



E145 2008

Accounting Workshop

Presented by Boris Logvinskiy
(with thanks to Professor Tom Byers and Ann Miura-Ko)
Stanford University

Special Thanks to Eric Carr, Scott Bowie, Mike Rosenbluth, and Nathan Furr

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Workshop Agenda



- Course Policies
- Case Method
- Basics of Accounting

Honor Code Strictly Applied



The following are violations of Stanford honor code for E145

- Being coached by others who have done the cases in past
- Reviewing other people's notes about cases
- Copying the work of another E145 Team
- Contacting case actors to find out what happened
- Anything else that prevents you from doing an analysis, using your own brains and judgment
- ***Failure to footnote and give credit for intellectual property you did not create***

Class Participation is Critical



Treat our class sessions like high priority meetings with your most valuable customers:

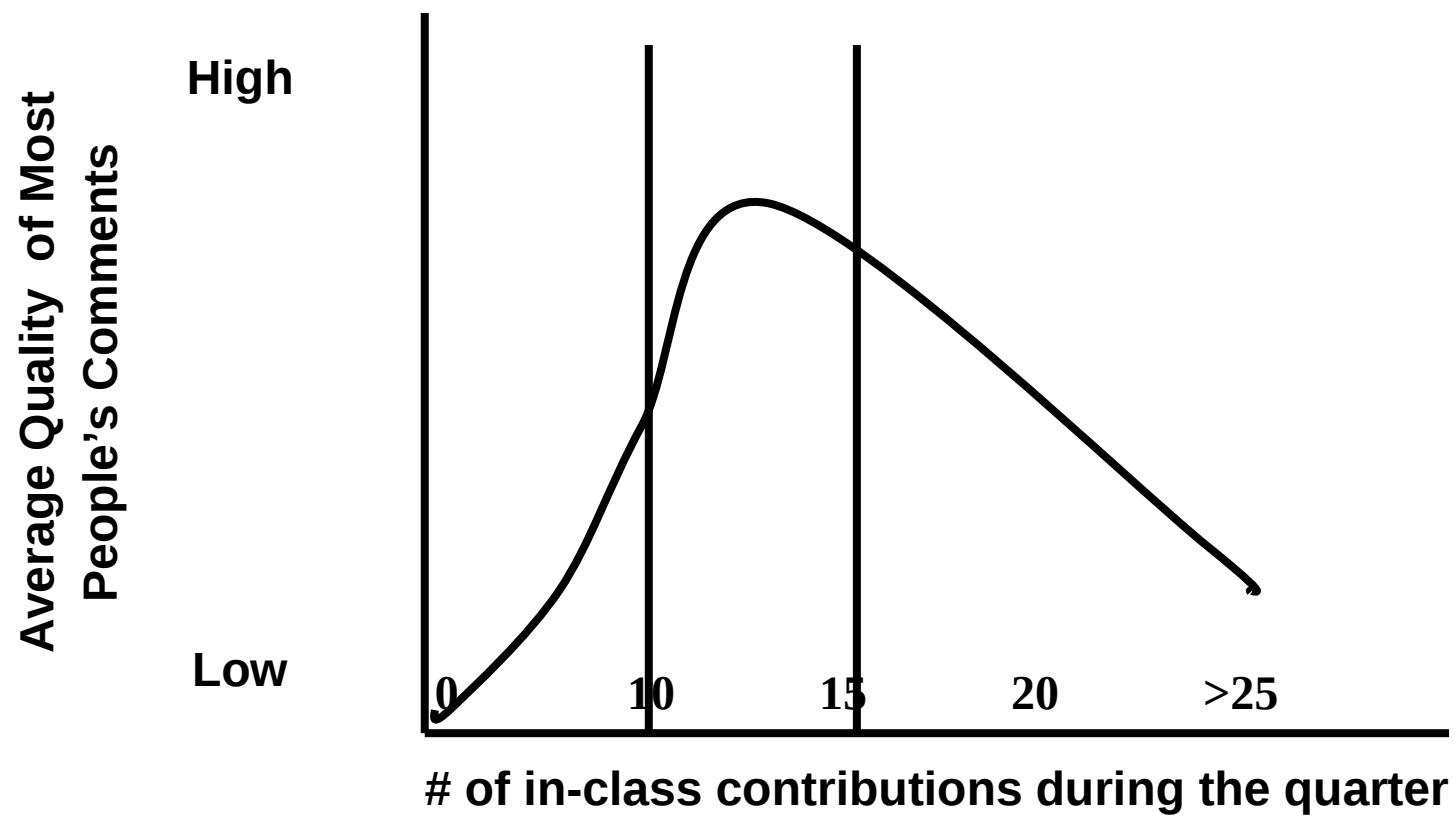
1. Be here
 2. Be on time
 3. Be well prepared
 4. Participate thoughtfully and effectively
 5. Listen to & respect one another
 6. Take the initiative
 7. Have fun!
- Note: Attendance is mandatory, unless you have a valid reason.
 - Absences will be excused for serious illness, hardship, weddings, critical job interviews, company requirements for out of town travel.

