

BU121: LA 3 Guide

Agenda

- Forecasting (Marketing C)
 - Top-Down, Bottom Up, Combining the two
- Entrepreneurial Finance
 - Cash Budgeting, Cash Worksheets, Cash Burn, Cash Build, Pete's Case B
 - Contribution Analysis
 - Venture Life Cycle, Sources of Funding, Valuation
- Formula sheet
- Not in these slides but you should look over:
 - Lab Manual articles

Forecasting Demand

- Sales forecast is not expected to be 100% accurate
- You need to do research and make educated assumptions
- Market size is not equal to a sales forecast
- Must plan for scalability

Market Size

- **Total Available Market** – the total market demand for the product with no competition or limits. Represents **potential**.
- **Service Available Market** – portion of **TAM** within geographical reach
- **Service Obtainable Market** – target market; % of **SAM** that can be realistically captured.
- **Penetrated Market** – Current customers, sales, user base

Top-Down Forecasting

- Not the preferred approach but represents **potential**
- Based on the **external** market
- Example: You want to sell a satellite radio system to cars
- TAM: 150 million available cars
- SOM: You want to capture 1%, so $0.01 \times 150 \text{ million} = 1.5 \text{ million}$
 - You can see where the logic here is flawed, it is too optimistic to just take a random percentage of TAM and calculate your SOM

Bottom-Up Forecasting

- Grounded in reality, based on what is within your **internal** capacity
- Consider the tightest constraints of what you can do
- Operating capacity → how many can you produce?
- Marketing → distribution → # of stores that sell lawn mowers → # they will carry → # mowers they sell in season on average
 - + Hr capacity to call in on stores
- Best approach → combine top down with bottom up. What is possible in the short term and long term potential → scalability
- **Scalability** is the company's ability to grow without being hampered by its structure or resources when faced with increased production

Combining the two

- The best approach is to combine the two to figure out the **potential** that is achievable but what is **realistically** achievable with your **capacity**
- Eg. Happy Cola uses the top-down method and wants to capture 10% of the market size of 30 million. Thus $0.1 * 30,000,000 = \$3,000,000$ worth of sales
- Happy Cola sells containers for \$5,000 per order, so it needs to generate 600 customers ($3,000,000 / 5,000 = 600$).
- However, Happy Cola's analysis has shown they can only generate 500 leads with one salesperson, therefore 600 customers will never be reached.
- Best to use **bottom-up** for short term and **top-down** for long-term

Sensitive Analysis and Contingency

- Pessimistic / Optimistic / Most Likely
- Think about breaking even, your capacity, analyze a similar sized company or launch
- Validate and better your assumptions
 - Think about potential changes to forecasts / what 'ifs'
- Have a contingency plan → point out risks before the investor does

Entrepreneurial Finance

Cash vs Profit

- Key principle: accounting is the language of business, cash is the currency
- A company that is profitable can still go bankrupt!
 - Sales Revenue → Accounts receivable
 - Expenses → Accounts payable
 - Depreciation / Amortization → Not cash
 - Owner's Equity → cash to use for business?

Cash Budgeting

Beginning Cash Balance

+ Receipts *

Total Cash Available

- Disbursements *

Cash Excess / (Deficiency)

Minimum Cash Balance Desired

Financing Req'd / Surplus or Repayment

Ending Cash Balance

Keys:

- Besides excess balance meeting minimum cash requirements, there are 3 possibilities:
- 1. Deficiency
 - Finance deficiency + minimum
 - Ending balance = minimum required
- 2. Excess $>$ minimum
 - Surplus available to repay borrowing
 - Ending balance = minimum required + any surplus that isn't needed for repayment
- 3. Excess $<$ minimum
 - Finance to = minimum requirement
 - End balance = minimum required

Cash Budgeting Exercise

- You want to get a handle on cash from January, February, March
 - Minimum Balance: 12,000
 - Sales forecasted: 20,000, 40,000, 60,000, 30,000, 50,000, 40,000 from November-April
 - Collect 30% of Receipts in month of sale, 60% the following month, 10% the second month after
 - Inventory is purchased a month ahead of time, and they cost 75% of sale
 - You pay for 20% of the purchase the month of, and 80% the month after
 - Prepare a **cash worksheet**

Cash Worksheet

	Nov	Dec	Jan	Feb	March	April
Net Sales	20,000.	40,000	60,000.	30,000	50,000	40,000
Collections						
30% month of						
60% following month						
10% second month after						
Total Receipts						
Net Purchases						
75% of next month's sales						
Payments						
20% month of purchase						
80% following month						
Total Disbursements						

