



Frankfurt School Student Consulting Case Book

Frankfurt School Student Consulting GmbH

Frankfurt am Main, 2024



Agenda (1/2)

INTRODUCTION	4
BASICS	6
Structuring Principles	7
Quantitative Skills	9
Collection of Formulas	10
General Information & Population	12
Financial Knowledge	14



Agenda (2/2)

FRAMEWORKS	17
Onion Model	18
Stakeholder Analysis & Mapping	19
McKinsey's 7-S	20
SWOT-Analysis	21
ADKAR Model	22
Porter's Five Forces	23
Value Chain Framework	24
PESTEL Framework	25
BCG Matrix	26
4 P's of Marketing	27
Market Sizing and Profitability	28
Market Entry Framework	29
Revenue Growth and Competitive Response	30
Pricing Framework	31
PERSONAL FIT	32
BRAINTEASER	36
CASES	39



1

Introduction

Introduction

Frankfurt School Student Consulting is proud to present you the 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 16 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 **16 cases** (interviewer- and candidate-led) **like 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



2

Basics



Structuring Principles (1/2)

Basic tools

BASIC TOOLS

Mutually Exclusive Collectively Exhaustive (MECE)

- 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 timing

Pyramid principle

Purpose:

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

A 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 and describe obvious aspects to not lose your interviewer and to gain time to think

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

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



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. An organized case analysis is therefore a useful proof of your analytical and structured thinking.



Structuring Principles (2/2)

Basic tools – Issue tree

BASIC TOOLS

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!

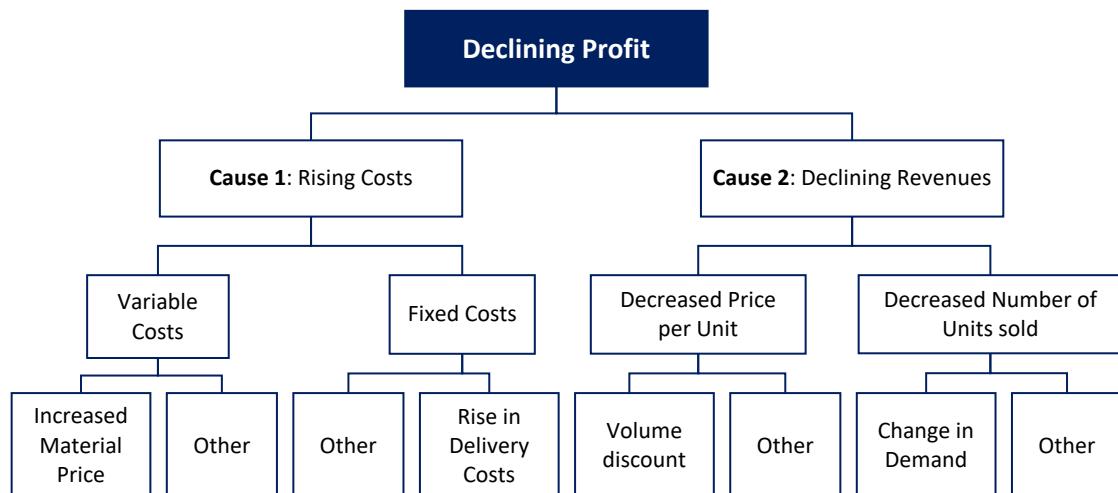
Start with a problem-based tree

- 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

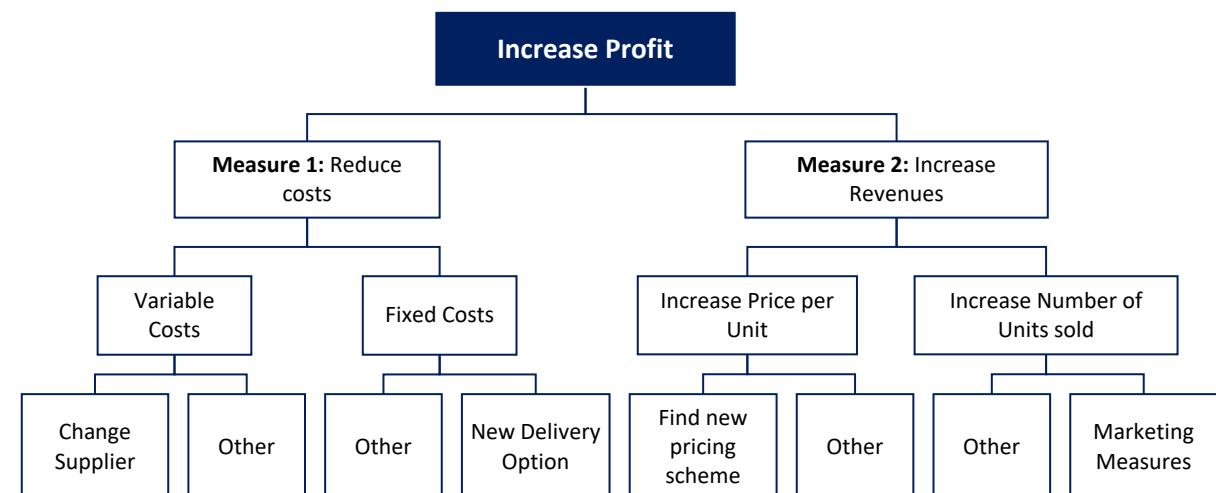
End with a solution-based tree

- 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

TOOLS FOR IMPROVEMENT

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 and Division. These tricks 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:

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

Remember:
More than three payments, use the p-q-formula!



GENERAL STOCK PRICE - CURRENT PRICE P0 OF A SHARE:

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

DIV_t: expected dividend per share
r_E: cost of equity
P_H: expected price in t=H

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

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



CAPM:

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

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

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

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

E = equity

r_D = cost of debt

r_E = cost of equity

D = debt

r_D = cost of debt

T_c = company's tax rate

PORTFOLIO SELECTION

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

E(r_i) = μ_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

Var(r_i) = σ_i^2 : variance of the returns of security i

Collection of Formulas (2/2)

Marketing, Geometry and Metric Conversion

MARKETING:

Item	Formula
Market share	Sales volume/Market volume
Level of market saturation	Market volume/Market potential
Market volume	Market saturation level * Market volume
Market potential	All that could be sold
Price elasticity	Relative quantity change/Relative price change
Cross-price elasticity	Relative quantity change A/Relative quantity change B

Item	Formula
Conversion rate (CR)	Conversion/Clicks
Click-through rate (CTR)	Clicks/Impressions
Cost per mille (CPM)	Costs/Total Impressions * 1000
Cost per click (CPC)	Costs/Clicks
Return on investment (ROI)	(Revenue-Costs)/Costs ¹
Budgeting	e=own advertising costs/own turnover * turnover competiton/advertising competition

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
x°Celsius	(x°Celsius*2) +30 °Fahrenheit
1 kg	35.27 ounces

AREA CONVERSION:

Surface

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

Volume

- Multiply by 1,00, when moving right
- Divide by 1,000, when moving left

km², ha, a, m², dm², cm²



General Information

Facts & Figures

GENERAL INFORMATION	WORLD	EU	GERMANY
# of Countries	195 (acc. UN)	27	n/a
Earth surface	510 m km ²	4.42 m km ²	0.357 m km ²
thereof sea	70%	3%	2%
thereof earth	30%	97%	98%
Ø Annual population growth	0.8%	0.2%	1.1%
Ø Energy price (per kWh)	€0.13 / kWh	€0.29 / kWh	€0.41 / kWh
Ø Energy consumption (per capita, as of 2022)	21,039 kWh	36,129 kWh	40,977 kWh
Population Structure (simplified)			
0-20	33%	20%	20%
20-40	30%	25%	25%
40-60	23%	28%	25%
60+	14%	27%	30%

Population Figures

Worldwide Population Data

WORLD (TOP 10 COUNTRIES)

India	1.417bn
China	1.412bn
United States	333m
Indonesia	275m
Pakistan	235m
Nigeria	219m
Brazil	215m
Bangladesh	171m
Russia	144m
Mexico	128m
TOTAL WORLD	8.1b

EUROPE (TOP 10 COUNTRIES)

Germany	84m
France	68m
United Kingdom	67m
Italy	59m
Spain	48m
Poland	38m
Romania	19m
Netherlands	18m
Belgium	12m
Czech Republic	11m
TOTAL EUROPE	742m
TOTAL EU	448m

GERMANY (TOP 5 CITIES)

