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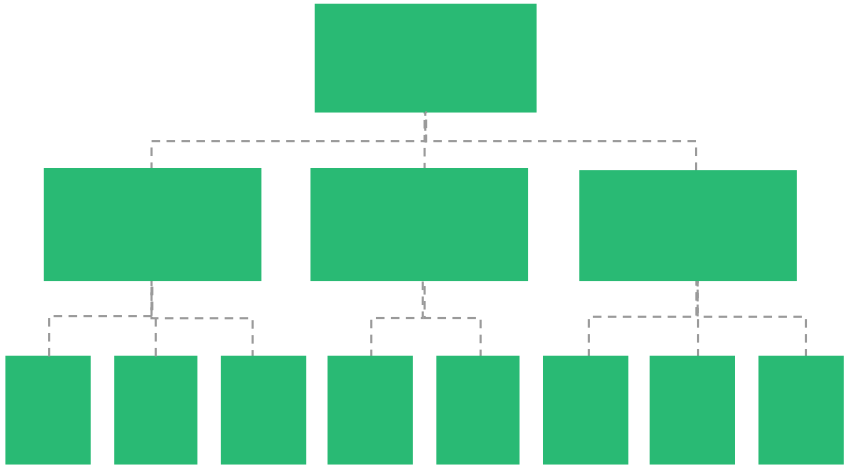
Deliver high quality analysis and drive to insight

Analysis planning and prioritization

Plan your analysis— use your hypotheses as a baseline

Hypothesis tree

What are your hypotheses to solve the problem?



Ask the right questions

Analysis

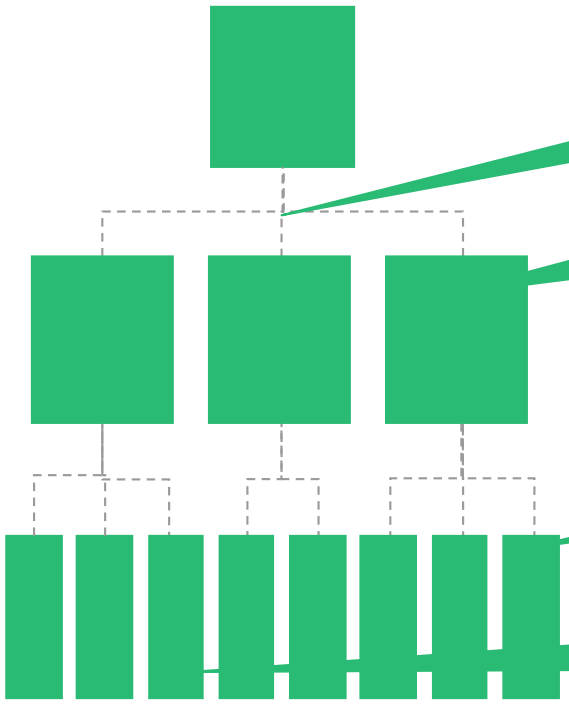
What do you need to do to validate or falsify your hypotheses?

Determine what needs to be done to validate or change a hypothesis.

- Data collection
- Qualitative information
- Analysis

Get to the right answers

Focus your work—drill down selectively, step back when required



Potential discoveries during early phases of project

Argument found why level is not MECE—element missing

Hypothesis can be sufficiently validated by simple logic

Back-breaking effort to find this out

Highlights issues that are very important to other problems

Required actions to stay focused

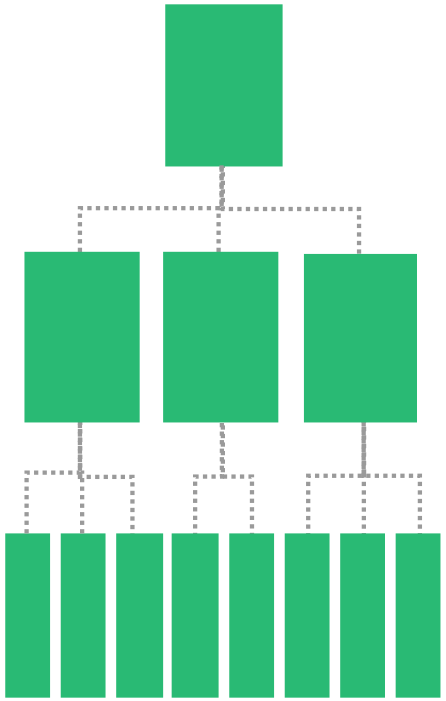
Revisit tree and strongly consider addition. Step back to see if this has impact on other branches.

Consider scrapping lower-level hypotheses—do we lose anything by spending freed time on other topics?