Cash Worksheet

	Nov	Dec	Jan	Feb	March	April
Net Sales	20,000.	40,000	60,000.	30,000	50,000	40,000
Collections						
30% month of	6,000	12,000	18,000	9,000	15,000	12,000
60% following month		12,000	24,000.	36,000	18,000.	30,000
10% second month after			2,000	4,000	6,000	3,000
Total Receipts			44,000	49,000	39,000	
Net Purchases						
75% of next month's sales	30,000	45,000	22,500	37,500	30,000	
Payments						
20% month of purchase	6,000	9,000	4,500	7,500	6,000	
80% following month		24,000	36,000	18,000	30,000	24,000
Total Disbursements			40,500	25,500	36,000	

Cash Budget

Prepare a cash budget for January to March

- Selling + administrative expense is \$5000 per month
- You have an outstanding \$1200 bill from your account that needs to be paid in January
- Rent on your store is \$1500 per month
- You bought a new software for \$2900 which needs to be paid in full February
- Liability insurance is \$9200 in January
- Minimum cash balance of \$12,000
- Beginning cash balance in January equals minimum cash balance

Cash Budget

Cash Budget			
January, February, March			
	January	February	March
Beginning Cash Balance	\$ 12,000	\$ 12,000	\$ 12,700
Add: Receipts	44,000.00	49,000.00	39,000.00
Total Cash Available	\$ 56,000	\$ 61,000	\$ 51,700
Less: Disbursements for Purchases	40,500.00	25,500.00	36,000.00
Selling + Administrative Expense	5,000.00	5,000.00	5,000.00
Rent	1,500.00	1,500.00	1,500.00
Outstanding Bill	1,200.00	-	-
Liability Insurance	9,200.00	-	-
Software	-	2,900.00	-
Total Disbursements	\$ 57,400	\$ 34,900	\$ 42,500
Cash Excess/(Deficiency)	(1,400.00)	26,100.00	9,200.00
Minimum Cash Balance Desired	12,000.00	12,000.00	12,000.00
Financing Required	13,400.00	-	2,800.00
Surplus Cash	-	14,100.00	-
Ending Cash Balance	\$ 12,000	\$ 12,700	\$ 12,000

Cash Burn

- Gross Cash Build Rate
 - How quickly a venture builds cash through collections on sales
- Gross Cash Burn Rate
 - How quickly a venture uses up cash
- Monthly *Net* Cash Burn/Build Rate
 - $\text{=(Total gross build - total gross burn) / \# months}$
 - Compare to cash balance to determine weeks of cash remaining – your runway
 - + → build
 - - → burn
- Liquidity
 - The ability of a venture to maintain a high enough build rate to meet its obligations as they come
- Cash Runway = Ask / Rate

Example

- XYZ has a total gross build of \$545,000, and a gross cash burn of \$606,000
- Over the course of 12 months, what is the monthly cash burn rate?
 - $545,000 - 606,000 / 12 = 5083$
- If XYZ projects a balance of \$5000 at the end of the year, how long will it last?
 - A little less than a month
- **Total Receipts = Build, Total Disbursements = Burn**

Survival / Cash Flow Breakeven

- Some new ventures show profitability during the startup stage but most have losses
- You need to know the level of sales and # of units that make your survival (breakeven) revenue
- And this needs to be shown on a cash basis

Two types of costs

- Variable Costs

- Cost of directly providing a product or service -> the total \$ amount varies with sales
- Example: Cost of goods sold
- It is however, a constant % of sales revenue $(\text{COGS} / \text{Sales Revenue}) = \text{VCRR}$

- Fixed Costs

- Expected to remain constant over a range of revenue for a period
- The total \$ amount is constant, so it doesn't fluctuate with sales volume, but varies as a % of revenue
- Example: Rent, Depreciation / Amortization NOT included in CFC

Breakeven Calculation

- Let x represent the # of units of sales where total revenue = total cost

$$\text{Revenue} = \text{VC} + \text{CFC}$$

$$x\text{Price} = x \frac{\text{VC}}{\text{unit}} + \text{CFC}$$

$$\left(\text{Price} - \frac{\text{VC}}{\text{unit}} \right) x = \text{CFC}$$

$$x = \frac{\text{CFC}}{\text{Price} - \text{VC/unit}}$$

- x = the survival revenue \rightarrow Volume of sales needed to breakeven

Breakeven Calculation

- $x = \frac{\text{CFC}}{\text{Price} - \text{VC}}$ or $x = \frac{\text{CFC}}{\text{Contribution}}$ where x is dollar volume of sales
- Breakeven is reached when the contribution covers cash fixed costs
- When unit costs aren't available:
 - $x = \frac{\text{CFC}}{100\% \text{ of sale} - \% \text{VC}}$
 - $x = \frac{\text{CFC}}{1 - \text{VCRR}}$
 - $x = \frac{\text{CFC}}{\text{Contribution Margin}}$

