Strategic Cost Management & New Technologies

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Session 1
Introduction and Concepts

What is managerial accounting?

Managers need information to make strategic decisions and create value.

Decision making process:

- Problem Identification
- Information gathering
- Prediction
- Decision
- Implementation


Investors & Creditors
Tax Authorities
Financial Accounting
External Reports
Tax Accounting
ACCOUNTING SYSTEMS
Internal Reports
Decision Making
Managerial Accounting
Decision Control

Managerial VS Financial accounting

Financial Accounting

- For external use
- Past oriented
- Regulatory framework (GAAP)
- Regular frequency

Managerial Accounting

- For internal use
- Future oriented
- No framework, only concepts
- Anything you deem useful (hourly?)

Managerial accounting aims to

Study internal information in order to

- Encourage better decision-making.
- Influence the behavior of those making the decision.

What types of decisions?

What to produce?

How much to produce / sell?

What price should be charged?

What input to use?

Need data from the internal accounting system to make those decisions.

Main objective of the course

How do we measure the creation of value?

Cost and profitability measurements.

Goal: decision making and incentives.

Brief outline

Session	Topic	Case Study
1	Introduction	bou
2	hihi	bah

Course logistic

Textbook

> *Managerial Accounting: Making Decisions and Motivating Performance*

by S. Datar and M. Rajan. Pearson, 2014, ISBN 978-0-13-702487-2

Online classes on Zoom: Link on Canvas homepage,

Canvas website: Communication, classes recording, submissions, etc.

Each class consists of 2 parts:

- Part I: Lecture on key concepts.
- Part II: Case Study.

Why case studies?

Study real problems in real context.

Stimulate critical thinking.

Requires student involvement and expression of different points of view.

Your job:

- Create groups that will be fixed for the entire course.
- Every week, read the case study for the class.
- Prepare the questions (check Canvas) and submit your answers (on Canvas) per group.

Evaluation

Every group case study assignment will be graded.

The final will be a (guided) case study to be done at home individually!

You are required to respect academic integrity.

The final grade consists of

- 50% from the group case studies assignments
- 50% from the final case individual case study

Grading may slightly change between now and the end of the quarter, but only in your interest.

Any question so far?

Cost Concepts

Cost Concepts - Overview

Cost vs Expense

Direct vs Indirect Costs

Fixed vs Variable Costs

Sunk vs Incremental Costs

Opportunity Cost

Cost vs Expense

Expenses

Follow the accounting matching principle.

Are reported on the income statement in the same period of the related revenues.

Don’t necessarily involve a cash outflow.

Cost

Sacrifice of resources, cash out-flow

- Example: manufacturing costs

Costs become expenses when the goods are sold.

Direct vs Indirect Costs

Direct Costs

Can be directly traced to the product

Direct material (DM) costs.

Direct labor (DL) costs.

Indirect Costs

Cannot be traced directly.

Also referred to as overhead costs.

Need to be allocated according to some formula.

Fixed vs Variable Costs

Fixed Costs

Do not vary with production volume

Example: Depreciation of buildings

Variable Costs

Proportional to production volume

Merchandise, product parts

Relevant range

In the long term everything is variable

Product Costing (in a manufacturing firm)

MANUFACTURING

Direct

- Direct Material
- Direct Labor

Indirect

- Variable
- Fixed

Most are charged to the product.

Sometimes, fixed OH is not charged.

NON-MANUFACTURING

SG&A

Advertising

Marketing

Administrative

Selling

Not charged to the product

Sunk vs Incremental Costs

Sunk and Incremental costs are *relative to a decision*.

Sunk Costs

Cannot be altered by the decision.

R&D, advertising, staff training, consultants.

Incremental Costs

Additional cost incurred by the decision.

Also referred to as **Differential Costs**.

What type of cost should affect the decision?

Only incremental costs!

Opportunity Cost

Opportunity cost: what is forgone by choosing an alternative

Very important concept for decision making!

Opportunity Cost

You won a free ticket to see an Eric Clapton concert (which has no resale value).

Bob Dylan is performing on the same night and is your next-best alternative activity.

Tickets to see Dylan cost $40 and you would be willing to pay $50 for it on any given day.

What is the opportunity cost of seeing Eric Clapton?

