

Hollywood Secrets of Project Management Success

James Persse

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Chapter 6

Strip Board the Script

Many projects that fall into trouble do so because they were headed that way right from the start. Drifting schedules, budgets, and resource levels often indicate initial performance targets that were insufficiently stated to begin with. The drifting, then, is not so much a measure of moving off course as it is an indicator of correction toward a course reflecting the project's true nature. Projects get launched from such inauspicious beginnings for a variety of reasons. Preset deadlines and team sizes may be mandated from above. External business drivers may pressure premature action. But a chief and common reason for the drift, coming from within the shop, is planning that fails to use the requirements as a major tool for determining project parameters. The need for such reliance may seem obvious, yet it's surprising how often the details of the requirements are given short shrift when it comes to planning activities. Instead, management often places greater weight on intuition and past experience, on informed opinion, and on a sense of best-case possibilities. Although those forms of input are no doubt valuable, their contribution is proportionate only to their foundation in the requirements.

In view of the nature of estimation and the qualitative characteristics of project planning, the ability to pinpoint schedule, budget, and resource targets probably will remain elusive. And external and cultural pressures surely will always be factors to be dealt with. Specific planning techniques and practices, however, are available for use by project management to mitigate these conditions and to improve managers' ability to predict and articulate a project's true shape and size. This chapter reviews some of these techniques and practices, aimed at breaking down project requirements for optimal scheduling, budgeting, and resource allocation. In the movie-making business, this step in the preproduction process is recognized as being of prime importance. So let's begin with a quick look at how the studio production system derives project size from a close examination of the script.

The Time-Money Equation

As with most businesses, in Hollywood time is money, especially in view of the expensive nature of movie making. The more time spent on a production, the more costly it's going to get. So although Hollywood studios may appear to be extravagant in areas such as star salaries and executive perks, they all tend to be extremely stingy with time—because they've learned that's where it pays to be frugal.

Amy Kaufman knows about this necessity firsthand. She is a producer who has overseen a number of movies including the Jeff Bridges drama *The Door in the Floor* and the John Cusack romance, *Serendipity*. When I contacted her to discuss production planning, one of her first comments related to the task of scheduling. She mentioned that with all projects, one of the producer's first jobs was to "strip board the script." I thought she meant storyboarding. But as Amy explained, *strip boarding* is another process entirely. Today it is done on computer, but the name comes from the old practice of writing the scenes from a script out on a series of paper strips and then, after analysis, ordering those strips into an efficient shooting sequence. This carefully considered sequencing shapes the structure of the entire production and serves as the foundation for the production plans. Strip boarding is really an exercise in time management. It's all about compressing the duration of the production into the smallest time span practicable. The result: better cost and production controls down the line.

Strip Boarding the Script

This time management exercise will shape not only the budget but the actual shooting schedule, casting calls, crew calls, and all of the other details that make up a production effort. That's why it's done early in the game, while the unit is still in preproduction, and that's why it's assigned to a producer-level team member. It's a high-impact job that requires a well-practiced knowledge of production management techniques.

As mentioned earlier, the job of strip boarding is to analyze the script and then break it down into an economical shooting sequence. First, the script must be studied thoroughly with a view toward its structural composition. Then the individual scenes are identified; each is assessed for its production demands; and the scenes are then grouped and ordered. For example, a story's shift in locations is a primary strip boarding consideration. In my research, I was surprised to find how much of a production budget is dedicated to transportation, to moving people and equipment. Many producers I spoke to likened this undertaking to coralling a traveling carnival, or to fielding an army. Big trucks and lots of them are needed for the equipment, and because the endeavor also involves moving people, the trucks will be followed by catering and travel trailers and a host of other conveyances for on-the-road needs. With these potential challenges in mind, the producer's strip board seeks to minimize the need to move the production unit. Locations that can be reused or are close together are aligned on the strip board. As an adjunct to this strategy, the producer will also identify scenes that can be shot on a sound stage, which will park the whole company in one place for a while.

Another factor the producer will look at when working to order scenes is the availability of the main actors. If the production needs to accommodate certain actors' schedules, those scenes will be brought together on the strip board, even if this grouping means rearranging other scenes within the sequence. Weather is also considered. The producer tries to arrange scenes in a way that provides a degree of shooting flexibility. If an exterior planned for one

day gets rained out, it would be nice to have an available standby, another scene that could be shot instead.

Lots of other considerations are involved in strip boarding. The fact that they can all be active at once, even competing against each other, makes this a complex exercise. Producers may spend weeks working on the strip board: drafting it, reviewing it with others, revising it. The goal always is to compress, to economize the shoot.

