USES OF COST ACCOUNTING IN BUSINESS DECISIONS WITH REAL-LIFE EXAMPLES

TAX CONSIDERATIONS WHEN MAKING BUSINESS DECISIONS

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1) Uses of Cost Accounting in Business Decisions with Real-life Examples

COST ACCOUNTING HELPS BUSINESSES IN THE FOLLOWING WAYS

- Assist managers in directing and controlling activities
- Provide information for decision making and planning
- Motivate managers and other employees towards organization's goals
- Measure performance of subunits, activities, managers, and other employees
- Assess the organization's competitive position

BUSINESS DECISIONS A COMPANY WOULD NORMALLY MAKE

There are many day-to-day decisions a company needs to make, and cost accounting information could help. For example:

- Continue an unprofitable business segment?
- Accept a new project?
- Accept a special order?
- Should the company manufacture a component by itself, or buy from others?
- o Buy a new machine or retain the existing one?o Etc

DECISION MAKING PROCESS

- In general the following decision making process would be employed when making business decisions:
- 1. Clarify the decision problem
- 2. Specify the criterion, i.e. objectives
- 3. Identify the alternatives
- 4. Develop the decision model
- 5. Collect the data
- 6. Make a decision

In order to be useful, information should be relevant, reliable and timely

RELEVANT INFORMATION FOR DECISION MAKING

Not all information is relevant for decision making, and we should focus only on relevant information

Why?

It is because:

- 1. Gathering information is expensive and time consuming
- 2. Decision makers would be overloaded with excessive information
- 3. Inclusion of irrelevant information may distort the economic reality of the alternatives

Information is relevant for decision making if:

- 1. They have a bearing on the future
- 2. They are different among alternatives

BALANCE BETWEEN ACCURATE AND TIMELY INFORMATION

- There is always conflict between the information accuracy and timeliness
- The more time it is allowed to prepare and gather information, the more accurate the information would be; however, the longer the time to prepare the information, the less timely the information would be and may delay the decision
- Therefore in order to meet deadline for decisions, information may have to be developed that is less accurate than desired

RELEVANT VS IRRELEVANT INFORMATION

The following table summarizes information that would be relevant or irrelevant to decision making:

Relevant	Irrelevant
Future costs	Sunk costs
Differential costs and benefits	Costs and benefits that are the same under different alternatives
Proceed from disposal of old equipment	Book value of old equipment
Incremental costs	Allocated costs that would be incurred anyway
Opportunity costs	

Again, identifying relevant information is crucial for making sound business decisions!!!!!

EXAMPLES ON DECISION MAKING

- 1. Whether a University should launch a new short course to the public
- 2. Whether a manufacturer should replace the old machine with a new one

EXAMPLE 1 – LAUNCHING A NEW COURSE

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Background:

- ABC University plans to launch a revision course for HKICPA QP Module 14 (Taxation). The accountant collected the following information:
 - Tuition fee for each student is \$2,000, with 15% discount for alumni. Around 25% of students would be from alumni
 - The revision course consists of 6 lectures with a total of 24 contact hours
 - A visiting lecturer will teach the course at an hourly rate of \$1,000; also need to contribute 5% MPF
 - Course material printing cost is \$100 per student

EXAMPLE 1 - LAUNCHING A NEW COURSE

Background (cont'):

- Promotion: \$1,000
- Overhead cost:
 - Electricity: \$120 per hour
 - Sharing of room cost: \$400 per hour
- Allocation of staff cost:
 - Programme officer: \$250 per hour for 5 hours
 - Admin assistant: \$170 per hour for 10 hours
- Course coordination for full time lecturer: \$900 per hour for 2 hours

EXAMPLE 1 – LAUNCHING A NEW COURSE

Analysis:

- 1. Determine objectives: the management would like to know the minimum viable number of students so the University could offer the course without incurring a loss
- 2. Identify relevant and irrelevant costs:
 - Some costs are irrelevant, including allocation of staff cost for programme officer and admin staff, as the staff will receive their salary no matter the revision course will be offered or not

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 Sharing of room cost is also irrelevant (unless the University is really required to pay this to 3rd parties), as this is kind of a unitized fixed cost

EXAMPLE 1 – LAUNCHING A NEW COURSE

Analysis:

- 3. Identify fixed costs:
 - Fixed costs are costs that will not change in relation to a cost driver, for example the promotion of \$1,000
- 4. Identify cost drivers and the associated variable costs:
 - A project could have different cost drivers
 - In this case, cost drivers include:
 - number of students (affecting income and printing costs)
 - number of contact hours (affecting visiting lecturer's salary, MPF and electricity)
 - number of hours for full time lecturer's course coordination (assuming the University will pay additional remuneration to the lecturer; if not, this cost is irrelevant)

	<u>\$</u>
Course tuition fee (17 students, 4 are alumni) (13 x $$2,000 + 4 x $1,700$)	32,800
Less: Visiting lecturer's remuneration (\$1,000 x 24)	(24,000)
MPF (5% of remuneration)	(1,200)
Course coordination fee (\$900 x 2)	(1,800)
Electricity (\$120 x 24)	(2,880)
Course materials printing cost (\$100 x 17)	(1,700)
Promotion	(1,000)
Surplus	220

The above is the minimum viable number of students for the course to break-even, i.e. 17 students

EXAMPLE 1 – LAUNCHING A NEW COURSE In reality, enrollment status may be lower than break-even and deficit may occur. For example, on enrollment due date only 14 students enrolled:

	<u>\$</u>	
Course tuition fee (14 students, 2 are alumni) (12 x $2,000 + 2 \times 1,700$)	27,400	
Less: Visiting lecturer's remuneration (\$1,000 x 24)	(24,000)	
MPF (5% of remuneration)	(1,200)	
Course coordination fee (\$900 x 2)	(1,800)	
Electricity (\$120 x 24)	(2,880)	
Course materials printing cost (\$100 x 14)	(1,400)	
Promotion	<u>(1,000)</u>	16
Deficit	(4,880)	

How to deal with the deficit? Below are some alternatives:

- 1. Not to offer the new course
- 2. Offer the new course with a deficit, as the University would like to build up relationship with the HKICPA and develop revision courses for professional qualifications in the future
- 3. Extend the enrollment due date and at the same time launch <u>additional promotions</u> to attract more students to enroll
- 4. Offer the course but try to minimize costs, for example <u>reducing the number of contact hours</u>, <u>reducing the hourly rate for visiting lecturer</u>, <u>asking students to print notes by themselves</u> etc

Revised plan: extend enrollment due date with additional promotion and reduced costs, now the financial position would be:

	<u>\$</u>
Course tuition fee (15 students, 2 are alumni) (13 x $$2,000 + 2 x $1,700$)	29,400
Less: Visiting lecturer's remuneration (\$1,000 x 24)	(24,000)
MPF (5% of remuneration)	(1,200)
Course coordination fee (reduced to 1 hour)	(900)
Electricity (use smaller room, hence reduced by 50%)	(1,440)
Course materials printing cost (Nil now)	(0)
Promotion (increased to \$1,800)	(1,800)
Surplus	60

For each alternative, the management needs to consider both quantitative and qualitative impacts, for example:

- By deciding to offer the course at a deficit may in the long run provide goodwill to the University
- Cutting costs may turn the course into a profitable business, but this may undermine teaching quality and lead to dissatisfied students experience, as a result damaging the University's reputation

So the management needs to weight the costs and benefits of each alternative to the University's best interest

EXAMPLE 2: REPLACING MACHINE

Background:

- Dongo Limited is a company manufacturing semi-conductors in Hong Kong. It belongs to Dongo Group, headquartered in the US. It is a subsidiary of Dongo US
- Dongo Limited is considering replacing an old machine. The new machine will cost \$1,080,000 and the old one could be sold for \$30,000
- The new machine could be used for the next 5 years. At the end it is estimated that the machine could be sold for \$45,000

Analysis:

- 1. Determine objectives:
 - The management needs to ensure the new machine will bring positive benefits to the Company during its useful life after considering the initial investment; and
 - The Company is tight in cash flows, so the management needs to get back the initial investment amount within 3 years
- 2. Determine the methods to use for analysis:
 - As it is a long term investment, several techniques could be employed, like net present value ("NPV"), internal rate of return ("IRR"), modified IRR etc. The management has decided to adopt NPV method
 - Payback method is also employed to assess if the Company can get back the initial investment amount within 3 years (discounted payback method could also be used, but not for this example)

Analysis:

- 3. Information required for analysis:
 - Estimate cash flows for each year: the accountant has estimated the annual after-tax cash flows as follows:
 - Year 1 \$500,000; year 2 \$450,000; year 3 \$400,000; year
 - 4 \$350,000; year 5 \$300,000 (excluding residual value)
 - ${\scriptstyle o}$ At the end of year 5 the machine can be sold for \$45,000
 - Estimate the discount rate: as the Company has different sources of capital (e.g. loans, bonds, common stocks etc), weighted average cost of capital ("WACC") technique is employed. The Company's WACC is around 16%
 - For payback method, assume cash flow will be generated evenly throughout the year

Net Present Value analysis	<u>\$</u>
Initial investment (\$1,080,000 - \$30,000)	(1,050,000)
Present value for:	
Year 1: \$500,000 / 1.16	431,034
Year 2: \$450,000 / 1.16 ²	334,423
Year 3: \$400,000 / 1.16 ³	256,263
Year 4: \$350,000 / 1.16 ⁴	193,302
Year 5: \$300,000 / 1.16 ⁵	142,834
Disposal of machine: $$45,000 / 1.16^5$	$\underline{21,425}$
NPV	329,281

As the NPV is larger than ZERO, the new machine would bring in positive benefits to the Company

Payback method	<u></u>
	Cumulative cash flows:
End of Year	
0 (outflow of \$1,050,000)	(1,050,000)
1 (inflow of \$500,000)	(550,000)
2 (inflow of \$450,000)	(100,000)
3 (inflow of \$400,000)	300,000
4 (inflow of \$350,000)	650,000
5 (inflow of \$345,000)	995,000

From the above analysis, the new machine would take 2 to 3 years to claw back all the initial investment of \$1,050,000. Therefore the payback period:

= 2 years + 100,000/ 400,000 = 2 years and 3 months

Decisions:

• As the new machine's NPV is positive and the payback period is within 3 years, the Company should invest in the new machine

Points to note:

- Detailed and realistic cash flow analysis should be conducted
- WACC is the minimum rate of return for the project. If the investment is riskier than the Company's average profile, the discount rate can be increased to reflect the additional risk involved
- Depreciation should be excluded from cash flow analysis, however tax saving on depreciation (i.e. tax shield) should be considered (to be discussed in Part 2)

2) Tax Considerations when making Business Decisions

INTRODUCTION

- When making business decisions and/or deciding which approach to take, in real life tax is something we cannot ignore
- Companies should choose the most tax efficient alternative for achieving a particular business decision. However, bear in mind that:
 - Commercial reality should always be considered before tax. A tax driven decision may not provide the best result to the company ultimately
 - We need to check against anti-tax avoidance legislations. Overly aggressive tax schemes may be challenged by tax authorities and result in fines / interests / imprisonment

Areas to be Covered

In this part, we will briefly discuss the following areas:

- Types of tax
- Typical situations where we need to consider tax when making decisions
- Illustrative examples

TYPES OF TAX

There are different types of tax that will affect business decisions:

- Income tax:
 - E.g. profits tax and salaries tax in Hong Kong, that are chargeable on profit or income
- Turnover tax:
 - E.g. VAT, GST (not in Hong Kong), that will be charged on turnover, regardless if the company has profit at the end
- Transaction tax:
 - E.g. stamp duty, that will be charged on stampable instruments

TYPICAL SITUATIONS

Below are some common scenarios where companies need to consider tax when making business decisions. We will continue using Dongo Limited introduced in Example 2 to further illustrate the concepts:

- Acquiring a residential property in Hong Kong (see Example 3)
- Acquiring machine in Hong Kong (see Example 4)
- Conducting R&D activities (see Example 5)

EXAMPLE 3 – ACQUIRING A RESIDENTIAL PROPERTY IN HONG KONG

EXAMPLE 3 – ACQUIRING A RESIDENTIAL PROPERTY IN HONG KONG

- Suppose after conducting a detailed analysis, Dongo Limited has decided to acquire a residential property at Cyberport for \$30 million. The next question is how to acquire the property
- The residential property is held by a company called Cyber Limited. Dongo Limited can either:
 - Option 1 Buy the shares of Cyber Limited from existing shareholders; or
 - Option 2 Buy the property directly from Cyber Limited
- Which one should Dongo Limited choose?

