

Beyond the Cost of Quality to Cost Effectiveness

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Basic Question

- 0011
- You have \$1 to spend
 - You have three possible solutions, or
 - You have three opportunities
 - Each solution or opportunity costs \$1 each
 - Each solution or opportunity has value

How do you decide where
to spend your dollar?

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Presentation Outcome

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Participants will have the basics to consider cost effectiveness analysis in their organizations and questions to consider in analyses of their quality initiatives.

This presentation meets the needs of experienced Six Sigma practitioners working in established Six Sigma programs who are looking for ways to take a next step up for their program

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Learning Outcomes

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- Compare and contrast Cost Benefit/Cost of Quality (doing things right) Analysis with Cost Effectiveness Analysis (doing the right things)
- Consider viewpoint a CFO would use to allocate scarce resources (biggest bang for the buck)
- Consider and discuss a short list of issues to focus a cost effectiveness analysis for attendees' specific organizations
- Solicit input from attendees on specific ways effectiveness analysis might be applied in their organizations.

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Lean Verses Six Sigma

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- Lean addresses flow issues
- Six Sigma addresses variation issues
- Approach and tools depend on fundamental strategic focus

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Cost Benefit verses Cost Effectiveness Evaluations

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- Cost effectiveness and benefits frequently use the same cost measures
- Cost Benefit – outcomes expressed in monetary terms
- Cost Effectiveness – outcomes expressed in more substantive terms
- Cost effectiveness usually measures two similar outcomes
- Cost effectiveness can be used to measure competing initiatives...although more complicated

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Cost Effectiveness Defined

- 001 • Effectiveness is expressed in terms of the costs to achieve a given result
- Can be expressed in terms of cost per unit, person, or single product or service
- Able to assess relationship of monetary inputs to expenditures
- Useful for comparing various solutions to same outcome
- Compare various strengths of interventions to different levels of outcomes
- Or can be used to compare value of various desired outcomes

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Types of Waste (Hidden Factory)

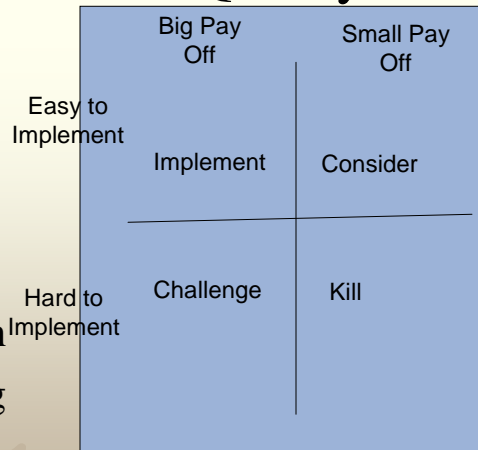
- 0011 • Correction: repair or rework
- Motion: People moving
- Overproduction: making more than needed
- Conveyance: moving goods or parts
- Inventory: Maintaining raw materials
- Processing: more work than needed
- Waiting: idle people
- * Seven wastes are not always independent

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Tim Wood – Cost of Quality

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- Transportation
- Inventory
- Motion
- Waiting
- Over production
- Over Processing
- Defects



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CEO's Measures of Business Performance

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- **Increase**
 - Market share
 - Productivity
 - Customer satisfaction
 - Margin/Opns Profit
 - Service quality
 - Business growth
 - Product reliability
- **Decrease**
 - Defects and scrap
 - Time to market
 - Order to cash cycle time
 - Delivery time
 - Inventory levels

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CFO's Cost Measures

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- Revenue
- Earnings per share
- Profit/earnings ratio
- Return on assets
- Return on net assets
- Economic value added

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CFO's Effectiveness Measures

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- Cash flow – daily operations
- Outflow for capital expenditures
- Financing and interest costs
- Freeing assets for other uses
- Cash and capital spending avoidance
- Reduction of cash tied into inventory
- Decreased spending on capital

