, the project manager. Implementing software without a sound process and a plan, or implementing the wrong package(s), can be disastrous. You will spend lots of time and money with no improvements to show for it, and you will turn many people off to project management.

A well-planned approach to selecting project management software is just like any project plan—it is absolutely necessary to the success of the project. Here are some issues to think through when developing your evaluation approach.

No Silver Bullet

There is no one best project management software product on the market. Technology has enabled new functionality that may or may not help you meet business goals and manage projects better. Increased sophistication does not guarantee success. The product that offers the most features is also the most difficult to implement, learn, and support.

How do you select a software product to improve your project management processes?

That should not be an easy question for you to answer. Investment in new scheduling software is significant, especially when you consider the cost of training users, management, and systems administrators. You also have to budget for hardware upgrades, parallel system execution, and the cost of the software itself. Process reengineering is appropriate during a new project management systems deployment, adding to the cost. While the project of software selection and implementation is complex, like any other project it begins with some simple steps. These steps, and some key areas to which you will want to pay attention, are covered in this chapter.

What Kind of Tool? There are many different types of project management software that will help to improve the success of projects.

Historically, project management software meant traditional scheduling tools—those that calculate the critical path, level resources, and produce the project schedule. These tools were used by a small number of specialists to develop the project plan. Today, ven-

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dors have recognized that effective project management requires much more than a detailed Gantt chart.

The *Project Management Software Survey* takes into account a broad variety of tools, many of them new to the project management software marketplace. Highly specialized risk and cost tools dramatically differ from group communications or portfolio management tools. Thus, narrowing your search to the categories of software best suited to your business needs will save time. Many packages fall into multiple categories. Some vendors offer a single tool with features that cross over multiple categories. Other vendors offer many tools, often integrating them into a well-orchestrated suite of tools.

Prices range dramatically, within and across categories, and your budget for software could have significant impact on your choice. "High-end" tools that offer functionality for multiple categories are typically used by a subset of specialists on the project team. These vendors often offer a complementary tool for desktop users that is less expensive. Other vendors offer solutions that require software purchased for every team member. These packages can be less expensive than the traditional high-end tools, but quantities purchased are higher.

An overall plan for the kind of environment that will enable project success will help you narrow down the kinds of software packages that will be appropriate for your needs. Narrow the types of tools by creating a list of business problems to be solved. Group similar problems, then try to make a general statement about what's in that group. Identify the category of products marketed as designed to solve those kinds of issues. You may find that more than one approach seems appealing. There is a lot of overlap in the kinds of business problems the different kinds of tools solve. Your organizational history and the maturation level of your current processes may be a deciding factor. Consider budget and the state of technology, and you should begin to see a preference toward one kind of tool. Focus your product search there.

New Kinds of Tools The PMI Software Survey team recognized many new vendors offering different software approaches to improving the project management process. These include group communications, portfolio management, Web publishers, graphics add-ons, and suites. Each type of product offers different information to assist the process. Team communications tools ensure that everyone on the team is involved and aware. Team tools track issues, action items, status; delegate tasks to team members. These tools are used by every team member daily, drawing them into the process.

Project management tool suites address many issues beyond the schedule. Vendors offering suites of tools have designed them to complement one another, offering an integrated approach to solving a broad spectrum of project management problems. Some suites address all of the major problems faced by a specific industry, type of project, or project management process. These suites offer specialized modules developed to address very specific industry- or process-related problems. Other suites attempt to cover most or all of the *PMBOK™ Guide* areas, offering modules to address each. Suite vendors offer pre-integrated tools, so you don't have to spend any effort doing the integration in-house. This saves time and money.

The Process

Here is a quick process for evaluating project management software:

- State the business problem
- State improvement objectives
- Document or reengineer the project management process
- Map the project management process to the appropriate category of software
- Generate a requirements list
- Select the short list
- Test it yourself
- Decide.

State the Business Problem. Why are you looking at new software? What's wrong with what you have? There are two typical reasons for looking at new software. The first is technology related—the infrastructure needs an upgrade, budget funds are available, or your needs exceed the capacity of the current system. The second is process related—project performance is below expectations. If you fall into the first category, you are somewhat less at risk when choosing new software. If projects are not performing up to expectations, be careful before assuming new software will solve that problem. Take a deep dive into the reasons behind project performance. If the process is broken, new software won't fix it.

Assuming you fall into the first category, document the business problems associated with the current project management system. Your documentation should include specifics on what data is not available, how it will be used when it is available, and how that information will help meet your strategic objectives. Simply stating "the current system doesn't produce the reports we need" is not adequate. You need to define the information required in detail in order to generate requirements to help direct you to the right package.

