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White Paper

Measuring Innovation Effectiveness

By Jack Alexander

Introduction

Is there a definitive "silver bullet" approach for evaluating innovation initiatives? Our research and analysis suggests not, and shows that there are very few business areas that can be effectively measured by a single performance indicator. In fact, complex organizational areas such as innovation present distinctive challenges to executives as they try to evaluate and measure linkages to business objectives and performance. In practice, the strategic importance and high costs of innovation initiatives require the development of effective measures.

This paper argues that innovation, while difficult to quantify, can indeed be measured. As exemplar companies like Dell and Netflix demonstrate, it is critical to appropriately *direct* efforts with specific business objectives and key value drivers. To explain this directed approach, we will begin by describing how innovation can be aimed at product development, business processes or business models—or at an appropriate combination of these. Next, we will describe how innovation can have a significant impact on key financial measures and shareholder value. In particular, the effective measurement of innovation requires identifying leading indicators of critical business processes and activities that are targets for innovative practices. It is also possible to identify and assess certain conditions that tend to support and encourage innovations. Finally, in addition to measuring performance, it is essential for executives to provide tools for *improving* performance.

Types of Innovation Programs

Innovation initiatives are often grouped into three broad categories: product, business model and process. Product innovation is generally focused on increasing the speed at which creative new products are introduced to the market—think of Apple's stream of new iPods and iPhones. Business model innovation involves developing a new approach to delivering products and services that create significant competitive advantages in cost, customer service or other important drivers. Examples include Southwest's "low-cost no-frills" model in air travel and Netflix's mail-delivery model of movie rentals.

Process innovation includes efforts to improve the quality and effectiveness of key business processes such as customer fulfillment or supply chain management. Wal-Mart, for example, is notable as an innovator in supply chain, inventory and vendor management. Other organizations, such as General

Electric, create innovative *management* processes around organization and management development; still others, like Netflix, innovate processes such as business intelligence/analytics.

Some initiatives cut across two of these categories, and there is often a fine line between process and business model innovation. In addition, efforts to improve the new product development process reflect both process and product innovation. These distinctions can indeed be subtle, but the key point is that innovation is much broader than simply "new products" and can be directed to any business activity.

Will Our Innovation Efforts "Move the Needle"?

Before developing effective performance measures that can help "move the needle," we first need to determine which dial we have in mind. What exactly are we trying to accomplish *through* innovation? Common objectives include growth in sales, improvement in profitability and improvements in processes or product development effectiveness. Ultimately, most executives hope to accelerate progress on key strategic objectives, financial measures and shareholder value.

The overall objective of commercial enterprises is to create value for the company's shareholders. Of course, we all recognize that you can't create long-term shareholder value without meeting customers' needs and expectations—and that cannot be accomplished without a capable and committed workforce.

Most consultants and academics and most independent rankings of innovation focus on two or three measures of overall performance to evaluate effectiveness. These measures, such as total return to shareholders (TRS), revenue or profit growth, are good starting points but they are by no means perfect measures of innovation. Their principal deficiencies are that they are lagging indicators; historical measures don't help companies see where they are going. Moreover, each of these measures is impacted by multiple factors besides innovation; TRS, for instance, is also subject to stock market variations and errors in valuation. During the dotcom bubble, hundreds of companies created billions of dollars of *unsustainable* shareholder value due to unrealistic expectations and departure from sane valuation fundamentals.

Developing an effective set of measures necessitates the identification of leading indicators that emphasize the direct contribution from innovation. This process -- development of a "dashboard for innovation" – can be facilitated by identifying key measures and activities that cascade from the objective of creating shareholder value.