Opportunity Cost

Answer: $10

By not going to see Dylan, you decide to forgo utility equivalent to $50 - $40 = $10.

At the 2005 annual meeting of the AEA, researchers Paul J. Ferraro and Laura O. Taylor of Georgia State University asked almost 200 professional economists to answer the same question.

- Only 21.6% got the right answer.

They originally asked the same question to a large group of college students.

- Among those who had taken a course in economics, 7.4% answered correctly.
- 17.2% answered correctly for those who had never taken one.

Example
USPS and Amazon

Example: USPS and Amazon

Amazon is costing the United States Post Office massive amounts of money for being their Delivery Boy. Amazon should pay these costs (plus) and not have them borne by the American Taxpayer. Many billions of dollars. Only fools, or worse, are saying that our money losing Post Office makes money with Amazon. THEY LOSE A FORTUNE, and this will be changed. Also, our fully tax paying retailers are closing stores all over the country...not a level playing field!

Donald J. Trump

USPS Customers in 2017

Retail Customers

- Based on demand elasticity and marginal cost data, the U.S Post Office has decided to charge retail customers **$4.00** per package.

Fedex

- In 2016, USPS negotiated a contract with Fedex for five years, under which Fedex pays the Postal Office **$2.20** per package delivered.

Amazon

- In 2017, the Postal Office negotiated a service agreement with Amazon. Under the terms of this agreement, USPS delivers 400 million packages for Amazon, at a price of **$1.05** per package.

