

# Frankfurt School Student Consulting

## FS-SC Case Book

Frankfurt am Main | 2020



# AGENDA

■ Main focus of this book

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# Introduction

# Introduction

Frankfurt School Student Consulting is proud to present you the first-ever Frankfurt School Consulting Case Book – designed by and for students preparing for management consulting interviews. The student body has been working thoroughly to give you insights into the consulting interviewing processes and provide you with a range of 20 cases that will help you prepare for your upcoming interviews.

The objective of this book is threefold:

- 1) **Outline general tips and tricks** for the consulting interviewing process
- 2) Equip you **with frameworks that help you crack your case interviews**
- 3) Provide you with a range of **15 brand new cases** (interviewer- and candidate-led) **similar to those which expect you in a consulting interview**

We hope that with the FS-SC Case Book we can provide some value-add to your interview preparation. We wish you all the best in your upcoming interviews and if you are struggling to “crack the case”, do not hesitate to contact us for help.

Frankfurt School Student Consulting

Special thanks to: Gloria Fachinger, Julia Salzburger, Isabel Tretow, Amelie Westarp, Marco Winter

# Basics

# Structuring Principles (1/2)

## Organization tools to entangle your thoughts

### BASIC TOOLS

#### MECE

- Means: Mutually Exclusive Collectively Exhaustive
- Check that all your answers do not overlap or repeat
- While grouping options for instance, your answer should consider all possible scenarios
- Include a category called “others” to comprise all other options you did not explore in detail
- Be careful not to elaborate on too many options, but focus on 3-5 main categories to manage the time constraints

#### Pyramid principle

##### Purpose

- walk the interviewer/client through your solution in a structured manner

##### Clear structure is essential

- WHAT? Governing thought/conclusive statement. State action to be completed in order to reach the ultimate goal.
- WHY? State observations and key findings of your analysis that led to your conclusion
- HOW? Allow further insight into the key findings and provide detailed steps.

##### Example

- WHAT? Cost reduction for suppliers
- WHY? Benchmarking displayed significant differences in supply costs. For basic products the entailed lower quality is sufficient. Market outlook does not allow for higher prices.
- HOW? Benchmarking over suitable suppliers. Analysis of product differentiation in order to reconsider pricing.

#### Structuring for exhibits

##### General topic

- Briefly describe what the exhibit shows, e. g., state the axis labels
- By describing obvious aspects you ensure not to lose your interviewer and you gain time to think about the provided information

##### Meaning

- Relate the exhibit to the main question and state insights of the exhibit (which help you to solve the main problem)

##### Reasons

- State hypotheses what drives your identified insights
- Think about additional factors which may affect the problem (positively and negatively)

##### Outlook

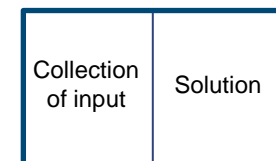
- Propose next steps based on your insights (e. g. how to test your hypotheses)

#### Paper Structure

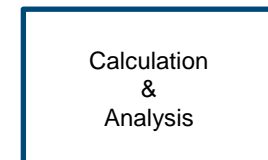
- Allocate different papers to different parts of the case
- Usually, papers are used horizontally

##### Example

- Separate input you receive in the beginning from calculations and own assumptions
- Reserve half of a paper to put down your solution. This aids a structured presentation of your recommendation
- You can make use of the Pyramid Principle or Issue tree.



Paper 1



Paper 2

All these tools help you to structure your thoughts, to come up with a solution and present your recommendation in a timely manner. Practice sufficient cases to find out what tools work for you.

Usually, your case notes are collected. An organized case analysis is therefore a useful proof of your analytical and structured thinking.



# Structuring Principles (2/2)

## Organization tools to entangle your thoughts

### BASIC TOOLS

#### Issue tree

##### Graphical overviews

- Convenient way to present your thoughts and support the interviewer's understanding
- Use hypothesis-driven approach: answer-first, results-first
- Ensure that issues are MECE!

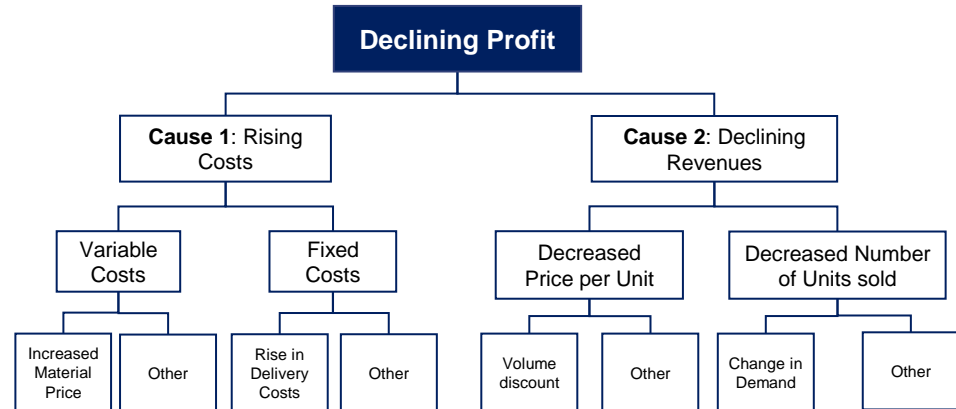
##### Start with a problem-based tree

- Analyze the root cause of the problem identified
- State the problem at the top
- Add all potential causes you can think of and group them
- Step by step, analyze which cause is the main cause of the problem at hand in more detail

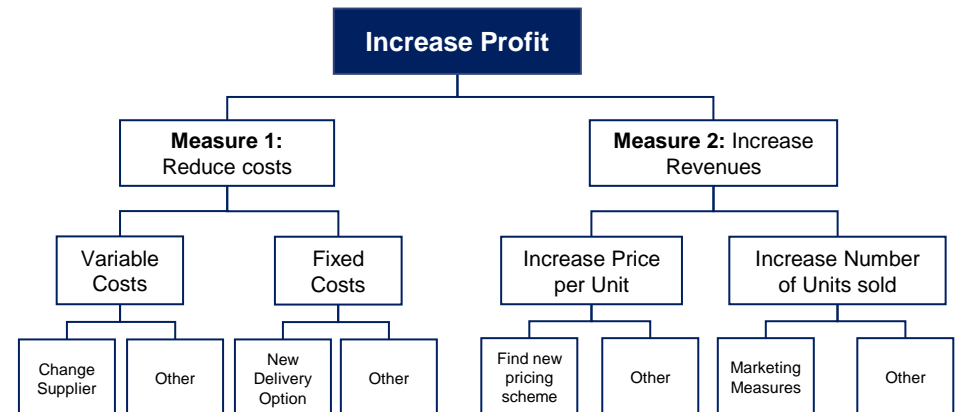
##### End with a solution-based tree

- Determine and present your recommendation
- State the conclusive statement (governing thought) at the top
- Add all reasons and actions underneath

#### Problem-based tree



#### Solution-based tree



# Quantitative skills

## Improve speed and accuracy of your calculations

### BASIC TOOLS

- Usually, there is no access to a calculator. Be ready to prove calculation skills without and with scrap paper.
- Practice the following disciplines with odd numbers by taking online speed tests
  - Addition
  - Subtraction
  - Multiplication
  - Division
- Tricks on the right will improve your speed and confidence.

#### Multiplication tricks

- **By 5:** Multiply by 10, divide by 2
- **By 4 or 8:** Multiply by 2 twice or thrice
- **By 9:** Multiply by 10, deduct that number once
- **Two-digit number by 11:** Write sum of digits in-between

#### Division tricks

- **By 5:** Multiply by 2, divide by 10
- **By 4 or 8:** Divide by 2 twice or thrice
- **By 25:** Divide by 100, multiply by 4

### PERCENTAGES

- Many cases make use of percentages, either in the introduction, exhibits or during quantitative analysis.
- Dedicate sufficient time of your preparation to find out how you determine percentages the fastest.
- Option 1: Think of it as a fraction
- Option 2: Break it down into smaller percentages

### ADDITIONAL HINTS

Create your own overviews regarding:

- Squares
- Big Number

Practice makes perfect

- Mental Math
- Prep Lounge: <https://www.preplounge.com/en>
- Math Trainer: <https://www.mathtrainer.org>
- Consulting Coach: <https://www.myconsultingcoach.com/>

#### **Remember:**

This overview serves as a collection of potential ways to tackle quantitative challenges. Find the way that appears to be the smoothest for you while practicing. There is more than one path to the right answer.



# Collection of Formulas (1/2)

## Finance

### PRESENT VALUE

$$PV = \sum_{t=1}^T \frac{C_t}{(1+r_t)^t}$$

$C_t$ : cash flow in period t  
r: internal rate of discount

### FUTURE VALUE

$$FV = \sum_{t=1}^T C_t * (1+r_{(T-1)})^{T-t}$$

### INTERNAL RATE OF RETURN (IRR)

$$NPV = C_0 + \sum_{t=1}^T \frac{C_t}{(1+r_t)^t} = 0$$

#### Remember:

If there are more than three payments you must use the p-q-formula!



### GENERAL STOCK PRICE - CURRENT PRICE $P_0$ OF A SHARE

$$P_0 = \sum_{t=1}^H \frac{DIV_t}{(1+r_E)^t} + \frac{P_H}{(1+r_E)^H}$$

$DIV_t$ : expected dividend per share

$$P_0 = \frac{DIV}{r_E} \quad (\text{perpetual stream of dividends})$$

$r_E$ : cost of equity  
 $P_H$ : expected price in t=H

$$P_0 = \frac{DIV_1}{r_E - g} \quad (\text{perpetual stream of dividends growing at rate of } g)$$

### CAPM

$$\mu_i = r_f + (\mu_M - r_f) * \beta_i$$

$$\beta_i = \frac{Cov(r_i, r_M)}{Var(r_M)} = \frac{\sigma_{iM}}{\sigma_M^2} = \frac{\rho_{iM} * \sigma_M * \sigma_i}{\sigma_M^2}$$

$$\text{Sharpe Ratio} = \frac{r_p - r_f}{\sigma_p}$$

### DURATION

$$\text{Duration} = \frac{1 * PV(C_1)}{PV} + \frac{2 * PV(C_2)}{PV} + \frac{3 * PV(C_3)}{PV} + \dots + \frac{T * PV(C_T)}{PV}$$

### WEIGHTED AVERAGE COST OF CAPITAL

$$WACC = \left(\frac{D}{V}\right) * r_D * (1 - T_c) + \left(\frac{E}{V}\right) * r_E$$

V = firm value

D = debt

E = equity

$r_D$  = cost of debt

$r_E$  = cost of equity

$T_c$  = company's tax rate

### PORTFOLIO SELECTION

$$E(r_i) = \mu_i = \sum_{s=1}^S p_s * r_{is} \quad \text{Var}(r_i) = \sigma_i^2 = \sum_{s=1}^S p_s * (r_{is} - \mu_i)^2$$

$E(r_i) = \mu_i$ : expected return of security i

$P_s$ : probability for the state of nature

$R_{is}$ : return of share i in the state of nature s

$\text{Var}(r_i) = \sigma_i^2$ : variance of the returns of security i

# Collection of Formulas (2/2)

## Marketing, Geometry and Metric Conversion

### MARKETING

Item	Formula	Item	Formula
Market share	Sales volume / market volume	Conversion rate (CR)	Conversions / Clicks
Level of market saturation	Market volume / market potential	Click-through-rate (CTR)	Clicks / Impressions
Market volume	Market saturation level * Market potential	Cost per mille (CPM)	Costs / Total Impressions x 100
Market potential	All that could be sold	Cost per click (CPC)	Costs / Clicks
Budgeting	$e = \text{own advertising costs} / \text{own turnover} * \text{turnover competition} / \text{advertising competition}$	Return on Investment (ROI)	$(\text{Revenue} - \text{Costs}) / \text{Costs}^1$
Price elasticity	Relative quantity change / relative price change		
Cross-price elasticity	Relative quantity change A / relative price change B		

### GEOMETRY

Item	Area	Volume
Rectangle / Cube	$a*b$	$a*b*h$
Ball	$4*\pi*r^2$	$4/3*\pi*r^3$
Pyramide	-	$a^2*h/3$
Triangle	$0.5*a*b$	-

### EU/USA METRICS

EU	USA
1 km	0.62 miles
1 liter	0.26 gallons
1° Celsius	32° Fahrenheit
1 kg	35.27 ounces

### AREA CONVERSION

#### Surface

- Multiply by 100 when moving right
- Divide by 100 when moving left

#### Volume:

- Multiply by 1,000 when moving right
- Divide by 1,000 when moving left

**km<sup>2</sup>, ha, a, m<sup>2</sup>, dm<sup>2</sup>, cm<sup>2</sup>, mm<sup>2</sup>**

1: Other ways of calculation also applicable

# General Information

## Facts & Figures

GENERAL INFORMATION	WORLD	EU	GERMANY
# of Countries	270	27	n/a
Earth surface	510 m km <sup>2</sup>	4.42 m km <sup>2</sup>	0.357 m km <sup>2</sup>
<i>thereof sea</i>	70%	3%	2%
<i>thereof earth</i>	30%	97%	98%
Ø Annual population growth	1.11%	0.47%	1.06%
Ø Energy price (per kWh)	€0.15 / kWh	€0.21 / kWh	€0.30 / kWh
Ø Energy consumption (per capita, as of 2015)	3,132 kWh	6,021 kWh	7,035 kWh
Population structure (simplified)			
0-20	33%	20%	20%
20-40	30%	25%	25%
40-60	23%	28%	25%
60+	14%	27%	30%

SOURCE: World Bank Data

# Population Figures

## Worldwide Population Data

### WORLD (TOP 10 COUNTRIES)

<b>China</b>	<b>1.40bn</b>
<b>India</b>	<b>1.38bn</b>
<b>United States</b>	<b>330m</b>
Indonesia	270m
Brazil	210m
Nigeria	205m
Bangladesh	165m
Russia	145m
Mexico	128m
Japan	125m
<b>TOTAL WORLD</b>	<b>7.50 bn</b>

### EUROPE (TOP 10 COUNTRIES)

<b>Germany</b>	<b>83m</b>
<b>France</b>	<b>67m</b>
<b>United Kingdom</b>	<b>66m</b>
Italy	60m
Spain	47m
Poland	38m
Romania	19m
Netherlands	17m
Belgium	11m
Czech Republic	10m
<b>TOTAL EUROPE</b>	<b>740m</b>
<b>TOTAL EU</b>	<b>445m<sup>1</sup></b>

### GERMANY (TOP 5 CITIES)

<b>Berlin</b>	<b>3.6m</b>
<b>Hamburg</b>	<b>1.8m</b>
<b>München</b>	<b>1.5m</b>
Köln	1.1m
Frankfurt am Main	750k
<b>DACH (DE, AT, CH)</b>	
<b>Germany</b>	<b>83m</b>
<b>Austria</b>	<b>8.9m</b>
<b>Switzerland</b>	<b>8.3m</b>
Berlin	3.6m
Vienna	1.9m
Bern	1.0m

