

Case Interview Workbook - Technology

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WHAT IS A CASE INTERVIEW?

A case interview is a type of job interview, used most frequently by consulting firms, that allows an applicant to demonstrate his/her ability to solve a given business problem. During a case interview, an interviewer presents a situation or case and then asks the applicant to explore the underlying causes of the problem and suggest recommendations to remedy the problem.

The cases given tend to be real business situations, often drawn from the interviewer's actual project experience. Case interviews typically last from 45 to 60 minutes, with a focus on the case itself lasting 30 to 45 minutes.

Your success in a case interview will not depend on identifying the "correct" answer, but rather on how clearly you define the problem, how logically you structure your analysis, your quantitative analysis skills and how well you communicate your thoughts to the interviewer.

Consulting firms are looking for people who can show problem solving and business analysis skills, think under pressure and maintain a professional presence with their teams and the clients. A case interview provides excellent insight into how well you would perform in a consulting situation.

The purpose of this guide is to help familiarize you with the process of a case interview, introduce you to some potential methodologies, and provide you with sample cases to practice. Learning about case interviews is also a helpful way to determine if strategic consulting is right for you, as these cases reflect the types of business situations and structured thinking consultants encounter on a daily basis.

COMMON MISCONCEPTIONS ABOUT CASE INTERVIEWS

THERE ARE MANY MISCONCEPTIONS ABOUT THE CASE INTERVIEW AND WHAT THE INTERVIEWER IS LOOKING FOR.

Myth

There is one right answer or approach to the case

The interviewer expects you to get the right answer

Industry knowledge is required to do well on the case

Fact

Usually there are several credible approaches and solutions

The interviewer expects a thoughtful, structured response

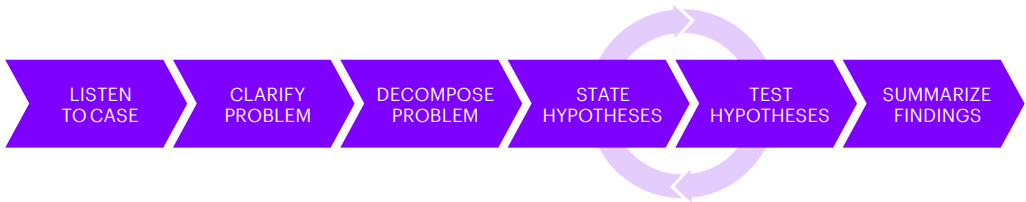
The interviewer expects you to be effective with the knowledge you have and make hypotheses based on sound common sense

CASE INTERVIEW SUCCESS FACTORS

CASE INTERVIEW SUCCESS DEPENDS ON PROVIDING A THOUGHTFUL AND STRUCTURED RESPONSE TO THE CASE PROBLEM.

- Understand the case situation and what is being asked
- Analyze the case issues and potential solutions in a structured manner
- Make certain your thought processes are transparent to the interviewer
- Be creative, yet practical—use your business judgment and give specifics
- Take notes
- Make sure you are communicating clear and logically
- Listen for suggestions and hints from the interviewer
- Engage the interviewer—it is okay to ask for direction and clarification
- Manage time effectively—maintain your momentum, don't get bogged down on one point
- Identify critical focus areas and ask probing questions to learn more

THE CASE INTERVIEW PROCESS: STRUCTURED PROBLEM SOLVING

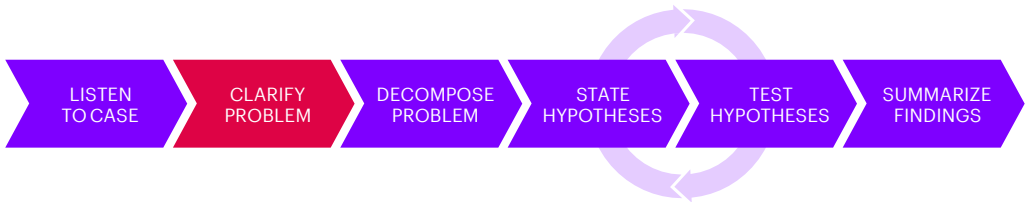


A case study interview is quite similar to a consulting situation. First, you will be given a description of a case problem by the interviewer. This description may be as short as one sentence or as long as a page of detailed information. Once given the case description, you will need to understand the problem by asking the interviewer well thought out questions. The answers to these questions should allow you to align on the objectives and expectations before developing an approach (framework) that you can use to analyze the situation.

