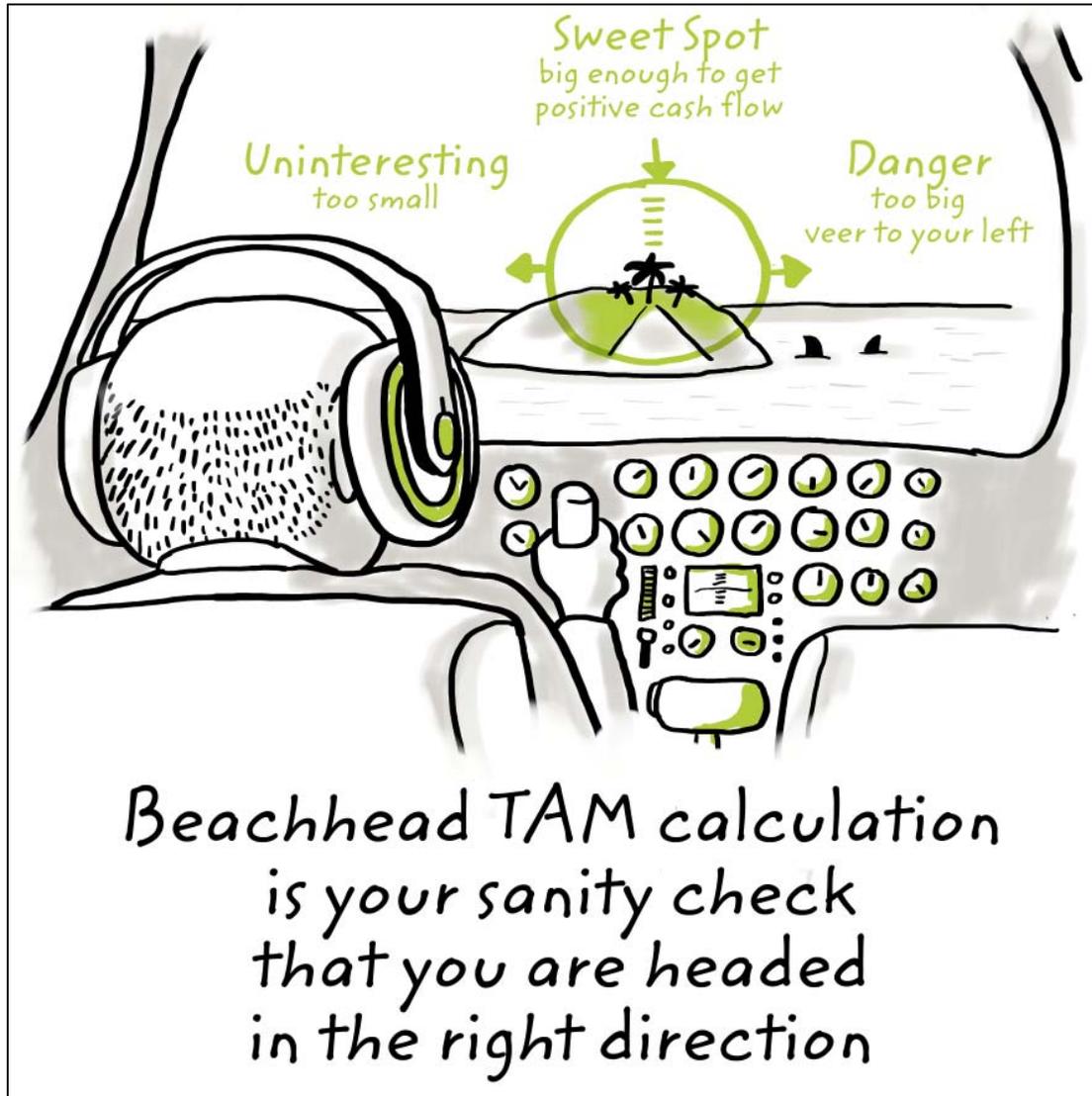


Step 4: Calculate the Total Addressable Market (TAM) Size for the Beachhead Market