SOURCE: World Bank Data as of August 2020

1) Excluding UK

# Financial Knowledge (1/2)

## Income Statement, Balance Sheet and Cash Flow Statement

### INCOME STATEMENT

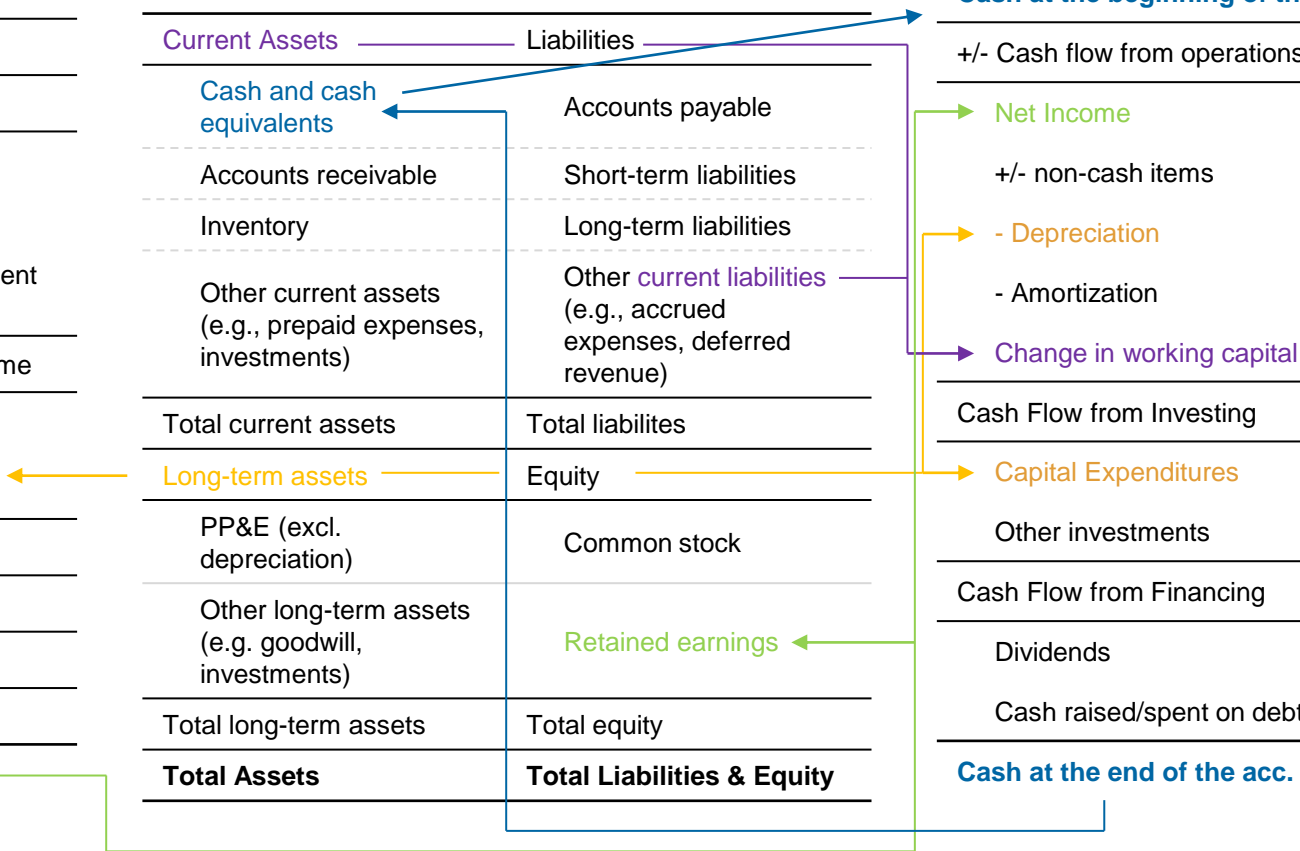
Revenue / Net Sales
- COGS
= Gross Margin
- Operating expenses <sup>1</sup>
- SG&A
- Research & Development (R&D)
= EBITDA / Operating income
+/- Other income and expenses (e.g. - depreciation)
= EBIT
- Interest expense
= Income before Tax
- Taxes
= <b>Net Income</b>

### BALANCE SHEET

ASSETS	LIABILITIES & EQUITY
<b>Current Assets</b>	<b>Liabilities</b>
Cash and cash equivalents	Accounts payable
Accounts receivable	Short-term liabilities
Inventory	Long-term liabilities
Other current assets (e.g., prepaid expenses, investments)	Other <b>current liabilities</b> (e.g., accrued expenses, deferred revenue)
Total current assets	Total liabilities
<b>Long-term assets</b>	<b>Equity</b>
PP&E (excl. depreciation)	Common stock
Other long-term assets (e.g. goodwill, investments)	<b>Retained earnings</b>
Total long-term assets	Total equity
<b>Total Assets</b>	<b>Total Liabilities &amp; Equity</b>

### CASH FLOW STATEMENT

Cash at the beginning of the acc. period
+/- Cash flow from operations
<b>Net Income</b>
+/- non-cash items
- Depreciation
- Amortization
<b>Change in working capital</b>
Cash Flow from Investing
<b>Capital Expenditures</b>
Other investments
Cash Flow from Financing
Dividends
Cash raised/spent on debt or equity
Cash at the end of the acc. period



1) Not exhaustive

# Financial Knowledge (2/2)

## Company Valuation Methods and M&A Framework

### DISCOUNTED CASH FLOW METHOD

A DCF values a company based on the present value of its future cash flows and the present value of its terminal value



#### DCF Walkthrough

- 1) Project company's financial with assumptions about revenue growth, expenses, working capital, asset and liability growth rates
- 2) Calculate Free Cash Flow (FCF) for each year for ~5 years
- 3) Discount FCF with the Weighted Average Cost of Capital (WACC), which is the minimum acceptable rate of return at which a company yields returns for its investors
- 4) Estimate the Terminal Value (TV) and discount it with WACC
- 5) Add the sum of the present value of our FCFs and the TV to arrive at our Enterprise Value

#### Free Cash Flow Calculation

Revenue  
 - COGS  
 - Operating Expenses  
 = EBIT  
 - Taxes  
 + Depreciation (and other non-cash expenses)  
 - Capital Expenditures  
 - Changes in Net Working Capital  
 = Unlevered FCF

#### WACC Calculation

$$WACC = \frac{Equity}{Equity+Debt} * r_e + \frac{Debt}{Equity+Debt} * r_d * (1 - Tax Rate)$$

$r_e = \text{Cost of Capital}$   
 $r_d = \text{Cost of Debt}$

#### Terminal Value Calculation

$$TV = \frac{FCF * (1 + g)}{(r - g)}$$

### M&A (DO OR DON'T) CASE FRAMEWORK

#### Buyer Company

- Why do we want to acquire the target?
  - Strategic reason (market positioning, growth, diversification)
  - Defensive (to be larger in our own industry)
  - Revenue & cost synergies or value creation
    - Revenue: product, marketing, clients
    - Cost: procurement, distribution, logistics, workforce
  - Undervaluation (ineffective management, buyer can bring target back on track)
- In which industry does buyer operate?
- Which other business does the buyer run (look out for synergies)?
- M&A experience of buyer

#### Target company

- Industry similarity, competition & growth and trends
- Industry market entry barriers
- Market share of target
- Valuation of target (DCF, Multiples) & likelihood to grow
- Which parts of the targets business are relevant for the acquisition (synergies!)
- Culture: Similarity between both management boards, Leadership Style, Human Capital, Loss of key people, shared values
- IT and Systems

#### Feasibility

- Is the market open for M&A?
- Does the buyer have enough financial resources or is there chance of raising funds?
- Is there cultural fit?
- How will the acquisition affect our shareholders?
- Other risks (e.g. political / macroeconomic risk)

# Frameworks

# Case Frameworks (1/9)

## Porter's Five Forces Framework

Be aware that **all frameworks** provide you with **ideas how to solve a certain problem**. Within the interview process **do not mention** that you use a **framework**. Instead, **proof** that you are capable of **solving the case independently**.

### PORTER'S FIVE FORCES FRAMEWORK

#### General information

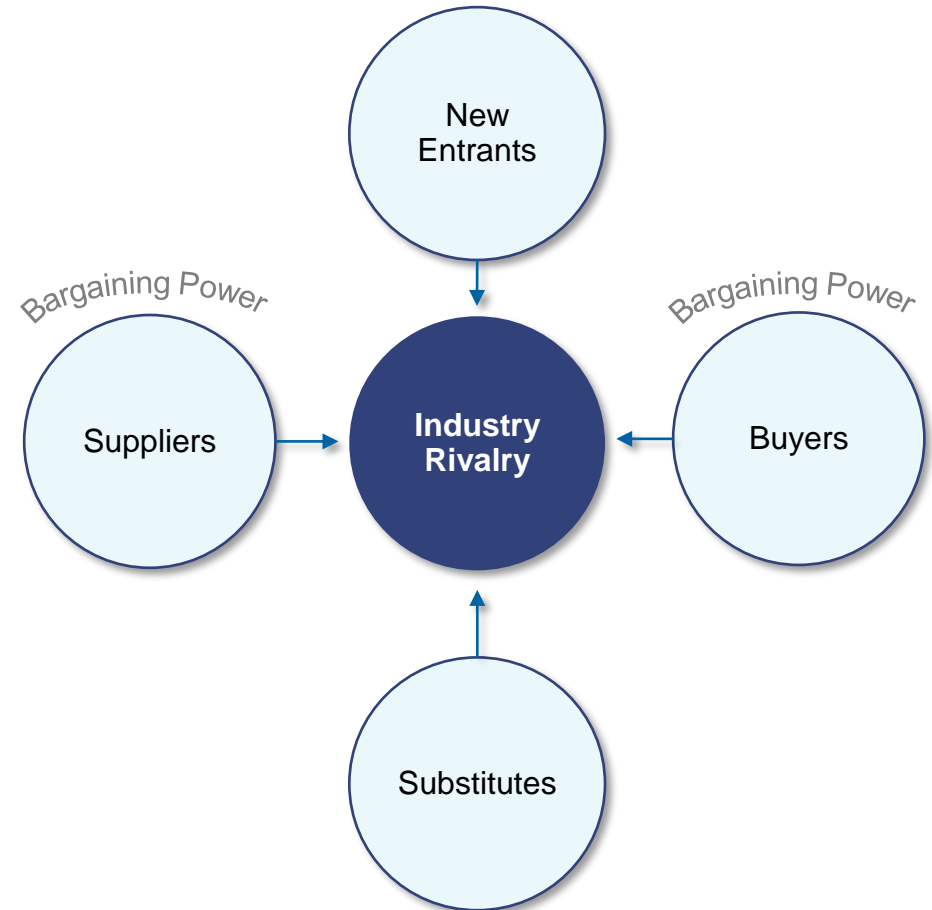
Michael Porter's Five Forces is probably the best known framework used in the preparation of the case interviews. It helps to **assess the attractiveness of an industry** and can be used in order to **evaluate market entry as well as competitive advantage opportunities**.

#### Exemplary usage

- Market Entry (also see Market Entry Framework)
- Competitive response
- M&A

**The competitive advantage in an industry is dependent on five primary forces:**

- Threat of new entrants
- Bargaining power of buyers and suppliers
- Threat of substitute products
- Rivalry within the industry





# Case Frameworks (2/9)

## Value Chain Framework

### VALUE CHAIN FRAMEWORK

#### General information

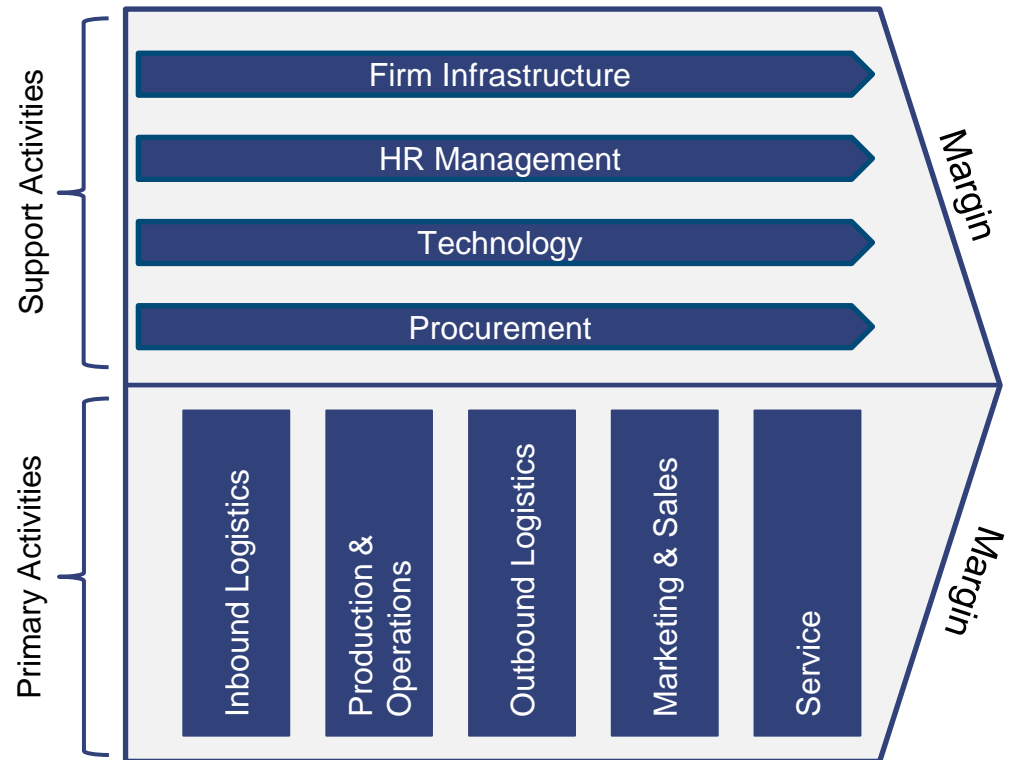
Value chain analysis is used to analyze all activities of an organization, supply chains and distribution networks. It is a useful framework to understand the supply chain network of an organization, to determine where value is added and to identify weaknesses or bottlenecks within an organization.

#### Exemplary usage

- SCM Analysis
- Analysis of all activities
- Distribution network analysis

#### In order to create a resilient supply chain:

- Supply chains should not be operated too closely
- Set up strategic supplier management
- Expand stocks for safety reasons
- Implement multiple sourcing for risk diversification
- Continuously evaluate supplier



# Case Frameworks (3/9)

## PESTEL Framework

### PESTEL FRAMEWORK

#### General information

A PESTEL analysis is a framework or tool used to analyze and monitor the macro-environmental factors that may have a profound impact on the organization's performance. This framework is especially useful when starting a new business or entering a foreign market.

#### Exemplary usage

- External environment analysis
- Market entry (also see: Market Entry Framework)
- Competitive response

Use the dimensions as a start for thinking. The six categories of PESTEL analysis give a good idea of what kind of information to include in your analysis, but you have to determine what is relevant to the scope of your analysis.



P

**Political:** Government Support, Regulations, Sanctions, Subsidies



E

**Economical:** Interest rates, Unemployment rates, Stock market, Strength of currencies



S

**Social:** Demographics, Culture, Educational system, Health system



T

**Technological:** Internet, Wireless communication, Industry 4.0, Nanotechnology



E

**Ecological:** Resources, Emissions, Infrastructure, Location characteristics



L

**Legal:** Legal system, State constitution, Legal consciousness, Areas of law

# Case Frameworks (4/9)

## BCG Matrix Framework

### BCG MATRIX FRAMEWORK

#### General information

The BCG growth matrix is used to evaluate a company's portfolio of products or product lines in order to determine in which to further invest or to divest.

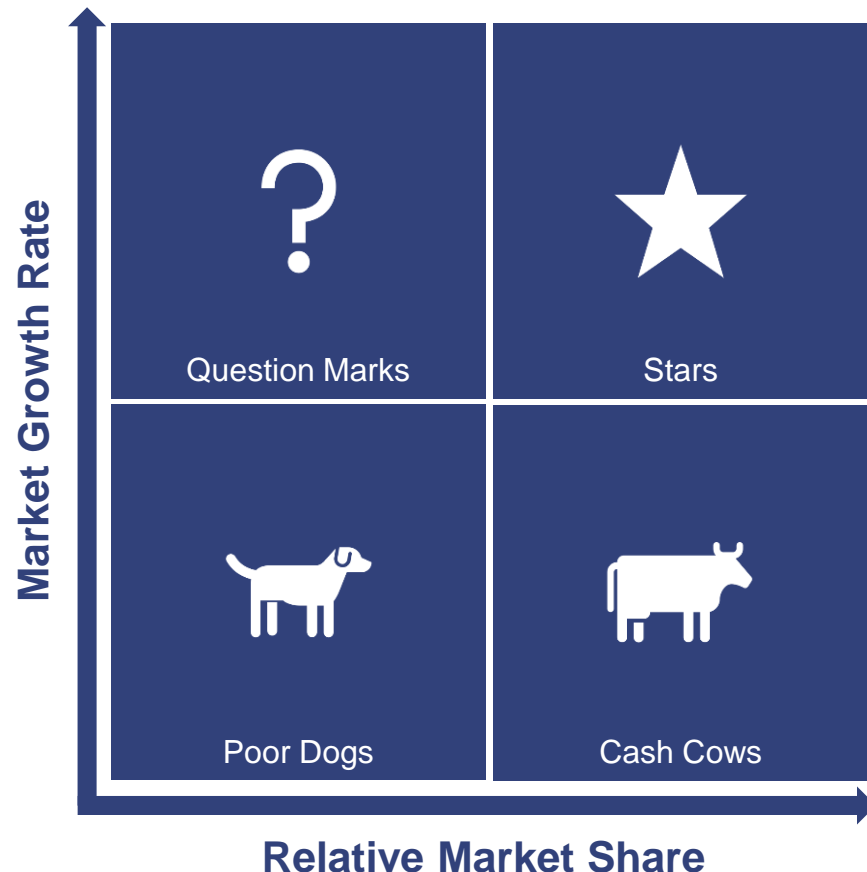
Invest profits generated by cash cows in question marks to transform them into stars.

#### Exemplary usage

- Market positioning
- Product portfolio
- Investments
- M&A

#### Keep in mind:

Center of the Y-axis = average market growth,  
center of the X-axis = 100% market share  
(see formula sheet to calculate relative market share)



# Case Frameworks (5/9)

## 4 P's of Marketing

### 4P'S OF MARKETING

#### General information

The 4 P's of Marketing, also known as Marketing Mix, provides a Framework to assess marketing decision making.

#### Exemplary usage

- Decision-Making in Marketing
- Strategy Development

#### Potential of Marketing Mix:

- Develop strengths and avoid weaknesses
- Strengthen the competitiveness and adaptability of enterprises
- Make the internal departments of the enterprise work closely together



#### Product

- How is the product differentiated?
- What are the customer needs that the product needs to fulfil?
- Does the product have complements or product lines?

