

ARTICLE

How to Determine the Size of Your Market - Part I

by [Allen Weiss](#)

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Perhaps the most important question confronting anyone thinking about creating a start-up, or marketing any product for that matter, is determining the size of the potential market.

There isn't an easy answer for this because, frankly, a "market" is not a thing, but an idea. You can't see a market, but you only have an idea that it exists. So, if you can't see something, but you want to measure it, how do you do this?

Well, there are actually several ways to approach this problem, and we'll consider one of these here and other methods in future tutorials.

IS SIZE THE PRIMARY OR SECONDARY DEMAND?

Regardless of the approach, the first thing to consider is whether you want to determine the size of "primary demand" or "secondary demand".

Primary demand is the size of the market for a product category - like "virtual hard drives". Secondary demand is the size of the market for a particular brand - like xdrive.com or idrive.com. As you might imagine, secondary demand is more naturally associated with market share. You can read more about primary and secondary demand in our tutorial on [firstmovers](#).

Since most companies we've dealt with tend to be interested in the demand for new technologies or services, our focus will be on primary demand - or the size of the market for a product category.

DECOMPOSE AND BUILDUP

The first thing to note about almost all methods for estimating market size is that they are based on decomposing the larger "market size" problem into smaller problems, and building the results of these smaller problems into the market size. The best way to see this approach is in the familiar method of estimating market size as follows:

$$\begin{aligned} \text{Market size} = & \text{number of buyers in the market} \times \\ & \text{quantity purchased by an average buyer in the market per year} \times \\ & \text{price of an average unit} \end{aligned}$$

Notice how the total problem is broken down into its constituent elements (i.e., the number of buyers, the quantity per buyer, etc.) and aggregated up (through multiplication) to get the final result.

This is a common technique used by many companies, with the major differences being how they break the problem down and how they build in back up.

For example, an Internet service provider may think of the number of buyers at the level of a household - since a household buys the Internet service, not an individual. In contrast, an application service provider (ASP) selling to corporations would likely focus on the employees in the customer corporation who will use the service, not the corporation itself.

CHAIN RATIO METHOD

The art of breaking down a problem and building it up is also at the heart of the "chain ratio method". Similar to what we just described, but more focused on the size of the market in terms of number of customers, rather the dollars. Think of this method as trying to determine the "number of buyers in the market" in the simple equation above.

The chain ratio method can be used by either first breaking down the problem into smaller problems and then building up, or estimating (really almost guessing) the size of the total market and then doing some fine tuning. We'll focus here on latter approach of fine tuning a general broad estimate of the market by looking at the infamous cat problem.

THE CAT PROBLEM

Let's look at the question consulting firms like to ask potential employees to determine how they think. The question is: How many cats are there in the U.S.?

Here's how you answer this question. Notice how we'll approach this by fine tuning a broad estimate of the total market.

First, determine the unit of analysis. You could say the unit of analysis is a cat owner, but you would quickly see it makes more sense to think of the household as the unit of analysis.

Next, how many people are there in the U.S? Let's say 250million

Next, let's assume there are 5 people per household - - that means there are $250/5=50\text{M}$ households.

Next, about how many of the households have pets? Let's assume $1/5$ - - that means there are about 10M households with pets.

Right, but what percentage of the pets are cats? Let's say 50% - - that means there are about 5M households with cats.

Now, let's fine tune this. Let's assume that of these 5M households have about 2.5M have 1 and 2.5M have 2 cats - - that would mean there are about 7.5M cats.

Throw in some strays (let's assume .5M stray cats), and you have about 8M cats!

You'll notice that we've used a lot of assumptions here. As in all business problems, there are assumptions and these are no different. Some of the assumptions you can verify with data (such as how many people per household). Some assumptions you can't verify, but for these you can do sensitivity analysis - - change the numbers and see how much of a change you have in the final result - to see if the assumption is really that critical or not.

THE PRACTICALITY OF THE CHAIN RATIO METHOD

Before you think this is just some interesting trick, consider how you could use this to determine the size of your own market. Follow the basic process as we just outlined.

Start with the universe of all possible buyers. Then systematically use percentages to fine tune the problem. The important thing is to do this in a logical manner, and clearly state you assumptions as you go along.

Remember, a venture capitalist - or anybody else, for that matter - won't know the actual percentages or numbers for the various elements of your problem. What they will know, however, is that you've thought through the problem correctly and logic holds. So focus on the logic and do the best you can at getting reasonable numbers.

FINAL COMMENT

When I was a Bell Labs (now Lucent Technologies) a number of years ago, my group was once asked if we could figure out the flow rate at the mouth of the Mississippi River in New Orleans. All we had was a piece of paper and our minds to complete this exercise.

We had help (thankfully) from someone who really understood this process of decomposing a problem into constituent elements. Given the nature of the problem, we started by estimating the answer to several small but more manageable problems, and then aggregating up.

Amazingly, by making estimates on such things as rainfall east of the Rocky Mountains, soaking rates in soil of Great Plains, and other such esoteric ideas, we were able to come very close to the actual flow rate. Did we get it exactly right? No. But we were able to get close and, more importantly, really understand what goes into the final answer.

This is as much as you can expect from any method of estimating market size. But when you think about it, that's really a lot!

Check out our other tutorial ([How to Size a Market - Part 2](#)) on this important question.

ABOUT THE AUTHOR



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