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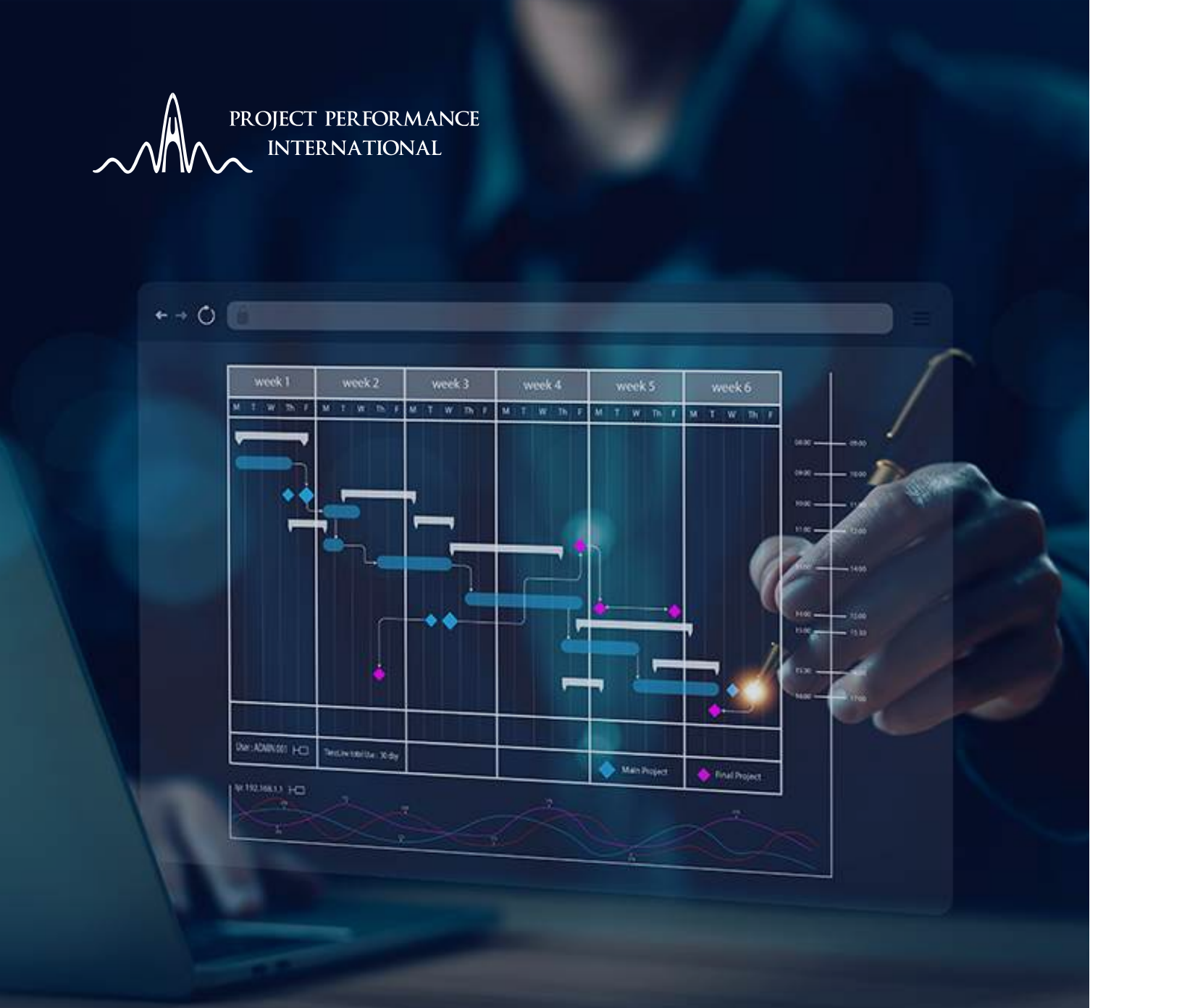

WHITE PAPER

Project Decision Jumpstart Applied to a Product Line

Accelerating platform decisions for faster, better, lower-risk product delivery

PPI-008873-1

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Executive Summary

The Project Decision Jumpstart (PDJS) service as delivered by Project Performance International (PPI) is the refinement of an engagement model that has been applied ~150 times over the past three decades.

Although most of these projects focused on the design of new products and systems either under contract or as part of a commercial product portfolio, numerous engagements have addressed the development of the reusable assets that form the core of a product platform on which multiple product variants can be delivered.

Over the years, PDJS engagements have yielded significant improvements in stakeholder value, in the form of cost and schedule reductions and technical performance enhancements, regardless of application domain and project type.

