TIM 80C Lec. 13 May 16, 2017

(1) Cash Flow Analysis

(2) Team meetings

(1) Cash Flow Analysis

Before we can create a Financial Strategy for the start-up we need to understand the flow of cash into and out of the business.

5-Step Process for cash flow analysis

(1) Make a list of all the relevant cash flows of the Startup.

Cash flows in:

- NOT Funding
- revenue from selling the product
- licensing revenue from patents
- contract work for other companies (e.g., product development)

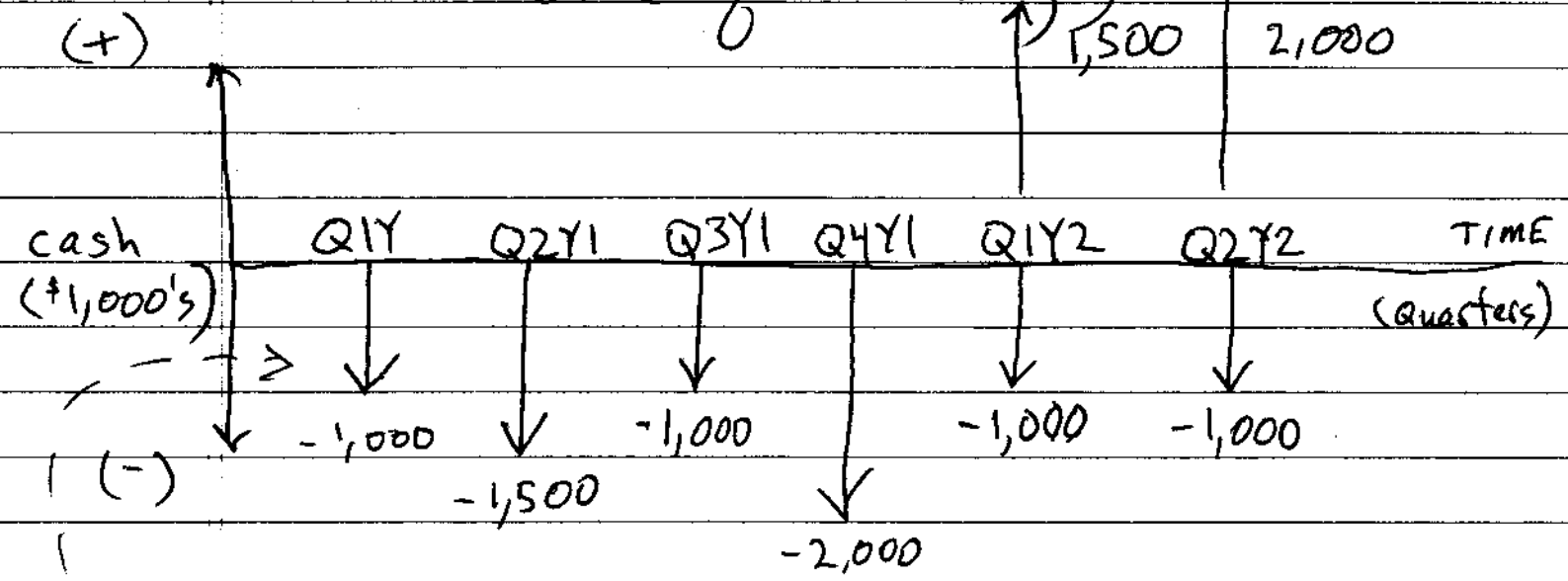
Cash flows out:

- people: managers, product developers, marketing & sales team, others
- equipment: computers, lab equipment

materials

- facilities: building, office supplies, food, insurance

Step 2 Determine the timing of the cash flows (typically done quarterly)

