The Project Management Method

by Thomas G. Johns

An unmistakable trend in management views its role as a support system to work that flows horizontally across the organization. The work conducted by people who are chosen from across the company work in joint participation as a team to fulfill the needs of customers. The actions and behaviors of these people, as well as the actions and behaviors of people who support them, constitute a project. The creation and orchestration of these actions and behaviors is project management. The trend is thus toward viewing the company's organization as providing support to these teams who satisfy the needs of customers through the conduct of projects.

Coordination and orchestration of the project team's actions and behaviors are the responsibility of one of the team members, a project manager. The project manager, sometimes likened by Peter Drucker to the conductor of a symphony, in general will not possess all the competencies necessary to fulfill the needs of the customer, but, nonetheless, is empowered by the company to fulfill these needs. This method of management is the project management method. Is it new to NASA? No; in fact, NASA pioneered some of the basic notions of the method. Is it being appropriately implemented? In some places, yes. But frequently people have different views of what project management is, what their role should be, and how to implement it, all of which can result in disharmony.

About five years ago at a PPMI planning session, while discussing management development needs of NASA staff and how these needs were being addressed in one of JSC's project management courses, an invited staffer asked: "Why do we need all that human factors stuff in the course? What does that have to do with project management?"

Before the industrial era, tailors, carpenters, shoemakers, milkmen and blacksmiths all knew their customers by name. As Edwards Deming points out, they knew whether their customers were satisfied and what was required to satisfy them. In the industrial era, one individual could not possess, much less understand, all the competencies necessary to satisfy customers, so companies were formed. These early companies often likened themselves to kingdoms and governments of the 17th or 18th centuries, where people did not own things or feel a sense of participation, but were subservient to the management of the company. Individuals did what they were told to do and had their place.

Such systems of government did not survive when competing with those following the French and American revolutions. These new governments were based on a new order founded by Hobbes, Locke and Rousseau, who asserted that all citizens have the right to own and keep things. Systems designed to incorporate this valued right of individuals would outperform systems that did not incorporate this right.

Companies now tend to have management systems that foster greater participation and ownership by project team members. They are designed to take into account different cultures and values (personal, corporate and societal), different cognitive management styles, the nature of the project and the business situation.

Basic behaviors on which the project management method is built are much the same as those stressed by Drucker and Deming, in versions of TQM, ISO 9000, etc., and they can be easily remembered with the help of an acronym, C.O.S.T. Each letter stands for a concept basic to the method: Customer, Ownership, System and Teamwork.

Customer

As the blacksmith was an extension of a farmer's need for iron work, NASA project team members are likewise extensions of needs of their customers, who can be internal or external to the Agency. The first opportunity to create defective work is to misunderstand a customer's needs. Time spent ensuring that the project objectives and requirements are clearly understood, communicated and agreed upon has an immediate impact on improving project quality, reduction of reworks, and reduction in the number of costly changes. The project manager should ask: Who are my customers? Do I talk to them directly? Am I sure that I understand their true needs? Are we communicating with customers clearly?

Ownership

Outside of the valued rights of life and liberty first set forth by Hobbes, Locke and Rousseau, a most cherished value is *ownership*. The greater the participation in establishing project and task objectives by the team members who can do the work, the stronger will be their attachment and sense of ownership of that work, and the more likely it will be that the objectives are met.

The project manager should ask: Has the project team developed a breakdown of the work with tasks whose outputs are work products? Is someone responsible for these work products? Do we have a project organization that has a one-to-one relationship with the work breakdown (one name in each box)? Is the project organization well known, and has it been coordinated with other unit managers?

System

The project management system consists of creating *behaviors* in three functional areas: Planning, Leadership and Control.

Planning. Planning is determining *what* needs to be done, by *whom*, *when* and at what expense of resource in order to fulfill the customer's needs. Without planning, a project will be out of control, in free fall, i.e., "It's over when it's over" because there is no basis for control.

Five basic management tools are used to create appropriate planning behaviors. The extent and rigor of their use must be allowed to differ, because projects, people and situations differ. Even for the smallest project, each tool is used.

1. **Project Objectives.** The behavior created by the development of project objectives is *concurrence and agreement* with customers. Costly mistakes are frequently made by having poorly established objectives that contribute to high change traffic, defects in service, poor relationships and mistrust. In effective project management, a lot of time is spent in making sure objectives are clear, measurable, verifiable and agreed to, and that risks are understood.

2. **Work Breakdown Structure (WBS).** The behavior created by developing a work breakdown is *control* behavior. The WBS enables project team members to stand back and see how their part fits into the project as a whole, to see if any-

thing is missing, and how the project might be better organized or broken down further. An approach to controlling work is to divide it into smaller pieces and then to control the pieces. If the pieces are still too large and complicated, then those pieces are broken into yet smaller ones, and so on. There are many views and opinions on how projects should be broken down, and there are many different work breakdowns that are possible; however, the best work breakdown is that which will best *control* the work; that is, control of quality, schedule and budget.