Consider alternative ways of answering (e.g., by drilling down one level or doing back-of-the-envelope calculations)

Don't be tempted too easily to drill down further. Potentially suggest that another team starts spin-off—what would be their key question?

Always have an answer and communicate regularly along different levels of the hypothesis tree



"We believe that cost is your main problem"

"It looks like you're at a 15-20% cost disadvantage overall"

"You appear to be subscale in distribution relative to your competitors"

"We think a niche/product differentiation strategy is likely to enable you to overcome your cost disadvantage"

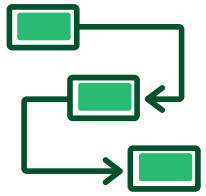
- Belief as to cause of problem
- Analytical support for hypothesis
- Preliminary diagnosis of root cause
- Emerging answer

The foundation for a logical story

Qualitative analysis

4

key success factors for qualitative analysis excellence



Elaborate on what observations meant for the client

Apply observations to test current hypotheses, build new hypotheses by asking yourself what it means and what underlying factors there may be

Push analysis further and come up with 2nd and 3rd order insights

Drill down into underlying reasons that explain your findings

Keep client question in mind

Understand higher-level implications of your findings and aim to find the "so what?"

Apply business sense

Use your business and functional knowledge to develop hypotheses, ask relevant questions, prioritize analysis

Insights are built upon observations

Observations state what is seen	Insights explain why it is so, plus provide us with the broader implications
"Sales are down 20% this year"	"Sales are down 20% because of changes in consumer preferences. Rebranding is required to improve business"
"The distribution department is performing poorly, and packages are arriving late"	"The distribution department is underperforming because the warehouse is disorganized, and the shipping process is not standardized"
"Customer satisfaction has been decreasing for the past 18 months"	"The client's goal of launching the product in a new market will not be successful unless customer satisfaction is improved"
"The market looks appealing"	"The market looks appealing because companies are adapting technology for their needs"

Questions to ask yourself to pull insights from information and analysis

What are the underlying factors that explain observation?

What does it mean?

Why is this information important?

How does this move us further forward?

The Five Whys can be used to drill down further and gain deeper insights

Our client, a trucking company, has been losing money. Initial analysis reveals that the problem is their operating costs, which are higher than expected

We can use the Five Whys to gain insight into why this is happening

Operating costs are high

?

1 Fuel costs above annual forecast

?

2 Client pays more per gallon than industry benchmarks

?

3 Not see economies of scale as no supplier contracts

?

4 Fuel purchased at individual driver level

?