Berlin	3.8m
Hamburg	1.9m
München	1.5m
Köln	1.1m
Frankfurt am Main	770k
DACH (DE, AT, CH)	
Germany	83m
Austria	8.9m
Switzerland	8.8m
Berlin	3.8m
Vienna	2.0m
Bern	145k



Financial Knowledge (1/3)

Income Statement, Balance Sheet and Cash Flow Statement

INCOME STATEMENT

Revenue/Sales

- COGS

Gross margin

- Operating expenses
- SG&A
- Research & Development (R&D)
- Other

EBITDA

- Depreciation & Amortization

EBIT

- Interest expense
- + Interest income

Earnings before Tax (EBT)

- Taxes

Net Income

BALANCE SHEET

Assets
Cash and cash equivalents

Short term investments

Accounts receivable

Inventories

Total current assets

Property, plant
& equipment

Intangibles

Total non-current assets
Total assets
Liabilities
Accounts payable

Income taxes payable

Accrued expenses

Total current liabilities

Long term debt

Total non-current liabilities
Total liabilities

Shareholder's capital

Retained earnings

Total equity
Total liabilities and equity

CASH FLOW STATEMENT

Cash at the beginning of acc. period

Net income

+ Depreciation & Amortization

+ - Change in op. working capital

Cash flow from operating activities

- Capital expenditure

+ Proceeds from sale of equipment

Cash flow from investing activities

+ - Long-term debt

- Dividends

+ Issuance of equity

Cash flow from financing activities
Cash at the end of acc. period


Financial Knowledge (2/3)

Discounted Cash Flow Valuation and M&A Framework

DISCOUNTED CASH FLOW VALUATION

!

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

DCF Walkthrough

- 1) Project company's financials with assumptions about revenue growth, margins, working capital, D&A etc.
- 2) Calculate Free Cash Flow (FCF) for each year for 5-10 years, assuming a 100% equity financing. The tax shield is fully incorporated through the WACC
- 3) Calculate the Weighted Average Cost of Capital (WACC)
- 4) Calculate the Terminal Value for the years after the projection period
- 5) Discount FCFs of the projection period and the Terminal Value with the WACC
- 6) Calculate the Enterprise Value by summing up all discounted FCFs and the discounted Terminal Value

Free Cash Flow Calculation (FCF)

$$FCF = EBIT * (1 - \text{tax rate}) + D\&A - \text{Capital Expenditure} - \Delta \text{Net Working Capital}$$

Weighted Average Cost of Capital

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

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

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

Terminal Value

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

M&A CASE FRAMEWORK – WHAT TO CONSIDER

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 the 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 target's business are relevant for the acquisition (synergies!)
- Culture: Similarity between both management boards, Leadership Style, Human Capital, Loss of key people, shared values

Feasibility

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



Financial Knowledge (3/3)

Multiples & Equity to Enterprise Value Bridge

MULTIPLES

Multiples are a quick and often used methodology to determine the value of a company. Common multiples based on the Enterprise Value are EV/EBTIDA or EV/EBIT, while P/E (Price/Earnings) is the most used based on the Equity Value.

Trading and Transaction Multiples

A simple and fast procedure with low personnel bias

Trading Multiples



Up-to-date valuation

Transaction Multiples



Past valuation



Publicly available



Not always published



Valuation by the overall market



Includes buyer premium

EQUITY TO ENTERPRISE VALUE BRIDGE

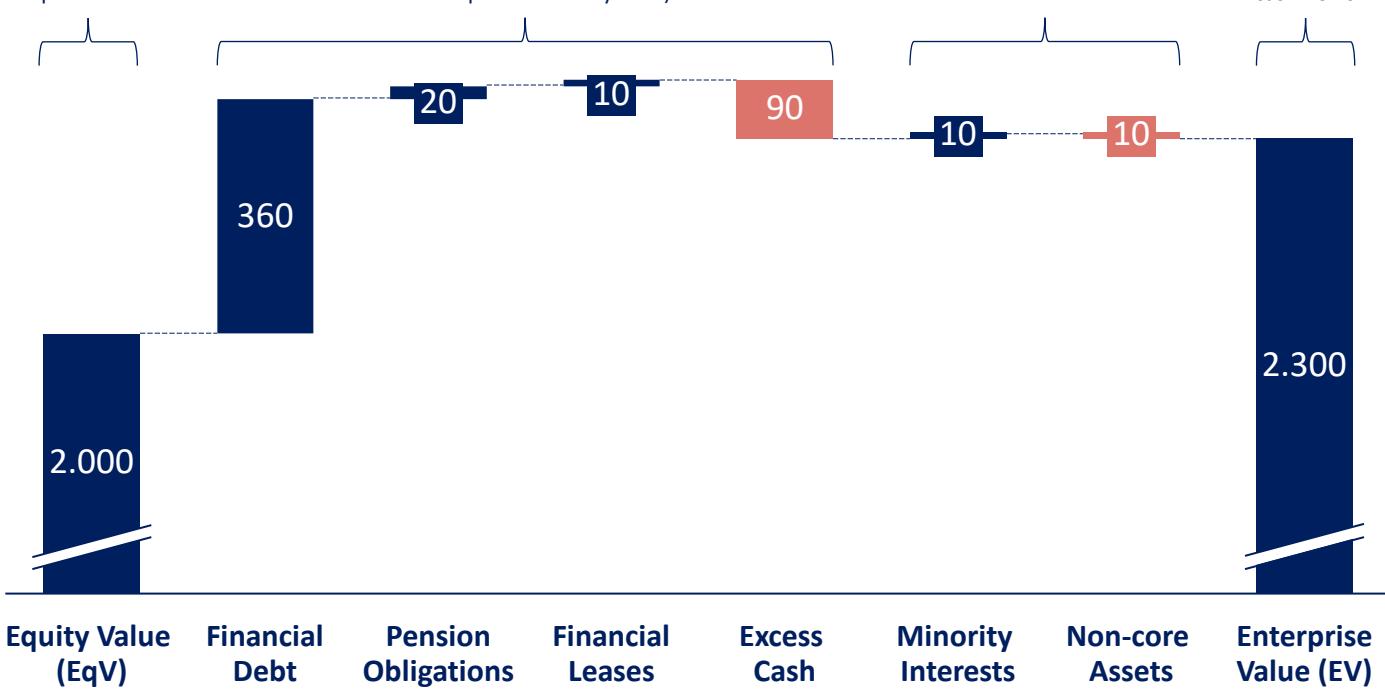
Illustrative

Equity Value
The market value of the company's equity / market capitalization.

Net Debt
Sum of all interest-bearing liabilities (must be refinanced at the time of sale) minus excess cash (incl. cash equivalents that can be liquidated at any time)

Other items

Enterprise Value
The value of the core-business an investor would have to pay to be entitled of all cash flows



3

Frameworks



Onion Model

Helps to identify all relevant stakeholders and possible actors in a company and the outside market

ONION MODEL

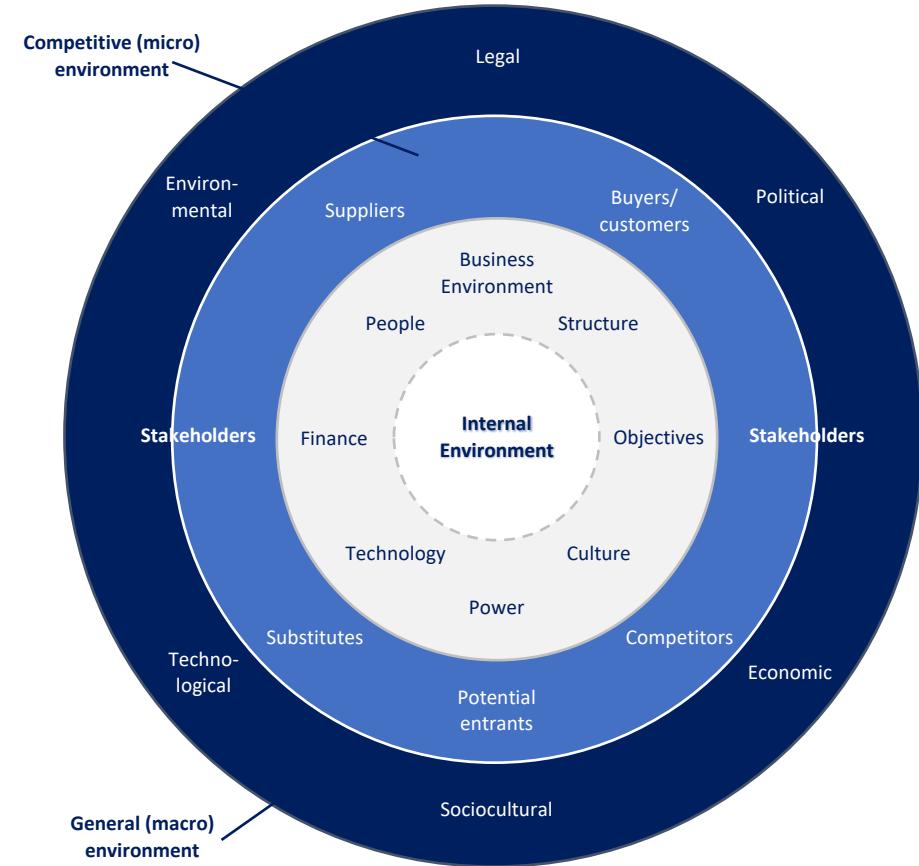


General information:

The Onion model visualizes all relevant actors for a company or business, by summing up Porter's Five Forces and the PESTEL Framework in one. It supports your structured approach for brainstorming, helps you identify different stakeholders and categorize them. You can use the model at the beginning to get a structured overview over all the stakeholders in each of their categories.

