

Why Good Portfolio Management Depends on a Robust Front-end

NPD and R&D Inputs and Outputs

By Paul O'Connor, The Adept Group

If you are interested in NPD and R&D portfolio management, here is an important insight. **Most Portfolio Management discussions, presentations, and articles address only the management of those projects that are under development.**

To state this in terms of process management, the insight is that portfolio management focuses only on those projects that are underway within the Stage-gate process. If you evidence, simply look at a few conference presentations or search the web to check it out for yourself.

Where's the Leverage?

Anyone new to product development cannot help but conclude that Portfolio Management is only about those projects residing within the Stage-gate process. But do not get fooled by this. NPD & R&D Portfolio management is more than about just shifting resource on projects within the Stage-gate process.

Indeed, the greatest influence on the total value of the portfolio of projects under development is, in fact, the output of the Front-end of product development. In other words, what goes on in the Stage-gate process is important, but the quality of the output from the Front-end is even more important. If your organization wants to increase NPD and R&D productivity through Portfolio Management, you will also need to consider the impact of Front-end activities.

The following example helps explain the Front-end to Stage-gate relationship in Portfolio Management. Figure 1 below displays a four-project portfolio. Each project is at a different point in the development process (X-axis) and will be

commercialized between eight and twenty-four months out (Y-axis). The size of the bubble represents the peak annual revenue that project should generate if it is successful. The text next to the bubble indicates the name of the project and the probability of success the organization calculated for each project (using RiskAssessor™).

Closing The Gap

The bar chart in Figure 2 displays the risk-adjusted peak annual revenue for the projects (this is like saying that the project is expected to have, at its peak in three years from launch, sales of X million dollars).

The chart shows only one (the number that is inside of each bar) project from this portfolio will launch in the year 2005. It has a risk-adjusted peak annual revenue is about \$5 million (the height of the bar.) In 2005, three of the four products will have launched and the summation of their risk-adjusted peak annual revenue is about \$25 million.

Unfortunately, the NPD financial objective requires a portfolio with more peak annual revenue coming from product development. A gap existed between the objective and the calculated "Accumulative Expected Launch Value.

Bigger Better Bubbles

The dilemma is common to NPD Portfolio Management. When an organization starts up more projects, it will need to assign resources to these projects. The new projects cause resources to be spread thinner across all projects. The effect of having less resource is either slows down the existing

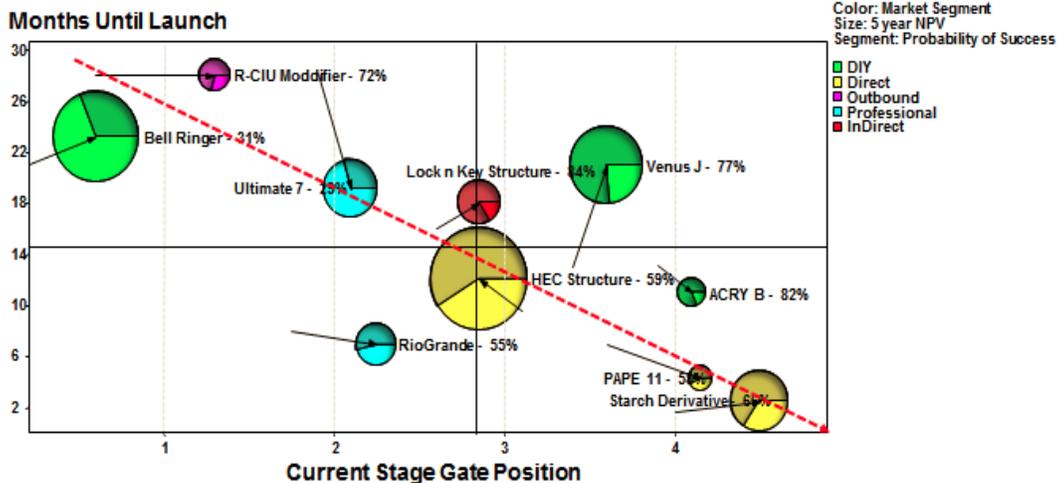


Figure 1 **Progression of Products in Development** created with [PortView™](#). This chart reveals a portfolio of ten projects progressing through a stage gate process. The center of each bubble is the current position of the project within the stage-gate process (X-Axis) and with its time-to-launch (Y-axis). The vector shows the movement of the

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Figure 2 **Accumulated Expected Launch Value of Products in Development** created with [RiskAssessor™](#) This chart is a histogram of the expected (risk adjusted) value of those projects to be launched within a given year.

project or the decreases the probability of success for the projects.

