Market Sizing: Meet SAM and TAM

wait, WHAT?

On second thought, can we just talk for a minute?

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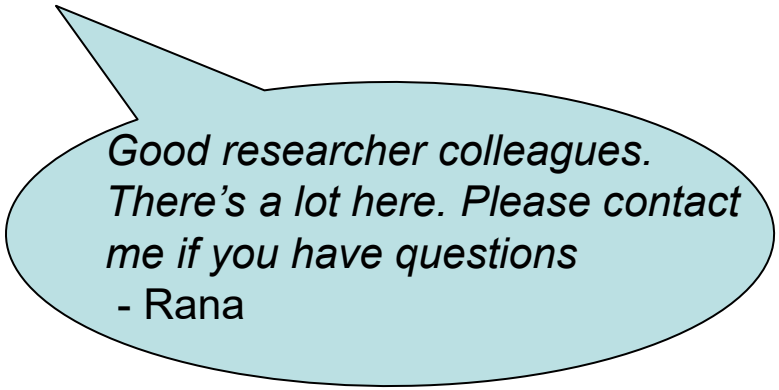

Here's what we'll cover

Ground rules and "no-nos"

Establishing definitions and understanding the context of an attractive market

Tell a story

Examples, notes on examples and a simple approach

Ground rules, discomforts and ambiguities when talking about market size

- This exercise assumes **you've determined the NEED, customer, and value proposition** at least for your first target customer
- Term 'market size' is ambiguous – not one definition
- Units are obligatory when quoting market size
- Assumptions and sources are vital
- There can be (are) different units employed when quoting market size
- You will make uncomfortable assumptions (guesses)
- You will extrapolate from piecemeal data
- Assumptions and sources are vital (I've seen that before somewhere – must be important)

A few ‘no-nos’ that I cannot help but throw in

- When a team says, “we believe..” it’s a sign they’ve not done their homework
  - No one cares what you believe
  - DO the work
  - Find the sources (and cite them)
- There are three components to an idea : team, product, market
  - The only one we can’t change is the market, so this is important
  - It’s why identifying the NEED, customer and Value Proposition are vital
- There’s no such thing as ‘no competition’; your customers are doing something today, however imperfect, to address this need**
- Don’t show a HUGE market figure (e.g. the entire automotive industry) and say “*if we capture only x%...*”

**actually, the toughest, ever-present competitor is inertia. Only by addressing a customer’s NEED will you overcome inertia

Q: what makes a market attractive?

- Many facets define an attractive market. Here are a few
  - Size
  - Growth: growing quickly is attractive
  - Competition: just because there's a lot of competition does not mean it's unattractive
  - Stability: supply chain, manufacturing seasonality, changing technologies
  - Quick to adopt novel products
    - Consumer electronics are adopted quickly
    - Utilities do not adopt new technologies quickly
  - Channels to the customer
    - Unattractive channels
      - A select few companies own all channels to the customer
      - Fragment market: expensive to reach the customer
  - Budgets- people in companies, labs, institutions have money to spend to solve the types of problems you have documented that they have

This presentation addresses market size

Think about how you want to commercialize this idea – *market attractiveness is in the eyes of the pathway*

- Two basic pathways:
  - License (to an existing company)
  - Startup (you start a company and license to your NewCo)
- If licensing, then the licensee will want to see a big market
- If investors are involved, they'll want a big market
- If startup, educate and ask yourself as to whether
  - This will be attractive to investors
  - Do you want investors?
- If you don't want investors or it won't be attractive to them, then a big market may or may not be required
  - Perspective: if 10,000 people are buying a $1,000 product every year
    - That's a $10,000,000 total annual market
    - If your First Target Market is 20% of those people you have a $2,000,000 addressable market
    - That may be enough to start YOUR business

Whatever path you choose, start with your First Target Market

Here're a few definitions (some borrowed)