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First Dictum

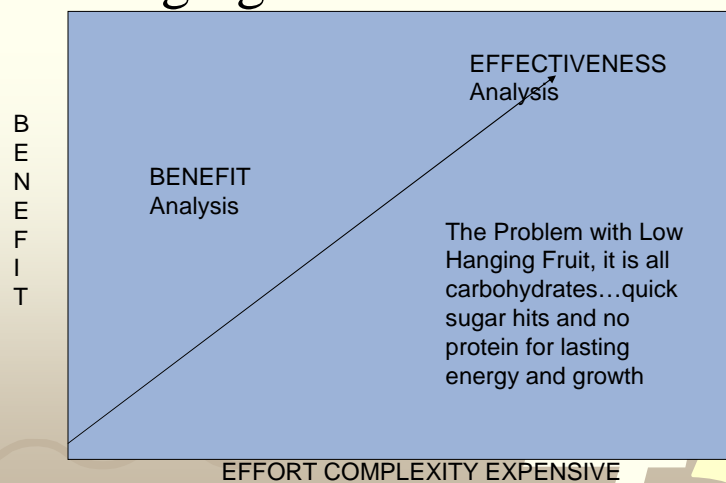
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- There is no right way to compute cost effectiveness
- There is however, one way that works for your organization
- Tied to organizational strategic objectives
- And computed on leaders' bonus and team rewards

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Low Hanging Fruit

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Total Cycle Time Considerations

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Which is smarter...working on value added nor non-value-added cycle time issues?

Typical Value-add of total cycle time is 5 to 15 percent.

A 50% improvement in value-add is small.

A 50% improvement in non-value add...reduction in time and cost...can be huge.

Value Stream Mapping classic tool to see value verse non-value added time and cost.

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Marketing Channels Analysis

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| Channel | Avg Issue reach | Times Per year | annual contacts | Contact to Attene | Attendanc e impact | cost per issue | Attend ane | Pay back |
|------------------------------------|-----------------|----------------|-----------------|-------------------|--------------------|----------------|------------|----------|
| Section website | 300 | 10.0 | 3,000 | 10 | 300 | \$ 2.00 | \$4 | 2.00 |
| KCQAA group | 35 | 5.0 | 175 | 100 | 2 | \$ 2.00 | \$4 | 2.00 |
| Member e mails | 400 | 15.0 | 6,000 | 20 | 300 | \$ 5.00 | \$4 | 0.80 |
| Major local businesses QA contacts | 25 | 10.0 | 250 | 10 | 25 | \$ 5.00 | \$4 | 0.80 |
| KCTV 5 website | 2000 | 10.0 | 20,000 | 10000 | 2 | \$ 5.00 | \$4 | 0.80 |
| FOX 4 website | 2000 | 10.0 | 20,000 | 10000 | 2 | \$ 5.00 | \$4 | 0.80 |
| Newsletter | 600 | 9.0 | 5,400 | 20 | 270 | \$ 7.00 | \$4 | 0.57 |
| JCCC classes | 20 | 6.0 | 120 | 50 | 2 | \$ 15.00 | \$4 | 0.27 |
| cold call local firms | 35 | 6.0 | 210 | 100 | 2 | \$ 15.00 | \$4 | 0.27 |
| JEC website | 200 | 12.0 | 2,400 | 50 | 48 | \$ 41.67 | \$4 | 0.10 |
| ASQ section mtgs- regional | 15 | 3.0 | 45 | 100 | 0 | \$ 100.00 | \$4 | 0.04 |
| St Louis Conference | 200 | 1.0 | 200 | 100 | 2 | \$ 100.00 | \$4 | 0.04 |
| CoC meetings- local | 12 | 4.0 | 48 | 100 | 0 | \$ 125.00 | \$4 | 0.03 |
| KC Small Business journal | 2500 | 5.0 | 12,500 | 2000 | 6 | \$ 200.00 | \$4 | 0.02 |
| KC Business journal | 10000 | 10.0 | 100,000 | 1000 | 100 | \$ 500.00 | \$4 | 0.01 |
| JEC directory | 2000 | 1.0 | 2,000 | 100 | 20 | \$ 500.00 | \$4 | 0.01 |
| Excellence in Missouri | 500 | 2.0 | 1,000 | 100 | 10 | \$ 750.00 | \$4 | 0.01 |
| Kansas Excellence Award | 500 | 2.0 | 1,000 | 100 | 10 | \$ 750.00 | \$4 | 0.01 |
| Star business section | 10000 | 2.0 | 20,000 | 1000 | 20 | \$2,500.00 | \$4 | 0.00 |