Exemplary usage:

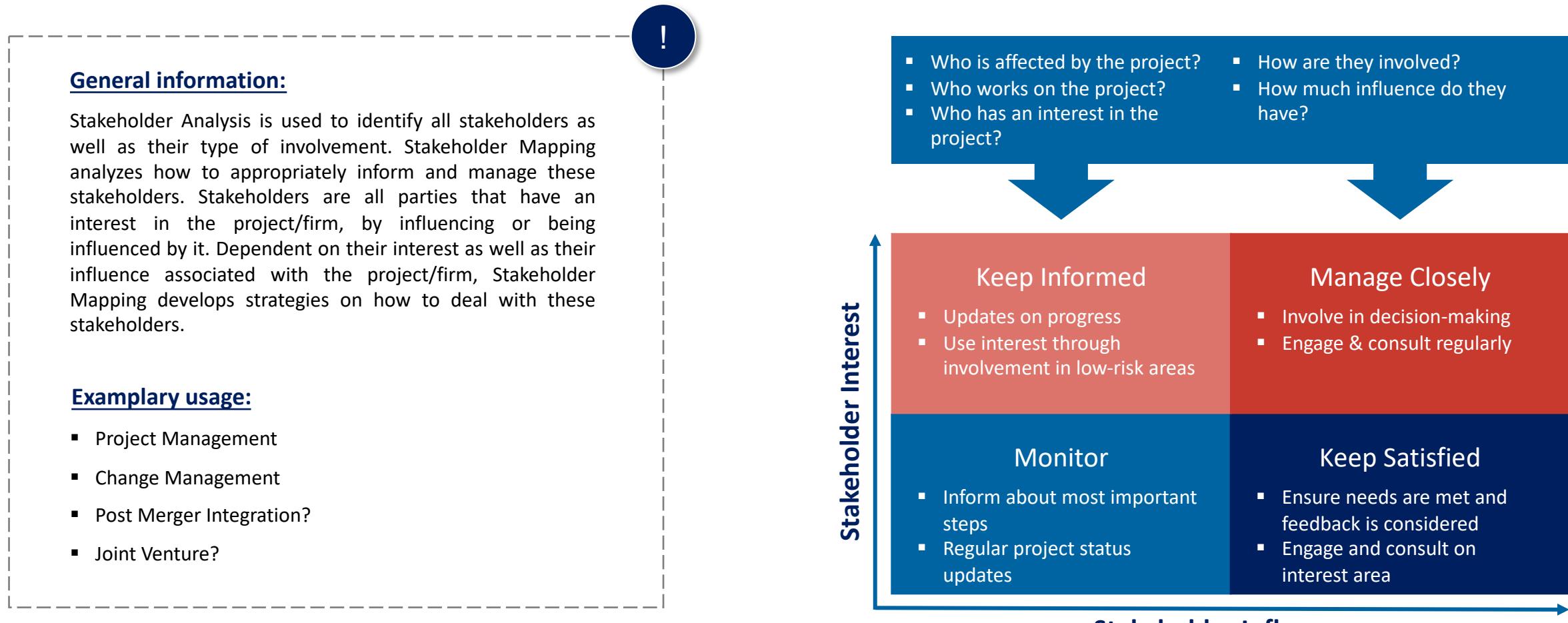
- Analysing potential weak spots and risks
- Analysing and categorising all kinds of influences
- Distribution of different stakeholders



Stakeholder Analysis & Mapping

Helps you to identify different stakeholder groups and develop strategies on how to deal with them

STAKEHOLDER ANALYSIS & STAKEHOLDER MAPPING



McKinsey's 7-S

McKinsey's 7-S address the role of coordination in organizational effectiveness

MC KINSEYS 7-S

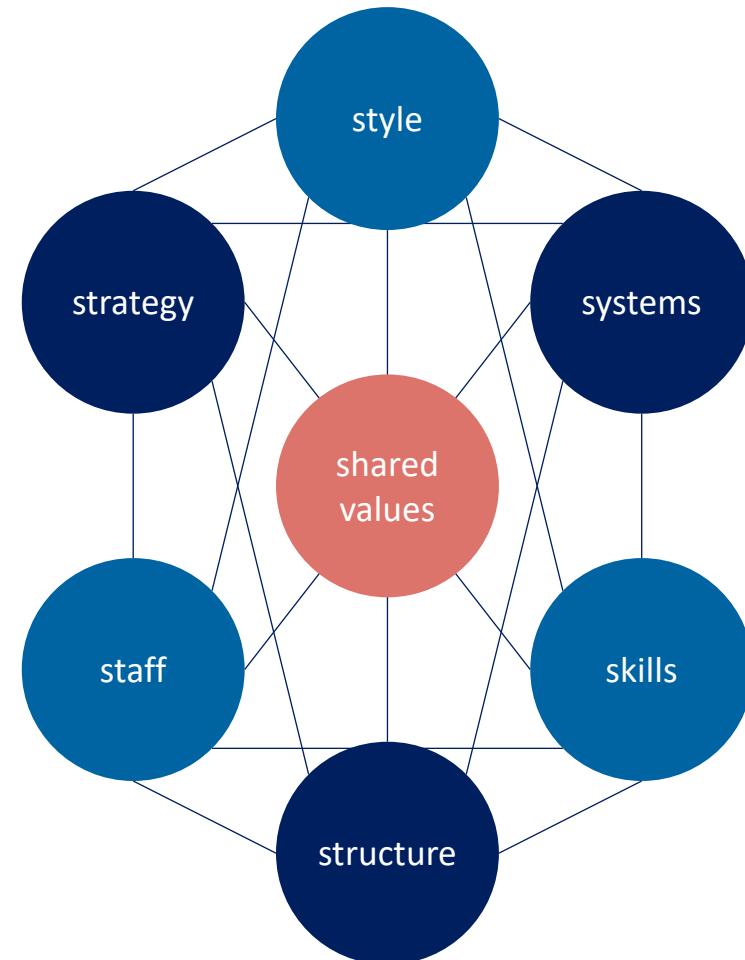


General information:

The framework illustrates a constellation of interconnected factors that influence an organization's ability to change. It is used to diagnose how existing organizations operate and advise them on specific elements that require change and how these changes should be aligned with each other. The non-pyramidal and equal illustration implies that each area is equally important and that making significant progress in one area of the organization will be challenging without addressing the others.

Exemplary usage:

- Change Management
- M&A
- Performance Improvement
- Transformation
- Expansion



SWOT Analysis

Provides a picture of a business and derives a strategy to pursue opportunities & tackle potential threats

SWOT ANALYSIS



General information:

The SWOT analysis is a strategic planning tool used to identify and evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a business or project. It provides a structured framework for assessing the internal and external factors that can impact an organization's performance and decision-making.

Exemplary usage:

- Status-Quo assessment
- Derivation of a new strategy
- Project Management

Internal

External

Strengths

- What do we do well?
- What is unique about our business or the assets we own?
- What do we do better than our competition?
- What do our stakeholders like about us?

Opportunities

- What emerging trends can we take advantage of?
- How can we use our strengths?
- Are there markets we might tap into?
- What are the chances for the future?

Positive

Weaknesses

- What are the problems and issues of our business?
- Where do we fall behind competition?
- Where are we lacking skills or resources?
- Where do we need to improve?

Threats

- What is our competition doing (better than us)?
- What market trends affect us?
- What issues could impact our business?
- What obstacles do we face when pursuing our goals?

