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Accountants and
Financial Professionals
in Business

A Conceptual Framework for Managerial Costing

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What is a Conceptual Framework?

The boundaries you want to stay within as you build standards or a model.

What Might a CF tell us?

- Balance Sheet or Income Statement focus
- Which customer's information needs have priority?
- Basis of Accounting – i.e. Accrual, Cash, other

Agenda

- **Introduction –**
 - ▶ **Necessity for a Conceptual Framework for managerial costing**
 - ▶ **What is a CF?**
 - ▶ **What is managerial costing?**
 - ▶ **Action Needed**
 - Objective, Scope, Principles–
 - ▶ Framework Objective
 - ▶ Framework Scope
 - ▶ Framework Principles
 - Concepts and Constraints
 - ▶ Overview
 - ▶ Explanation
 - ▶ Airline Examples to illustrate concepts
-

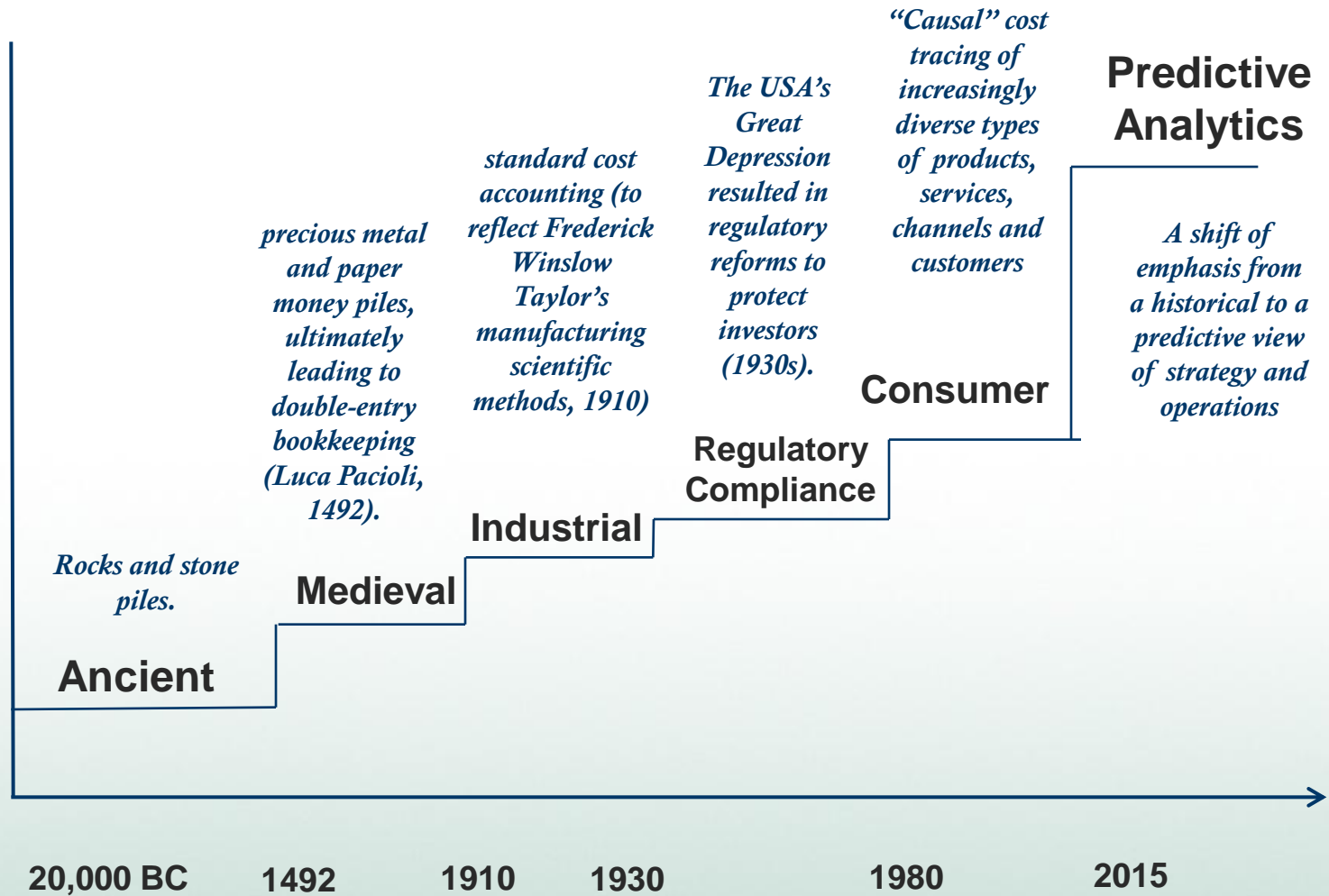
By Dr. Tachai Ono, inventor of the Toyota Production System:

“You have touched on my biggest problem – the thing I have fought against for 40 years. Cost accountants in Japan think just like they do in the Western hemisphere. Exactly. They believe in EOQs; they believe in efficiencies ... and in variances. Somehow my system, ‘Just-in-time,’ is at odds with those things. I manufacture things in very small batches. I don’t keep my workers busy all the time producing product. I don’t always run things on the lowest cost machine. That’s at odds with cost accounting rules ... the people who are killing you in the Western hemisphere are the people who have copied my system. And I am telling you, my system is at odds with cost accounting rules ... I not only kept the cost accountants out of my factories; I tried to keep the knowledge of cost accounting principles out of the minds of my people.”



Six Eras of Managerial Accounting

Stage Of Costing Maturity



Enterprise Financial Management

Tax Accounting

Financial Accounting

Source data capture (transactions)

Managerial Accounting

Non-financial data capture

Cost Measurement

Cost Accounting
External financial Reporting
e.g. GAAP, IFRS

- Costs of goods sold
- Inventory valuation

Performance Evaluation & Analysis

- For example:
- Assessment of current strategy & plans
 - Integrated cost/operational performance measures (e.g. cost variance, capacity measurement, process efficiency etc)
 - Profitability reporting
 - Process analysis
 - Learning & corrective actions

Planning & Decision Support

- For example:
- Fully absorbed and incremental costing
 - Adaptive operation & cost based planning, budgeting & forecasting
 - What-if analysis & planning
 - Product, process, channel, & customer strategic adaptations
 - Enterprise optimization (e.g. make vs. buy, outsource etc)

The Domain of Costing

Historical

Predictive

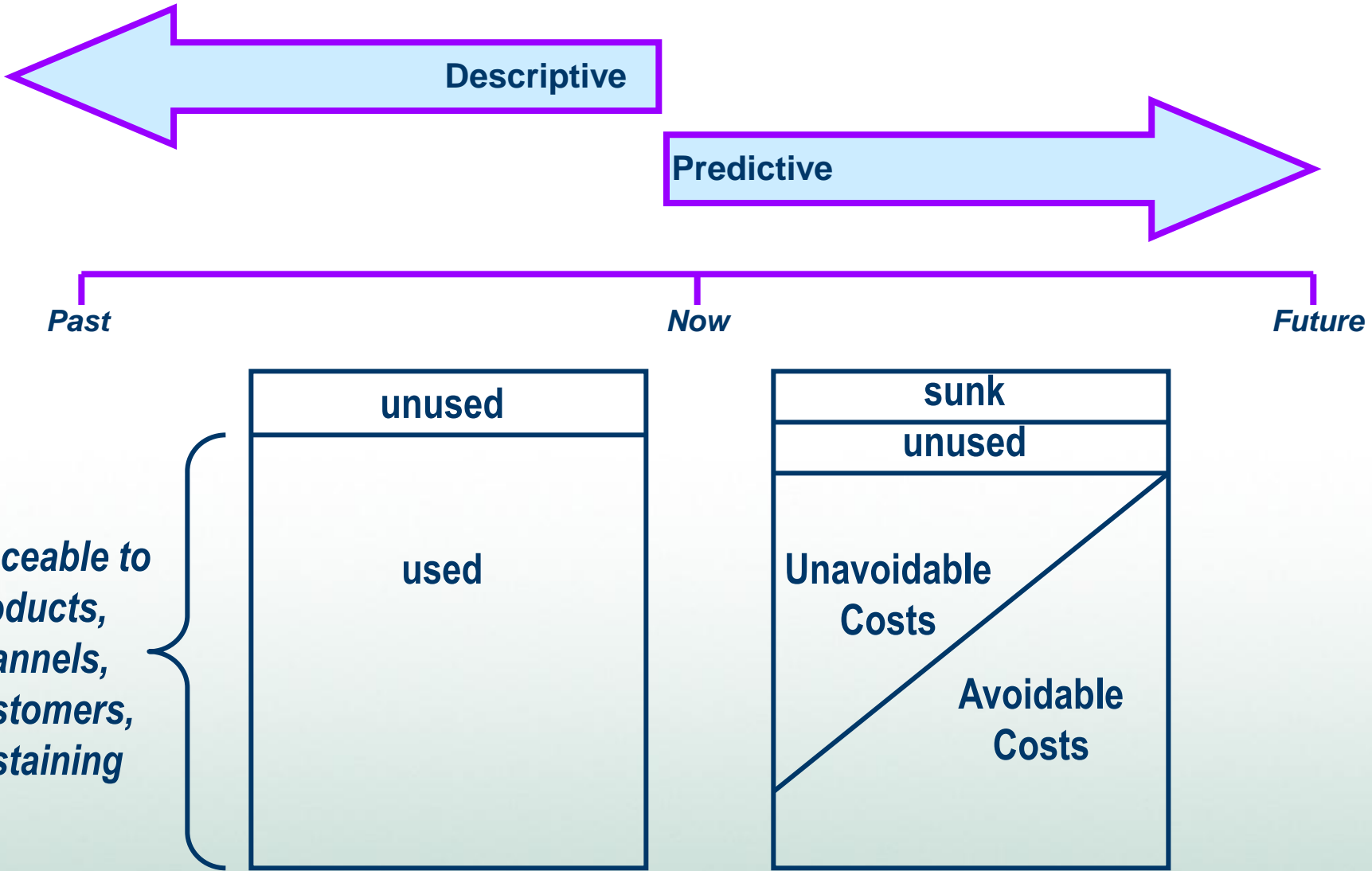
Lower ← Value-added to managerial decisions

