The Form of the Balance Sheet:



Assets:

Current:

Cash

Receivables

Short Term Notes

Inventory

Prepaid Expenses

Current (| Yr)

Fixed: Land, Bldgs, & Equip

less Accum Depreciation

Long Term Investments

Goodwill and Intangible Assets

<u>Liabilities:</u>

Current: Short Term Credit Line

Accounts Payable 4

Accrued Expenses 4 5

Taxes Payable

Curr. Port. Of L-7 Debt

Long Term: Long Term Debt

Repayable Grants -

Shareholder's Equity

Capital Shares / ()

Retained Earnings

Total Assets 1

Total:

The Concept of Debt:



- In a western agricultural or industrial society, wealth is held primarily by individuals and not by society at large. There are exceptions, e.g. resources, but the profits from development generally flow to individuals.
- Most with wealth wish to preserve or grow wealth.
- Wealth and entrepreneurial spirit often do not align, and there
 are vast differences in the tolerance for risk.
- The borrower believes inherently that he/she can create more wealth than the cost of the borrowed funds.

Lenders trade lower return (growth in wealth) for lower risk (the "risk-reward relationship). Debt is the primary mechanism to reduce risk, since it ranks ahead of equity.

Equity vs. Debt





- Equity is fundamentally different than debt; understanding this difference is key to understanding the commercial world.
- Equity is focused on growth (Dell); debt is focused on preservation of value (Nortel).
- The "mindset" is drastically different. Debt: "will I be repaid"? Equity: "how much value creation can I get?"
- The legal rights are different: debt can push a company into bankruptcy.

The Concept of Debt (2):



- The benefit to the borrower is that debt does not convey ownership. The lender may restrict the business through covenants, but the equity owners own the business and its "blue sky" potential.
- Interest is the cost of debt. It is: RISK (=> Interest
 - Highly variable from loan to loan, i. e. it depends on the risk associated with the loan, and over time, reflecting the balance between savers and borrowers and inflation rate.
 - Often secured, i.e. if not repaid the lender can "attach" (seize) certain assets in order to recover the principal.
 - Always lower than the projected rate of return on equity in the project/business. Otherwise, the business would not be able to repay the equity investors at an acceptable return.

Secured vs. Unsecured Lenders:



- Long term lenders are usually secured by a claim on fixed assets. Home mortgages are like this. Because the home can be seized if the loan isn't paid, the lender is relatively indifferent to the borrower's financial status.
- Short term lenders and suppliers are not secured by hard assets. Given that debt is focused on repayment, why do they lend?

Working captials

Working Capital



- Working capital= Current assets Current Liability
- Working capital ratio = current assets / current liabilities

Working Capital



- Working capital is the difference between current assets and current liabilities; it is the extra cost of being in business over and above fixed assets.
- The ST credit line is usually the largest unsecured creditor. It looks to a surplus of working capital as proof that more funds are available in the near term to pay obligations.
- The credit line is a demand loan, callable at any time, and subject to covenants.

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Covenants re Working Capital



- There are typically four covenants for working capital:
 - 1. The company will file monthly financial statements with the bank.
 - 2. The owners will not declare a dividend without the consent of the bank.
 - 3. The company will maintain a fixed dollar amount of working capital.
 - 4. The company will maintain a fixed working capital ratio.

serious matter

Failure to comply with these covenants will lead a short term lender to call the loan, often pushing the company into bankruptcy.

Sales Growth and Working Capital



- Current assets and liabilities change with sales level; failure to recognize this has sunk many business. Typically, inventory, payables and receivables are proportional to sales.
- Nove "one time" means are sometimes available to cover a major growth in sales.

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Working Capital Deficiency:



- Imagine a startup "magic box" business with the following characteristics:
 - Your "rich uncle" gave you \$500k to see what you could do.
 - You and some friends spent two years and \$400k doing the software. It has been depreciating at the rate of \$4K per month for 10 months
 - Your losses to date from two years of prototyping are \$95k.
 - Your sales strategy is a CM of 50%.) co65 level
 - Material is 90% of COGS, contract labor is 10%. -> payabor You are selling \$25K/mo of boxes to larger companies, who are testing the product. You are at break even.
 - One company gives you an order for \$1,000,000!!
 Can you survive the order?

Working Capital Deficiency (2):



- The sequence:
 - You order the material at time zero, terms net 30.
 - You receive the material a month later.
 - You pay for the material on time.
 - You hire the labor force in month two to finish the product.
 - You ship the product at the start of month three, terms net
 30. You book the earnings at this time.
 - Your large customer takes 60 days to pay you due to testing of the first large shipment.
- Follow the balance sheet and "think like a banker".