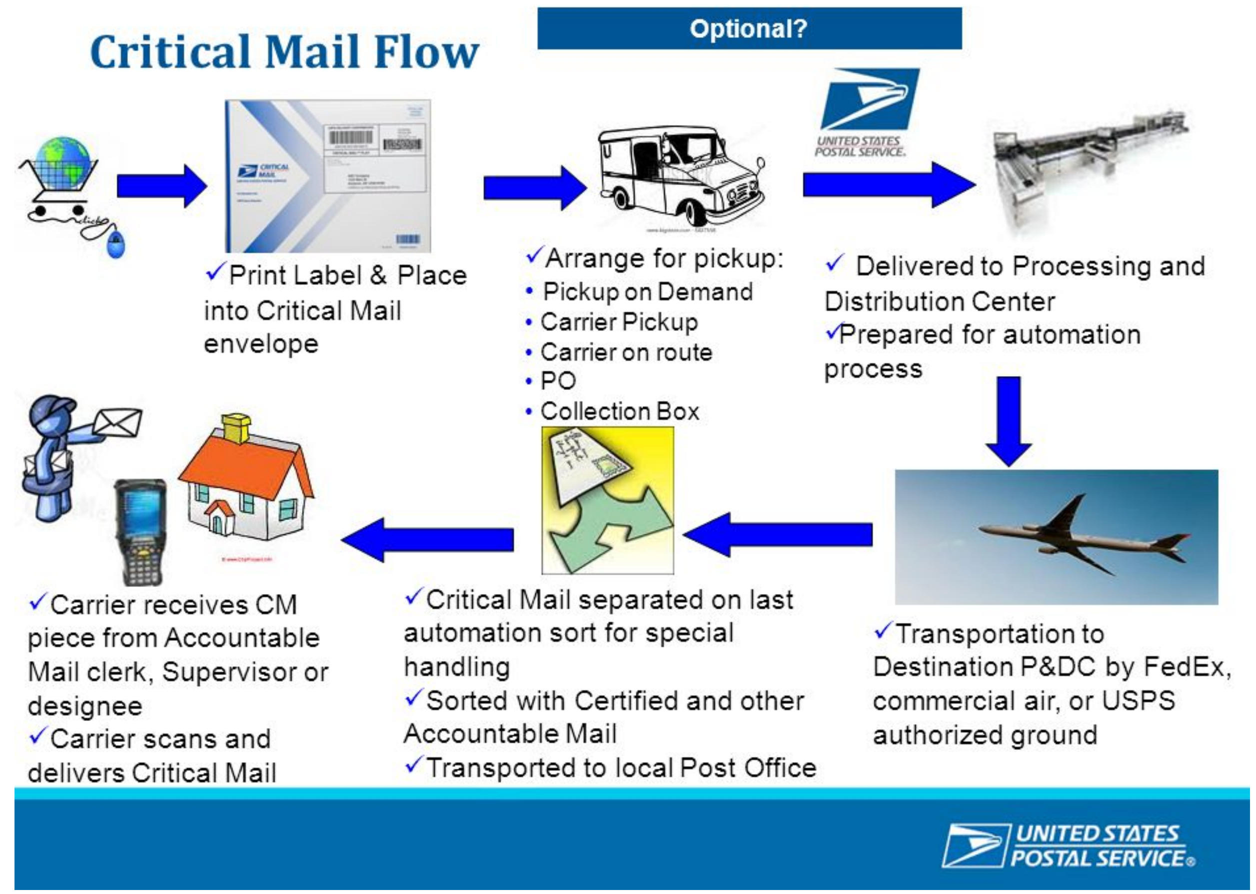
USPS Costs

Collection

Transportation

Sorting

Delivery



USPS Total Cost in 2017

	Total Overhead Cost ($ millions)
Transport	$ 1,360
Sorting	$ 510
Delivery	$ 765
Collection	$ 765
Total	**$ 3,400**

Is this cost variable or fixed?

USPS Variable Cost

	Variable Cost ($ per unit)
Transport	$ 0.40
Sorting	$ 0.10
Delivery	$ 0.25
Collection	$ 0.25
Total	**$ 1**

USPS estimates that 50% of its overhead cost is fixed

- Arising from the need to maintain USPS' infrastructure: 300,000 routes, 200 millions delivery points, 50,000 post offices.

How many packages did USPS deliver in 2017?

USPS Volumes and Prices

	Retail	Fedex	Amazon
Price / unit	$4.00	$2.20	$1.05
Volume (millions)	1,000	300	400

Is USPS making money on Amazon?

Need to answer the following:

- What would be the revenues for USPS with and without the Amazon deal?
- In other words, what are the incremental revenue and incremental cost of the Amazon deal?

Assumptions:

- USPS charges Fedex a price per package equals to average cost plus 10% margin where average cost is defined as

$$\text{Average Cost} = \frac{\text{Total Cost}}{\text{Volume}}$$

Without the Amazon deal, Fedex volume would be 270 millions instead of 300. (we'll see why)

With the Amazon deal

How much does Fedex pay per package? **$2.2**

Remember that

- Total Volume = 1000 (retail) + 300 (Fedex) + 400 (Amazon) = 1700
- Total Cost = 1700 (fixed) + 1700 * $1 (variable) = $3400

$$\text{Average Cost} = \frac{\$3400}{1700} = \$2$$

Fedex price = $2 * (1+10%) = **$2.2**

Without the Amazon deal

How much does Fedex pay per package? $2.57

Without the deal, we have

Total Volume = 1000 (retail) + 270 (Fedex) = 1270

Total Cost = 1700 (fixed) + 1270 * $1 (variable) = $2970

$$\text{Average Cost} = \frac{\$2970}{1270} = \$2.33$$

Fedex price = $2.33 * (1+10%) = **$2.57**

From USPS side

Even if the variable cost is $1, the incremental cost of serving Amazon now incudes an opportunity cost through the change in Fedex pricing.

- Variable cost of Amazon packages = 400*$1 = $400.
- Forgone revenues on Fedex deal = 270*(2.57-1) – 300*(2.2-1) = 424 – 360 = $64

Incremental Cost Amazon Deal = $464

Incremental Revenue Amazon deal = $420 (400*1.05)

From USPS side

With Amazon deal (exclude retail)

Revenues = Fedex + Amazon = 300*(2.2-1) + 400*(1.05-1) = 360 + 20 = $380

Without Amazon deal

Revenues = Fedex = 270*(2.57-1) = $424

Break-even price of Amazon deal?

What price should USPS charge Amazon to see no change in revenues?

Price p should solves the following equation:

$$300 * 2.2 - 1 + 400 * p - 1 = 270 * (2.57 - 1)$$

For USPS to breakeven on its Amazon deal, Amazon must pay **$1.16** per package.

Takeaway

For decision making, focus on **incremental costs**.

- Include variable costs
- Exclude fixed costs
- Add relevant opportunity cost (e.g. forgone revenues)