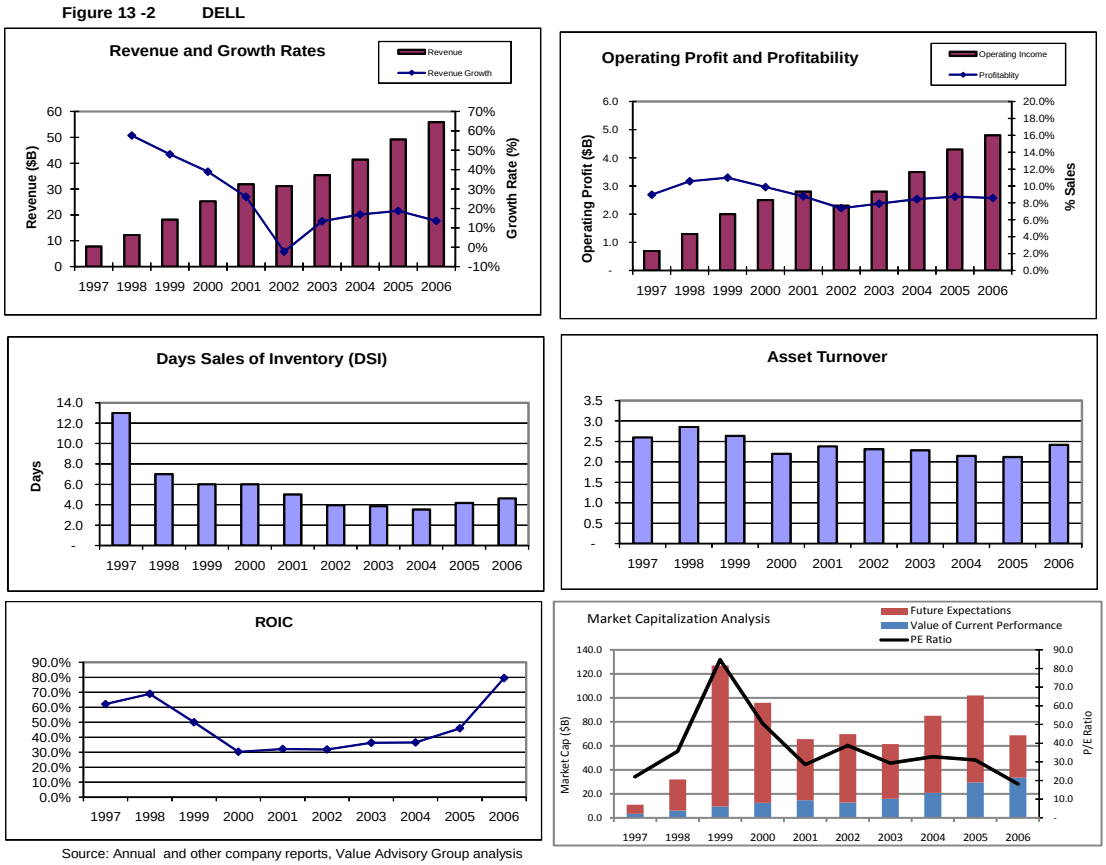
Performance and Value Creation in Innovative Organizations. How have innovative companies performed on overall financial and value creation measures? Consider the dashboard of key financial and value indicators for Dell, which includes the following measures (See Figure 1):

- Revenue growth
- Operating margins

- Return on invested capital
- Asset turnover
- Growth in market value

Even though Dell has fallen on challenging times recently, its 10-year performance trend is an extraordinary example of the power of business model innovation combined with breakthrough processes in customer fulfillment and supply chain management.

Figure 1: Dell's Dashboard of Key Indicators



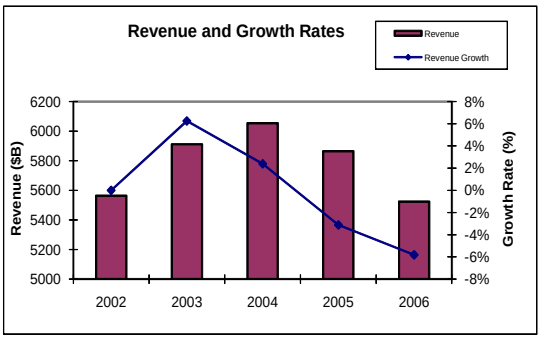
Source: Annual and other company reports, Value Advisory Group analysis