Quality, Not Quantity!

We use 7 criteria to assess quality of comments
& questions in class:

1. Clarity
2. Rigor = logic + evidence + assumptions
3. Conciseness
4. Relevance = timing + fit with the flow
5. Synthesis
6. Creativity
7. Humor

Quality Beats Quantity in E145!



Case Method

The Case Method of Instruction



- A case is a “**simulation**” of business life and decision-making. It usually sets the stage for a set of business problems and complex decisions.
- Cases present **lots of information** arranged in an **unstructured way**. Goal of case analysis is to select the relevant information, and structure it in a way that helps addressing the issues of the case and making decisions.
- Many times, decisions will have to be made with **insufficient information** reflects real life!
- **Teamwork** is essential for case-based learning and for the development of grounded opinions. **Disagreement is normal** and even necessary solutions are rare.
- Teamwork Tips
 - Talk about the facts, not personal opinions
 - Come up with a number of alternatives
 - Seek consensus, not unanimity



(please read E145 handouts on Case Analysis)

Seven Tips for Case Analysis

1 - Gain a **Basic Understanding** of the Company

- What does the company sell, to whom, how, and why do people buy it?
- Size of revenues - How big is the business?
- Growth of revenue and assets – How quickly is the company growing?
- Profitability of the business (several measures)

2 - Understand the **Financial Situation** of the Company

- Is operational cash flow positive or negative?
- How is the short term cash position?
- How much debt does the company have?

3 - **Benchmark** the company against competitors and the industry average

- Measures of profitability
- Measures of operational efficiency
- How are the company's products differentiated from competition?

4 - Analyze the **historical evolution** of the company's financial situation

Seven Tips for Case Analysis

5 - Analyze the **sustainability of growth** and the **cash burn rate**

- How long will the company be able to maintain operations with the current cash position?

6 - Don't **confuse symptoms with problems**.

- Numbers often reflect symptoms that help in diagnosing business problems.
- One of the most important tasks of case analysis is to identify the problems addressed by the case.

7 - Reach a **clear decision** on the case.

- Should be well-supported and logically consistent with the analysis.

Case Write-Up Tips

- 1 - Skip the intro.** We know what question you're answering; we have to read at least 6 answers to the same question. You've only one page in which to make your case, make effective use of it.
- 2 - Build an argument.** Don't just answer the "what" question, back it up with the "why". If you make assertions or assumptions outside of the case, justify them. We ought to be able to read your answer and create a representative outline of the form:
 - "I think _____ should do/choose _____ option because
 - Reason X
 - Reason Y
 - Reason Z

In fact, maybe make the outline first. If the outline is good enough, you can just turn it in. Content over style.

Case Write Up Tips



- 3 - Read the case carefully and learn to filter.** These cases have a lot of info, not all of it is relevant. Many of these cases were written with different case questions in mind. Some of them deal with technologies you may not be familiar with. If there's terminology or anything in the text that you don't quite understand, feel free to ask. The teaching team is here to help.
- 4 - Use the study questions.** At least read them. Preferably, discuss and answer them. The study questions have been carefully designed to help you narrow down the scope of the actual homework question or, at very least, to point you in the right direction. Again, if you're not sure, ask.

