Startup Finance and Unit Economics

Understanding the Financial Backbone of Startups

Startup Management, Aleš Špetič, 2025

🔁 Recap from Lecture 9

Key Learnings from Previous Lecture

- 📈 B2B vs. B2C sales models: key distinctions and tactics
- 📘 Building and using a sales playbook
- 🧩 CRM tools and key sales metrics
- 🤝 Negotiation techniques and closing strategies

🎯 Learning Objectives

What you'll learn today

- 🧾 Basic Startup Accounting
- 🔥 Startup Metrics: Burn Rate, Runway, CAC, LTV
- 📅 Forecasting and Budgeting
- 📉 Early-Stage Financial Models

The Role of Finance in Startups 💰

Why Founders Need Financial Awareness

- Helps founders make informed decisions
- Tracks financial health and sustainability
- Aligns strategy with capital efficiency

The 3 Key Financial Reports

The Core Reports to Track

- Income Statement - profitability
- Balance Sheet - stability
- Cash Flow Statement - liquidity

Income Statement (Profit & Loss)

Tracking Revenue and Profitability in a Period of Time

Item	Amount (€)	
Revenue	20.000	(+)
Cost of Goods Sold	12.000	(-)
Gross Profit	8.000	(=)
Operating Expenses	6.000	(-)
Net Income	**2,000**	**(=)**

Income Statement (Profit & Loss)

Tracking Revenue and Profitability

Item	Amount (€)
Revenue from ticket sales	35,000
.. Partner commissions	-7,000
Net Revenue	28,000
..Cost of Goods Sold (COGS)	-14,000
Gross Profit	14,000
..Salaries	-6,000
..Marketing Spend	-3,000
..Platform & Hosting Costs	-1,000
Operating Expenses	-10,000
Net Income	**4,000**

Depreciation & Amortization

Non-Cash Expenses in Financial Reporting

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Depreciation: Allocation of tangible asset cost over its useful life
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Amortization: Similar allocation for intangible assets (e.g., patents, software)
- 💡 These are non-cash expenses that reduce accounting profits
-  Appear on Income Statement but not on Cash Flow Statement

Asset Type	Asset Name	Purchase Cost (€)	Useful Life (Years)	Monthly Depreciation (€)
Tangible	Laptop Equipment	2.400	3	66.67
Intangible	Software License	1.200	2	50.00

Example: Depreciation & Amortization

Purchase of a Laptop Computer

Category	January (€)	February (€)	March (€)
Revenue	15,000	16,000	17,000
COGS	-6,000	-6,400	-6,800
Gross Profit	9,000	9,600	10,200
Salaries	-4,000	-4,000	-4,000
Marketing	-2,000	-2,500	-2,500
Depreciation	-66.67	-66.67	-66.67
Net Income	2,933	3,033	3,633

EBITDA

Earnings Before Interest, Taxes, Depreciation, and Amortization

- 🧮 EBITDA = Net Income + Interest + Taxes + Depreciation + Amortization
- 💡 Strips away financing and accounting effects to focus on core operations
- 📊 Used to compare profitability between startups with different cost structures

Metric	Amount (€)
Net Income	2.000
Interest Expense	500
Taxes	1.000
Depreciation	800
Amortization	700
EBITDA	**5.000**

EBITDA

Strip out the Non-cash Charges

Metric	Amount (€)
Net Income	4.000
Interest Expense	500
Taxes	800
Depreciation	200
Amortization	100
EBITDA	**5.600**

Balance Sheet

Snapshot of Financial Position at a Point in Time

Assets	Amount (€)	Liabilities	Amount (€)
Cash	50,000	Loans	30,000
Equipment	10,000	**Equity**	30,000
Total	**60,000**	**Total**	**60,000**

Example: Balance Sheet

Purchase of a Laptop Computer (after 3 months)

Assets	Amount (€)	Liabilities	Amount (€)
Cash	17,500	Credit (card)	2,400
Equipment	2,400		
(-)Accumulated Depreciation	-200.01		
(=) Laptop Equipment	2,199.99	**Equity**	17,299.99
Total	**19699.99**	**Total**	**19699.99**

Balance Sheet

Snapshot of Financial Position at a Point in Time

Assets	Amount (€)	Liabilities	Amount (€)
Cash	24.000	Credit Card	5.000
Accounts Receivable	6.000	Deferred Revenue	3.000
Equipment	5.000	**Equity**	27.000
Total	**35.000**	**Total**	**35.000**