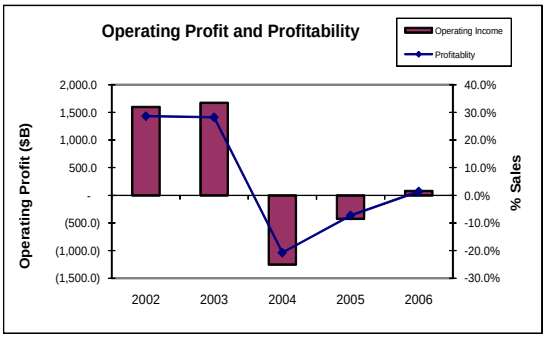
Dell's revenue grew to more than $50 billion and the company delivered consistent profitability over the 10-year period. This profitability, when combined with high asset utilization (including single-digit days of inventory) resulted in one of the highest levels of return on invested capital (ROIC) across industries. Over this period, Dell's investors were highly rewarded, despite what happened in the aftermath of the dotcom bubble.

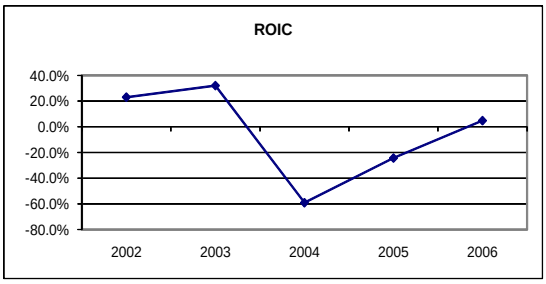
The power of innovation to drive differentiation within an industry is noteworthy as well. Look at the contrasts between the performance of the business model innovator Netflix (NFLX) and its traditional competitor Blockbuster (BBI) (See Figure 2). Netflix's innovative business model for DVD rental resulted in very rapid sales growth – at Blockbuster's expense. The Netflix business model also produced strong operating margins, even during high growth periods, while Blockbuster's profits plummeted. Blockbuster's market capitalization and price-to-earnings (PE) multiple cratered as a result, whereas Netflix created substantial value.

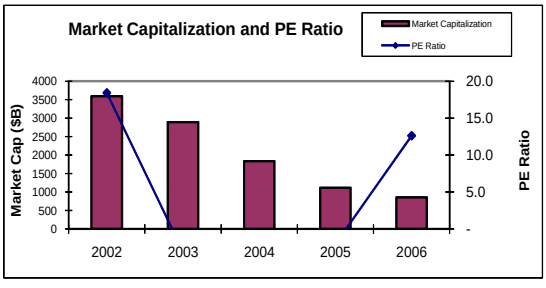
Figure 2: Contrasting Performance at Netflix and Blockbuster