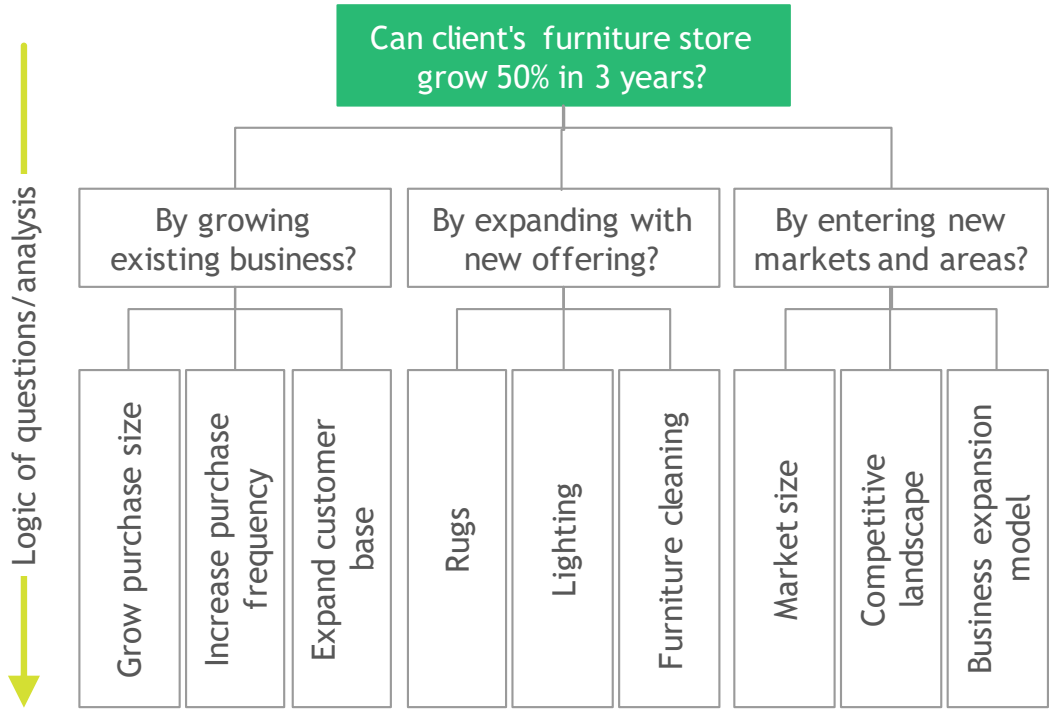
5 No central procurement office

So what

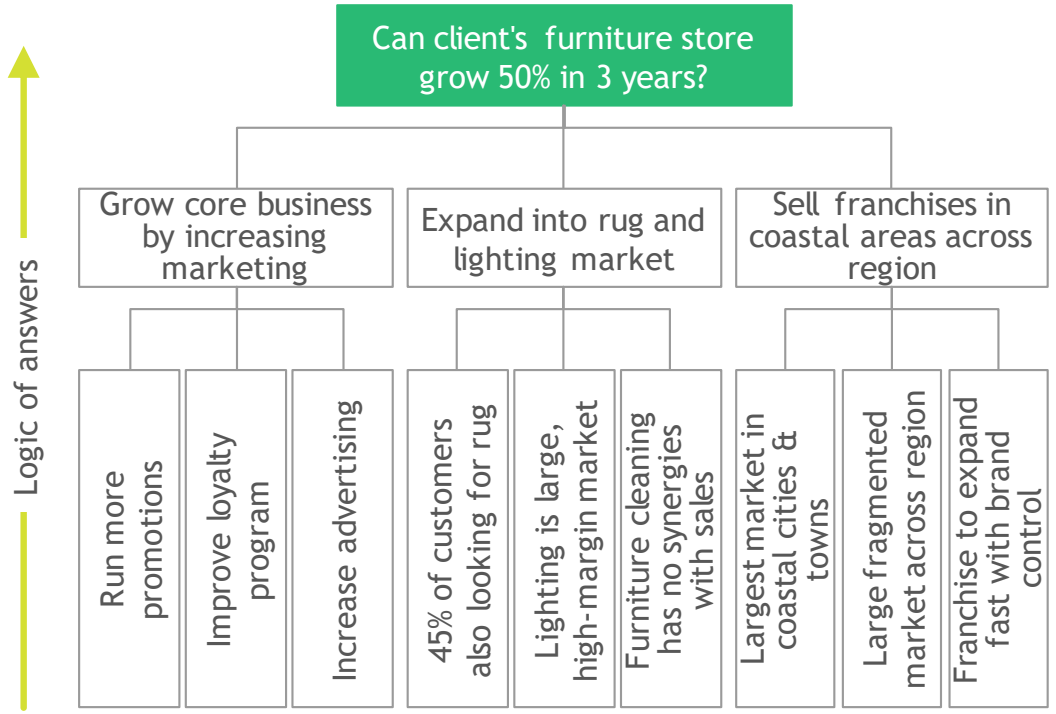
! Client should consider setting up a central procurement office

Reverse the logic of pyramid principle to extract higher-level implications

Start with your pyramid of key drivers



Move up from the bottom to find the "so what?"



Business judgement will help to build hypotheses, ask relevant questions and prioritize analysis

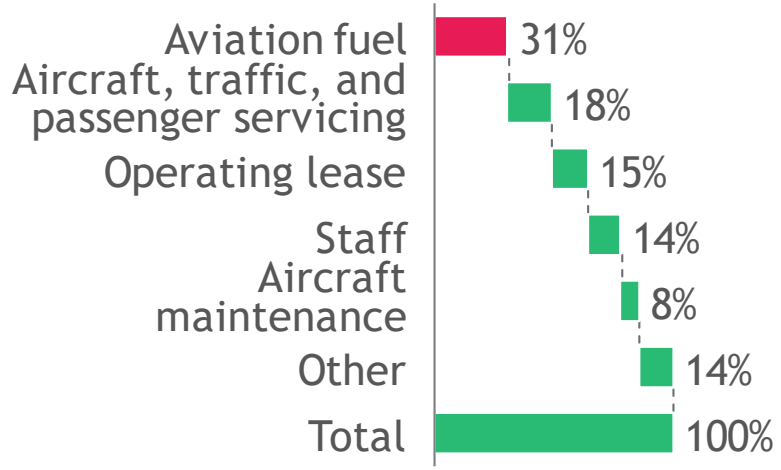
Example: Airline largest cost items

How is it perceived by customers?