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Additional Considerations Defined

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- Shadow Prices – real costs in the market
- Opportunity Costs – resources are usually limited
- Secondary Effects – unintended either positive or negative
- Distributional Considerations – gains must consider potential losses
- Discounting – money is less valuable over time

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Primary Costs – Ingredients

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- What are the ingredients to consider?
- How to find reasonable costs of ingredients?
- Standardized “costs” for personnel, facilities, et.al.

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Controversy Over CE Analysis

- Unfamiliarity with analytical and technical procedures... by both quality and financial professionals
- Reluctance to impose financial outcomes on intangible and quality of life organizational issues
- Unwillingness to change established processes or procedures
- Correlation verses causality

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Case Against CE Analysis

- Impractical
- Requires technical analysis
- Political considerations
- Requires selective costs and outcomes
- Difficult to comprehend
- Depends on untested assumptions
- Difficult to gain requisite data
- No single “right” way or kind of analysis
- Should not be the sole determinant

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Cost Utility Analysis

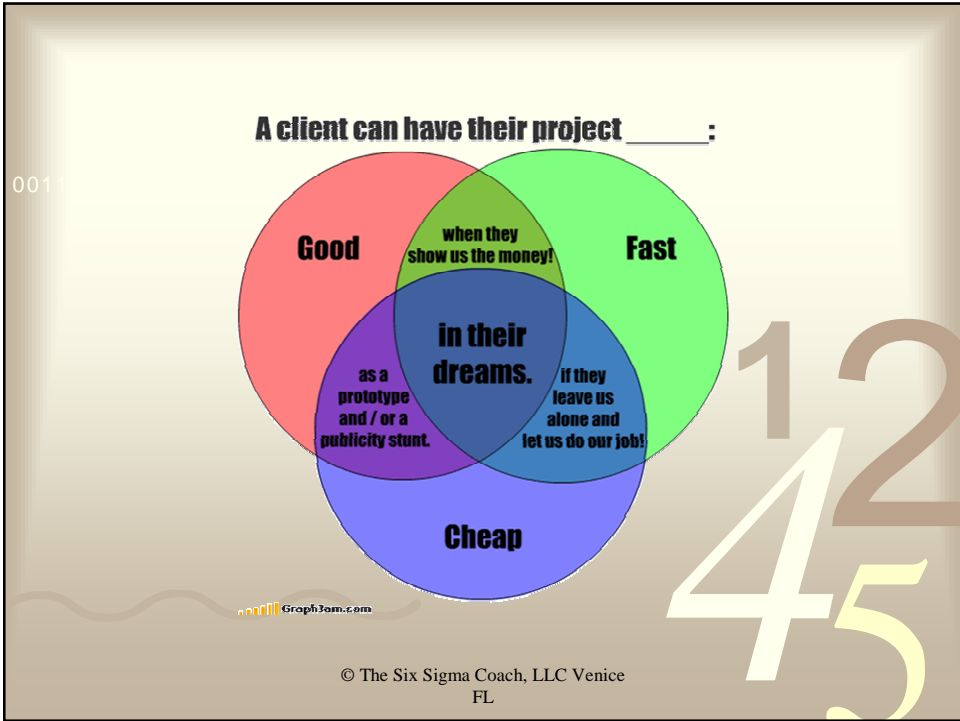
- Take multiple measures of effectiveness
- Consider various stakeholder needs
- Weigh effectiveness against different stakeholders
- Arrive at a single unit of utility, or
- Compromise across stakeholders, or
- Compromise across gains and losses

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References

- Lean Six Sigma, The Financial Impact, ASQ QMD Meisel, Robert M, Babb, Steven J, Marsh, Steve F, and Schlichting, James P.
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"The journey of a thousand miles begins beneath one's feet. Even the longest journey must begin where you stand."

Lao-tzu, The Way of Lao-tzu
Chinese philosopher (604 BC - 531 BC)

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