Case Write Up Tips



- 5- Feel free to use outside knowledge.** Make full use of your own and your team's knowledge. What do you know about this particular technology or market? Between you and all of your team members, you probably know a lot more than you think you know. What would you do in this situation? From what you know of the personalities in the case, which of the decision options do you think they would prefer?
- 6- But, don't just look up an answer.** With point 5 in mind, don't just look up what really happened and let historical determinism answer your question. Answer the case from the time and perspective of the personalities in the case. We don't look for right or wrong answers, we look for well-constructed arguments.

Case Write Up Tips



- 7 - Think through the alternatives.** They won't always be laid out in the case or the question.
- 8 - Think about limitations as well as advantages.** Argue for your choice, but recognize the risks. Every choice has tradeoffs, else these decisions wouldn't be so interesting or so difficult. What are the big risks for each alternative and why, despite these risks, do you think your choice is the best path of action?
- 9 - Know when to use the numbers.** Hint: if we teach you financing in class and then you get a case with financing numbers in it, we probably want you to run the numbers. You'll note that you won't have all the values you need – you can solve for some values, others you'll just have to guess (and justify why those numbers are reasonable).
- 10 - Use the tools and models from reading.**



Accounting



Why should I care?

- Key Business Drivers
 - Identifies the **critical assumptions** you are making about your business (for revenues and for costs)
 - Identifies what drives the growth of your business
- Timeline analysis
 - Enables you to know **how much** resources are required to scale the business and **when** those resources are required
- Does this business even make sense?
 - Can't make a \$1 widget with a \$3B fab
 - Sure, selling dollar bills at a discount gets you great market share fast but also makes you broke

Accounting Principals

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

What the company owns
(used to generate income)

- How the ownership of assets was **financed** (By third parties or by the owners)
- **Equity** = *book value* of company

$$\text{Market Value} = \text{Share price} \times \# \text{ shares issued}$$

- **Note:** *Market and book value of company are not the same. Market value takes into account the potential growth of the company*

Balance Sheet

- A *snapshot* of the investing and financing activities of a firm

Balance Sheet of XYZ Corp. - 31 December of 2007 (in thousand \$)

Current Assets (liquid in less than a year)	{ Cash Accounts Receivable Inventories	Current Liabilities (payable in less than a year)	{ Accounts Payable Salaries Payable Accrued Expenses Income Taxes Payable Short Term debt
Fixed Assets	{ Property, plant and equipment (less depreciation)	Long-Term Liabilities (bonds issued, bank loans)	
Other Assets	{ Intangibles (less depreciation) Investment Securities	Shareholders' Equity	{ Common Stock Additional Paid-in Capital Retained Earnings
Total Assets		= Total Liabilities + Shareholder's Equity	

Balance Sheet

- A *snapshot* of the investing and financing activities of a firm

Balance Sheet of XYZ Corp. - 31 December of 2007 (in thousand \$)

Current Assets (liquid in less than a year)	{ Cash Accounts Receivable Inventories	Current Assets (payable)	Assets are economic resources
Fixed Assets	{ Property, plant and equipment (less depreciation)	Long-term Assets (bonds)	• An asset has the ability to provide future benefits to the company
Other Assets	{ Intangibles (less depreciation) Investment Securities	Shareholder's Equity	
Total Assets		= Total Liabilities + Shareholder's Equity	

Balance Sheet

- A *snapshot* of the investing and financing activities of a firm

Balance Sheet of XYZ Corp. - 31 December of 2007 (in thousand \$)

• Liabilities are creditors' claims on the assets of a firm. The claims result from benefits the firm has previously received from the creditors	Current Liabilities (payable in less than a year) Accounts Payable Salaries Payable Accrued Expenses Income Taxes Payable Short Term debt Long-Term Liabilities (bonds issued, bank loans) Shareholders' Equity Common Stock Additional Paid-in Capital Retained Earnings
Total Assets	= Total Liabilities + Shareholder's Equity

Balance Sheet

- A *snapshot* of the investing and financing activities of a firm

Balance Sheet of XYZ Corp. - 31 December of 2007 (in thousand \$)

Current Assets (liquidity) Cash Shareholder's equity is the owners' claim • Contributed capital (Paid-in capital): the amount invested • Retained earnings: Increase in equity due to operations	Current Liabilities (payable in less than a year) - Accounts Payable - Salaries Payable - Accrued Expenses - Income Taxes Payable - Short Term debt Long-Term Liabilities (bonds issued, bank loans) Shareholders' Equity - Common Stock - Additional Paid-in Capital - Retained Earnings
Total Assets	= Total Liabilities + Shareholder's Equity

