Managing Cash Flow + Cap Tables

MGMT 6260
ESHIP FINANCE
FALL 2023

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AGENDA

1 **WELCOME BACK! (5 min.)**
HBR revamp.

2 **MANAGING CASH FLOW (30 min.)**
When will you run out of money.

3 **EXERCISE No. I (25 min.)**
When will you really run out of money? Let's play.

4 **BREAK (5 min.)**
Stretch the legs.

5 **MANAGING CAP TABLES (25 min.)**
A quick overview of something you'll check every day.

6 **TEAM, SIM + HBR (10 min.)**
Looking ahead to the next few weeks and beyond.

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MANAGING CASH FLOW
ESPECIALLY SaaS

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WHY FOCUS ON SAAS?

In 2022, approximately 70% of total company software use was SaaS. This number has the potential to reach up to 85% by 2025, indicating that SaaS will only continue to become more popular.

It's also estimated that over 90% of SaaS startups fail as 20% of them never survive more than two years, and only half make it past the five-year mark.

Crunchbase, 2022

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SAAS CASH FLOW: IN + OUT

CASH INFLOWS

Cash inflows from operating activities include any new product or subscription sales or upsells, existing accounts receivable, or interest paid to the business.

CASH OUTFLOWS

Cash outflows from operating activities consider any spend to keep business operations going, such as payroll, and any cost of revenue (ad spend included).

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FORECASTING SAAS CASH FLOW

RUNWAY AND BURN RATE

Startups have limited resources. They also have deadlines. They may run out of cash. If you choose to bootstrap, you also face an equally time-constrained position.

SIMULATE SCENARIOS

There is a concept called risk-ready cash flow planning. This is also called reality. Understand scenarios to prepare your SaaS business for predictive modeling.

OPTIMIZE EXPENSES

Make tough decisions. Remove redundancies. This allows you to make cost-saving decisions for capitalization.

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SAAS CASH FLOW: BEST BET

UNIT ECONOMICS

With this, the profitability of a SaaS business can be calculated at the unit level, making unit economics fundamental for achieving profitability and growth.

SaaS unit economics, which encompasses the financial performance of a company on a per-unit basis, includes key metrics such as:

Customer acquisition cost (CAC)
Customer lifetime value (CLV)
Monthly recurring revenue (MRR)
Gross margins
Churn

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UNIT ECONOMICS

UNIT ECONOMICS

What is a good unit economics for startups?

As part of a unit economics analysis, you'll be looking at two basic variables -- customer lifetime value and customer acquisition metrics, and the ratio between the two.

An ideal ratio is considered to be 3:1, where you get three times the value of acquisition from each new customer.

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UNIT ECONOMICS MEASURES

LIFETIME VALUE (LTV)	AVERAGE CUSTOMER LIFETIME (ACL)	GROSS PROFIT (GP)
CUSTOMER ACQUISITION COST (CAC)	NUMBER OF CUSTOMERS (C)	AVERAGE ORDER VALUE (AOV)
CHURN RATE	NUMBER OF TRANSACTIONS (T)	AVERAGE GROSS MARGIN (AGM)
RETENTION RATE (R)	TOTAL REVENUE (TR)	GROSS MARGIN PER CUSTOMER LIFESPAN (GML)
	DISCOUNT RATE (D)	

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UNIT ECONOMICS MEASURES

LIFETIME VALUE (LTV)	*Lifetime value is the average amount of money earned per customer over the lifetime of their relationship with the company. In SaaS, this is the amount of money earned from the time they sign up, to the time they cancel and don't return.*
CUSTOMER ACQUISITION COST (CAC)	*The total amount of money spent on sales and marketing to acquire one customer. If you spend too little, you don't get new customers. If you spend too much, you don't get profit. The right amount to spend is directly tied to your LTV. These are the two most important variables.*
CHURN RATE	*Churn rate is the percentage of customers that cancel their subscription during a given period.*
RETENTION RATE (R)	*Retention rate is the opposite of churn. It's the percentage of customers that remain subscribed during a given period.*

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UNIT ECONOMICS MEASURES

AVG CUSTOMER LIFETIME (ACL)	*Average amount of time a customer stays subscribed before they churn. It is a key component in calculating their lifetime value.*
NUMBER OF CUSTOMERS (C)	*Total number of customers subscribed to your service during a period.*
NUMBER OF TRANSACTIONS (T)	*This metric covers the actual number of transactions that have been made during the period and may not equal the number of customers.*
TOTAL REVENUE (TR)	*Amount of money you've made from customers over a period.*
DISCOUNT RATE (D)	*Your discount rate is the rate of your return on investment.*

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UNIT ECONOMICS MEASURES

GROSS PROFIT (GP)	*This is the total revenue minus cost of sales.*
AVG. ORDER VALUE (AOV)	*This is simply total revenue divided by the number of orders.*
AVG. GROSS MARGIN (AGM)	*This is gross profit divided by your total revenue.*
GROSS MARGIN PER CUSTOMER LIFESPAN (GML)	*Similar to raw LTV rate, except it only takes the margin into account, rather than total revenue.*

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SAAS CASH FLOW LTV EQUATIONS

PREDICTIVE

Takes into account how customer preferences change over time. Helps you avoid a sudden and unexpected drop in sales. Predictive LTV is good when revenue is rather stable.