- Meals
- Crew wages
- Aircraft maintenance

What is actual cost breakdown?

Aeroflot operating costs 2018



Source: Aeroflot annual report; BCG analysis

Deep industrial or functional knowledge is not required to solve the case

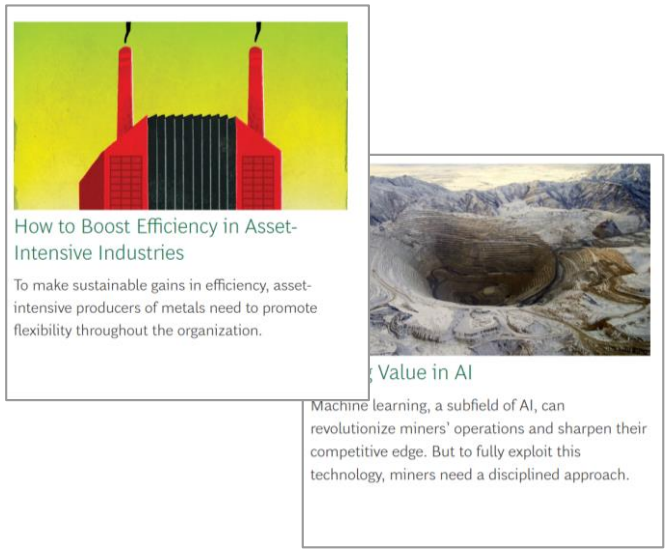
Still it makes sense to develop business judgement if your background is non-business or very narrowly focused

Potential ways to achieve this

- Read public materials. Select articles that describe industries and trends, company case studies – political news, statistics and price reports, M&As are of less interest
- Solve cases. Look for key drivers in industries and functions