Negative



ADKAR Model

Fundamental framework to assess the control of organizational change

ADKAR MODEL



General information:

It is one of the most sought-after models for change management and emphasizes the often overlooked fact that change can only be successful if employees actively shape it. ADKAR addresses common challenges in organizational change, such as lack of understanding by employees and insufficient preparation by managers. It provides strategies and tools for leaders and individuals to overcome these challenges. Also, it helps leaders guide individuals through change, address potential resistance and ensure that those affected are informed and motivated.

Exemplary usage:

- Change Management

Awareness

- Awareness means that employees understand the planned change and its rationale. Clear communication from management is crucial to create a positive attitude towards change.

Desire

- Desire refers to the personal desire of employees to accept and support the change. This involves creating an emotional connection to the change and presenting personal benefits.

Knowledge

- Knowledge involves providing information and resources to enable employees to acquire the necessary skills for the new environment, often through training and educational opportunities.

Ability

- Ability means that employees, having acquired knowledge, are able to put the new requirements into practice. The aim is to ensure that theoretical knowledge is put into practice.

Reinforcement

- Reinforcement stabilizes the change in the long term. This includes recognition and rewards for successful implementation as well as the adaptation of systems and processes to anchor the change in the organization.

Porter's Five Forces

Framework to analyze the competitive dynamics within an industry

PORTRÉ'S FIVE FORCES

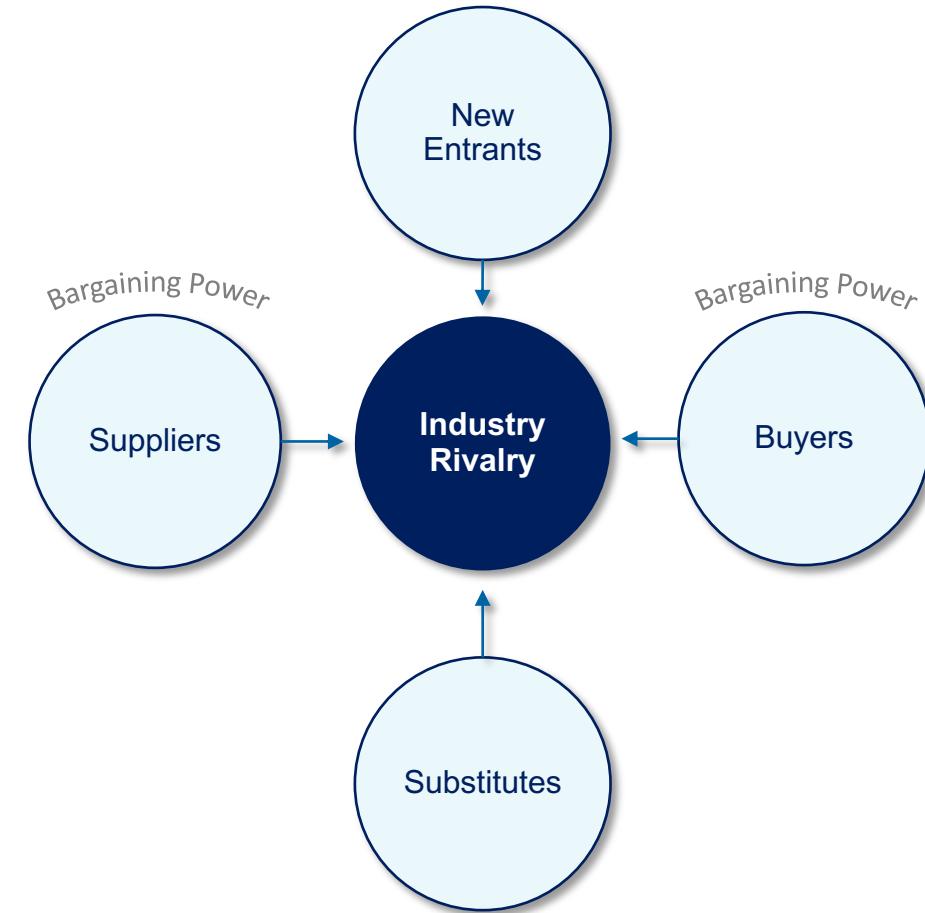


General information:

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. 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

Exemplary usage:

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



Value Chain Framework

Breaking down a company's activities, enabling a detailed analysis of the value creation process

VALUE CHAIN FRAMEWORK

General information:

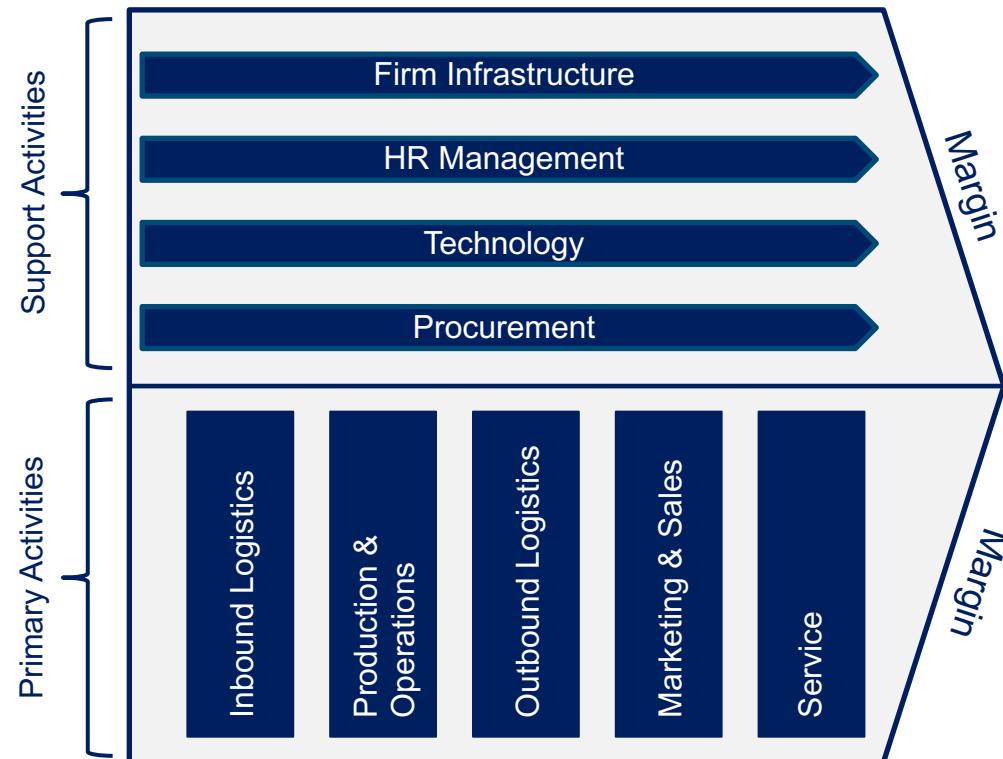
Value chain analysis is used to analyze all activities of an organization, supply chains and distribution networks. It is a useful framework to understand the supply chain network of an organization, to determine where value is added and to identify weaknesses or bottlenecks within an organization.

In order to create a resilient supply chain:

- Set up strategic supplier management
- Expand stocks for safety reasons
- Implement multiple sourcing for risk diversification

Exemplary usage:

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



PESTEL Framework

Asseses the external macro-environmental factors that can impact an organization

PESTEL FRAMEWORK



General information:

A PESTEL analysis is a framework or tool used to analyse 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. 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.

Exemplary usage:

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



Political: Government Support, Regulations, Sanctions, Subsidies



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



Social: Demographics, Culture, Educational system, Health system



Technological: Internet, Wireless communication, Industry 4.0, Nanotechnology



Ecological: Resources, Emissions, Infrastructure, Location characteristics



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

BCG Matrix

Provides a framework for the analysis of the product portfolio

BCG MATRIX

!

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.