Example

- CFC = \$400,000, Price = \$100/unit, VC = \$65/unit
- Breakeven for x units of sales:
 - = $\text{CFC} / (\text{Price} - \text{VC})$
 - = $\$400,000 / (\$100/\text{unit} - \$65/\text{unit})$
 - = 11 429 units
- OR if your unit costs aren't available, but you know your VCRR = 65%
 - = $\text{CFC} / (100\% \text{ of Sale} - \% \text{VC})$
 - = $\$400,000 / (1 - 0.65)$
 - = \$1,142,857

Breakeven Cont.

- Use the costs you have forecasted for your business, CFC and VC
- If you have more than one product, use a weighted average for VCRR depending on the % each product will contribute to your sales as per your demand forecast
- Time frame for breakeven
 - Dependent on time period used to calculate fixed costs
 - What do you need to sell each month? What do you need to sell to get cash flow positive?
- Compare to your sales forecast
- What if breakeven is too high?

Breakeven Drivers

- **VCRR is the most important** influence on breakeven
- What's leftover once VC is covered is **contribution margin**
- Example: in year 2, you **lower** the production costs from \$65 to **\$60**, so **(60% of \$100 revenue per unit)**
- Survival Revenue = $CFC / (1 - VCRR)$
= $\$400,000 / (1 - 0.6)$
= $\$1,000,000$

So just by lowering VCRR from 65% to 60%, thereby increasing the contribution margin (1-VCRR) from 35% to 40%, you have lowered the breakeven value of sales from \$1,142,857 to \$1,000,000

Leverage

- Increasing **operating leverage**: accepting higher **fixed costs** to **lower VCRR**
- Example: A firm could buy a more automated piece of machinery (higher fixed cost) to get lower labour and material costs per unit (lower variable costs)
- Higher fixed cost means higher survival revenue and risk but lower variable cost results in a higher contribution margin
- Thus, the return is higher above the breakeven point
- Risk-Return tradeoff – Key principle of entrepreneurial finance

Operating Leverage Example

- ABC Company is considering buying new machinery to increase productivity
- Costs:

	Old Machinery	New Machinery
• Fixed	\$10,000	\$30,000
• Variable	\$6 / unit	\$2 / unit
• Price	\$10	\$10

Calculation

- Old Machinery Breakeven:
 - = $CFC / (Price - VC)$
 - = $\$10,000 / (10 - 6) = 2,500$ units
- New Machinery:
 - = $\$30,000 / (10 - 2) = 3,750$ units
- Newer machinery has a higher survival revenue, **but** it also has a higher contribution margin $(10-2) = 8$ vs. $(10-6) = 4$

Breakeven Cont.

- Therefore, it is sensible to increase the operating leverage as long as the risk of not meeting breakeven volume is not too high
- Ask yourself if you can really sell that much
- Above the breakeven point, the return (contribution) is higher per unit
 - Key principle: Risk-Return Tradeoff
- Look at RISK first -> can we make **any money** instead of overall return (**will we make more money?**)

Strategies to Lower Break-Even

- Lower fixed costs
 - Less units needed to be sold to break-even
- Raise prices
 - Increases the contribution per unit so you won't need to sell as many units
 - Customers may expect a better product or service if you increase prices
- Lower variable costs
 - Once again increases contribution, you can try to lower these by negotiating with your suppliers, changing suppliers, or changing your process.

Contribution Analysis

- Most important concept for decision making is **contribution**
- It can be used for more than just breakeven
- Often called CVP (cost volume profit) analysis
- Helps to see the effect of changes in cost or volume on profits

