OC&C Strategy Consultants

BURGER MACHINES – MARKET SIZING

Introduction

This is a case study based on a real case that OC&C worked on in 2005, trying to gain an idea of the global market for Burger machines. This is typical of an 'analytical' case study that you will get asked – requiring sound numerical skills (the ability to competently use a calculator), the ability to come up with some sensible estimates and some commercial awareness. Excellent candidates differentiate themselves by the quality of the answer, but also the time taken to respond – some of the later, more advanced questions will only get touched upon if a candidate has 'aced' the earlier questions.

Case Background

Our client is responsible for the sale and manufacture of burger machines that produce the meat patties that populate the ever-popular hamburgers, sold worldwide by the likes of McDonald's and Burger King. OC&C have been approached to help them think about their international expansion strategy, and in particular the opportunity posed by developing markets, such as China, India etc.

Your specific task on this case is to scale the opportunity – i.e. how many Burger Machines could this company expect to sell into China in the future.

Market estimation methodology

First question: how would you estimate the market for burger machines?

The good candidate explains that the market for burger machines is clearly driven by the fast food market, so we need to consider the total number of burgers that are likely to be sold, the number of burgers that a machine can produce and divide one by the other.
The excellent candidate points out in addition to the above that we need to consider the effect of different population centers and transport on the likely configuration of manufacturing plants. We also need to consider the effect of importing on the local demand for burgers, as well as any existing infrastructure that may be capable of meeting manufacturing demand.

Market estimation

Second question: given that a burger machine can produce 90,000 burgers an hour, and is worth £250k how much do we think the market for burger machines is worth?

Now this gives you a couple of the vital data points that you need to work out the market size, but also leaves some key information that you need to estimate or make assumptions on. Good candidates will work through the logic piece by piece, whilst the excellent candidates will lay out methodology and information required upfront and then work through them systematically. Fundamentally however we need to work out the number of burgers sold and divide it by the number of burgers a machine can produce to give us the number of machines.

The good candidate thinks about number of burgers consumed per person given benchmarks from western society (data point provided here that the average American spends $350 per year on fast food). Estimates a reasonable number per Chinese person and comes up with a total number of burgers consumed. Next, takes the given 90,000 burgers per hour, and then calculates the number of burgers that a machine can produce given 24 hours per day, 365 days per year. Possibly considers different total working hours or utilization rates for the machine but doesn't expand on this thinking or rationalize assumptions made

The excellent candidate contemplates the proportion of people in urban centers likely to be the target for fast food sales, uses western benchmarks, adjusted for Chinese society and comes up with an estimate. Next, the candidate uses 90,000 burgers per hour but quizzes interviewer on number of hours worked per day. Pursues debate on how many hours you would work per day (see next question) conclude and then calculate capacity. Raises issues on utilization rate given potential mechanical downtime, impact of geographic dispersion and other, and second order effects.

Subissue: machine utitilization

Third question: how many hours a day would you operate the machines: What are the potential operating models and what will influence which of these you choose?

The good candidate considers 24 hour a day operation versus 8 / 12 / 16 hour operation with key considerations being ability to find staff to work all night, extra cost of getting people to work overtime, and problems of trying to operate machinery 24 hours / day.
The excellent candidate identifies that a critical trade off is extra labour cost associated with operating a night shift versus extra capital cost of having to buy more machines if working less hours; rationalizes working 24 hours given likely cost of local labour versus high capital cost of (Western manufactured) machinery.

In all of these calculations and discussions, there is an expectation that the candidate will be able to calculate the numbers correctly, using a calculator. This does not mean that if you make a mistake you have failed, but that you can identify when you have made mistakes (execute that all important sanity check) and ultimately arrive at a sensible and correct answer. There is also an expectation that where you are forced to make estimates they are vaguely sensible – assuming that all Chinese people eat 1 burger per day is just clearly not very realistic!

Conclusion

The final task in the market sizing question is to calculate the total number of machines required and multiply through by the value of each machine – it is always surprising to see how many applicants forget what the original question was and stop at the number of machines.

In the majority of cases the interview will finish at this stage – both interviewer and interviewee being generally exhausted and out of time. For exceptional candidates, who have managed to get through the case quickly, we then go on to contemplate the size of this market in relation to the US market, and what the likely drivers of the US market are.

Additional question

Fourth question: if the US fast food market is not growing, what will be the key drivers of burger machine sales, and what impact would this have on your domestic strategy?

The excellent candidate is very unlikely to get all of the items below but should be able to generate some interesting and non-obvious issues for discussion), like:

- Growth in basic demand zero, so sales of machines are unlikely to be driven by capacity expansion, except if new regions are being developed.
- Market will be largely driven by replacement of old machines (interesting to reflect how this will be impacted by economic cycle) …
- … or by market innovation. Consequently technological improvements and changes in the manufacturing processes possible with the machines will drive new purchases. The key impact of this will be enhanced investment in R&D