Higher →



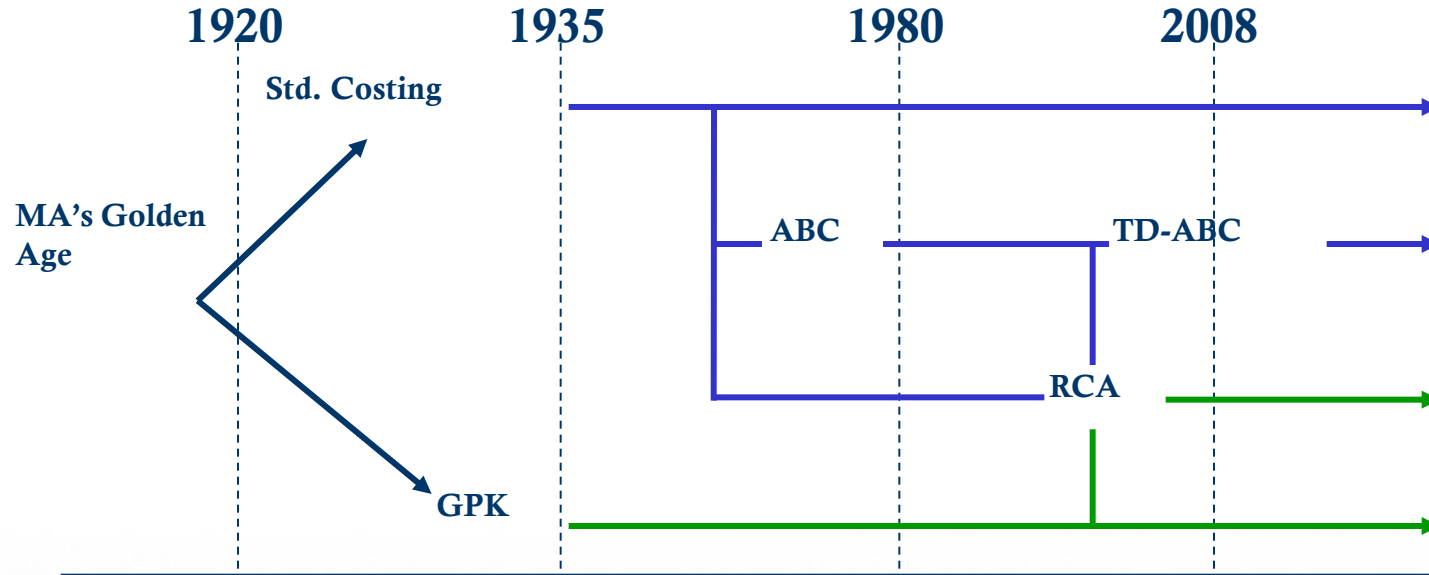
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The shift to predictive accounting



Methods

Roots in Accounting Profession



Roots in Other Disciplines

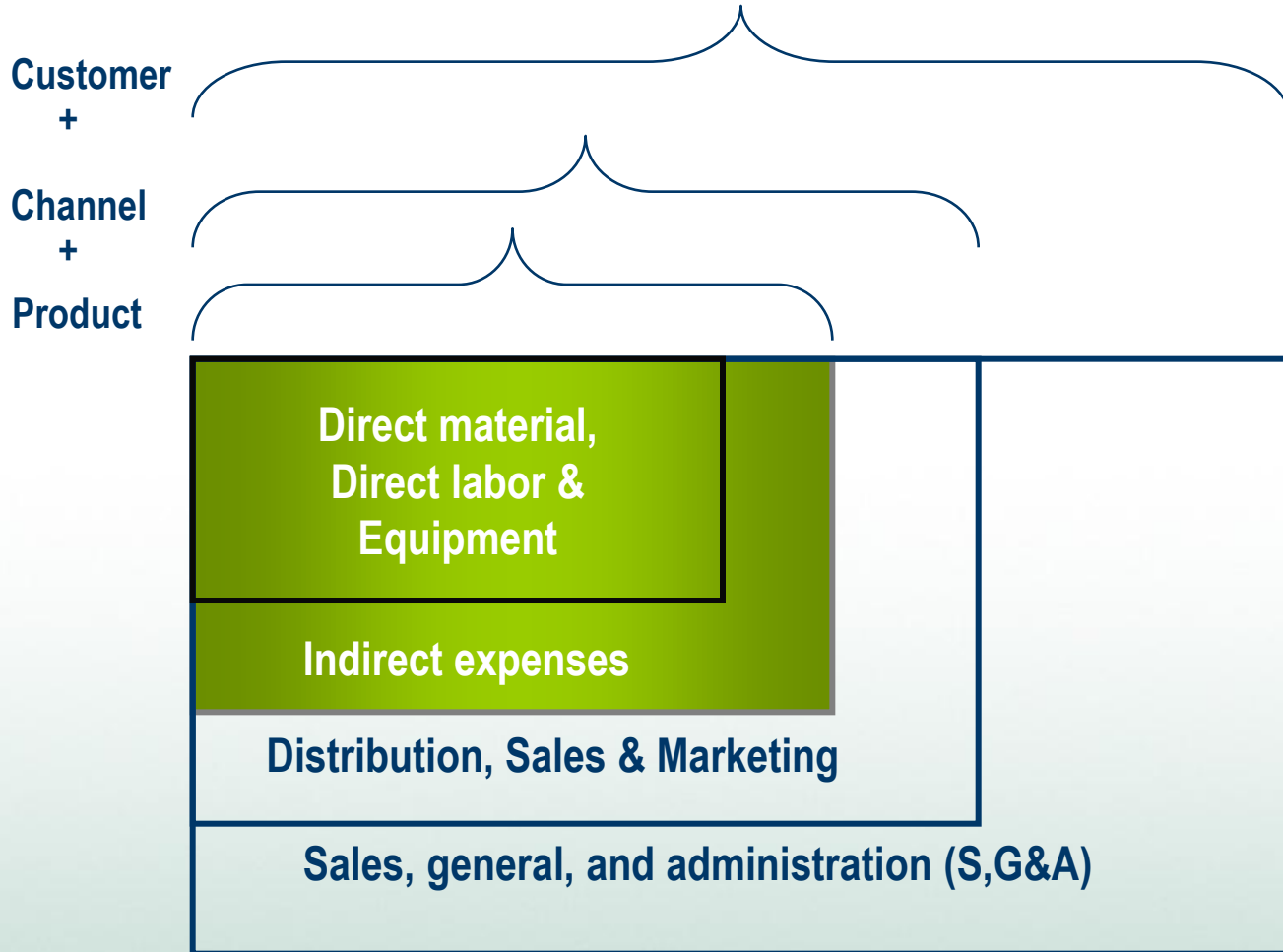


- Production Method Centric
- Accounting Method Centric
- Principle-based



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Costs from Sales & Marketing are not Products



What is a Conceptual Framework?

