

Feasibility Revisited

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Abstract: Overview of the PSDP Feasibility Phase

Project Management is an ever-evolving matter. In recent months, Mike Prestwood introduced a new version of Prestwood Software Development Process™ (PSDP). PSDP is the next-generation of the very successful PSDM and is a significant evolution in the process of managing software projects.

This article is a revised edition of all of my previous articles on the Feasibility Phase, with a focus on PSDP.

What PSDP introduces to the Feasibility Phase of project management are phase paths and phase checkpoints. These provide a mechanism for capturing the work effort required during the Feasibility Phase.

Feasibility Goals

Here are the goals of the Feasibility Phase as outlined by PSDP:

1. Establish initial success factors that are finalized during the requirements phase.
2. Gather high-level requirements.
3. Perform critical proof-of-concepts.
4. Deliver Feasibility Study.

Establishing Initial Success Factors

PSDM introduced the primary goal of the Feasibility Phase, which is to determine whether the project can and should be done, by asking:

“Can the project be accomplished given the parameters explored thus far?”

“Is our consulting firm a good match for the project?”

The initial success factors will come from the answers to both questions.

Consider the first key question: “Can the project be accomplished given the parameters explored thus far?” It’s easy, and quite common, when presented with a new project for the first time to just look at what the customer is asking you to build, and say, “Yes, we can do that!”, only because you haven’t asked the customer enough questions yet. As you begin gathering the requirements for the project, you may find that the customer’s wishes far exceed the scope of what you initially agreed to do.

Gather high-level requirements

By gathering the high-level requirements of the project, you are defining the parameters of the project. This does not mean documenting every functional piece of the resulting software product, but rather gathering enough to understand scope and technical needs. Any research that you or the customer do at this point will allow your firm to present the true cost of the development effort to the customer, giving them the option to back out if the project costs turn out to be beyond the acceptable limits of their budget.

While the PSDP offers a difference between gathering requirements formally or informally, I want to stress that it is important that you ask the user enough questions about the project to get a clear and complete assessment of the requirements.

Performing critical proof-of-concepts

The steps you take to complete this goal will tell you if the desired functionality is within your scope of expertise. If your firm is unable to successfully implement a technical requirement of the project through a proof of concept, then either your firm is not a good match for the project, or the project is far greater than the parameters that your



firm has allowed for. In either case, the customer will need to determine how best to proceed with the project. A proof of concept should be scaled down to simply prove that the functionality can be accomplished. This saves time and expense on behalf of the customer, and provides a quicker answer to the two critical questions.

Doing proofs of concept during this phase provides the project manager with a means to determine if the development team is “on the right track” towards providing the needed functionality. If the functionality can be demonstrated early on to the user community, it provides the entire team with a “safety cushion” in case the development team hasn’t quite met the users’ needs. This important fact is better learned early on rather than immediately after deployment of the software to the end users.

Delivering the Feasibility Study

When you deliver a Feasibility Study to a customer, it serves as your documented understanding of the project scope and needs. Since it occurs at the point of project inception, it serves as an ideal mechanism for assuring the customer that you are “on the same page” with the customer, and provides time to clarify misunderstandings before the real work of the project begins.

Guidelines for meeting the Feasibility goals:

1. Never make assumptions. Present your understanding of the project in a **memo of understanding**, or some other format, and have your customer buy off on your assumptions before you agree to do the work.
2. Ask the right questions, then ask some more. Always take into account that either you or the customer knows more about the process than the other. If you find yourself on unfamiliar ground, ask the customer to explain their business processes. If the customer doesn’t understand the technology you’re presenting as a solution, give them the “5 cent tour” of the technology and come to an agreement about whether it is a good fit for them or not.
3. Chart your course before you sail. Before you can begin, you need to determine if all of the solutions exist, or if new solutions need to be created (and at what cost). Explain to the customer that this *is a part of the process*. Do the research *first*. If the project involves new technology (whether it be operating system, communications, interface, or data persistence), the research will save you and your customer from potential grief.
4. Give the customer room to say “No”. Be honest, and don’t back your customer into a corner. After you show the customer the scope and cost of the project, give them the chance to take a big gulp and tell you they can’t go forward with it. Not every customer has deep pockets. You might find that they will return with a simpler project, or come back with the original project after they have secured enough funding. Or in the best case, they might ask *you* how to trim the project down to a manageable budget, and then proceed with that.