Assumptions:



regular sales 25k/month receivables days 50K\$

payables 72 days 30K\$ Inventory days 40K\$

$$\frac{7^2}{30} \times 25 \text{ kmonth} \times (1-(M)) = 48 \\
= 30 \text{ K}$$
Contribution Sales

Margin (%)

50% in this case

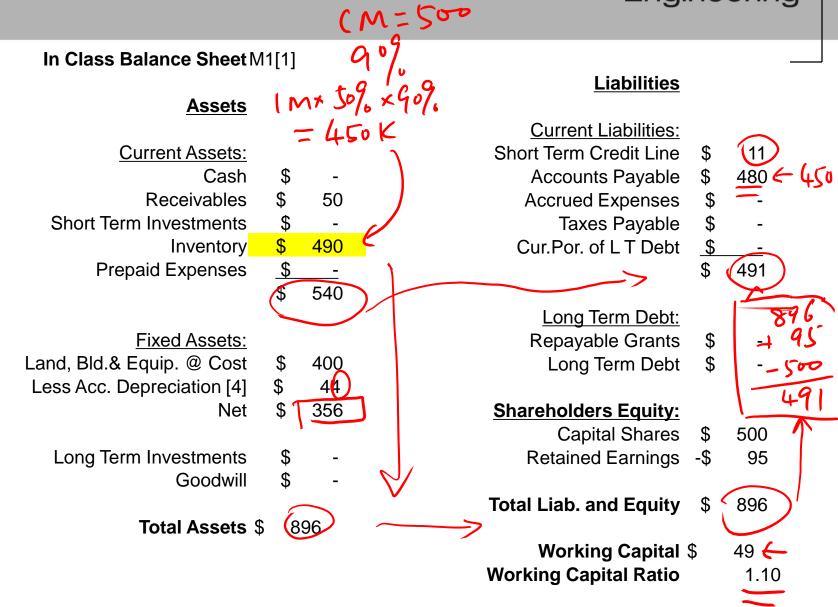
In Class Balance Sheet



	[0] OM (000)	In Class Balance Sheet
<u>Liabilities</u>		<u>Assets</u>
Current Liabilities: Short Term Credit Line \$ 15 Accounts Payable \$ 30 Accrued Expenses \$ - Taxes Payable \$ - Cur.Por. of L T Debt \$ 45	\$ 50 \$ 40 \$ 790	Current Assets: Cash Receivables Short Term Investments Inventory Prepaid Expenses
Long Term Debt: Repayable Grants Long Term Debt Shareholders Equity: Capital Shares Retained Earnings Shareholders Equity: 95	\$ 400 \$ 400 \$ 360 \$ - \$ -	Fixed Assets: Land, Bld.& Equip. @ Cost Less Acc. Depreciation [4] Net Long Term Investments Goodwill
Total Liab. and Equity \$ 450 Working Capital \$ 45 Working Capital Ratio 2.00	\$ 450	Total Assets
		variational ports on / vangaban

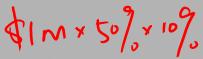
Month 1 – Material Arrival





Month 2 – Labor Incurred, Material

Paid~





In Class Balance Sheet N	12 [2]	
<u>Assets</u>	`	<u>Liabilities</u>
Current Assets: Cash Receivables Short Term Investments Inventory Prepaid Expenses	\$ - \$ 50 \$ - \$ 540 \$ - \$ 590	Current Liabilities: Short Term Credit Line \$ 507 Accounts Payable \$ 30 Accrued Expenses \$ - Taxes Payable \$ - Cur.Por. of L T Debt \$ 537
Fixed Assets: Land, Bld.& Equip. @ Cost Less Acc. Depreciation [4] Net	\$ 400 \$ 48 \$ 352	Long Term Debt: Repayable Grants Long Term Debt Shareholders Equity:

Total Assets \$ 942

Working Capital \$ Working Capital Ratio

Capital Shares

Retained Earnings

Total Liab. and Equity \$

53 7

500

95

942

Long Term Investments

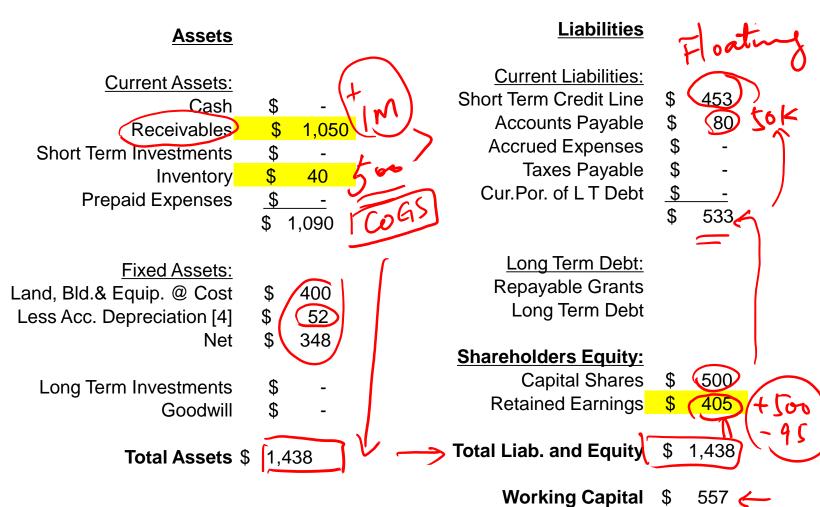
Goodwill

Month 3 – Product delivered, labor due, wait for customer payment (not due)



2.05 \angle

In Class Balance Sheet M3[3]



Working Capital Ratio

Month 4 – Labor Cost Paid



JOK

In Class Balance Sheet M4

Ass	ets
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Current Assets:

\$ \$ 1,050 Receivables **Short Term Investments** \$

Cash

40 Inventory \$ **Prepaid Expenses**

Fixed Assets:

Land, Bld.& Equip. @ Cost \$ 400 Less Acc. Depreciation [4] 56

> 344 Net

1,090

Long Term Investments \$ Goodwill

Total Assets \$ 1,434

Liabilities

Current Liabilities:

Short Term Credit Line Accounts Payable

Accrued Expenses

Taxes Payable

Cur.Por. of LT Debt \$

Long Term Debt:

Repayable Grants

Long Term Debt

Shareholders Equity:

Capital Shares \$ 500 **Retained Earnings** 405

Total Liab. and Equity

1,434

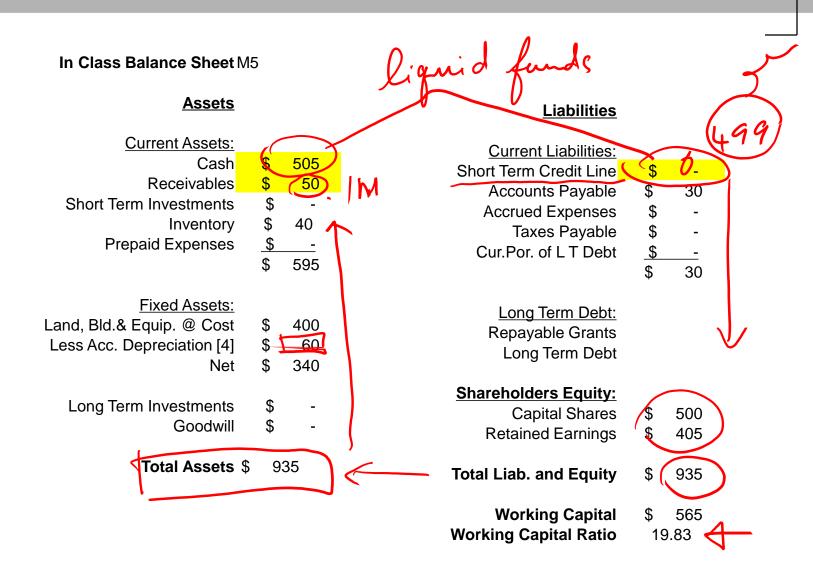
529

Working Capital Working Capital Ratio

561 2.06

Month 5 - Payment Received





Fixing a Working Capital Deficiency:



- The problem is "above the line": not enough current assets (what will become cash in less than 12 months) to service cash obligations.
- Any change "above the line", e.g. collecting receivables or reducing inventory, does not change working capital, because the security for the debt is reducing just as fast as the debt! The lender focuses on the shortfall, which doesn't change.
- Hence the saying: "you can't change an above the line problem above the line": the fix is more equity or more long term debt (refinancing).

solution majic

Debt and Leverage:



- Return (i.e. growth in wealth) is more volatile (more "levered")
 as debt goes up and equity goes down.
- This arises because the risk in the project is being concentrated onto a smaller base of equity. The debt gets a fixed (and hopefully lower!) return than equity, but it ranks ahead of equity; it must be serviced first.
- Debt ratio measures leverage.
- Debt ratio = Total debt / Total Assets

Leverage up equals leverage down.