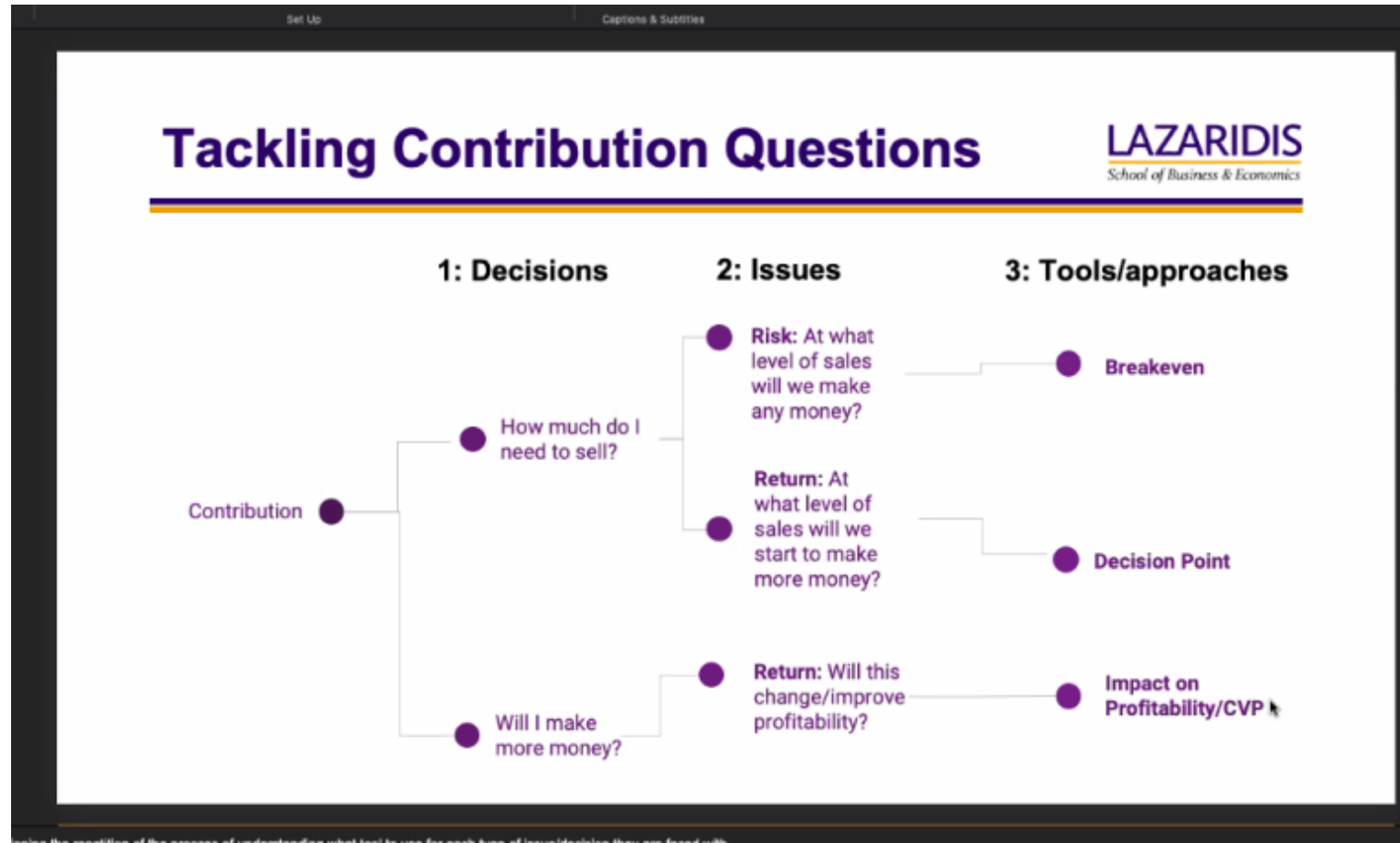
Contribution Analysis

- Assess **Risk** – of not selling enough to be profitable
 - Determine **breakeven** – what you have to sell above to become profitable
 - When fixed costs are covered by *contribution* from sales
 - =CFC / Contribution per unit or % margin
 - Compare to sales forecast and market → is it realistic? → Do I adjust VCRR?
- Assess **Return** – level of sales at which the decision makes sense
 - Determine **decision point** – what you must sell above to be *more profitable*
 - When incremental (change in) fixed costs is covered by change in contribution
- Assess **Return** – the impact the decision will have on profitability
 - Positive impact on profit?
 - Total incremental contribution > incremental fixed and negligible negative qualitative impact

Contribution Analysis Summarized.

- Question: How much do I need to sell?
 - Assess the **risk** by doing a breakeven analysis
 - Can we sell enough to make any money?
 - Assess the **return** by assessing decision point
 - At what level of sales will we make more money?
- Question: Will I make more money?
 - Assess the **return** by assessing the impact on profitability
 - Will this change improve profitability?

