Back to Basics in Management

Accounting: Resource Consumption Accounting

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Executive Director,
Resource Consumption Accounting Institute
Enterprise Optimization: RCA

- Foundational Management Accounting Concepts
- RCA Overview
- The Road Forward
What is Enterprise Optimization?

• To Maximize Revenue or Mission Outcomes
• To Minimize Cost or Redeploy Financial Resources

Decisions On the Use of:
• Existing Resources and Capabilities; or
• Incremental Changes
What is Management Accounting’s Contribution to Enterprise Optimization?

• Decision Support, Planning and Control Over the Value Creating Operations of the Firm

By doing what?

• Modeling… the Organization’s Operations & Costs
What Causes Costs?

Resources (also creates any revenues!)

- Inputs
  - Labor
  - Machines
  - Material
  - IT Resources

- Resource Pool
  - Support or Production

- Output
  - Resource Quantities and Activities/Processes

- Another Resource Pool (s) Or Final Product/Service
What Are the Primary Characteristics of Resources?

• Capability
  – Quality or Qualitative Characteristics

• Cost
  – Cost Structure
  – Cost Behavior

• Capacity
  – Quantity They Provide
How Do We Define Capacity?

- Productive
- Non-Productive
- Idle/Excess

More Questions:

- Who is Responsible for Idle & Excess Capacity?
- What can Allocations of Idle & Excess Capacity Do to Costs?
Cost Concepts

Operational
- Fixed
- Variable

Decision Support
- Avoidable
- Unavoidable

"Relevant Range"

Which Cost Concept Must Form the Basis for Cost Modeling?
What Types of Decisions Are Needed for Enterprise Optimization?

Too Many, Too Diverse, Too Situational
Impossible to Categorize
What Constitutes an Effective Model of Operations & Costs?

**Key Principles:**
- Causality
- Responsiveness
- Work or Process Visibility

Bridging the Gap between Operational & Decision Support Costing requires **Resource Divisibility.**

**Resource Divisibility & accurate Cause and Effect modeling is the key to effective Decision Support Information!**
**Principle of Causality**

- Cause and Effect Relationships Exist and Must Be Accurately Modeled – For Managerial Decisions and Transparency Inside the organization.
  - At Each Step in the Value Chain
  - From Resource Pool to Resource Pool to Final Product or Service
  - Idle Capacity must be Isolated at Each Resource Pool

- How Close Can You Get to Full Cost and Maintain the Principle of Causality

**Attributable Cost**
The Essential Cost Concept for Decision Support
Principle of Responsiveness

Traditional: Total Cost to Total Volume

Value Chain Modeling of Resource Pools
What is Responsiveness?

- Consumption Behavior must Respond to Causal Relationships
  - Fixed Responsiveness
  - Proportional Responsiveness

- Integrity of Resource Quantities and their associated Costs must be maintained
  - Requires Careful design of Resource Pools
  - Each Resource Pool must provide Discrete, Homogeneous Resource/Capability

- Clear Insights into Organizational, Product Line, Batch, & Unit level Cost Behaviors is Always Available in the Data

Provides Resource Use & Cost Divisibility Insights
### Traditional Income Statement vs. Multiple Margin P&L

<table>
<thead>
<tr>
<th>Traditional Income Statement</th>
<th>Multiple Margin P&amp;L</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Revenue</td>
<td>+ Revenue</td>
</tr>
<tr>
<td>- Cost of Goods Sold</td>
<td>- Product Proportional Cost</td>
</tr>
<tr>
<td>= Gross Margin</td>
<td>= Contribution Margin</td>
</tr>
<tr>
<td>- G&amp;A</td>
<td>- Product Fixed Cost</td>
</tr>
<tr>
<td>- Depreciation</td>
<td>= Product Gross Margin</td>
</tr>
<tr>
<td>- Interest</td>
<td>- Non-Product Proportional Costs</td>
</tr>
<tr>
<td>= Net Income before Tax</td>
<td>= Margin 3</td>
</tr>
<tr>
<td>- Taxes</td>
<td>- Non-Product Fixed Cost</td>
</tr>
<tr>
<td>= Net Income</td>
<td>= Margin 4</td>
</tr>
<tr>
<td></td>
<td>- Excess/Idle Capacity Costs</td>
</tr>
<tr>
<td></td>
<td>= Margin 5</td>
</tr>
</tbody>
</table>
Principle of Work
Insights into Process Effectiveness