#### Price

- What is the absolute/relative price of the final product?
- How will staff be compensated (commission, etc.)?
- How should discounts or incentives be offered and implemented? (price elasticity)

#### Placement

- What types of stores will offer the product?
- How will the product reach the stores (supply chain, distribution channels)?
- For new products, will test markets be used for roll-out?

#### Promotion

- Which marketing strategy suits the product?
- What is the brand message that needs to be communicated to all stakeholders?
- How will the product be positioned?

# Case Frameworks (6/9)

## Market Sizing and Profitability

### MARKET SIZING FRAMEWORKS

#### 1) Demand side approach

- **How many people want the product / frequency of purchase**
- Possible approaches through
  - Population segmentation
    - Age structure
    - Income
    - Urban / rural
  - Households
  - Seasonality of sales
- **If supply cannot meet demand** or the variable is supply-side constrained, **use supply side approach!**

Example: # of US Visa issued by Russian embassy  
 → Demand clearly exceeds supply and the processing capacities, use supply side

**Use only if demand drives the variable we are calculating** and supply meets demand!

#### 2) Supply side approach

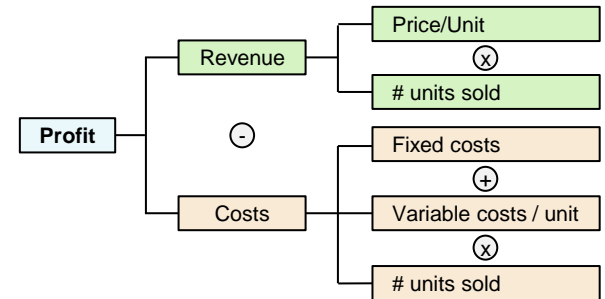
- **How many companies offer the product?**
- Possible approaches through
  - Stores selling product/service
  - # of workers
  - Products processed per workers

#### 3) Stand-alone (e.g. how many items of product xX are sold every year? / how many xX have to be replaced/year?)

- Calculate total amount of xX (by either demand or supply side)
- Divide by the life-time of xX (estimate)

**The assumption is that the amount of xX stays constant!** Adapt growth rate for growing/deteriorating products!

### PROFITABILITY FRAMEWORK



#### Revenue

- **Segment revenue** by product type, distribution channel, geography, customer type
- When quantity is 0, total cost equal fixed costs

#### Costs

- Fixed Costs
  - Rent, Energy and other utilities
  - Administrative costs & salaries (advertisement, taxes)
  - Investment costs, loan repayments
  - Depreciation of fixed assets (e.g. machinery, property, plant equipment)
- Variable costs
  - Raw materials, packaging & transport
  - Production changing costs (e.g. batch size replacement)

# Case Frameworks (7/9)

## Market Entry Framework

### MARKET ENTRY FRAMEWORK

#### Market & Competitors

##### Market

- How profitable is the market?
- Will this profitability remain stable/grow?
- Strategic fit given?
- Market regulation?
- Market entry barriers?
- How will the market evolve?
- General macroeconomic buying power

##### Competitors

- Concentration of competition & competitors market share?
- Is rest of the market fragmented and how much market share can we grab?
- How will competitors react to our market entry? (If they know our costs, they can price below our contribution margin, leaving us with no market share)

#### Company

##### Capabilities and expertise

- Company's capabilities & expertise in the new market?
- Does the company have to develop / hire new capabilities to be competitive?
- Has the company ever done any new market entries in recent years?
- Have competitors tried to enter the new market & can we learn something?

##### Financials

- Current situation of company (do we have spare resources to invest?)
- Investment costs
- Personnel, training, etc.
- Ongoing costs (advertisement, raw material, manufacturing)
- Expected revenues?
- Through which distribution channels can we reach the customer?
- Overall ROI & breakeven point?

#### Customer

- Who are the customers (private/organization)?
- Customer concentration & power?
- Distribution channel preference / customer segment
- What products do they buy today?
- How much do they pay?

#### Entry Strategy

##### Timing

- Is there first mover advantage or should we wait for competitors first?
- Speed of market entry: test a region first or enter whole at once?

##### Type

- Export own products
- Joint venture or partnership with established competitor
- Acquisition of competitors

**The Market Entry Framework can be customized to also be used in a variety of other case settings**

**General Information:** The market entry Framework is used to analyze a new industry, market and business ideas

**Exemplary Usage:** Market entry, Strategy, Industry analysis

# Case Frameworks (8/9)

## Revenue Growth and Competitive Response

### REVENUE GROWTH

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#### Increase of # sold (more difficult)

- Expand into new markets
- Increase / diversify product line (watch out for product cannibalization!)
- Increase distribution channels
- Invest in marketing campaign
- Referral programs / loyalty programs
- Partnerships with existing competitors / stores around the company
- Acquire competitors in same / different industry

#### Increase of price (easier)

- Bundle products or cross-sell
- Price discounts
- Consider price elasticity

### COMPETITIVE RESPONSE

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- Acquire or merge with competitors in same / different industry
- Hire personnel from competitor (e.g. management)
- Copy competitor
- Partner with competitor
- Invest in marketing campaign

**The answers to revenue or competitive response are only exemplary** and can be expanded by a variety of different answers



# Case Frameworks (9/9)

## Pricing

### PRICING FRAMEWORKS

#### Overall strategy

- What is the objective of our pricing strategy (e.g., win market share? High profitability?)
- Are there products we can cross-sell / upsell that we should take into account when pricing this specific product (e.g., upsell color options when selling a car)?
- Can we sell different versions of the product at different price points (e.g., iPhone 8, iPhone 8 Plus)?
- **Consider the strategic fit of the product when pricing a new product**

#### 1) Cost-based approach

- **What are the variable costs for the product** you are pricing?
- **What are the fixed costs** for the company and how much of the fixed costs should be allocated to the product you are working on vs. other products?
- How many units of that product are expected to sell yearly?
- **What markup do we want to achieve** / what is usual in the industry for that product?

Example: Pricing of a Laptop


Variable Costs = €400

Fixed Costs allocated = €100

Markup Rate = 20%

→  $(€400 + €100) * (1 + 20\%)$

→ **Final Price of 600€**

**The cost-based approach does not take into account customer preferences, only internal data and targets** 

#### 2) Value-based approach

- What segment of the market are we planning to sell the product to (e.g., luxury)?
- **What is the next best alternative to the product we are offering** (e.g., other similar luxury bag)?
- **What features make our product better than the next best alternative** (e.g., unique because only luxury nylon bag, Prada brand, etc.)?
- How much are people ready to pay for these additional features?

#### 3) Market-based / competitor approach

- What other products can customers buy instead of ours (e.g., Lyft if you are Uber)?
- **How much are our competitors charging for these products** (e.g., \$1 / mile)?
- Can we afford to price at the same level of than our competitors?
- For how long (e.g., we have \$100m in funding)?

**General Information:** The pricing framework is used to determine the optimal price for newly developed products

**Exemplary Usage:** Strategy, Business Development, Competitive Response



# Personal Fit

# Personal Fit Questions (1/2)

## Exemplary questions for personal fit interviews

**Tip: Highlight each question in a different color according to their difficulty to you** (e.g., Blue = Easy, Orange = Medium, Red = Hard)

### GENERAL

- Briefly introduce yourself
- Guide me through your CV
- Why consulting?
- Why *[company name]*? What are the values of *[company name]*?
- Why did you study at Frankfurt School? Why business studies?
- Why should we hire you?
- What was your favorite module / least popular module at university?
- How do you feel about spending a lot of time "on the road"?
- What qualities should a consultant possess?
- What do you think are the typical tasks of a consultant?
- What are your geographical and industrial preferences?
- If we offered you the job now, would you accept it?
- If you received several offers, how would you decide which one to accept?

### PERSONALITY

- What are your strengths and weaknesses?
- Have you ever received feedback on weaknesses?
- Which feedback has helped you
- Describe yourself in 3 words, 3 sentences, 1 headline / How would your friends describe you?
- What kind of animal would you be
- Which character trait would you like to have?
- Tell a story that's not in the CV
- What was the most important event in your life?
- What has been the most difficult thing you have had to do in your life so far?
- What does success mean to you? How do you know that you are successful?
- When is personal success particularly important for you?
- Which performance are you particularly proud of?
- What do you like to do most? What is your favourite hobby?
- Where do you see yourself in five years? Where in 10 years?
- What kind of work do you do best?
- Give us 3 examples of goals that you have set and achieved
- Give us 3 examples of goals that you have set yourself and not achieved
- Are you more of a "big picture" or "detail" person?
- Which company do you admire?
- What is your favourite brand and why?
- Which magazines do you read? Have you read an interesting article?

## Personal Fit Questions (2/2)

### Exemplary questions for personal fit interviews

**Tip:** Highlight each question in a different color according to their difficulty to you (e.g., Blue = Easy, Orange = Medium, Red = Hard)



#### SITUATION

- Tell me about a situation in which you gave feedback to a colleague / fellow student
- Have you ever been wrong in a situation? How did you deal with it?
- Describe a hurdle in your life and how you have dealt with it
- When have you ever failed? What did you do then?
- When did you work with someone you didn't like?
- Describe a situation where you were innovative / creative
- Describe a situation where there were problems at work. How did you deal with this?
- What would be the first 3 policies that you, as CEO of a very successful company, would introduce?
- Tell me about a time when you were the leader but without authority
- What is your philosophy on leadership? What kind of leader are you?
- Give us 3 examples of leadership
- What was the most interesting problem at work that you faced?
- Tell us about a time when you and your boss had a disagreement, how did you solve it?
- Tell me about a workplace decision that had a major impact
- What decisions did you have to make on your last job?
- Tell us about a task that you did not like to do and yet did it well
- How does your behavior in a group influence the behavior of the other group members?
- Describe 3 events that have strongly influenced you in your life
- When was the last time you solved a problem?
- What motivates you?
- What motivates you outside work?
- Tell us about a time when you took a risk
- Describe a situation in which you took the initiative / had an original idea

# Personal Experience Interview (PEI) at McKinsey & Company

## Tips & Tricks to master the McKinsey interview

### WHAT IS MCKINSEY LOOKING FOR?

The Personal Experience Interview at McKinsey & Company differs very much from common Personal Fit Interviews. You will be asked to prepare **stories about yourself**. In these stories you have to prove that you possess the following three qualities. Ideally, you have prepared **two to three stories** for each dimension. The PEI will last for ~25-30 minutes, in which your story will be questioned by a McKinsey interviewer.

#### INCLUSIVE LEADERSHIP

- Rationale: Drive positive change in complex organizations with a team
- Skills needed: Lead teams successfully, foster effective teamwork to drive positive results and be fun to work with
- Typical McK question: Tell me about a time you led a team and had success together. What were the challenges and your learnings from this situation?

#### PERSONAL IMPACT

- Rationale: Work with a wide range of individuals in tough situations
- Skills needed: Show involvement and support of individuals to develop and implement sound recommendations and creative solutions
- Typical McK question: Tell me about a time when you convinced someone else of a difficult idea. What were the challenges and your learnings from this situation?

#### ENTREPRENEURIAL DRIVE

- Rationale: Innovative and driven by nature, always aiming for high goals
- Skills needed: Persistence, Endurance, creativity as well as outstanding energy and determination to reach difficult targets
- Typical McK question: Describe a situation in which you set yourself a high goal and how you managed to achieve this.

### STORY TELLING METHOD

- Have a clear structure for telling your stories
  - Teaser: Describe the situation in ~30 seconds
  - Situation: Detailed description of the situation (~2-3 min.)
  - Task / Action: What was your task and what were challenges that you had to manage? (~5 min.)
  - Result: What was the result of the situation? (~2 min)
  - Learnings & Improvement: What did you learn or could have done better? (~2-3 min.)

- Expect in-detail questions to check the authenticity of your stories (e.g., “Tell me the names of your team members“, „How did you feel in this situation“, „When did this happen“, etc.)
- Focus on your own contribution (use „I“, not „We“)
- Prepare yourself by telling your stories to other persons
- **Remember: the PEI is focused on HOW you behaved and not on the concrete results!**

# Brain teaser

# Brain teaser (1/2)

## Tackling a mental challenge/Solving a mental puzzle

### INTRODUCTION

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#### Definition

- A brain teaser is a form of puzzle you are required to solve without further aid in an interview
- Usually brain teasers take up a small amount of time and include little information to process
- Brain teasers can be incorporated into comprehensive cases, taking on very different shapes

#### Purpose

- Interviewers aim to test your analytical skill but also your level of confidence and behavior under time pressure
- Depending on the kind of brain teaser, you are not meant to come up with a correct number but a logically concluded solution

### APPROACH

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#### Preparation

- The nature of preparation largely depends on the type of brain teaser asked, you are **not able to apply a general framework** and thus cannot prepare in detail
- Generally, simple math concepts and conversion rates should be familiar to you
- Try to increase your speed using math tricks and mental math exercises
- Practice different types of brain teasers to not be surprised during the interview
- The method on the right-hand side helps you to structure your solving approach

#### Method

- Brain teasers are used as a tool to “shock” you with a seemingly impossible task
- Stay calm and think about the goal and how you can break the question down to the first assumption
- Make sure to communicate your thoughts with the interviewers and guide them through your thought process
- Depending on the type of brain teaser, you can make use of structuring principles such as an issue tree
- Present your answer in a short concluding sentence

Be aware that **brain teasers do not test your skills comprehensively**. It is broadly debated whether brain teasers are an appropriate tool to assess interviewees. Make sure to **prioritize practicing cases as they are more certain to appear within an interview** in the consulting industry



# Brain teaser (2/2)

## Common types and examples

### TYPES

#### Mystery

##### Characteristics

- Unfortunately, the classical brainteasers come with a twist – a mystery – to be solved by you
- Spend close attention to the question and make sure you understand the information given
- Your performance hugely depends on whether you get the catch or not

##### Example

- Brainteaser: A prince is being punished for his inappropriate behavior and is asked to do the following to survive: Being blindfolded, he receives 12 coins with a “head” and “number” side. 6 of the coins he receives show “head” and the remaining 6 coins show “number”. He is required to organize the coins into 2 piles that both contain an equal amount of coins displaying “heads”. He is not able to identify the side of the coin with his hands. How can he be sure to survive?

- Solution
- The prince will survive if he divides the 12 coins into two piles of 6 coins and then turns all coins of one of the piles around.
  - Dividing into two same-sized piles ensures that the same amount of “heads” displayed in one pile corresponds the amount of “number” in the other pile.

#### Estimation

- Allocate different papers to different parts of the case
- Usually, papers are used horizontally

##### Example

- How many smarties fit into a smart?
- How heavy is Manhattan?
- How many cats are in Germany?

#### Conversion

##### Characteristics

- Different units are given and must be converted into another unit
- Often related to time zones, currencies, units of measurements

##### Example

- How many liters of toothpaste are needed annually in Germany?
- How many square meters of the Black Forest would have to be deforested to cover all households in Munich with parquet flooring?

### PRACTICE POOL

- <https://icebreakerideas.com/brain-teasers/>
- [https://www.e-fellows.net/Karriere/Bewerbung/Vorstellungsgespraech-und-Assessment-Center/Brainteaser-fuer-das-Bewerbungsgespraech/\(page\)/all](https://www.e-fellows.net/Karriere/Bewerbung/Vorstellungsgespraech-und-Assessment-Center/Brainteaser-fuer-das-Bewerbungsgespraech/(page)/all)
- <https://www.consulting-life.de/brainteaser-beispiele-nuetzliche-quellen-fuer-deine-optimalen-vorbereitung/>

#### Pro tip:

Make sure to familiarize yourself with brainteasers when applying for being a member at FS Student Consulting GmbH. We use them to see how you would approach a specific problem, so make sure to involve the interviewer in your thoughts.



# Cases



# What is a consulting case and why do management consultancies use them in their interviewing process?

**Consulting cases are a crucial part of any management consulting interview.** The purpose of a consulting case is to test the candidate's **ability to break down complex situations** into their single components, **think critically** about a problem and **communicate the results and key insights in a structured fashion.**

Management consultancies use either the interviewer-led, or the candidate-led case style, which differ as follows:

- Interviewer-led case: A structured case, in which the interviewer lies out the initial scenario and guides the interviewee through a set of pre-defined questions. Thus, most interviewees perceive these cases as easier to solve. This type of interviews is mostly found at McKinsey & Company.
- Candidate-led case: A type of case, in which the interviewer lies out the initial situation, but only provides little guidance to the interviewee afterwards, as the candidate is supposed to lead the case by asking the right questions and driving the case forward. This type of interviews is mostly found at all companies outside McKinsey & Company.

**Within this Case Book, we have created 15 cases, ranging from interviewer-led to candidate-led cases, from Consumer Goods to the Energy industry, and from **beginners to advanced**.** We are sure that you can find a case to crack, regardless of your current case knowledge!