State Improvement Objectives. Your new system should meet improvement objectives for the project management process. If you can state the improvement objectives in detail in the early phase of the software evaluation process, you can define requirements in terms of the features you *will actually use*. This process helps you identify which product differentiators will most benefit you. Without clear improvement objectives, companies tend to develop a laundry list of requirements, compiled from product literature and published evaluation data. After implementation, you try to implement your project management process, only to find that the software does not have the one critical feature you really need.

Stating the improvement objectives in detail means documenting the current state of things, quantifying the improvements, and finally, defining the information required to support the improvements. Document what information is not available from your current system. Do not refer to product literature for this exercise. Instead, look to industry publications explaining process

improvements appropriate for your organization. Treat this as a visioning exercise, using subject matter experts or consultants, as appropriate.

Document or Reengineer the Project Management Process. Analyze whether your current project management process is appropriate for solving the business problem, meeting the improvement objectives, and meeting the goals of the project management environment. If significant changes are required, spend the time to document the new process before continuing the evaluation process.

The documented process should be detailed enough so that a person knowledgeable in project management, but not knowledgeable in your specific process, could describe the data required to support the process. This is the most important phase of the process of evaluating project management software.

Map the Process to the System. After the project management process has been refined, identify the software functionality required to support the project management environment. This step should be the most labor intensive. You're not trying to identify a package at this stage.

Schedule a series of detailed sessions to walk through each step in the process. Make detailed notes describing the inputs, outputs, and processing required to support the process. Involve subject matter experts who represent or have knowledge of your project management process, management, your current system, your information technology staff, and your customer(s), if appropriate

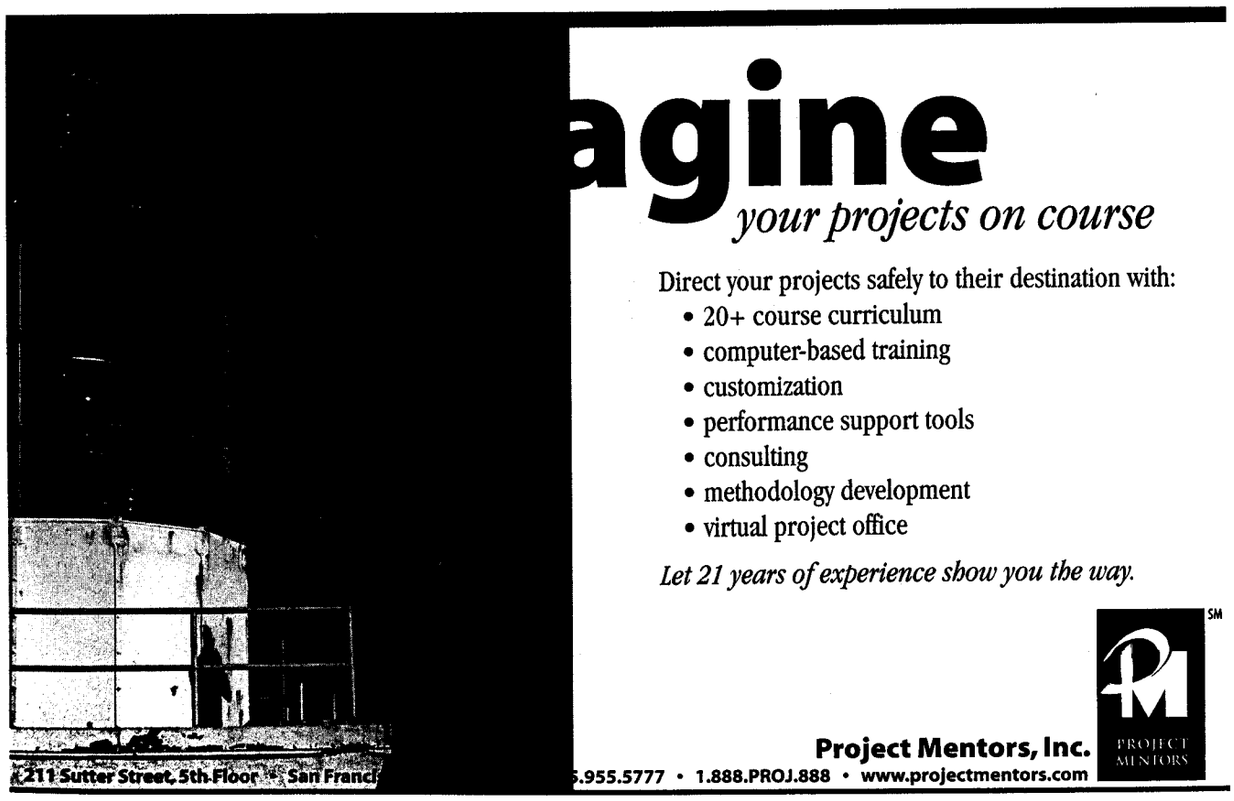
Produce a detailed document that explains how the system will support the project management process. Capture the data elements required. Identify reporting issues such as format, delivery mechanism and cycles. Document update cycles, roles and responsibilities, security requirements, number of locations, number of users, projects and schedules, and all other relevant data required.