It is important to start to understand the size of the market you are targeting early; you will modify this as time goes on but it is wise to be thinking about this point early on and keeping track of a number

Step 4: Calculate the Total Addressable Market (TAM) Size for the Beachhead Market

::: In This Chapter, You Will:

::: Use the demographics from the end user profile to determine how large your beachhead market is

The beachhead market and End User Profile give you enough specificity to make a first-pass calculation of the Total Addressable Market (TAM) size for the beachhead market. The TAM for your beachhead market is the amount of annual revenue, expressed in dollars per year, that your business would earn if you achieved 100% market share in your beachhead market.

The goal of this exercise is not to write down a big number to impress others, but to develop a conservative, defensible number that you believe. Entrepreneurs often tend to inflate the TAM with excessive optimism. However, a big number is not necessarily better.

You are looking for a market that is big enough for you to get to critical mass, develop key capabilities and get to cash flow positive in the market. On the other hand, if the market is too big, you will likely not have sufficient resources to compete and you may get overwhelmed and either not succeed or have to raise money without much of a track record for potential investors to evaluate.

To calculate the TAM, you will first determine how many end users exist that fit your End User Profile, primarily using a bottom-up analysis based on primary market research, with limited top-down analysis to complement your primary research. Too much top-down analysis will lead you to focus on spreadsheets, not customers, and I have never seen a real live customer hiding in a cell on a spreadsheet. Then, you will determine how much each user would spend per year.

Bottom-Up Analysis

The best way to calculate the TAM is a bottom-up analysis, often termed “counting noses.” Show from your primary market research how many end users you have identified that fit your End User Profile. Customers, trade associations, etc. can help you identify how many customers there are, as well as how many end users each customer has. Sometimes we refer to this as “counting noses” because you are getting very specific and you know where each potential customer is and how much they could spend.

Top-Down Analysis

A top-down analysis starts by using secondary market research, such as market analysis reports, to determine how many end users meet different characteristics. This data is usually expressed with an inverted pyramid that has several horizontal levels, where the bottom-most level is the smallest and contains all end users who meet your End User Profile. A top-down analysis should be complementary to your bottom-up analysis. It is often much higher because you are not as specific.

From “How Many End Users?” to “Show Me the Money”

Once you have counted the number of end users who fit your End User Profile, determine how much annual revenue an individual end user is worth. Multiplying the revenue per end user by the number of end users will give you the TAM.

If, by any chance, the TAM is less than \$5 million per year, it could be a problem because it is a non-trivial possibility that you overestimated the size and it is generally very optimistic that you will get 50% of the TAM in a reasonable timeframe. Also, if you are seeking outside funding, this could be a problem. Generally, the initial market size of about \$20 million per year up to \$100 million is a good target. Anything over \$1 billion certainly raises flags. Anything less than \$5 million per year can also be a problem because it is generally very optimistic that you would get 50% of the TAM in a reasonable timeframe, and such a small number will make it more difficult to convince investors that yours is a worthy opportunity.

It is possible that an initial TAM of \$5 million per year could be a good thing if you can truly capture the market quickly and convincingly, especially if the gross margins would be very high (e.g., 90% as it would be for software, apps, information plays). This could create positive cash flow from the market which would be a significant accomplishment and a good beachhead market.

Hence the key factors are not just size but also gross margin, speed, potential for dominant and sustainable market share, and strategic value. But size does matter and it is a common language we use, so it is well worth doing the calculation but not spending an inordinate amount of time on it. As you learn more in the later steps, you will likely come back and revisit this calculation and modify it to make it more credible. That is a good thing.

Examples

SensAble Technologies

Our focus allowed us to do a bottom-up analysis, counting real customers. Since we had a lot of dialogue with the user base and built up trust and confidence, we were able to easily determine how many industrial designers were at one customer, Hasbro, and we were able to easily determine how many other major toy companies there were. We also befriended a staffer at the Industrial Design Society of America who helped us refine this list.