Keep in mind:

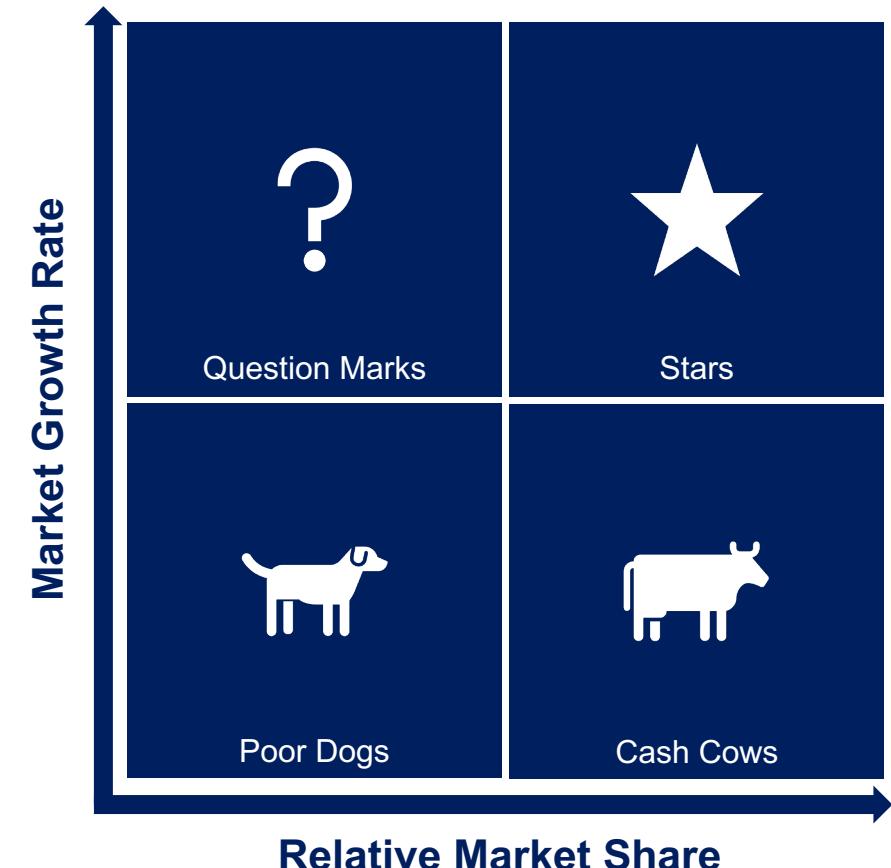
Center of the Y-axis = average market growth, center of the

X-axis = 100% market share

(see formula sheet to calculate relative market share)

Exemplary usage:

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



4 P's of Marketing

Comprehensive framework for the implementation of marketing strategies

4 P'S OF MARKETING



General information:

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

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

Exemplary usage:

- Decision-Making in Marketing
- Strategy Development

Product

- How is the product differentiated?
- What are the customer needs that the product needs to fulfill?
- 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?

Market Sizing and Profitability

Evaluation of the potential market size and profitability for a product or service

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

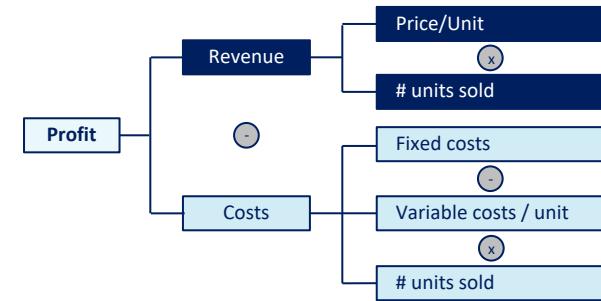
- How many companies offer the product?
- Possible approaches through
 - Stores selling product/service
 - # of workers
 - Products processed per workers

3) Stand-alone

- (e.g. how many items of product x are sold every year? / how many x 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 x 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)

Market Entry Framework

Developing strategies for a business entering a new market

MARKET ENTRY FRAMEWORKS

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



Revenue Growth and Competitive Response

Framework to assess revenue growth and competitive response

REVENUE GROWTH

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

- 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

!



Pricing Framework

Structured approach to set prices of products or services

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%
 $\rightarrow (\text{€}400 + \text{€}100) * (1 + 20\%)$
→ Final Price of 600€

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?

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

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

4

Personal Fit



Personal Fit Questions (1/2)

Exemplary questions for personal fit interviews

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?

PERSONAL

- What are your strengths and weaknesses?
- Have you ever received feedback on weaknesses?
- Which feedback has helped you?
- Describe yourself & 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 was the most difficult thing you had to deal with in your job?
- 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?

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



Personal Fit Questions (2/2)

Exemplary questions for personal fit interviews

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 (job related/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

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



Personal Fit 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 proof 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“, etc.)
- Focus on your own contribution (use „I“, not „We“) and prepare yourself by telling your stories to other persons
- **Remember: the PEI is focused on HOW you behaved and not on the concrete results!**



5

Brainteaser



Brainteaser (1/2)

Tackling a mental challenge and solving a mental puzzle

INTRODUCTION

Definition:

- A brainteaser is a form of puzzle you are required to solve without further aid in an interview
- Usually, brainteaser take up a small amount of time and include little information to process
- Brainteaser 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 brainteaser, you are not meant to come up with a correct number but a logically concluded solution

APPROACHES

Preparation:

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

Method:

- Brainteasers 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 brainteaser, you can make use of structuring principles such as an issue tree
- Present your answer in a short concluding sentence

Be aware that brainteasers do not test your skills comprehensively. It is broadly debated whether brainteaser 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



Brainteaser (2/2)

Common types and examples

TYPES

Mystery

- 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:

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.

Example:

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

Conversion

- 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?

PRACTISE 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/>



Hint: 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.



6

Cases

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 32.9m USD in their Shampoo product portfolio. They want to increase revenue by at least 3%

Quick Solution

- CWS should increase the price of Shampoo 4 by 20%
- Thus, 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?

Qualitative factors (suggested approach):

- 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: what is our internal expertise in the process linked to price increases (e.g. marketing, management, accounting, legal)

Quantitative factors (suggested approach):

- 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 3%, as expected by management in order to stick to this decision?

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

Internal (suggested approach):

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

External (suggested approach):

- Customers
- 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?

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?

Exhibit 1 & 2

- Calculation of current revenue

of customers * price/product = current revenue → $1,500,000 * \$6.99 = \sim 10.5\text{m USD}$

- Calculation of new revenue considering price elasticity and lost customers

$(\# \text{ of customers} * (1 - \text{share of lost customers}) * (\text{price/product}) * (1 + \text{price increase})) + (\# \text{ of customers} * \text{share of lost customers} * \text{percentage of customers which still buy products within our company} * \text{average price/product})$

$$1,500,000 * (1 - 10%) * \$6.99 * (1 + 20%) = \sim 11.3\text{m USD}$$

$$1,500,000 * 10\% * 80\% * \$3.99 = \sim 0.48\text{m USD}$$

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!



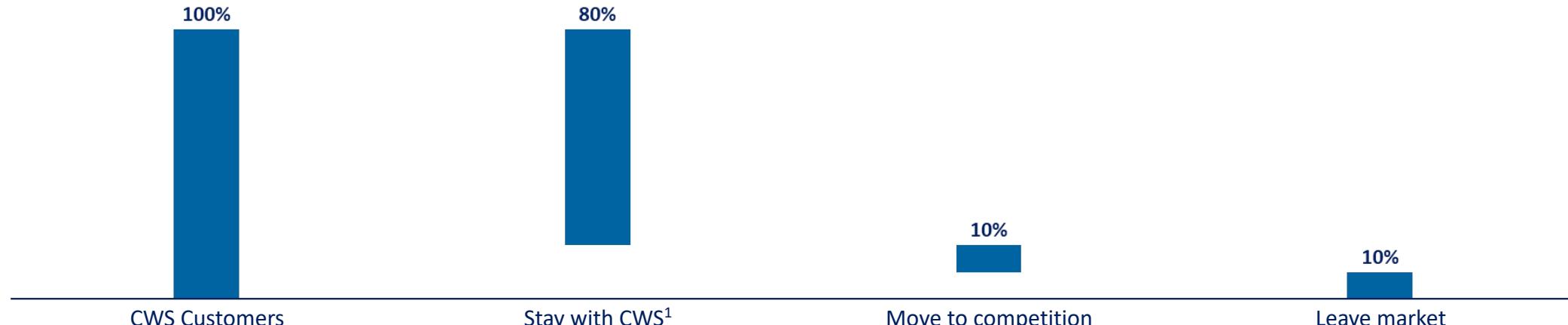
Case 1: Drugstore CWS (4/4)

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



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 advice 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 flavorful beer market however, there are 3 main players, including Bubble Beer & Co., which has 80% of market share within this segment.

Customers

- 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?

Financial (suggested approach):

- 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 (suggested approach):

- Market development: will the food & beverages market develop as expected?
- Customer expectations: will customer expectations change over time? Is beer with fruity tastes only a short running hype?
- 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 and a WACC of 5%, should Bubbly & Co. invest in a new production facility?

