15.516x Financial Accounting

Recitation 4

MIT Sloan School of Management

Finance at MIT

Where ingenuity drives results

Agenda

- Intangibles
- Cash flow statement

Tangible assets vs. intangible assets

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- Tangible assets are things you can touch (e.g., inventory and PPE). Tangible assets have physical substance.

- Intangible assets are things you cannot touch (e.g., patents and brand value). Intangible assets do not have physical substance.

- Intangible assets include:
  - Intellectual property (Patents, Copyrights, Trademarks)
  - Licenses, Franchise rights
  - Brand value
  - Customer lists
  - Goodwill

Intangible assets

- Investing in R&D and other intangible assets is conceptually similar to CAPEX.

- What are the rules for the costs of internally developed intangible assets under US GAAP?
  - The costs of internally developed intangible assets are expensed (as opposed to capitalized and put on balance sheet as an asset).

- Logic?
  - Future economic benefit not reliably measurable.
  - Compare to “tangible” asset like building

- Exceptions:
  - Certain software development expenditures
  - Intangibles purchased from another company (more later)

Question 1 Software Development Cost Amortization

- Suppose software costs capitalized for 2015-2017 are as follows
- If the useful life is 2 years:
  - How much is amortization in 2017?

	2015	2016	2017
Software costs capitalized	100	110	120

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Amortize 2015 costs		50	50

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Software costs capitalized	100	110	120
Amortize 2015 costs		50	50
Amortize 2016 costs			55

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Software costs capitalized	100	110	120
Amortize 2015 costs		50	50
Amortize 2016 costs			55
Total to be amortized			105

Question 2: Intangibles

ABC Corp. has the following intangibles information, during and at the end of fiscal year 2019 (12/31/2019):

US$ millions	FY 2019
Internally developed software	83
Software costs, capitalized in 2018	170
Useful life	10 years

Question 2: Intangibles

US$ millions	FY 2019
Internally developed software	83
Software costs, capitalized in 2018	170
Useful life	10 years

- How much R&D expense did ABC corp incur during fiscal year 2019?
  - $83 million
- How much intangibles amortization expense did ABC corp incur during fiscal year 2019?
  - $17 million

Agenda

- Intangibles
- Cash flow statement

Cash Flow Statement

Three Sections:

- Operating (Cash flow from operations, CFO): day-to-day business activities
  - E.g., pay employees/suppliers, collect from customers, …
  - Also: Interest income, dividends received
- Investing (Cash flow from investing, CFI): purchase or sale of long-term assets
  - Purchase/sale of equipment, financial investments, etc. patent
- Financing (Cash flow from financing, CFF): raise or repay external capital
  - Issue equity/bonds, dividends, borrow/repay debt (BUT: interest payments are in the operating section).

Q3: Transactions affecting cash flow statement

(T1) Issues stock and receives $3,000 in cash	+3000	Financing
(T2) Purchase equipment for $20,000 in cash	-20000	Investing
(T3) Buys inventory for $1,000 cash	-1000	Operating
(T4) Sells inventory costing $300 for $500 on account	[no cash]	
(T5) Collects $200 worth of receivables	+200	Operating
(T6) Record depreciation of $100 on the equipment	[no cash]	
(T7) Pays dividend to shareholder of $600	-600	Financing

Q3 – Putting it altogether

Net Cash Flows:

1. Operating: -1000 (T3) + 800 (T5) = -200
2. Investing: -20,000 (T2)
3. Financing: 3,000 (T1) – 600 (T7) = 2,400

Total Net CF: -18,400

Q4: Cash-Flow Classification

O	1)	Payment of 96,900 to suppliers
F	2)	Receipt of 200,000 from issuing common stock
O	3)	Receipt of 49,200 from customers for sales made this period of goods originally costing 35,000
O	4)	Receipt of 22,700 from customers this period for sales made last period
O	5)	Receipt of 1,800 from a customer for goods the firm will deliver next period
O	6)	Payment of 16,000 for interest expense on debt
I	7)	Payment of 40,000 to acquire land
O	8)	Payment of 25,300 as compensation to employees for services rendered this period
O	9)	Payment of 7,900 to employees for services rendered last period but not paid for last period
I	10)	Payment of 53,800 for a patent purchased from its inventor
I, F ~~None~~	11)	Acquisition of a 290,000 building by issuing a note payable to a bank
F	12)	Payment of 19,300 as a dividend to shareholders
I	13)	Receipt of 12,000 from the sale of equipment that originally cost 20,000 and had 8,000 of accumulated depreciation at the time of sale
F	14)	Payment of 100,000 to redeem bonds at maturity
I	15)	Payment of 40,000 to acquire shares of IBM stock
O	16)	Receipt of 200 in dividends from IBM relating to the shares of common stock acquired in transaction 15.
F	17)	Payment of 60,000 to repurchase the firm's own shares

Indirect Method

Under indirect method: start with net income and then adjust it to end up at operating cash flows.

- Start with net income
- Adjustments
- ~~End up with Net Income~~ End up with Cash Flow from Operations

Net Income = Operating Cash Flow + Operating Accruals

"Reconcile net income and cash flows from operations:"

Net Income

+ non-cash expenses (e.g., depreciation)

-/+ gains/losses from investing activities (e.g., PP&E disposal)

-/+ changes in relevant current asset/liabilities accounts (e.g., $\Delta\mathrm{AR}, \Delta Inv.$)

= **Cash Flow from Operations**

Q5: Indirect Method – what was the cash flow from operations?

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Income Statement

Revenues	$5,000
COGS	(600)
Interest Exp.	(320)
Deprec. Exp.	(500)
Gain on Sale	800
Net Income	**$4,380**

Changes in…	
Cash	1,180
A/R	4,500
Inventory	400
Interest payable	200
Bond payable	2,500

- Deprec. Expense: 500 is NOT cash
- Gain on Sale: 800 is Investment

We then subtract the gain on sale. We do this because gain on sale is under cash flows from investing. So not subtracting this would be double counting.

- A/R: 4,500 is change in current assets
- Inventory: 400 is change in current assets
- Int Pay: 200 is change in current liab.

interest

Cash from Operations

Net Income		4,380
Plus: Depreciation Expense	500	
Less: Gain on Sale of PP&E	(800)	
Less: Increase in A/R	(4,500)	
Less: Increase in Inventory	(400)	
Plus: Increase in Payables	200	
Total		**$(620)**

Add non cash expenses

Subtract investing gain/loss

Subtract (signed) changes in current assets

Add (signed) changes in current liabilities