- **Market**: Geoffrey Moore offers a definition## in his book *Crossing the Chasm*:
  - A set of actual or potential customers
  - For a given set of products or services
  - Who have a common set of needs or wants, and
  - Who reference each other when making a buying decision
- **First Target Market:** the market segment that NEEDS your solution NOW and will adopt it quickly
- **Comparable**: company that possesses some facet(s) similar to yours, that offers relevant data or qualities to help create and tell your story
  - For market sizing we're interested in comparable (could be competitive) products**
- **Addressable Market**: who cares (about your product) AND you can realistically reach them
- **(Total) Available Market**: Addressable + those whom you can't reach but can use your product = everyone who can use your product
- **Customer Discovery**: an iterative process using the scientific method to identify customers' needs and the value proposition of a solution that will address those needs
- **Market Research**: A group survey. Used mostly by big business, group interviews or focus groups are useful brainstorming tools for getting information on product ideas (www.entrepreneur.com). A top-down quantification of an industry and its component markets and products (Rana)

Note Mr Moore's book targets the "high tech" industry, so this definition may be customized for your industry, but it's a starting point

** Other facets of another company can be a valuable comparable for different analyses: business model, market adoption, marketing message

Market Research

versus

Customer Discovery

- You can purchase it
- Can help you look at trends/ facts
- Often focused on a product or service
- Assists you in determining the size of your market and whether your venture is worth pursuing
- Often conducted via survey
- Shows you the landscape

- May better help you discover a need that does not yet really exist yet
- Best if done by founders
- Is about people
- About how people do their work today and what they have done to solve problems past and current
- Helps you understand the intensity or magnitude of their problem
- Done as close to in-person as possible
- Helps you parse more micro issues

Customer Discovery is an intense, bottom-up, personal, interview-driven activity designed to identify market needs so you don't make something no one buys

Market Research can be a useful tool to understand the big picture of the markets and industry your engaging

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This presentation addresses market size

Size is but one component to an *attractive market*
Q: what makes for an *attractive market*?

- Many facets define an attractive market. Here are a few
  - Size
  - Growth: growing quicky is attractive
  - Competition: just because there's a lot of competition does not mean it's unattractive
  - Stability: supply chain, manufacturing seasonality, changing technologies
  - Quick to adopt novel products (see Appendix B for adoption curve model)
    - Consumer electronics are adopted quickly
    - Utilities do not adopt new technologies quickly
  - Channels to the customer
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Hint: A superior presentation addresses the larger question of an *attractive market*

This presentation addresses market size

Think of describing market size as a story, not a static figure

- Your task is to tell a compelling story about 1) who's going to buy your product (and why); 2) how many such people there are in that (target) population
  - Use simple English to describe a population and their need

- Different market segments will need your solution over time
  - You'll start with one market segment and move to another and another
  - New inventions start with a **First Target Market** and grow from there
  - As your product moves to different markets, customers' needs, your marketing message and potentially the very product itself, may change

First Target Market: "I can **definitely** sell to this market segment – they need what I have – and from there I'll move to other markets

Don’t confuse concepts while you quantify your market(s)

- An industry is not a market
  - *The health care market is three trillion dollars…*
- A person who does not need what you’re selling is not a customer
  - *There are 25 million people in their twenties…*
- A problem is not a market size
  - *Not everyone with that problem will buy your solution*
- Don’t quote huge market figures unless you can substantiate, or at least name, the P * Q behind them (see slide XX for an explanation of P * Q)
  - *This is a 100 billion dollar market…*
  - *Forrester Research says…*

There is one equation you should know

P * Q = mkt size in sales

Where:

P = price (of a product)

And

Q = quantity (frequency the product is purchased in a period of time)

Multiply these and voilà (I speak French), you have yourself the *beginnings* of a market size calculation

BUT this figure is not always the market size that will tell YOUR story best

AND even this equation can be implemented to compute different potentially addressable markets for your idea

Start with a story – keep it personal

- A **market** is not going to adopt your idea
- An **industry** is not going to adopt your idea
- A **company** is not going to adopt your idea
- A **person**** is going to **BUY** your product
- Start with that person and tell us that person's story

This also helps YOU keep the calculation grounded, real and not some big numbers you throw onto a screen

** usually with the assistance of other persons

Start from the beginning of the story. This engages the audience and helps them understand the market

If it's a training or educational or medical treatment software

- A trainer walks into a classroom and has the challenge to…
- A student is tasked with…
- A patient learns she has…

If it's a device to be used in a process

- An engineer is making or optimizing…
- A chemist is experimenting with…
- A biologist is making an assay for…

If it's a device to diagnose or treat

- A doctor needs to…
- A patient is diagnosed with…
- A patient presents with the following symptoms to his PCP…