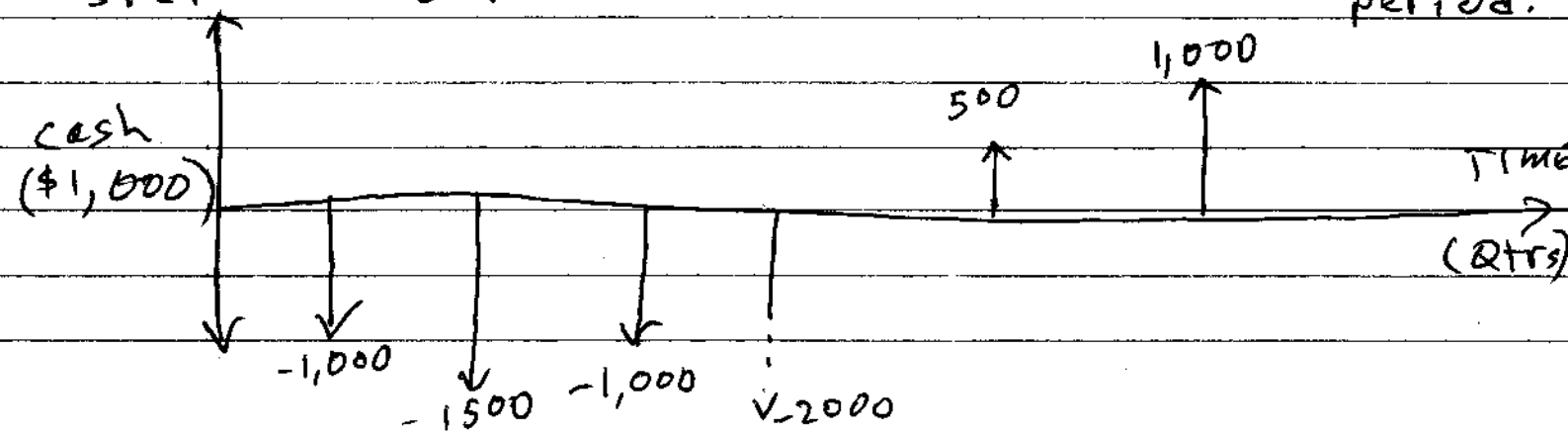


- Facilities ... renting & furnishing an office $200k

People .... hire a product development team: $500k

Equipment ... servers $100k

STEP 3: Determine the Net Cash Flow for each period.



Step 4: Compute the present value of the net cash flow for each period

money loses value over time due to inflation: $\$1_{2016} > \$1_{2017}$

We need to discount the future value of the cash flow in order to get its present value

$FV \triangleq$ future value
$PV \triangleq$ present value
$d \triangleq$ discount rate (rate of inflation)
$n \triangleq$ number of periods that the FV is in the future

$$PV = \frac{FV}{(1+d)^n}$$

in the present, $n = 0$, so $PV = FV$

$$FV = PV(1+d)^n \rightarrow \text{(just like a bank account}$$

Example:

A venture capital firm has promised you they will invest $1 million, but the investment will be in 3 years.

How much is the investment worth in today's dollars?

$FV = \$1m$

$n = 3$

$d = 10\%$ per year

$$PV = \frac{\$1m}{(1+0.1)^3} \approx \$750K$$

what if the investment will be made in 3 quarters?

adjust d from years to quarters

$$d = \frac{10\%}{yr} \times \frac{1yr}{4qtrs} = \frac{2.5\%}{qtr}$$

$$PV = \frac{\$1m}{(1+0.025)^3} \simeq \$940K$$

Example #2

Based on your cash flow analysis, you promise the venture capitalist a $3m return on their $1m investment in 3 years.

Q: How much is that return actually worth?

$FV = \$3m \quad d = 10\% \quad n = 3yrs$

$$PV = \frac{\$3m}{(1+0.10)^3} \approx \$2.25m$$

compare return on investment: ROI

$$\triangleq \frac{\text{return} - \text{investment}}{\text{investment}}$$

without discounting

$$\frac{\$3m - \$1m}{\$1m} = 2 \text{ or } 200\% \text{ ROI}$$

with discounting

$$\frac{\$2.25m - \$1m}{\$1m} = 1.25 \text{ or } \$125\% \text{ ROI}$$