

**Tech-Clarity**

*making the value of technology clear*

## Issue in Focus: Optimizing Product Portfolios with Advanced PPM

*Applying Value Optimization  
to Portfolio Decision Making*



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## Introducing the Issue

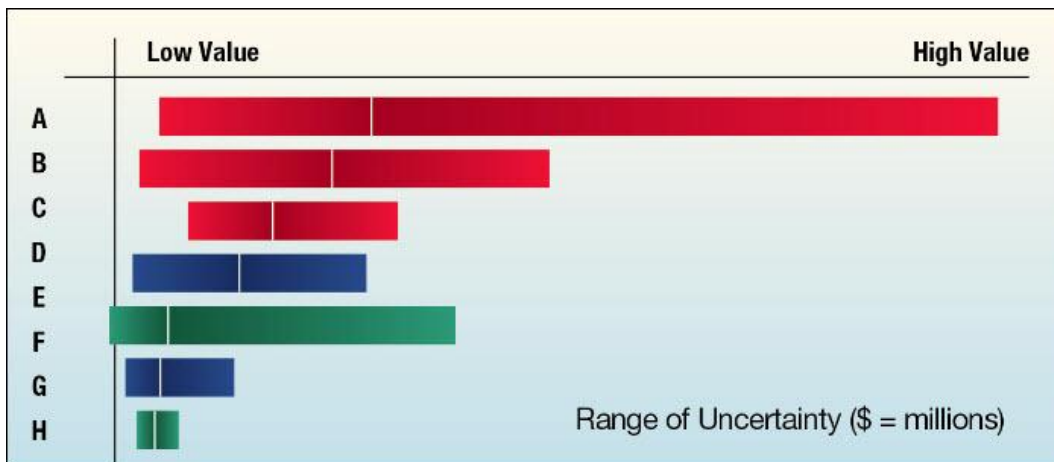
Companies are gaining significant business value by implementing Product Portfolio Management (PPM) best practices. According to Tech-Clarity’s *Issue in Focus: The ROI of Product Portfolio Management*, effective portfolio management can improve both top-line performance and bottom-line profitability. PPM does this by helping companies align their product portfolios with business objectives, effectively allocate resources to their projects, and better execute product development projects.

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*Most companies fail to reach the highest possible levels of profitability because they lack a clear understanding of the potential financial value of the products in their portfolio.*

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Despite the value achieved from these standard PPM best practices, most companies fail to reach the highest possible levels of profitability because they lack a clear understanding of the potential financial value of the products in their portfolio. Part of the problem is that current best practices and technology lack an effective way to assess risk and uncertainty and can’t predict their impact on product value. These impacts can be in the range of millions of dollars (Figure 1). Decision-makers can’t afford to ignore this uncertainty, and can’t make optimal portfolio decisions without a realistic picture of the likely range of values returned from candidate projects in the portfolio.



**Figure 1: Range of Project Values based on Risk and Uncertainty**

To get the most out of limited product development resources, companies need to be able to optimize the value of their product portfolios in addition to managing them through a product development processes with standard PPM best practices. Advanced PPM processes and technology enable this by providing a systematic approach to determine

financial value. As Tech-Clarity's *Maximizing Product Development Value* report concludes, "*Creating high value portfolios is much simpler when the factors that create and destroy value for a project are clearly identified, quantified, and managed over the life of the project.*" The result is extending "on-time" and "on-budget" to "on-profit." With this understanding, companies can develop portfolios that provide an optimal financial return based on sound business analysis.

## The Basics of Product Portfolio Management

Many companies employ current best practices in PPM, while others have not yet adopted them. This section reviews these best practices and why they are important for those that have not fully adopted PPM processes and solutions. To start, the first reason PPM is important is that most companies have too many product ideas to choose from. Given limited financial and human resources, they need to make trade-offs. To do this, they must have visibility across all of the products they are considering bringing to market and an ability to compare them objectively.