Order Through Understanding

Of necessity, strip boarding happens very early in preproduction. By its very nature, this highly intensive effort generates numerous advantages: Practical schedules can be developed. Reliable budget frameworks can be established. Key personnel can be accommodated. Moreover, from the act of scrutinizing the script so closely, the producers also acquire a complete, in-depth understanding of the story they wish to present. This understanding, which incorporates every detail of every scene, particularly in relation to other scenes and other details, represents the starting point for the control that will be needed across the rest of production. People are often surprised to learn that movies are not shot in story sequence—it seems like such a jumbled way to work. But practicality is key, and it's the strip board—and before that, the need to shape the production from the shape of the script—that drives this production approach.

Form Following Function in Technology Development

The power that comes from strip boarding is twofold; First, it sets a firm foundation upon which plans can be built; second, it gives managers a deep understanding of the project's script so that execution can be effectively controlled. These same two needs—for a foundation and an understanding—exist in IT shops today. Obtaining a firm understanding of the requirements should be a prerequisite to all planning activities. Yet more often than not—at least from my own experience across corporate IT—this step is skipped or, at best, minimized. Project managers tend to move directly into scheduling and budgeting activities without a thorough sorting or ordering of the work specifics. The bases they use instead are things like project life cycle phases, predelivered end dates, or preset budget parameters. The schedules, budgets, and management plans generated by this approach may appear on the surface to meet organizational objectives, but they often have little relationship to the realities of the work. This disconnect becomes a common source of project management problems.

That's not to say that the concept of strip boarding is not already reflected in the IT world. Indeed it is. A look at an established management framework like the PMI's PMBOK or the SEI's CMMI will show a series of "best practices" that deal with the creation of *work break-down structures* (WBSs). Although this is a common term in most IT shops, its use is often

out of sync with its intended purpose. To many project managers, a WBS is simply the project schedule. Perhaps it has been “perked out” in MS Project or Primavera or any of the other project scheduling systems available today. (And often that schedule is considered the entire project management plan.) The way the project manager arrives at the schedule is typically through what’s been called “plate organization” (as in boiler plate). In plate organization, chunks of work are grouped in generic categories, such as analysis, design, development, testing, and so on. Most often, each plate category reflects an established step in the classical system development life cycle. The manager then prefigures the subtasks likely to support each plate. Out of this limited analysis emerges what might be called a one-dimensional WBS: It reflects only one dimension of the project—the shape of the life cycle. At the same time, it ignores the requirements, the source information that will by necessity dictate the shape of the work.

Plate organization is so prevalent that it is often seen as a best practice in and of itself. But that perception is an illusion. The result is not a work breakdown at all. It’s just a *form* breakdown. And when form does not follow function, a team can end up with a cantilevered project structure. In failing to reckon with the demands of the requirements, and to shape a work approach that will best accommodate those demands, project management is ignoring the full dimension of considerations that such a commitment introduces. Here are several issues that typically arise when an organization relies on plate organization as the sole way to create a WBS:

- **Mis-scaled schedules** Schedules that arise from a plate-organized WBS will invariably have potentially serious flaws. Although they may be based on a convenient shape, and although that shape may account for the general activities that must be addressed in production, the lack of insight into product detail increases the risk for mis-scaling of time frames, either up or down, from the realities of actual production.
- **Miscalculated budgets** When work details are not adequately accounted for and schedules have only a general affinity with reality, budgets will inevitably carry a high degree of predictive instability. In my experience, IT shops in which plate organization is the only WBS technique used rarely have confidence in their budgets. Anxiety about their accuracy and usefulness appears right at the start of project execution and carries through into subsequent phases. As a result, project managers feel forced to spend an inordinate amount of time focusing on budget control, often with consequent neglect of issues such as product quality and deliverability.
- **Inefficient resource allocations** Plate organization typically specifies the need for analysts and developers and testers, and so on, for a project, but it’s not very helpful in illuminating required team sizes or balancing resource levels. This approach treats a project as if it were shaped like a rectangle of time and phases, or perhaps like a staggered staircase. But the plate organization approach does not allow anticipation of the peaks and valleys that may run through these macro shapes at a micro level. Plate-organized schedules, then, are prone to the inefficient allocation of resources. It’s tough to predict which personnel and other resources will be needed when and for how long.