Then quantify the NEED and SOLUTIONS TODAY

- How many such people or organizations with those people there are of that profile
  - There are XXX cardiologists who perform this surgery
  - There are YYY such facilities running operations of this nature
  - There are ZZ facilities that offer this sort of training
- How many times does that happen per…year
  - XX times per day
  - YY times per month
  - ZZ times per year
- How many products fill that need today
  - There are XX current solutions
- What's the price of those current products**
  - The average price of solutions on the market is $YY

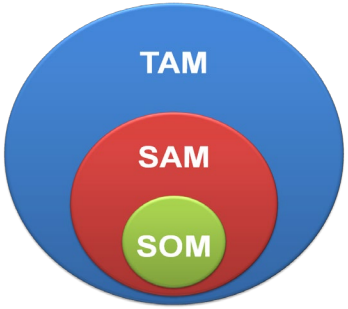
** we'll use the work product to describe a product or service

Use common sense and be rigorous when quoting market size units

- If you have a therapeutic or a med device:
  - If there's no incumbent solution, the number of **patients** diagnosed per year can be a market size figure
  - If there are incumbent solutions use their P (price) * Q (above) to compute current market size (may have to add data from several solutions)
- If you have a software as a service:
  - Use P*Q to tell us the current market size using incumbents' data
  - If there is no software that addresses this need specifically then:
    - Determine the number of such people who perform this task (Q)
    - State your intended price (P). Use comparables to arrive at that price
- If you're selling to other researchers
  - How many researchers are there in that area of study
  - How much does your solution cost

I'm obligated to show you some conventional definitions and market size acronyms**

- TAM (Total Available## Market): if every customer who wanted to buy, bought it
- SAM (Serviceable Available Market): aka Addressable Market (see slide 6)
- SOM (Serviceable Obtainable Market): what proportion of that market you can reach