Contribution Analysis in Tree Format Lol



Example Revisited

- | | Old Machinery | New Machinery |
|------------|---------------|---------------|
| • Fixed | \$10,000 | \$30,000 |
| • Variable | \$6 / unit | \$2 / unit |
| • Price | \$10 | \$10 |
- Newer machinery has a higher survival revenue, **but** it also has a higher contribution margin $(10-2) = 8$ vs. $(10-6) = 4$
 - Increased return with increased risk – can you sell that much?

When to make this decision?

- Assuming you can exceed breakeven, you need to determine which option will make you more money.
- The point of indifference is the **decision point**
- Let x be where the volume of new machinery is better

$$\begin{aligned}\text{Fixed}_o + \text{Old VC}(x) &= \text{Fixed}_n + \text{New VC}(x) \\ \$10,000 + 6x &= \$30,000 + 2x \\ 4x &= \$20,000 \\ x &= \$5,000\end{aligned}$$

Easier way

- Decision point is where incremental fixed costs are covered by incremental contribution
- So, take the change in fixed costs / change in contribution

$$\frac{\Delta FC}{\Delta \text{Contribution}} = \frac{\$30,000 - \$10,000}{(\$10 - \$2) - (\$10 - \$6)} = \frac{\$20,000}{\$8 - \$4} = \$5,000$$

Impact on Profitability

- CVP / contribution analysis can also be used in making decision to
 - Change to a new lower cost supplier
 - Change how you pay your employees
 - Change the price of a product
- Example assumptions:
 - ABC company sells 400 units of a product at \$250/unit and variable costs are \$150/unit
 - Contribution per unit: $P - VC = \$250 - \$150 = \$100/\text{unit}$
 - Total contribution: $\$100/\text{unit} \times 400 \text{ units} = \$40,000$
 - Contribution margin: $1 - VCRR = 1 - (150/250) = 40\%$

Keys to using contribution

- What is the issue?
- What tool do I have that would help me make a decision (WHY?)
- What are the steps (WHAT)
- What information do I need and how do I get it?
- How do I interpret the answer/use it to make a decision (HOW?)

Background: Income Statement from Pete's A

Income Statement For the Year Ended January 31, 2013

Net Sales	\$132,600
Cost of Goods Sold	<u>79,560</u>
Gross Earnings	\$ 53,040
Marketing Expenses	2,000
Rent Expense	12,000
Wage Expenses	15,655
Depreciation Expense	<u>4,000</u>
EBIT	\$ 19,385
Interest	<u>1,260</u>
Earnings Before Taxes	\$ 18,125
Taxes @ 20%	<u>3,625</u>
Net Income	<u><u>\$ 14,500</u></u>

We want to find the cost and contribution ratios for calculations later:

$$\text{Cost Ratio} = \frac{\text{COGS}}{\text{Net Sales}} = \frac{\$79,560}{\$132,600} = 60\%$$

$$\text{Contribution Ratio} = 1 - \text{Cost} = 40\%$$

Pete's B Case – Option 1

A supplier has suggested that Pete purchase a new inventory management software system that would help reduce his cost of goods sold to 55% of sales. The supplier has offered to lease it to him as well as provide ongoing training and support for \$4,200 per year. Pete thinks that this might be a good idea for the business, but wonders what number of units he would have to sell for this new system to be more profitable for him

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PROCESS!

- Does this decision hinge on the **level of sales** needed?
- Is the issue one of **risk or return?** **Return**
- What approach to contribution do we use? **Decision Point**
- What **information** would we need? **Incremental Fixed cost**
Incremental Contribution

Pete's B Case – Option 1

$$\begin{aligned}\text{Incremental Contribution} &= (1 - 55\%) - 40\% \\ &= 5\%\end{aligned}$$

$$\begin{aligned}\text{Decision Point} &= \text{incremental fixed} / \text{incremental contribution} \\ &= \$4,200 / 0.05 \\ &= \$84,000\end{aligned}$$

Pete's B Case – Option 2

After realizing its importance, Pete is considering increasing his advertising budget by \$5,000. He is also considering combining the increased advertising with a 5% reduction in prices, and a new 1 cent sales commission on each unit sold to increase sales and customer service. Currently, his average price per product sold is \$3. He thinks this will increase the number of products he sells on average by 10%. He is looking to you for advice.

Pete's B Case – Option 2

After realizing its importance, Pete is considering **increasing his advertising budget by \$5,000**. He is also considering combining the increased advertising with a **5% reduction in prices, and a new 1 cent sales commission on each unit sold** to increase sales and customer service. Currently, his **average price per product sold is \$3**. He thinks this will **increase the number of products he sells on average by 10%**. He is looking to you for advice.

PROCESS!

