Conceptual Framework for Managerial Costing & Resource Consumption Accounting

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Agenda

1. Conceptual Framework for Managerial Costing (Institute of Management Accountants Task Force)

2. Resource Consumption Accounting as a Costing Approach for Federal Entities
Managerial Costing

• SFFAS 4 (Para 61,62, 63)
  • Financial Accounting
  • Budgetary Accounting
  • Management Decisions

• Cost Accounting
  • Tool for Financial Reporting

• Management Accounting
  • Activities of Professional Accountants in Business

• Managerial Costing
  • Tool for Managerial Decision Support
Conceptual Frameworks

• Importance of Conceptual Frameworks
  – Statements of Federal Financial Accounting Concepts (SFFAC’s)
  – FASB/IASB
  – IPSASB

• Guidance for Managerial Costing for internal decision support?
Methods

Roots in Accounting Profession

1920  1935  1980  2008

Std. Costing
MA’s Golden Age
GPK

1920

1935

1980

2008

ABC
TD-ABC
RCA

Roots in Other Disciplines

Production Scheduling
Theory of Constraints
Lean Thinking
Lean Acc

Production Method Centric
Accounting Method Centric
Principle-based
Moving Beyond Methods

• Objective
• Scope
• Qualitative Characteristics
  – Principles
  – Concepts
  – Constraints
• Framework in Operation
• Call to Action
• Appendix: Truth in Managerial Costing
Objective

• The objective of managerial costing is to:
  – Provide a monetary reflection of the utilization of business resources and
  – Provide cause and effect insights into past, present, or future enterprise economic activities.

• Managerial costing aids managers:
  – In their analysis and decision making and
  – Supports optimizing the achievement of an enterprise’s strategic objectives.
Scope

• Provide managers and employees with an accurate, objective cost model of the organization and cost information that reflects the use of the organization’s resources.

• Present decision support information in a flexible mold that caters to the timeline and insights needed for internal decision makers.

• Provide decision makers insight into the marginal/incremental aspects of the alternatives they are considering.

• Model quantitative cause and effect linkages between outputs and the inputs required to produce and deliver final outputs.
Scope

- **Accurately values all operations** (support and production) of an entity (i.e. the supply and consumption of resources) in monetary terms.

- Provides **information that aids in** immediate and future economic decision making for optimization, growth, and/or attainment of enterprise strategic objectives.

- Provides information to **evaluate performance and learn from results**.

- Provides the basis and baseline factors **for exploratory and predictive managerial activities**.
Principles

• **Causality**
  
  – *The relation between a managerial objective’s quantitative output and the input quantities that must be, or must have been, consumed if the output is to be achieved.*

• **Analogy:**
  
  – *The use of causal insights to infer past or future outcomes.*
Principles & Concepts
Modeling Concepts

- Resource
- Managerial Objective
- Cost
- Responsiveness
- Traceability
- Capacity
- Work
- Attributability
- Homogeneity
- Integrated Data Orientation

MODELING VIEW
Resources, Operational Quantities and Costs

CONCEPTS
Causality

INFORMATION
Use View
Managers’ Analogous Activities

CONCEPTS
Analogy

Operational Model Providing Attributable Cost

Baseline Optimization Information
Modeling Concepts

- **Resource**: A definitive component of an enterprise acquired to generate future benefits.

- **Managerial Objective**: A specific result or outcome of the application or provision of resources, which management chooses to monitor for the purpose of enabling one or more managerial activities.

- **Cost**: A monetary measure of (1) consuming a resource or its output to achieve a specific managerial objective, or (2) making a resource or its output available and not using it.

- **Responsiveness**: The correlation between a particular managerial objective’s output quantity and the input quantities required to produce that output.

- **Traceability**: A characteristic of an input unit that permits it to be identified in its entirety with a specific managerial objective on the basis of verifiable transaction records.
Modeling Concepts

- **Capacity**: The potential for a resource to do work.
- **Work**: A measure of the specific nature of units of resource output.
- **Attributability**: The responsiveness of inputs to decisions that change the provision and/or consumption of resources.
- **Homogeneity**: A characteristic of one or more resources or inputs of similar technology or skill that allow for their costs to be governed by the same set of determinants and in an identical manner.
- **Integrated Data Orientation**: Information about an organization's economic resources, events, and their corresponding monetary values free from traditional accounting artifacts (such as that available in a general ledger), which allows for the aggregation of elementary data elements and their values for any purpose.
Information Use Concepts

MODELING VIEW
Resources, Operational Quantities and Costs

CONCEPTS
Causality

INFORMATION USE VIEW
Managers’ Analogous Activities

CONCEPTS
Analogy

Operational Model Providing Attributable Cost

= Baseline Optimization Information

- Avoidability
- Divisibility
- Interdependence
- Interchangeability
Information Use Concepts

- **Avoidability**: A characteristic of an input that allows for the input (and hence its costs) to be eliminated as a result of a decision.