# CASES

#	Title	Industry	Difficulty	Quantitative	Qualitative	Type	Page
1	Drugstore CWS	Consumer Goods	Medium-low	←————●————→	←————●————→	Interviewer-led	35
2	Bubbly Beer & Co.	Food & Beverages	Medium	←————●————→	←————●————→	Interviewer-led	39
3	Southside & Co.	Travel & Tourism	Medium	←————●————→	←————●————→	Interviewer-led	43
4	Recession Restructuring	Overarching	Medium-high	←————●————→	←————●————→	Interviewer-led	47
5	Guitar Gustavo & Co.	Music & Leisure	Medium-high	←————●————→	←————●————→	Interviewer-led	51
6	Wind Turbines & Co.	Energy	High	←————●————→	←————●————→	Interviewer-led	55
7	Fashionista & Co.	Consumer Goods	High	←————●————→	←————●————→	Interviewer-led	59
8	University Video Conferencing	Education	High	←————●————→	←————●————→	Interviewer-led	63
9	Pizzeria Corona	Food & Beverages	Medium-low	←————●————→	←————●————→	Candidate-led	67
10	High-Tech Mirror	Technology	Medium	←————●————→	←————●————→	Candidate-led	69
11	Business Snack	Food & Beverages	Medium	←————●————→	←————●————→	Candidate-led	71
12	Airport Cab	Traffic & Transport	Medium	←————●————→	←————●————→	Candidate-led	73
13	Sustainametics	Consumer Goods	Medium	←————●————→	←————●————→	Candidate-led	76
14	University Cafeteria	Food & Beverages	Medium	←————●————→	←————●————→	Candidate-led	80
15	Germany's Electric Mobility	Automotive	Medium-high	←————●————→	←————●————→	Candidate-led	85

# Case 1: Drugstore CWS (1/4)

## Introduction

### Case Information

Industry: Consumer goods

Difficulty: Medium-low

Case format: Strategy, Pricing

## PROBLEM STATEMENT

Our client is CWS, a local drug store company selling pharmacy and hygiene products. CWS has been struggling in the last years and wants to increase revenue in the upcoming months. To achieve this, they are looking into implementing a 20% price increase on one of their products in their shampoo product portfolio. Since CWS's customers are very loyal, the company is confident that this price increase will boost revenue and ideally attract new customers.

## BACKGROUND INFORMATION (provide only if requested)

### Market & competition:

- Within the area, there are 3 more drugstores. CWS has a market share of ~30%. The remaining 70% are spread evenly across the 3 competitors.
- To ensure competition, price increases have to be made public 1 month before implementation

### Customers:

- Strong loyalty to both the CWS drug store and their products.

### Products:

- CWS's shampoo portfolio consists of 4 shampoos, which differ in quality and are targeted towards a wide range of consumers

### Company:

- The company has a current revenue of 10.5m USD in their Shampoo product portfolio. They want to increase revenue by 10%

## QUICK SOLUTION

- **CWS should increase the price of Shampoo 4 by 20%**
- **Through this, they would increase revenue by 1.3m USD and exceed management targets**

# Case 1: Drugstore CWS (2/4)

## Analysis

### QUESTION 1: What factors should CWS consider before implementing a price increase?

---

*Suggested approach:*

#### **Qualitative factors:**

- Product cannibalization: increasing the price of a product in a portfolio can lead customers to buy other, cheaper products. This can have a potential negative effect on CWS profit margin
- Customer target: a price increase can potentially target more wealthier customers, meaning new customer segments, expectations and competition
- Internal capabilities: do we know the process linked with price increases and can we handle this internally (e.g. IT & systems, accounting, legal)

#### **Quantitative factors:**

- Price elasticity: an increase in prices can easily scare customers away and make them move to the competition
- Financial impact: will the price increase result in a revenue increase of 10%, as expected by management to follow through with this decision?

### QUESTION 2: Which stakeholders should be thought of when looking into a price increase?

---

*Suggested approach:*

#### **Internal:**

- C-level management
- Internal sales force
- Retail employees
- Customer service
- Accounting & legal

#### **External:**

- Potential company owners
- External sales force
- Suppliers
- Distributors

# Case 1: Drugstore CWS (3/4)

## Analysis

**QUESTION 3:** When looking into CWS' product portfolio, which product would you increase in price and why?

*Suggested approach:*

– EXHIBIT 1 –

- Shampoo 4 has a solid customer base and the lowest price elasticity → **Increase price of Shampoo 4**
- *Note: The candidate should not calculate the additional/lost revenue but should estimate the product rapidly*
- *Note: The candidate should be able to walk the interviewer through the table in a structured way and come to a conclusion with the proper consideration of customer base, price and price elasticity*

**QUESTION 4:** How much additional revenue can CWS generate through the 20% price increase of Shampoo 4?

*Suggested approach:*

– EXHIBIT 1 & 2 –

### 1) Calculation of current revenue

*# of customers \* price/product = current revenue*

$$1,500,000 * \$6.99 = \sim 10.5\text{m USD}$$

### 2) Calculation of new revenue considering price elasticity and lost customers

*(# of customers \* (1 – share of lost customers) \* (price/product) \* (1 + price increase)) +*

*(# of customers \* share of lost customers \* percentage of customers which still buy products within our company \* Average price/product)*

$$1,500,000 * (1 - 10\%) * \$6.99 * (1 + 20\%) = \sim 11,3\text{m USD}$$

$$1,500,000 * 10\% * 80\% * \$3.99 = \sim 0,48\text{m USD}$$

$$\underline{\sim 11.8\text{m USD}}$$

**CWS should increase the price of Shampoo 4 by 20%, since this would lead to a revenue increase of ~1.3m USD and meet management targets**

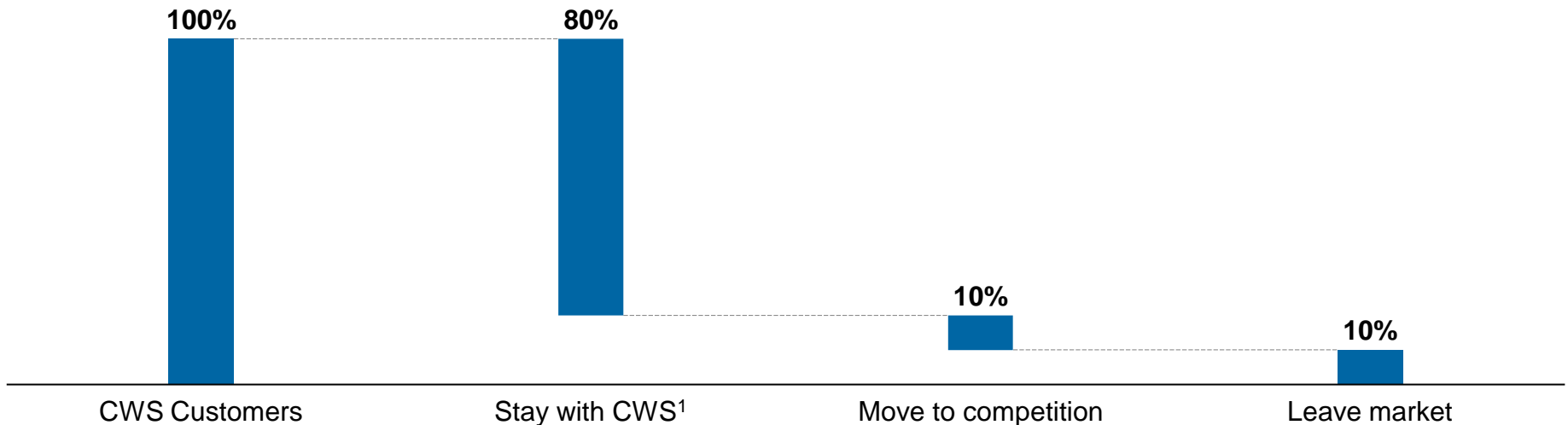
# Case 1: Drugstore CWS (4/4)

## Exhibits

**EXHIBIT 1:** Overview of CWS' shampoo product portfolio

Products	\$/product	# of customers	Price elasticity (increase by 20%)
Shampoo 1	\$3.99	#3.0m	- 20%
Shampoo 2	\$2.99	#2.5m	- 40%
Shampoo 3	\$5.99	#0.5m	- 55%
Shampoo 4	\$6.99	#1.5m	- 10%

**EXHIBIT 2:** Flow of CWS' customers after price increase



1) Buy other products within CWS for a price of \$3.99

# Case 2: Bubbly Beer & Co. (1/4)

## Introduction

### Case Information

Industry: Food & Beverages

Difficulty: Medium

Case format: Finance, DCF

### PROBLEM STATEMENT

Our client is Bubbly Beer & Co. – a new brewery focusing on the production of beers with fruity taste in Malaysia. Bubbly Beer has entered the market one year ago and is having tremendous success with their products. They are currently experiencing strong customer loyalty and are on the way on becoming the market leader in their segment in Malaysia. Due to this strong growth, their current production facility is running at full capacity. Therefore, the management of the company is thinking about investing in a new production facility in order to enable Bubbly Beer to grow more rapidly. However, they are unsure if this is their best move to grow and have asked you for your advise on how to approach this issue.

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- Malaysia has a variety of different breweries and is strong on exporting beer as well
- Within the flavoury beer market however, there are 3 main players, including Bubbly Beer & Co., which has ~80% of the market share within this segment.

#### Customer

- Bubbly's customers are very loyal and like the flavor of the new beer creation.

#### Products:

- Bubbly Beer & Co. produces flavoured beer, whose qualities are very similar to the traditional beer, however with a fruity taste to it.
- All products are sold solely through third-party retail stores (no online sales).

#### Company:

- Bubbly Beer is a newly founded company and Malaysia is the only market they are currently active in
- If the company invests in a new production facility, they want to achieve a positive Net Present Value

### QUICK SOLUTION

**Bubbly Beer & Co. should not invest in a new production plant, as it yields a Net Present Value of - €1.10m, thus not meeting expectations from the management**

## Case 2: Bubbly Beer & Co. (2/4) Analysis

### QUESTION 1: What risks do you think are linked with investing in a new production facility?

*Suggested approach (exemplary):*

#### Financial

- Breakeven risk: will the production facility yield the desired break-even?
- Financial constraints: Do I have the financial resources to invest in a new facility?
- Monetary policy risk: If I lend to invest in the production facility, will interest rates develop as expected?

#### Non-financial

- Market development: will the food & beverages market develop as expected?
- Customer expectations: will customer expectations change over time?
- New entrant: will a new product or a new company with stronger USPs push Bubbly & Co. out of the market?

### QUESTION 2: Given an investment cost of €10m, should Bubbly & Co. invest in a new production facility?

*Suggested approach:*

– EXHIBIT 1 –

#### 1) Clarify on management targets regarding the production facility

- Management wants to achieve a positive NPV. Ensure to calculate the NPV and not only sum up the net income of all the given years

#### 2) Calculation of the Net Income and Net Present Value

- Investment Costs = €10m
- Interest Rate = 5%

Net Income for each year = Revenue - COGS - Operating Expenses - SG&A

$$NPV = \sum \frac{Net\ Income_t}{(1+Interest\ Rate)^t} - Investment\ Costs$$

$$NPV = \frac{-30}{(1+0,05)^1} + \frac{-45}{(1+0,05)^2} + \frac{50}{(1+0,05)^3} + \frac{15}{(1+0,05)^4} + \frac{10}{(1+0,05)^5} + \frac{20}{(1+0,05)^6} - €10m = -€1.10m$$

#### Remember:

- Do not sum up each net income figure by its own and then subtract the investment cost, but **remember to account for the discount rate and calculate the NPV**
- After the candidate has proved he can calculate the first parts of the NPV, the candidate can estimate the result



## Case 2: Bubbly Beer & Co. (3/4) Analysis

**QUESTION 3:** Given that Bubbly Beer & Co. will not invest in a new production facility, what other ways of increasing revenue would you suggest?

---

*Suggested approach (adapted Revenue Growth Framework, exemplary):*

### **Product-related**

- Increase / diversify product line (watch out for product cannibalization!)
- Bundle products or cross-sell
- Price discounts (and earn more revenue through higher volume)
- Price increase with limited-edition products (and earn more revenue with higher margins but less volume)

### **Non-product related**

- Expand into new markets
- Increase distribution channels (e.g., onboard marketplaces and D2C online sales instead of just retail-selling)
- Invest in marketing campaigns
- Introduce referral programs / loyalty programs
- Partnerships with existing competitors / stores around the company
- Acquire competitors

## Case 2: Bubbly Beer & Co. (4/4)

### Exhibits

**EXHIBIT 1:** Simplified financial indicator forecast of the production facility over time (in m EUR)

	<b>2020</b>	<b>2021E</b>	<b>2022E</b>	<b>2023E</b>	<b>2024E</b>	<b>2025E</b>
<b>Revenue</b>	100	150	250	210	250	300
<b>COGS</b>	50	90	95	100	120	145
<b>Operating Expenses</b>	50	75	65	55	80	95
<b>SG&amp;A</b>	30	30	40	40	40	40

# Case 3: Southside & Co. (1/4)

## Introduction

### Case Information

Industry: Travel & Tourism

Difficulty: Medium

Case format: Market Entry, Pricing

## PROBLEM STATEMENT

Our client is Southside, a South American tourism company which offers walking tours in the desert of Argentina. Due to increasing competition, Southside has seen a loss of customers over the last months. To counter this loss of customers, Southside is thinking about an expansion of its product portfolio and thinks about introducing whale watching tours for tourists and locals. However, the management of Southside is unsure whether they should move forward with this expansion and have asked you to support them in their decision-making process.

## BACKGROUND INFORMATION (provide only if requested)

### Market & competition:

- Within the area, there are 4 more companies offering walking tours in the desert. The market share of Southside decreased from 50% in 2018 to 15% in 2020
- There are no companies offering whale watching, even though the bay area is heavily suitable for such activities

### Customers:

- Customers are mostly tourists and occasionally some locals

### Products:

- Southside offers walking tours on each day of the week (Pricing and frequency irrelevant)

### Company:

- The company wants to break even with their investment within 1.5 years of implementation

## QUICK SOLUTION

- **Southside should implement the whale watching tours**
- **Through this, they would break even in ~130 days with a contribution margin per tour of ~€4k**

## Case 3: Southside & Co. (2/4)

### Analysis

**QUESTION 1:** What factors should Southside consider before expanding their product portfolio to whale watching?

*Suggested approach (Note: this is the adapted Market Entry Framework)*

#### Market / Competition:

- Trends in the whale watching market
- # of competitors and current market share
- Market regulation and legal requirements
- Macroeconomic factors (e.g., disposable income, buying power)

#### Company:

- Internal capabilities and knowledge
- Make or buy decision
- Financial resources

#### Customer:

- Who is your customer
- Customer preferences
- Willingness to pay
- Entry & Timing: first mover?, Build our own, partnership/JV, M&A

**QUESTION 2:** Southside sees 3 options in implementing whale watching tours: Make, Joint Venture, Acquisition. What are the advantages / disadvantages of each option and which one would you suggest?

*Suggested approach:*

#### 1) Make

- + Full control over decision-making
- + No distribution of profits
- Large financial investment
- Greatest risk

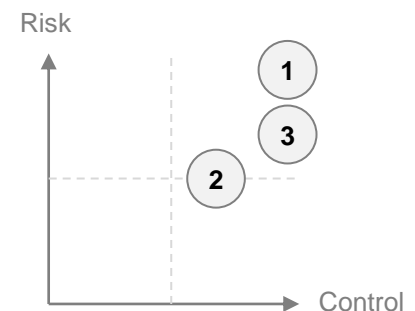
#### 2) Joint Venture

- + Split of financial investment
- + Shared risk
- Shared control and profit distribution
- Culture clash

#### 3) Merger or Acquisition

- + Rapid customer and market share acquisition
- + Available knowledge & capabilities
- Culture clash and post-merger integration

*Suggested graphical approach:*



## Case 3: Southside & Co. (3/4)

### Analysis

**QUESTION 3:** Southside has decided to implement the whale watching tours on their own. With the given investment and ongoing costs, they would like to know when they are going to break even.

