How to Measure "Innovation"

Performance measures provide information to monitor strategy execution. But some things are inherently "easier" to measure than others. For example, an objective such as "Improve Revenue" is fairly easy to measure. But other strategic objectives, especially those in the Internal Business Process and Learning & Growth perspectives have been historically more difficult to measure.

One seemingly difficult-to-measure objective is "Innovation". We typically see "innovation" strategic objective in the Internal Process perspective on the organization-wide strategy map. Its roots are usually found in a "Grow the Business" strategic theme and/or "Operational Excellence" strategic theme in which ***"transformation through innovation"*** is a ***key driver***.

But, how do you MEASURE "innovation"?

Using our disciplined approach to developing performance measures (Step 5 of our *Nine Steps to Success*™ framework), we must first define what is meant by "Innovation" as well as agree upon what the intended results are for this objective for YOUR organization.

WARNING: Do NOT skip this key step. The strategic intent of "innovation" can vary wildly from organization to organization. Until you've properly defined the objective AND the intended results, you cannot possibly develop a meaningful performance measure.

For the purpose of this paper, ***innovation is defined as the process of ideation, evaluation, selection, development, and implementation of new or improved products, services, or programs.*** And the intended results of this objective are:

1. **Increased number of new ideas**
2. **Improved quality of ideas**
3. **More efficient implementation of quality ideas**
4. **Improved resultant success achieved from the implementation of new ideas.**

Step 5: Performance Measures

This series of articles addresses the ***difficult to measure*** and presents some potential measurement solutions, based on our client experiences.

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Using our disciplined approach, the next step is to identify potentials measures that will indicate if the organization is making discernible progress toward the four intended results listed above.

We might brainstorm and come up with potential measures such as:

- A ratio of number of new ideas per 100 employees
- Percent of new ideas selected for funding

- A ratio of revenue (or net profit) from new ideas divided by the average cost of implementation of an idea
- Aggregate ROI of new ideas implemented

Are these good measures? Maybe. But we are not finished. Best practice balanced scorecards only contain 1-2 performance measures per objective. So after we brainstorm using our disciplined techniques, we must then select the most meaningful performance measure(s) for this particular innovation objective. Some selection criteria include:

Which measure(s) have the strongest correlation or contribution to the intended results?

- Over which measures do you have the most influence?
- Which measures capture desired behavior changes?
- Is the data accessible; is there ease of collection and use?
- Are you starting from where you are, with what you have? You can add measure complexity later.
- Can the measure be used as a drill-down measure from Tier 1 to Tier 2?
- Can we establish meaningful targets (and thresholds) for this measure?

After a measure is selected, further data definition work will need to be performed and sometimes an organization gets "stuck" when attempting to define targets and thresholds for a measure. Thresholds are the red-yellow-green color bands or dashboards that indicate levels of performance. Targets and thresholds should be based on a known value, such a baselines (how the organization has historically performed) or benchmarks (industry norms). So the ability to define meaningful targets and thresholds plays into the decision on which measure(s) to select.

Measuring Product/Service Innovation

A performance indicator that meets the above-mentioned selection criteria requirements and captures the four intended results listed above is **Return on Product Development Expense, or RoPDE™** (pronounced "roh-pee-d'ee").

RoPDE is a comprehensive KPI (key performance indicator) for measuring the performance of product/service innovation and development. To establish RoPDE's thresholds, a comparison is made to profitability metric, such as Operating Income Margin, EBIT or EBITDA. Figure 1 is an example of one company's RoPDE dashboard by fiscal year.

On an enterprise balanced scorecard, "Improve Product/Service Innovation" would be measured by an aggregate version of RoPDE charted by fiscal periods and compared to an acceptable range of Operating Income Margin of 0-10% (0-10% is a typical range which would be adjusted for the context of each individual business).