EXAMPLE 3 – ACQUIRING A RESIDENTIAL PROPERTY IN HONG KONG

Option 1

- The applicable stamp duty rate will be charged under Head 2 of the Stamp Duty Ordinance ("SDO"), and currently the applicable rate is 0.1% for each of the bought and sold note
- So total stamp duty = \$30m x 0.2% = **\$60,000**

Option 2

- Acquisition of residential property is governed by Head 1 of the SDO
- Dongo Limited is not a Hong Kong permanent resident, so the acquisition would be subject to Ad Valorem Stamp Duty ("AVD") at 15% and Buyer's Stamp Duty ("BSD") also at 15%
- So total stamp duty = \$30m x 15% + \$30m x 15% = \$9,000,000

EXAMPLE 3 – ACQUIRING A RESIDENTIAL PROPERTY IN HONG KONG

- Therefore from tax perspective, Option 1 should be chosen
- However, buying shares of Cyber Limited may face other risks like hidden liabilities, so Dongo Limited should engage professionals to conduct legal, financial and tax due diligence

EXAMPLE 4 – ACQUIRING MACHINE IN HONG KONG

EXAMPLE 4 – ACQUIRING MACHINE IN HONG KONG

- Further to Example 2 on Part 1, now Dongo Limited has decided to replace the machine at \$1,080,000
- Management now needs to consider if the Company should acquire the machine under:
 - Option 1 hire purchase; or
 - Option 2 full cash payment
- How different acquisition options affect Dongo Limited's profits tax position in Hong Kong?

EXAMPLE 4 – ACQUIRING MACHINE IN HONG KONG

- Please note that under Hong Kong Profits Tax, accounting depreciation is non tax deductible; instead tax depreciation allowance has to be calculated for tax deduction
- Dongo Limited is a manufacturer and suppose the machine is a manufacturing machine, the machine would be classified as prescribed fixed assets under s16G of the Inland Revenue Ordinance ("IRO"), and the acquisition cost would be fully deductible (i.e. no need to claim via depreciation allowance)
- However, machines acquired via hire purchase will not be qualified as prescribed fixed assets

EXAMPLE 4 – ACQUIRING MACHINE IN HONG KONG

- Therefore, under Option 1, the machine will be tax deductible over several years under depreciation allowance, while under Option 2, Dongo Limited can claim full tax deduction of \$1,080,000 during the year of acquisition
- So from tax perspective, Option 2 would result in quicker tax deduction and should be chosen
- However, as we know Dongo Limited is tight in cash, paying \$1,080,000 immediately may not be realistic
- Under hire purchase, additional interest expense will be incurred (though interest expense will likely be tax deductible also), which eventually may hurt the Company's profits
- So the management needs to weight the pros and cons of each option for final decision making

- Dongo Limited has decided to invest \$5,000,000 in R&D activities for developing a super conductor
- Who should Dongo Limited engage in carrying out the R&D activities?
 - Option 1 MIT in the US
 - Option 2 HKU

- Effective 2018/19, s16B of the IRO has segregated R&D activities into Type A and Type B expenditure
 - Type A expenditure 100% full deduction
 - Type B expenditure super deduction, i.e. 300% for the first \$2m, and 200% for the remainder
- For Option 1, as the research will be conducted by MIT in the US, which is not a designated local research institution (i.e. not Hong Kong based), it will be classified as Type A R&D, so \$5,000,000 R&D expense is fully deductible
- For Option 2, as the research will be conducted by the HKU, which is a designated local research institution, it will be classified as Type B R&D, so total deduction = \$2,000,000 x 3 + \$3,000,000 x 2 = \$12,000,000

- From tax perspective, Option 2 should be chosen as this will increase Dongo Limited's tax deductible expenditure dramatically
- However, other business aspects should also be considered, for example the world ranking of the universities, which university would yield better R&D results etc

Summary

COST ACCOUNTING FOR DECISION MAKING: TAKE AWAY

- Always define the objectives first. Without the objectives, you do not know where to go
- Identify alternatives. Every business decision must have at least 2 choices (as simple as to do or not to do)
- Only include relevant information when analyzing. Irrelevant information not only would cost extra money and time to prepare, but also may result in making wrong decisions
- Tax is a relevant factor when making business decisions, and different alternatives may have huge tax differences
- However, business decisions should not be tax driven. Commercial substance is crucial for sustainable tax schemes

~~ The End ~~