Without the Work Principle:

Resource Pool A
Planned Output: 1,000 Hrs
Actual Output: 1,100 Hrs

Product 123
Inputs:
Pool A 1,100 Hrs

Using the Work Principle:

Resource Pool A
Planned Output: 1,000 Hrs
Actual Output: 1,100 Hrs

Setups
Setups (Qty 10) 300 Hrs
Run Machine
Run Machine 800 Hrs
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4 Stages of Cost Management & Performance Measurement Systems*

• Stage 1 - Inadequate for Financial reporting
• Stage 2 - Financial-reporting Driven
• Stage 3 – Stand-alone
• Stage 4 - Integrated Cost Management, Financial Reporting and Performance Measurement

What is Resource Consumption Accounting?

• RCA Inherits Core Principles from German Cost Management (GPK)
  – GPK is a Well Developed Standard Costing System
  – Principles Applied in Practice since the Late 1940’s
  – Principles Implemented by 3,000+ Companies

• RCA Integrates
  – Activity-based Costing and Throughput Concepts

• RCA Creates an Integrated Economic Model of Operations for Decision Making
  – Enterprise Optimization
  – Principle Based
  – Highlights Resource Divisibility
RCA: The Fundamental Difference
Operational Integration

- Breaking the “Tapestry Syndrome”
- Stop Trying to Get Management Accounting Information from the Financial Accounting General Ledger

Traditional Practice

Value Chain Integration

- Quantity Flows
- Value Flows
What is Resource Consumption Accounting?

Pillar 1: Focus on Resources & their Consumption
- Understand your Resources & Their Consumption… Understand Cost
- Provides a Framework for Capacity Management

Pillar 2: Quantity Structure for Resource Consumption
- Operational Quantities Drive Costs
- Model the Operation & Use of Resources….then Apply Cost
- Enables Resource Capacity Management
- Demonstrates Causality of Value Chain Relationships

Pillar 3: Recognizing the Inherent and Changing Nature of Costs
- Resource Pools Start with an Inherent Cost Structure
- As Resources are Consumed, the Nature of their Costs Change
- Costs that are Initially Proportional by Nature can Change from Proportional to Fixed Based on Consumption Patterns
- Value Chain Modeling of Resource Cost Responsiveness
What is Resource Consumption Accounting?

Traditional Standard Costing

Traits:

- Been Around For A Long Time
- Best Understood of Current Methods
- Works Perfectly in Low Diversity & Low Complexity Environments
- Low Causal Relationships in Some Allocations
- Typically A Full Absorption System
- Allocations are Volume Sensitive
- No Resource Interrelationships
- Weak on Cost Behavior & Cost Control
What is Resource Consumption Accounting?

Activity Based Costing

- Traits:
  - Higher Causal Relationships in Allocations & ABM
  - Resource Interrelationships at Activity Level
  - Full Absorption System - Volume Sensitive
  - Limited Capacity Management
  - No Marginal/Incremental Information
  - Weak on Cost Behavior & Control
What is Resource Consumption Accounting?

- Causal Relationships
- Interrelationships at Resource Level
- Not Fully Absorbed
- Handles Volume Fluctuations
- Strong on Capacity Management
- Manage Model Complexity
- Strong on Cost Behavior & Control
RCA Storyboard

S: Ancillary Production Equipment
RP: Dryer (Hours) Capacity: 100 Output Qty: 100
RP: Chiller (Hours) Capacity: 50,000 Output Qty: 50,000
RP: Plant Maintenance (Maint. Labor) Capacity: 30,000 Output Qty: 30,000

S: Plant Engineering and Maintenance

S: Administration Human Resources & Accounting
RP: Admin Labor (Labor hours) Capacity: 17,000 Output Qty: 17,000

S: Quality Assurance
RP: QA Labor (Labor hours) Capacity: 14,000 Output Qty: 14,000

P: Extrusion Line
RP: Extrusion Labor (Labor hours) Capacity: 32,000 Output Qty: 30,000
RP: Extrusion Machine1 (Machine hours) Capacity: 17,520 Output Qty: 10,000