Exhibit 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
- 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?

Product-related (suggested approach):

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

Non-product related (suggested approach):

- Expansion 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 / restaurant chains
- Acquisition of competitors

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

Exhibits

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

	2020	2021E	2022E	2023E	2024E	2025E
Revenue	100	150	250	210	250	300
COGS	50	90	95	100	120	145
Operating Expenses	50	75	65	55	80	95
SG&A¹	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's management wants to know after how many days within a year they would be able to break even

Quick Solution

- Southside should implement the whale watching tours
- Thus, they would break even in ~99 days with a contribution margin per tour of ~€1.5k



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

Analysis

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

Market / Competition (suggested approach):

- 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 (suggested approach):

- Internal capabilities and knowledge
- Make or buy decision (e.g., partnership/JV, M&A)
- Financial resources
- Entry & Timing: first mover?

Customer (suggested approach):

- Who is your customer?
- Customer preferences
- Willingness to pay

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?

1) Make

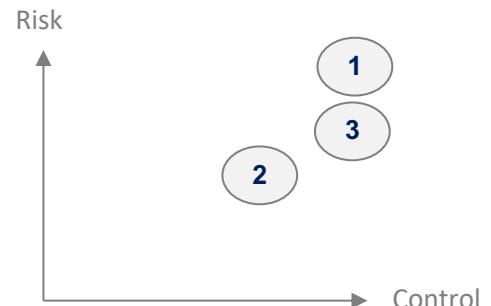
- Full control over decision-making
- No distribution of profits
- Large financial investment
- Greatest risk

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



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 how many tours they would need to break even.

Exhibit 1:

1) Calculation of investment costs

Ship costs (depreciation)	$\text{€12.5k} * 3 \text{ ships} = \text{€37.5k}$
Captain salary	$\text{€50k} * 3 \text{ captains} = \text{€150k}$
Guide salary	$\text{€42k} * 2 \text{ guides} = \text{€84k}$
Other costs	€25k
Total investment costs	€296.5k

2) Calculation of ongoing costs per tour

Ship maintenance	€3k
Fuel costs	$\text{€30k} * 60\% = \text{€18k}$
Other costs	$\text{€30k} * 25\% = \text{€7.5k}$
Total ongoing costs	€26k
Contribution margin / tour	€30k – €28.5k = €1.5k

3) Calculation of breakeven time horizon

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

Breakeven in # of tours / (tours/day) = breakeven in # of days

$\text{€296.5k} / \text{€1.5k} = 197.67$ tours to break even

→ ~197.67 tours / 2 tours/day = ~99 days to break even

Southside should move forward in implementing the whale watching tours since they deliver a break even after approximately ~3 months.



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

Exhibits

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

General Information:

- 5 h / tour
- 2 tours / day
- 3 Ships¹
- 3 Captains
- 2 Guides
- 50 customer / tour
- €30k / tour Revenue

Investment Costs:

- €100k / Ship (8Y Depreciation)
- Captain salary: €50k
- Guide salary: €42k
- €25k other fixed costs

Ongoing Costs:

- €3k Ship maintenance (per Ship and per Tour)
- Fuel costs → 60% of Revenue
- Other costs → 25% 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

- 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 personnel 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 companies' 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: 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, 75% 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
= Gross Margin	\$475,000,000
- Operating expenses	
- SG&A	\$375,000,000
- R&D	\$5,000,000
= EBITDA	\$95,000,000
+/- Other income and expenses (e.g. - depreciation)	\$10,000,000
= EBIT	\$85,000,000

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

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



Case 4: 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 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
= Gross Margin	\$237,500,000
- Operating expenses	
- SG&A	\$225,000,000
- R&D	\$500,000
= EBITDA	\$12,000,000
+/- Other income and expenses (e.g. - depreciation)	\$10,000,000
= EBIT	\$2,000,000

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

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



Case 4: Restructuring (4/4)

Analysis

Step 3: Own investment preference

Own investment preference

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

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 personnel 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 CZE-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?

Product-related (suggested approach):

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

Non-product related (suggested approach):

- 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
- Too few payment alternatives

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

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?

Suggested approach:

- Revise relationship with last-mile delivery supplier in Spain, since the probability of damage is high
- Revise the logistics process when shipping products from Czech Republic to Spain, since a 5% damage probability occurs
- 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?

Exhibit 2:

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

$$\text{National} = 600 - 150 - 100 - 15 = €335$$

$$\text{International} = 600 - 100 - 150 - 50 = €300$$

2) Calculate the difference to find out additional profits

$$\text{Difference in contribution margin between national and international production} = €335 - €300 = €35$$

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



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

Exhibits

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

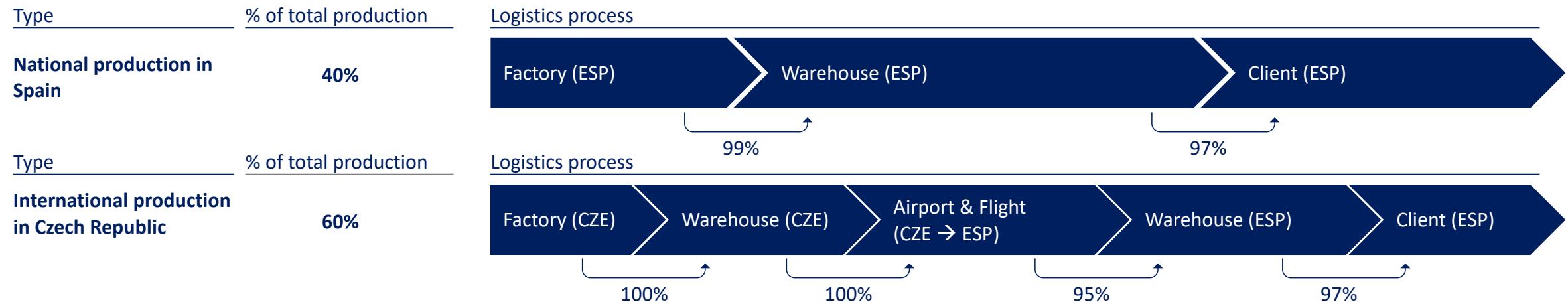


Exhibit 2: Simplified P&L per guitar sold of national and international production (in EUR)

National production in Spain		National production in CZE	
Revenue	600	Revenue	600
COGS	150	COGS	100
Operating Expenses	100	Operating Expenses	150
Delivery	15	Delivery	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 have 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 m² 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?

Opportunities (suggested approach):

- 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 (suggested approach):

- 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?

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)

= $(800 \text{ GWh} * 30\% * 50\% * 1,000) / (24 \text{ MWh} * 20\%) = 120,000 / 5 = 24,000$ 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)

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

= $300,000 / 5 = 60,000$ 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 ($24\text{MWh} * 20\%$)

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?

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 * 3,500m² = ~ 120 million m² of steel

WTC should produce $\sim 120 \text{m m}^2$ 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

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

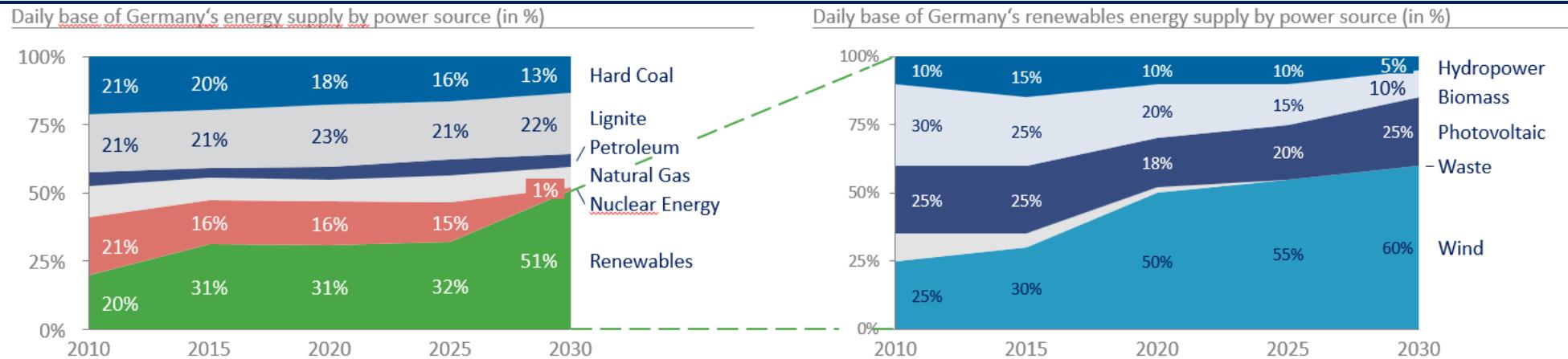
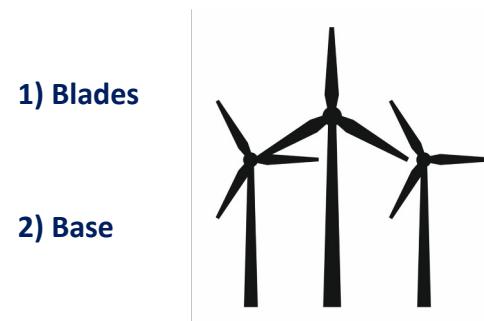
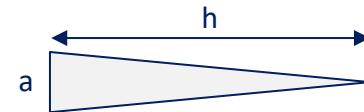


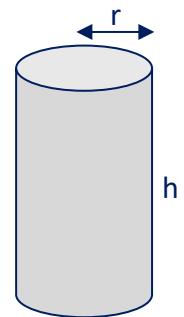
Exhibit 2: Measurements of WTCs Wind Turbines



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 CO2 savings
- However, financial profitability and supplier default must be considered.