FLEXIBLE

Flexible LTV is a metric that will take retention and discount rates into account to provide more accurate results during those times.

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SAAS CASH FLOW LTV EQUATIONS

PREDICTIVE

PREDICTIVE LTV FORMULA:
(T x AOV x AGM x ACL) / C

T: Number of transactions
AOV: Average order value
AGM: Average gross margin
ACL: Average customer lifetime
C: Number of customers

FLEXIBLE

FLEXIBLE LTV FORMULA:
GML x (1 + D - R/R)

GML: Gross Margin Per Customer Lifespan
R: Retention Rate
D: Discount Rate
R: Retention Rate

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SAAS UNITS: CUSTOMER V. PRODUCTS

AS CUSTOMERS

If you have a B2B model, customers are likely to purchase several subscriptions. They have a large number of employees. With the units-as-customers model, the business counts as one unit. For B2C, it's straightforward.

AS PRODUCTS SOLD

For the units-as-products-sold model, the scenario flips. For a SaaS business, that would mean each subscription is counted as one unit. For physical products — where there are production costs per item to account for — units as products sold is more standard.

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MANAGING CASH FLOW

ESPECIALLY SaaS

AN EXAMPLE

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EXAMPLE: MY NETFLIX SITUATION

MY ALGORITHM

Documentaries
Occasional ROMCOM -- or five
Anime
Young Adult
Bluey
Ozark

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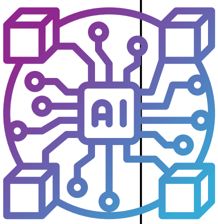
EXAMPLE: MY NETFLIX SITUATION



NETFLIX

PREDICTIVE LTV FORMULA:

(T x AOV x AGM x ACL) / C

T: Number of transactions
AOV: Average order value
AGM: Average gross margin
ACL: Average customer lifetime
C: Number of customers

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EXAMPLE: MY NETFLIX SITUATION

PREDICTIVE LTV FORMULA:

AVG. ORDER VALUE (AOV)

This is simply total revenue divided by the number of orders.

(T x AOV x AGM x ACL) / C

T: Number of transactions: 432
AOV: Average order value: $799.36
AGM: Average gross margin: $0.70
ACL: Average customer lifetime: 36 months
C: Number of customers: 34,567

AVG. GROSS MARGIN (AGM)

This is your gross profit divided by your total revenue.
Ex. **GROSS PROFIT: $6.99**

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EXAMPLE: MY NETFLIX SITUATION

PREDICTIVE LTV FOR THE FAMILY

$251.74

MONTHLY: PREDICTIVE LTV FOR THE FAMILY

$6.99

BREAK

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CASH FLOW EXERCISE

WHEN WILL YOU RUN OUT OF MONEY?

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BURN AND CHURN EXERCISE

OVERVIEW

The attached document will take you to a burn and churn exercise as you're the founder of a new SaaS company that created a micro-mobility solution to find transportation options for people living with disabilities.

You are tasked with finding the following:

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BURN AND CHURN EXERCISE

OVERVIEW

What's your burn rate? In this example, it's the salary of three junior developers.

- **What's the total revenue you need to earn to pay your three junior developers with an annual salary of $85,000?**
- **What's the total number of customers you need to earn to pay your three junior developers with an annual salary of $85,000?**
- **How many months before you run out of money, operating under the assumption**
- **that you cannot pay your three junior developers?**
- **How many monthly transactions do you need to ensure you hit your revenue goals?**

You have to operate under the assumption that you will not experience hockey-stick growth.

Good luck!

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MANAGING CAP TABLES

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CAPITALIZATION TABLE

DEFINITION

A cap table (or capitalization table) details ownership in a company. It lists all the securities or number of shares of a company including stock, convertible notes, warrants, and equity ownership grants.

You've already know this -- two weeks ago, we began with shares.