- **IASB/FASB** Conceptual Framework
 - ▶ Objective and Qualitative Characteristics
 - ▶ Elements and Recognition
 - ▶ Measurement
 - ▶ Reporting Entity
 - ▶ Presentation and Disclosure, including Financial Reporting Boundaries
- **IPSASB** – International Public Sector Accounting Financial Standards Board

What is Managerial Costing?

- **Statement of Federal Financial Accounting Standard 4, Para 42:** Managerial cost accounting, therefore, is the servant of both budgetary and financial accounting and reporting because it assists those systems in providing information. Also, it provides useful information directly to management.
- Cost Accounting
 - Tool for Financial Reporting
- Management Accounting
 - Activities of Professional Accountants in Business
- Managerial Costing
 - Tool for Managerial Decision Support

What is a Conceptual Framework?

- What about managerial accounting/costing?
 - ▶ Financial Accounting/Reporting Standards provide guidance to meet their goals.
 - ▶ Textbooks teach methods to support specific applications
 - Traditional Standard Costing
 - Variable Costing
 - Activity Based Costing
- Where do you go for the principles to build a better cost model to manage your organization?

Moving Beyond Methods

Conceptual Framework for Managerial Costing

- ▶ Objective
- ▶ Scope
- ▶ Qualitative Characteristics
 - Principles
 - Concepts
 - Constraints
- ▶ Framework in Operation
- ▶ **Call to Action**
- ▶ Appendix: Truth in Managerial Costing

Agenda

- Introduction –
 - ▶ Necessity for a Conceptual Framework for managerial costing
 - ▶ What is a CF?
 - ▶ What is managerial costing?
 - ▶ Call to Action
 - **Objective, Scope, Principles–**
 - ▶ **Framework Objective**
 - ▶ **Framework Scope**
 - ▶ **Framework Principles**
 - Concepts and Constraints
 - ▶ Overview
 - ▶ Explanation
 - ▶ Airline Examples to illustrate concepts
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What is the Objective of Managerial Costing?

- What differentiates FA info from MA information?
- Target customer for Managerial Costing information?
- Most important result of Managerial Costing information?
- What do managers make decisions about?
What drives cost?

Statement of Objective

Managerial Costing Conceptual Framework

- 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.
-

What is the Scope of Managerial Costing?

- Scope:
 - ▶ What Managerial Costing must achieve to meet the stated objective.
 - ▶ The boundaries of the application of Conceptual Framework for Managerial Costing.

- What would be “out of scope”?

Scope Statements

Managerial Costing Conceptual Framework

1. 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.
2. Present decision support information in a flexible mold that caters to the timeline and insights needed for internal decision makers.
3. Provide decision makers insight into the marginal/incremental aspects of the alternatives they are considering.
4. Model quantitative cause and effect linkages between outputs and the inputs required to produce and deliver final outputs.

Scope Statements

Managerial Costing Conceptual Framework

5. Accurately values all operations (support and production) of an entity (i.e. the supply and consumption of resources) in monetary terms.
6. Provides information that aids in immediate and future economic decision making for optimization, growth, and/or attainment of enterprise strategic objectives.
7. Provides information to evaluate performance and learn from results.
8. Provides the basis and baseline factors for exploratory and predictive managerial activities

Qualitative Characteristics

Conceptual Framework for Managerial Costing

- ▶ Objective
- ▶ Scope
- ▶ **Qualitative Characteristics**
 - Principles
 - Concepts
 - Constraints
- ▶ Framework in Operation
- ▶ Call to Action
- ▶ Appendix: Truth in Managerial Costing

Foundation of Principles

- What must form the foundation for a set of principles?

Truth

- What is “True Cost”?

Foundation of Principles

Correspondence Definition of Truth

Truth corresponds to facts.

Resources in operation create a factual situation.

Example

- More Accounting Transactions – 12,000/yr
- Finance Operations Center:
 - ▶ Personnel Cost \$30,000,000
 - ▶ Operating Cost \$15,000,000
 - ▶ Transactions/year: 3,000,000

 - ▶ **Calculated Full Cost:**
 - \$15/transaction X 12,000 = \$180,000
 - ▶ **Judgmental Marginal Cost:**
 - 1 Accounting Technician = \$50,000

Principles

Qualitative Characteristics

- **Causality**

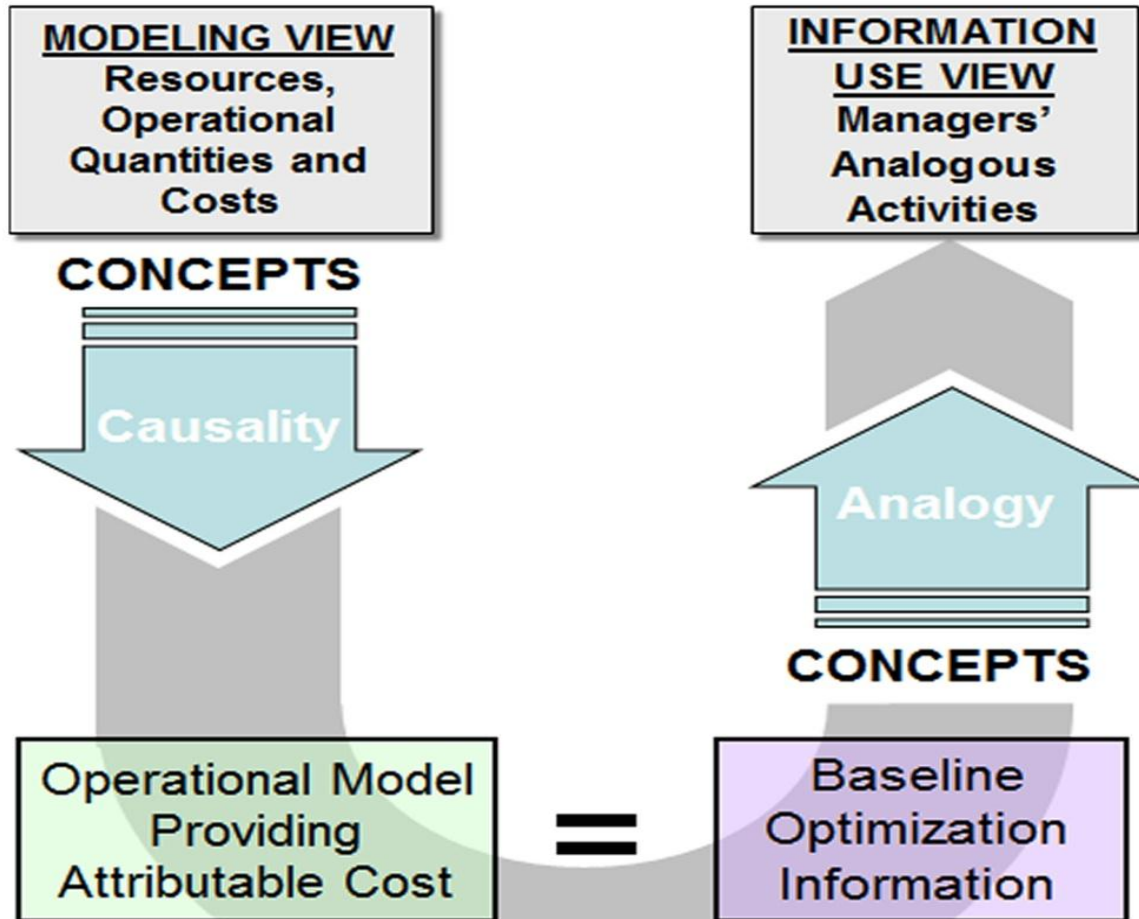
- ▶ *The relation between a managerial objective's quantitative output and the input quantities that must be, or must have been, consumed if the output is to be achieved.*