- Does this decision hinge on the level of sales needed?
- Is the issue one of risk or return? **Return**
- What approach to contribution do we use? **Impact on Profitability**
- What information would we need? **Incremental total contribution**
Incremental fixed costs

Pete's B Case – Option 2

- Step 1: What is the Incremental Total Contribution
 - What is the **original contribution**?
 - Contribution margin = Price – VC
 - VC/unit = Total VC/Units Sold
 - = 79560/44200
 - = \$1.80/unit
 - Contribution margin = \$3 - \$1.80 = \$1.20
 - Total Contribution = Contribution per unit * sales volume
 - = \$1.20 * 44,200
 - = \$53,040
- * Note: # of Units Sold (44,200) was found by taking Net Sales from income statement (132,600) and dividing by average price as given by the question (\$3).

Pete's B Case – Option 2

- Pete is considering a 5% reduction in price from \$3.00 to **\$2.85**
 - **$\$3.00 - 5\% = \2.85**
- $VC = \$1.80 + \$0.01 \text{ sales commission}$
 $= \$1.81$
- New Contribution Margin = Price – VC
 $= \$2.85 - \1.81
 $= \$1.04$
- 10% increase in sales = $44,200 + 10\%$
 $= 48,620 \text{ units}$
- New total contribution = $\$1.04 * 48,620$
 $= \$50,564.80$
- Therefore, total incremental contribution would be $\$50,564.80 - 53,040$. Total incremental contribution = $(\$2,745.20)$

Pete's B Case – Option 3

The last option is to create a grocery delivery service to add an additional revenue stream and expand his customer base. He estimates he could serve 5% of the city's 12,000 students and that the service would triple the \$50 per month that these students spend on average for 8 months of the year. He would need to lease 2 delivery vans at \$21,500/year each + \$3,000 total maintenance. 2 new employees would also need to be paid an annual salary of \$42,000 each. Creating and maintaining the order system would cost \$18,000 per year. The VCRR would also increase by 15% due to increasing labour costs to fill the orders. He expects also to spend an extra \$10,000 per year to market to the students

Pete's B Case – Option 3

The last option is to create a grocery delivery service to add an additional revenue stream and expand his customer base. He estimates he could serve **5% of the city's 12,000 students** and that the service would **triple the \$50 per month that these students spend on average for 8 months** of the year. He would need to **lease 2 delivery vans at \$21,500/year each + \$3,000 total maintenance. 2 new employees would also need to be paid an annual salary of \$42,000 each.** Creating and maintaining the **order system would cost \$18,000 per year.** The **VCRR would also increase by 15%** due to increasing labour costs to fill the orders. He expects also to spend an **extra \$10,000 per year to market to the students**

PROCESS!

- Does this decision hinge on the level of sales needed?
- Is the issue one of risk or return? **Return**
- What approach to contribution do we use? **Impact on Profitability**
- What information would we need? **Incremental total contribution**
Incremental fixed costs

Pete's B Case – Option 3

- Step 1: What is the Incremental Total Contribution?
 - Pete expects **5% of the 12,000** students to increase their grocery expenditure by **\$100/month** (*triple the \$50 they now spend = \$150 - 50 more*) for the **8 months** they are in town
 - **VCRR would increase by 15%** from *current 60% to 75% = 25% contribution margin*
 - # of students × average price × # of months
= (12,000 students × 5%) × \$100/student/mo × 8 mos/yr = \$480,000/yr
 - \$480,000 × 0.25 = \$120,000

Pete's B Case – Option 3

- Step 2: What is the Incremental Fixed Cost?
 - The program would require **2 vans at \$21,500 plus \$3,000** maintenance
 - The program would require **2 salaried employees at a salary of \$42,000**
 - The system **costs \$18,000 annually** and would cost an additional **\$10,000 in advertising**
 - Incremental fixed cost
 $= (\$21,500 \times 2) + \$3,000 + (\$42,000 \times 2) + \$18,000 + \$10,000$
= \$158,000

Pete's B Case – Option 3

- Profit/Loss from this option
 - = Incremental Contribution – Incremental Fixed Cost
 - = \$120,000 – 158,000
 - = (\$38,000)
- What fee could Pete charge to recuperate this shortfall?
 - Breakeven Fee = Loss from option/students
 - = 38,000 / 600 (8/12)
 - = \$7.92
- With 600 students in the town for 8 months annually, Pete would have to charge a fee of \$7.92/purchase to breakeven on the program

Venture Life Cycle (stolen from SI)

Stage	Description	Finance Sources
Development	Initial idea to business, prototyping and trial stage	Your own assets, family and friends
Startup	Beginning at founding, just starting to get revenue	Your own assets, family and friends, angel investors, venture capitalists
Survival	Revenues cover some expenses, must raise cash with debt or equity to cover the rest	Business operations, venture capitalists, suppliers and customers, government, commercial banks
Rapid Growth	Cash inflows > outflows so you're cash flow positive, value increasing	Business operations, suppliers, customers, commercial banks, investment bankers
Early Maturity	Growth slows, most value realised, consider exit	Business operations, commercial banks, investment bankers, possible IPO?