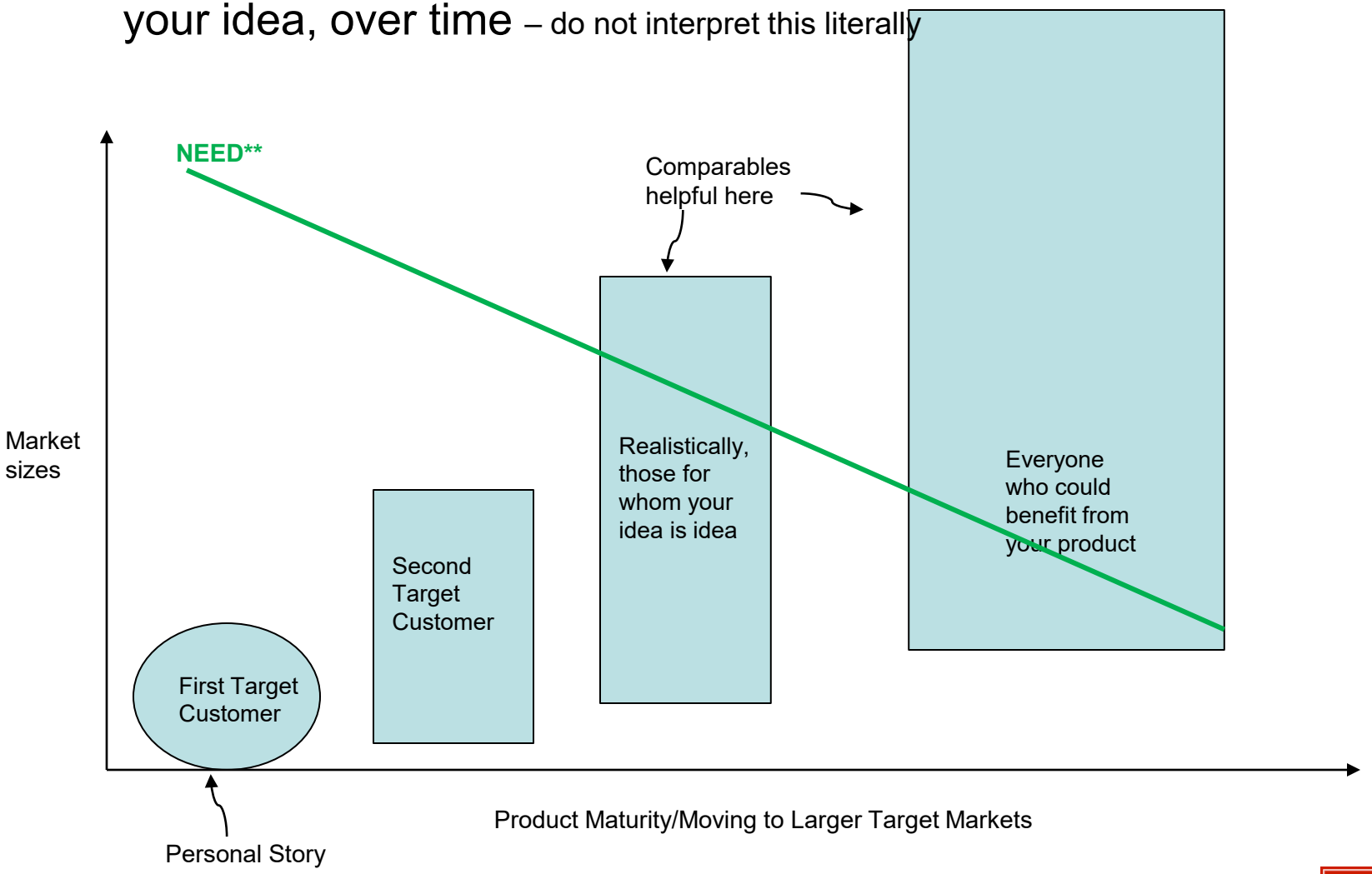
They are often portrayed thusly

What you **don't want to do** is use terms and present numbers that don't make sense, don't tell YOUR story, can't be easily related (arithmetically) and you don't understand

This is **your** story, **your** market, **your** product, **your** customer

** I challenge you to find three people who offer the same method to calculate these figures
See Appendix A for more

Here's a *figurative* graphic to depict different markets relevant to your idea, over time – do not interpret this literally



BOSTON UNIVERSITY

** Good market sizing assumes you've identified an URGENT NEED in a first target market

Notes on the following three real-world examples

- Uber example:
  - Good: second figure labeled “Serviceable Available” is also called “Addressable market”. This figure when applied correctly is an important one because it describes customers you can realistically reach
  - Bad: do not cite sources
- Cancer Dx example:
  - Good: use of references, assumptions and transparency in calculations
- Linear lighting example:
  - Good: brings it down to (what appears to be) a realistic market size for the “Initial Target Market”
  - Bad: do not cite sources

Example: Uber

Total Available (TAM)

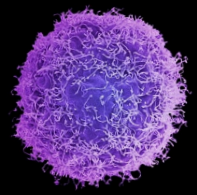
- The value of all taxis and ride-hailing services everywhere on the planet

Serviceable Available (SAM)

- The value of all the taxis, etc., in all the cities Uber is in. This number is all the value, assuming they have a monopoly of 100% of the markets where they are.

Serviceable Obtainable (SOM)

- The portion of SAM Uber CAN CAPTURE. Is that 30%? 50%? What is realistic?