*Suggested approach:*

– EXHIBIT 1 –

#### 1) Calculation of investment costs:

Ship costs (depreciation)	€10k * 3 ships = €30k
Captain salary	€50k * 3 captains = €150k
Guide salary	€35k * 2 guides = €70k
Other costs	€5k
<b>Total investment costs</b>	<b>€255k</b>

#### 2) Calculation of ongoing costs per tour:

Ship maintenance	€2k
Fuel costs	€30k * 60% = €18k
Other costs	€30k * 20% = €6k
<b>Total ongoing costs</b>	<b>€26k</b>
<b>Contribution margin / tour</b>	<b>€30k – €26k = €4k</b>

#### 3) Calculation of breakeven time horizon:

Total investment costs / contribution margin per tour = breakeven in # of tours

Breakeven in # of tours \* days/tour = breakeven in # of days

€255k / €4k = 63.75 tours to break even

→ ~65 tours \* 2 tours/day = **~130 days to break even**

**Southside should move forward in implementing the whale watching tours since they deliver a break even of ~4 months, which clearly exceeds expectations from the management**

# Case 3: Southside & Co. (4/4)

## Exhibits

### EXHIBIT 1: Investment and ongoing costs for Southside's whale watching tours

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#### General Information:

- 5 h / tour
- 2 tours / day
- 3 Ships
- 3 Captains
- 2 Guides
- 50 customer / tour
- €30k / tour Revenue

#### Investment Costs:

- €100k / Ship (10Y Depreciation)
- Captain salary: €50k
- Guide salary: €35k
- €5k other fixed costs

#### Ongoing Costs:

- €2k Ship maintainance (per Ship and per Tour)
- Fuel costs → 60% of Revenue
- Other costs → 20% of Revenue

# Case 4: Recession Restructuring (1/4)

## Introduction

### Case Information

Industry: Overarching

Difficulty: Medium-high

Case format: Restructuring

### PROBLEM STATEMENT

Imagine the German economy to be in a fairly stable situation. You observe three types of businesses: a manufacturer, a personnel service provider and a retailer. The revenue generated in 2019 is \$500,000,000 for each company. How does a realistic income statement and EBIT for each of the companies look like?

Now assume that a strong recession hits Germany and affects all three businesses, resulting in a revenue decrease of 50%. Which income statement changes do you expect in which company?

If you had sufficient capital to invest into one of these companies, which company would you choose and why?

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- The market is currently stable, no important trends to take into account
- No information on competitors needed, a regular business in this industry is assumed

#### Balance Sheet:

*If the candidate struggles to imagine the types of businesses, support with crucial distinctions between the three companies*

- The manufacturer has a huge production site and less human personnel
- The personal service provider rents the office and lives off its employee's performance
- The retailer possesses a significant inventory level and little human personnel

#### Company:

- No information on the companys' former financial statements or performance.

### QUICK SOLUTION

**Comparing EBIT for all three businesses shows that the manufacturer suffers the most from the crisis while the personnel service provider is least affected. Given sufficient capital and reasonable assumptions, I would invest in the personnel service provider.**

This open-framed case aims to test **accounting knowledge beyond standard journal entries** in three steps. The candidate is required to quickly come up with **reasonable numbers and assumptions**.

# Case 4: Recession Restructuring (2/4)

## Analysis

### STEP 1: Potential Income statement for each company in a stable economy

You should remember the basic structure of an income statement and identify COGS, SG&A (due to personnel expenses), R&D and depreciation as the most crucial line items. The following are potential assumptions (% compared to revenue):

- Personnel Service Provider: 5% COGS, 80% personnel, 5% SG&A and very little depreciation (2%)
- Manufacturer: Higher COGS (roughly 25% of revenue), lower personnel expenditures (15%), higher investment into R&D and high depreciation due to usage of machines (40%)
- Retailer: Highest COGS (typical reselling), similar personnel expenditures as manufacturer, little investment into R&D and medium depreciation (20%)

#### INCOME STATEMENT Personnel Service Provider

Revenue	\$500,000,000
- COGS	\$25,000,000
<b>= Gross Margin</b>	<b>\$475,000,000</b>
- Operating expenses	
- SG&A	\$375,000,000
- R&D	\$5,000,000
<b>= EBITDA</b>	<b>\$95,000,000</b>
+/- Other income and expenses (e.g. - depreciation)	\$10,000,000
<b>= EBIT</b>	<b>\$85,000,000</b>

#### INCOME STATEMENT Manufacturer

Revenue	\$500,000,000
- COGS	\$125,000,000
<b>= Gross Margin</b>	<b>\$375,000,000</b>
- Operating expenses	
- SG&A	\$75,000,000
- R&D	\$50,000,000
<b>= EBITDA</b>	<b>\$250,000,000</b>
+/- Other income and expenses (e.g. - depreciation)	\$200,000,000
<b>= EBIT</b>	<b>\$50,000,000</b>

#### INCOME STATEMENT Retailer

Revenue	\$500,000,000
- COGS	\$250,000,000
<b>= Gross Margin</b>	<b>\$250,000,000</b>
- Operating expenses	
- SG&A	\$75,000,000
- R&D	\$1,000,000
<b>= EBITDA</b>	<b>\$174,000,000</b>
+/- Other income and expenses (e.g. - depreciation)	\$100,000,000
<b>= EBIT</b>	<b>\$74,000,000</b>



# Case 4: Recession Restructuring (3/4)

## Analysis

### STEP 2: Potential Income statement for each company in a recession

Consider the change in revenue, and go through each position and explain your expected changes and reasons step by step.

- **COGS:** While a personal service provider can easily adapt costs of service delivered (-50%), the manufacturer and retailer have more difficulties to quickly change the cost of material or products purchased for reselling (-40%).
- **SG&A:** Personnel costs are the most significant expense of a personal service provider which can be reduced by dismissing employees (-40%) which are not needed as half of the services/goods could not be sold. This is also applicable for the retailer (-30%) whereas the staff entailed in the manufacturing company is crucial to complete the products at all (-10%).
- **R&D:** Depends on type of recession, but usually a huge decrease is entailed whereas depreciation stays the same for all.

#### INCOME STATEMENT Personnel Service Provider

Revenue	\$250,000,000
- COGS	\$12,500,000
<b>= Gross Margin</b>	<b>\$237,500,000</b>
- Operating expenses	
- SG&A	\$225,000,000
- R&D	\$500,000
<b>= EBITDA</b>	<b>\$12,000,000</b>
+/- Other income and expenses (e.g. - depreciation)	\$10,000,000
<b>= EBIT</b>	<b>\$2,000,000</b>

#### INCOME STATEMENT Manufacturer

Revenue	\$250,000,000
- COGS	\$75,000,000
<b>= Gross Margin</b>	<b>\$175,000,000</b>
- Operating expenses	
- SG&A	\$67,500,000
- R&D	\$5,000,000
<b>= EBITDA</b>	<b>\$102,500,000</b>
+/- Other income and expenses (e.g. - depreciation)	\$200,000,000
<b>= EBIT</b>	<b>\$(97,500,000)</b>

#### INCOME STATEMENT Retailer

Revenue	\$250,000,000
- COGS	\$150,000,000
<b>= Gross Margin</b>	<b>\$100,000,000</b>
- Operating expenses	
- SG&A	\$52,500,000
- R&D	\$100,000
<b>= EBITDA</b>	<b>\$47,400,000</b>
+/- Other income and expenses (e.g. - depreciation)	\$100,000,000
<b>= EBIT</b>	<b>\$(52,600,000)</b>

# Case 4: Recession Restructuring (4/4)

## Analysis

Own investment preference

### STEP 3: Own investment preference

	Advantages	Disadvantages
<b>Retailer</b>	<ul style="list-style-type: none"> <li>• Low R&amp;D expenses</li> </ul>	<ul style="list-style-type: none"> <li>• Little control over material cost</li> <li>• High COGS/revenue ratio</li> </ul>
<b>Manufacturer</b>	<ul style="list-style-type: none"> <li>• High control over material purchased</li> </ul>	<ul style="list-style-type: none"> <li>• Long-term liabilities &amp; Inventory</li> <li>• R&amp;D expenses remain</li> <li>• Least adaptive</li> </ul>
<b>Personnel Service Provider</b>	<ul style="list-style-type: none"> <li>• Low depreciation</li> <li>• Main cost driver (personnel) can be altered</li> </ul>	<ul style="list-style-type: none"> <li>• Dismissing the firm's core asset entails consequences</li> </ul>

#### Limitations & potential result deviations:

##### **Type of recession:**

- Depending on recession, a specific manufacturer might be even more profitable
- Example: Toilet paper during COVID-19 lockdown experienced an increased demand

##### **Generalization:**

- All used estimations are based on general assumptions for businesses typical to the industries
- Example: Innovative retailers who focus on an omnichannel distribution might also show high R&D expenditures

##### **Further implications:**

- Some measures entail important consequences to consider
- Example: Dismissing personal negatively impacts both employee cohesion and firm's reputation

# Case 5: Guitar Gustavo & Co. (1/4)

## Introduction

### Case Information

Industry: Music & Leisure

Difficulty: Medium-high

Case format: Logistics, Strategy

## PROBLEM STATEMENT

Our client is Guitar Gustavo & Co., a company producing guitars for the Spanish market and selling them solely through their online website. The company has been around for a long time and is the market leader in Spain when it comes to the sales of guitars online. However, customer satisfaction has been decreasing in the last months. The management of the company is unsure what is driving this issue and has asked you to help them out.

## BACKGROUND INFORMATION (provide only if requested)

### Market & competition:

- Guitar Gustavo & Co. is the market leader in the sales of online instruments
- The demand for guitars has been increasing in the last years and the trend is shifting from retail to online sales

### Customer

- Consumers are increasingly gaining trust in online purchases

### Products:

- All guitars from Guitar Gustavo & Co. come with a 100-day free trial period for customers to test out the product and a 10-year warranty
- The guitars produced by Guitar Gustavo & Co. are of high quality but very fragile in delivery

### Company:

- The company has been doing great financially and enjoys a great reputation in the Spanish market
- The company expects to sell ~500k guitars in the upcoming year (2021)

## QUICK SOLUTION

**Guitar Gustavo & Co. faces decreasing customer satisfaction due to the arrival of damaged products, mainly driven through an uncareful shipment from GER-ESP. Guitar Gustavo & Co. can reach an additional profit of €17.5m if they shift their entire production to Spain.**

## Case 5: Guitar Gustavo & Co. (2/4)

### Analysis

**QUESTION 1:** What could be the main drivers that caused the decrease in customer satisfaction in the last months?

*Suggested approach (exemplary):*

Product-related:

- Bad packaging and instructions
- Unfriendly customer service
- **Damaged product at arrival**

Non-product-related

- Competition came up with better, more innovative products
- Long delivery times after purchase
- No ability to schedule delivery time
- Unfriendly mail man
- No warranty or trial time

**QUESTION 2:** How high is the probability that a product arrives damaged at the customers' address?

*Suggested approach:*

– EXHIBIT 1 –

1) Calculate damage probability for national and international production

$$\text{National} = 0.01 * 0.03 = 0.0003 = 0.03\%$$

$$\text{International} = 0.05 * 0.03 = 0.0015 = 0.15\%$$

2) Calculate total, aggregated damage probability based on the weight of each production facility

$$\text{Total damage probability} = 0.4 * 0.0003 + 0.6 * 0.0015 = 0.00102 = 0.102\%$$

International production is driving the spike in damaged products. However, the last-mile delivery of the Spanish warehouse to the client could also be enhanced

## Case 5: Guitar Gustavo & Co. (3/4)

### Analysis

**QUESTION 3:** What could Guitar Gustavo & Co. do to reduce the amount of damaged products shipped to customers?

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*Suggested approach:*

1. Revise relationship with last-mile delivery supplier in Spain, since the probability of damage is high
2. Revise the logistics process when shipping products from Spain to Germany, since 5% damage probability
3. Shift production to Spain only, while ensuring that quality standards are being met and the factory does not run at >100% capacity

**QUESTION 4:** How much additional profit could Guitar Gustavo & Co. make in 2021 if they produce their guitars only in Spain?

---

*Suggested approach:*

– EXHIBIT 2 –

- 1) Calculate the contribution margin / profit for national and international production

National =  $599 - 150 - 100 - 15 = €335$

International =  $599 - 200 - 150 - 50 = €300$

- 2) Calculate the difference to find out additional profits

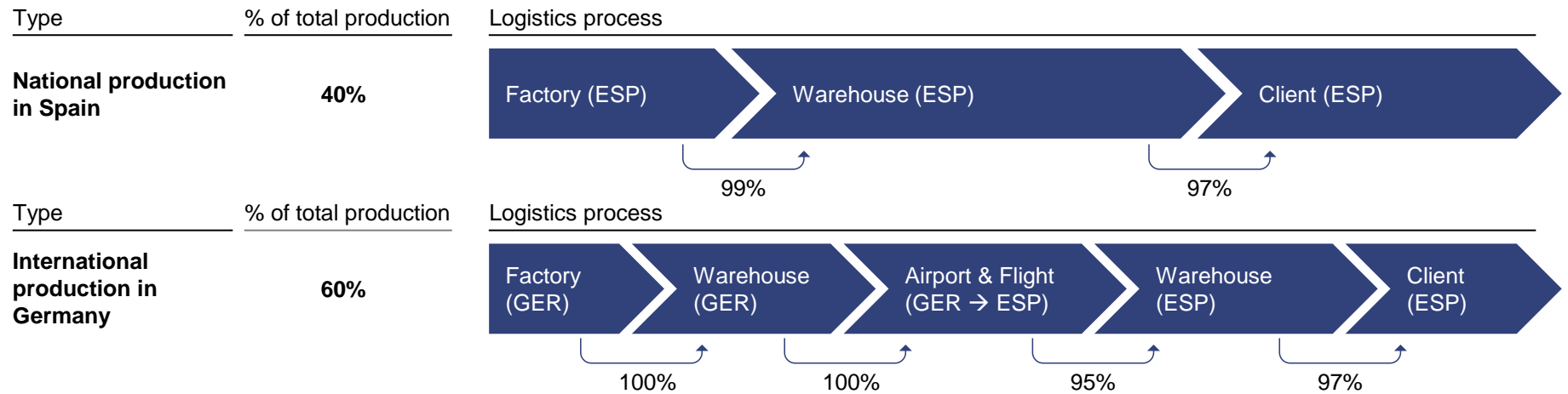
Difference in contribution margin between national and int'l production =  $€335 - €300 = €35$

**Total additional profit in 2021 = 500,000 units sold \* €35 = €17.5m**

# Case 5: Guitar Gustavo & Co. (4/4)

## Exhibits

**EXHIBIT 1: Simplified logistics process and chances of product passing without damage to the next stage**



**EXHIBIT 2: Simplified P&L per guitar sold of national and international production (in EUR)**

National production in Spain		Int'l production in Germany	
<b>Revenue</b>	600	<b>Revenue</b>	600
<b>COGS</b>	150	<b>COGS</b>	200
<b>Operating Expenses</b>	100	<b>Operating Expenses</b>	150
<b>Delivery</b>	15	<b>Delivery</b>	50

# Case 6: Wind Turbines & Co. (1/4)

## Introduction

### Case Information

Industry: Energy & Materials

Difficulty: High

Case format: Strategy

### PROBLEM STATEMENT

Our client is Wind Turbine Company (WTC), a leading German company producing wind turbines made of steel. Until 2030, the German government wants to reach a share of renewable energy of 50% and has tasked WTC with the production of wind turbines to contribute to this target. The management of WTC is excited to have secured this deal, but is struggling to determine the amount of steel they have to purchase to produce the required amount of wind turbines. You have been asked to help WTC's management with this task.

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- No competitor, since WTC has already won the deal with the German government. We assume that all existing wind turbines have been produced by WTC.
- The current daily energy supply in Germany (2020) is 800 GWh. The expectations for 2030 are 1,000 GWh per day.

#### Products:

- A wind turbine has a capacity factor of 20%, meaning it produces energy for 20% a day
- Wind Turbines can be divided into the base and the blades (for more info see exhibits)
- We assume that 1kg of raw steel will still be the same 1kg of steel after production, i.e. WTC has no loss of the raw steel during the production process

#### Company:

- The focus should lie on determining the right amount of steel WTC has to buy. The focus should not lie on the financial side of the operation.

### QUICK SOLUTION

**WTC should produce ~120m m<sup>2</sup> of steel, as this amount delivers the required quantity to produce 36,000 wind turbines which will be required until 2030 to reach the German government targets**

## Case 6: Wind Turbines & Co. (2/4)

### Analysis

**QUESTION 1:** What opportunities and risks arise for WTC through the production of wind turbines for the German government?