- **Analogy:**

- ▶ *The use of causal insights to infer past or future outcomes.*

Principles & Concepts

Qualitative Characteristics



Moving Beyond Methods

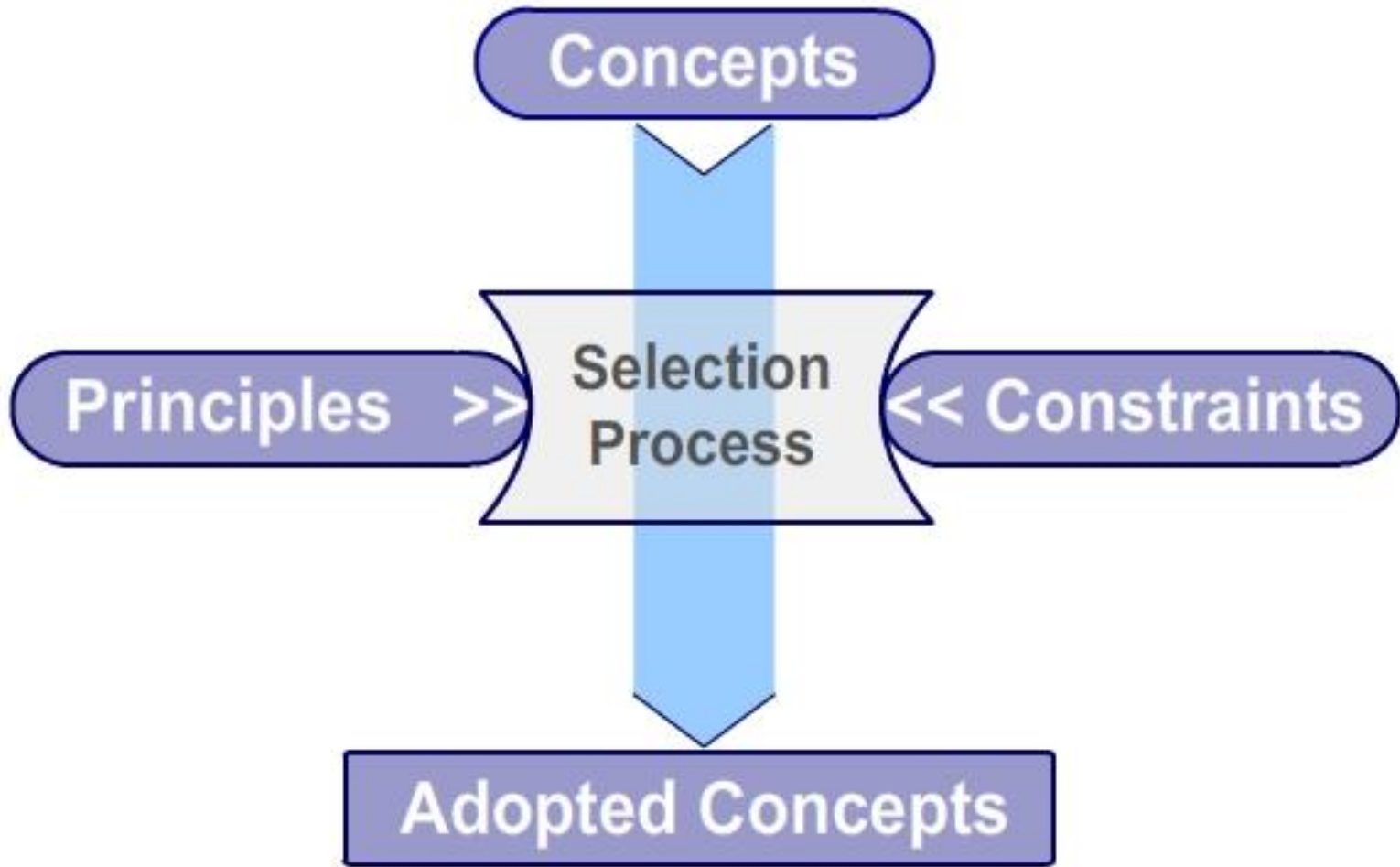
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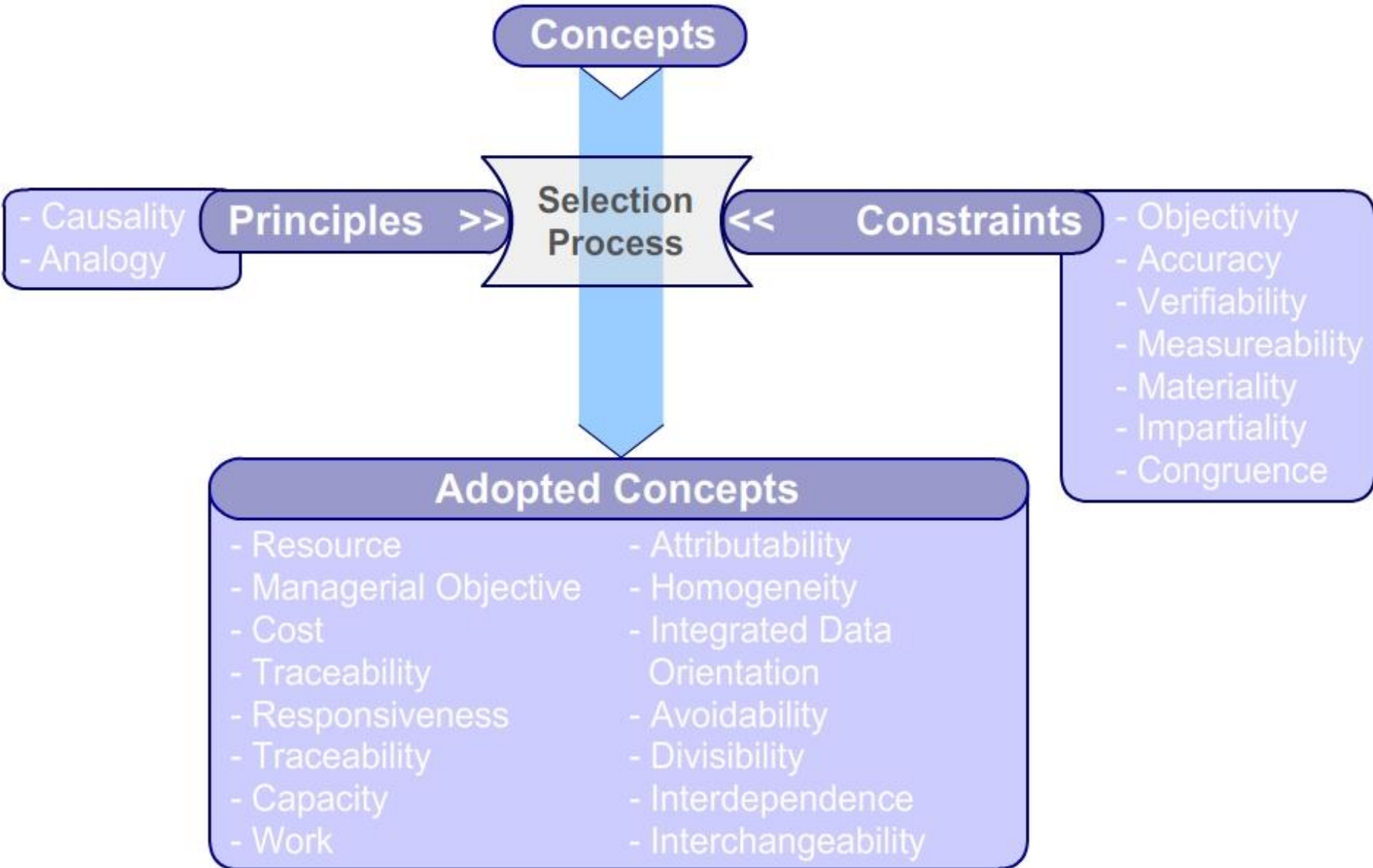
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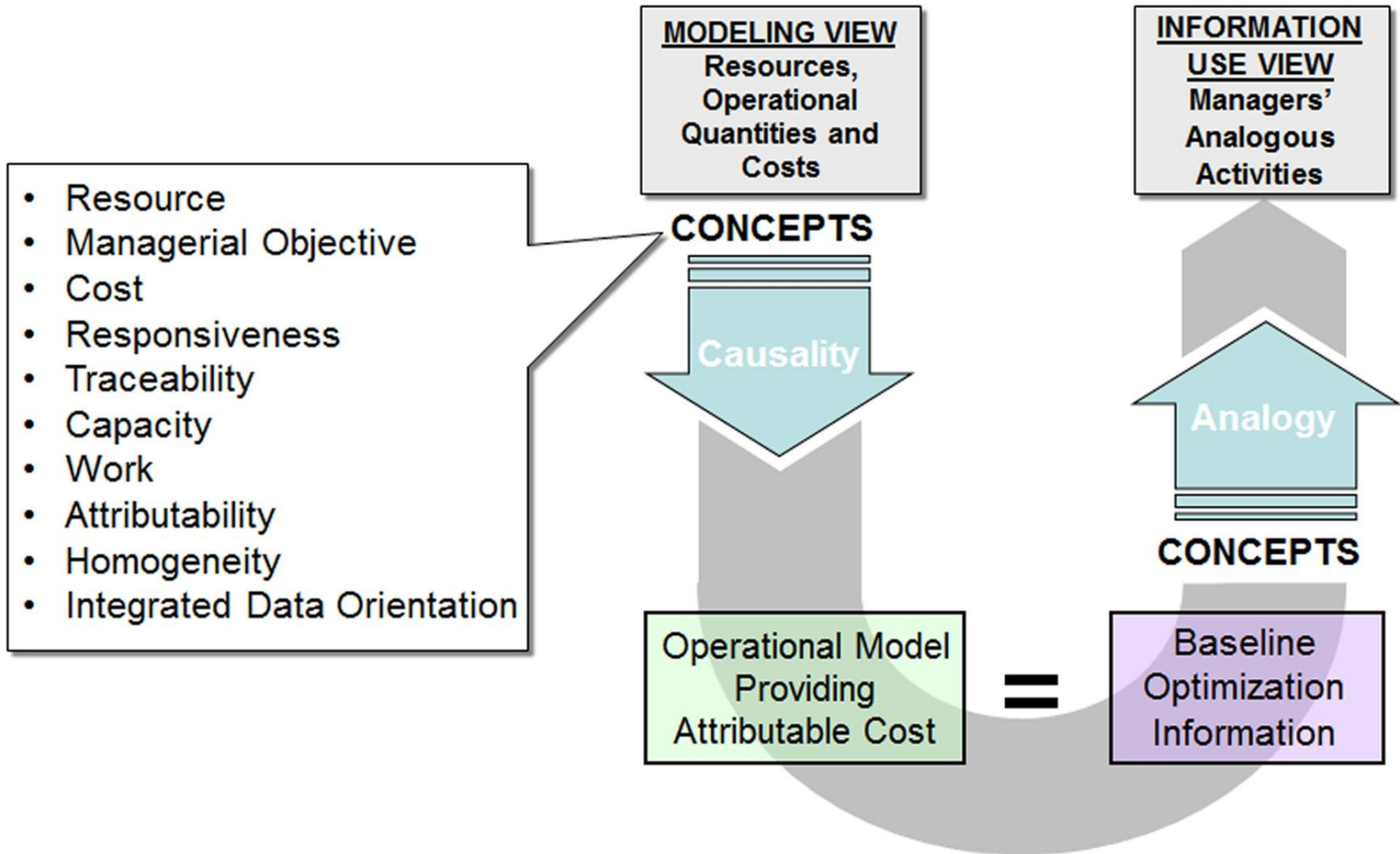
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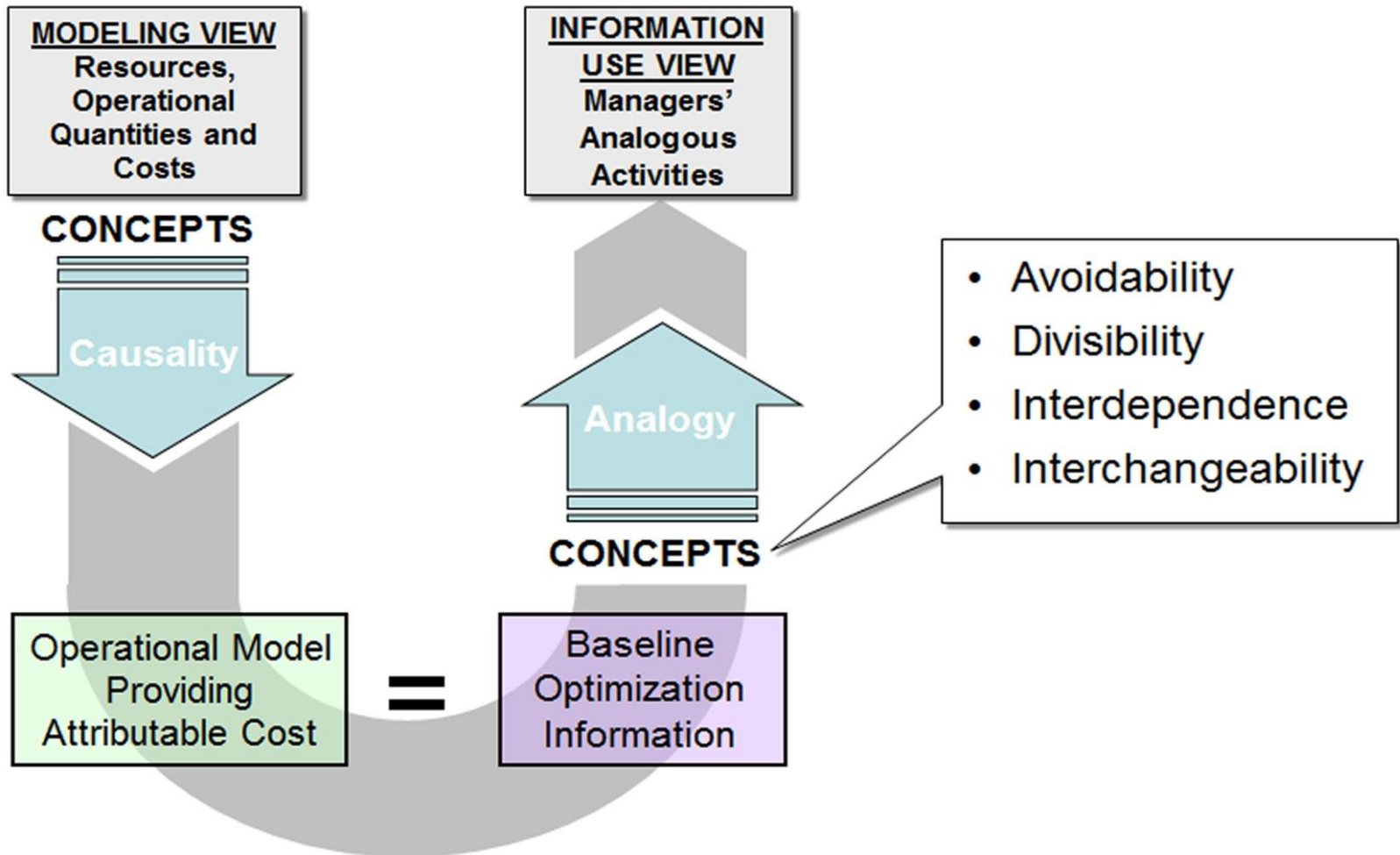
The Framework Outline