After you lay out the framework for the interviewer, you should discuss the analyses you would perform to determine potential solutions to the business problem. The interviewer may ask you to perform simple analyses to test your hypotheses.

Finally, you should summarize your methodology with any recommendations you may have as well as addressing risk factors.

CLARIFY THE PROBLEM



Goal: Articulate Key Case Problem

Activities:

Ask clarifying questions

Probe for additional information

Assess case facts

Pause to structure your thinking

Summarize issues for discussion

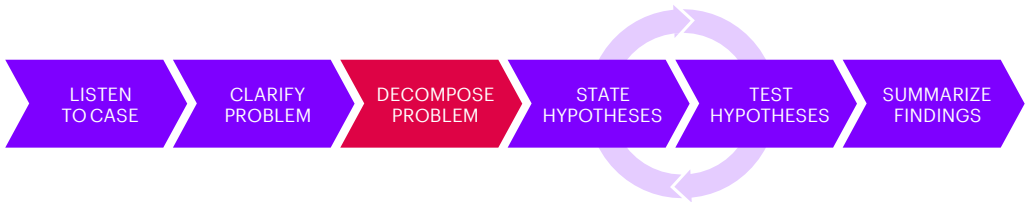
Confirm objectives and expectations

Document and confirm assumptions

In consulting, understanding the client situation is fundamental to developing solutions to important problems as well as recommendations for how a business could be run more effectively. A case interview models this by presenting you with information, asking you to make sense of it, and develop potential solutions. Clarifying the nature of the business issue (e.g., declining profitability, loss of market share, or new competitive threats) is an important step.

Based on your questions, the interviewer will often provide you with more details about the case. By structuring your questions, you will cue the interviewer to how you plan to work through the problem. It is important to be flexible in your approach and open to multiple solutions. If the questions you are asking do not yield useful answers, try switching to an alternate approach. Remember, you are also being evaluated on your ability to ask insightful questions.

DECOMPOSE THE PROBLEM



Goal: Identify Root Causes of Problem

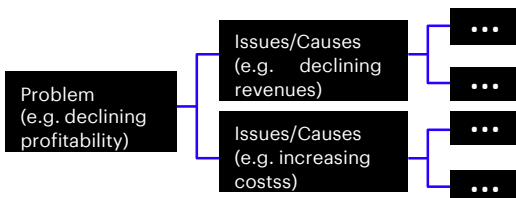
Activities:

Break the problem into its component parts in a structured manner

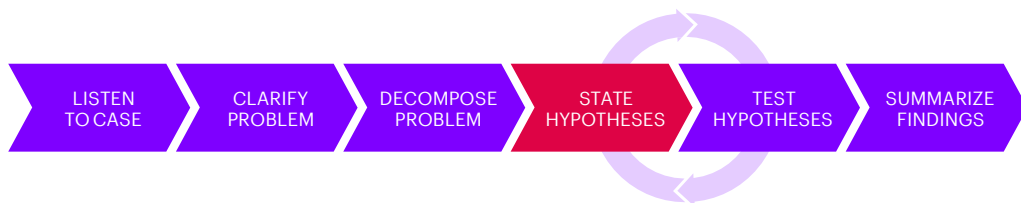
Once you have stated and clarified the problem, you need to decompose it in an exhaustive, logical manner. By using an issue tree, you can break the problem into smaller pieces and illustrate logical relationships among the component parts.

Basic issue trees are structured as follows:

To develop a good issue tree, you should ensure that the subcomponents are linked in a logical manner, that it prioritizes the issues, and that it reveals possible solutions. Also, each branch of the tree must not overlap with another (mutually exclusive), and the branches should thoroughly represent contributing elements (collectively exhaustive).