- **Weak performance benchmarks** Plate organization emphasizes the identification of generic benchmarks (plate categories). This categorization process may be fine in and of itself, but scheduling will later require that specific dates be tied to those benchmarks. The weak scheduling inherent in plate organization, however, means that management may have a difficult time assessing performance in terms of cause and effect. Are performance problems due to personnel issues or weak specifications, or do they perhaps stem from inaccurate benchmarks? It's hard to tell—so such problems are hard to manage.
- **Incompatible success criteria** The four factors just described invariably combine to cloud the meaning of “project success.” Because realistic expectations are not engineered early in the project life cycle, measures of success (or failure) lose concrete meaning as relevant outcomes are manifested toward the end.

Those are just some of the faults inherent in the one-dimensional views that can come from plate organization. A better approach is to borrow the Hollywood practice of strip boarding and engage in an enhanced WBS development activity, one that leverages plate organization with “source organization” to produce two-dimensional planning data. This goal constitutes the sixth lesson of this book:



Lesson 6: Use source organization as a way to produce work breakdown structures based on a logical sorting and ordering of the requirements.

The Two-Dimensional Work Breakdown Structure

The difference between plate organization and source organization is one of dimension. With a WBS created using the former, the shape of the development life cycle is basically spread in as practical a way as possible over a set span of time. This approach usually is based on only a general understanding of the requirements. Accordingly, plate organization tends to produce generic-looking schedules and project plans. In source organization, the approach to work breakdown is not so much *different* as it is *extended*, one that echoes Hollywood's use of strip boarding to drive a deeper understanding of work demands. Source organization begins with the plate format—important because it represents the framework of the project management system in place. Then the requirements are thoroughly assessed, sorted, and prioritized. This ordered output, set against the framework, becomes the foundation for all subsequent project planning activities, including budgeting and scheduling. The accuracy, reliability, and workability of all of these products will rise accordingly.

Creating a source-organized WBS entails two fundamental steps: (1) establishing an assessment team and (2) organizing the requirements.

Establish the Assessment Team

Probably the vast majority of technology projects are planned in isolation—if not total isolation, then at least substantial isolation. Project managers are given some fundamental constraints by higher-level management, together with some basic scope materials, and then asked to create a plan. The experienced project manager will actively seek expert opinion and input in this planning process, but if the culture doesn't promote strong interactions, fostering this approach from scratch may be difficult.

Source-organizing a WBS *demands* collaboration, however. So organizations using this approach will charge not just a project manager with the planning tasks but a dedicated support team as well. It is the makeup of this team that will bring value to the source-organizing activities. Management should appoint key project personnel in a mix that will represent the business characteristics of the project as well as the technical characteristics. The idea is to cover those viewpoints necessary to gain a complete understanding of the requirements, thereby garnering an effective ability to organize them.

Who should be included on the assessment team? That decision is up to the individual organization and the IT shop. But a full range of positions should be considered. A business analyst with a solid take on the business mission of the project would be a good choice. A technical architect responsible for the solution design could provide valuable integration insight. A programmer could spot opportunities for parsimonies and reuse. A tester could contribute suggestions for iterative builds and validation cycles. In short, almost any member of the project team could lend substantial input. The key is to establish the team, charge its members with the source organization mission, and then provide the time and resources needed to carry out the job. The team can then use a five-step process, presented next, to create the two-dimensional, source-organized WBS.

Organize the Requirements

Here's a familiar sequence with three basic requirements: (1) User inserts ATM card; (2) user enters PIN; (3) system prints receipt. It's easy to see how these three requirements for an ATM transaction can be organized into two groups: "Customer Entry" and "System Printing," with two requirements in the first group and one in the second. From this grouping, the relative weights of each can be evaluated, and possible durations assigned. One requirement can be prioritized over another. All three can be ordered into a work sequence that best accommodates the availability of UI experts and systems experts, if needed. And the working of those groups can be fitted into a project management framework in a way that maximizes development efficiencies. That's the whole idea behind source organization, and it's the key to turning out a well-designed, two-dimensional WBS.

This approach to creating a WBS is summarized in the following five steps.