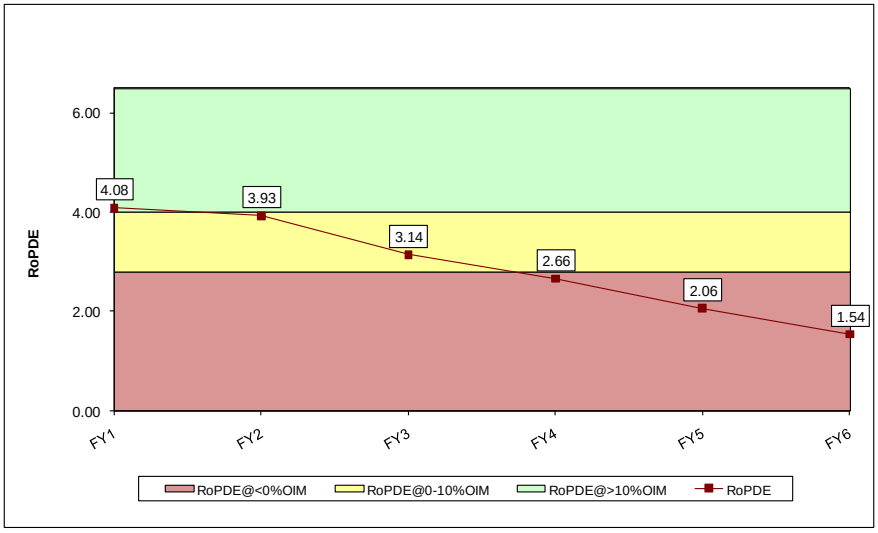


Figure 1: RoPDE dashboard by fiscal year

How to Calculate RoPDE

$$\mathbf{RoPDE} = \frac{(\mathbf{GM} - \mathbf{PDE})}{\mathbf{PDE}}$$

where
(GM) is Gross Margin, and

(PDE) is Product Development Expense

GM* may also be called gross profit, determined by subtracting cost of sales from revenue. Cost of sales, or cost of goods sold (CoGS), normally includes the material, labor and overhead associated with delivering a production unit.

PDE will typically include the engineering, technician, product marketing and associated management labor expense, fully burdened (benefits, facilities, IT, depreciation). Stock based compensation can be excluded if done so consistently, which will usually simplify the calculation without reducing the significance of the result.

**This can be adapted for Government and NonProfit accounting standards*

The Power of RoPDE	Explanation
RoPDE is derived from standard accounting data.	The measure, targets, and thresholds come from the organization's existing accounting data. RoPDE is overlaid on an Operating Income Margin Band (typically 0-10%.) Within the band is acceptable performance (yellow), above the band is admirable performance (green), below the band (red) requires corrective actions to improve performance.
RoPDE can serve at multiple levels as a drill-down measure: (1) As a Tier 1 (enterprise) and Tier 2 (business unit) strategic measure, (2) As an operational measure of innovation performance for a product / service / program, (3) As a measure on an single innovation project within a product / service / program area.	Even at its most micro level, a single project, the forecast of PDE to Sales (or Cost Savings) to RoPDE can be projected and monitored against the Operating Income Margin Band to provide ***meaningful information upon which to take action.***
RoPDE can be integrated into any stage gate system or product life cycle management process	What appears to be a financial measure becomes a performance indicator that encompasses a number of key work flows and business processes critical to the success of any innovative development.
RoPDE is more powerful measure than a traditional ROI approach and does NOT require any additional accounting systems or reports. It also alleviates the traditional disputes over allocations and treatment of expenses related to innovation.	Traditional ROI measures, such as a discounted cash flow analysis, rarely resonate with stakeholders. The finance team will often own the cash-flow analysis, while decisions on how much to spend and when to spend it are happening elsewhere in the company. The end result is weak alignment throughout the organization with regard to profitability contributions of innovation, development and support efforts.

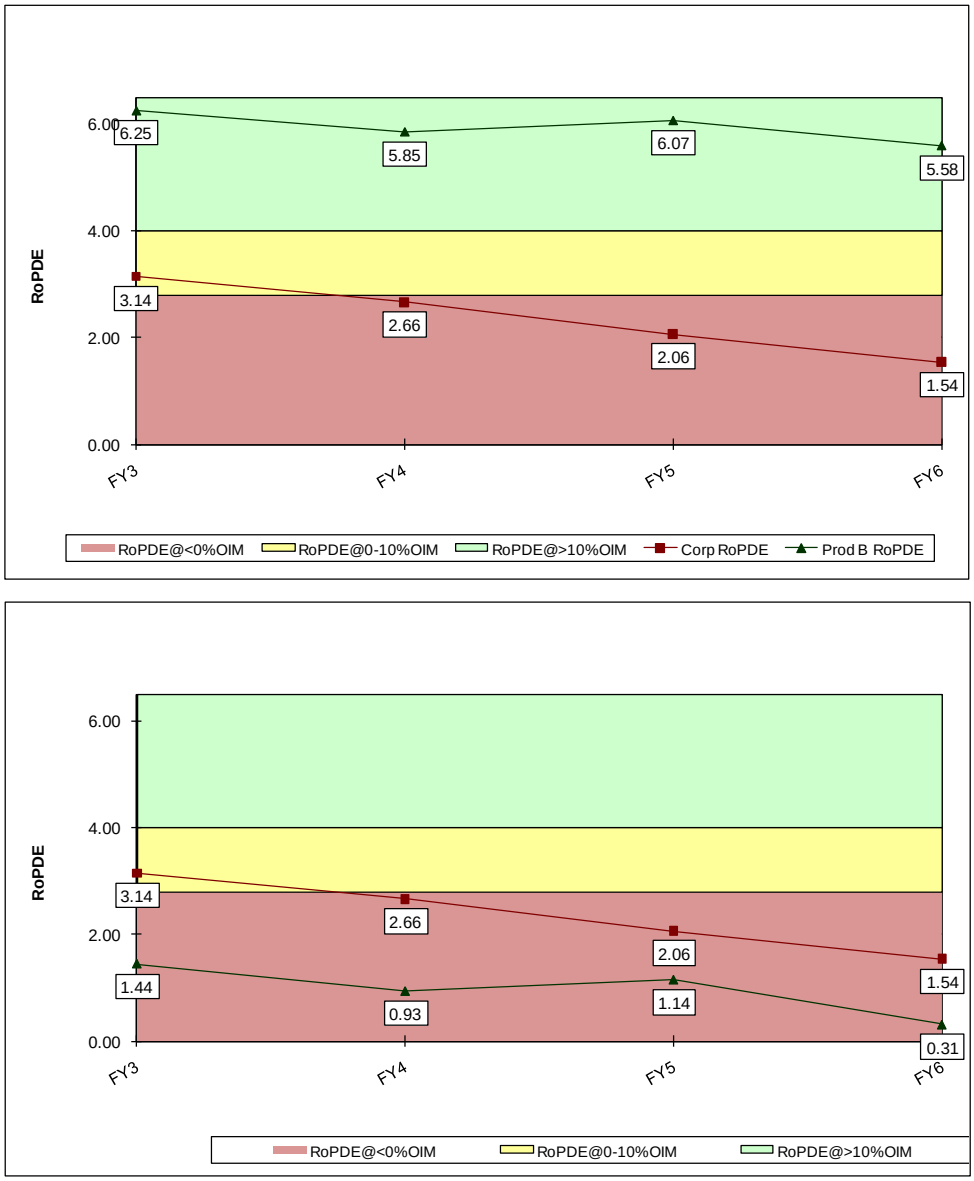
Using RoPDE to Monitor the Innovation Process