STATE HYPOTHESES AND DEVELOP



Goal: State Hypotheses/Potential Solutions

Activities:

Review problem
decomposition

Identify potential
hypotheses/solutions

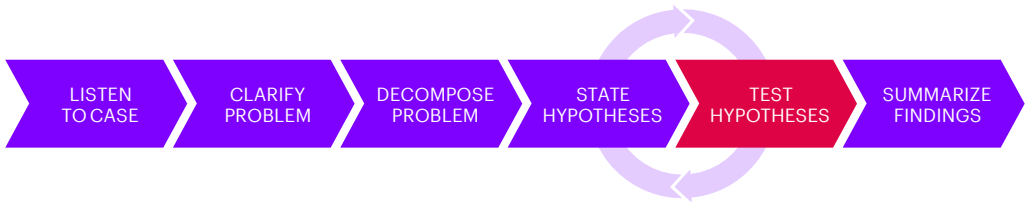
State your
assumptions

Choose appropriate framework to test hypotheses
(See “Sample Frameworks and Applications” section) for example:
Porter’s Five Forces, 4 P’s of Marketing, Profitability Analysis, Three
“C’s”

Once you are confident you understand the problem, you should list out potential hypotheses that may resolve the core problem. You will then need to choose a framework (or analysis tool) to structure your hypotheses (see “Sample Frameworks and Applications” section), but do not feel constrained by these

since many cases will not fit neatly into one of those frameworks. The framework is a key to structured thinking—it allows you to approach a problem in a holistic manner, while directing your analysis to each of the components within the framework.

TEST HYPOTHESES



Goal: Apply framework to Test Hypotheses

Activities:

Describe analyses to be applied

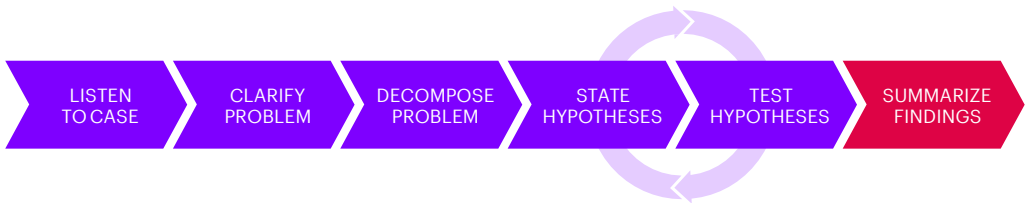
Break problem into its component parts in a structured manner

Apply framework and discuss findings/implications to solution definition

Once a framework is selected, you must analyze each component of the framework in a logical manner. Discuss the analyses you would perform to determine if your initial hypotheses are true. You may have to ask additional questions of the interviewer to get the information needed to develop these Analyses. Often times, you may be asked to perform an analysis with simple data supplied by the interviewer.

If you find that your analyses are not confirming your initial hypotheses, develop new ones. If your analyses do not appear to be enlightening, the interviewer may direct you towards another path. Take advantage of these hints if they are offered.

SUMMARIZE AND COMMUNICATE FINDINGS



Goal: Summarize Findings/Implications

Succinctly remind interviewer of issues covered

Activities:

Present solutions

Present alternative scenarios

Finally, summarize the framework and analyses you utilized in the case and communicate effectively those findings. Suggest recommendations for the client and potential next steps the client should take. The interviewer may tell you what happened with the real project situation on which the case was based. However, don't worry if your methodology or answer did not match the real project situation because you are being evaluated on your thought processes and not against some predetermined answer.

“SOFT EVALUATIVE” CRITERIA

In addition to your ability to ask probing questions, decompose the problem, define the preferred analysis framework and perform the analyses in the case, you will also be evaluated on many intangible qualities. While interviewers look at these criteria in non-case interviews as well, you will need to be extra-conscious of them in a case interview, since often times your concentration will be on solving the case.

Poise

- Are you confident in your answer?
- How do you handle yourself when you make a mistake?
- Do you perform well under pressure?

Communication

- Are you articulate in communicating your thought processes and conclusions with others?
- To be a successful consultant, you must be able to clearly communicate your recommendations and articulate how you were able to arrive at your conclusions
- Listening skills: are you leveraging all the information/data provided by the interviewer

Flexibility

- As situations change and new information becomes available, are you able to adapt your thinking to new data or an emerging environment?