Cash Flow Statement

Understanding Actual Money Movement

Section	Description
Operating	Day-to-day cash flows from sales, expenses, suppliers, and salaries
Investing	Cash used for buying equipment, property, or other long-term assets
Financing	Cash from investors or loans; or cash used to repay them

Cash Flow Statement

Understanding Actual Money Movement

Activity	May (€)	June (€)	July (€)
Financing			
Seed Funding Raised	50.000	0	0
Operating			
Ticket Sales	20.000	25.000	35.000
Partner Payouts	0	-4.000	-7.000
Salaries	-5.000	-5.000	-6.000
Marketing Spend	-2.000	-3.000	-3.000
Hosting & Ops Costs	-1.000	-1.000	-1.000
Investing			
Equipment Purchase	-5.000	0	0
Net Cash Flow	**57.000**	**12.000**	**18.000**
Cumulative Position	57.000	69.000	87.000

What is Burn Rate?

Measuring Monthly Cash Consumption

- 🔥 Definition: Monthly negative cash flow
- 📉 Gross Burn: Total monthly expenses
- 📉 Net Burn: Expenses minus revenue
- 🧮 Example: If you spend €40,000/month and earn €10,000, your net burn = €30,000

Runway

How Long Your Startup Can Survive

- ⏳ Formula: Cash / Net Burn Rate
- 🚨 Implications for funding and decision-making
- 📊 Used in fundraising decks and investor conversations

CAC – Customer Acquisition Cost

How Much You Spend to Win a Customer

- 📊 Formula: Total Sales & Marketing Spend / New Customers Acquired
- 📈 Different for B2C vs B2B
- 🧪 Realistic example from digital marketing

LTV – Lifetime Value

Monetizing Long-Term Customer Value

- 📈 Formula: ARPU x Gross Margin % x Customer Lifespan
- 🔄 Reflects retention and upsell potential
- 💼 Must be grounded in real usage data

CAC vs LTV Ratio

Benchmarking Acquisition Efficiency

- ⚖️ Healthy ratio: LTV > 3x CAC
- 🚩 Red flags when LTV < CAC
- 🔁 Adjust pricing, targeting, or funnel if inefficient

Gross Margin vs Net Margin

Measuring Profitability at Different Levels

- 💰 Gross Margin = (Revenue - COGS) / Revenue
- 📉 Net Margin = Net Income / Revenue
- 🧠 Gross margin focuses on product/service efficiency
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 Net margin reflects total business profitability after all expenses

Metric	Value (€)	Formula Used
Revenue	100.000	
COGS	40.000	
Net Income	10.000	
Gross Margin	60%	(100.000 - 40.000) / 100.000
Net Margin	10%	10.000 / 100.000

Payback Period

How Fast You Recoup CAC

- ⏱️ Formula: CAC / Monthly Gross Margin per Customer
- 🧭 Key for cash flow management
- 🔄 Critical in early-stage business models

Unit Economics in Action

Analyzing Startup Viability Through Metrics

Metric	Value (€)
CAC	15 €
LTV	75 €
Gross Margin	50%
Monthly GM/Customer (adjusted - churn…)	9 €
Payback Period	1,67 months

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If Sport Tickets Inc. spent €3,000 on marketing in July and acquired 200 new customers

CAC = €3,000 / 200 = €15

2

ARPU (Average Revenue per User) = €25/month, Gross Margin = 60%, Lifespan = 6 months

LTV = 25 × 60% × 6 = €75

3

Net Revenue: €28,000

COGS: €14,000
→ Gross Profit = €14,000
→ Gross Margin = €14,000 / €28,000 = 50%

4

monthly gross margin per customer (LTV/ Lifespan)

€ 75 / 6 = € 12.5

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CAC / Monthly Gross Margin per Customer

= €15 / €9 ≈ 1.67

Forecasting - Why It Matters

Looking Ahead with Financial Foresight

- 🗺️ Provides direction for spending and hiring
- 📊 Essential for investor communication and goal setting
- ⚙️ Supports scenario planning and resource allocation

Top-Down vs Bottom-Up Forecasts

Two Approaches to Projecting Revenue

- 🔝 Top-down: Start from market size and estimate share
- 🔽 Bottom-up: Build based on actual funnel or unit performance
- 📈 Hybrid models can work too

Forecasting Examples – Sport Tickets Inc.