Valuation Approaches (stolen from SI)

Approach	How?	Negative Aspect
Income	Value the business as the sum of the present values of all expected future benefits	Too many unknowns to actually come up with a good number, it's a SWAG(Scientific Wild Ass Guess)
Market	Compare to other companies with known values and scale accordingly	How another company's doing could just reflect them being first, i.e. finding a "similar" company is basically impossible because every company is different and the industry was probably in a different place than it is now.
Cost	Value is the cost of assets and original amount invested, giving a "cost to duplicate" money	Doesn't account for subjective values like intangible assets, brand etc. Also doesn't account for earning power like your revenues, cash flow etc, cost approach only cares about assets

Valuation Factors

- **Market** factors (what's going on around you?)
 - Value proposition (how well do you connect with customers?)
 - Industry sector (how attractive is the environment?)
- **Moat** factors (how unique are you?)
 - Intellectual property
 - Time to market
 - Path to profitability
 - Deal structure
- **Management** (who's doing what?)
 - Experience and quality of founders
 - Value added from investors
 - Social capital

Growth Strategies

- Intensive Growth
 - (from 111) Market penetration, market development, product development
 - Alternative channels, same customers different distribution channel
- Integrative Growth (mergers and acquisition)
 - Horizontal integration (with competitor), e.g. Facebook buying Instagram
 - Backward vertical integration (with supplier), e.g. Virgin Records doing talent acquisition and management
 - Forward vertical (with distributor), e.g. Amazon buying Whole Foods
- Diversification (111 PTSD)
 - Acquire/merge with a company that's completely unrelated to current mix
 - e.g. Yamaha going from making instruments to motorcycles

Harvest and Exit Strategies

- The method the entrepreneur and investor use to reap the value of their investment
- For entrepreneur – personal motivations as well as financial considerations
 - You want it to be able to operate without you = Saleable
- For investor – often commitment to capital will be tied to harvest options
 - Want to know how much, when, and how
 - Want to convert their investment into a more liquid form = liquidity event
 - Share buyback, royalty payback, strategic sale, IPO
 - Liquidation – sometimes the only option for some businesses

Harvest and Exit Strategies

- IPO (Initial Public Offering)
 - Raise a bunch of equity financing at once, decreases flexibility
- Acquisition (just sell the company)
 - Strategic (sell for their growth)
 - Financial (sell for your cash flow)
 - Employee (sell for your human capital)
- Release cash flows
 - Orderly withdrawal of investment
 - ~~Stop~~ investing and harvest money → caution
 - Take cash flow from business, start buying back shares
 - Be wary of stripping too much down

IPO

- Going public is not an easy or always a realistic exit strategy
- Very few companies achieve the size necessary to go public
- Primarily way to raise additional equity capital to finance company growth
- Concerns:
 - Lock-up, cost, share dilution, loss of secrecy and flexibility
 - Reverse takeovers are more common → private company buying a public company

James' Cheat Sheets

- James and the gang is selling cheat sheets on Ko-Fi, which charges a 5% fee on sales. James bought Ko-Fi Gold for U\$6/mo \approx C\$7.50, which eliminates this fee. The average person donates 50¢. There were around 400 downloads of EC 140's Test 2 Cheat Sheet. Of that, 88% was through the Ko-Fi shop. Was it worth it?
- **Idk what the variable names are (Ace fix pls)**
 - $\$7.50 / 0.05 = \150 break-even sales
 - Current sales = $0.50 \times 400 = \$200$
 - 88% of \$200 = $\$176 > \150

Example

- Increase advertising by \$10,000 increases sales by \$30,000
- Process → What is the change in contribution?
- Compare it to the change in fixed cost
- Are you better off quantitatively and qualitatively?
- Increase in sales \times contribution margin = additional contribution
 - $\$30,000 \times 0.4 = \$12,000$ additional contribution
 - $\$12,000$ incremental contribution $>$ $\$10,000$ incremental fixed costs, therefore you are better off quantitatively
 - Ask yourself what qualitative issues or benefits arise