Other Intangibles

- Do you display energy and drive?
- Do you show initiative?
- Do you manage time effectively?
- Do you demonstrate decisiveness?
- Do you convey a genuine interest in the career and the firm?

TYPES OF CASES

THERE ARE THREE GENERAL TYPES OF CASES:

The “Great Unknown”



Provides very little information

Tests candidate’s ability to probe for additional details

Requires structuring framework based on new facts

The “Parade of Facts”



Provides a significant amount of detail—some unnecessary

Tests candidate’s ability to distill key issues

Requires depth of analysis based on relevant facts

The “Back of the Envelope”



Provides little information, but asks a key question

Tests a candidate’s analytic abilities

Requires logical thought process and ease with numbers

The “Great Unknown” and “Back of the Envelope” cases are the most common types of cases. However, regardless of the type, be sure you have a solid understanding of the facts and what is being asked of you before you begin to “crack” the case.

THE “GREAT UNKNOWN”

One of the most common types of case interviews poses the situation in one or two sentences, leaving you with little information or structure on which to build. These cases are used often because they test your ability to discover necessary facts by posing the right questions and being able to develop analytical frameworks to solve the problem.

Potential Methodology:

Case Description

Listen carefully and determine the central business problem being asked.

Problem Decomposition

Identify and prioritize root causes of the problem by breaking the problem down into its component parts. An issue tree is a valuable tool to ensure that decomposition is exhaustive and that the sub-components are linked together in a logical manner.

Problem Understanding

Consider the central problem. What additional facts do you need to fully clarify this problem? What are the crucial pieces of information that will allow you to develop a framework around this problem?

Write those questions out and ask the interviewer. Be prepared to go several layers deeper into the issue as the interviewer's answers may lead you to additional questions.

Hypotheses and Framework Development

Describe to the interviewer what some of the potential issues/hypotheses could be. Then choose a framework that will structure your thinking and guide you through testing the issues/hypotheses.

Hypotheses Testing

Using the framework selected, explore the issues/hypotheses initially laid out. Describe the factors in each section of the framework that are relevant to the central problem. Also list out analyses to test the hypotheses in each section of the Framework. By asking additional questions, you may still yield more information about the case from the interviewer.

Case Summary

Review your initial issues/hypotheses in light of your structured analyses and suggest possible recommendations for the client.

THE “GREAT UNKNOWN” CASE EXAMPLE

Interview Example:

- The client, a leading manufacturer of prefabricated kitchen furnishings, has been steadily losing market share over the last two years.
- The senior executive team would like you to help them understand why and what they can do to improve their market standing.

Potential Methodology:

Problem Understanding

- Has the size of the market changed in the last two years?
- Has the competitive structure of the industry changed? Mergers and Acquisitions? New Entrants?
- Are there any new products or new technologies that are gaining market share?
- How are we currently positioned (low cost, high quality, etc)? What is our competitive advantage?

THE “PARADE OF FACTS”

These cases are relatively rare because of the amount of time necessary to present the case description, but can also be one of the more challenging types of questions. You will be given more information than you need in the case description, and one of your key tasks is determining which facts are relevant to the client’s business problem.

Consultants are often faced with a deluge of details, and the ability to sort out the crux of a problem is a key skill for which firms are looking.

While most of our process steps are similar to “The Great Unknown,” how we understand the central issue and probe for insight differs.

Potential Methodology:

Problem Understanding

Pause for a moment and consider the central problem. Which of these facts are totally irrelevant? Eliminate them for now. Which facts are definitely related to the problem? Ask questions about facts that appear relevant.

Probe for additional facts that the interviewer may have.

THE “PARADE OF FACTS” CASE EXAMPLE

Interview Example:

- Client is a leading food company that wants to develop a fresh prepared meal business
- Trend among consumers is toward fresher food with no artificial preservatives or coloring
- Consumers are currently purchasing \$5.0 billion of frozen meals—trend is toward more upscale products
- A fresh meal plate combining a protein, vegetable and starch is delicately arranged in a sealed plastic dome package
- Nitrogen gas flushing is used to extend shelf life
- Product is currently in limited consumer test at \$5.50 to \$8.50 per meal
- Shelf life of product is 14 days—product will spoil in 21 days potentially causing food poisoning
- Client wants to know if they can make money in this business
- Client wants to know if the market is big—how will they keep competition out
- Client wants a consultant to assist in building business case