Feasibility Paths and Checkpoints

The fundamental difference between PSDP and other processes and methodologies is to categorize the level of work effort for a given phase by designating which path to take. There are three paths in each phase of the PSDP: informal, formal, and robust.

How do these paths differ when referring to the Feasibility Phase? Here is a quick summary of the tasks to undertake in each path:

Informal:

- ?? Gather high-level requirements from the user using informal communications (via phone, email, or in person).
- ?? Gather any detailed requirements or design specifications, if available.
- ?? Perform critical proofs of concept, if required.
- ?? Deliver informal feasibility study verbally or via email.

Formal:

- ?? Gather high-level requirements from the user using informal communications (via phone, email, or in person), and document them in the Feasibility Study (optionally, using the PSDP template).
- ?? Gather any detailed requirements or design specifications, if available.
- ?? Generate initial, high-level use-case diagrams, documenting the work flow within the proposed project.
- ?? Generate initial test scripts (derived from the use case diagrams).
- ?? Perform critical proofs of concept, if required.
- ?? Deliver formal Feasibility Study report.
- ?? Provide updated Feasibility Report after user review.

Robust:

- ?? Gather detailed requirements and preliminary design specifications from the user community who will be using the final software entity.
- ?? Perform critical proofs of concept.
- ?? Deliver formal Feasibility Study report to the customer and the user community.
- ?? Feasibility is not complete until the study has been approved by the customer and the user community.

The PSDP explains which factors the project manager uses in determining the correct path to adopt. The Feasibility Worksheet, which accompanies the PSDP, provides a mechanism for the project manager to use during execution of the tasks I outlined above.

Once the checkpoints are met in the Feasibility Phase, and the study is reviewed by the customer, this will give the customer a chance to say "No" to the project, or reduce the initial functionality to a scope that can be delivered within a reasonable budget and time frame.



Determining if you are a good match for the project

Once you have met the goals of the Feasibility Phase, and you are ready to deliver your study, ask these questions:

?? Do we have a full comprehension of the scope of the project?

?? Do we have the time, skills, and resources to apply to this project?

The answer to the first question depends on how well you accomplished the task of gathering and reviewing resources, and how well you identified the technical solutions needed to complete the project. PSDP shows that you answer the first question by asking the user all the right questions in determining what the project's high-level requirements might be. Having done this, your technical solution proposal should be able to accurately answer the following questions:

?? Can the project be accomplished within the given budget?

?? Can the project be accomplished in time to meet the business need?

If you are in the business of developing custom software, turning work down can be a real gut-wrenching experience! Before you say, "No, we are not a good match for the project", consider discussing the following questions with the customer:

?? How can we scale down the project to meet the given budget, and yet still deliver a satisfactory solution?

?? Can we phase the project to allow the customer to meet some of their needs under the current budget, and add further functionality as new budgets become available?

?? How can we fulfill the resource requirements to accomplish the project goals within the customer's time frame?

Consider the customer's point of view. Not only are they looking for a software solution; they would not have come to you with this project if the need for it didn't already exist. The customer might be willing to wait a few weeks or even a few months for an available solution, but if your firm is too understaffed to complete the project in a reasonable amount of time, from the customer's viewpoint, that isn't their problem.

It is also quite possible that the customer only needs your firm to assess the project needs, so that they can allocate their own resources (or those of another firm) to the project. Don't make the mistake of assuming that the project will be yours after the Feasibility phase. Be sure that you understand the customer's true game plan on the project.

In the event that you and the customer come to agree that your firm is not the perfect match, the delivered products of the Feasibility Phase can be used by the customer to measure other potential firms to see how well they fit the need. (Of course, this means that you should always insist that the customer pay you for the efforts you completed during the Feasibility Phase.)

Simply delivering the Feasibility Study may not be enough to convince the customer that you are a good match. You may need to consider preparing an Executive Proposal to accompany the study that addresses:

?? Why your firm feels it is capable of taking on this project.

?? Your firm's track record, its successes and failures, and where your firm has had experience in the past with projects of this type or magnitude.

?? What your firm can offer, in skills or services, that other firms might not.

?? How your firm plans to back up its work, and provide the customer with a reliable solution.

?? How committed you are to completing the project.

I wish to make one last point about PSDP. During the Inception Phase, you should stress to the customer how important it is for them to become fully involved in the process from the beginning. The PSDP Feasibility Phase will give both parties (the customer and the development team) a fair idea of how well the customer buys into PSDP, and becomes a part of the process. This often means the difference between process success or failure.

To learn more about PSDP, visit <http://www.prestwood.com/standards/psdp>.