Blockbuster

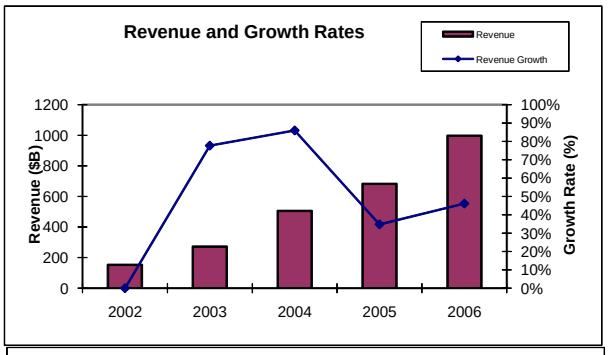


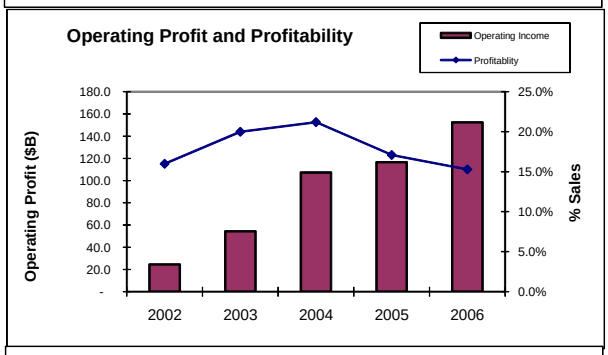


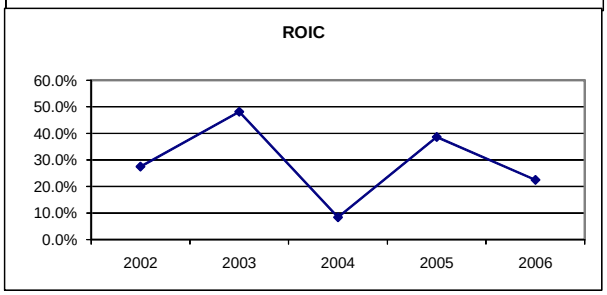


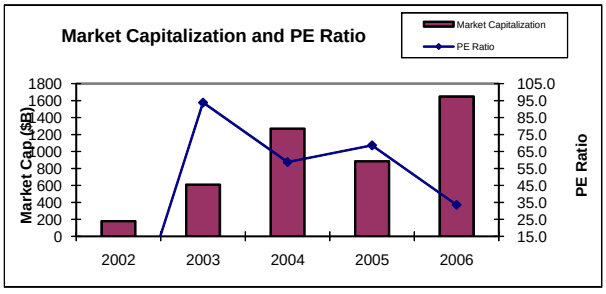


Netflix







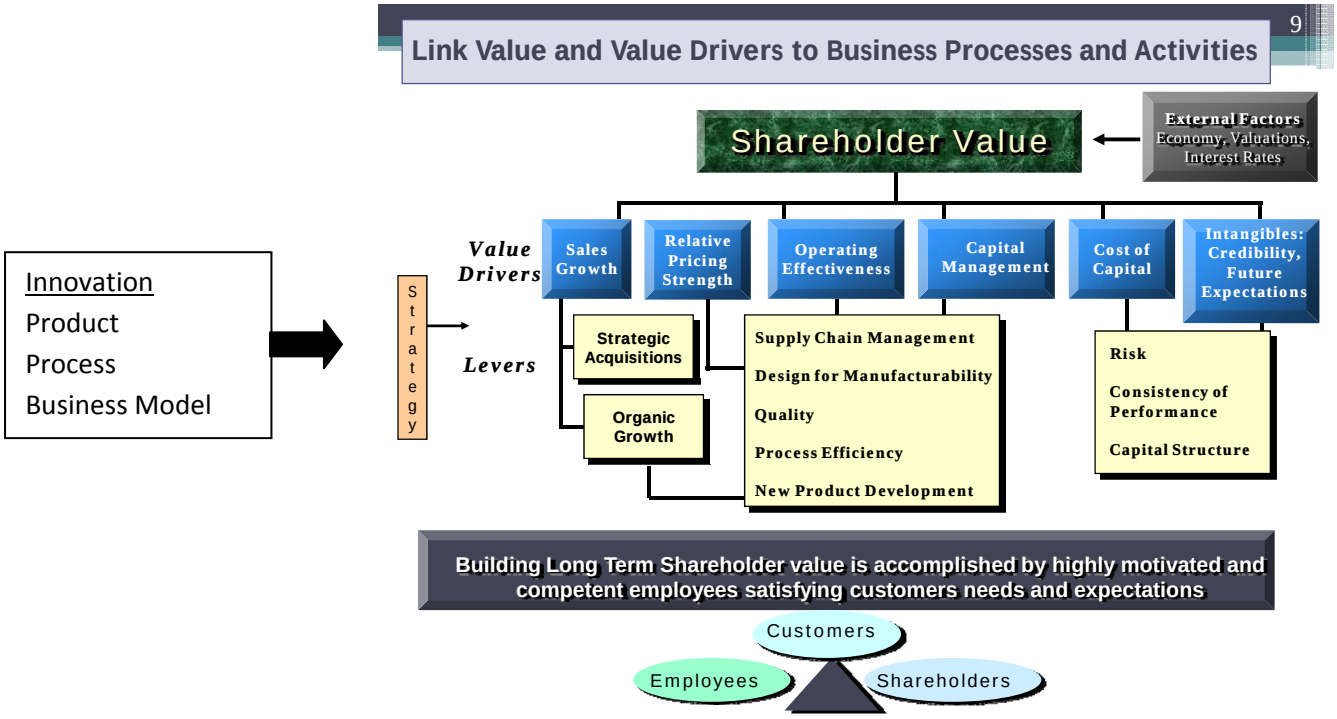


Source: Annual and other company reports, Value Advisory Group analysis

Connecting the Dots: Innovation, Financial Performance and Value. Given that a publicly traded company's ultimate objective is to create long-term sustainable value for its shareholders, it is important to identify, evaluate and direct innovation efforts toward key value drivers. (See Figure 3.)