The Framework







Outline Scenario - Airline

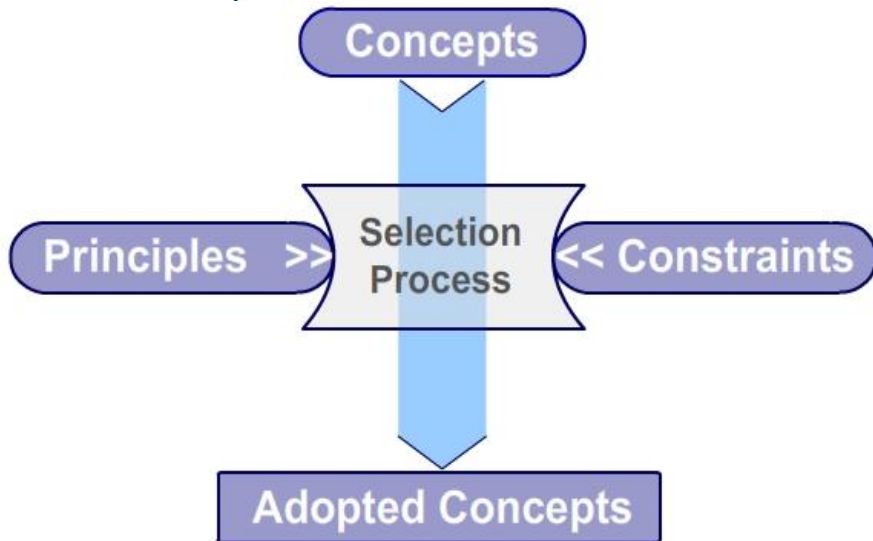




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Managing An Airline!

Outline Scenario - Airline



One Way – Nickel & Diming



Another Way...



Apply the Framework: Six Steps

- 1. Identify the Resources**
- 2. Identify the Managerial Objectives**
- 3. Understand Cause and Effect Relationships**
- 4. Capture Managerial Objectives and Their Relationships in a Cost Model**
- 5. Document Scope, Intent, Required Inputs, Outputs and Underlying Assumptions and Limitations**
- 6. Apply and Maintain the Model**

Modeling Objects

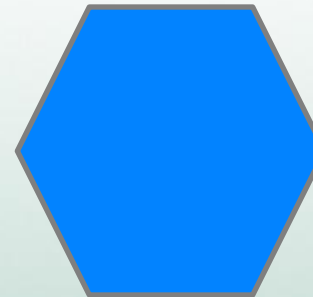
Resource -



Work/Activity -



Product/Service -



Scenario 1

The Airline Managers Wants to Know What It Costs to Produce Flight 123.