Both the slow down and the decrease in probability of success causes the risk-adjusted expected peak annual revenue to decrease. Thus, a revision of the bar chart presented above would reveal an increasing gap.

In response, perhaps management might choose to shift resources to the two near-term projects. The resource shift would likely move the bars to the left, but would also widen the gap in future years (trading off the long term to meet short term goals.)

The difficulty for this fictitious company is that the nature of the projects in the Stage-gate portfolio is not adequate to reach the overall objective. The projects simply do not address opportunities that are large enough. Management can shift the projects and bubbles around within the Stage-gate process as much as they like, but they will never meet the objective.

The solution to the dilemma requires some leadership to break the paradigm and shift resources toward getting better projects out of the Front-end. It is a hard lesson, but if the gap cannot be filled with the current projects, then other bigger or better projects must be found. More important to

note, though, is that without a proactive, structured Front-end, it is improbable that this company will achieve its NPD financial objectives.

Default Front-end

Most organizations, unfortunately, do not have a structured or a proactive Front-end. Instead, potential projects come from the same sources, in the same manner as they have for many years: One-off projects from R&D, customers, marketing, the sales force, and even top management.

Unfortunately, this "default" Front-end delivers development projects that, over time, start to have similar characteristics. Projects tend to be of a similar size of the opportunity, have a similar degree of newness, and even have typical or expect competitive alternatives. Without an ability to guide the Front-end toward better projects, management can only turn Stage-gate projects on or off, and increase or decrease the resources assigned to each.

Default Front-end processes are not sufficient to optimize the NPD or R&D portfolio. From the vantage point of the bubble diagram above, you simply need a proactive Front-end to deliver bigger, better bubbles.

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Yes, good Portfolio Management demands managers to optimize among the projects within the Stage-gate process. This is absolutely necessary. But as organizations increase their capability maturity in portfolio management (see SpiralUp™ Implementation), they also need to increase and better manage the resources invested in a proactive Front-end.

By itself, a good Front-end process is not sufficient to drive adequate value. It must also be integrated with Portfolio Management. Yet another observation of our ever-evolving NPD management science is that few Front-end models, processes or approaches recognize the trade-off decisions required in good portfolio management.

Funding, people count, and balance with strategy simply do not seem to matter to front end management. But if a company increases NPD resources and dollar investments within the Front-end, the resources were likely shifted from projects in the Stage-gate process. The only way to do this intelligently is through Portfolio Management that is inclusive of both Front-end and Stage-gate activities.

Marrying Your Front-end to the Portfolio

Portfolio Management, to be effective, must include projects underway within the Front-end. And, for a Front-end process to become robust and deliver a steady stream of new opportunities, it must be well funded and included in the NPD investment portfolio.

Portfolio Management and the Front-end go hand-in-hand, but the details of how best to marry the two may not be as

obvious. The characteristics of projects in the Front-end are much different from those in the Stage-gate process in terms of timeframes, task-duration certainty, task-outcome certainty, investment amounts, resources skills, and option roadmaps and even specifications.

The good news is that there is an implementation path forward that enables integration. The key is in understanding the sub-processes and the "investment objects" within the Front-end. If your organization expects true NPD and R&D productivity gains, you should be aggressive in learning about this.

Good NPD Portfolio Management does depend on a robust Front-end. To gain more insights about this, or to simply discuss the challenges of establishing and marrying Portfolio Management and the Front-end within your organization's processes, please do not hesitate to contact me. I'd be glad to share my expertise with you and your organization in order to drive significant gains.



Paul O'Connor
paul.oconnor@adept-plm.com
The Adept Group
904-473-5339
www.adept-plm.com

