



Public Comment Submission to DoC Advisory Committee on Measuring Innovation in the 21st Century Economy

Measuring Innovation

Identification of firm-specific data items that can enable comparisons and aggregation

May 11, 2007
Washington, DC

Summary information requested by the advisory committee...

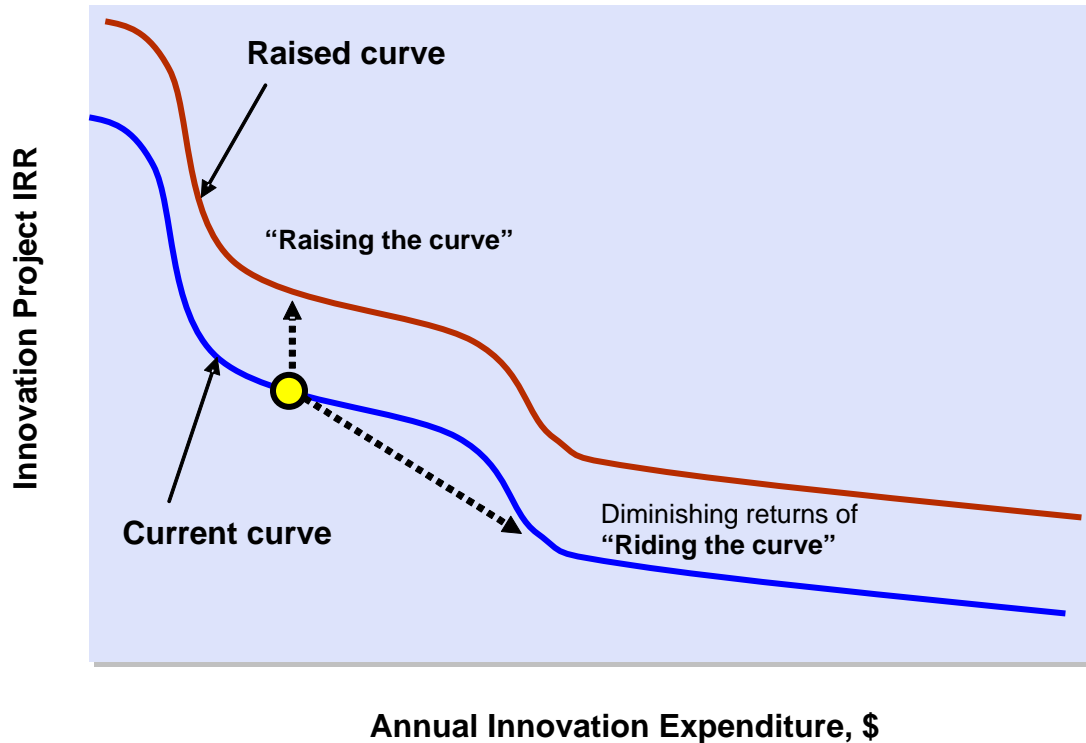
Description

- ▶ Description of the proposed metrics
 - *Return on Innovation investment (ROI2)*
 - *Freshness Index*
- ▶ To which Committee category does the proposal apply
 - *Category 3: Identification of firm-specific data items that could enable comparisons*
- ▶ Rationale for the proposed change
 - *Empirical data suggests these metrics are best suited to compare/contrast growth prospects of commercial firms*
- ▶ Data description, sources and method of collection
 - *IRR and annual investment for individual projects in a firms project portfolio*
- ▶ Approximate cost and burden estimate
 - *This data is already collected & available at most firms, though may not in the manner we prescribe*

Impact

- ▶ How proposal improves measurement of innovation as defined by the Advisory Committee
 - *In particular addresses the following elements: "...design, invention, development and/or implementation of new or altered products, services, processes, systems...for purpose of creating new value for customers and financial returns for the firm."*
- ▶ Which particular elements of innovation measurement that are improved
 - *See above*
- ▶ How the proposal addresses the issues and questions raised by the Committee
 - *See above*
- ▶ How the proposed measures provides signals of changes in business behavior that could inform policy debates
 - *Changes in ROI2 and/or Freshness Index by sector leaders/laggards could be used as leading indicators for a sector*
 - *Aggregation of ROI2 and/or the Freshness Index*

The innovation effectiveness curve is a critical data set for understanding a company's innovation performance