- Resource



- Homogeneity
- Capacity

Managerial Objective?



- Traceability

Scenario 1

The Airline Managers Wants to Know What It Costs to Produce Flight 123.



- Resource

Aircraft



- Homogeneity
- Capacity

Pilots



- Traceability

Flight
123

Scenario 1

The Airline Managers Wants to Know What It Costs to Produce Flight 123.



- Resource



Flight Hours



- Homogeneity
- Capacity



Block Hours



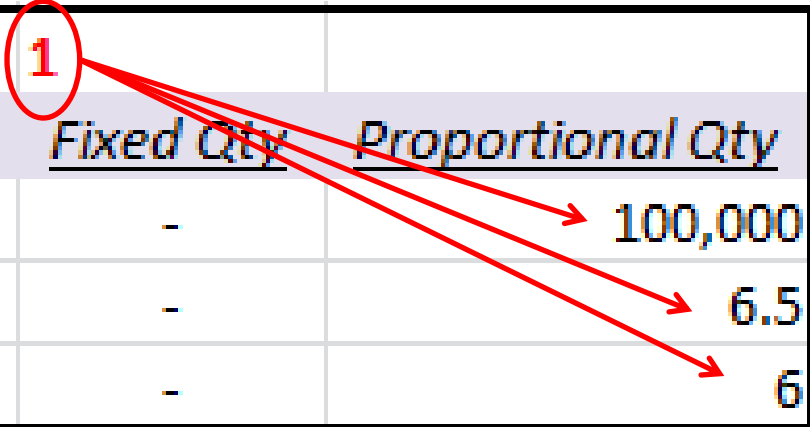
- Traceability

Gallons



Scenario 1

<u>Flight 123:</u>		Output: 1	
<u>Inputs</u>	<u>UoM</u>	<u>Fixed Qty</u>	<u>Proportional Qty</u>
Jet Fuel	Gallons	-	100,000
Pilot Block Hours	Hours	-	6.5
Aircraft Flight Hours	Hours	-	6



The Result:

Quantity-based Cause and Effect Relationships

To Produce 1 x Flight 123 the managers needs...



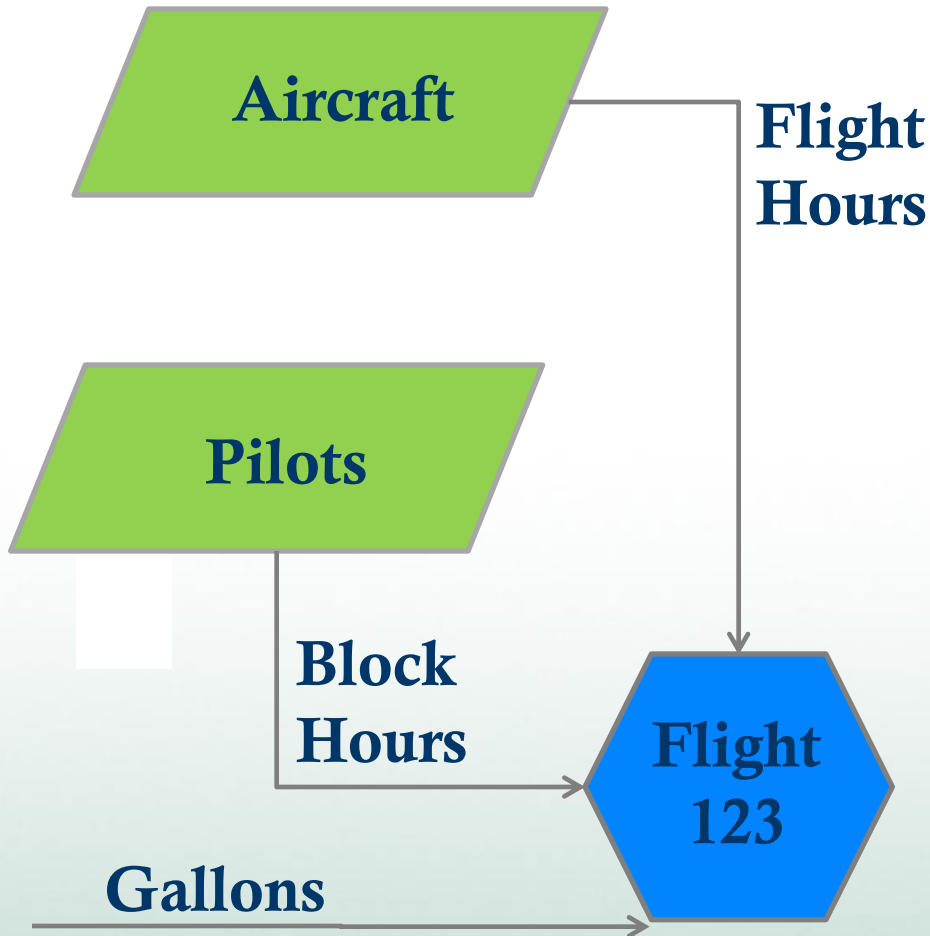
Scenario 1: Add Money

<u>Flight 123:</u>	Output: 1		
<u>Inputs</u>	<u>UoM</u>	<u>Fixed Qty</u>	<u>Proportional Qty</u>
Jet Fuel	Gallons	-	100,000
Pilot Block Hours	Hours	-	6.5
Aircraft Flight Hours	Hours	-	6

<u>Flight 123:</u>	Output: 1				
<u>Inputs</u>	<u>UoM</u>	<u>Fixed Qty</u>	<u>Proportional Qty</u>	<u>Fixed \$'s</u>	<u>Proportional \$'s</u>
Jet Fuel	Gallons	-	100,000	-	\$50,000
Pilot Block Hours	Hours	-	6.5	\$975	\$1,625
Aircraft Flight Hours	Hours	-	6	\$12,300	\$11,400
				\$13,275	\$63,025

Scenario 1: Application

Flight 123:

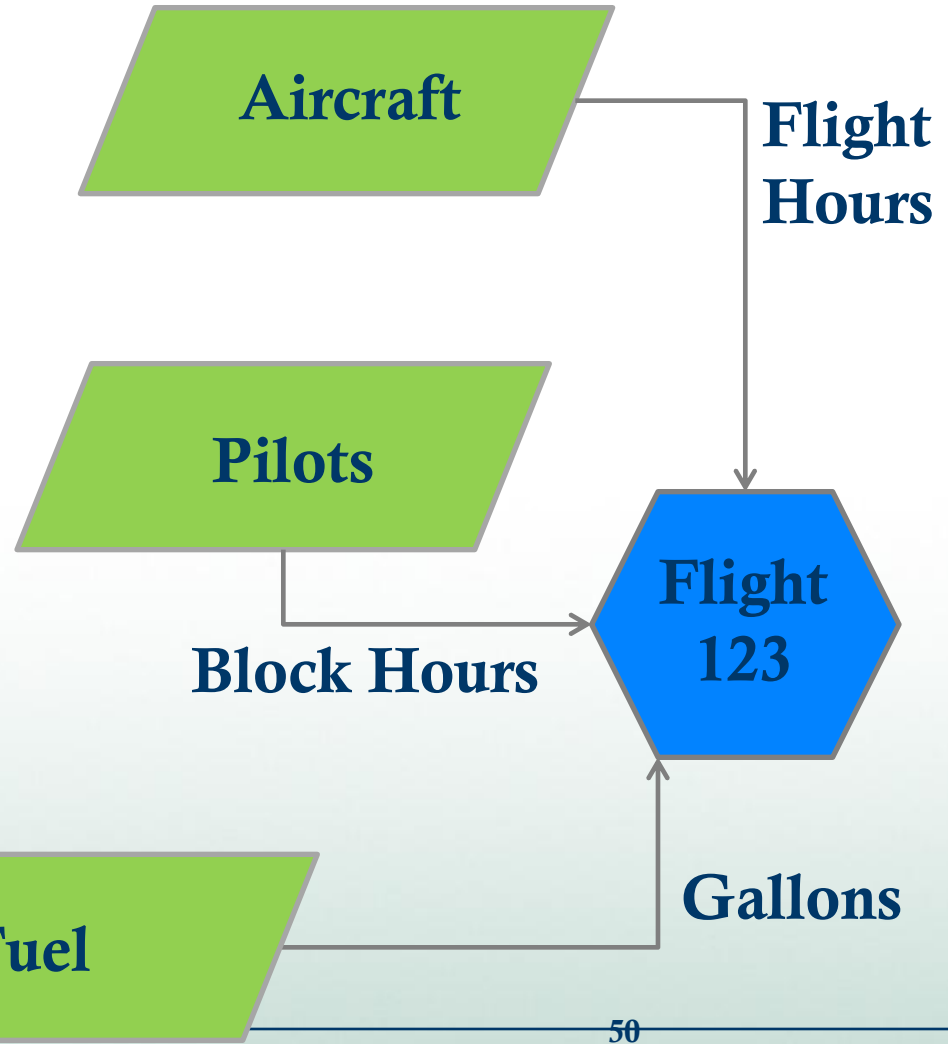


- Divisibility
- Avoidability



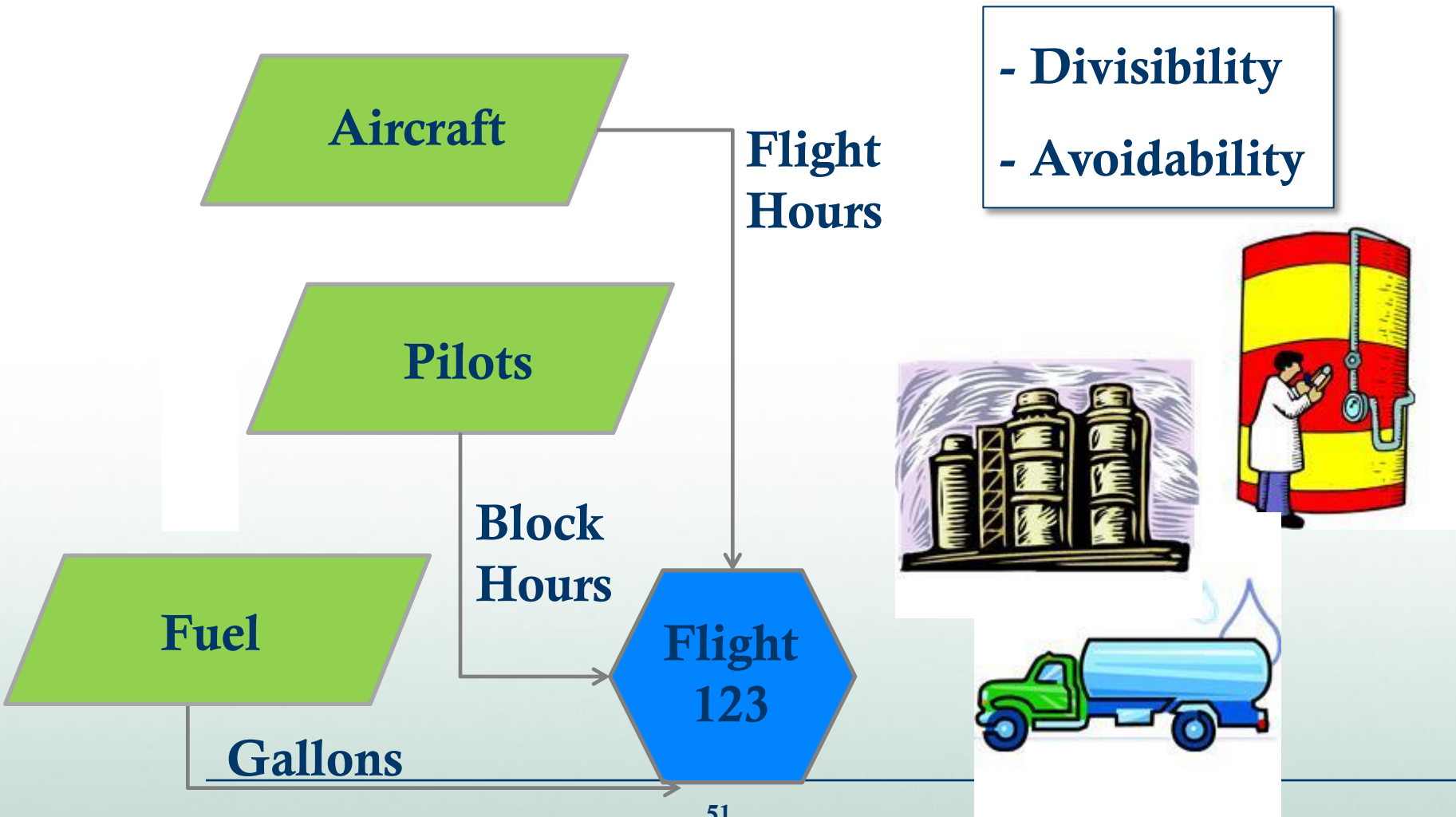
Scenario 2: Fuel Supply

Flight 123



Scenario 2: Application

Flight 123:



Scenario 3

Pilot Excess/Idle Capacity



- Homogeneity
- Capacity (FAA Limitations – 720 Block Hours/Year)
- Output for 10 Pilots
- Excess/Idle Time
- Divisibility
- Avoidability

Scenario 3: Pilot Resource Pool

<u>Resource Pool: Pilots</u>		Capacity: 7,200		Output: 6,800	
<u>Inputs</u>	<u>UoM</u>	<u>Fixed Qty</u>	<u>Proportional Qty</u>	<u>Fixed \$'s</u>	<u>Proportional \$'s</u>
Pilot Salaries Productive	Hours		6,800	\$1,020,000	\$1,700,000
Pilot Salaries PTO	Hours	1600		\$640,000	\$0
Pilot Salaries Excess/Idle	Hours	400		\$160,000	\$0
Uniforms	Each	10		\$10,000	\$0
Training	Trng.Hours	500		\$125,000	\$0
Simulators	Sim. Hours	250		\$187,500	\$0
Facilities	SqFt	800		\$17,472	\$0
				\$2,159,972	\$1,700,000
			Rates:	\$300	\$250

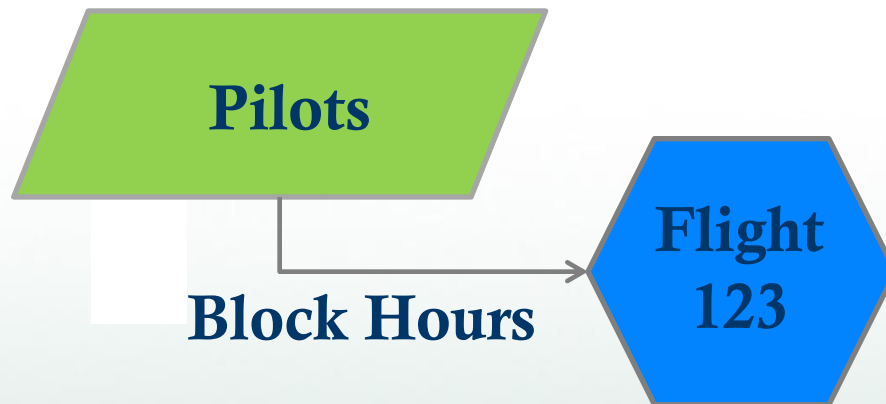
Scenario 3

Resource Pool: Pilots		Capacity: 7,200		Output: 6,800	
<u>Inputs</u>	<u>UoM</u>	<u>Fixed Qty</u>	<u>Proportional Qty</u>	<u>Fixed \$'s</u>	<u>Proportional \$'s</u>
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Scenario 2