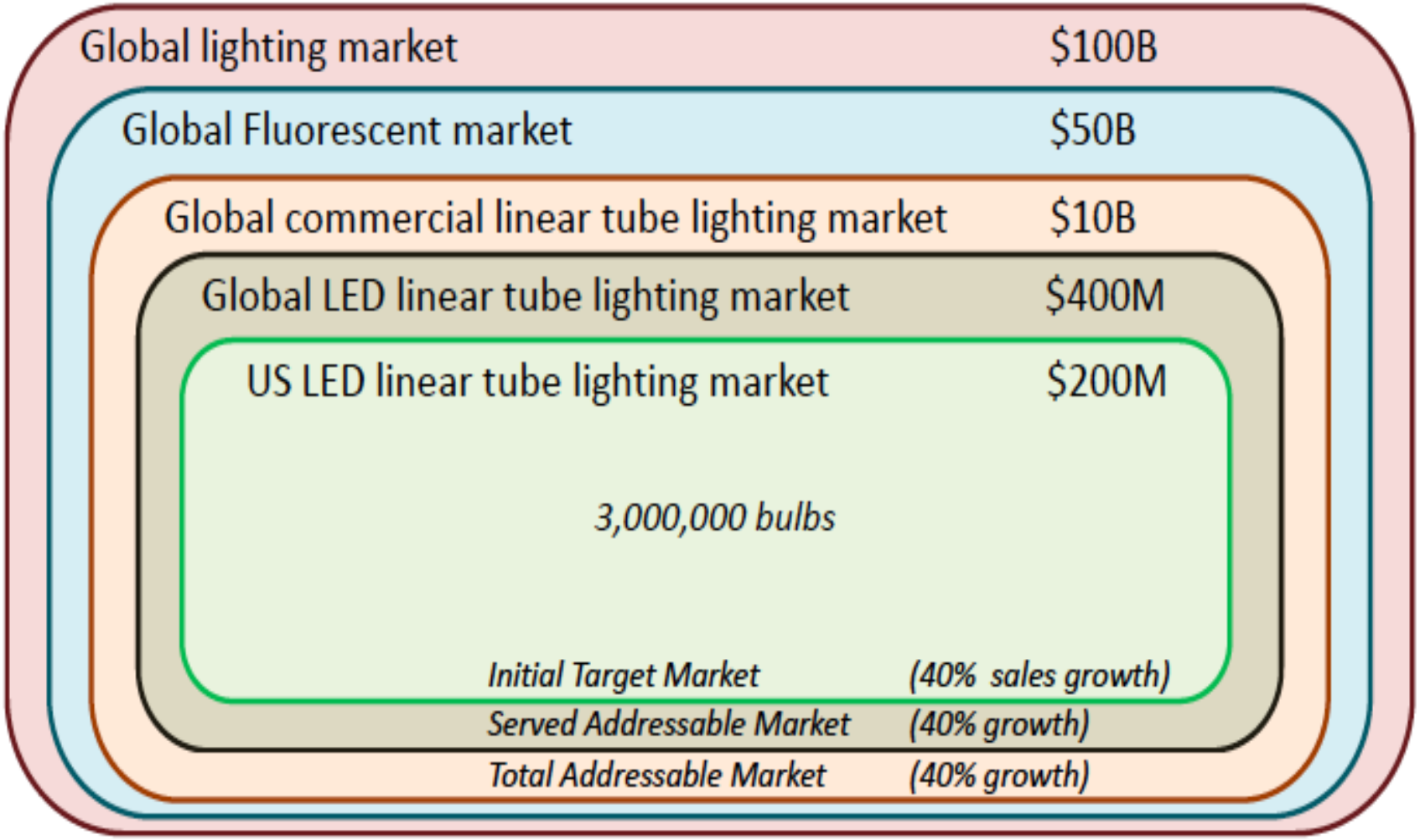


The market size for metastatic cancer diagnostics in the U.S. is estimated to be $805M p.a.

Methodology:	Value:	Explanation:	Source:
U.S. population size	313M	• Total U.S. population in 2012	• U.S. Census Bureau estimate
x			
U.S. incidence of all cancers	0.512%	• Treatment is typically given in the first year following diagnosis	• ACS Cancer Facts & Figures 2011
=			
Total U.S. cancer incidence	1.6 M		
x			
% diagnosed with regional or distant cancers	39.4%	• Cancers that spread to local or distant lymph nodes or organs	• NCI SEER 2011 data
=			
Patients w/ regional or distant cancers	628,420		
x			
Cost of diagnosis and monitoring (annually)	$1,285	• Weighted avg. patient cost p.a. for imaging procedures (2008)	• JAMA. 2010; 303(16):1625-1631
=			
Market size for metastatic cancer Dx / monitoring	$805M		

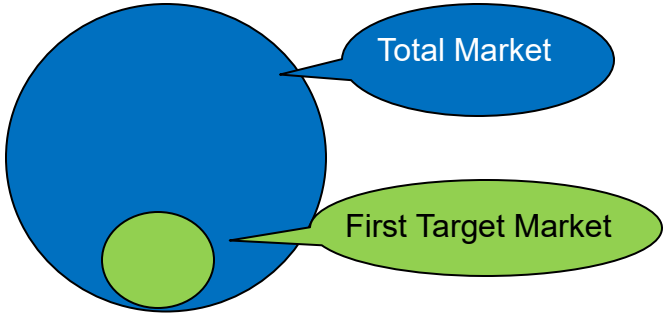
CanScan

Linear Lighting Market Size



Here's the trick to keeping it simple: **dominate** the first target market and quantify the larger market size