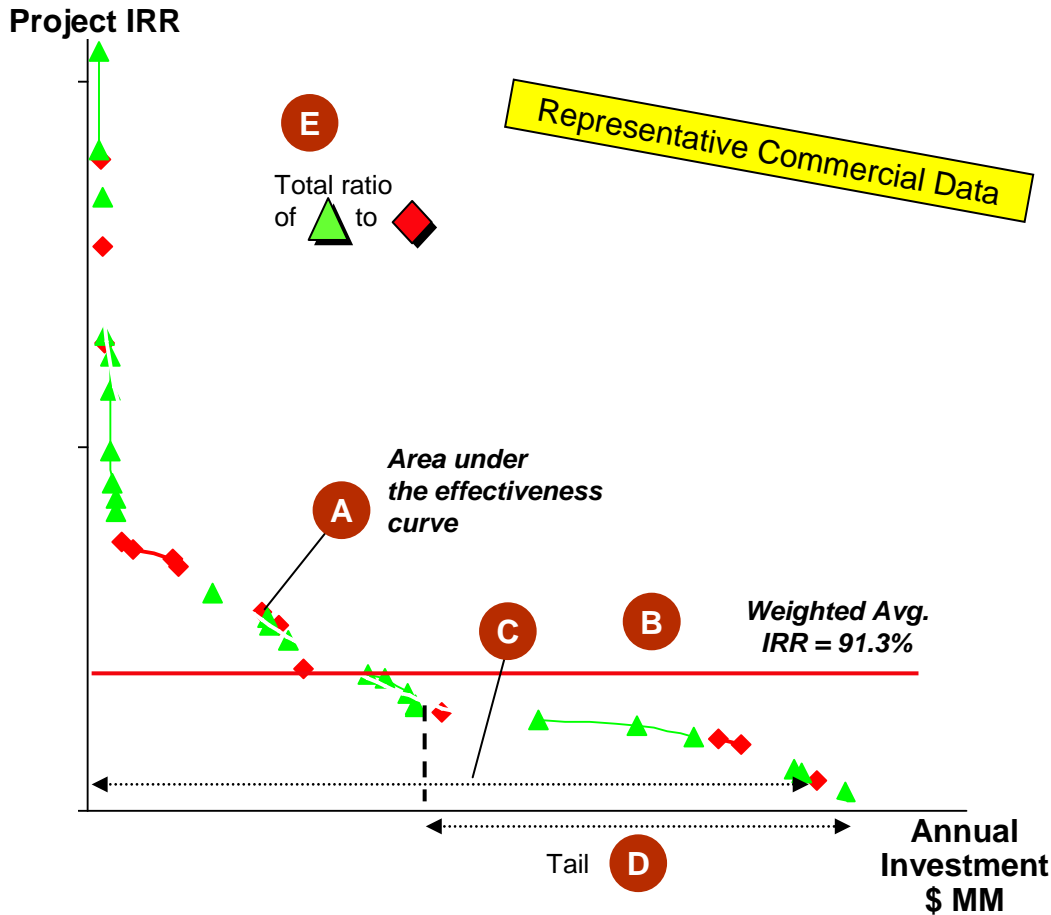




- ▶ The innovation effectiveness curve is an intrinsic economic characteristic of a firm's innovation portfolio
- ▶ The innovation effectiveness curve can be drawn by plotting the IRR for each innovation project against annual project expenditure
- ▶ The larger area under the curve, the greater the firm's ROI2s
- ▶ Improving returns on base and incremental innovation investments results in **raising** the innovation effectiveness curve and accelerating growth
- ▶ Incremental innovation investments result in **riding** the curve with limited performance improvements

This data is internally available in most companies, though it may not be presented/used in the manner we prescribe

The innovation effectiveness curve reveals a wealth of innovation related insights

Innovation Effectiveness Curve



 Growth—Projects targeting incremental revenue growth
 Brand Maintenance—Projects focused on maintaining current products