*Suggested approach:*

#### Opportunities

- Market share expansion: through a deal with the government, WTC can rapidly rise to a prominent player in the wind turbine market
- Large financial resources inflow: This large deal brings in liquidity to the company, which WTC can use for internal development or M&A activities

#### Risks

- Uncertain energy supply: the government targets may not be met or will not focus on wind anymore, leading to the redundancy of the wind turbines
- Heavy maintenance: wind turbines require heavy maintenance, building many at once may exceed internal capacities

**QUESTION 2:** How much wind turbines would be needed in 2030 to meet the targeted power supply?

*Suggested approach:*

– EXHIBIT 1 –

#### 1) Calculation of the current amount of wind turbines in 2020

= Total daily wind energy supply (in GWh) \* 1,000 / Total energy capacity of one wind turbine (in MWh)

= (Amount of energy supply \* Share of renewable energy \* Share of wind energy) / (24h per day \* Capacity factor)

= (800 GWh \* 30% \* 50% \* 1,000) / (24 MWh \* 20%) = 120,000 / 5 = **24,000 Wind Turbines currently in use as of 2020**

#### 2) Calculation of the future amount of wind turbines in 2030 (same calculation as above, but with adapted numbers for 2030)

= (1,000 GWh \* 50% \* 60% \* 1,000) / (24 MWh \* 20%)

= 300,000 / 5 = **60,000 Wind Turbines will be in use in 2030**

#### 3) Calculation of the difference in Wind Turbines

= Needed wind turbines in 2030 – current wind turbines in 2020

= 60,000 – 24,000 = **36,000 wind turbines need to be produced**

#### Remember:

- The capacity factor for the wind turbines is 20%, i.e. each wind turbine will supply ~5 MW per day (24MWh \* 20%)
- 1 GWh = 1,000 MWh



## Case 6: Wind Turbines & Co. (3/4)

### Analysis

**QUESTION 3:** How much steel would WTC have to produce to meet their 2030 targets?

*Suggested approach:*

– EXHIBIT 2 –

#### 1) General equation

= Wind Turbines needed to be produced \* amount of steel per wind turbine

#### 2) Calculation of amount of steel needed per wind turbine

= Amount of steel needed for the base + amount of steel needed for the blades (3 blades per wind turbine)

=  $(\pi * \text{radius} * \text{height}) + (\text{base} * \text{height} * 0,5) * 3$

=  $(\pi * 10 * 100) + (5 * 20 * 0,5 * 3)$

=  $\sim 3,150 + 150$

=  **$\sim 3,300\text{m}^2$  of steel needed for each wind turbine**

#### 3) Calculation of amount of steel needed for all wind turbines in 2030

= 36,000 wind turbines \*  $3,500\text{m}^2$

=  **$\sim 120$  million  $\text{m}^2$  of steel**

**WTC should produce  $\sim 120\text{m}^2$  of steel, as this amount delivers the required quantity to produce 36,000 wind turbines which will be required until 2030 to reach the German government targets**

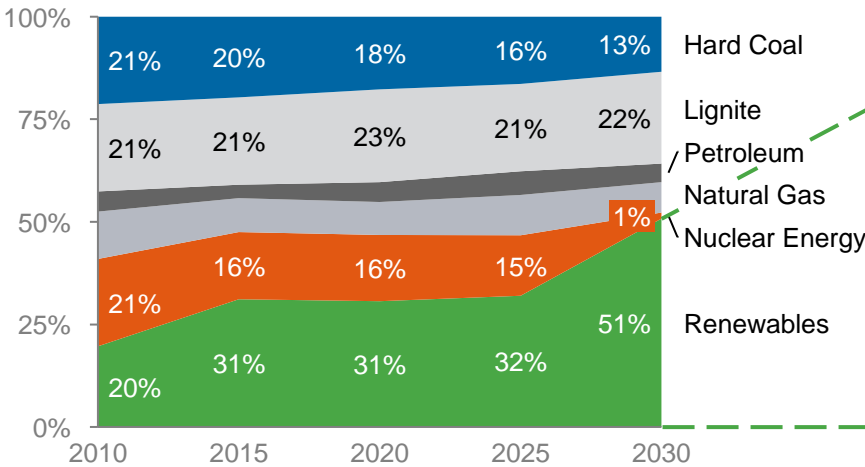
# Case 6: Wind Turbines & Co. (4/4)

## Exhibits

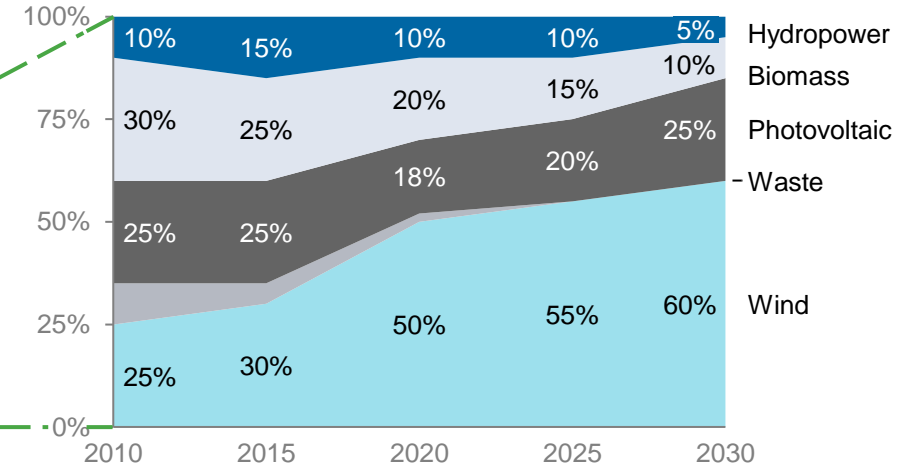
– INDICATIVE DATA –

### EXHIBIT 1: German energy supply over time, deep dive on renewables

Daily base of Germany's energy supply by power source (in %)



Daily base of Germany's renewables energy supply by power source (in %)



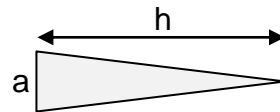
### EXHIBIT 2: Measurements of WTCs Wind Turbines

1) Blades

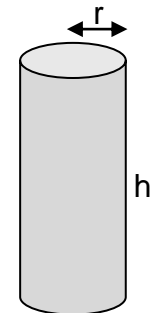


2) Base

**1) Blade:**  
Form: Triangle  
 a: 5m  
 h: 20m



**2) Base:**  
Form: Cylinder  
 h: 100m  
 r: 10m



# Case 7: Fashionista & Co. (1/4)

## Introduction

### Case Information

Industry: Consumer Goods

Difficulty: High

Case format: Strategy, Sustainability

### PROBLEM STATEMENT

Our client is Fashionista & Company, a German fashion house that sells their own clothing for the mass market. Fashionista covers the entire clothing product range and sells their products through own retail stores, third-party department stores and their own online store. In the last weeks, Fashionista has been under scrutiny as they have been criticized for having an unsustainable and environmentally-harming business model. This criticism has reached the C-suite and the CEO now wants to take a closer look at this issue and make Fashionista more sustainable. They have asked you to come up with first ideas to tackle this issue.

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- Most competitors are currently trying to improve their carbon footprint

#### Customers:

- Customers are becoming more environmentally-conscious and are looking for „fair trade“ clothing and environmentally-friendly production processes
- Less customers are buying offline (Retail & Department Store) as more customers are buying products online
- Online, customers buy more products than offline (e.g., order same product in different sizes), which leads to exponentially higher return rates in online sales

#### Products:

- Fashionista offers all kind of clothing products, all from their own brand

#### Company:

- In the past years, Fashionista has selected their suppliers based on their low price rather than their environmental contributions
- Design, fabric selection and production are outsourced, while Marketing and Sales is done in-house
- The main KPI to measure a higher sustainability is the company's carbon Footprint

### QUICK SOLUTION

- **Fashionista & Company should move to a greener supply chain by optimizing contracts with current suppliers or finding new, greener suppliers**
- **This change leads to ~2.21m t CO<sub>2</sub> savings**
- **However, financial profitability and supplier default has to be taken into account**

# Case 7: Fashionista & Co. (2/4)

## Analysis

**QUESTION 1:** What are the main factors that Fashionista & Company could look at when wanting to reduce their CO<sub>2</sub> footprint?

*Suggested approach (exemplary):*

### Internal:

- Product packaging and bundling: Less packaging material and bundling products to reduce shipping can reduce the carbon footprint
- Product return rate: Reducing the return rate, especially in online sales, can drastically reduce the carbon footprint
- Reduce number of new collections per year: Reducing the # of news collections p.a. drastically reduces labor time and can starkly contribute to a reduced carbon footprint

### External

- Revise contracts with suppliers: Switching to greener suppliers or buying fabrics from more local suppliers can enhance Fashionista's carbon footprint
- Energy consumption in retail stores: Switching to a more energy-efficient lighting / energy system can improve Fashionista's carbon footprint

If the candidate struggles, steer him towards the answer „Reducing Return Rate“ and „Revise supplier contracts“

**QUESTION 2:** The CEO wants to reach to reach >2m tons in CO<sub>2</sub> savings until Q4 2022. His team has come up with two CO<sub>2</sub> saving options, however he is unsure which one to implement.

1) Calculate the annual CO<sub>2</sub> savings from the supply chain option (*Remember that today is 31.12.2020*)

– EXHIBIT 1 & 2 –

Supply Chain Step	p.a. CO <sub>2</sub> savings	Additional p.a. CO <sub>2</sub> savings	Years to Q4 2022	Total p.a. CO <sub>2</sub> savings
Design	50 / 2Y = <u>25t CO<sub>2</sub></u>	25 * 20% = <u>5t CO<sub>2</sub></u>	2	30 * 2 = <u>60t CO<sub>2</sub></u>
Fabric collection	400 / 4Y = <u>100t CO<sub>2</sub></u>	100 * 25% = <u>25t CO<sub>2</sub></u>	2	125 * 2 = <u>250t CO<sub>2</sub></u>
Production	900 / 4.5Y = <u>200t CO<sub>2</sub></u>	200 * 40% = <u>80t CO<sub>2</sub></u>	2	280 * 2 = <u>560t CO<sub>2</sub></u>
Transport & Log.	1,000 / 2.5Y = <u>400t CO<sub>2</sub></u>	400 * 10% = <u>40t CO<sub>2</sub></u>	2	440 * 2 = <u>880t CO<sub>2</sub></u>
Marketing & Sales	400 / 2Y = <u>200t CO<sub>2</sub></u>	200 * 15% = <u>30t CO<sub>2</sub></u>	2	230 * 2 = <u>460t CO<sub>2</sub></u>

**2.21m t CO<sub>2</sub>**

## Case 7: Fashionista & Co. (3/4)

### Analysis

**QUESTION 2 (cont'd):** The CEO wants to reach to reach >2m tons in CO<sub>2</sub> savings until Q4 2022. His team has come up with two CO<sub>2</sub> saving options, however he is unsure which one to implement.

2) Calculate the annual CO<sub>2</sub> savings from the return rate option (*Remember that today is 31.12.2020*) – EXHIBIT 1 & 2 –

2.1) Calculate the total amount of CO<sub>2</sub> issued without saving measures in 2021/22 (since we are only interested until Q4 2022)  
 = # of Packages shipped p.a. \* CO<sub>2</sub> per package \* Return Rate without CO<sub>2</sub>-saving measures

<u>2021</u>	<u>2022</u>	<u>Total CO<sub>2</sub> without saving measures</u>
= 750k * 200g * 70% = <u>105m g CO<sub>2</sub></u>	= 850k * 200g * 60% = <u>102m g CO<sub>2</sub></u>	207m g CO <sub>2</sub> = <b>207k t CO<sub>2</sub></b>

2.2) Calculate the total amount of CO<sub>2</sub> issued with saving measures in 2021/22 (since we are only interested until Q4 2022)  
 = # of Packages shipped p.a. \* CO<sub>2</sub> per package \* Return Rate with CO<sub>2</sub>-saving measures

<u>2021</u>	<u>2022</u>	<u>Total CO<sub>2</sub> with saving measures</u>
= 750k * 200g * 30% = <u>45m g CO<sub>2</sub></u>	= 850k * 200g * 20% = <u>34m g CO<sub>2</sub></u>	79m g CO <sub>2</sub> = <b>79k t CO<sub>2</sub></b>

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CO<sub>2</sub> Savings = **128k t CO<sub>2</sub>**

→ The CEO should optimize the supply chain as this leads to >2m t CO<sub>2</sub> savings

**QUESTION 3:** The CEO would like to know what risks and next steps are associated with a greener supply chain.

#### Risks

- Profitability risk: Switching to a greener supply chain may decrease profitability
- Supplier default risk: Suppliers can file for bankruptcy and thus harm our supply chain
- Miscalculation risk: Wrong assumptions can lead to an inflated CO<sub>2</sub> savings forecast

#### Next Steps

- Align with Finance department: How much of our profitability are we willing to give up for a more sustainable supply chain?
- Renegotiate with suppliers / find new suppliers: Find greener suppliers or renegotiate current contracts
- Align new contracts with legal department: All new contracts should be run by the legal department to ensure compliance

# Case 7: Fashionista & Co. (4/4)

## Exhibits

**EXHIBIT 1:** Supply chain savings estimation as of 31.12.2020 if changing to greener suppliers or insourcing (in '000 tons of CO<sub>2</sub>)

	Design	Fabric collection	Production	Transport & Logistics	Marketing & Sales
<b>CO<sub>2</sub> Savings<sup>1</sup></b>	50	400	900	1,000	400
<b>Savings reached until</b>	Q4 2022	Q4 2024	Q2 2025	Q2 2023	Q4 2022
<b>Additional Savings p.a.<sup>2</sup></b>	20%	25%	40%	10%	15%

**EXHIBIT 2:** Online return rate estimation as of 31.12.2020

	2025E	2024E	2023E	2022E	2021E	2020
# of packages shipped (in '000)	1,500	1,300	1,000	850	750	700
CO <sub>2</sub> per package (in gramm CO <sub>2</sub> )	100	100	100	200	200	200
Share of CO <sub>2</sub> emission per package w/o saving measures	50%	55%	60%	60%	70%	75%
Share of CO <sub>2</sub> emission per package w/ saving measures	15%	20%	20%	20%	30%	n/a

1) Savings can be evenly distributed over the year

2) Additional Savings can be achieved through scale and are calculated as a percentage of the total annual CO<sub>2</sub> savings

# Case 8: University Video Conferencing (1/4)

## Introduction

### Case Information

Industry: Education

Difficulty: High

Case format: Digitilization

### PROBLEM STATEMENT

December 2019, the novel coronavirus breaks out. The situation develops rapidly within a very short time and the number of infected people increases rapidly every day. The first case of corona in Germany was confirmed by the Bavarian Ministry of Health at the end of January. At the moment, no one is aware of the coming scale of this situation.

The management of the Frankfurt School closely monitors current events and decides to draw up an emergency plan. One question remains unanswered: How will lectures be held from now on and how will all people at Frankfurt School collaborate with each other once the campus has to be closed?

### BACKGROUND INFORMATION (provide only if requested)

#### Frankfurt School (FS) :

- FS plans to use a video-conferencing provider.
- In addition to its students, FS has several subsidies. These subsidies have the same number of employees as the Frankfurt School without the faculty members.

#### Selection criteria for provider:

- FS is a privately run university and it must pay attention to costs, which is why the provider should be primarily low-cost.
- However, quality should not suffer and it should be ensured that every student has access to the platform.

#### Duration of online classes:

- Basically it is assumed that the whole next semester will be online. Therefore, FS's server capacity needs to be upgraded to be able to cope with the new load.

### QUICK SOLUTION

**According to Frankfurt School's requirements, Shrink is chosen.**

## Case 8: University Video Conferencing (2/4)

### Analysis

**QUESTION 1:** Assume FS has 4 providers to choose from, how should they determine the ideal video-conferencing provider?

*Suggested approach:*

#### Costs for each provider:

- How is the cost model looking like?
  - Variable/fixed costs?
  - Various types of licenses?
- Implementation cost?
- Any discounts for buying large amounts?

#### Benefits/Features of each provider:

- Max. number of participants
- Functionality: break out rooms, file-sharing, phone dial-ins, screen sharing, session recording
- Compatibility with various devices (e. g. Android/Apple)

#### Technical aspects

- How much server capacity does each provider need?
- How well does it fit to the existing IT-infrastructure? Are there further changes required?
- How do they deal with data security?

**QUESTION 2:** Taking a look at the exhibits, what do you see and which conclusions do you derive (without calculating)?

*Suggested approach:*

#### 1. Overview?

Information regarding the various video conferencing providers (different cost, features and need varying server capacity)

#### 2. Meaning?

More/Improved features seem to require more sever capacity and allow video-conferencing providers to demand higher prices

#### 3. Reasons?

Each provider may target a different customer segment; provider need to differentiate from another

#### 4. Outlook?

FS needs to prioritize features and identify the 'essential' ones; determining (maximum) budget

– EXHIBIT 1, 2 & 3 –

**Ideally, the candidate uses the tips for “Structuring exhibits” from page 6 to analyze the provided exhibits.**



## Case 8: University Video Conferencing (3/4)

### Analysis

**QUESTION 3:** Assuming FS only wants a provider who offers virtual break-out rooms, which one should they choose when their goal is to minimize costs for 6 months?

*Suggested approach:*

1. Candidate has to understand that only Shrink and Macrohard need to be considered.
2. Candidate needs additional information: how many people study/work at FS? → should make an assumption, here exemplary calculation with **2,220 students** (Bachelor and Master) and **150 faculty members (pro licenses)**, employees not considered

#### **Shrink:**

License cost students: (→incl. price reduction):

$$(1 - \text{Rounddown}(\# \text{ student licenses}/500)) * 5\% * \text{cost per license} * \# \text{ licenses}$$

$$= (1 - 4 * 5\%) * € 9.99 * 2,220 \approx € 17,760$$

License cost professors (surcharge):

$$\text{Pro surcharge} * \text{cost per license} * \# \text{ licenses (professor)}$$

$$= 125\% * € 9.99 * 150 \approx € 1,875$$

Server cost:

$$(\text{Roundup}(\# \text{ licenses (students + profs)}) / \text{server capacity}) * \text{cost per server}$$

$$= (3,000 / 1,000) * € 300 = € 900$$

Total cost:

$$\text{License cost students} + \text{license cost professors} + \text{server cost}$$

$$= € 17,760 + € 1,875 + € 900 = € 20,535$$

**QUESTION 4:** Frankfurt School is a university which lives from people interacting with each other, online-lessons hamper this. Therefore, FS is asking how students can be motivated to be more interactive during the lecture e.g. turning on the camera etc.?