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***Standard PPM solutions provide basic analysis and visual tools that help companies make decisions based on a portfolio view.***

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Current portfolio management best practices and tools can help. PPM centralizes project information so candidate projects can be contrasted and compared. They allow what-if scenarios to help determine a good mix of products in the portfolio. Basic decision-making criteria can help make sure that products fit within corporate and product line strategies. They can also help develop a balanced strategy. For example, PPM helps companies balance their investment in incremental innovation with breakthrough innovation, help balance portfolios by key investment area of the business, and help balance product investments across divisions, product lines, geographies, and other organizational entities. Standard PPM solutions provide basic analysis and visual tools that help companies make decisions based on a portfolio view.

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***Best practice dictates that putting the right number of projects into the pipeline will result in higher throughput than overloading it.***

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Once the "right" portfolio is selected, companies have to make sure it can be executed. They must balance the portfolio with available resources. This resource planning process should include both human resources and financial resources. Too often, companies overload product development teams and end up getting reduced productivity. This is frequently due to "thrashing," where people jump back and forth between multiple assignments and don't have time to contribute effectively. Best practice dictates that putting the right number of projects into the pipeline will result in higher throughput than overloading it.

Finally, companies have to deliver on their projects. They need to be able to execute their projects to ensure they are progressing. PPM can help implement and support standardized new product development processes and provide transparency to assignments, issues, schedules, and overall attainment of project goals. Most companies also use PPM to put in place a gated process where project milestones are evaluated to ensure the project stays on track as it progresses through different phases of product development. An effective project management process helps companies:

- Develop and track to realistic timelines, tasks, and costs
- Identify and correct bottlenecks
- Uncover and address skills gaps
- Document and mitigate project issues and risk
- Provide enterprise visibility to project health and status

These standard best practices help companies select a balanced portfolio, ensure it is staffed properly, and help them execute their projects in a systematic, repeatable, best-class approach.

## The Next Level of Portfolio Decision Making

Standard PPM best practices and tools, however, only help products get delivered on-time and on-budget. While these are incredibly important, today's best practices are designed to develop and execute the "right" mix of products, but not necessarily the "best" or most valuable product portfolio. For example, standard PPM allows for financial value to be included in portfolio analysis. They do not, however, provide the analytics to develop a realistic net present value (NPV). The process to develop an NPV typically involves a spreadsheet process where someone forecasts revenue and cost projections based on a set of assumptions. This is not enough to represent the complexity of new product development and introduction and the risk and uncertainty involved.

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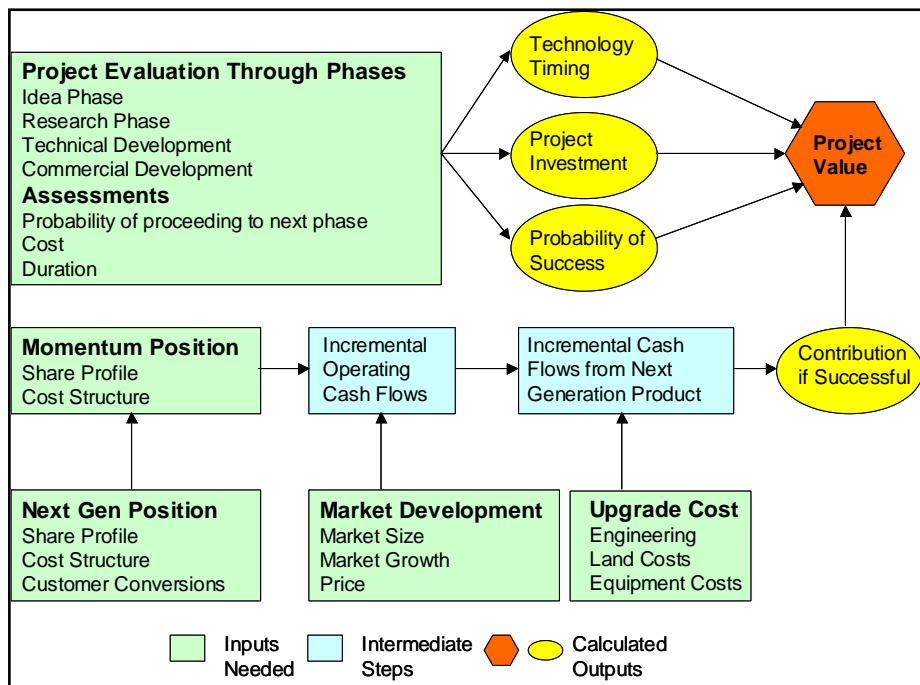
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Advanced PPM introduces additional insight and visibility to extend standard PPM best practices. It is important to recognize that there are multiple potential outcomes for any given project. These outcomes can result in a wide range of financial value delivered to the company (as seen in Figure 1 in Introducing the Issue). A single, calculated NPV falls short when companies need to make decisions, because it does not properly reflect the assumptions that drive risk and uncertainty.