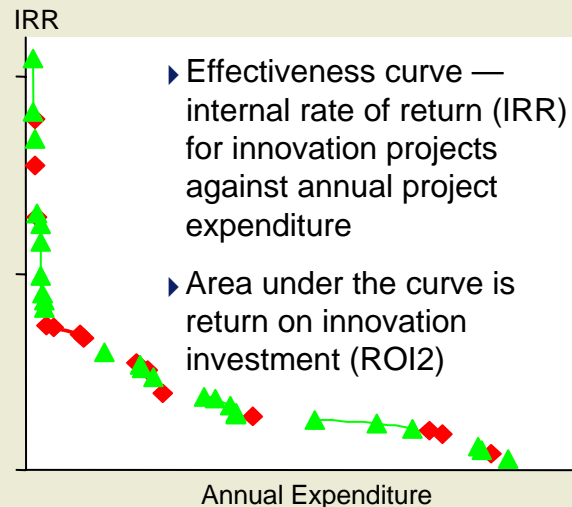
Key Indicators	
A Return on Innovation Investment (ROI2)	▶ Area under the innovation effectiveness curve, \$
B Weighted Average IRR	▶ Weighted average IRR, %
C Total Innovation Investments	▶ Annual innovation expenditure, \$
D Length of the Tail	▶ Portion of innovation investments with low returns (\$ and %)
E Ratio of Growth to Brand Maintenance	▶ Is there a balance in project portfolio?
F Average Size of a Novel Project	▶ Are the novel projects truly breakthrough?

The single most important innovation metric derived from this data is the Return on Innovation Investment (ROI2)

