Entrepreneurship for Computer Science

Beachhead Markets & Revenue Projections

HOW TO START A START-UP

by Anna Vital

live in the future, ahead of your time

what is missing in the world?

write it down and bounce ideas around

make a **prototype**

show the prototype to 100 people

launch - let everyone know you have made something

look for **funding** and build version one at the same time

register your C-corp, split **equity**

find a **co-founder**

iterate on the prototype until it makes sense

1,000

get to 1,000 **users**

grow 5% a week (hard, but proven possible)

keep growing for another 4 years, and at that rate you will reach 25 million users

follow up with users. Are they coming back?

yes, they are coming back

no, they came and left

launch again (after iterating) launch until users stay (AirBnB launched 3 times)

inspired by eponymous essay by **Paul Graham**

Funders and Founders

Today…

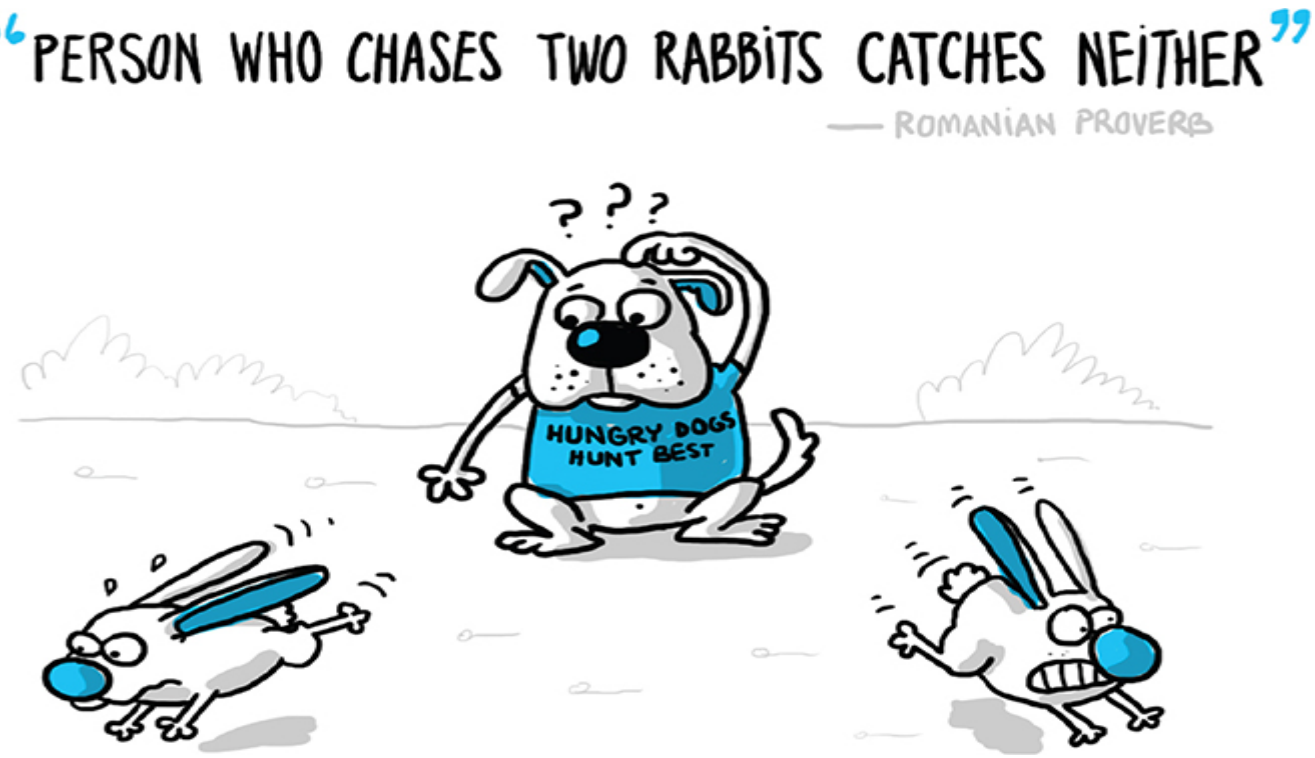
- Last Session:
  - Market research
- Today’s Session:
  - Beachhead markets & revenue projections

Beachhead Market

- In military operations, if an army wants to invade an enemy territory, the army may employ a *beachhead strategy*
- A beachhead strategy entails planning and focusing all time and resources on wining a small strategic boarder area
  - This small area is called *beachhead*
- The beachhead market then becomes the stronghold to land troops and supplies for the bigger invasion to the enemy territory
- The 1944 invasion of Nazi-controlled Europe by the Allied forces is one of the most famous examples of a beachhead strategy

How to Select a Beachhead Market?