Shareholder value will of course be impacted by an array of external factors, ranging from the general economy to geopolitical events. The value drivers that can be affected by innovation include sales growth, pricing strength, operating and capital effectiveness, as well as the cost of capital and intangibles such as future expectations.

Figure 3.Using Business Processes to Drive Shareholder Value

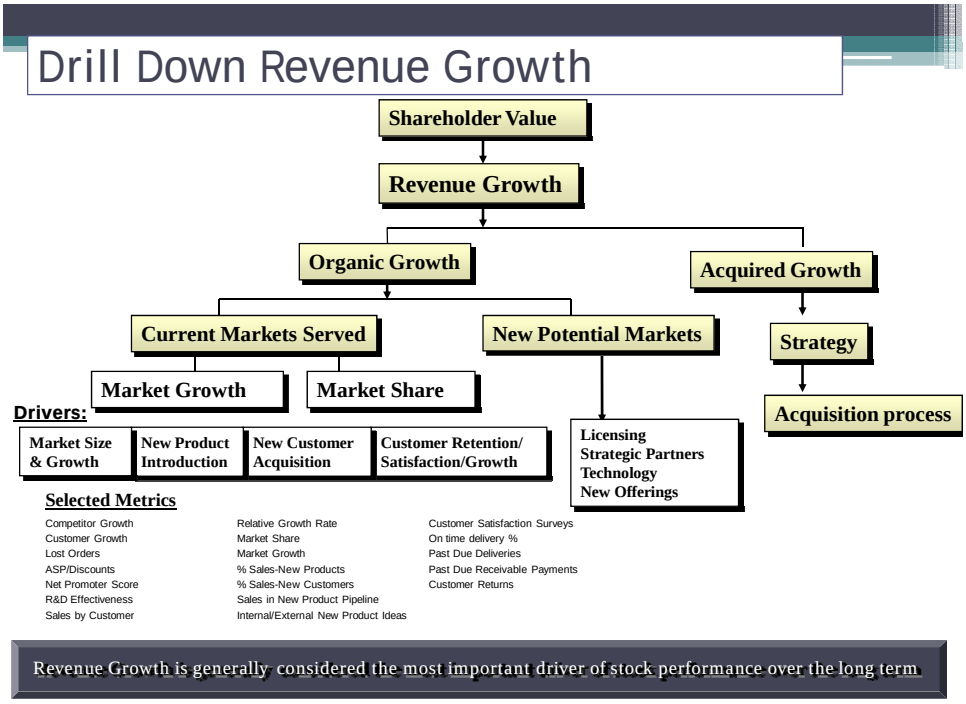


These value drivers will vary in relative importance from company to company and over time. Acquiring customers and sales growth may be the most important drivers for an enterprise in the early stages, while operating effectiveness may be more important for a company in a mature, highly competitive life-cycle stage. Technology companies, for example, will typically focus on marketing, sales and development activities to capture market share and build sales. Over time, sales growth will slow due to market and competitive factors and the company will be required to improve performance in other areas to build additional value. The potential impact on value of each of these drivers can be estimated to determine its relative significance using a robust valuation tool such as discounted cash flow.

Under each of these value drivers, we can identify the critical business process (or processes) that impacts that particular driver. We can also consider opportunities to innovate process, product or business model and estimate the impact of each on key value drivers. We can then identify performance measures that are reflective of the effectiveness of each process.

To examine this analytical framework in more detail, let us look at how it affects revenue growth, for instance. (See Figure 4.) For this purpose, we will focus on the four key drivers of organic growth: Market size and growth; new product introduction; new customer acquisition; and customer satisfaction/retention.