Metric

Return On
Innovation
Investment—ROI2

Definition

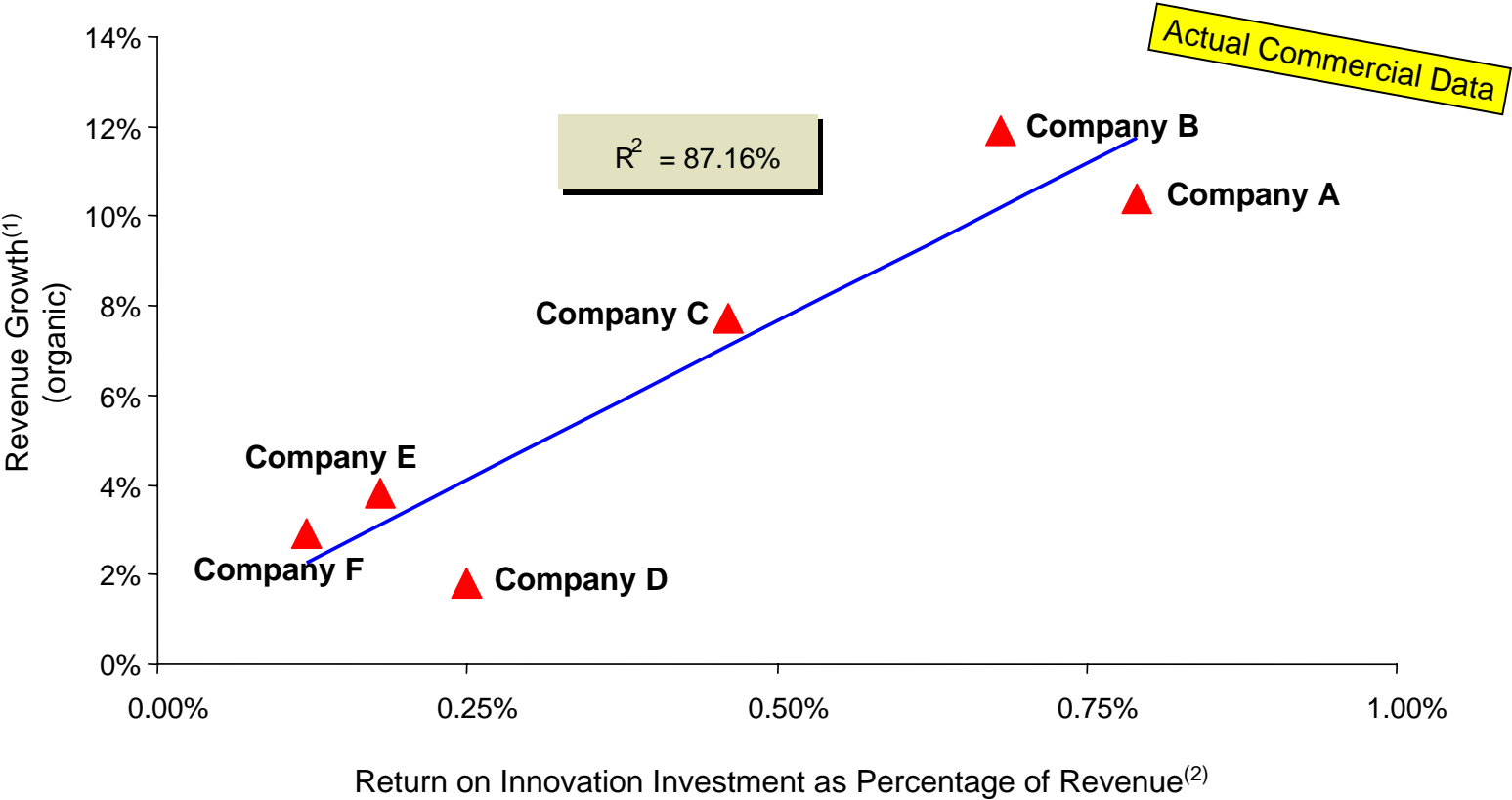


Rationale

- ▶ We will show that this is the best measure of a company's growth potential
- ▶ The measure is **forward looking**—predicts a firm's growth based on *current* innovation portfolio
- ▶ It is a **comprehensive** measure—considers all aspects (e.g., investment/expected revenue/operating margins) of the portfolio

We have shown in previous studies that ROI2 highly correlates with firms' growth performance


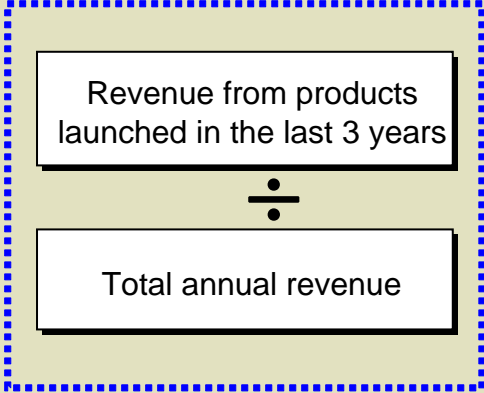
ROI2 Versus Revenue Growth



Source: Booz Allen Innovation Benchmarking Survey 2006

Note: Only 10%-15% of corporate R&D spending is for research (not development); research dollars are often not reported which can have a material impact on ROI calculations

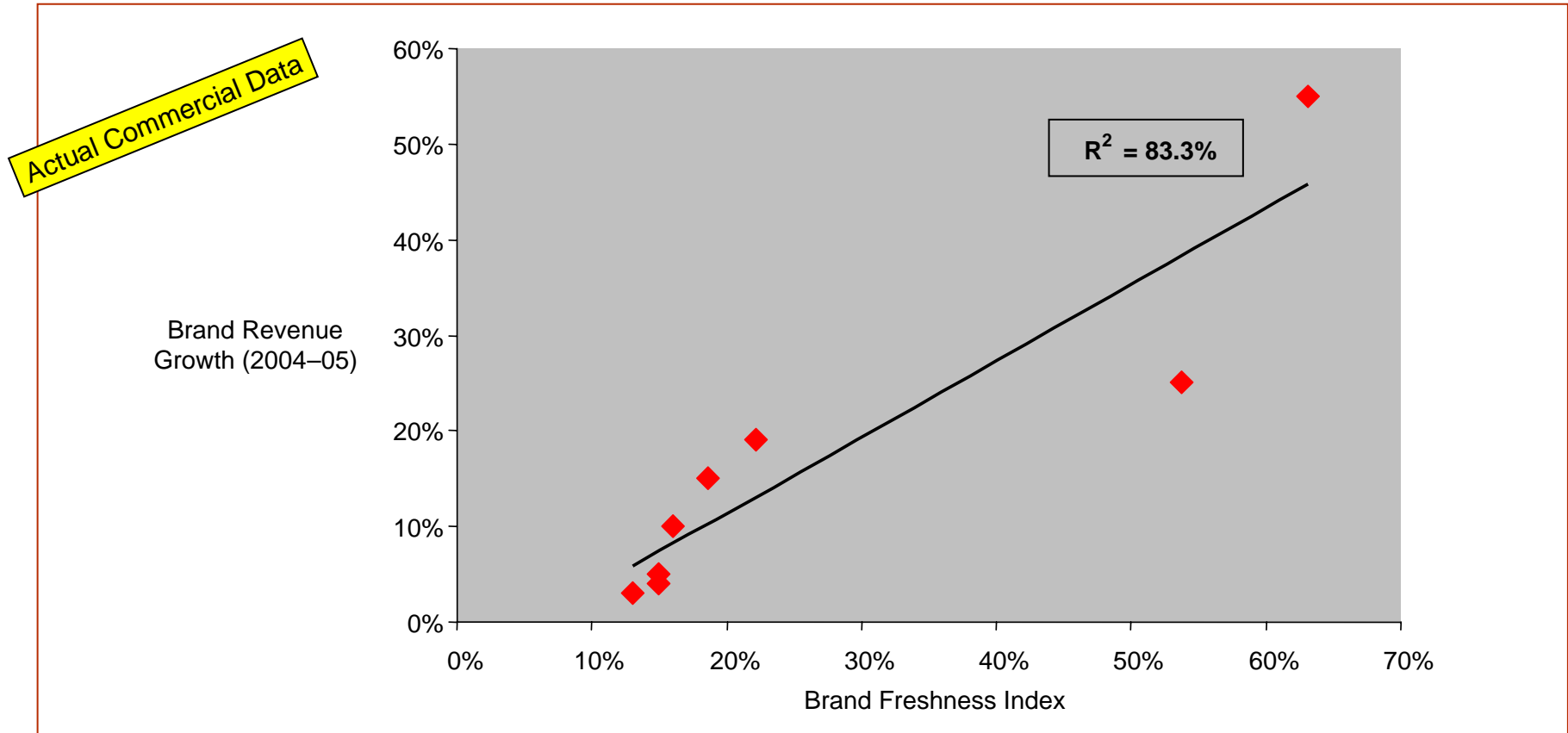
A second complimentary innovation performance metric worth interrogating is the Freshness Index

