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

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

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- 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
- Variable vs Fixed 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.

Variable vs Fixed Costs

- Fixed costs: do not vary with production volume
- 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 A. Direct 1. 2. B. Direct Material Direct Labor Indirect 1. 2. Variable Fixed Most are charged to the product. NON-MANUFACTURING (VARIOUS LABELS) 1. SG&A 2. Advertising 3. Marketing 4. Administrative 5. Selling Not charged to the product Sometimes, fixed OH is not charged.

Sunk vs Incremental Costs

- Sunk and Incremental costs are relative to a decision.
- Sunk Cost: cannot be altered by the decision
- R&D, advertising, staff training, consultants
- Incremental Cost: 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 sae 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? a) $0 b) $10 c) $40 d) $50

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 Total Cost Average Cost = 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 Average Cost = $3400 = $2 1700
- 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 Average Cost = $2970 = $2.33 1270
- 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: $300 * 2.2 - 1 + 400 * \mathrm{p} - 1 = 270 * (2.57 - 1)$
- 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)

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