*Suggested approach – all creative solutions possible:*

- Students earning points for active participation
- Including polls in lessons
- Spontaneously calling students' names who have to answer the question (after being called)
- Using Break-out session for group works, afterwards one group is coldly called out to present their results

#### **Macrohard:**

- Use formulas from left-hand side

License cost students: (→incl. price reduction):

$$= (1 - 4 * 5\%) * € 14.99 * 2,220 \approx € 26,640$$

License cost professors (surcharge):

$$125\% * € 14.99 * 150 = € 2,812.5$$

At least at this point, candidate should stop because he/she realizes that costs for Macrohard exceed Shrink's cost → choose Shrink!

**Reasonable rounding of numbers!**



# Case 8: University Video Conferencing (4/4)

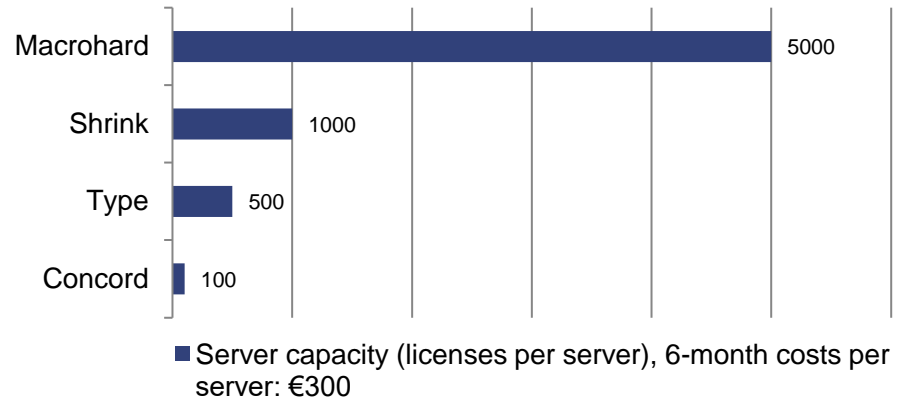
## Exhibits

**EXHIBIT 1: Provider - costs**

Provider	6-month costs (in €, per license)
Concord	4.99
Type	7.99
Shrink	9.99
Macrohard	14.99

**For all provider and prices:**

- For each full package of 500 licenses an (additional) reduction of 5% is received (only for students)
- Average surcharge of 25% for professor's pro-licenses

**EXHIBIT 2: Provider – server capacity**

**EXHIBIT 3: Provider - features**

	Concord	Type	Shrink	Macrohard
Maximum number of participants	150	300	400	unlimited
Chat function	✓	✓	✓	✓
Virtual Break-Out Rooms	x	x	✓	✓
File sharing	x	x	x	✓
Phone-Dial-In	✓	✓	✓	✓
Screen Share	✓	✓	✓	✓
Session recording	x	✓	✓	x
Compatibility	No Apple-systems	unlimited	unlimited	unlimited
Security	Normal	Normal	Password-protected	Threat protection

# Case 9: Pizzeria Corona (1/2)

## Introduction

### Case Information

Industry: Food & Beverages

Difficulty: Medium-low

Case format: Strategy, Turnaround

### PROBLEM STATEMENT

Our client is Pizzeria Corona, a local pizza place in Frankfurt selling primarily pizza and pasta. Due to the COVID-19 crisis, the Italian restaurant and take-away Pizzeria is struggling to adapt to the newly introduced regulations and to attract new customers. Until now, they only offer Pizza and Pasta to eat in the small restaurant (10 m<sup>2</sup> indoor/ 25 m<sup>2</sup> outdoor) or ordering via their own hotline. Due to less personnel and shorter opening hours, they need to be able to serve 30 seated customers at the same time to be profitable in this luxury district in Frankfurt. They have approached you to develop recommendations regarding opening up their seating area and winning new customers? Consider solutions that respect all governmental regulations.

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- Within the area, there are 2 more Italian restaurants and an ice cream parlor.
- Pizzeria Corona is known for their handmade and family-owned business for customers with a smaller budget.
- Corona Measures: Delivery Service is allowed, masks need to be worn and tables need to be 1 m apart from each other
- One desks takes up 4 m<sup>2</sup> including chairs, indoor and outdoor areas are square shaped

#### Customers:

- Strong loyalty to Pizzeria Corona
- 70% people aged below 50, 50% of which are students

#### Products:

- 10 different pizzas and 5 different pasta dishes (see Appendix)

#### Company:

- The restaurant has severely suffered from the closing period and now needs more customers to cover all the costs (30 customers on average).

### QUICK SOLUTION

- **Pizzeria Corona should not open the seating area of their restaurant, but increase their delivery service**
- **Attracting new customers through building up a social media presence, and changing their menu according to highest demand, next to increasing delivery service**

## Case 9: Pizzeria Corona (2/2)

### Analysis

#### STEP 1: Should they open the restaurant's seating areas?

---

##### *Suggested approach*

How many people can eat at the restaurant considering the new regulations (table distance of 1m)

- Indoor seating area (10 m<sup>2</sup>): Since one table takes up 4m<sup>2</sup> and a distance of 1m needs to be obtained inbetween, a maximum of 2 tables can be served.  $(2m+1m+2m) * 2m = 5m * 2m = 10m^2$
- Outdoor seating area (25 m<sup>2</sup>): Taking the side length of the total space a table takes up (2m), it can easily be computed that only 4 tables fit into this area.  $(2m+1m+2m) * (2m+1m+2m) = 5m * 5m = 25m^2$
- Assuming 4 people can sit on one table, a maximum of  $(2 \text{ tables} + 4 \text{ tables}) * 4 \text{ people/tables} = 24 \text{ people}$
- Conclusion: 30 people on average are required to be profitable, but since not enough customers can be seated ( $24 < 30$ ) it is not recommendable to open the restaurant's seating area. They are required to drastically expand their delivery service in order to be operating.

#### STEP 2: How can they attract new customers?

---

##### *Suggested approach:*

- Current state: Opening seating areas is not profitable and ordering is only possible via own hotline.
- Proposals
  - **Cooperate with ordering services like lieferando, foodora, lieferheld.** Potential customers living close by will automatically be offered their menu without marketing expenses.
  - **Create social media presence.** Time needs to be invested to create an account and upload content continuously. Still, new customers can be attracted and sustained by linking own hotline and ordering website.
  - **Changing the menu.** Especially considering the huge young proportion of customers, newly created dishes might attract new customers. However, the loyal customers still need to be offered the most demanded dishes. A thorough analysis of which dishes are actually ordered might help to reduce the menu to profitmaking dishes and add a few new ones.

# Case 10: High-Tech Mirror (1/2)

## Introduction

**Case Information**  
Industry: Technology  
Difficulty: Medium  
Case format: Pricing

### PROBLEM STATEMENT

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A close friend of yours is currently developing a new device. The "Wonder Mirror" is a mirror that is displaying information such as weather forecasts, messages and e-mails in addition to serving as a regular mirror. She is asking you for advice on how to price this high-quality device for the German market. Assume that this is the very first product of its kind and there is no further information on development or production costs.

### BACKGROUND INFORMATION (provide only if requested)

---

#### Market & competition:

- No competitor, first product of its kind worldwide.
- No information of prices in other markets.

#### Products:

- Size of product: One size, 50cmx30cm
- Features: Touchscreen on a mirror surface, cannot play music.
- Degree of customization: Choice of displayed content and size.
- Versions: Only one version is planned for now.

#### Company:

- No information on the company's cost structure or reputation.

### QUICK SOLUTION

---

**Little information given leaves few options on pricing approaches. A value-based approach is the option with the least amount of assumptions. Potential segments and alternative products should be explored to eventually conclude a suitable price.**

# Case 10: High-Tech Mirror (2/2)

## Analysis

### STEP 1: Which pricing approach is suitable?

---

*Suggested approach (Note: this is the adapted Pricing Framework)*

#### Options to explore:

- Shortly provide an overview of all three options and discuss how applicable this case is to each
- Cost-based approach: Asking for cost structure of the product leads to a dead end, assumptions can be made. Moreover, this approach does not consider customer preferences, an important dimension when pricing a new product in the technology industry. This approach is only partly suitable.
- Market-based/competitor approach: No other information about the market and competitors is available. No assumptions can be made. This approach is not suitable.
- Value-based approach: Segment can be deduced when thinking about next best alternative of the product developed. A solid basis for pricing can be deduced and after carefully considering additional value added through the wonder mirror, a fitting price should be determined

### STEP 2: What price should be set for Wonder Mirror?

---

*Suggested approach:*

#### Value-based approach (Qualitative)

- Segment: Accessible luxury, targeted at upper income class
- Next best alternative product:
  - Smartphone: similar screen features including selfie function, but not same size
  - Tablet: similar screen features, but mirror is attached to a specific place and not suitable for traveling.
  - TV: similar size, but horizontally, fixed location
  - Screen: Display of same information, fixed location
- Value added:
  - Simultaneous display of own reflection and chosen information.

#### Value-based approach (Quantative):

- Governing thought: How much are people willing to pay for these additional features?
- Price of a high-quality screen without touch function: ~€400
  - Note: High competition in industry lowers prices
- Additional features:
  - Simultaneous benefit
  - Innovative product, 0 competition
- Final price range: €800-€1000

#### Cost-based approach: Possible, but more complex

- Assumptions to be made
  - Similar products' cost structure and markup
- Price = (FC + VC) \* 1.4, e.g. (€200 + €400) \* 1.4 = €840

# Case 11: Business Snack (1/2)

## Introduction

### Case Information

Industry: Food & Beverages

Difficulty: Medium

Case format: Market Sizing

### PROBLEM STATEMENT

A local sandwich place has a shop located in the London business district which is filled with large head-offices of famous companies, a subway station & a huge public university. After a detailed customer survey, they decided to sell only one type of sandwich, which is a sliced cooked poultry with fried bacon, lettuce, tomato, mayonnaise served on toast. It is priced at £6.00. As all sandwiches are prepared after the order is placed, they are all freshly made. Therefore, no pre-packaging takes place. The shop has four employees who all serve customers. The shop only provides take-away service without seating possibilities.

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- There is not a single snack bar that offers this special type of sandwich.
- Within the business district area there is one more sandwich place that offers three types of vegan sandwiches.

#### Customers:

- Customers are mostly business people and students.

#### Product:

- The sandwich is packaged in a recyclable bag.
- The ingredients are conventional products.

#### Company:

- There is no information about the company's cost structure or reputation.

### QUICK SOLUTION

- **Based on our assumptions total estimated revenue per month is £14,880.**

# Case 11: Business Snack (2/2)

## Analysis

**QUESTION 1:** What is the total revenue this shop can generate in one month? Try to base your estimation on logical assumptions.

*Suggested approach:*

### Assumptions:

- The sandwich is served freshly and warm, so it takes about 6 minutes to prepare each sandwich in total. (preparation time of the meat included)
- Shop follows office hours operating 8 hours from 10.00 a.m. 06.00 p.m.
- Shop is closed on weekends.
- Preparation time has to be included. Therefore we assume that between 10.00 a.m and 12.00 p.m. the shop is preparing for the busy lunch-rush. In those two hours they do not sell anything.
- Lunch-rush between 12.00 p.m. – 02.00 p.m.
- Light afternoon between 02.00 p.m. – 05.00 p.m.
- Busy evening rush between 05.00 p.m. – 06.00 p.m.

### Revenue Calculation:

- Four employees are able to prepare 40 sandwiches an hour.
- They sell at 100% capacity during busy lunch-rush  $\rightarrow 40 * 2$  (hours) = 80 sandwiches
- They sell at 20% capacity during the light afternoon time segment  $\rightarrow (40 * 20\%) * 3$  (hours) = 24 sandwiches
- They sell at 50% capacity during the busy evening rush  $\rightarrow (40 * 50\%) * 1$  (hours) = 20 sandwiches
- **Total daily revenue:**  $(80 + 24 + 20) * £6 = £744$
- **Total monthly revenue:**  $£744 * 20$  days = £14,880

**Total estimated revenue is £14,880 per month.**



# Case 12: Airport Cab (1/3)

## Introduction

### Case Information

Industry: Traffic & Transport

Difficulty: Medium

Case format: Market Sizing

### PROBLEM STATEMENT

Heathrow Airport has decided to act against black-market taxi drivers and unlicensed cabs. As there have always been legal issues concerning those private taxi drivers the airport wants to commence a bidding process to assign airport taxi service to only two large operators. Consequently, they are retracting all existing permits and are issuing 2,500 new permits to the two operators mentioned before. Our client who is one of the two operators owns a 3,100 car fleet but is not serving the airport yet. As he has a spare capacity of 600 taxis he is considering applying for those 600 new permits. Nevertheless, he is not sure about getting a positive return on his investment.

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- There will be one competitor who is applying for permits.

#### Customers:

- Customers are all travelers commuting from and to the Heathrow Airport.

#### Product:

- Taxi operator has 600 taxis.
- Concerning the size of the cabs, different types of capacity are available

#### Company:

- Investment target is 20% ROI over a period of 1 year.

### QUICK SOLUTION

**Total ROI of 7.67% is lower than ROI target of 20%. Therefore, investment is not recommended.**

## Case 12: Airport Cab (2/3)

### Analysis

**QUESTION 1:** Should our client pursue applying for the permits or not? Help him to make a good decision.

*Suggested approach:*

#### Revenue Calculation:

- Daily revenue of one taxi:  $6 * £90 + 18 * £70 = £1,800$ .
- Annual revenue of 600 taxis:  $600 * 1,800 * 365 = £394,200,000.00$

#### Cost Calculation:

- Total license costs:  $£300,000 * 600$  (taxis) =  $£180,000,000.00$
- Operating costs:  $£5,500 * 600 = £3,300,000.00$
- Taxi drivers:  $50% * £394,200,000.00 = £197,100,000.00$

#### ROI Calculation:

- Investment target: 20%
- Total earnings one year:  $£394,200,000.00 - £197,100,000.00 - £3,300,000.00 = £193,800,000.00$
- ROI:  $((£193,800,000.00 - £180,000,000.00) / £180,000,000.00) * 100% = 0,076667 = 7.67%$
- Our return is an estimated 7.67% for the first year. Since license costs are not recurring it will increase to 107.67%.

**7.67% < 20% → As target cannot be reached, it is not suggested to continue with the investment.**

**Attention:** This calculation assumes a 100% utilization which is alright for simplicity's sake. A great candidate mentions the possibility to calculate demand per hour and comparing that to supply per hour. (considering daytime and night)

# Case 12: Airport Cab (3/3)

## Exhibits

### EXHIBIT 1: Details for calculation process

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#### Revenue

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- Airport has 94,000,000 passengers per year
- 20% goes into London using a taxi, remaining 80% are transit passengers.
- 50% requires a taxi between 12.00 a.m. (midnight) - 6.00 a.m.  
(sharing a taxi is taken into account here)
- The remaining 50% requires a taxi between 6.00 a.m. – 12.00 a.m. (midnight)  
(sharing a taxi is taken into account here)
- Day fares are £60
- Night fares are £90
- Taxis operate 24/7 → assumption of no need for fuel, traffic jams or maintenance.
- Leaving and getting back to the airport is calculated with 60 minutes per trip.

#### Costs

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- Instead of a salary drivers get 50% of the revenue
- Operating costs: £5,500 per taxi/year
- License costs: £300,000 per taxi (one-time fee)

# Case 13: Sustainametics (1/4)

## Introduction

### Case Information

Industry: Consumer Goods

Difficulty: Medium

Case format: Digital Marketing

### PROBLEM STATEMENT

Our client Sustainametics is a German cosmetics retailer specialized on natural cosmetics (vegan and without animal experiments). Currently, Sustainametics operates 35 shops in Germany. Additionally, they launched an online-shop 5 years ago which was recently redesigned to enhance customer experience. Loyal customers become members of the SustainameticsClub, who receive monthly newsletters which contain e-coupons for this online-shop after the redesign. However, Sustainametics still faces a low number of orders from their online-shop. Which steps could they take to increase the number of orders via the online-shop?

### BACKGROUND INFORMATION (provide only if requested)

#### Client:

- Sustainametics' customers are sustainability-concerned women and men from 15 to 55 years who have a higher willingness to pay for environmental-friendly products compared to „normal“ cosmetic products.
- Sustainametics wants to analyze the customer journey in their webshop to detect potential problems.

