Market Sizing and Estimation

Interview preparation summary · SC track

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INT.KM.1.a · Top-down and bottom-up

Choose between a top-down and a bottom-up approach, segment the population so the groups are mutually exclusive and different in behaviour, and state the assumptions aloud.

Every sizing question starts with a choice of method, and the interviewer marks the choice before the arithmetic. Top-down starts from a large total you can anchor, such as population, households or an industry's sales, and narrows it with shares. Bottom-up builds the answer from units: how many customers, how much each buys and at what price. Top-down is quick and suits a question about a slice of a known total. Bottom-up suits a new product or a business market where the buyers can be counted, and it shows which assumptions drive the answer. Whichever you pick, segment the population into groups that do not overlap, cover everyone, and differ in the thing that drives volume, such as coat type, company size or age band. A split by labels that do not change behaviour adds work and no insight. Say each assumption aloud, use round numbers, and finish by saying which segment carries most of the answer.

WORKED EXAMPLE: SIZING MOBILE DOG GROOMING FOR BRINDLE PET CARE

Brindle Pet Care is an invented company that wants to know the annual UK spend on professional dog grooming. Assume the UK has 9.0m dogs. Dogs with high-maintenance coats are 20% of dogs; 85% of them are groomed professionally, 6 times a year, at an average of £50 a visit. All other dogs are 80% of dogs; 15% of them are groomed professionally, twice a year, at an average of £35 a visit. Size the market and say which segment matters most.

Answer: About £534.6m a year, roughly £0.5bn, of which about 86% comes from high-maintenance coats.

> **Interview tip:** Say the method and why, name the two segments, give each calculation in one breath, round to about half a billion, and end with the insight that one segment carries the answer. That last sentence is what separates arithmetic from judgement.

INT.KM.1.b · Top-down and bottom-up

Build a demand-side estimate from users, usage rate, frequency and price, converting frequencies to a common period and splitting heavy and light users.

A demand-side estimate multiplies four things: the people in scope, the share who use the product, how often each user buys and the price per purchase. Each term can be judged from everyday experience, which is why interviewers favour it. The traps are in the middle. Use rates differ sharply between users, so a single average frequency usually misleads: split users into a few bands, such as daily habit and occasional, and size each. Convert every frequency to the same period before multiplying, and use realistic periods: about 48 to 50 weeks for spending that stops in holidays, and working days (often 220 to 230 a year) for office-based purchases. Keep the units visible, for example cups per adult per year, and check the answer back against a per-person figure. Finally, find which band carries most of the volume, because that is the assumption to test first.

WORKED EXAMPLE: TAKEAWAY COFFEE IN THE CITY OF MARLOWE

Marlowe is an invented city of 1.2m people. Assume 78% are adults. Of the adults, 20% have a daily habit of 5 takeaway coffees a week, 35% buy 1 a week, and the rest buy none. Assume 48 weeks of buying a year and an average price of £3.20. Size annual cups and revenue and test the answer.

Answer: About 61m cups and £195m a year, or roughly 65 cups per adult, with about 74% of the volume from the daily-habit band.

> **Interview tip:** Announce the formula first (adults x share x cups per week x weeks x price), then speak each band as a short sentence with its units. Finishing with the per-adult check shows you do not trust an answer you have not tested.

INT.KM.1.c · Top-down and bottom-up

Size a market from the supply side using capacity, utilisation and price, and triangulate it with a demand-side estimate, explaining any gap.

Supply-side sizing counts what suppliers can deliver and how much of it is actually sold: the number of suppliers or units of capacity, the capacity of each, the utilisation (the share of capacity used) and the price. It suits markets with visible, countable capacity, such as courts, screens, rooms, vehicles, factories or machines, and it is a strong cross-check on a demand-side figure because it rests on different assumptions. Triangulating means getting to the answer by two independent routes and comparing. If the two land within about 10 to 20%, confidence rises and you can quote a range. If they differ widely, do not average blindly: compare intermediate quantities, such as court-hours, to find where the routes diverge. Common mistakes are assuming capacity is fully used, leaving out a type of supplier that serves the same demand, and counting capacity that cannot be used all year.

WORKED EXAMPLE: INDOOR PADEL COURTS IN THE INVENTED COUNTRY OF VELTRIA

Veltria has 1,200 indoor padel courts. Each is open 14 hours a day for 360 days a year and is booked for 35% of those hours at an average of £28 a court-hour. Size annual court revenue from the supply side. Then cross-check: assume 300,000 regular players, each playing 20 sessions a year of 1.5 hours, with 4 players on court.

Answer: About £60m a year (range £59m to £63m), with the two routes within about 6% of each other.