Figure 4: A Closer Look at the Factors that Drive Revenue Growth



Again, the importance of each of these drivers at this level will vary over time and from company to company. Organizations should select measures that address an improvement opportunity or a specific strategic objective. For example, if new product development is a priority, measures such as revenue from new products, project status and other key metrics can be incorporated into a new product development dashboard. (See Figure 5.) Such a dashboard would be appropriate for Apple but not relevant for Wal-Mart's process focus or Netflix's focus on business model innovation. If we were to create the revenue growth drill-down chart for Netflix, it would most likely focus on customer acquisition, retention, activity, and related measures.

Figure 5: Dashboard for New Product Development

Source: Performance Dashboards and Analysis for Value Creation

Note that this new product development dashboard is "balanced:" In addition to containing vital information on new product status and development performance, it also presents information on the quality of the design process (ECNs from new products) and design for manufacturability (inventory levels).

Assessing and Measuring Innovation Performance. Innovation should be directed to the key value drivers that offer the biggest opportunities for improvement. The first level should include the two keys to creating long-term shareholder value: revenue growth and ROIC. The next level should focus on leading measures of factors that drive growth and ROIC for a particular company. The specifics will vary depending on whether the organization is innovating through new product, business model or process. (See Figure 6.)

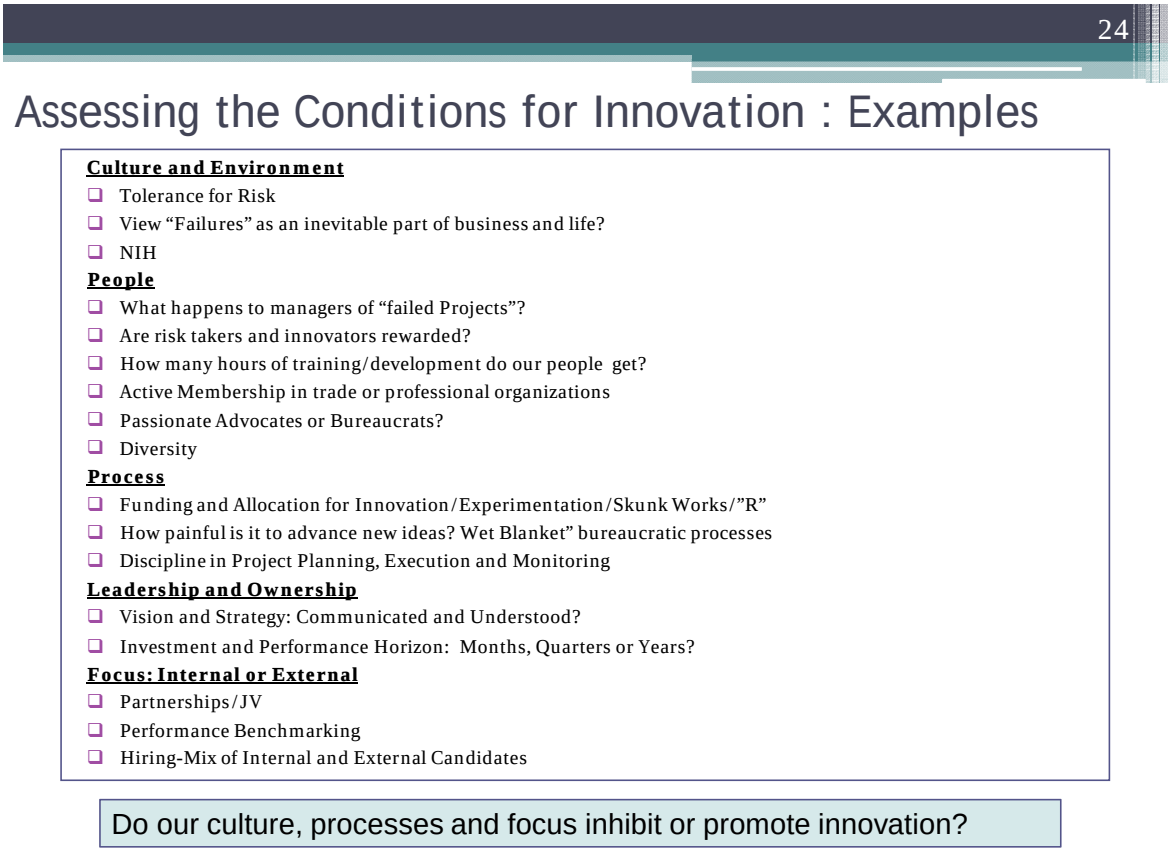
Figure 6: Key Innovation Measures

Overall	New Product	Business Model	Process
Revenue Growth-Organic	Relative Growth Index	Value Added per Employee	Asset Turnover
Total Return to Shareholders	Annual Revenue in Development Pipeline	Operating Leverage %	Customer Satisfaction (Warranty, OTD)
Profitability	Project Completion vs. Plan (Milestones and Cost)	ROIC (Asset Turnover x Profitability)	Cycle Time
Return on Invested Capital	% Sales from New Products	Customer Life Cycle Cost	Production Yields

Additional measures which provide insight into innovation effectiveness by specific value driver are included in the appendix. Managers should select measures from the list that best represent key business priorities and issues.

It can also be helpful to assess the *conditions* for innovation. Do the culture, management systems and practices of the company encourage or inhibit innovation? (See Figure 7.)

Figure 7: Assessing Typical Conditions for Innovation



Essential Ingredients for Effective Business Performance Management (BPM)