#### Market:

- Sustainametics only operates in Germany (including the online-shop).
- Sustainametics competes with four other companies in the market for sustainable products („normal“ cosmetics are not relevant) which all offer an online-shop.

#### Products:

- Even though products are mainly standardized across all companies (with regard to features and prices), the market is highly innovative and launches new products on a regular basis.

### QUICK SOLUTION

**Receiving less orders from their webshop is a result of attracting only a low number of customers online. Thus, Sustainametics should increase traffic on the website by placing an animated display add for 20 seconds.**

# Case 13: Sustainametics (2/4)

## Introduction

### SUGGESTED SOLUTION

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1. Candidate should start analyzing reasons for a decreasing number of orders in the online shop (customer journey analysis)
  - **Attraction** of customers (How to reach a customer?)
    - Ads
    - (Retargeting)
    - Newsletter:
      - mails end up in spam folder
      - too less loyal customers
  - **User experience** on webpage (how well is the webshop designed (e.g., search function, promotions, colors)) to create willingness to buy
    - Customers are not happy about the new redesign and therefore start ordering from a competitor
      - cannot find what they are looking for
      - long loading time of website
      - competitors offer better online features than Sustainametics (e.g., online-consultations)
  - **Purchase** of desired products
    - (high) shipping cost
    - inappropriate payment methods
    - customers forget about their items in the shopping cart
2. After analyzing potential problems of the webshop, the candidate should come to the conclusion that in-depth information regarding Sustainametics' appearance in its webshop is required. If further information are requested, provide Exhibit 1.
  - **Two key findings:**
    - Sustainametics has **too little clicks** compared to its competitors (except from competitor 3, who should be therefore excluded from the following examination)
    - Sustainametics' conversion rate (CR) is very low compared to its competitors (CR = conversion / impressions)

Sustainametics:	800 / 15,000 ≈ 5.3 %		
Competitor 1:	3,400 / 45,000 ≈ 7.6%	Competitor 3:	420 / 10,000 ≈ 4.2%
Competitor 2:	2,200 / 25,000 ≈ 8.8%	Competitor 4:	3,890 / 50,000 ≈ 7.8%

# Case 13: Sustainametics (3/4)

## Introduction

### SUGGESTED SOLUTION

3. Based on the detected the problem, the candidate should derive a possible solution to help Sustainametics increase the number of clicks on its webpage as well as enhance the conversion rate.

#### Increase number of clicks on webpage:

- Place **display ads** about Sustainametics: the candidate should ask for information regarding costs and additional revenues gathered by display ads (provide exhibit 2)
- Based on this information, the candidate is expected to design the perfect display ad which provides Sustainametics with the highest profit
- When looking at the table, the candidate should realize that the add-on „sound“ is the least attractive option as it is most expensive and delivers the lowest number of additional clients. Thus, it is excluded from the following calculation.

	Costs per click (€)	Clicks generated	Quality of clients	Total costs (€)	Customers generated	Costs incurred per client (€)	Avg. amount spent by client (€)
Display ad	0.6	10,000	25%	6,000	2,500	2.4	10
+ animated	0.2	600	8%	120	48	2.5	20
+ sound	0.8	350	3%	280	10.5	26.67	15
+ on both sides of page	0.6	500	5%	300	25	12	10
+ 10 additional seconds	0.5	1,000	10%	500	100	5	25

*Yellow boxes indicate calculations:*

*Total costs = costs per click \* clicks generated; Customers generated = clicks generated \* quality of clients; Costs incurred per client = total costs / customer generated*

Comparing the costs incurred per client with the average amount spent by client, the candidate should see that the best option for Sustainametics is to place an animated display ad which lasts for the double time. Additionally, the quality of clients implies an improvement in Sustainametics' CR.

# Case 13: Sustainametics (4/4)

## Introduction

**EXHIBIT 1:** Performance of Sustainametics' webpage compared to its competitors

	Clicks (per month)	Conversions (per month)	Avg. time spent on page (mins)	Dropouts
Sustainametics	15,000	800	5	Check-out
Competitor 1	45,000	3,400	8	Product-page <sup>1</sup>
Competitor 2	25,000	2,200	6	Product-page <sup>1</sup>
Competitor 3	10,000	420	3	Landing-Page <sup>2</sup>
Competitor 4	50,000	3,890	4	Check-out

**EXHIBIT 2:** Costs and Revenue generated by the various features of a display ad

	Costs per click (€)	Clicks generated	Quality of clients <sup>3</sup>	Avg. amount spent by client (€)
Display ad <sup>4</sup>	0.6	10,000	25%	10
+ animated	0.2	600	8%	20
+ sound	0.8	350	3%	15
+ on both sides of page	0.6	500	5%	10
+ 10 additional seconds	0.5	1,000	10%	25

1) Product-page: Customer views a certain product on the page

2) Landing-page: Click on newsletter leads customer to a certain landing-page

3) Quality of clients means the probability that a clicker converts to a client and buys something in Sustainametics webshop

4) A general ad takes 10 seconds, is only on the left-hand side of the page

# Case 14: University Cafeteria (1/5)

## Introduction

### PROBLEM STATEMENT

Frankfurt School has a cafeteria on the ground floor. All members of the university can satisfy their hunger in the cafeteria between 11.30 a.m. and 2.00 p.m. In order to give more exclusive occasions the appropriate atmosphere, they have recently opened an executive restaurant that offers higher quality than the cafeteria and is very popular with non-students. Comfortable and state of the art seating possibilities offer guests an unforgettable lunch experience. Due to an increasing number of delivery services the boss is worried about losing too many students as customers which would have a drastic impact on the Cafeteria's profit.

What is the current profit of Frankfurt School Cafeteria and what can they do to improve their overall financial performance?

### BACKGROUND INFORMATION (provide only if requested)

#### Market & competition:

- Frankfurt School cafeteria is completely economically independent from the university itself.
- There are a lot of different delivery services which are very popular and often quite cheap.

#### Customers:

- ~ 2,240 students at Frankfurt School
- ~ 630 employees at Frankfurt School

#### Company:

- All dishes have the same price structure every day.
- There are three different counters offering three different types of meals in the Cafeteria.
- Everyday customers can enjoy the "soup of the day".
- At the restaurant one meal a day is offered.
- Only restaurant visitors buy a drink to each meal.
- Each visitor can choose from the same number of dishes.
- All dishes are equally popular.

#### *Case Information*

Industry: Food & Beverages

Difficulty: Medium

Case format: Market Sizing

### QUICK SOLUTION

- **To get a quick overview of the current financial performance an estimation of profit has to be made.**
- **Based on our assumptions total estimated profit is 39.388 €.**
- **Several ways to increase revenue and decrease costs have to be suggested.**

**All assumptions are based on students' experience made at Frankfurt School Cafeteria.**



# Case 14: University Cafeteria (2/5)

## Analysis

### STEP 1: Calculation of current profit (1/2)

*Suggested approach:*

#### Profit/Meal

Assumptions profit (80 % of price):

Counter URSPRUNG: = 5.50 € \* 80 % = 4.40 €

Counter HEIMAT: = 4.10 € \* 80 % = 3.28 €

Counter PIZZA, PASTA: = 5.00 € \* 80 % = 4.00 €

Soup of the day: = 1.50 € \* 80 % = 1.20 €

Meal Restaurant: = 12.88 € \* 80 % = 10.30 €

Drinks Restaurant: = 3.50 € \* 80 % = 2.80 €

**Ø restaurant prices: (5.50 € + 4.10 € + 5.00 € + 1.50 €) / 4 = 4.025 € → 4.025 € \* 320 % = 12.88 €**

#### Demand

2,240 students → 25 % of working day/year = 37.5 days \* 2,240 students = 84,000 meals/year

#### Semester abroad:

Bachelor → 1 semester abroad (every program): 8 programs \* 30 students \* 125 working days (half year) \* 25 % demand = 7,500 days

International Management: 2 courses \* 30 students \* 125 working days \* 25 % demand = 1.875 days

Master: 2,240 \* 45 % = 1,008 Master students = 504 Master students \* 125 working days \* 25 % demand = 15,750 days

**Meals in total: 84,000 – 7,500 – 1,875 – 15,750 = 58,875 per year**

About 630 employees at Frankfurt School → Assumption: also 25 % of employees eat in cafeteria.

25 % of working days/year = 37.5 days \* 630 employees = 23,625 meals/year

Meals in total per year = 58,875 + 23,625 = 82,500 meals/year

Total demand/meal = 82,500/4 meals = 20,625 per year

Restaurant: utilization of 75 % → 75 % \* 250 days/year \* 30 seats = 5,625 meals/ year plus 5,625 drinks/year

# Case 14: University Cafeteria (3/5)

## Analysis

### STEP 1: Calculation of current profit (2/2)

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*Suggested approach:*

#### Direct profit

Profit/meal \* sold ones

Counter URSPRUNG:	=	4.40 € * 20,625	=	90,750 €
Counter HEIMAT:	=	3.28 € * 20,625	=	67,650 €
Counter PIZZA, PASTA:	=	4.00 € * 20,625	=	82,500 €
Soup of the day:	=	1.20 € * 20,625	=	24,750 €
Restaurant:	=	(10.30 € + 2.80 €) * 5,625	=	73,688 €

#### Indirect costs

Assistants, Cashiers, Sellers, Waiters:

6 h/day \* 250 working days = 1,500 h/year/employee \* 9 employees = 13,500 h/year \* 10 €/h = 135,000 €

Chefs:

6 h/day \* 250 working days = 1,500 h/year/employee \* 4 employees = 6,000 h/year \* 14 €/h = 84,000 €

Rent:

300 m<sup>2</sup> \* 15 €/m<sup>2</sup> = 4,500 €/month \* 12 = 54,000 €/year

Extra charges: 50 % of rent = 27,000 €/year

**Total indirect costs = 135,000 € + 84,000 € + 54,000 € + 27,000 € = 300,000 €**

#### Profit/year

**Profit/year = 339,388 – 300,000 = 39,388 €**

# Case 14: University Cafeteria (4/5)

## Analysis

### STEP 2: Ways to increase profit

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#### *Suggested approach:*

#### Increase revenue:

- Cross selling (e.g. Offer a coffee or a dessert after enjoying lunch)
- Price discounts (e.g. Happy hour for soft drinks)
- Loyalty Programs (e.g. 9 meals, 10<sup>th</sup> lunch for free)
- Partnership with existing competitors (e.g. Cooperation with Pizza delivery services)
- Diversify product line (e.g. Collect data analysis through a survey)
- Increase variety (e.g. Offering ice cream in summer, offering Christmas cookies in winter)
- Adding flexibility and versatility to customer experience (e.g. Food to go, Special Days like “Sweet Waffles Thursday”)

#### Decrease costs:

- Reduce purchasing costs (e.g. Changing the suppliers can have a huge impact on purchasing costs.)
- Reduce size of the portions (selling less for the same price)
- Reduce personnel costs (e.g. Shorten opening hours leads to fewer working hours. However, pay attention to consequences!)
- Reduce rent (e.g. Downsizing eating area)

# Case 14: University Cafeteria (5/5)

## Exhibits

### EXHIBIT 1: Useful information about Cafeteria and exclusive Restaurant

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#### General information:

Every fourth working day students in the cafeteria. Except from the International Management course (two courses) there are 30 students on average in the Bachelor program. 45 % of all students are attending a Master program. 50 % of the Master students take the chance to fulfill their Frankfurt School experience with one semester abroad.

- Working hours: six hours/day, 250 working days/year
- Wages: 14 €/hour (chef), 10 €/hour (staff),  
(no tip has to be taken into account)

#### Exclusive Restaurant:

- Meal: ø 320 % of the cafeteria price
- Drinks: ø 3.50 €/drink
- Opening hours: opened on all working days (utilization:  $\frac{3}{4}$ )
- Most frequent guests: Course participants  
(As they are not students, they never visit the cafeteria.)
- Course offers: three courses/week  
(80 % of those guests decide to eat in the restaurant.)
- Staff: two chefs, two highly qualified waiters

#### Cafeteria:

- Counter Prices: URSPRUNG (5.50 €), HEIMAT (4.10 €), PIZZA & PASTA (5.00 €)
- Soup of the day: Price → 1.50 €
- Staff: two chefs, two assistants, two cashiers, three sellers
- Total area: 300 m<sup>2</sup>
- Rent: 15 €/m<sup>2</sup> + 50 % extra charges of the rent

# Case 15: Germany's Electric Mobility (1/3)

## Introduction

### Case Information

Industry: Automotive

Difficulty: Medium-high

Case format: Investment Decision

## PROBLEM STATEMENT

The State of Germany is convinced that vehicles powered by electricity will be the standard in a few years. As Germany wants to support this form of mobility, the state is thinking about investing a substantial amount of money to boost the electric automotive industry. However, officials are still unsure about the right amount and the correct ways to invest money into this sector and have asked you to help them reach a decision. Notice that this is a rapid assessment and that the state ministers will walk into the meeting room in 20 minutes, expecting a first indication from you on where to move with this topic.

## BACKGROUND INFORMATION (provide only if requested)

### Market & competition:

- The German Automotive Landscape can be described as very concentrated, with 3 main players having over 90% of the market
- The state is thinking about subsidizing these companies through direct loans and grants, in order to promote a faster production of electric vehicles

### Customers:

- Customers who will get rid of their conventional vehicles in the upcoming 5 years, will receive a "Scrapping Premium, in form of a fixed amount of €2.5k
- Customer who will buy an electric vehicle in the upcoming 5 years, will receive a "Electric Vehicle Incentive", in form of a fixed amount of €5k

### Other:

- Germany is currently lagging behind other states when it comes to infrastructure for electric vehicles (e.g., power stations)

## QUICK SOLUTION

**After an initial rapid assessment, Germany should consider to establish an „Electric Vehicle Subsidy“ and increase spending in infrastructure for electric vehicles, as these seem to be the most attractive options so far. Further details to be considered in a more in-depth analysis.**

# Case 15: Germany's Electric Mobility (2/3)

## Analysis

### SUGGESTED SOLUTION

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*Note: this is a candidate-led case, meaning that the solution heavily depends on the candidate's ability to drive the case into the right direction. This solution represents one of many possible approaches.*

#### 1) Initial option list

When thinking about pushing money into the automotive industry from the perspective of the German government, 4 different approaches could be taken into consideration:

- a. “Scrapping Premium”: To speed up the process of removing conventional gas-powered cars from the streets, the government could think about giving out grants to consumers if they get rid of their current car
- b. “Electric Vehicle Subsidy”: When buying a new electrically-powered car, the government could give out a fixed sum or a percentage of the purchase price as a subsidy to the customer or the OEM, to incentive purchases of electric vehicles.
- c. Grants and loans to automotive OEMs: By granting state-backed loans to producers of electric vehicles, R&D and more rapid production can be encouraged.
- d. Increase spending in infrastructure for electric vehicles: As Germany is lagging behind in terms of infrastructure for electric vehicles, the government could think about setting a solid basis for the years to come by investing into this area.

#### 2) First conclusions undermined with data

– EXHIBIT 1 –

After analyzing Exhibit 1, 2 options come into the closer consideration

- a. “Electric Vehicle Subsidy”:
  - Most economical out of all 4 options, highest exp. uptick in electric car sales, solid increase in exp. tax revenue
  - Public perception moderate, could damage reputation of Government
- b. Increase spending in infrastructure for electric vehicles:
  - Strong increase in exp. tax revenue, High public perception, catch-up with other states on electric vehicle infrastructure
  - Highest investment of all 4 options, low exp. electric car sales increase, long implementation time

#### 3) Factors to be considered in a more detailed analysis

- Development of total car sales over time, electric vs. conventional car sales growth rate, growth of other forms of mobility

# Case 15: Germany's Electric Mobility (3/3)

## Exhibits

- Negative public perception  
● Positive public perception

**EXHIBIT 1:** Investment amount and factors of consideration for possible investments into the electric vehicle market

	Investment	Expected increase in electric car sales <sup>1</sup>	Public perception per measure	Expected increase in tax revenue <sup>1</sup>
<b>Scrapping Premium</b>	€1.0bn	+ 5%	●	+ 1.5%
<b>Electric Vehicle Subsidy</b>	€0.7bn	+ 15%	●	+ 2.5%
<b>Grants and Loans to OEMs</b>	€1.5bn	+ 10%	○	+ 2.0%
<b>Enhancement of Infrastructure</b>	€3.0bn	+ 3%	●	+ 5.0%

1) Expectations based on the upcoming 5 years

# Publisher: Frankfurt School Student Consulting GmbH (FS-SC)

## With this Case Book, we aim to help students preparing for consulting interviews

### Foundation and concept

We were founded in 2015 as a student consultancy of the Frankfurt School of Finance & Management in the legal form of the Unternehmersgesellschaft (UG). Since the end of December 2019 we have been operating as a GmbH. The student initiative currently consists of around 60 consultants who are studying in the various Bachelor and Master programmes at Frankfurt School.

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... get in contact with exciting companies and get to know **potential employers**.



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