- **Divisibility**: A characteristic of a resource that allows it to be associated in its entirety with the change in a managerial objective’s output resulting from a decision.

- **Interdependence**: A relation between managerial objectives which occur because of a decision to use resources to achieve one objective that affects the amount or quality of resources required to achieve other objectives.

- **Interchangeability**: An attribute of any two or more resources or resource outputs that can be substituted for each other without affecting the costs of the other resources that are required to carry out the activities to which the interchangeable resources are devoted.
Constraints

Cost Modeling Constraints

- **Objectivity**: A characteristic of a cost model that shows it to be free of any biases.
- **Accuracy**: The degree to which MA information reflects the intended concepts modeled.
- **Verifiability**: A characteristic of modeling information that leads independent reviewers to arrive at similar conclusions.
- **Measurability**: A characteristic of a causal relationship enabling it to be quantified with a reasonable amount of effort.

Cost Modeling Constraints

- **Materiality**: A characteristic of cost modeling that would allow for simplification without compromising managers’ decision making needs.

Information Use Constraints

- **Impartiality**: The unbiased consideration of all resource application alternatives.
- **Congruence**: The interdependence of individual managerial actions to attempt to achieve both individual and enterprise objectives in an optimal manner.
Framework Finale

• Framework in Operation
  – Evaluating a Company’s Operations and Strategy for the Purpose of Modeling
  – Model Design & Construction
  – Implementation Factors
  – Managerial and Operational Factors

• Call to Action

• Appendix: Truth in Managerial Costing
  – Pursuit of Truth vs. Relativism
Resource Consumption Accounting
The Primary Challenge

Desired Performance Outcome

Projected New Output

= New Resources to Achieve a Performance Outcome (Marginal Change) + Existing Resource Base & Current Output
Primary Problems

- Lots of relatively fixed costs
- Unclear cause and effect relationships
- Limited capacity information – productive, unproductive, idle/excess
- Tracing money is easier than tracing resources, but provides limited information.
- Priority – Financial Reporting, Budgetary Reporting, Managerial Reporting
Cost & Consumption Concepts

Operational
- Fixed
- Variable

Decision Support
- Opportunity Cost
  - Avoidable
  - Unavoidable

"Relevant Range"

Can be Modeled
- Divisibility of Resource Information

Basis for Action
Traditional CVP Analysis

Change in Total $'s Due to a Change in Total Volume

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Resource Consumption Accounting

- **RCA Inherits Core Principles from German Cost Management (GPK)**
  - Grenzplankostenrechnung (GPK) Translated – Flexible Analytic Cost Planning & Accounting
  - Principles Applied in Practice since the late 1940’s
  - Used by 3,000+ Companies

- **German firms currently using GPK**
  - Deutsche Telekom
  - Daimler AG
  - Porsche AG
  - Deutsche Bank
  - Deutsche Post

- **RCA Focuses on Managerial Decision**
  - Enterprise Optimization
  - Capacity Management
  - Superior Marginal/Incremental Analytics
IFAC Costing Continuum/Levels of Maturity

Descriptive: Expense Tracking, Cost Reporting and Consumption Rates

- Book-keeping
- Process/lean accounting
- Direct cost to outputs
- Add indirect costs
- Individual std costs, project & job costing
- Push activity-based costing (ABC), Product costs
- Level 6 with customer & channel profitability reporting; Cost-to-serve
- Unused capacity costs (estimated)

Predictive: Demand Planning Driven with Capacity Sensitivity

- Pull ABC Resource Planning
- (ABRP); forecast driver quantities
- (TDABC); forecast driver quantities
- X std unit rates; driver-based budgeting
- Attributable costs on all objects, blends activity and direct resource charges, consumes activities back to resources
- Unused capacity costs

Traditional Standard Costing

- Activity Based Costing

Finite systems modeling

12 Simulation

11 R C A

10 Time-driven ABC

9 Pull ABC Resource Planning

8 Unused Capacity Aware

7 Customer Demand Sensitive

6 Explicit Indirect Costs

5 Explicit Outputs

4 Output Visibility

3 Direct cost to outputs

2 Process/Visibility

1 Blind

26 Detailed Marginal Insights

No Marginal Insight

Marginal Insight Awareness

Descriptive: Expense Tracking, Cost Reporting and Consumption Rates

Predictive: Demand Planning Driven with Capacity Sensitivity

1 Blind Book-keeping

2 Process Visibility

3 Direct Cost to Outputs

4 Add Indirect Costs

5 Individual Std Costs, Project & Job Costing

6 Push Activity-Based Costing (ABC), Product Costs

7 Level 6 with Customer & Channel Profitability Reporting; Cost-to-Serve

8 Unused Capacity Costs Estimated

9 Pull ABC Resource Planning

10 Time-Driven ABC

11 R C A

12 Simulation

Finite Systems Modeling

Increased Ability to Isolate Common Fixed Costs
IFAC Costing Continuum/Levels of Maturity