- Select a beachhead market via selecting just ONE market opportunity from your market segmentation matrix



How to Select a Beachhead Market?

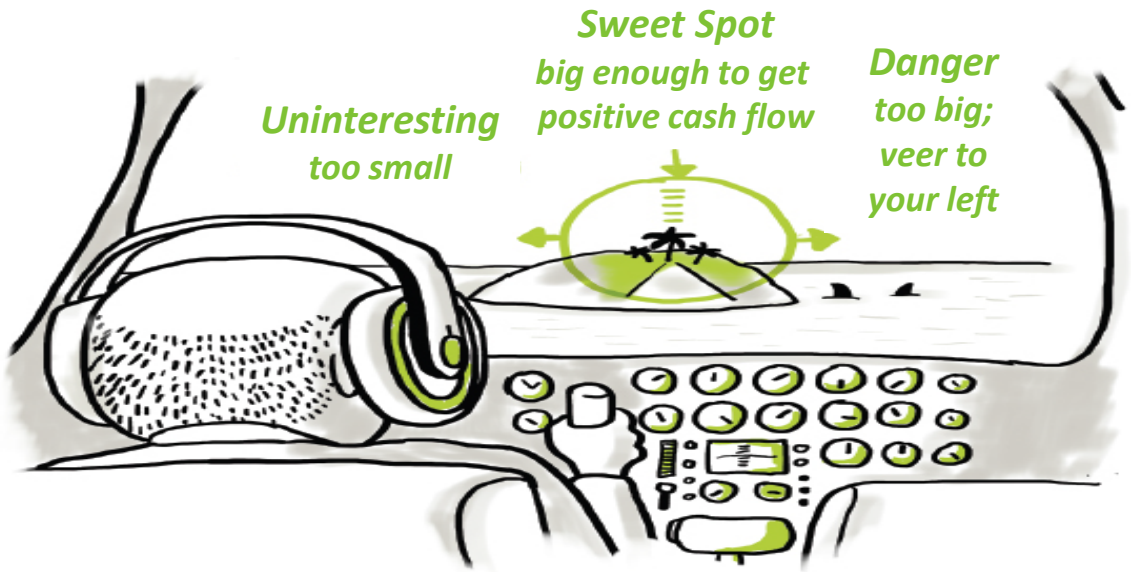
- In many cases, there are multiple paths to success, hence, it is not imperative to choose the absolute best market
- Alongside, it is better to avoid selecting the largest or very large markets, even if they seem to be the best markets
- The first market you attack will be a significant learning experience (with perhaps a lot of failures) for you, so you are better off learning, *persevering* or *pivoting* in a smaller market
- But, what are the criteria to select a beachhead market?

How to Select a Beachhead Market?

- Some criteria that may prove useful in choosing your beachhead market:
  - Is the target customer well-funded? (*affordability metric*)
  - Is the target customer readily accessible to your sales force? (*accessibility metric*)
  - Does the target customer have a compelling reason to buy? (*motivational level*)
  - Can you today, with the help of partners, deliver a whole product? (*readiness level*)
  - Is there entrenched competition that could block you? (*competition level*)
  - Are there entrenched legalities that can block you? (*legality barrier*)
  - If you win this segment, can you leverage it to enter additional segments (i.e., proceed to the bigger invasion)? (*scale-up metric*)
  - Is the market consistent with your passions, values, and goals? (*adherence level*)
  - What is the *Total Addressable Market* (TAM) size of this market? (*TAM size*)

What is TAM?

