Market Sizing Cases – Intro Session

Tips for market sizing cases:

- There are three types of market sizing cases: population based (number of gas stations in the US), household based (number of garden hoses sold in the EU Last year), and finally preposterous cases (estimate the weight of a Boeing 747).
    - Start by determining which type of case is it
- Usually you don't get a chance to ask clarifying questions during a market sizing case, *only* as questions when you do not understand the questions or terminology
- Lay out the framework/structure that you will use to answer the questions
    - Make assumptions and breakdown population by demographics relevant to the case. For example, if you are trying to find the number of smartphones sold in the US last year you would break the population down by generation
    - Estimate the number of units of what you are sizing per demographic group
        - Done through two ways: 1. By estimating the number, per demographic group, that is in need of a new product of what you are sizing, and 2. By estimating the number of replacements and upgrades to new products which depends on the lifecycle of the product (very important to consider).
    - Do the calculations and come up with your estimate! Be prepared to defend your assumptions and framework.
- Then work the numbers and assumptions in your structure and come up with your estimate (that way you get second a second chance to review your though process)
    - Base your assumptions on some sort of logic; otherwise you could be questioned on how you came up with them.
    - Very *important* to use numbers that are easy to work with. **Remember:** the interview is more interested in your logic than whether your assumptions and numbers are spot on.

Some key numbers to remember:

- Us population is 320 Million
- Average Life Expectancy of an American is 80 years
- Even distribution between ages
- 80 Million per generation
- 100 million households (Assuming on average there are 3 people per household)

Case 2:

Oliver Wyman – Round 1 Case

Problem Statement: The client is a firm that considering to enter the traffic signal market in Manhattan, and wants to know what is the Market size of traffic signals in Manhattan last year?

1. Label the case, what type of case is it? Preposterous Case.
2. This is unique to this type of case but we need to be aware of the company's revue streams to know what we are sizing. In this case the company installs and maintains traffic signals but doesn't manufacture. So we will need to size the installations and maintenance market.
3. Have you thought about why the case is asking for Manhattan specifically? The answer is because it's easy to determine the number of traffic signal systems since Manhattan is basically a grid. So the First step is to determine the number of traffic signal systems
   - Assumptions: There is 1 traffic signal system at each intersection
   - There are approximately 80 streets long and 25 streets wide (note the easy numbers)
   - Number of traffic signal systems = 80 x 25 x 1 = 2000
4. What is the lifecycle of the product? This is important to consider for the installation market because we are interested in the traffic signal sales **last year**.
   - Assumptions: Traffic signal systems last 10 years
   - There are 2000/10 = 200 signal systems bought every year
5. Doing the calculations for the market size:
   - Assumptions: Average price of the installation is $100,000
   - There is Single contract for maintaining ALL traffic signals in Manhattan. Contracts awarded by bidding to highest bidder.
     - Also all signals will be maintained not just new ones
   - Price of maintenance = $15,000 per years
   - **Size of Maintenance market** = 2000*15,000 = $30 M
   - **Size of installation market** = 200*100,000 = $20 M
   - **Total Market size** = $50 M

Case 1:

McKinsey and Company

Problem Statement: We're going to look at the sales of Pianos in the United States. What do you think annual sales (total revenues) are in the US for Pianos?

1. Label the case, what type of case is it? Mainly household based
2. Break down the population by the demographics, who are the Piano buyers? I am suggesting that the piano buyers are households and institutions:
   - 1) First-time piano owners
   - 2) Upgrading an old piano or replacing a damaged piano
   - 3) Adding a second piano (small for households, larger for institutions)
3. Estimate the number of units of what you are sizing per demographic group
   - 100 Million Households in the US. 25% of which (25 Million) are in $75,000/year income bracket and are most likely to buy a piano.
     - Assume 5% of these households already own a piano. Note that these people won't replace their piano because pianos unlike other products like traffic signals for example last for a long time. This is why we consider new and used pianos below
     - Assume 2% of the 25 M will buy a new piano, then there are 500K pianos sold to households every year (includes people who are replacing their old piano and those who are buying one for the first time
     - Assume 20% of institutions (e.g. colleges, universities, symphonies, Carnegie Hall, bars/businesses) would want a piano. If we have 1 Million institutions that would be 200K
     - Assume 5% of that would buy a piano every year or 10K sold to institutions
     - Total number of pianos sold per year are 510K
4. Determine the price of new and used pianos
   - New piano market: low price for a piano is $5,000 and the high price is $15,000, so the average price of a new piano is $10,000
   - Used Piano Market: the low is probably $1,000 and new is $5,000, so the average price is $3,000
5. Determine Market Size:
   - Assume 20% of pianos sold are new, and 80% are sold used for both households and institutions.
   - Therefore approximately about 400K are sold used and 100K are sold new
   - **Annual sales of new piano** = 400,000*3,000 = $1.2 B
   - **Annual sales of used piano** = 100,000*10,000 = $1 B
   - **Total annual sales** = $2.2 B