Legend
S-Support
P- Production

Perform HR
Perform Accounting
Perform Admin
QA Testing
Product Returns

Manufacturing Costs
Budgeted Products
Product Support Cost
Common Fixed Costs

Legend
S-Support
P- Production

Department
Resource Pool Abbreviated RP
Activity
### Primary Costs

<table>
<thead>
<tr>
<th>Cost Description</th>
<th>Fixed</th>
<th>Proportional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technician Wages</td>
<td>$</td>
<td>$ 600,000</td>
</tr>
<tr>
<td>Supervisor Salary</td>
<td>$ 80,000</td>
<td>$ -</td>
</tr>
<tr>
<td>General Material</td>
<td>$ 12,000</td>
<td>$ 100,000</td>
</tr>
<tr>
<td>Depreciation: Shop Equipment</td>
<td>$ 50,000</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Total Primary Costs</strong></td>
<td>$ 142,000</td>
<td>$ 700,000</td>
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</table>

### Secondary Costs

<table>
<thead>
<tr>
<th>Resource Pool</th>
<th>Output</th>
<th>Fixed Qty</th>
<th>Prop Qty</th>
<th>Fixed</th>
<th>Proportional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>MW-Hrs</td>
<td>40</td>
<td>160</td>
<td>$ 6,000</td>
<td>$ 24,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity/Process</th>
<th>Driver</th>
<th>Fixed Qty</th>
<th>Prop Qty</th>
<th>Fixed</th>
<th>Proportional</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR: Benefits Adjustments</td>
<td># Adjusts</td>
<td>22</td>
<td>0</td>
<td>$ 1,100</td>
<td>$ -</td>
</tr>
<tr>
<td>Purchase: Gen Materials</td>
<td># PO's</td>
<td>10</td>
<td>200</td>
<td>$ 500</td>
<td>$ 10,000</td>
</tr>
<tr>
<td><strong>Total Resource Pool Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td>$ 149,600</td>
<td>$ 734,000</td>
</tr>
</tbody>
</table>

**Unit Cost Rates (/20,000 Hrs)**

<table>
<thead>
<tr>
<th></th>
<th>Fixed</th>
<th>Proportional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.48</td>
<td>36.70</td>
</tr>
</tbody>
</table>
For Enterprise Optimization RCA Provides:

- Operational View of Organization
- Fixed and Proportional Nature of Cost
  - Costs are Better Understood,
  - Responsibility for Costs is Clearer
- Variance Analysis
- Target Cost Determination
- Multi-level and Multi-dimensional Contribution Margin / Profitability Reporting
- Capacity Utilization Information
- Planning, Forecasting, and Simulation
  - Model is Reversible/Invertible for Calculations
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A Challenging Marketplace

- Multiple Philosophies, Approaches, Techniques: Activity-Based Costing, Lean Accounting, Theory of Constraints, etc.
- Multiple Failed Attempts for Operational Decision Support Information
- Inconsistent Usage of Basic Principles by the Various Options (Avoidable/Unavoidable, Fixed/Variable, etc.)
- NOISE – What To Do for What Purpose?
- Manager Confusion is at an All Time High
A Challenging Marketplace

• Low Level of Knowledge About Management Accounting
  – Compared With Financial Accounting

• Cluttered, Undisciplined Market for Management Accounting Solutions
  – High Failure Rate
  – No Reliable Standards

• Investments in Management Accounting Systems Considered High Risk.
RCA Institute Objectives

• **Improve Management Accounting Knowledge and Practice**
  – Focus on Decision Support for Enterprise Optimization

• **Build A Highly Structured and Disciplined RCA Community**
  – Create Standard Body of Knowledge and Standards of Practice
  – Initial Objective is 150-200 Highly Skilled Practitioners (The Tipping Point)
  – Provide A Professional Structure that Minimizes Risk to RCA Adopters
RCA Support & Quality Assurance

- Institute Membership
  - Corporate & Individual
- Certification
  - Specialist, Practitioner, Master
  - Software Products
- Adopter Exploratory Workshops
  - Customized Workshops applying RCA to an organization
- Implementation Review/Accreditation
  - Support Adopting Organizations & Practitioner Expertise
- Adopter Internal Use Reviews
  - Evaluations of An Organization’s Effectiveness Using and Maintaining RCA
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