- TAM is the amount of annual revenue (in dollars) your company would earn if you achieved 100% market share in the chosen market



Beachhead TAM calculation is your sanity check that you are headed in the right direction

Calculating TAM

- To calculate TAM, you need to figure out and multiply the following two factors:
  1. The estimated number of customers who will use your product or service
  2. The estimated total revenue each customer is worth per year

- The first factor and part of the second factor can be determined using primary and/or secondary market research

- The final value of the second factor can be determined using your *business model*, which is a framework by which you extract from your customers some portion of the value your product creates for them (*more on this later*)

Example: A Shoe E-Commerce Platform

- Assume a specialized e-commerce platform for selling shoes online
  - The platform does not own any inventory, but rather partners with existing shoe stores
  - The platform does not own any delivery company (or department), but rather partners with existing delivery companies

- Simple business model:
  - 8% of any package cost as a *transaction fee* from any shoe store
  - $5 *convenience fee* from any customer for delivering her/his package
  - Total Revenue Per Package = 0.08 × package cost + $5

Example: A Shoe E-Commerce Platform

- Two required factors:
  - The estimated number of transactions over this shoe e-commerce platform (say, 1000, 000)
  - The estimated cost of per package/transaction (say, $35)

- The first factor is equal to the total number of people who buy shoes in the selected market if they ALL buy shoes via ONLY this e-commerce platform
  - This is an upper-bound, which is used in calculating TAM
  - A *conservative percentage* can be assumed for more realistic revenue projections
  - A *sensitivity analysis* can be performed assuming a range of percentages (*more on this shortly*)

Example: A Shoe E-Commerce Platform

- TAM = Estimated # of transactions × Estimated revenue per transaction
  = 1000,000 × ((0.08 × 35) + 5))
  = $7800,000

Note that the business model was used in determining the final value of the second factor

- General Hints:
  - If TAM < $5 million, it is possible that your venture has not identified a big enough beachhead market
  - $5 million < TAM < $100 million is usually a reasonable TAM
  - Anything over $1 billion certainly raises flags

- Important Note:
  - Your advisors, partners, and investors know that these projections are only estimations (and most probably inaccurate), but they do still accept them because they give a good sense of your target market

Example: A Shoe E-Commerce Platform

- The revenue projection process can be fully formalized (*via developing a mathematical model*) and conducted over multiple years

- Assume:
  - Estimated # of transactions = **N**
  - Market Share = **α**
  - Transaction Cost = **C**
  - Transaction Fee = **β**
  - Convenience Fee = **δ**

- Mathematical Model = $(\alpha \times N) \times (\beta \times C + \delta)$

Example: A Shoe E-Commerce Platform

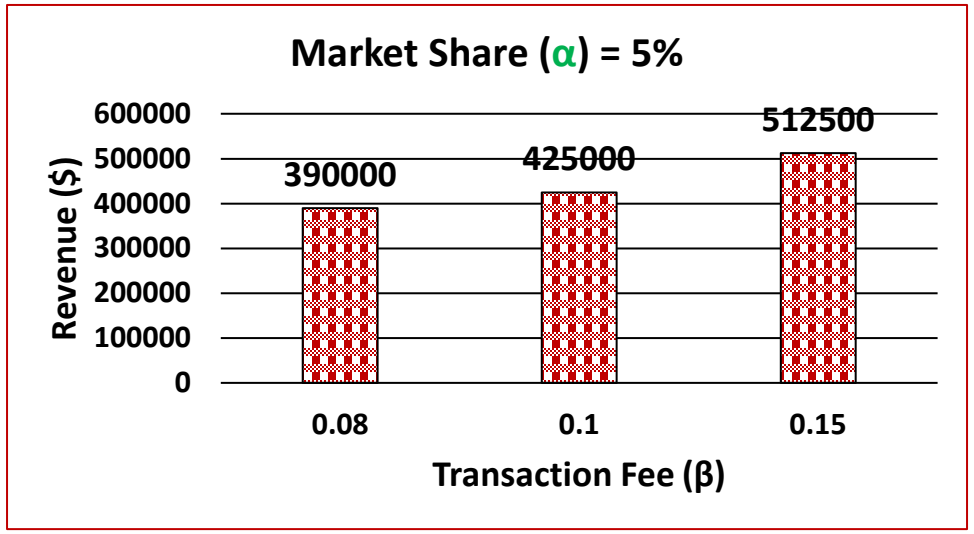
- Alongside, you can vary the market share (α) and observe how the projected revenue will change accordingly