Advanced PPM techniques can much better predict value because the factors that influence the results are determined. When value drivers are understood, decision analytics can leverage mathematical techniques to predict value based on an “influence diagram” or “value map” (Figure 2). Advanced PPM best practices provide a systematic approach that identifies potential scenarios and analyzes a variety of potential outcomes based on a methodology that asks the right questions.

*Advanced PPM best practices provide a systematic approach that identifies potential scenarios and analyzes a variety of potential outcomes.*

Advanced PPM techniques also allow people from different disciplines to collaborate and bring their different perspectives together to develop a clear model of project value. The result is a range of values based on the risks and uncertainties. This provides a much better decision making tool when evaluating product candidates for the portfolio by more accurately reflecting the potential outcomes of the project, so companies can make more optimal portfolio decisions.



**Figure 2: Influence Diagram or Value Map**

Once a project is selected, project leaders need to recognize which factors will have the biggest impact on profitability and value. These factors can be represented in a “tornado chart” (Figure 3) that visually depicts the range of impacts of each uncertain outcome.

These can be used to focus product development resources on addressing the uncertainties that have the biggest potential impact on value, allowing decision makers to learn more and narrow down the uncertainty so more informed portfolio investment decisions can be made. By focusing on the biggest areas of uncertain outcomes first, companies can limit or stop resource allocation should the project fall into a less attractive range of projected value, adjusting product plans accordingly.

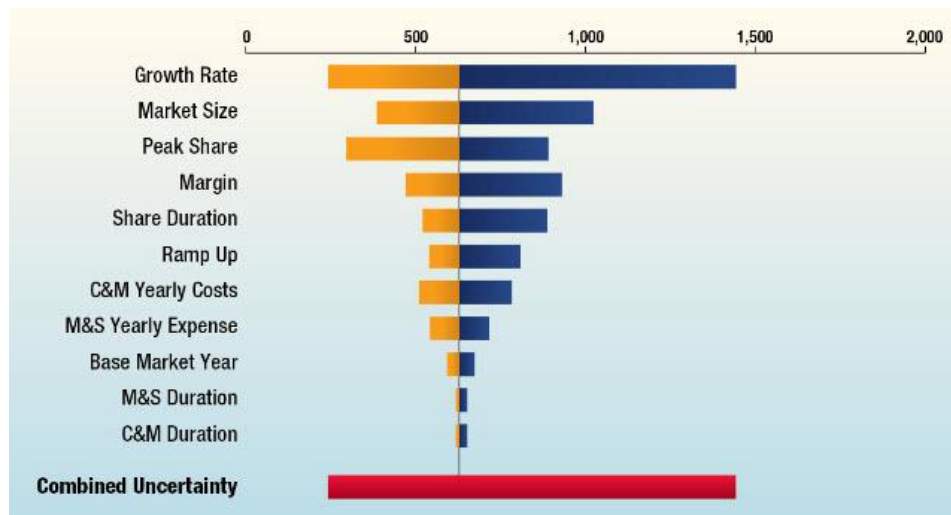


Figure 3: Tornado Chart

## Realizing Optimal Portfolio Value

Standard best practices and PPM tools alone are not enough to drive optimal value out of product portfolios. Portfolio optimization requires the complementary capabilities of standard PPM and advanced PPM solutions. In fact, the best approach to target and realize an optimal portfolio is an integrated approach. Ideally, the approach is a composite solution that shares common data and augments the PPM environment with value optimization. According to *Tech-Clarity Insight: Product Portfolio Management in a PLM Strategy*, a well developed PPM program consists of four primary, integrated processes (Figure 4):