Balance Sheets Comparison



Assets	Wal-Mart (\$B)	Cisco (\$B)	Genentech (\$B)
Cash	7.4	22.3	3.3
Accounts Receivable	2.8	4.0	2.4
Inventories	33.7	1.3	1.5
Prepayments	2.7	2.0	0
Other Current Assets	0	2.0	1.5
Total Current Assets:	46.6	31.6	8.8
Property, Plant and Equipment	88.4	6.0	5.0
Intangible Assets	13.8	14.7	2.7
Other Long Term Assets	2.4	2.7	2.1
Total Assets:	151.2	53.3	18.9
Liabilities and Shareholders' Equity			
Accounts Payable	28.1	0.8	3.2
Notes Payable	2.6	0	0
Accrued Expenses	14.7	5.4	0
Other Current Liabilities	6.5	7.1	0.7
Total Current Liabilities	51.7	13.4	3.9
Long Term Debt	30.7	6.4	2.4
Other Noncurrent Liabilities	7.1	2.1	0.3
Total Liabilities	89.6	21.9	7.0
Shareholders' Equity	61.6	31.5	11.9
Total Liabilities and Shareholders' Equity ..	151.2	53.3	18.9

Balance Sheet Analysis

- **Working Capital:** Part of current assets not financed by current liabilities. Also a measure of how much you have in quickly liquid assets

$$= \text{Current Assets} - \text{Current Liabilities}$$

- **Liquidity ratios:** measures of the ability to meet short term financial obligations
 - **Current Ratio** = Current Assets / Current Liabilities
 - **Acid-test** = (Cash + Accounts Receivable) / Current Liabilities
 - **Debt to Equity** = Liabilities/Shareholder's Equity
- **Operational Efficiency Measures**
 - **Inventory Turnover** = Cost of Sales per year / Current Inventory
 - **Accounts Receivable Collection Period** = Accounts Receivable / Sales
 - **Accounts Payable Collection Period** = Accounts Payable / Cost of Sales

Balance Sheet Analysis



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Total Liabilities and Shareholders' Equity ..	151.2	53.3

Working Capital:

Walmart: -5.1B

Cisco: 18.2B

Current Ratio:

Walmart: 0.9

Cisco: 2.4

Inventory Turnover

Walmart: 7.8

Cisco: 9.5

Acct Receivable Collection Period:

Walmart: 0.01

Cisco: 0.11

Acct Payable Collection Period:

Walmart: 0.11

Cisco: 0.06

Guess That Company



- Which financial services company had a Debt/Equity ratio of 1,600?
Merrill Lynch
- Which Silicon Valley firm has a current ratio of 6.96?
Google
- Which financial services company had 0s for its current and acid-test ratios?

ALL OF THEM!!!

Balance Sheet and Income Statement



$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

$$\text{Assets} = \text{Liabilities} + \underbrace{\text{Contributed Capital} + \text{Retained Earnings}}$$

$$\text{Assets} = \text{Liabilities} + \text{Contributed Capital} + \underbrace{\text{Retained Earnings, Beginning of Period} + \text{Net Income for Period} - \text{Dividends for Period}}$$

$$\text{Assets} = \text{Liabilities} + \text{Contributed Capital} + \text{Retained Earnings, Beginning of Period} + \underbrace{\text{Revenues} - \text{Expenses for Period}} - \text{Dividends for Period}$$

Income Statement



Reports the **economic results** of a company over a time period. It shows the derivation of earnings or losses.

Income Statement of XYZ Corp. – year 2007

\$

% Rev.