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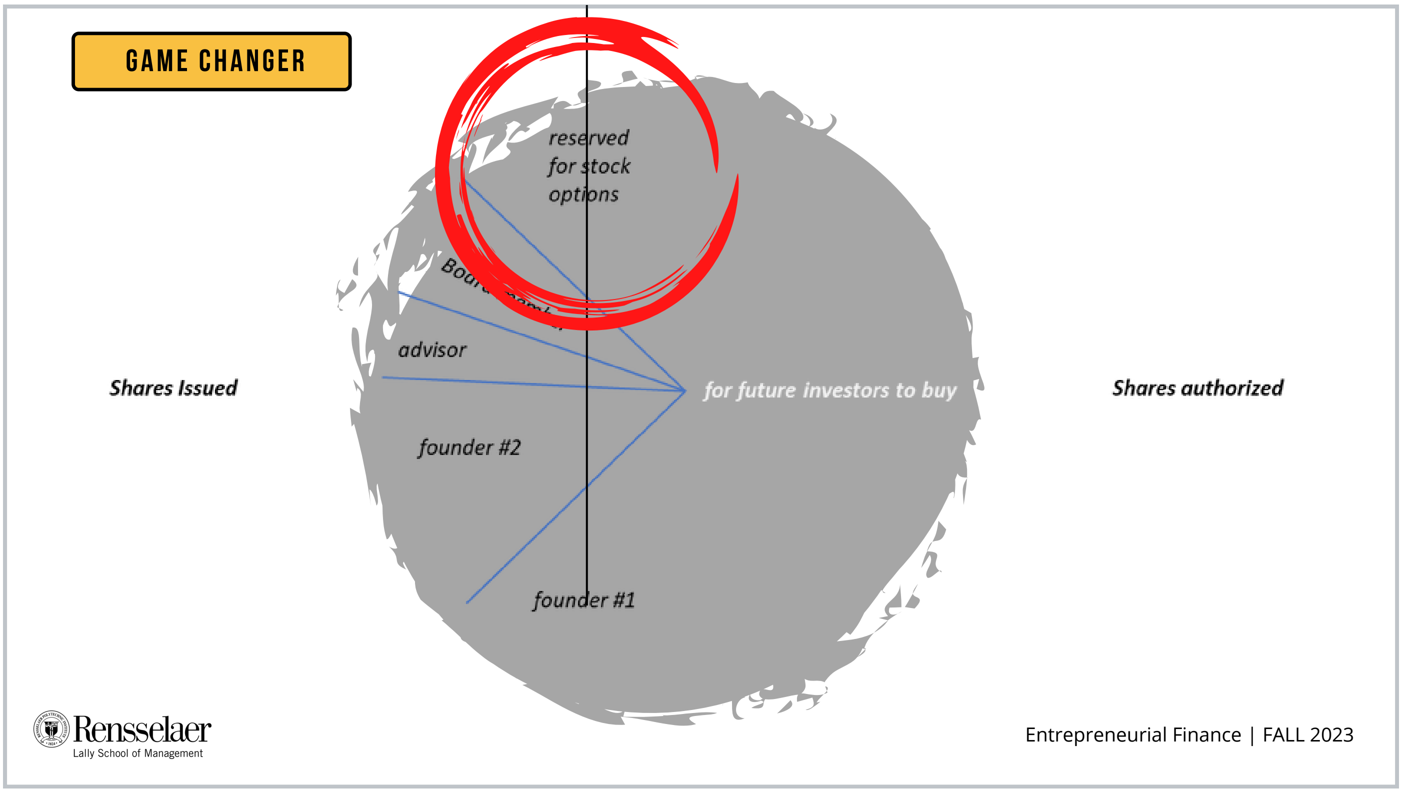
CAPITALIZATION TABLE

WHAT IT INCLUDES

Cap tables are easiest with seed or Series A: common stock, preferred stock, options, and convertible debt.

WHAT IT DOESN'T

It doesn't include warrants, vesting, debt interest, liquidation preferences, dividends, the Series B, etc.


GAME CHANGER
reserved for stock options
advisor
Shares Issued
for future investors to buy
Shares authorized
founder #2
founder #1
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THE OPTION POOL

The option pool lowers your effective valuation.

Make sure this is pre-money.
An investor may ask you to do it post-money.

Why is that a bad idea?

THE OPTION POOL: WHAT IT DOES

ONE

The option pool only dilutes the common stockholders. If it came out of the post-money, the option pool would dilute the common and preferred shareholders proportionally.

TWO

The option pool eats into the pre-money more than it would seem. It seems smaller than it is because it is expressed as a percentage of the post-money even though it is allocated from the pre-money.

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THE OPTION POOL: WHAT IT DOES

THIRD

If you sell the company before the Series B, all un-issued and un-vested options will be canceled. This reverse dilution benefits all classes of stock proportionally even though the common stock holders paid for all of the initial dilution in the first place. In other words, when you exit, some of your pre-money valuation goes into the investor's pocket.

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SOLUTION: HIRING PLAN

SHRINKS THE POOL

Use a hiring plan to size the option pool. You can beat the game by creating the smallest option pool possible.

"That should cover us for the next 12-18 months."
"That should cover us until the next financing."
"It's standard," is not a reasonable answer.