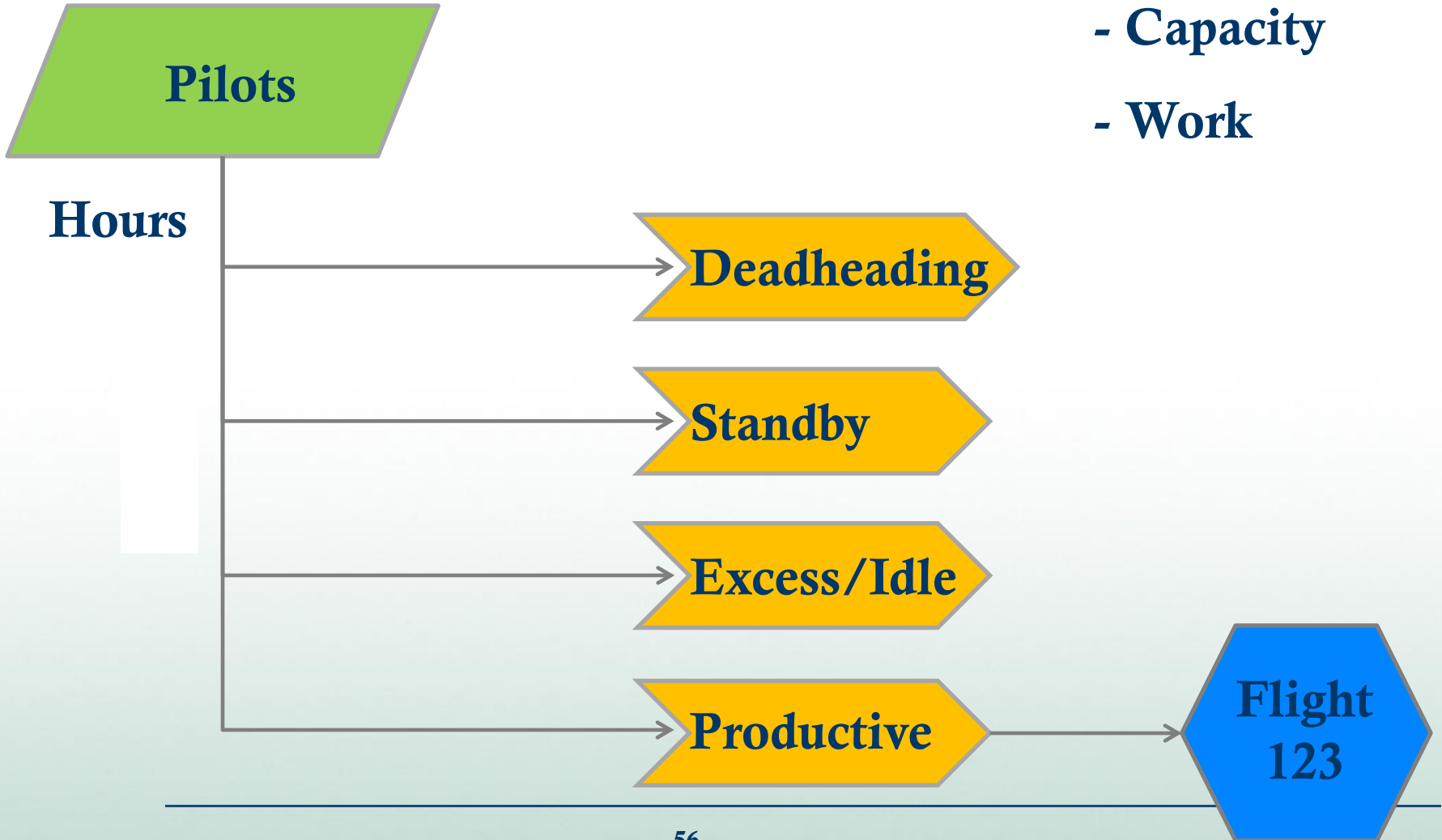
Flight 123

- **Divisibility = 720 Block Hours**
- **Avoidability = >720 Block Hours**



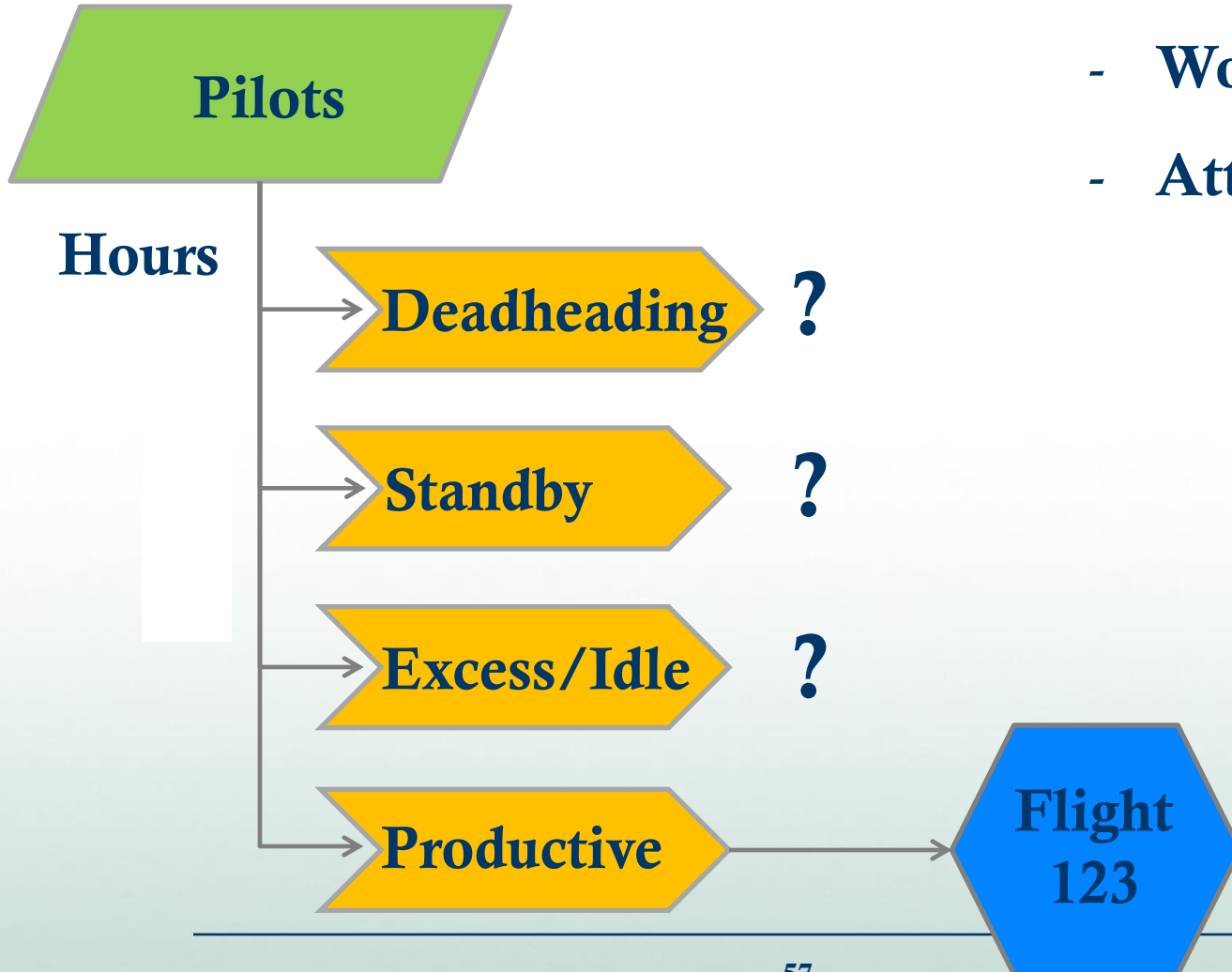
Scenario 3

Pilot Time – Analytical Insight



Scenario 3

Pilot Time – How to Assign?



- Work
- **Attributability**

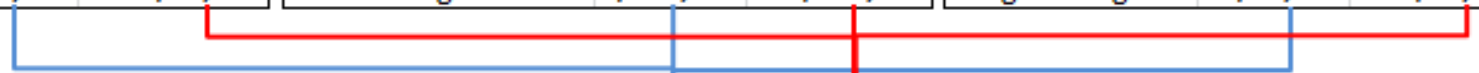
Scenario 4

Customer Dimension, Attributable Cost & Relative Margins

<u>Business Class</u>		
	<i>Marginal</i>	<i>Attributable</i>
Revenue	\$30,000	\$30,000
Meals	750	750
Entertainment		2,000
Cabin Crew	960	2,080
B/Class Margins	\$28,290	\$25,170

<u>Coach Class</u>		
	<i>Marginal</i>	<i>Attributable</i>
Revenue	\$120,000	\$120,000
Snacks	750	750
Entertainment		1,000
Cabin Crew	2,880	6,240
Coach Margins	\$116,370	\$112,010

<u>Freight</u>		
	<i>Marginal</i>	<i>Attributable</i>
Revenue	\$45,000	\$45,000
Pallet		150
Loading	250	2,500
Freight Margins	\$44,750	\$42,350



<u>Flight 123</u>		
	<i>Marginal</i>	<i>Attributable</i>
Fuel	50,000	50,000
Navigation	5,000	5,000
Landing Fees	2,500	2,500
Flight Crew	2,000	4,400
Maintenance	2,400	8,000
Aircft Depreciation		19,200
Flight Margins	\$127,510	\$90,430

Allocate?



Scenario 4

Customer Dimension & Relative Margins

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Standby

Excess/Idle

- **Route Margins**

- **BU Margins (Domestic/International)**



Scenario 4

Why: Divisible Insight, Actionable Information

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- Route Margins

- BU Margins (Domestic/International)

Constraints

Qualitative Characteristics

Cost Modeling Constraints

- **Objectivity:** *A characteristic of a cost model that show 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.*



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Questions?

Thank You

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