- 1. Prepare the framework.** This is the plate-organizing step. It's an important step because it allows the project at hand to follow the flow of the company's project management system. This flow—the phases and mandatory steps required for development—needs to be wrapped as a framework around the project, like a kind of exoskeleton. This activity will produce the general shape of the emerging WBS.
- 2. Understand the requirements.** This is where the necessity of the assessment team becomes apparent. At this point, the members of the team study the project's requirements in order to thoroughly understand them. (This need is emphasized over and over again in the CMMI, ISO 9001, and PMBOK.) Firm, reliable project commitments can be established only when the team understands intimately what it's been enjoined to accomplish. Several avenues can be taken to arrive at this understanding: individual reviews, team meetings, and workshops. In addition to the strength in numbers afforded by a team approach, an important advantage is the availability of selective viewpoints from different specialists on the assessment team. It is the combination—the collaboration—of these viewpoints that will lead to a more complete understanding.
- 3. Organize the requirements.** Now the work of source organization really begins. And this is where the team's representative expertise makes its contribution. Once an understanding of the requirements has been achieved, the assessment team begins to allocate the requirements into related or complementary groups. Naturally, the type of categories or groups used will depend on the needs of each project or technology domain. But the idea remains the same whatever the project: to sort the requirements into groups that can be worked together. Once these relationships have been established—the desired depth of which again depends on the needs of the project—the team can prioritize the importance of the groups, sequencing them into chains of either dependence or production efficiencies.
- 4. Sequence the requirements.** Here the value of source organization is realized. Within the method framework established in step 1, the assessment team's expertise is leveraged to sequence the logical groupings of requirements into a preferred order of action. This order can be established through any number of considerations: technical complexity, resource availability, integration dependencies, requirements stability, and so on. Because the considerations can be many, and sometimes even competing, this step usually requires the most amount of concentrated work. But now the project's logical design begins to take shape. A management approach becomes clear. And a solid foundation emerges upon which schedules, budgets, and other plan components can be built.

5. **Assign the requirements.** Step 4 is actually the last step in creating the WBS. This plan gives a breakdown of work that accommodates the phases of the production process (step 1). It recognizes the particular demands of the project (steps 2 and 3). And it shapes these demands into an ordered sequence that can be realized and managed by the project team (step 4). With this two-dimensional detail in place, expected durations and resource levels can now be assigned to the requirements; from these determinations, expected expenses can be derived. (For more on this topic, see Chapter 8, "Budget to the Board.")

Hollywood producers strip board their scripts in order to get a detailed picture of each project's initial scope and organizational demands. It's a routine practice in the motion picture industry, one that dates back easily to the 1930s and remains essential in preproduction work today. The world of IT has a similar need. For technology projects to be efficiently scheduled and accurately budgeted, project management must understand the business and system requirements that drive the project. The practice of source organization can promote this need in technology shops. It fosters the production of WBSs that reflect two key dimensions of project management: alignment with the project management system and the realization of functional delivery.

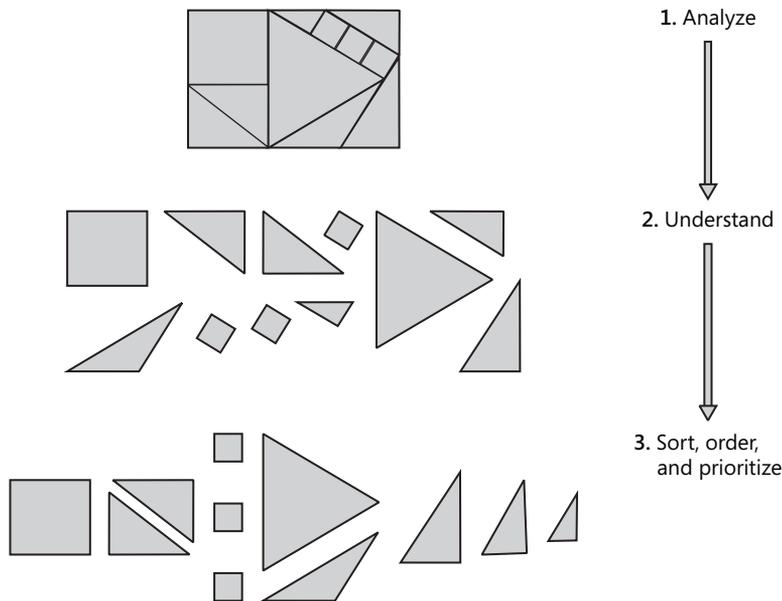


FIGURE 6-1 The shape of the two-dimensional work breakdown structure.

Benefits of Source-Organized Work Breakdown Structures

The practice of producing source-organized WBSs may take some getting used to, especially in IT shops that traditionally rush through planning activities or historically prefer a generic, plate-organized WBS. But for the shop that embraces this practice, rewards are not long in coming. Many benefits are to be gained; several of the most tangible and distinct are listed next.

