**The Problem / Motivation**

"Programs should be based on metrics. Much long range planning is based on conclusions and assumptions rather than facts [and not] centered on all customer issues.” — Technical Program Manager

**THE PROBLEM**

One product, more than one customer, many unique metrics

- **What’s common:** the product.
- **What’s unique:** the customers. Not all customers record the same product metrics for a number of reasons: unique customer values and strategic objectives, customer-specific measurement capability, varying product knowledge, restrictions and regulations, operating environment, leadership involvement, etc.
- **What’s the outcome:** each customer produces a number of unique, value-varied product metrics. This variation, as well its ambiguity in assessing overall product performance, can lead to the program manager and product community potentially using wrong assumptions and potentially making wrong decisions relative to product performance.

**THE MOTIVATION**

Find a more efficient, and perhaps more effective, way to monitor overall product performance by all customers without sacrificing customer value.

**Research Questions**

- How can the concept of commonality be applied towards metrics?
- How efficient and effective is commonalizing metrics in assessing performance?
- How do metrics change over an operating life cycle?

**The Research Concept**

This research integrates three topics of interest:

- **Metric**: A metric is something quantifiable that is used to help drive a decision (Blackburn, 2009)

**Commonalization**

- **Commonality**: The reuse of assets that were specifically developed to meet the needs of other products (Boas, 2008)

**Life Cycle**

- **To maximize the value of a product, while containing its impact on cost to manufacturer, the user and the society to a minimum** (Prasad, 2000)

Commonalizing metrics, and understanding metric value across the operating life cycle, allows the enterprise stakeholders to:

- **Do the right job** … by tracking the product or service performance measures that stakeholders value, and basing the right decisions off of them

- **Do the job right** … by using an optimal number of common metrics at the right phase in the operating life cycle for all customers

(Drucker, 1963)

**Methodology**

- **Literature Review**
- **Case Study**
  - Initial customer interviews
  - Artifact review
  - Product expert interviews
  - 2nd round of customer interviews

**Conclusions**

Sept. 2008

**Expected Contributions**

- Benefits of commonalizing metrics across an operating life cycle
- A framework to choose an optimal set of metrics for a given product or service
- Proposition of metric value change over an operating life cycle
- Concept generalizability outside of a product or service deliverable

**The Case Study**

- **BACKGROUND**
  - Technical product
  - Operating for decades
  - Continued operation for decades
  - Many customers with hundreds of the same product
  - Domestic and international
  - Product used in different environments
  - Currently thousands of same product operating all over the world
  - Lack of a common metric set across all customers to assess overall performance

- **PRELIMINARY CONCLUSIONS**
  - Metric commonality can exist across all customers
  - Proposed >90% reduction in current metric set to assess performance
  - Most optimal metrics should be recorded throughout life cycle
  - Benefits: common metrics → common data sets → less ambiguity in analysis → easier identification of “problem areas” → quicker, and more accurate, fixes to improve performance and lower product maintenance costs
  - Understand the customer’s most attractive adoption attributes necessary for adoption of new business model

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