Public materials can be used to develop business judgement

BCG Publications



BCG's publications; strategy topics and ideas for frameworks

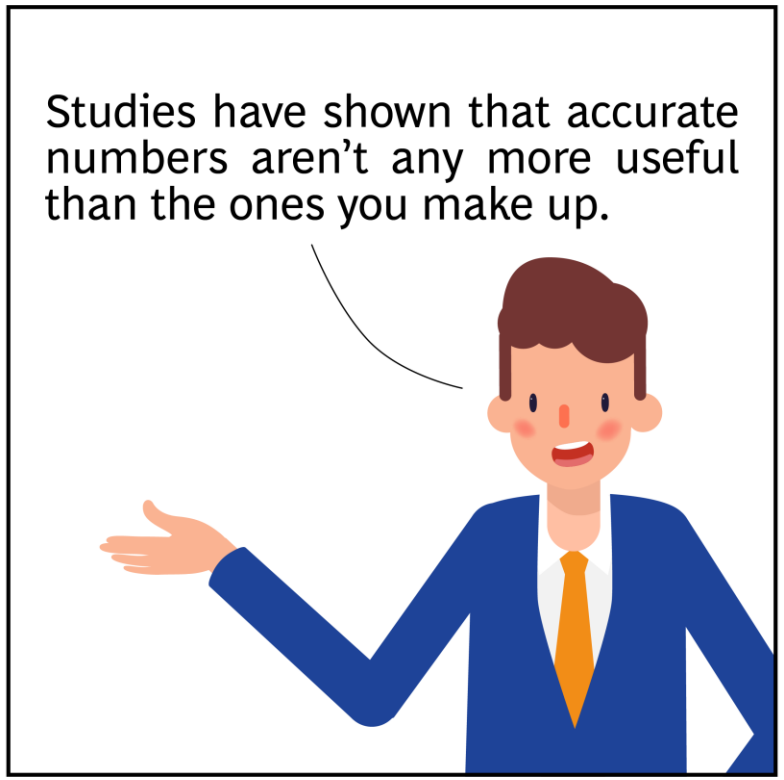
Harvard Business Review

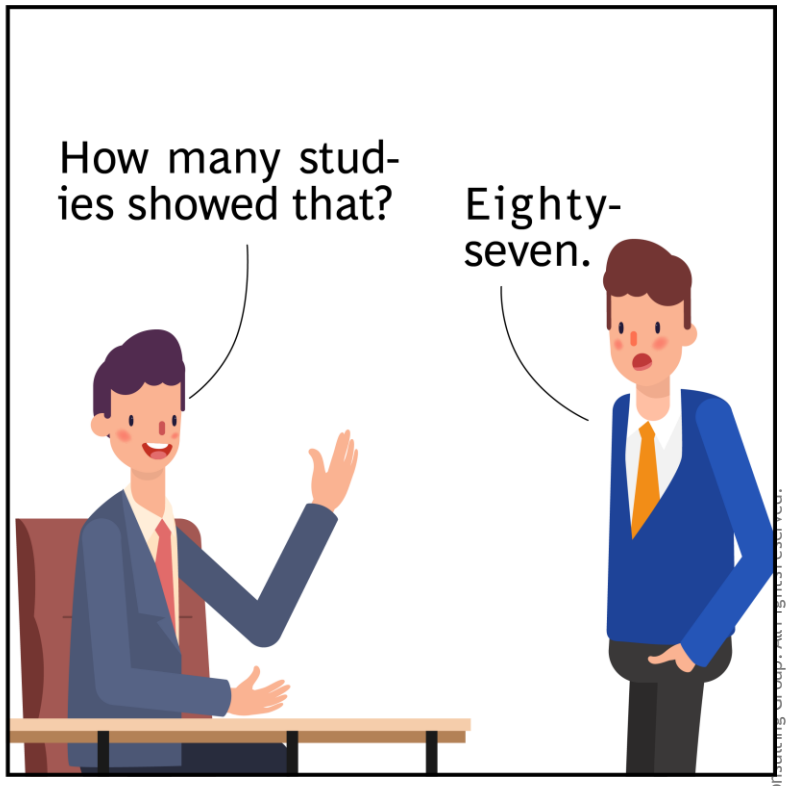
External research; strategy topics and ideas for frameworks

Media

Industry coverage; understanding of key drivers and case studies

Quantitative analysis





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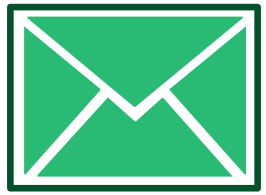
key success factors for quantitative analysis excellence



Use back-of-the envelope analysis

Round numbers up or down and come up with rough estimates to avoid unnecessary work or to fill in gaps in data

Perform quick and accurate calculation

Refresh your calculation skills and use short cuts

Validate your answer

Quickly sanity-check whether results of your analysis make sense and whether the order of magnitude is correct

Stay open to back-of-the-envelope calculations

Four reasons why back-of-the-envelope is such an important and powerful tool

1. Avoids unnecessary fine tuning, freeing up time for more relevant analyses
   - If back-of-the-envelope suggests pay off option A is 100-110, and option B is 5-10, we don't need to go into excessive detail to know if X is 105, 106, etc. A is clearly better.

2. Breaks down logic for analyses and shows on which specific parts to focus on.
   - Back-of-the-envelope to estimate X consists of 5 steps. Perhaps 3 of these steps will be clear, however 1 or 2 will need to be checked in greater detail.

3. Fill gaps when no data is available
   - Answer will explicitly be uncertain, but it is better to have an indication than no answer

4. Provides input for analysis "sanity checks"
   - If back-of-the-envelope shows X is 100-110, and analysis shows it is 58, something needs to be fixed either in the logic or in the model

Example of back-of-the envelope calculation

Number of EU inhabitants that could make use of device enhancing GPS accuracy in cars

Inhabitants in Europe (knowledge)	300 million
Average number of people per household (estimate)	2
Average number cars per household (estimate)	1
Approximate number of drivers using GPS (estimate from experience)	1/3
Potential number of users of the new device	50 million

During the case some calculations will be performed using only pen and paper

Simple operations	Be able to add, subtract, multiply and divide real numbers	34,5 + 26 = ? 34,5 – 26 = ? 34,5 x 26 = ? 34,5 ÷ 26 = ?
Percentage	Be able to estimate certain % of a number and also to estimate 100% given certain percent	26% of 34,5 = ? 34,5 = 26% of XX; XX =?
Fractions	Be able to add, subtract, multiply, divide fractions by other fraction and real numbers	3/45 + 34/5 = ? 3/45 + 34,5 = ? 3/45 ÷ 34/5 = ?
Calculation rules	Keep in mind correct order for multiple operations	34,5 + 3/45 x 26 = ?

Practice calculations before case interview – come up with random numbers and perform calculation using pen and paper

Know what types of numbers you should prioritize for sanity check

Key numbers	Numbers that are critical for defining recommendation – they MUST be correct
Analysis output	Numbers that are derived from multiple calculations or that depend on various assumptions
Outliers	That show wide divergence from their peer group
Surprising results	Results that are not in line with what the running hypothesis of the case is

4 potential checks that can be conducted

1. Compare your number with any known number (e.g. GDP, population, company revenue or production volume, minimum salary)
2. Check totals of rows and columns
3. Check units: perform your operations with units and make sure you get required one
4. Check calculation