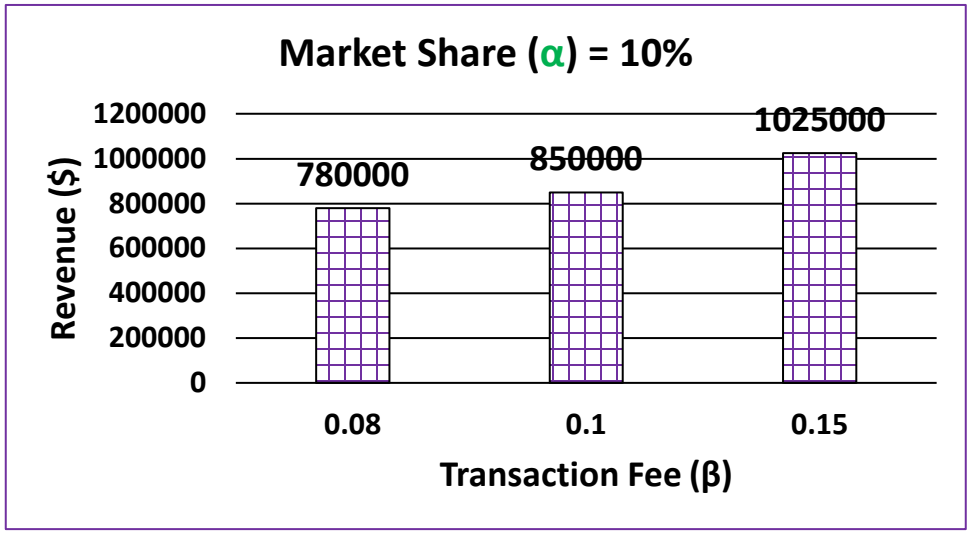
	Number of Transactions (N)	Market Share (α)	Transaction Fee (β)	Package Cost (C)	Convenience Fee (δ)	Revenue Projection Model ((α × N) × (β × C + δ))
TAM	1,000,000	1	0.08	35	5	**$7,800,000**
	1,000,000	0.01	0.08	35	5	**$78,000**
	1,000,000	0.02	0.08	35	5	**$156,000**
	1,000,000	0.05	0.08	35	5	**$390,000**

- In fact, you can vary any variable in your model and observe how the projected revenue will change accordingly
  - This study is called *sensitivity analysis*

Example: A Shoe E-Commerce Platform

- Sensitivity Analysis:





- You can also do revenue projections over multiple years (typically you would increase your market share every year by a certain %)

The China Syndrome

- You might be inclined to choose a *huge* existing market, assuming that you can easily acquire a *tiny* fraction of it, and reap the rewards!
  - This is referred to as the *"China Syndrome"*

- For instance, if you can acquire 0.1% of the toothbrush market in China (population 1.3 billion), would not you make a lot of money?

- How would the logic go?

The China Syndrome

- The logic goes as follows:
  - A reputable site on the Internet says that China has over 1.3 billion people
  - If all these people have teeth, the market size would be 1.3 billion customers
  - I can build a toothbrush for the Chinese market, and maybe I will get 0.1% market share in the first year
  - If each person buys 3 toothbrushes a year, I could sell 3.9 million toothbrushes per year
  - If I sell each toothbrush for $1, I would have $3.9 million in sales the first year, with lots of room to grow!
- Is there any problem with this logic?

The China Syndrome

- This logic has several problems such as:
  - It did not demonstrate in a compelling manner why people will buy your toothbrush
  - It did not show why your market share would increase over time
  - It did not validate any of your assumptions by learning directly and/or indirectly from/about your market
  - Perhaps, you have never been to China!

- After all, if entrepreneurship were this easy, would not everyone sell toothbrushes to China?
  - Do not get ensnared by "The China Syndrome"
  - Do your revenue projections ONLY after you do market segmentation, *and* primary and secondary market research

Next Class

- Business Models