

# 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

- 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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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

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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

# Recitation Agenda

Statement of cash flows

# Cash Flow Statement

- Balance Sheet
  - A snapshot of the financial position of a business
  - What did the firm own / owe at the end of 2013?
- Income Statement
  - Accounting performance of a company over a period of time
  - Was the firm profitable during 2013?
- Statement of Cash Flows
  - Sources and uses of cash
  - What has happened in the cash balance during 2013?
- Stockholders' Equity
  - Evolution of Shareholders' equity in the company.
  - How did the equity accounts change during 2013?

# Cash Flow Statement

## Three Sections:

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

# Q1: 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

## Q1 – Putting it altogether

### Net Cash Flows:

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

Total Net CF:  $-18,400$

## Q2: 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 | 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 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.,  $\Delta AR$ ,  $\Delta Inv.$  )
- = Cash Flow from Operations**

# Q3: Indirect Method – what was the cash flow from operations?

Income Statement	
Revenues	\$5,000
COGS	(600)
Interest Exp.	(320)
Deprec. Exp.	(500)
Gain on Sale	800
<b>Net Income</b>	<b>\$4,380</b>

Balance Sheet			
Assets		Liabilities	
Cash	1,180	Int Pay	200
A/R	4,500	Bond Pay	2,500
Inventory	400		
		S/E	
		Cont Cap	1,000
		R/E	2,380
<b>Total Assets</b>	<b>6,080</b>	<b>Total S/E Liab</b>	<b>6,080</b>

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

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

## Cash from Operations

Net Income	4,380	
Plus: Depreciation Expense	500	Add non cash expenses
Less: Gain on Sale of PP&E	(800)	Subtract investing gain/loss
Less: Increase in A/R	(4,500)	Subtract (signed) changes in current assets
Less: Increase in Inventory	(400)	
Plus: Increase in Payables	200	Add (signed) changes in current liabilities
<b>Total</b>	<b>\$(620)</b>	