3. **Project Organization.** The behavior created by developing a project organization is *accountability and ownership.* One individual's name should be associated with each task of the work breakdown. If an individual cannot be identified at the time of planning, the name of the line manager who will provide that individual to the team should be associated with the task. If there are tasks without names, what should be of concern is . . . *Who will define the objectives for these tasks?* If it is someone other than the one who will do the work, the probability of ownership of the work decreases and the probability of defects delivered to the customer increases.

4. **Project Schedule.** The behavior being created by a project schedule is communications across the project team, with company management and with customers. "The problem," says one expert, "is that our fascination with the tools of management often obscures our ignorance of the art." What comes out of a computer is often not usable and needs to be simplified. Some of the best schedules are simple and hand-drawn; those that fill entire walls often benefit only the person who developed them.

5. **Project Performance Baseline (Budget).** The behavior created by developing a project budget is to establish a performance baseline and, therefore, *control.* A performance baseline is a prerequisite for project control. People cannot work to their maximum effectiveness if they don't know what their goals are or how well they are doing in relation to these goals. An effective management action is to request that project team members develop their budgets as functions of time. The behavior created by this request is that they have to first break the work down into tasks, determine the various work products in each task, and then determine the interdependence of these work products that arranges the work products in time. This arrangement of work products in time represents a performance baseline used to control the work.

These five tools—Project Objectives, Work Breakdown Structure, Project Organization, Schedule and the Performance Baseline (Budget)—when taken together (often with additional company specific requirements), constitute the *Project Execution Plan,* a management tool used to create and foster planning behaviors. Although one cannot guarantee that appropriate planning is done, one can improve the *probability* that appropriate planning is done. Contractors and team members should be asked to develop a *Project Execution Plan* before their work is authorized. It should be requested in the Statement of Work (SOW) to be submitted in the contractor's proposal.

Leadership. There are three basic behaviors in project leadership: *communications, team building* and *empowerment.*

1. **Communications.** Well-run companies are characterized by their intense

communication across their organizations, between project team members, between the project teams and their customers, and between the project teams and their line management. Similarly, well-run projects nearly always have many informal communication paths among team members, management and customers. Building relationships with team members, customers and contractors is very important to the success of the project management method.

2. **Team Building.** Team building is action taken by the project manager, team members and line management that enables a group of individuals to better work, think and act jointly. Project teams spend a lot of time together, jointly setting group goals, exploiting positive feedback, recognizing and rewarding achievement, setting rules of behavior and establishing urgency, according to J.R. Katzenbach and D.K. Smith, writing in the *Harvard Business Review.*

3. **Empowerment.** An often overused word, empowerment refers to the project manager's actions to motivate team members toward attaining the customer's needs. As such, it requires an understanding of the team member, management and customer cultures, values and management styles. Team members are motivated by different things, including achievement recognition, advancement, responsibility, coworkers and management, and the work itself.

Control. Although project teams work largely on their own and are called self-controlled, they do not work in isolation. They need the support of an appropriate conflict resolution and feedback system. As part of the system, people set their own objectives, keep track of their progress, determine how their progress influences others, and establish appropriate responsive actions. The system provides checkpoints and feedback to prevent instability, ambiguity and tension in the company. At the same time, the system avoids rigid control that can impair creativity or spontaneity and drive the project out of control, vis-a-vis micro-management. The control system further involves the continuing behaviors of *measuring, evaluating* and *acting.*

Measuring is determining the degree of progress being made in the project. The metrics used to measure progress are determined during the planning process. The metrics should be true indicators of progress gathered so that they are statistically significant. Inappropriate measurement can drive the system out of control.

Evaluating is the process of determining causes for adverse performance deviations and predicting what can be expected in the future. It also involves determining possible ways to avoid or correct problems.

Acting involves communicating progress to appropriate people, taking actions to correct unfavorable trends, and taking advantage of opportunities.

For a company, project or task to be in control, the following three elements are prerequisites and must be present at appropriate levels in the organization. If inadequate, the company, project and/or task will be theoretically out of control:

- *Project execution plans.* What is being done to create planning behaviors at all levels in the company, projects and tasks? What is being done to foster appropriate planning behaviors in contractors and suppliers? Are such plans developed before work begins?

- *Procedures for analyzing, reporting and reviewing performance against baselines.* Are there procedures for formal or informal feedback of performance information to project team members, to line management, to the customers? Are they appropriately designed to provide people the information they need to be in control? Do the customer and management have appropriate and timely information to support the project team? Do they make executive decisions for the company that only they can make on behalf of the project?

- *Disciplined process for considering, approving and implementing change.* A system cannot be in a constant state of change without proven, significant performance information as a basis for action. Actions taken to correct an already altered state can cause the project to be "out of control." The effect of the change must be allowed to stabilize in order to determine its true effect.

Teamwork

Cross-company project teams build quality into service to customers through cross-functional creativity and innovation, big picture participation, added value caused by cross-functional reinforcement of complementary styles, and value systems of team members. Project teams will become building blocks of future companies, and the organizations of these companies will be those that best support these teams. Project teams will direct and discipline their own performance and be in control through organized feedback and coaching by customers and the companies' management. This is the project management method. Its basic notions are not new. The method is becoming popular because it appears to work better than other systems.

For Further Reading

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