+ **Revenues**

- Cost of Revenue (product cost or COGS)

= **Gross Margin**

- Sales and Marketing

- General and Administrative

- Research & Development

- Depreciation and Amortization

= **Operating Income (EBIT)**

+ Interest Income(expense) net

= **Net Income before Taxes**

- Income Tax Provision

- Extraordinary Items

= **Net Income**

Net Income = Revenues - Expenses

Income Statement Comparison



	Cisco (\$M)	Genentech (\$M)	Wal-Mart (\$M)
+ Revenues	34,922	11,724	348,650
- Cost of Revenue (COGs)	12,586	1,571	264,152
= Gross Profit	22,336	10,153	84,498
- SG&A*	8,728	2,446	64,001
- Research & Development	4,499	3,336	-
- Depreciation and Amortization	488	142	-
= Operating Income (EBIT)	8,621	4,502	20,497
+ Interest Income(expense) net	840	(76)	(1,529)
= Net Income before Taxes	9,461	4,426	18,968
- Income Tax Provision	2,128	1,657	6,365
- Extraordinary Items	-	-	894
= Net Income	7,333	2,769	11,182

SG&A = Selling, General and Administrative Expenses

Income Statement Analysis



- Some Profitability Measures:
 - **Gross Margin (%)** = $\text{Gross Profit} / \text{Sales}$
 - **Operating Margin** = $\text{Operating Income} / \text{Sales}$
 - **Return on Sales** = $\text{Net Income} / \text{Sales}$
 - **Return on Equity** = $\text{Net Income} / \text{Shareholders' Equity}$
- Other Important Measures
 - **Earnings Per Common Share (EPS)** = $\text{Net Income} / \text{Common Shares}$
 - **Price Earnings Ratio (P/E)** = $\text{Market Price} / \text{Earnings Per Share}$

Income Statement Analysis



	Cisco (\$M)	Wal-Mart (\$M)
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- Extraordinary Items	-	894
= Net Income	7,333	11,182

Gross Margin:
Walmart: 24%
Cisco: 64%

Operating Margin:
Walmart: 6%
Cisco: 25%

SG&A = Selling, General and Administrative Expenses

Financial Analysis Example



	GM	P/E	EPS
MSFT	80.8	14.16	1.87
CSCO	65.6	16.8	1.31
GE	24.22	11.46	15.21
Textron	25.31	7.35	3.93

	GM	P/E
Software	16.85	5.32
Networking	29.9	11.38
CE	18.23	7.6
CE	18.00	7.68

Cash Flow Statement

CFIMITYM !!!

(Cash Flow is More Important Than Your Mother!!)
Especially for an entrepreneurial firm...

It is possible for a profitable firm to go bankrupt
because they lack the cash to keep things afloat

Financing: Revenues and costs are not necessarily recognized when cash is transacted (e.g. accounts payable and receivable, salaries payable, depreciation vs. capital equipment purchase)

- *Investment Activities:* Firm also receives cash from sources not related operations (e.g. issuance of stocks and bonds)

Cash Flow Components



P

Operations

Cash Received from
Sales of Goods and
Services

—

Cash Paid for
Operating Goods and
Services

=

Cash Flow from
Operations

+

Investing

Cash Received from
Sales of Investments
and Property, Plant
and Equipment

—

Cash Paid for
Acquisition of
Investments and
Property, Plant and
Equipment

=

Cash Flow from
Investing

+

Financing

Cash Received from
Issue of Debt or
Capital Stock

—

Cash Paid for
Dividends and
Reacquisition of Debt
or Capital Stock

=

Cash Flow from
Financing

=

Net Change in Cash
for the Period

Source: Stickney and Weil, *Financial Accounting*

Statement of Cash Flows - Example

SIERRA CORPORATION
Statement of Cash Flows
For the Month Ended October 31, 2004

Cash flows from operating activities		
Cash receipts from operating activities	\$ 11,200	
Cash payments for operating activities	<u>(5,500)</u>	
Net cash provided by operating activities		\$ 5,700
Cash flows from investing activities		
Purchased office equipment	<u>(5,000)</u>	
Net cash used by investing activities		(5,000)
Cash flows from financing activities		
Issuance of common stock	10,000	
Issued note payable	5,000	
Payment of dividend	<u>(500)</u>	
Net cash provided by financing activities		<u>14,500</u>
Net increase in cash		15,200
Cash at beginning of period		<u>0</u>
Cash at end of period		<u><u>15,200</u></u>

Source: Kimmel et. al. *Financial Information For Decision Making*

Wrap-Up



- Financial model is not a part of your OAP but understanding financials is a critical part of your case analysis
- In practice, your financial model for a business plan will answer:
 - How long will it take to build your product?
 - How will you price it?
 - How will you sell it? How long will that take?
 - What are my critical risk factors?