The PDJS Engine

Leveraging the PDJS “engine” (proven decision patterns and decision-to-everything traceability, in the hands of a skilled consultant) supports the following goals that are common to almost all platform development and product line engineering initiatives:

- **Accelerate decision-making** to reduce time to architect the platform or to create product variants (get more done faster and with fewer resources)
- **Improve the differentiation** of the proposed platform/product design to gain competitive advantage (offer increased engineering value by improved decision quality)
- **Decrease the incidence of rework** caused by failed and conflicting decisions (with resulting delays, lost value and cost implications)
- **Improve the transition of responsibility** to the platform and product/feature execution teams (hit the ground running with an executable deployment plan).

Although the steps in the PDJS process, as shown below, don’t change significantly regardless of the scale of the platform/product line that is in-development, the effort required to complete the jumpstart engagement is sensitive to variables such as:

- **The novelty of the problem space** and applicable solution technologies
- **The overall complexity** and competitive criticality of the decisions to be addressed
- **The number of stakeholders** who will be affected by the product line design and their level of engagement
- **The completeness and clarity** of the documentation available that bounds the problem space, e.g., the quality of decision rationale and solution descriptions associated with prior decisions.

PDJS Variants

As shown in Figure 1, PPI offers two variants of the PDJS service that share common front-end tasks.

The Requirements Validation engagement focuses on reverse engineering prior stakeholder decisions to bound the problem space. We know that all stakeholder requirements can be traced from upstream decisions. Creating that explicit trace for the most demanding stakeholder requirements will help the platform and product design teams ask very pointed and efficient questions to clarify the use cases and "givens" that must be satisfied in the solution.

This effort will often uncover gaps in the stakeholders' thinking that create significant risks during solution development. It is far better to surface such issues early in the initiative and to gain clarifications where possible.

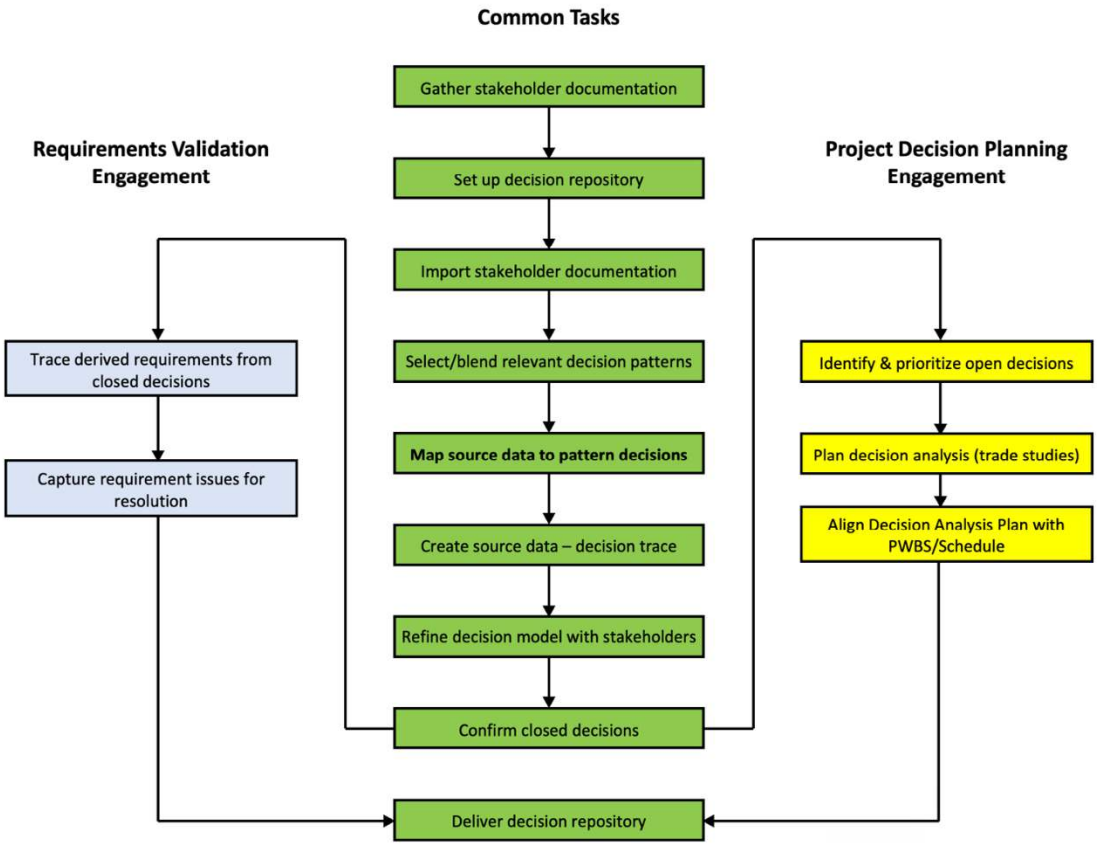

Figure 1. Project Decision JumpStart Service Flow

The Project Decision Planning engagement focuses on identifying the vital few decisions that will drive the success of the initiative, prioritizing the open decisions such that precious team resources are assigned to the critical questions that demand an answer and that will offer the greatest product line differentiation.