Applying Top-Down and Bottom-Up Forecasts

Top-Down Approach

- Total Addressable Market (TAM): €1B (ticketing market in Europe)
- Estimated Market Share in 2 years: 0,5%
- Projected Annual Revenue = €1B × 0,5% = €5M

Bottom-Up Approach

- Avg. Ticket Price = €10
- Monthly Customers = 5.000
- Monthly Revenue: 5.000 × €10 = €50.000
- Annual Revenue: €50.000 × 12 = €600.000

Building a Financial Forecast

Laying Out Key Assumptions and Drivers

- 🧱 Define pricing, customer growth, churn, and expansion
- 📈 Project revenue by month and year
- 💸 Include fixed and variable costs

Building a Financial Forecast

Laying Out Key Assumptions and Drivers

Driver	May	June	July
Avg. Ticket Price (€)	10	10	10
Tickets Sold	2,000	2,500	3,000
Revenue (€)	20,000	25,000	30,000
COGS (Partner Payouts, etc.)	-8,000	-10,000	-12,000
Gross Profit (€)	12,000	15,000	18,000
Salaries (€)	-5,000	-5,000	-6,000
Marketing Spend (€)	-2,000	-3,000	-3,000
Hosting & Ops (€)	-1,000	-1,000	-1,000
Net Income (€)	**4,000**	**6,000**	**8,000**

Scenario Planning

Planning for Base, Best, and Worst Cases

- 🔄 Use multiple models to assess risk
- 💡 Stress-test your growth and spending assumptions
- 📉 Essential for runway and fundraising strategy

Scenario	Monthly Revenue (€)	Monthly Net Income (€)	Cumulative Cash (€)
Worst Case	20,000	1,000	30,000
Base Case	30,000	4,000	60,000
Best Case	45,000	9,000	100,000

Budgeting for Startups

How to Plan and Track Resource Allocation

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Break down spending by category (marketing, salaries, ops)
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Forecast month-by-month and revisit regularly
- 
Identify fixed vs variable expenses

Budgeting for Startups

Operational

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
# Customers	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000	5200
Avg Ticket Price (€)	10	10	10	10	10	10	10	10	10	10	10	10
Tickets per Customer	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Total Tickets Sold	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000
Revenue (€)	30000	32000	34000	36000	38000	40000	42000	44000	46000	48000	50000	52000
Churn Rate	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
New Customers	3000	350	360	370	380	390	400	410	420	430	440	450