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SOLUTION: HIRING PLAN

COMMON SHARE ALLOTMENT

Title Range (%)
CEO: 5 – 10
COO: 2 – 5
VP: 1 – 2
Independent Board Member: 1
Director: 0.4 – 1.25
Lead Engineer: 0.5 – 1
5+ Years Experience Engineer: 0.33 – 0.66
Manager or Junior Engineer: 0.2 – 0.3

LAST RULE

Bring up your hiring plan before you discuss valuation.

Discuss your hiring plan with your prospective investors before you discuss valuation and the option pool. They may offer the truism that "you can't hire good people as fast as you think."

You should respond, "Okay, let's slow down the hiring plan... (and shrink the option pool)."

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SIM: YOUR ROLE

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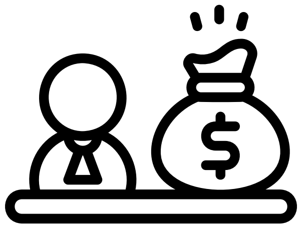
THE STARTUP GAME: THREE ROLES

Founders: All new companies are at a very early stage, having gone through some initial proof of concept, but seeking additional funding and talent. Each company has 100 shares in total plus whatever capital and resources listed in their role information.

Employees: All are C-level talent, who will come part of the core management team and will often have a significant stake in the company. These are the star players that can make a significant contribution to new organizations. Employees are compensated with cash and equity. It is assumed if those roles are not filled, that lower level employees will.



Investors: Represent angel or VC investors in a company. Investors may invest in multiple companies, though their information sheet should serve as a guide for their investment strategy.

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THE STARTUP GAME: ASSESSMENTS

RICH V. KING/QUEEN

Some are interested in maximizing control over their destinies, others want to make as mich money as possible, and, of course, many want both. It is very hard for founders to maximize control and revenue. Choices that allow a founder to maintain control -- such as not delegating, not being responsible to outside investor, not hiring senior employees -- hurt the ability of the start to grow quickly and gain market share. Conversely, choices that are likely to maximize returns often involve giving up some control.

SKILLS: FOUNDERS + EMPLOYEES

Not all early employees are created equal and employees sometime operate independently and rise to challenges. Also, it can be hard for new companies to find people to hire, and there are often no formal HR practices. The sim focuses on getting the right skilled employees for the job.

THE STARTUP GAME: ASSESSMENTS

EXPLORATION/EXPLOITATION

Research on founding teams and early employees have repeatedly found critical linkages between composition of a start team and its business strategy. Founding teams tend to be homogenous. There are real benefits to this. Low diversity is helpful when firms are looking to exploit an existing idea or concept. They are focused on execution rather than innovation.

For more exploratory and innovative organizations, looking to hire and developing and bring more radical ideas, diversity can be an advantage.

INVESTING

For the game, the goal is not to deeply differentiate among investor types, but, instead, to pay attention to what investors might offer -- both in terms of money and other benefits. In this game, we are primarily concerned wit this equity stake.

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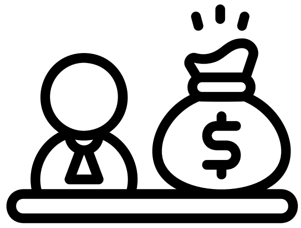
THE STARTUP GAME: SCORING

The founder score is based on the company ranking, adjusted for the amount of equity the founder retained.

The investor score is based on whether you deployed your money, how well the companies you invested in did, and what price you paid for shares in those companies.



Employees score if they had equity stakes in successful companies and if they achieved their salary goal. However, each employee was either focused on salary or on equity, and their score was based more on whether they achived their desired goal.

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THE STARTUP GAME: ENTER DATA

All Employee and Investor deals will automatically appear on the Founder's Play screen and the Founder has the ability to delete any of these deals. A smartphone or tablet can be used to enter deals.

- Founders have a total of **100 shares** for their company
- Investors: Select the company name, the number of shares (whole number, no decimals) and the amount you wish to invest (whole number, no decimals or commas). Select the green check mark. Investors can make investments in as many companies as they wish to their maximum available funds per their role description.
- Employees: Select the company name, the number of shares (enter 0 if none) and the salary you have accepted (whole number, no commas). Select the green check mark. Employees can be hired by only one company.
- Edit a Deal: Investors and Employees can edit a deal if they have renegotiated with the Founder by selecting the green edit icon to the right of their deal.
  Once the modification is complete, select the green save icon.
- Delete a Deal: All players have the ability to delete a deal which they are involved in. Simply select the red delete icon to the right of the deal.
- To edit the terms of a deal, click on the green icon in the right-hand *Action* column of the deal you wish to edit. Once you have made the necessary edits, click the save icon in the *Action* column. Cancel the modification at any time by clicking the red X icon.

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TEAM MEETING SIGN-UP SEPTEMBER 21

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