- First target market: you've identified the product-market fit. Now tell us the size of that market and how you're going to reach them (channel) and make money (costs and revenue)
- Total market: quantify the total market so we see the potential



If you can walk into a room and say, "this first target customer (market) NEEDS my solution and here's why…and from there we'll move to…[the larger market]" THAT's a compelling market sizing story

In conclusion, following are steps to create a market size estimate

- First target market
  - Start with a story, a person
  - Describe the first target market where you've identified a NEED
  - Quantify how many such first targeted people there are
- Beyond the first target market:
  - If it's a market where incumbents are selling use their data (e.g. annual report, market experts, call those companies) to identify market size
  - Limit your market to those who clearly value your solution AND you'll be able to reach given your business model

Make extrapolations as necessary

- Data will be incomplete. Sources include:
  - Competitors' annual reports
  - Industry reports
  - Interviews with consultants to and experts in the industry
  - Interviews with competitive company personnel

Ground your and the audience's understanding of the *situation* where your product will be used

Appendix A: **How Much** Can You Sell **and How**? p1

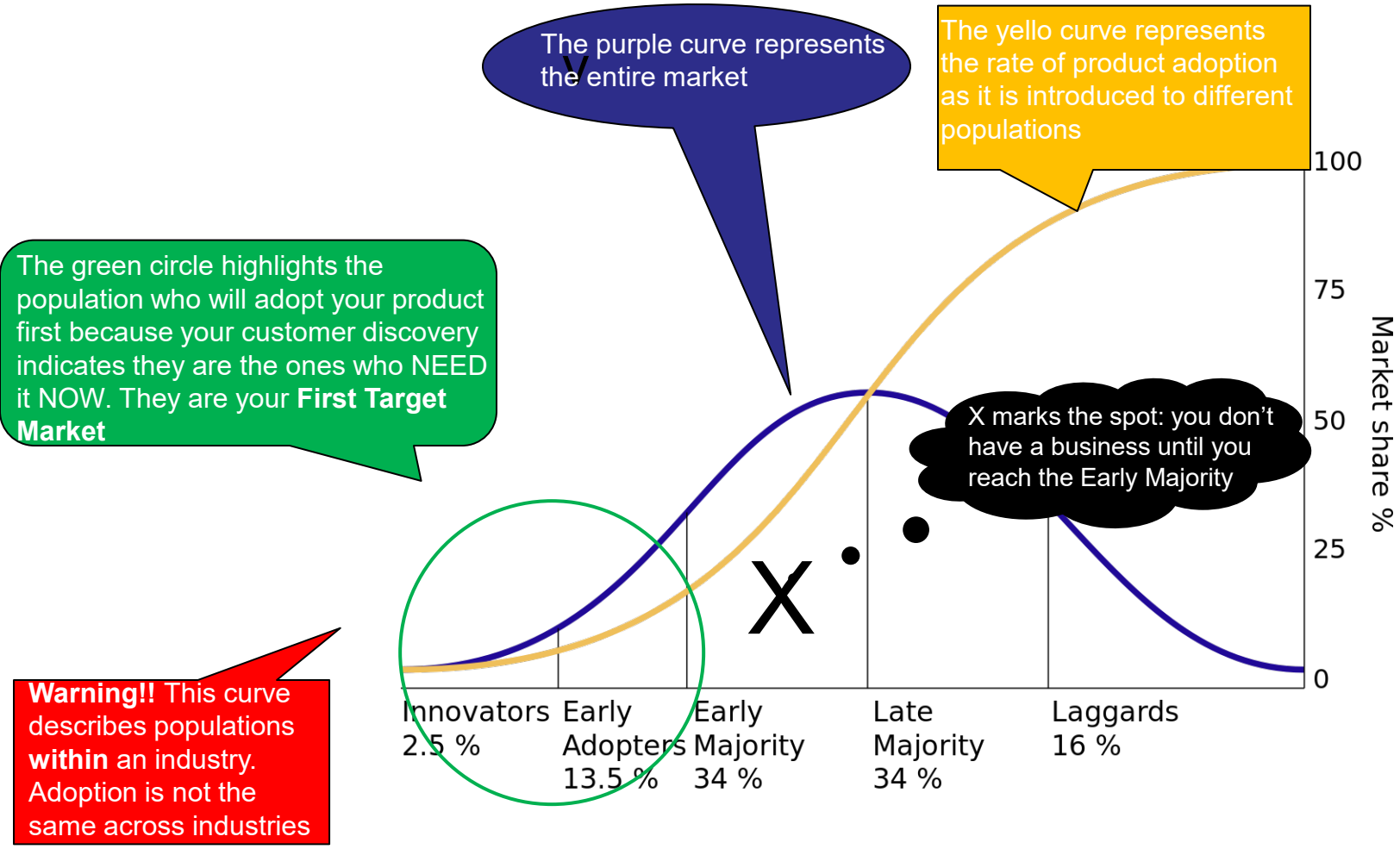
- Accurately assessing the upside is key to deciding whether this idea is worth your own time and if so, choosing how to finance the business.
- Jit Saxena, a well-known serial entrepreneur and angel in Boston says "The biggest mistake entrepreneurs make is not picking a market big enough to justify the massive effort required to build a business."
- **The revenue potential for a company is called the TAM or Total Available Market** – the amount of revenue your company could earn if every customer who wanted to buy the product did buy from you. Another way to think about this is the sales of your company and all its direct competitors added together.
- To calculate this means carefully dissecting how the market works and knowing which customers could buy your product and which never could. A common mistake founders make is to trumpet a market size number they can find on the Internet that is big and impressive, without thinking about it critically.
- For example, a start-up writing hotel management software might claim "the global tourism market is over $8 trillion annually!" VCs cringe because that is a gross generalization. It appears to be a cynical attempt to inflate the company's prospects, or perhaps lazy thinking. (It is cliché for a founder to then say in the next slide "if we only take 1% of that giant market we will be rich". Fast way to blow your credibility.)
- A big market size is an illusion because each customer is different in some way, which means every market is composed of smaller segments. Your company will serve some segments well, some poorly, and some not at all. You need to do your homework and figure out the realistic prospects both for your first product and for your long-term goals.

