The Softer Side of Project Management

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Many project managers limit themselves to techniques they have acquired through formal channels, which decreases their chances for success. I contend that there are many "softer" techniques available that have a great impact on a project. In this article, I share some of the techniques I use to increase the likelihood of achieving project goals.

Typically found in the toolbox of project management are techniques for cost estimation, risk management, meeting staff requirements, and establishing work breakdown structures. These techniques represent essential project management skills usually acquired through formal courses, reading, or on-the-job training. These learning methods often overlook the "softer side" of project management. Understanding this side constitutes yet another tool just as critical to project success as more formal ones. A manager's ability to effectively maintain morale, motivate the team, and use resources determines whether team members have a sense of pride in their project and feel ownership of it.

This article highlights some techniques I have used to address the human side of project management. Some focus on ensuring everyone on the team feels comfortable with their role. Others establish and maintain good team morale. All help a project maintain momentum toward a successful conclusion.

Soft Project Management Techniques

A new project is about to commence. The team consists of senior engineers and computer scientists, all with many years of experience in the tools that will be used on the project. This team also has a history of working together and keeping one another well informed. "A dream team," you think to yourself, and with good reason. Such a team is not likely to be found in the real world. It is much more probable that a project will have a blend of junior and senior employees with varying experience levels. Furthermore, the team will probably have little history with one another and with the technologies, thus requiring much groundwork to initiate the project.

Pair Team Members

Getting junior employees comfortable, up to speed, and productive quickly is definitely a challenge. Formal training helps, but this requires time and money that may not be available. In this situation, I pair junior, inexperienced team members with those who have more expertise. Junior persons may shadow their mentors, observing and studying their behavior, or the pairs may work on a task together, with the senior person handling the more difficult aspects and serving as a mentor to the junior person.

This technique pays for itself in the long run. On one project, a new developer initially played the junior role for a few months. When another inexperienced person joined the team, the first was able to move up to the senior role and successfully served as mentor. This transition was a source of great pride to the entire team.

Ensure Expert Technical Support

Dealing with today's world of constantly changing technologies can make any reputable manager cringe. No sooner has one committed to a suite of tools than a new and better solution becomes apparent. In the case of technologies like Java, new releases occur at short intervals—a daunting prospect for developers. On one of my projects, the team chose Java for its many advantages including hardware independence and enhanced programmer productivity, yet no one on the team had previously used this language. To manage the risk involved, I took steps to ensure that expert technical support for Java was available and accessible to the team. This came in two forms: First, I hired a Java mentor who provided guidance to the rest of the team, introduced new Java tools, and reviewed all Java software. Second, team members were also encouraged to maintain a close relationship with the vendor to stay aware of the latest developments and to provide them with requirements for new features. With this strategy in place, Java increased the team's productivity rather than proving to be an obstacle.

Assign People with Care

Have you ever felt that management views developers as interchangeable game pieces they can arbitrarily move between projects? Many times, I have seen people placed in critical positions based on their job title rather than their skills. Putting team members in positions they cannot handle usually leads to negative consequences in terms of schedule, quality, and productivity. Just because a person is hired as senior computer scientist does not mean that person can take on every task successfully and with little monitoring. Admittedly, there will be times when it is necessary to assign team members to tasks for which they do not have the right expertise. I do this with caution—only with people who have proven track records and in whom I have great confidence. I do not expect those with newly acquired skills to take on critical or complex tasks.

Consider work habits when assigning tasks. Some people work faster than others, thrive on challenge, and withstand pressure well. Others proceed at a more cautious pace and prefer to work on the familiar. Take all these factors into account to prevent situations in

which employees are frustrated with their assignments and cannot make a contribution.

Build a Project History

Every project uses a schedule to communicate its milestones and to guide development efforts. This provides a means to monitor progress. It is crucial to create a schedule that is both realistic and accurate. There are many documented techniques to scientifically do this. These include estimation techniques such as Constructive Cost Mode (COCOMO), Delphi Techniques, and Gantt Charts.

When I was faced with developing a schedule for my last project, COCOMO was suggested as a useful technique. But COCOMO requires parameters such as lines of code, which were not at my disposal. Past performance also might have been a useful predictor, but most of the project team was new—to both each other and the technologies. So I decided to build a project history, albeit a brief one. The team worked without a schedule for about three months. Throughout this period, we closely monitored and recorded progress on assigned tasks. Both the team members and I gained a sense of each person's capabilities, and we based our schedule on this knowledge. I met with team members to review their assigned tasks and to estimate how long each task would take. We compared performance to these estimates on a weekly basis. Within a few months, team members could predict their progress with precision.

There were other benefits derived from this schedule-building technique. The team became intimately aware of the schedule and regularly consulted it. Also, the schedule had buy-in from all members because the team built it. As a result, motivation to achieve milestone dates was extremely high.