- Select and Maximize Product Portfolio
- Resource and Enable Pipeline
- Execute and Manage Projects
- Determine and Monitor Product Value

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***Portfolio optimization requires the complementary capabilities of standard PPM and advanced PPM solutions.***

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**Figure 4: Tech-Clarity PPM Framework**

***A combined approach helps companies define an optimal portfolio strategy and focus projects on the risk and uncertainty that impacts product value.***

A combined approach helps companies define an optimal portfolio strategy and focus projects on the risk and uncertainty that impacts product value. This helps prioritize project tasks to better assess the potential value in addition to hitting milestones. Then, gate reviews can be based on assessment of project value in addition to progress towards deliverables and schedule. This helps actively manage for value throughout the project lifecycle, providing visibility to project health that includes an assessment of potential financial returns. The following table (Table 1) describes the complementary capabilities of standard and advanced PPM:

	<b>Standard PPM</b>	<b>Advanced PPM</b>
<b>Gate Reviews</b>	Checklists	Value achievement
<b>Project Health</b>	On time, on budget	On profit
<b>Decisions</b>	Commit resources	Prioritize resource allocations
<b>Portfolio Analysis</b>	Balance	Optimize value
<b>Risk / Uncertainty</b>	Watch lists	Impacts on profitability
<b>Decision Makers</b>	Project managers	Management / portfolio manager

	<b>Standard PPM</b>	<b>Advanced PPM</b>
<b>Progress Metric</b>	Task completion	Resolving uncertainty
<b>Visibility</b>	Progress	Value
<b>Project Focus / Roadmap</b>	Work breakdown structure	Value map
<b>Value Metric</b>	Single NPV	Value scenarios

**Table 1: Advanced and Basic PPM Capabilities**

## Conclusion

Adopting current, standard PPM best practices and solutions is a valuable endeavor. Standard PPM helps companies make better decisions about their portfolios, helps balance portfolios across multiple dimensions, and provides visibility to the portfolio mix. It helps companies ensure that the portfolio is properly resourced. Current best practices in standard PPM help businesses understand what they are working on, see where they are investing their product development resources, and provide visibility to project health so projects can be kept on track.

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***For a deeper competitive advantage, advanced PPM goes beyond the basics to optimize product portfolio value.***

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For a deeper competitive advantage, advanced PPM goes beyond the basics to optimize product portfolio value. Advanced PPM adds an understanding of how uncertainty and risk impact value. This provides a better understanding of the range of value that a product will deliver, improving portfolio decision-making. Advanced PPM helps decision makers develop an optimal portfolio and allows project leaders to prioritize their focus on biggest areas of uncertainties.

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***The combined solution helps companies make better portfolio decisions, resulting in higher value products and portfolios.***

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The combined solution helps companies make better portfolio decisions, resulting in higher value products and portfolios. Integrated processes and solution help manufacturers develop a plan to achieve optimal portfolio value and focus on maximizing it throughout the product development process.

## Recommendations

Based on industry experience and research for this report, Tech-Clarity offers the following recommendations:

- Use standard PPM best practices and tools to manage schedules, tasks, issues, resource assignments, and other project essentials
- Provide visibility to project status and health to make better decisions
- Enhance decision making to incorporate ranges of value based on risks and uncertainties
- Optimize portfolios for value based on a systematic understanding of value drivers
- Leverage standard and advanced PPM processes and solutions for their relative benefits
- Integrate standard and advanced PPM solutions to share data and ensure value optimization continues throughout the product development lifecycle

## About the Author

Jim Brown is the President of Tech-Clarity, an independent research and consulting firm that specializes in analyzing the true business value of software technology and services. Jim has over 20 years of experience in software for the manufacturing industries, with a broad background including roles in industry, management consulting, the software industry, and research. His experience spans enterprise applications including PLM, ERP, PPM, quality management, service, manufacturing, and others. Jim is passionate about improving product innovation, product development, and engineering performance through the use of software technology and social computing techniques.

Jim is an experienced researcher, author, and public speaker and enjoys the opportunity to speak at conferences or anywhere that he can engage with people that are passionate about improving business performance through software technology.

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