**Descriptive: Expense Tracking, Cost Reporting and Consumption Rates**
- **Book-keeping:** Process/lean accounting
- **2 Process Visibility:** Direct cost to outputs
- **3 Output Visibility:** Add indirect costs
- **4 Add indirect costs:** Individual std costs, project & job costing
- **5 Explicit Costing:** Push activity-based costing (ABC), Product costs
- **6 Explicit Indirect Costs:** Level 6 with customer & channel profitability reporting; Cost-to-serve
- **7 Customer Demand Sensitive:** Unused capacity costs (estimated)
- **8 Unused Capacity Aware:** (ABRP); forecast driver quantities X std unit rates, driver-based budgeting
- **9 Pull ABC Resource Planning:** Increased ability to isolate common fixed costs
- **10 Time-driven ABC:** Increased ability to isolate common fixed costs
- **11 Explicit Resource Planning:** Explicit resource cost object, supply-based denominator, strong & weak forms of causality catered for
- **12 Simulation:** No change

**Predictive: Demand Planning Driven with Capacity Sensitivity**
- **Finite systems modeling**

**Marginal Insight Awareness**
- No Marginal Insight
- Marginal Insight Awareness

**Detailed Marginal Insights**
- No marginal insights
1. Your organization is organized into resource pools.

2. Resource from a pool are consumed with a fixed or proportional relationship to their direct output.

3. Resource pool can produce an output (which consumes resources) or be idle.

4. A resource pool’s output supports other resource pools or managerial objectives.

5. A resource pool’s characteristics transfer to the consuming resource pool and may be changed.

6. Dollars can be attached to the flow of resources.
RCA Approach

1. Understand detailed resource pools and their outputs

2. Model the flow of resources (fixed & proportional) through resource pools to managerial objectives.

3. Apply resource quantities without a causal relationship to outputs to the lowest level of organization that can manage (i.e. eliminate) them.

4. Apply dollars to resources and their flow.
### Quantification

#### Accounting Policy Branch Resource Pool

**Output Measure:** Accounting Policy Labor Hr  
**Output Quantity:** 18,000 Hours

<table>
<thead>
<tr>
<th>Primary Costs:</th>
<th>Fixed</th>
<th>Proportional</th>
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<tbody>
<tr>
<td>Branch Chief</td>
<td>$ 120,000</td>
<td>$ 700,000</td>
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<tr>
<td>Accountants (7 @ $100K)</td>
<td>$ 700,000</td>
<td>$ 700,000</td>
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<tr>
<td>Contractor Hours (4K @$100)</td>
<td>$ 400,000</td>
<td>$ 400,000</td>
</tr>
<tr>
<td>Operating Budget (less contractors)</td>
<td>$ 30,000</td>
<td>$ 30,000</td>
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<tr>
<td>Equipment Replacement Depreciation</td>
<td>$ 10,000</td>
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<tr>
<td><strong>Primary Costs:</strong></td>
<td>$ 200,000</td>
<td>$ 1,130,000</td>
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| Secondary Costs:                                                               |            |              |
| Occupancy & Utilities (2000 SQFT)                                              | $ 100,000  | $ 20,000     |
| IT & Telecom (12 workspaces, 20 services)                                      | $ 36,000   | $ 20,000     |
| Personel Services & Payroll (8 employees)                                      | $ 8,000    |              |
| Procurement (6 Recurring, 10 Large, 30 Small)                                  | $ 6,000    | $ 5,500      |
| **Secondary Costs:**                                                           | $ 150,000  | $ 45,500     |
| **Total Resource Pool Costs:**                                                 | $ 350,000  | $ 1,175,500  |
| **Unit Cost Rates (/18,000 Hrs):**                                              | $ 19.44    | $ 65.31      |
Results

- Deep understanding of resources and multi-level managerial objectives (outputs)
- Resource Capacity - capacity limits and use/consumption
- Illustrates causal operational relationships
- Attributable Cost - Causal cost relationships or clear responsibility to manage.
- Responsiveness – The key to marginal/incremental cost information
Questions?

Thank You

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