- **Organized scope** WBSs, by default, organize work. Most of the time they do this in a very general way—by generic project phase, for example. But basing the layout of the WBS on the way in which requirement groups can be addressed will move the process from benign organization into proactive design. From there, activity breakdowns and sequencing can be taken to a finer level of detail, providing for a correspondingly finer level of control.
- **Aligned resources** One of the toughest jobs of project management is resource planning. But that job gets easier when the shape of the WBS reflects the true shape of the work. Using this shape—based on the organization of the requirements—will allow optimal assignment of resources in response to work types, categories, and specialization.
- **Facilitated scheduling** All WBSs serve as a foundation for the project schedule. But a WBS that's been built from an organization of the requirements has a firmer foundation to stand on. This gives project planners an edge in developing reliable, achievable schedules, by facilitating a greater level of *realistic* scheduling. The understanding that comes from the organizing activities provides the kind of insight needed to deliver more detailed decompositions of work over time. This more realistic appraisal in turn makes for stronger schedules.
- **Cleaner designs** This fourth benefit leads naturally from the initial strip boarding activities and will carry value across the rest of the project life cycle. In the process of analyzing and organizing the requirements toward a workable WBS, the assessment team categorized, sorted, and sequenced the requirements. The shape that ensues can't help but approach the beginning of a solution design. With early characterization of even a very general shape for the structure, the project team's ability to strengthen and manage the design is set firmly in place.

As I learned from Amy Kaufman, the Hollywood practice of strip boarding springs from the producer's responsibility to establish workable budgets and schedules. And a proven way to begin both jobs is to analyze the script for patterns in scene use, location needs, casting requirements, and so on, and then order the shooting of the scenes in a way that effectively and efficiently leverages these patterns. From the results of this analysis and coordination

process, reliable schedules and budget can be derived. The world of IT regularly deals with issues of realistic budgeting and scheduling. Some of these issues could be addressed by taking a tip from Hollywood. By creating WBSs based on a logical sorting and ordering of the requirements, the work patterns and groupings that emerge can be used to create more finely drawn schedules and stronger budgets—both of which lead to better project management.

Case in Point: Pryor Development Services

Pryor Development Services (PDS) provides software development and management services to companies in the gas and oil industries. The culture of these industries is one in which contractors traditionally work through firm fixed-price contracts, so for PDS to operate effectively (i.e., profitably), it needs the ability to schedule and cost its work accurately. PDS addresses this need in part through a three-step planning process. For *step one*, the company uses a technique it calls “task classification.” When planning the development phase of a project, a focused PDS planning team, consisting of both managers and technical members, analyzes the requirements with the purpose of assigning them to particular task classes. These are not classes in the sense that might be applied to object-oriented design; they’re much more general in nature. These classes sort the requirements according to the technical focus of each, as demanded by the particular project. For example, some requirements may be classified as UI tasks, others as Data Store tasks; some as Interface-to-X tasks, others as Interface-to-Y tasks; some as Local-Output, others as Remote-Output. Once this analysis is completed, the team ends up with the foundation for an ordered WBS, one that not only accounts for all the requirements but reflects relationships among requirements as well. In *step two*, the team uses past performance metrics as a basis for estimating the likely durations for each class. Project management then takes over for step three. Based on the skills needs of the project and the projected pool of available resources, the tasks are staffed and ordered and dates are assigned.

This three-step process serves PDS well. Because the task classes in use have been custom-defined by PDS over time, they readily reflect the technical domains that typically appear in its projects. So the “sorts” they produce are truly representative. Of note, the planning team is made up of a cross-section of project members, so the assessment and analysis results tend to be both more thoroughly reviewed and more likely to be backed by consensus. And because WBS segments are not datelined until resources have been considered, the resulting schedules are able to balance customer needs with the organization’s ability to deliver.

What PDS is doing here is, in its own way, very close to the Hollywood practice of strip boarding the script. And what it delivers is very much the same: a clearer picture of scope, a greater ability to estimate, and firmer control of work commitments.

For a Deeper Look . . .

- Project Management Institute, *Practice Standard for Work Breakdown Structures*, Second Edition, Project Management Institute, 2006

Yes, it's dry reading, but this hefty tome offers a complete look at the myriad issues surrounding activity identification, sequencing, duration estimation, schedule development, and schedule control. Full of worthy detail.

- James P. Lewis, *Project Planning, Scheduling & Control*, Fourth Edition, McGraw-Hill, 2005

A good guidebook for project managers for over 15 years, Lewis' book addresses all of the key project management issues, including the core task of arranging work in logical order in view of projects requirements. This fourth edition has been revised, updated, and expanded.

- Eric Uyttewaal, *Dynamic Scheduling with Microsoft Project 2002: The Book by and for Professionals*, Microsoft Press, 2003

This is more of a product, focusing on the purpose, use, and configuration of MS Project, but Uyttewaal manages to intersperse plenty of common-sense recommendations in this text, not only about how to best use Project but about how to best apply WBSs in support of overall mission objectives.