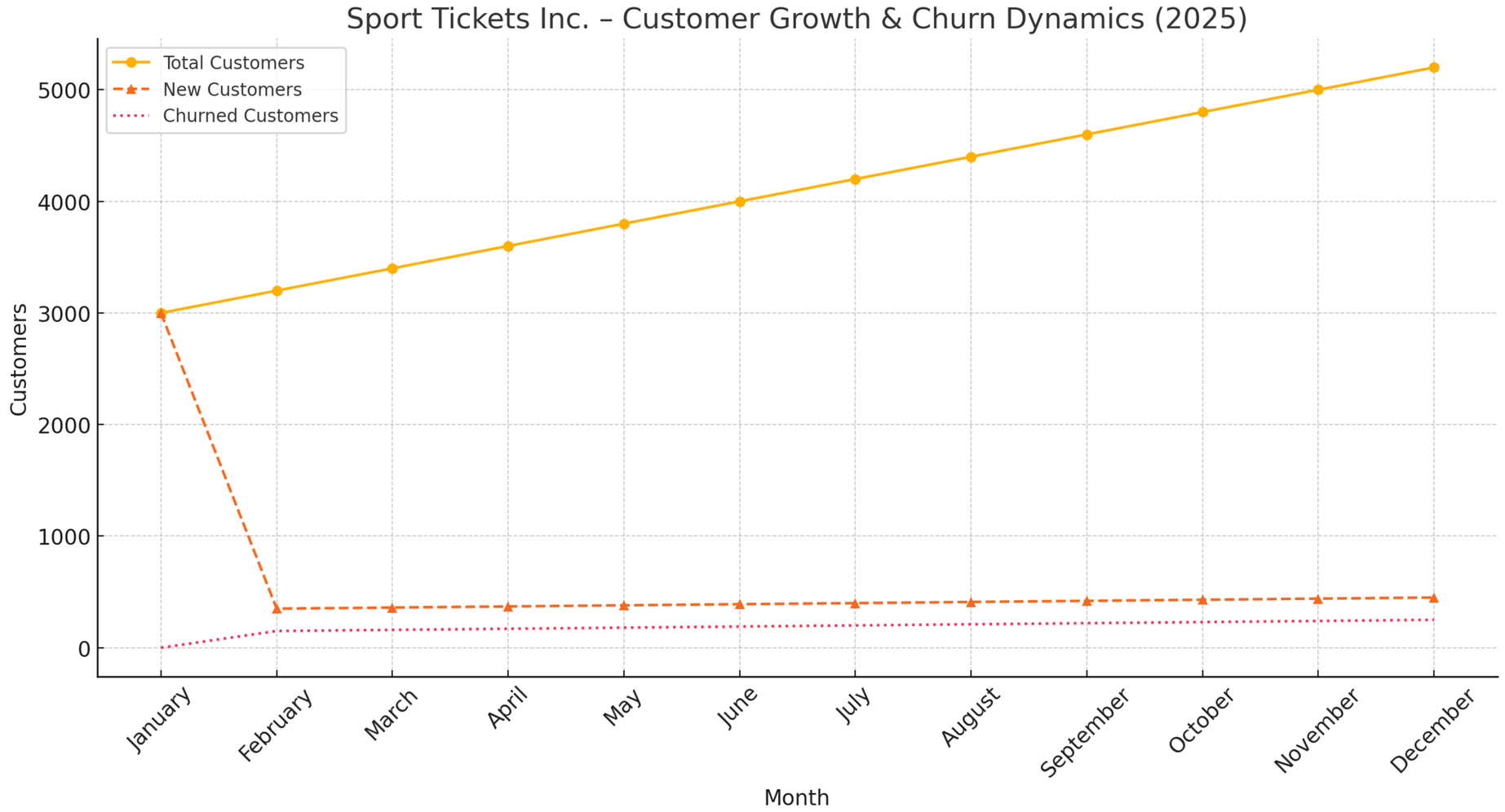
Budgeting for Startups

Income Statement

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Revenue (€)	30000	32000	34000	36000	38000	40000	42000	44000	46000	48000	50000	52000
COGS (€)	12000	12800	13600	14400	15200	16000	16800	17600	18400	19200	20000	20800
Gross Profit (€)	18000	19200	20400	21600	22800	24000	25200	26400	27600	28800	30000	31200
Salaries (€)	6000	6000	6000	6500	6500	6500	7000	7000	7000	7500	7500	8000
Marketing (€)	4500	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000	5200
Support (€)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Ops (€)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Misc (€)	500	500	500	500	500	500	500	500	500	500	500	500
Net Income (€)	5000	7500	8500	9000	10000	11000	11500	12500	13500	14000	15000	15500