> **Interview tip:** Always cross-check in a common unit, here court-hours, not in £. Say 'two independent routes agree within about 6%, so I am comfortable quoting 60m'. If they disagree, say where you would look first.

INT.KM.2.a · Estimation in practice

Use memorised anchors for populations, households and typical consumption, and convert units correctly, stating each anchor as approximate.

Fast estimating rests on a short list of anchors you can recall and state as approximate: the UK has about 68m people and about 28m households (roughly 2.4 people each), the EU about 450m people, the US about 335m and the world about 8bn. Add a few consumption anchors you can reason to, such as litres per person per day or kilowatt-hours per household, and always call them assumptions, never facts. Pick the anchor that matches the buying unit: a boiler or a broadband line is bought per household, a haircut per person. Then handle units with care. Know the prefixes (thousand, million, billion, trillion), the step from kilowatt-hour to gigawatt-hour to terawatt-hour, and the trap between imperial and US gallons. Write the unit beside every number and cancel units as you go. A wrong order of magnitude is a larger error than a wrong share, and interviewers watch for it.

WORKED EXAMPLE: UK HOUSEHOLD ELECTRICITY USE IN TERAWATT-HOURS

Estimate the electricity used by UK homes in a year, in terawatt-hours (TWh), and the bill. Use the anchors of about 68m people, 2.4 people per household and, as a stated assumption, 2,700 kilowatt-hours (kWh) per household a year at 28p a kWh.

Answer: About 76 TWh a year and about £21bn of household electricity spend, on the stated assumptions.

> **Interview tip:** Say 'I will assume about 2,700 kWh per household, which is an assumption I would want to check'. Naming the units as you convert (kWh to GWh to TWh) shows the interviewer you control the order of magnitude.

INT.KM.2.b · Estimation in practice

Project a market over time using penetration, compound growth and replacement, and explain why adoption follows an S-curve rather than a straight line.

Sizing a future market combines a base, a penetration rate and a growth path. Units in use equal the number of potential customers times penetration, the share who have adopted. New products usually follow an S-curve: slow at first, fast through the middle, then flattening as the pool of non-adopters shrinks, so a constant growth rate extrapolated far enough exceeds 100% of the base, which is the clearest sign of a bad forecast. Use compound annual growth (CAGR) to move between two points, and the rule of 72 to check it: dividing 72 by the growth rate in percent gives the years to double. Separate annual sales into new demand (the increase in units in use) and replacement (units in use at the start divided by product life). Cap the forecast with a saturation level taken from a comparable product, and say what would move it.

WORKED EXAMPLE: HEAT PUMP ADOPTION IN UK HOMES OVER TEN YEARS

Assume 28m UK households, of which 4% have a heat pump today. An analyst expects 25% in ten years. What compound growth rate does that need, how many heat pumps are added in total, and what does that mean for annual installations? Check the growth rate with the rule of 72.

Answer: About 20% a year growth in the installed base, 5.9m extra heat pumps over ten years, an average of about 588k a year and over 1.2m in the final year.

> **Interview tip:** Say the base, the target, the rate, and the rule-of-72 check in that order, then add the sentence 'adoption is an S-curve, so I would not assume it is steady'. That sentence shows you know the arithmetic is only a starting point.

INT.KM.2.c · Estimation in practice

Sanity check an estimate, recover when an assumption is challenged, and convert a market size into revenue or a profit pool.

An estimate is not finished until it has been tested. Divide the total by people or households and ask whether a real person would do that; compare it with a known benchmark; check that the order of magnitude is plausible. If an interviewer says a number feels wrong, treat it as a hint, not an attack: say which assumption is weakest and has most effect, replace it with a reasoned figure, and show the new total. Do not scale everything to hit a number you were given. Once you have a market size, go one step further: revenue for a client is market size times share, and a profit pool is revenue at each stage times its margin, where the stages are measured separately because the same sale appears at several stages. Say what the profit pool shows, for example that profit sits in a different place from revenue, and what you would check next.

WORKED EXAMPLE: TAKEAWAY PIZZA IN THE UK: A WRONG START AND A RECOVERY

A candidate estimates UK takeaway pizza as 68m people x 12 pizzas a year x £11 each. The interviewer says it feels high. Test the number, repair it, and then work out profit if operators earn a 9% operating margin. Anchors: 68m people and 28m households.

Answer: About £4.2bn of takeaway pizza revenue, and about £377m of operating profit at a 9% margin.

> **Interview tip:** When challenged, say 'good point, the weakest step is that everyone orders 12 a year. Let me change that to 70% of people at 8 a year', then give the new total. Revise one named assumption with a reason. Never scale the answer to match the interviewer.

Summary of the Charta interview-preparation topic. Companies and figures in the examples are invented. Draft content, not yet expert reviewed.