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 CO₂ footprint?

Internal (suggested approach):

- 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 new collections p.a. drastically reduces labor time and can starkly contribute to a reduced carbon footprint

Risks (suggested approach):

- 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 CO₂ savings until Q4 2022. His team has come up with two CO₂ saving options, however he is unsure which one to implement.

Exhibit 1&2:

1) Calculate the annual CO₂ savings from the supply chain option (Remember that today is 31.12.2020)

Supply Chain Step	p.a. CO ₂ savings	Additional p.a. CO ₂ savings	Years to Q4 2022	Total p.a. CO ₂ savings
Design	50 / 2Y = <u>25t CO₂</u>	25 * 20% = <u>5t CO₂</u>	2	30 * 2 = <u>60t CO₂</u>
Fabric collection	400 / 4Y = <u>100t CO₂</u>	100 * 25% = <u>25t CO₂</u>	2	125 * 2 = <u>250t CO₂</u>
Production	900 / 4.5Y = <u>200t CO₂</u>	200 * 40% = <u>80t CO₂</u>	2	280 * 2 = <u>560t CO₂</u>
Transport & Log.	1,000 / 2.5Y = <u>400t CO₂</u>	400 * 10% = <u>40t CO₂</u>	2	440 * 2 = <u>880t CO₂</u>
Marketing & Sales	400 / 2Y = <u>200t CO₂</u>	200 * 15% = <u>30t CO₂</u>	2	230 * 2 = <u>460t CO₂</u>
2.21m t CO₂				



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

Analysis

Question 2 (cont'd):

Exhibit 1&2:

2) Calculate the annual CO₂ savings from the return rate option (Remember that today is 31.12.2020)

2.1) Calculate the total amount of CO₂ issued without saving measures in 2021/22 (since we are only interested until Q4 2022)

= # of Packages shipped p.a. * CO₂ per package * Return Rate without CO₂-saving measures

2021

$$= 750k * 200g * 70\% = \underline{105m \text{ g CO}_2}$$

2022

$$= 850k * 200g * 60\% = \underline{102m \text{ g CO}_2}$$

Total CO₂ without saving measures

$$207m \text{ g CO}_2 = \underline{\underline{207k \text{ t CO}_2}}$$

2.2) Calculate the total amount of CO₂ issued with saving measures in 2021/22 (since we are only interested until Q4 2022)

= # of Packages shipped p.a. * CO₂ per package * Return Rate with CO₂-saving measures

2021

$$= 750k * 200g * 30\% = \underline{45m \text{ g CO}_2}$$

2022

$$= 850k * 200g * 20\% = \underline{34m \text{ g CO}_2}$$

Total CO₂ with saving measures

$$79m \text{ g CO}_2 = \underline{\underline{79k \text{ t CO}_2}}$$

→ The CEO should optimize the supply chain as this leads to >2m t CO₂ savings

$$\text{CO}_2 \text{ Savings} = \underline{\underline{128k \text{ t CO}_2}}$$

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 CO₂ 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 CO₂)

	Design	Fabric collection	Production	Transport & Logistics	Marketing & Sales
CO ₂ Savings ¹	50	400	900	1,000	400
Savings reached until	Q4 2022	Q4 2024	Q2 2025	Q2 2023	Q4 2022
Additional Savings p.a. ²	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 ₂ per package (in gramm CO ₂)	100	100	100	200	200	200
Share of CO ₂ emission per package w/o saving measures	50%	55%	60%	60%	70%	75%
Share of CO ₂ 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 CO₂ savings



Case 8: University Video Conferencing (1/4)

Introduction

Case Information

Industry: Education

Difficulty: High

Case format: Digitalization

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.

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?

Costs for each provider (suggested approach):

- 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 (suggested approach):

- 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 (suggested approach):

- 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)?

Exhibit 1,2 & 3

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 server 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

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:

- Candidate has to understand that only Shrink and Macrohard need to be considered.
- Candidate needs additional information: how many people study/work at FS? → should assume, 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:

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

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

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!

Question 3: 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) or using Break-out session for group works, afterwards one group is coldly called out to present their results



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 providers 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

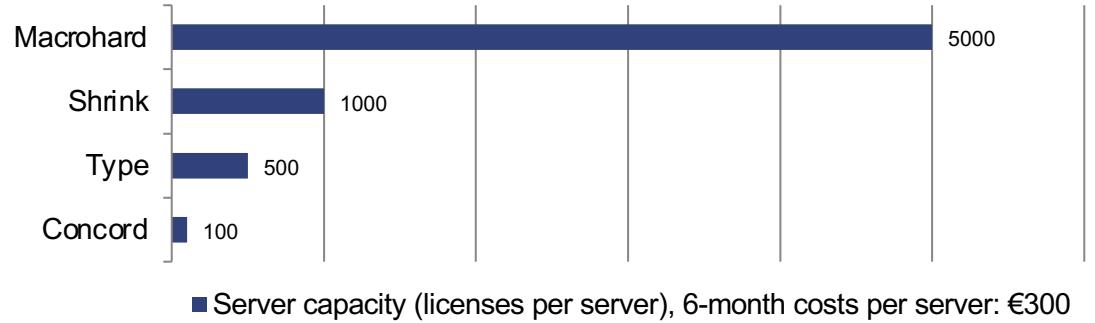


Exhibit 3: Provider - features

	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^2 indoor/ 25 m^2 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 their seating area and winning new customers? Consider solutions that respect all governmental regulations.

Background information (provide only if requested)

Marketing & 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^2 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

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

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

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

- Indoor seating area (10 m^2): Since one table takes up 4m^2 and 1m needs to be obtained in-between, a maximum of 2 tables can be served. $(2\text{m}+1\text{m}+2\text{m}) * 2\text{m} = 5\text{m} * 2\text{m} = 10\text{m}^2$
- Outdoor seating area (25 m^2): 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.
 $(2\text{m}+1\text{m}+2\text{m}) * (2\text{m}+1\text{m}+2\text{m}) = 5\text{m} * 5\text{m} = 25\text{m}^2$
- 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 to be operating.

Question 2: How can they attract new customers?

Current state: Opening seating areas is not profitable, and ordering is only possible via own hotline.

Proposals (suggested approach):

- 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 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

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)

Marketing & 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

Question 1: Which pricing approach is suitable?

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: The segment can be derived by thinking about the next best alternative of the developed product. From this, a solid basis for pricing can be derived and an appropriate price should be set after careful consideration of the added value of the miracle mirror.

Question 2: What price should be set for the Wonder Mirror?

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 (Quantitative):

- 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)

Marketing & 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

Products

- The sandwich is packaged in a recyclable bag
- The ingredients are the same as in conventional products

Company

- 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.

Assumptions (suggested approach):

- 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. to 06:00 p.m.
- Shop is closed on weekends.
- Preparation time must 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 can prepare 40 sandwiches an hour.
- They sell at 100% capacity during busy lunch-rush → $40 * 2 \text{ (hours)} = 80 \text{ sandwiches}$
- They sell at 20% capacity during the light afternoon time segment → $(40 * 20\%) * 3 \text{ (hours)} = 24 \text{ sandwiches}$
- They sell at 50% capacity during the busy evening rush → $(40 * 50\%) * 1 \text{ (hours)} = 20 \text{ sandwiches}$

Total daily revenue: $(80 + 24 + 20) * £6 = £744$

Total monthly revenue: $£744 * 20 \text{ days} = £14,880$

Total estimated revenue: £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 withdrawing 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)

Marketing & competition

- There will be one competitor who is applying for permits

Customers

- Customers include all travelers commuting from and to the Heathrow Airport

Products

- 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.