Stolen from PillarVC's *How to Raise a Seed – A Full Guide*:
https://www.pillar.vc/playlist/guide/how-to-raise-seed-full-guide/

Appendix A: **How Much** Can You Sell **and How**? p2

- The smaller the market segment, the more closely your product can fit the unique customer needs of that segment and the better your chances of success. Of course, a smaller company will be worth less. So the way you define your market is really an indication of your ambition for the business.
- My advice here is to keep narrowing markets down into smaller segments until you reach a target market that is only 5-10 times bigger than your long-term revenue goal for the company. Why? Think about it this way: for your company to be successful, you should aim to become one of the leaders in your category. In many industries, that means a market share of 10-20% or more.
- If your goal is to build a high-potential venture-backed company with a chance at unicorn status, then $100-250 million in sales is big enough to achieve that valuation, and so you want to keep narrowing your company's focus until you are down to a target market of $1-3 billion. If you go after a larger market, you are in danger of diluting your company's attention over too many customer types and failing to please any group well enough to win adoption.
- If the market is smaller, only you can judge whether there is room to build a company big enough to satisfy your ambition. If you do want to proceed, that is terrific. You just need to find a way to finance it without venture capital however, because venture capitalists only want to back unicorns.
- A red flag we often see in venture capital is that when a start-up's market size is small (but the founder wants to raise venture capital anyway) the founder tries to convince investors that the company can get to unicorn scale by entering "more markets later". The problem with this is that every time you enter an additional market, you take on new customer requirements, a new branding effort, a new sales effort, a new regulatory regime, new channel partners, new PR strategy, and so forth. The capital requirements grow higher, but the odds of winning all of those market battles simultaneously fall lower. It's a poor bet for both founder and investor.
- In sum, do the work to accurately assess revenue potential, and if the size looks right for you personally, then hunt for matching investors who like your scale of company, rather than changing your goals to please investors.

Appendix B: This curve describes new invention adoption – populations on the left are fast to adopt, on the right not so much



Referral Resource: "Crossing the Chasm" by Geoffrey Moore