Minimize Meetings

In the life of a project, it is a rare day that does not include at least a few meetings. No matter how justified their purpose, meetings tend to steal valuable time from designing and developing a product, which is the real business at hand. Most team members would rather be doing their "real" work and regard meetings with disdain. To combat this bombardment of meetings, one solution is obvious: minimize their number.

This is not a trivial feat. Gathering requirements, participating in design and code inspections, attending relevant briefings, and taking part in status reviews are essential software project activities. I handled this challenge by requiring only a small subset of the entire team at different meetings. For instance, inspections included only the people necessary to ensure coverage in the areas of databases, programming languages, logic, or quality assurance. Sometimes a desk review took the place of an inspection. A few team members had dedicated roles; I designated one to be the customer interface and he represented the team at all requirements meetings.

The exception to this policy is project status reviews. Valuable information-sharing and coordination of tasks occurs at these reviews, so attendance by all team members should be mandatory.

Keep the Team Satisfied

The magic bag of project management tricks amounts to naught without the team's dedication and enthusiasm. These people put in long, hard hours to get a product out the door. The project manager must create a stress-free, positive work environment. Techniques that foster such an atmosphere include showing appreciation, injecting humor whenever possible, and empowering team members.

Project managers should take every opportunity to show their appreciation. The power of cash awards is undeniable, yet these may be unavailable for fiscal or contractual reasons. For teams that consist primarily of contractors for whom cash awards are not available, another way must be found to inform their companies of their superior efforts. At significant milestones, I awarded individuals letters of appreciation and sent a copy to their supervisors. In all cases, the employees and their companies were delighted to receive this recognition.

A little humor goes a long way and should be dispersed in large doses. When an early prototype neared completion, software samples from each team member were analyzed by the Software TestWorks tool, which rates programming style and performs coverage analysis. Much to my delight, all code received high marks. To celebrate this achievement, I awarded the programmers a mock Certificate of Excellence for their efforts. Another light moment occurred during testing when the team was on an emotional roller coaster. To alleviate the tension, I decided to recognize the person who was responsible for the hundredth software discrepancy. Everyone eagerly anticipated this event, and when it finally occurred, I presented the team member with a token of appreciation. Although work continued uninterrupted, these light moments lifted the cloud of stress.

Empowering team members reaps many benefits. It provides them with ready access to all the information they need to do their jobs. Within well-defined boundaries, I allowed developers to directly contact customers and vendors when the situation called for it. Not only did this free me for other activities, but also fostered a trusting environment in which the team felt both unfettered and motivated.

Conclusion

In today's pressure-cooker environment, projects need all the help that can be mustered. Following a cookbook approach to project management probably is not the best recipe for success. Leaders must use every technique at their disposal to achieve their project goals. The tools presented in this article are meant to complement those usually found in courses and texts. Project managers need to select those tools with which they feel the most comfortable, while remembering that project management is as much an art as it is a science. Keeping more human concerns in mind will help projects overcome challenges and attain success. ◆

About the Author

Janice Strauss has been employed at the National Security Agency as a senior computer scientist for more than 13 years. She has worked in a variety of positions, most recently as a project manager. She is also actively involved in software improvement initiatives within her current organization. These have included leading a Requirements Management Technical Working Group as well as initiating a Software Process Information Exchange group, which provides a forum to trade development tools, techniques, and best practices.

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Report from STC '98

The Software Technology Conference (STC), sponsored by the U.S. Air Force, Army, Navy, and Marine Corps, and Defense Information Systems Agency, has successfully reached another milestone, completing its tenth annual conference April 19-23 in Salt Lake City, Utah. This year, more than 3,300 people from 16 nations met to exchange information, gather ideas, and draw from presentations by leading experts in software and information technology. The conference theme, "Knowledge Sharing – Global Information Networks," was likewise reflected in the displays from more than 300 vendors in the Salt Palace Convention Center Exhibition Hall and during vendor presentations.

Defense and industry leaders and other professionals agree, "Outstanding conference! ... STC sets the pace." Dr. Helmut Hellwig, deputy assistant secretary for science, technology, and engineering, Office of the Secretary of the Air Force for Acquisition, said at the conference, "We must dedicate ourselves to partnerships of people and organizations in government, industry, and academia. This will enable us to continue to manage acquisitions within the resources available and will also enable industry to make use of its past performance record, experience in the software domain or product line, and mature software development process. This is the tenth year of the annual Department of Defense Software Technology Conference. ... The conference provides a very unique opportunity for government, industry, and academia to form those partnerships vital to achieving software acquisition success. These partnerships are vital to providing American war fighters the right information in the right place, at the right time. The conference also provides a time for professional development, as attendees have the opportunity to learn more about the many faceted disciplines of software and information acquisition and engineering. Both partnerships and professional development are important aspects of ensuring our forces, industry, and country are prepared for the challenges that lie ahead in the new millennium."

Next year's conference will continue this tradition and set the stage for software and information professionals as we prepare to enter the new millennium. The theme for STC '99 is "Software and Systems for the Next Millennium." The conference co-sponsors look forward to seeing everyone May 2-6, 1999.

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