The typical platform/product line engineering initiative is a blend of these two models, with the balance between them driven by the quality of the originating requirements and the scale, complexity and novelty of the problem and potential solutions.

Lowering platform and product cost *while* ***increasing the value delivered per release*** *and* ***reducing execution risk*** *makes a compelling case for investing in this unique service.*

PDJS Decision Pattern and Results

Building from the Product/System Design decision pattern shown in Figure 2, a typical Product Line Engineering jumpstart will identify at least 20 decisions to be analyzed and create a Top-10 decisions list that will form the foundation for developing a differentiated platform and/or product variant on an existing platform.

The entire decision jumpstart process may be performed remotely; it's primarily a mapping exercise between the stakeholders' prior thinking (often captured in diverse and less structured form) and a decision pattern. Multiple virtual meetings with core members of the product line team are held to refine the resulting decision model and to work through the high priority decisions and their implications on the overall platform and product line design.

A typical PDJS engagement for platform/ product line engineering ranges from 40 to 100 hours of consulting support. Beyond the benefits noted above, the engagement leaves the organization with a tailored decision model that can be reused and refined across future initiatives. The "compound interest" effect of this reuse can be enormous as improvements to the decision pattern with each iteration increase its completeness and quality and reduce the effort needed to apply it to new product development projects.

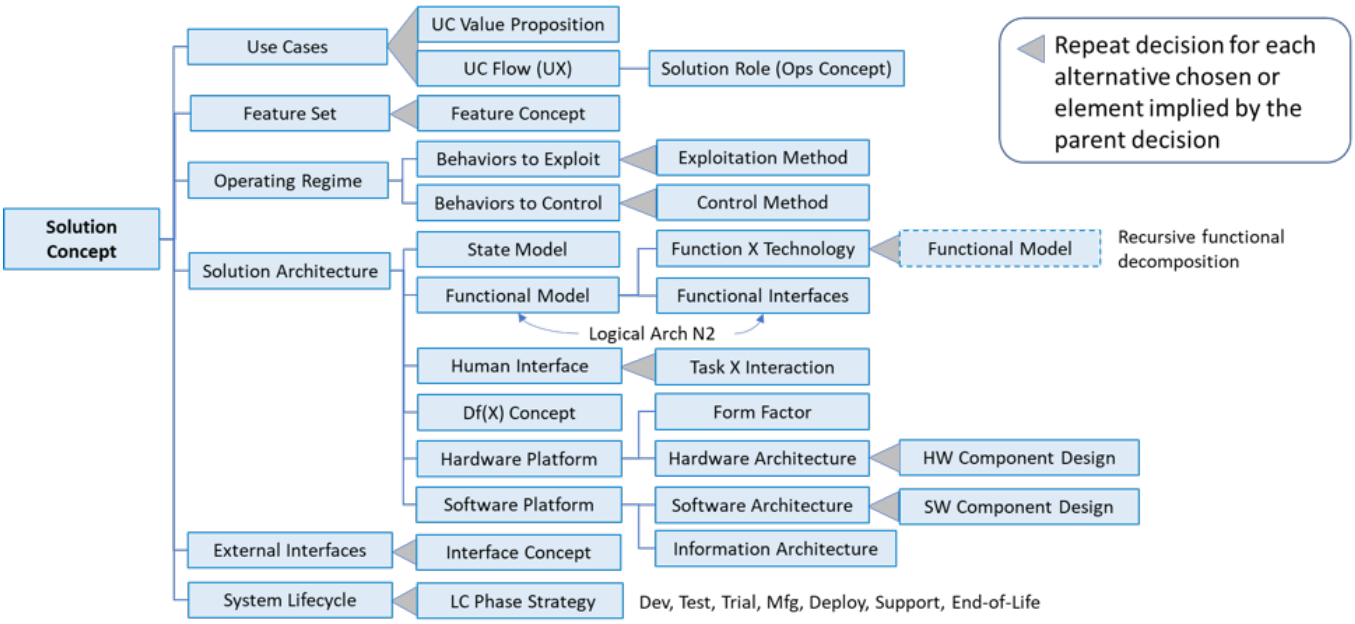

Figure 2. Product/System Design Decision Pattern

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Lowering platform and product cost while ***increasing the value delivered per release*** and ***reducing execution risk*** makes a compelling case for investing in this unique service. And the service is scalable; feel free to start small and then increase the scope (number of decisions covered and depth of support provided) based on the results achieved.

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