Budgeting for Startups

Visualisation of Customer Acquisition



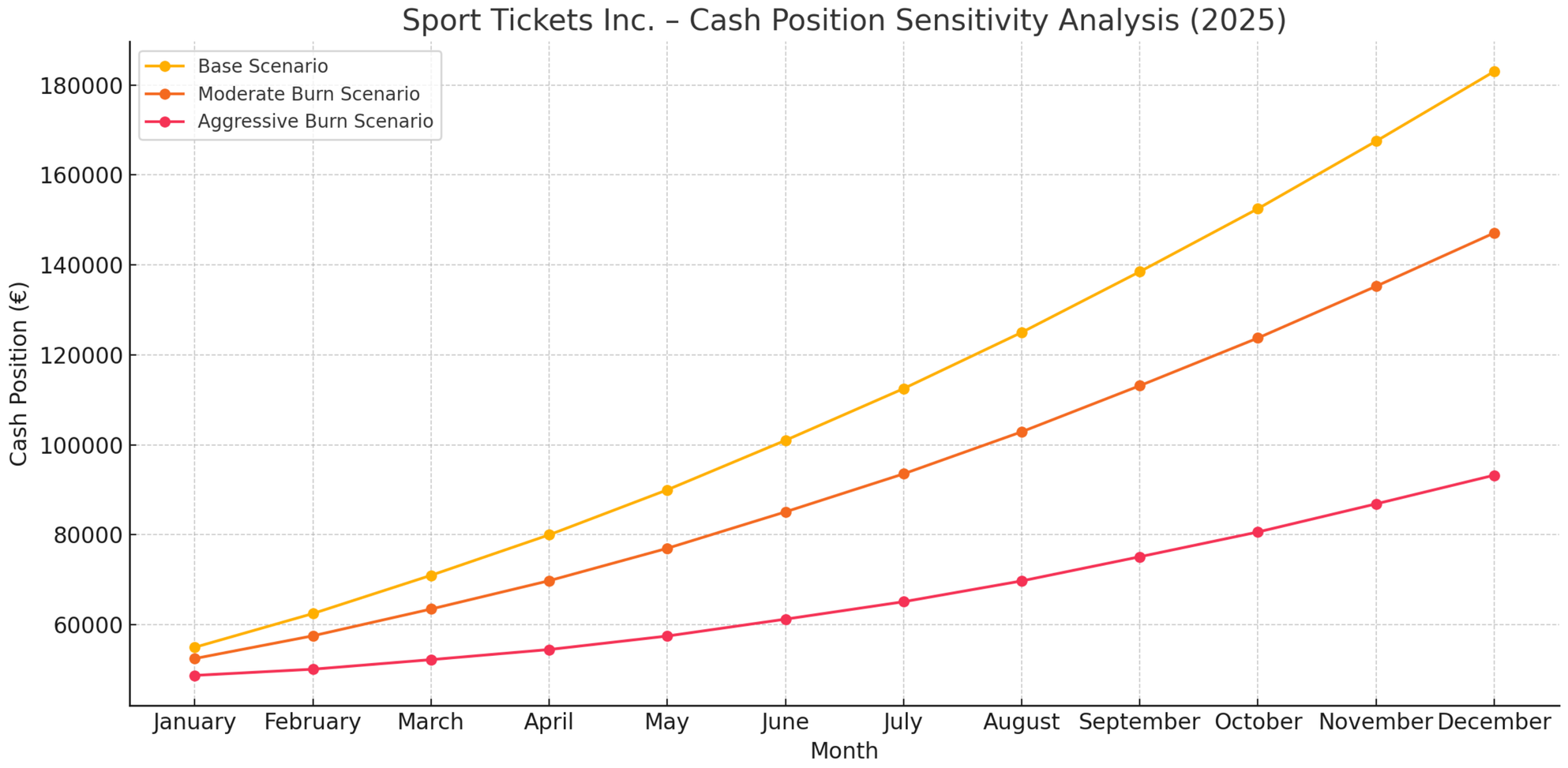
Budgeting for Startups

Cash Flow Forecast

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Operating CF	5000	7500	8500	9000	10000	11000	11500	12500	13500	14000	15000	15500
Investing CF	0	0	0	-5000	0	0	0	0	0	0	0	0
Financing CF	20000	0	0	0	0	0	0	0	0	0	0	0
Net Cash Flow (€)	25000	7500	8500	4000	10000	11000	11500	12500	13500	14000	15000	15500
Cash Position (€)	**75000**	**82500**	**91000**	**95000**	**105000**	**116000**	**127500**	**140000**	**153500**	**167500**	**182500**	**198000**

Budgeting for Startups

Sensitivity Analysis



What Is a Financial Model?

A Simplified Simulation of Business Performance

- 🔢 Combines forecasts, assumptions, and calculations
- 📊 Projects revenue, costs, profit, and cash flow
- 🎯 Used to plan growth, set targets, and raise capital

Key Components of a Financial Model

The Core Building Blocks

- 📈 Revenue forecast
- 💰 Cost structure (fixed + variable)
- 🧮 Operating assumptions (CAC, churn, LTV, conversion)
- 🏦 Cash flow tracking
- 📄 Output reports: P&L, Balance Sheet, Cash Flow

Building and Stress-Testing Your Model

How to Make It Useful (and Credible)

- 🔍 Start with realistic, bottom-up assumptions
- 🧪 Run sensitivity analyses on key drivers (churn, CAC, revenue)
- 📉 Prepare base, best, and worst-case scenarios
- 🎯 Align model outputs with strategic goals

Building and Stress-Testing Your Model

Step 1: Start with a Bottom-Up Model ✅

- Estimate pricing, conversion, churn, and volumes from actual or tested data
- Forecast revenue using units × price × conversion rate
- Cost modeling should include fixed (salaries, tools) and variable (COGS, ad spend)

Building and Stress-Testing Your Model

Step 2: Build Key Scenarios 🔁

- Base Case – Conservative growth, current team
- Best Case – Faster growth, high retention
- Worst Case – Slower sales, higher CAC, delays

Building and Stress-Testing Your Model

Step 3: Sensitivity Analysis 🧪

- Adjust key drivers by ±10–30%:
- CAC
- Conversion rate
- Churn
- Revenue per user
- Observe impact on cash, net income, runway

Building and Stress-Testing Your Model

Step 4: Validate the Model 📈

- Use benchmarks (e.g., LTV/CAC ratio > 3x)
- Check if cash runway is realistic under worst-case
- Ask: “Would I invest in this model?”