In addition to being used as an aggregate measure at an enterprise (Tier 1) or business unit (Tier 2) strategic balanced scorecard, RoPDE can also be used as an operational measure during all stages of the innovation process.

During the development and implementation stages of innovation, RoPDE can be used to monitor the effectiveness of individual products/services/programs as compared to the aggregate (e.g., compared to how the organization's entire portfolio of innovative initiatives is performing) as well as to the acceptable performance threshold based on OIM.

In Figure 2 below, we see Product B consistently outperforming the aggregate (corporation-wide) RoPDE while product C consistently underperforms. In other words, the innovative investments in Product B are more effective than those for Product C. Under this scenario, management has the information to make crucial decision about whether to invest further in Product C or to cancel innovation initiatives that are underway.

Figure 2: RoPDE for two product lines compared to Tier 1 corporate aggregate RoPDE



In the Ideation, Evaluation, and Selection phase of innovation, RoPDE can also be used for evaluating individual innovation opportunities under consideration. Figure 3 shows a planned PDE and the planned sales revenue for a private sector organization. By applying an expected gross margin percentage, the planned RoPDE can be established and charted against the acceptable threshold based on the OIM. As execution of the plan progresses, actual PDE and sales revenue can be compared to the plan, to determine if the RoPDE trajectory will meet the financial performance expected.

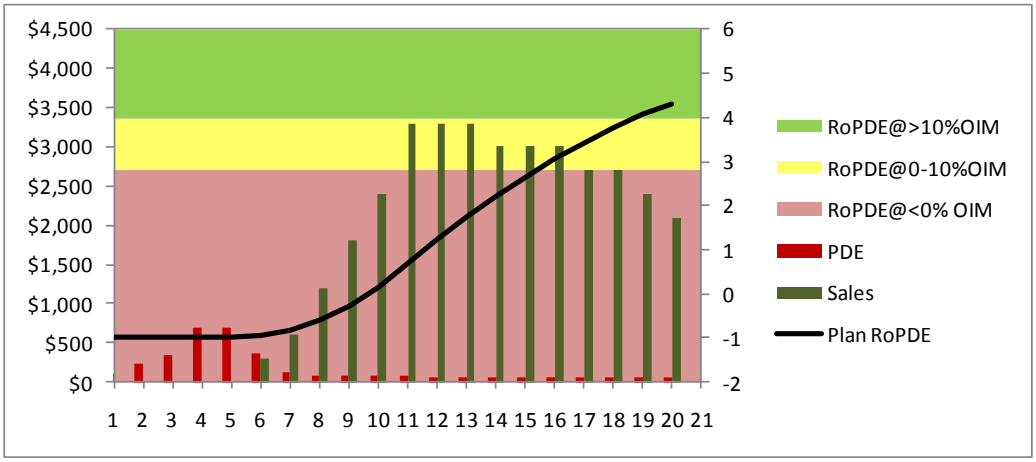


Figure 3: RoPDE for a single project

Conclusion:

The design and implementation of performance measures can be a major challenge to the implementation of strategic management frameworks. The most important step is to define the ***intended results*** for your own organization's innovation-based strategic objective. We have shown here how product/service innovation can be measured by a single roll-up measure. This same approach can be applied to non-profit or government organizations as long as thresholds of performance can be established.

If your intended strategic results for an innovation objective are:

- Increased number of new ideas
- Improved quality of ideas
- More efficient implementation of quality ideas
- Improved resultant success achieved from the implementation of new ideas

then RoPDE may be a powerful measure for you to consider in that it can scale from project to product line / program and cross the operational boundaries into a strategic objective on your balanced scorecard. And it is a simple measure to implement in that **it is created from data used in common accounting practices.**

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