Metric	Definition	Rationale
	 $\frac{\text{Revenue from products launched in the last 3 years}}{\text{Total annual revenue}}$	<ul style="list-style-type: none">▶ It is a good measure of the firm's performance because it correlates well with profitability and growth▶ However, it is based on past launches and is not a forward-looking metric▶ It loses relevance if a firm changes growth strategy, resulting in changes in the new product portfolio

This metric is already familiar to most firms; It is also more readily 'aggregate-able' across sectors

The Freshness Index also correlates well with growth

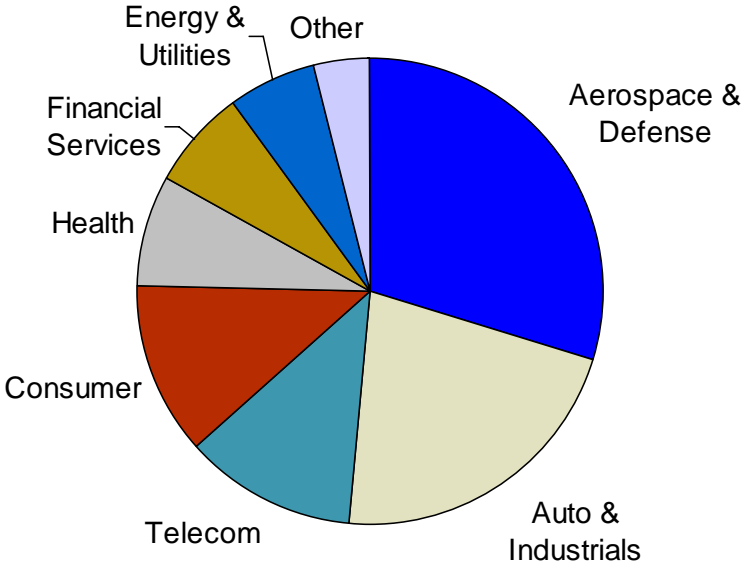
Growth Versus Freshness Index —
For Brands with Freshness Index > 10%



Booz Allen Hamilton is honored to share with the US DoC some perspectives we've gained on measuring of innovation...

Our insight is gained through ~500 commercial innovation-related engagements we've completed over the past 5 years...

Distribution of Booz Allen Innovation Commercial Engagements by Industry



...as well as the extensive research we've done on the topic of Innovation

Example Booz Allen Innovation Publications (2006)



Mastering the Innovation Challenge Reader



Joint Booz Allen/NASSCOM Globalization of Engineering study



Joint Booz Allen/INSEAD Global R&D Networks Study



Booz Allen Global Innovation 1000

...and we look forward to further discussing the challenging topic of measuring innovation in the 21st century



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