If these sessions are effective, a pattern will naturally emerge. You will focus on the nontraditional features required to make the new software successful. Your subject matter experts will identify requirements that will be more difficult to meet with off-the-shelf software. These unique elements will help you identify the best product.

Be careful in this phase to not define exactly how the software must perform, or you may be disappointed. There are often many ways to achieve an information objective. The point of this exercise is to simply identify what is required, not how the software should make it happen.

Generate a Requirements List. This is the time in the evaluation process to research products, contact vendors, and reference all evaluation materials available, including the *Project Management Software Survey.* Add a column to the matrix created when you mapped the process to a system. In each cell, describe how software could meet that requirement, in terms of features.

It is not important to go to the nth degree with the requirements list. Focus instead on the unique needs of your process.



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Many packages in a given category do many of the same things. You need to identify what makes your situation unique, then look for the package best suited to support those needs. Most critical requirements will be uncovered during the mapping process. Articulate these and your short list will identify the best possible matches for your requirements.

Select the Short List. The short list is easily generated: just tabulate the results from your requirements list. Contact the vendors and invite them to introduce you to their software. A short list of three products is ideal. A list with more products shows that your requirements do not force a differentiating feature, so almost any product will do. A detailed set of requirements based on a sound process should always result in identification of a need that can only be met by one or two vendors.

Test It Yourself—The Hands-On Phase. Products on the short list will satisfy most of the functionality requirements documented during the mapping exercise. Testing them will validate which products handle the requirements closest to the way you expect. Testing the software using data representing the business problem is absolutely critical. None of the packages on your short list will calculate exactly as you would on paper. None will **handle all of your requirements exactly as you imagined they would when you documented the requirements. A test drive against your data will uncover any show-stoppers quickly.**

Here's a testing example related to scheduling software:

When run against the same data, three products' time analysis algorithms will produce three different sets of results. Complicate the equation with resource leveling, and differences become more obvious. Run a one-year schedule through three scheduling packages, and resource-leveled results will differ significantly—as much as four to eight weeks. Larger quantities of data exaggerate the difference, so it is important to have enough data available to clearly dramatize the differences.

Create a significant amount of test data, and bring the short list of packages in for a test drive. Use experienced people to evaluate the results. They have an understanding of what results are expected, can articulate the pros and cons of the differences between how the packages perform, and can comprehend the potential benefits of differentiators between products.

Here are a couple key user interface issues that can help identify which product feels best for your environment.

Roll-up/Drill-down. Many products include fields designed to hold data elements created specifically for locating, filtering, summarizing and otherwise manipulating data across multiple projects. These fields differ from the user-defined fields attached to each task or resource record. Roll-up/drill-down features rely on structured coding, cascading the structure down through the data elements. Most products support roll-up and drill-down of data, but each handles it differently. The differences are dramatic, and could be a deciding feature. Here are some roll-up/drill-down features to look for:

- Ease of definition and population
- Validation—Users can/cannot add new values
- Flexibility/Templates—Create once, use many times, quickly and easily (share one scheme across multiple projects)
- Space—Holds enough data elements to comprehend everyone's requirements
- Multisite, multiproject.

Again, most tools support multiple users at geographically disperse sites. But how they handle it can add administrative burden and possibly dictate the project update cycle. The software has to know where projects are if they are not all on the same server. The administrative task of maintaining the pointers to project locations can be significant if new projects are created regularly, or if projects are moved. Some products require an exclusive lock on data before calculations. A large amount of data could require that updates be complete by 5 p.m. Friday for weekend processing, with no one allowed to access data until Monday when the schedules have been updated.

Vendor Support. Each vendor's ability to support you will become evident during this process. Every vendor provides curb service during the first phase of the sales cycle. During the hands-on phase of your evaluation, use the vendor's technical support staff. Try to go through the same help desk you will be using after the sale. Resist the temptation to lean exclusively on one contact, designated specifically for you during the sales pursuit, or you will not get a clear picture of what you can expect after the sale.

Take notes on all aspects of vendor support during the hands-on phase. How long does it take for calls to be returned? How long does technical support take to resolve issues? Remember that during major sales pursuits, the vendors' staffs are prepared for your calls. Is everyone prepared, or are you being directed to the senior staff? What happens when they are focused on the next large pursuit, and you are just a regular customer?

Decide. There are many more details to consider when investing in project management software. I have performed software evaluation efforts in as few as two days, and as long as four months. There is no one best product on the market today. But careful attention to the project management process, and the information required to improve it, can direct a project management software evaluation to a conclusion that meets the improvement objectives of your significant investment. ■

Linda Williams, technical leader for EDS' Project Management Consulting division, has 12 years of experience using and evaluating project management software. A PMI member since 1995, she served as team leader for the volunteer project team that helped create the *Project Management Software Survey.*

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