Common Financial Modeling Pitfalls

Avoid These Mistakes Early

- 🚩 Overestimating revenue growth
- 💸 Underestimating customer acquisition costs
- 🔄 Ignoring churn or payment cycles
- 📦 Skipping fixed/variable cost breakdown
- 📉 Missing connection to actual cash flow

Outputs for Fundraising

What Investors Want to See

- 📊 12–24 month financial forecast (monthly format)
- 🔁 Summary of key metrics: CAC, LTV, margins
- 

 P&L and cash flow projections
- 📄 Use charts, ratios, and benchmarks—not just tables

Investor Q&A on Financials

Prepare for These Questions

- 🧠 What assumptions drive your revenue forecast?
- 💰 How long is your runway? When do you need to raise again?
- 📈 What’s your CAC and LTV? How did you calculate them?
- 📉 What happens if growth slows or costs spike?

Key Financial Highlights

Sport Tickets Inc. – Seed Round Overview

- 📈 2025 Revenue Forecast: €522,000
- 💰 Gross Margin: 60% → Gross Profit of €312,000
- 🔥 Net Income (2025): €138,000
- 💸 Monthly Burn Rate (Avg): €6.8K
- ⏳ Cash Runway (Base Case): 12+ months from €50K initial capital
- 🔁 CAC: €15 LTV: €90 Payback Period: 1.67 months
- 📊 Efficient Growth: Unit economics already >3x LTV:CAC

Cash Flow & Runway Scenarios

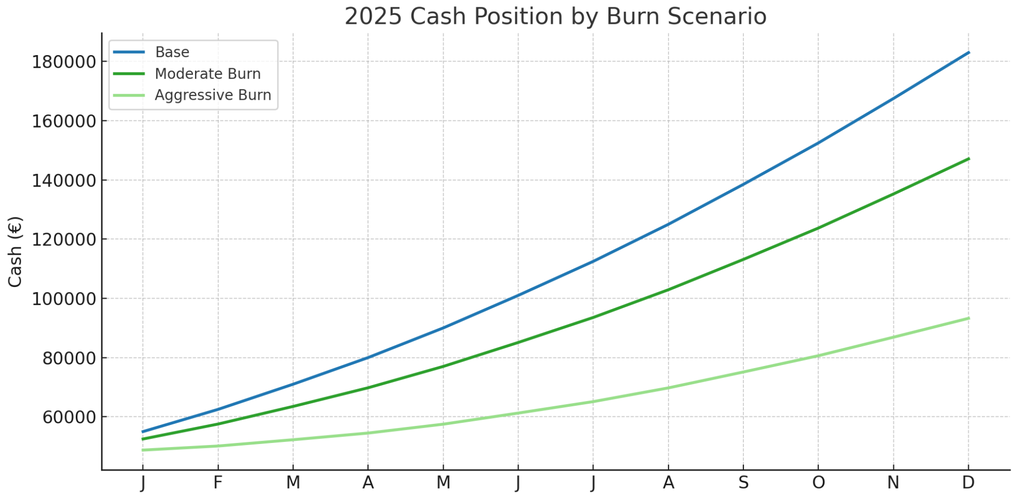
Managing Capital with Conservative Planning

Initial Capital (2025):

- 💰 €30,000 opening cash balance (founders, prior savings)
- 💸 €20,000 seed investment (January)

Projected Year-End Cash Position (2025):

- ✅ Base Case: €198,000
- ⚠️ +10% Expenses: €144,000
- 🚨 +25% Expenses: €64,000
- 📉 Burn Rate Sensitivity Modeled Monthly
- 📊 Runway remains >12 months across realistic burn scenarios



Assignment

Apply what you've built

- Monthly forecast for 1y (revenue, costs, net income)
- Key metrics (CAC, LTV, burn rate, runway)
- Scenario analysis (base / best / worst)
- Create pitch deck financial slides (1-2)
- Calculate how much cash are you raising!

Use Google Sheets to create your financial model and share it with ales@spetic.si by the day before the next lecture!

Further Reading & Resources

Books and Resources to Deepen Your Understanding

- 📘 Venture Deals by Feld & Mendelson – Chapters on financial models
- 📘 Google’s Startup Financial Model Template
- 📘 YC’s Startup School Finance Modules