Toy Industry List of Customers:

- *Hasbro (U.S., Asia, Europe)*
- *Mattel (U.S., Asia, Europe)*
- *Fisher-Price (U.S.)*
- *FP Brands (U.S.)*
- *Creata (US, Asia)*
- *Equity Marketing (U.S., Asia)*

- *Marketing Store (U.S.)*
- *Gemmy (U.S.)*
- *Gentle Giant (U.S.)*
- *Whitestone (U.S.)*
- *Bandai (Asia)*
- *Tomy (Asia)*
- *Unitec (Asia)*
- *Hermon Industries (Asia)*
- *Luen Shing (Asia)*
- *Synapse (Europe)*
- *Schleich (Europe)*
- *Playmobil (Europe)*
- *Disneyland (Europe)*

One early realization was that toy companies existed in three different geographic regions – the United States, Asia and Europe. We had not adequately segmented the market, and would need to choose one of these geographic regions.⁹ A better way to display the customers, then, was a three-column chart:

Toy Industry List of Customers		
Europe	U.S.	Asia
<ul style="list-style-type: none"> • Synapse • Hasbro E • Schleich • Playmobil • Mattel • Disneyland 	<ul style="list-style-type: none"> • Hasbro • Mattel • Fisher-Price • FP Brands • Creaa • Equity Marketing • Marketing Store • Gemmy • Gentle Giant • Whitestone 	<ul style="list-style-type: none"> • Bandai • Tomy • Unitec • Creaa • Hermon Industries • Luen Shing • Mattel • Hasbro • Equity Marketing

Then we calculated how many industrial designers were at each company. We knew Hasbro (both U.S. and Europe) with great certainty, both the number they employed and used via outsourcing, so we had a valuable data point in that we knew who within the company would greatly benefit from our product and would be excellent candidates to buy it. We then spoke to our friends at Mattel and Fisher-Price and determined with high confidence the number of industrial designers at each.

As we determined the exact number of designers at a number of companies, we were able to start calculating a “designer density” where we could estimate how many designers a company had based on their annual revenue and number of new products. The calculation helped us make educated guesses

⁹ We actually sold to all three markets when we started out because we did not yet understand the value of defining markets with specificity.

about other companies where we did not have sufficient time or connections to “count noses.” We needed several data points of actual numbers of designers per company before the calculation would be accurate.

We did the same process for the footwear industry:

Footwear Industry List of Customers:

- *Adidas (US, Europe, Asia)*
- *Nike (US, Asia)*
- *New Balance (US)*
- *Reebok (US, Europe, Asia)*
- *Fila (US, Europe)*
- *Ecco Design (U.S., Europe)*
- *Stride Rite (U.S.)*
- *Spalding (U.S.)*
- *Rockport (U.S.)*
- *Timberland (U.S.)*
- *Wolverine (U.S.)*
- *Doc Martens (Europe)*
- *Alsa (Europe)*
- *Gabor (Europe)*
- *Kurt John (Europe)*
- *Clark (Europe)*
- *Regra Design (Europe)*
- *Pou Chen (Asia)*
- *Feng Tay (Asia)*
- *ASICS (Asia)*

The number of industrial designers was a key input to the TAM, but now we had to determine how much budget per designer existed at the customer, which required additional data as well as some assumptions and calculations. We started by looking at how much customers are spending today for a similar but inferior digital product, or to simply get the job done without any digital product. While there are other costs the customer may presently incur, such as shipping and scanning of physical products, elongated product cycles, and additional iterations, we focused on how much the customer spends per designer as it was an easier data point to tabulate and seemed to best represent our market potential.

Each customer budgets for a clay workbench for each designer, which when fully equipped costs approximately \$20,000 per bench in the United States, with a five-year replacement cycle. Each customer also budgets for each designer a digital workstation and software that costs about \$15,000 each in the United States and has a three-year replacement cycle. Both of these costs would be displaced by SensAble’s product.

