Metrics for Metrics

Cost Analysis and Justifications

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What We’re Talking About

• Metrics
  – Measures and metrics
  – Processes and products
  – Improvement initiatives

• Economics of Metrics
  – Where the $ are
  – ROI
Software Models

- Abstract representation
- Product / Process
- Attributes
- Examples
Setting Up Metrics²

- Know why metrics are needed
  - Relate to the model
  - Do the right things
  - Effective activities
- Apply the Pareto principle
- Only measure what you must
  (Use what you’ve got)
- Automate
Data Mining

• Use values you already have
• Metrics from diverse data sets or warehouses
• Tools to pull data together centrally
  – cross system boundaries*
  – overcome data structure differences*
  – facilitate views into aggregated data*
• Evaluate for patterns, trends, improvements

* Zinnote® from Positive Support Review, Inc. is an example
IT Metrics Tool Kit

• Metric’s inventory
• Data Capture/Integration/Display tools
  – Use what you have first
  – Data already is captured electronically
  – Locate and use (No added cost)
• Acceptable models
• Reporting system
Psychology of Metrics

• Results based
• Clear objectives
• Process and product focus
• Focus on the numbers
• Avoid misuse
• Hawthorne effect
What Goes Wrong?

- IT metrics are “seat of the pants”
- Relevant metrics are not well defined
- Measurements are not consistent
- Measurements are not accurate
- Management is cost focused
- Little trust between IT and its customers
  - High dissatisfaction with IT
  - Negative perception of the value of IT
  - Fear of measures and metrics
  - Adversaries
Potential Problems

• IT metrics information shift costs
• Investments counter to “Rightsizing”
• Process change is cultural change
• Always up-front costs in changes
• Metrics only “tell a story”
  (They don’t write the book)
Analyzing Metrics Results

- Model effectiveness
- Telling the desired stories
- Cost effective measures
- Data accuracy
- Data consistency
Refining Metrics

• Less expensive way to measure
• Tell the right stories
  – Valid model
  – Appropriate values
  – New areas to pursue
  – Something left to gain
• Consistency of values
• Accuracy of values
IT Economics

• Traditional Focus
  – Doing things right
  – Costs
  – Efficiency

• Potential Problems
  – Best “Slide Rule”
  – Metrics (QA) is overhead
  – Cut costs into oblivion
Economics of Metrics

• Separate costs from returns
  – Different timeframes
  – Different functions

• Keep in mind
  – A metric is only information
    (Information is power)
  – People must act to effect changes
  – TANSTAFLL
Relating $ to Metrics

• Metrics direct $
  – Collecting
  – Reporting

• Metrics indirect $
  – Reducing rework
  – Change planning

• Metrics related $
  – Goodwill
  – Sales advantage
Metrics and the IT Budget

- Costs Increased
  - Planning
  - Measures
  - Tools
  - Analysis
  - Changes

- Costs Reduced
  - Improved productivity
  - Superfluous activities
  - Rework
  - Errors
  - Support
ROI For Metrics

Value of Information

Cost of Acquisition
Value of Information

• Direct
  – Net cost reduction
  – Net efficiency improvement
  – Net cost shifting

• Indirect
  – Quality improvement
  – Faster time to market
  – Risk reduction
Cost of Acquisition

- Incremental collection cost
- Computation and manipulation
- Interpretation of results
- Confidence (“fuzz factor”)

Short Term Justification

Perceived Value to User

\[
\frac{\text{Cost of 1}^{\text{st}} - \text{Order Estimate}}{1}
\]
Keys for Success

• Understand the purpose of metrics
• Focus on results
• Objective measures
• Knowledge acceptance and transfer
• Clear, relevant metrics
• Minimize added infrastructure
Conclusions

• Measures necessary for knowing success
• Metrics\(^2\) justify knowledge
• KISS: Keep It Simple, Silly
• Solutions differ with situation