Example 2

- You can decrease variable costs by \$25/unit but the quality decreases and sales drop to 350 units. Would you do it?
- Original VC is \$150, new VC is $(150 - 25) = 125$
 - Contribution per unit: $(\text{Price} - \text{VC}) = (250 - 125) = 125 / \text{unit}$
 - Total contribution: $350 \text{ units} \times \$125/\text{unit} = \$43,750$ total contribution
 - $\$43,750 > \$40,000$, so new contribution is above old contribution by \$3,750
 - Quantitatively? Yes
 - Qualitatively? The quality of the products drop, so maybe no

Example 3

- If by paying your salespeople a commission of \$15/unit, you could reduce salaries by \$6,000 and increase sales by 15%, would you do it?
- New VC: $150 + 15 = 165$, New Sales: $400 \times 1.15 = 460$
 - Contribution: $\$250 - \$165 = \$85/\text{unit}$
 - Total contribution: $460 \text{ units} \times \$85/\text{unit} = \$39,100$
 - $\$39,100 < \$40,000$, so contribution has decreased by \$900
 - **BUT** fixed costs decreased by \$6,000
 - Difference between change in fixed costs and contribution:
 $\$6,000 - \$900 = \$5,100 \rightarrow$ ahead by 5100 by comparing decrease in fixed costs and decrease in contribution.
 - Quantitatively, yes*
 - Qualitatively, some employees may like it, some other may not

Example 4

If by dropping price by \$20, and increasing advertising by \$15,000, could you expect to increase sales by 50%, would you do it?

Contribution per unit: $\$250 - \$150 = \$80$ per unit

- Total contribution: $600 \text{ units} \times \$80/\text{unit} = \$48,000$
- $\$48,000 > \$40,000 \rightarrow$ increase in contribution of \$8,000
- \$15,000 increased in fixed costs
- Compare increase in fixed costs and contribution: $8000 - 15000 = (7000)$
- Operating income drops \$7,000

Example 5

- If you were covering fixed costs now, and you could make a bulk sale of 150 units, what price would you charge in order to profit \$3,000
- Fixed costs are not relevant in this question as you are already covering them
- Therefore: $\$3,000 / 150 \text{ units} = \$20/\text{unit}$
- $\$20 + \$150 \text{ VC} = \$170/\text{unit}$ for price
- Any qualitative issues?

Example 6

- If in a slump you were only selling 200 units would you consider taking an order for 50 units that would increase VC by \$50? Assume that CFC = \$30, 000
- Total current contribution: $\$100 / \text{unit} * 200 \text{ units} = 20000$ total
- New contribution: $250 - 200 = \$50 / \text{unit} * 50 \text{ units} = 2500$ additional contribution
- VS. \$30 ,000 fixed cost
- VC is only increased for this new order
- You are still operating with a loss, but not as large of a loss

Formulas

Breakeven: $x = \frac{CFC}{Price - VC}$ or $\frac{CFC}{1 - VCRR}$

VCRR: $\frac{\text{Variable Costs}}{\text{Net Sales}}$ or $1 - \text{Contribution Margin}$ or $\frac{VC}{Price}$

Contribution: $Price - VC$

Contribution margin: $1 - VCRR$

Total Contribution: $\text{Contribution} \times \text{Units Sold}$

Impact on profitability: change in contribution – change in fixed costs

Decision point: $\text{Fixed}_{OLD} + VC_{OLD}x = \text{Fixed}_{NEW} + VC_{NEW}x$ and solve for x or $x = \frac{\Delta FC}{\Delta \text{Contribution}}$

Weighted average price: $P_1 \text{Revenue}\%_1 + P_2 \text{Revenue}\%_2 + \dots + P_n \text{Revenue}\%_n$

Weighted average VC: $P_1 VC\%_1 \text{Revenue}\%_1 + P_2 VC\%_2 \text{Revenue}\%_2 + \dots + P_n VC\%_n \text{Revenue}\%_n$

Beginning Cash Balance + Total Receipts = Total Cash available

Total Cash Available – Total Disbursements = Cash excess (+) or Deficiency (-)

Monthly *Net* Cash Burn Rate: $\frac{\text{Total Gross Build} - \text{Total Gross Burn}}{\text{\#Months}}$ or $\frac{\text{Total Receipts} - \text{Total Disbursements}}{\text{\#Months}}$ or
(Monthly Cash Build – Monthly Cash Burn)

Cash Runway: $\text{Ask} / \text{Burn Rate}$