We also included an estimated annual growth rate, based on our primary market research. While it does not directly affect the TAM calculation, it is a useful data point for future steps that we can easily collect

during this round of research, and a positive growth number is a good indicator of a healthy market opportunity.

TAM Calculation for SensAble Technologies Beachhead Market

	<u>U.S.</u>	<u>Europe</u>	<u>Asia</u>
Industrial Designers/Sculptors (Toys)	1,500	1,000	1,000
Industrial Designers/Sculptors (Footwear)	750	500	500
Estimated Annual Growth Rate	8%	8%	8%

Primary Market Research Shows:

Price per clay workbench	\$20,000	\$20,000	\$15,000
Price per digital workstations	\$15,000	\$15,000	\$10,000
Life of physical clay workbenches	5	5	5
Life of digital workstations	3	3	3

Annual expenditure per designer (calculated from above based on assumption that each designer will have both a clay workbench and a digital workbench going forward and we can replace them both with our offering)

	\$9,000	\$9,000	\$6,333
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TAM Calculation:

Industrial Designers/Sculptors (Toys)	\$13,500,000	\$9,000,000	\$6,333,333
Industrial Designers/Sculptors (Footwear)	\$6,750,000	\$4,500,000	\$3,166,667
Total TAM for Beachhead (\$/year)	\$20,250,000	\$13,500,000	\$9,500,000

OnDemandKorea

Some of our students at MIT, of which some but not all were Korean, noticed a very simple market opportunity. Koreans in the United States were particularly interested in staying in touch with things going on in their homeland. One of the major ways to do this for Koreans was to watch Korean soap operas. The students noticed that many of them visited websites where they could see bootlegged and low-quality versions of these shows. With their background, technical skills and connections, they were confident that they could build a site that would produce much higher-quality video and do it legally. The analogy would be iTunes as compared to Napster or Kazaa.

So the team dutifully built their End User Profile as you can see on the slide below. They then determined that the accurate number of Koreans in the United States is about 2.5 million. Of this total, a sub-segment was in the correct age group that they were targeting, and of them only a smaller sub-segment was female and possibly fitting their target customer profile, bringing the potential market

down to 1.2 million. They were also able to determine through some digging that the top three websites for Koreans where they watched this material today (Joonmedia, Bada, Dabdate) had 700K users in total. They figured that based on these numbers, there existed 400K end users in their beachhead market.

TAM Sizing Example: OnDemand Korea



Subset of Koreans in US who like to watch Korean TV

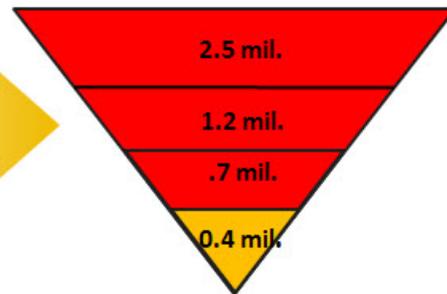
Age: 20-35 Females

Nationality: Korea

Residency: USA

Hobby: Watches ave. 2 hrs per day Korean drama through illegal websites

Note: Not satisfied with the illegal websites' services and its quality of contents



Joonmedia, Bada, Dabdate



Anytime, Anywhere, Anyway

While this is an excellent start to calculating the TAM, it cannot stop there. The TAM is not a number of customers but rather dollars per year. So to complete the TAM calculation, the team needs to determine how much the 400,000 potential customers would pay in a year.

This would be a good quick and dirty TAM calculation for a consumer-oriented new venture.

Summary

The TAM is how much annual revenue there is available to you for your product if you achieved 100% market share. This is only for your first “beachhead” market. The strong preference is for a bottom-up analysis where you can show from your primary market research how many of the potential customer you have identified and then extrapolate this to the broader market. Complementary to this but much less compelling on its own is a top-down analysis where you are working with market analysis reports

and extrapolating without direct interaction and validation. Often, very important subtleties are missed in top-down analyses.