When establishing performance measures, one of the key considerations is to ensure that we focus on the goal of *improving* performance, not simply *measuring* it. Tools such as training, process improvement and technology are essential to drive performance improvements. We also need to broaden our thinking of performance management beyond measures and dashboards to include a set of tools that can help managers achieve the goals of improving performance and growing value. The focus should be on leading and predictive indicators that assist managers in running the business (versus explaining what just happened to the business).

In addition to key measures and dashboards, we can assess the conditions for innovation, utilize benchmarking and process evaluation tools and project planning execution and tracking techniques.

Some specific guidelines for selecting measures and building performance dashboards include:

- Link to objectives, financial performance and value creation
- Ensure measures are objective, balanced and well-defined
- Anticipate unintended consequences
- Provide high-impact visuals

Babson Benchmark Study: Innovation Effectiveness

Value Advisory Group, LLC is conducting a benchmark study to evaluate innovation effectiveness and identify best practices and measures. If you would like to participate in the study, please contact Jack Alexander.

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Appendix

Selected Measures that Provide Insight into Innovation Performance by Value Driver

Overall	Sales Growth	Relative Pricing Strength	Operating Effectiveness
•Sales Growth •ROIC •ROE •Profitability •ROE-Dupont Analysis •Total Return to Shareholders	•Competitor Growth •Relative Growth Rate •Customer Growth • Market Growth •Market Share •Customer Satisfaction Surveys •Customer returns •On time delivery % •Lost orders •Past Due Deliveries •Past Due Receivable Payments •ASP/Discounts • % Sales-New Products •% Sales-New Customers •R&D Effectiveness • Sales in New Product Pipeline •Sales by Customer •Quality	•Competitor Growth • Market Share •Lost Orders • Product Performance •ASP/Discounts •Value Added per Employee	•Operating Leverage •Break-even •Vendor Performance •HR Costs per Employee •Revenue Linearity •Actual v. Target Development Costs •Project Completion % •Production Yields •Production Cycle Time •Number of Parts •Number of Vendors •Cost of Quality •ECN's •Budget Cycle •Quality •Product Returns

Capital Effectiveness	Cost of Capital	Intangibles	People and Organization
•Asset Turnover •Cash Conversion Cycle •Days Sales Receivables and Inventory •Quality •Past Due Collections •Past Due Customer Orders	•Beta (Risk) •Volatility •Operating Leverage •Financial Leverage •Forecasting Accuracy •Capital Structure (Debt/Equity)	•Actual v. Plan Acquisition Performance •Acquired Sales and Synergies •Integration Effectiveness •Human Resource Retention •Write-offs and Impairments	• Employee Turnover •Training Hours per Employee •Employee Satisfaction •Performance Assessment