Potential Methodology:

- **Key Problem:** Profitability of Business and Size of Market
- **Problem Understanding:**
 - Ask about consumer test What prices are consumers responding to? Are there any items spoiling on the shelf?
 - What is the competitive structure of this market currently?
 - What are the components of the company's cost structure?
- **Structure Analysis:**
 - What is the break-even point for the firm?
 - 1 Determine Gross Margin per Unit
 - 2 Determine fixed costs
 - 3 Divide to find break-even
 - Estimate the size of the market (a case within a case)
 - Determine the market share they will need to break-even
- **Develop Recommendations:**
 - Discuss the competitive structure of the market Can the firm realistically achieve the break-even market share?

THE “BACK OF THE ENVELOPE”

“The Back of the Envelope” questions are very different from other types of cases in that they are primarily numerically driven. You will be asked to estimate the number of some everyday item in society. The interviewer is not looking for a random guess, but rather a structured thought process to get to a numerical answer. These types of questions not only test your comfort level with numbers, but also force you to create your own framework to develop a numerical answer.

There are often several different ways to approach these problems, and all of them are correct as long as they are internally consistent and holistically structured to arrive at a logical answer.

Problem Understanding

Rather than asking probing questions, take a moment to think about the steps you would need to take to get to an answer. What assumptions will you have to make along the way?

Framework Development and Numerical Analysis

Walk the interviewer step-by-step through your framework, calculating the numbers for him as you go. You will need to begin with some assumption about the population (of people, objects, etc) and will need to make other assumptions at certain points throughout the case.

Don't be afraid to make too many assumptions, but be certain that they are needed and that you can explain why you are making that assumption. Often, you will hit a “dead end” in your thinking. If you find yourself in a situation where you don't know how to proceed, you should back up several steps in your analysis (make sure you communicate this to the interviewer) and pursue an alternative path.

THE “BACK OF THE ENVELOPE” CASE EXAMPLE

Interview Example:

- Estimate the total number of dry cleaners in Philadelphia

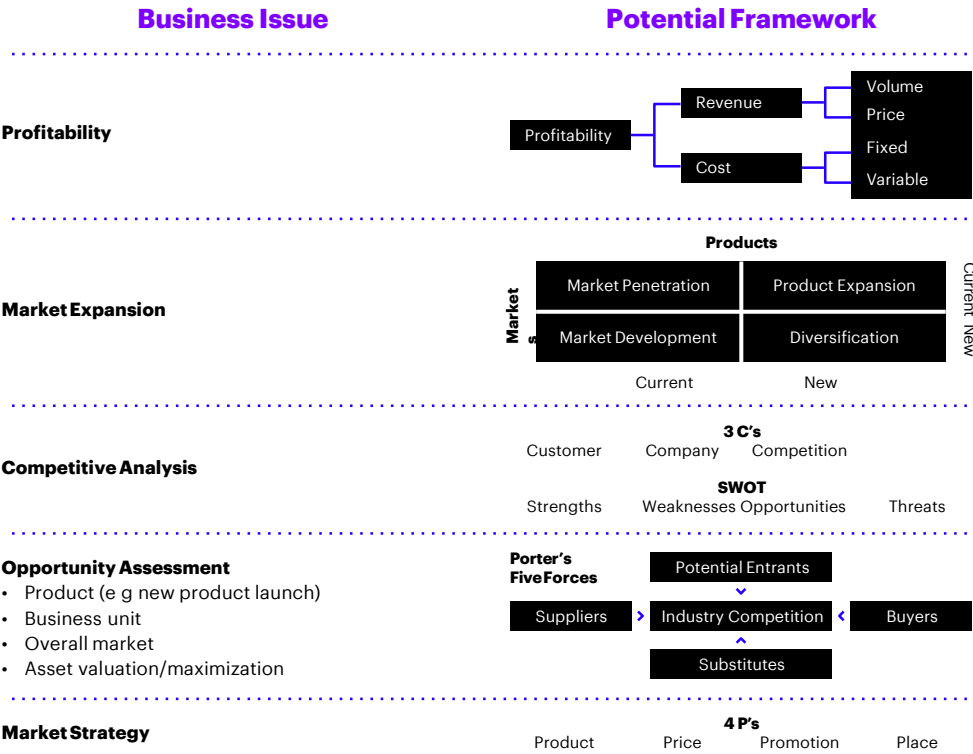
Potential Methodology:

- Assume there are two million people in Philadelphia
- Estimate the size of market by segmenting the population
 - Assume the population consists of 25% adult men, 25% adult women, and 50% children
 - Assume children have no dry cleaning and only 25% of adults use dry cleaning
 - Estimate the average number of “units” of clothing each man and woman brings weekly to the cleaners. For this case, assume that 3 shirts/ blouses and 1 suit are brought to the cleaners each week
 - Thus the total size of the market (per week) is one million units of clothing (1 million people x 25% x 4 units per person)
- Estimate the average number of units a dry cleaner can handle per week
 - Assume that the average dry cleaner has two workers who typically handle 20–30 customers (or 80–120 units of clothing) per hour
 - If the average dry cleaner is open eight hours a day, 5 days/week, they typically handle 3200–4800 units per week (80–120 units x 8 hours x 5 days)
- Divide the total market size by the average units handled per dry cleaner to find the total number of dry cleaners
 - There are between 208 and 312 dry cleaners in Philadelphia

SAMPLE FRAMEWORKS AND APPLICATION

In the preceding section we outlined several types of case “formats” you are likely to encounter throughout the interviewing process. However, this doesn’t describe the actual content of cases or the problems and issues you will be asked to consider. There are many different categories of business issues or

problems that can be presented within a case interview and oftentimes numerous business problems will be combined within one case situation. The following frameworks are not exhaustive but are provided as a guide to get you started thinking about how to solve different types of case problems.



PUTTING IT TOGETHER

The interview process we have outlined will help you structure your thinking and the “types” of cases we have suggested will help you orient yourself to the different way in which information may be presented.

In addition, the types of business issues and corresponding solution frameworks provided on the preceding page will help you determine how to analyze the situations given.

Remember, there will always be multiple methodologies and frameworks that can be used successfully to approach a solution and you will work more effectively if you choose a framework you are comfortable with.

Building and Refining Skills

One of the best ways to prepare for case interviews is by practicing them. Some suggestions for sharpening skills include:

- Rehearse before your first interview
- Think through potential types of business problems and applicable frameworks
- Practice cases with friends alternating between various styles and cases- start with practicing the case example in this workbook!
- Refine your skills throughout the recruiting process

PRACTICE CASES

THE “GREAT UNKNOWN” SAMPLE

- A major furniture retailer has experienced declining profits for four quarters, yet over that same time period, it has experienced a 25% growth in sales and has opened many new stores. Why are profits declining?
- A fast food company is thinking about putting a franchise in an airport. They hire you to see if they should do so.
- A bread division of a large food company is facing increasing competition in its market and wants to know if it should exit the market.
- A car company is interested in developing a new car. What marketing related issues should it consider before doing so?
- What factors influence the revenue potential of a new pharmaceutical product?
- Citibank is considering purchasing another credit card company. If the acquisition is made, Citibank will gain access to 100,000 new card holders. What is the estimated value of this acquisition?
- A commercial bank is re-evaluating the number of branches it operates, and whether they should increase the number of branches or close some down. How would you suggest they go about it?
- A large conglomerate company is facing declining profits in its railroad company division and is considering shutting it down. You have been hired to determine if this is the right course of action and identify potential alternatives.
- New York City has hired you to determine what optimal route or what destination taxi drivers should go to when they do not have a customer.

PRACTICE CASES

THE “BACK OF THE ENVELOPE ” SAMPLE

- How much money could Continental Airlines save by giving customers 1/2 a can instead of a whole can of Sprite?
- What is the estimated value of a taxi medallion in New York City?
- Discuss what is wrong with the following statistic: the Volvo is the safest car on the road because a recent study has shown that Volvos have the fewest number of accident deaths per mile driven.
- Estimate the change in the price of oil in the year 2000 from today's price. Will it increase or will it decrease?
- Estimate the number of attendees for a free concert for U2 in Central Park in New York City.

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