Revenue Calculation (suggested approach):

- 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: $£300,000 * 600 \text{ (taxis)} = £180,000,000.00$
- 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%

Attention:

This calculation assumes 100% utilization, which is fine for the sake of simplicity. A great candidate would mention the possibility of calculating demand per hour and comparing it to supply per hour.



Case 12: Airport Cab (3/3)

Exhibits

Exhibit 1: Details for calculation process

Revenue:

- 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 considered here)
- The remaining 50% requires a taxi between 6:00 a.m. – 12:00 a.m. (midnight) (sharing a taxi is considered 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:

- 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 Sustainametics Club, 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 fewer 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 ad for 20 seconds.

Case 13: Sustainametics (2/4)

Analysis

Suggested Solution

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 few 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 costs
 - inappropriate payment methods
 - customers forget about their items in the shopping cart

2. After analyzing potential problems of the webshop, the candidate should conclude that in-depth information on Sustainametics webshop performance is necessary.

If further information are requested, provide Exhibit 1.

- Two key findings:
 - Sustainametics has too few clicks compared to its competitors (except for 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: $800 / 15,000 \approx 5.30\%$

Competitor 1: $3,400 / 45,000 \approx 7.60\%$

Competitor 2: $2,200 / 25,000 \approx 8.80\%$

Competitor 3:

$420 / 10,000 \approx 4.20\%$

Competitor 4:

$3,890 / 50,000 \approx 7.80\%$



Case 13: Sustainametics (3/4)

Analysis

Suggested Solution

3. Based on the detected 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 twice as long. Additionally, the quality of clients implies an improvement in Sustainametics CR.

Case 13: Sustainametics (4/4)

Exhibits

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 ¹
Competitor 2	25,000	2,200	6	Product-page ¹
Competitor 3	10,000	420	3	Landing-page ²
Competitor 4	50,000	3,890	4	Check-out

Exhibit 2: Costs and revenues generated by the various features of a display ad

	Costs per click (€)	Clicks generated	Quality of clients ³	Avg. amount spent by client (€)
Display ad ⁴	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 and is only on the left-hand side of the page



Case 14: University Cafeteria (1/5)

Introduction

Case Information

Industry: Food & Beverages

Difficulty: Medium

Case format: Market Sizing

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. 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

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

Suggested Solution

1. Calculation of current profit

- Profit per meal:

- Assumptions profit (80 % of price):
- Counter URSPRUNG: $= 5.50 \text{ €} * 80 \% = 4.40 \text{ €}$
- Counter HEIMAT: $= 4.10 \text{ €} * 80 \% = 3.28 \text{ €}$
- Counter PIZZA, PASTA: $= 5.00 \text{ €} * 80 \% = 4.00 \text{ €}$
- Soup of the day: $= 1.50 \text{ €} * 80 \% = 1.20 \text{ €}$
- Meal Restaurant: $= 12.88 \text{ €} * 80 \% = 10.30 \text{ €}$
- Drinks Restaurant: $= 3.50 \text{ €} * 80 \% = 2.80 \text{ €}$

\varnothing restaurant prices: $(5.50 \text{ €} + 4.10 \text{ €} + 5.00 \text{ €} + 1.50 \text{ €}) / 4 = 4,025 \text{ €} \rightarrow 4,025 \text{ €} * 320 \% = 12.88 \text{ €}$

- Demand:

- 2,240 students $\rightarrow 25 \% \text{ of working days/year} = 37.5 \text{ days} * 2,240 \text{ students} = 84,000 \text{ meals/year}$
- Semester abroad: Bachelor $\rightarrow 1 \text{ semester abroad (every program)}: 8 \text{ programs} * 30 \text{ students} * 125 \text{ working days (half year)} * 25 \% \text{ demand} = 7,500 \text{ days}$
- International Management: $2 \text{ courses} * 30 \text{ students} * 125 \text{ working days} * 25 \% \text{ demand} = 1,875 \text{ days}$
- Master: $2,240 * 45 \% = 1,008 \text{ Master students} = 504 \text{ Master students} * 125 \text{ working days} * 25 \% \text{ demand} = 15,750 \text{ days}$

Meals in total: $84,000 - 7,500 - 1,875 - 15,750 = 58,875 \text{ per year}$

- About 630 employees at Frankfurt School \rightarrow Assumption: also 25 % of employees eat in cafeteria
- 25 % of working days/year = $37.5 \text{ days} * 630 \text{ employees} = 23,625 \text{ meals/year}$

Meals in total per year = $58,875 + 23,625 = 82,500 \text{ meals/year}$

Total demand/meal = $82,500 / 4 \text{ meals} = 20,625 \text{ per year}$

Restaurant: utilization of 75 % $\rightarrow 75 \% * 250 \text{ days/year} * 30 \text{ seats} = 5,625 \text{ meals/year plus } 5,625 \text{ drinks/year}$

Case 14: University Cafeteria (3/5)

Analysis

Suggested Solution

1. Calculation of current profit (cont'd)

- Direct profit:

- Profit/meal * sold ones
- Counter URSPRUNG: $= 4.40 \text{ €} * 20,625 = 90,750 \text{ €}$
- Counter HEIMAT: $= 3.28 \text{ €} * 20,625 = 67,650 \text{ €}$
- Counter PIZZA, PASTA: $= 4.00 \text{ €} * 20,625 = 82,500 \text{ €}$
- Soup of the day: $= 1.20 \text{ €} * 20,625 = 24,750 \text{ €}$
- Restaurant: $= (10.30 \text{ €} + 2.80 \text{ €}) * 5,625 = 73,688 \text{ €}$

- Indirect costs:

- Assistants, Cashiers, Sellers, Waiters: $6 \text{ h/day} * 250 \text{ working days} = 1,500 \text{ h/year/employee} * 9 \text{ employees} = 13,500 \text{ h/year} * 10 \text{ €/h} = 135,000 \text{ €/year}$
- Chefs: $6 \text{ h/day} * 250 \text{ working days} = 1,500 \text{ h/year/employee} * 4 \text{ employees} = 6,000 \text{ h/year} * 14 \text{ €/h} = 84,000 \text{ €/year}$
- Rent: $300 \text{ m}^2 * 15 \text{ €/m}^2 = 4,500 \text{ €/month} * 12 = 54,000 \text{ €/year}; \text{extra charges: } 50\% \text{ of rent} = 27,000 \text{ €/year}$

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

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

Case 14: University Cafeteria (4/5)

Analysis

Suggested Solution

2. How to increase profit

- Increase profit:

- 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, 10th 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., shortening 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

General information

Every fourth working day, students eat in the cafeteria. Except for 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 must be considered

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 m²
- Rent: 15 €/m² + 50 % extra charges of the rent



Case 15: Germanys 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 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 covering over 90% of the market share
- The state is thinking about subsidizing these companies through direct loans and grants, 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 "Scraping Premium," in the form of a fixed amount of €2.5k
- Customers who will buy an electric vehicle in the upcoming 5 years, will receive an "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: Germanys Electric Mobility (2/3)

Analysis

Suggested Solution

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 incentivize 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 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 by data

- After analyzing Exhibit 1, 2 options are considered more closely
 - a. “Electric Vehicle Subsidy”:
 - Most economical out of all 4 options, highest expected 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 expected tax revenue, high public perception, catch-up with other countries on electric vehicle infrastructure
 - Requires the highest investment out of all 4 options, expected to have a low uptick in electric car sales, and entails a 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: Germanys Electric Mobility (3/3)

Exhibits

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

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

○ Negative public perception

● Positive public perception

Case 16: Sanctions for Russia (1/5)

Introduction

Case Information

Industry: Food & Beverages

Difficulty: High

Case format: Investment Decision

Problem Statement

Dantwo AG, a French food company struggling with the EU sanctions against Russia, is faced with an important decision: should it continue to operate its numerous Russian production facilities or relocate? The newly appointed chairwoman, succeeding her father - the main shareholder and an influential figure in the board - needs to navigate this decision. Her father's risk-averse decision to vote should be taken into account when proposing solutions. Evaluate the financial impact of remaining in Russia versus moving to another country, factoring in sanction-related losses and new setup costs. Also, assess the ethical consequences of maintaining Russian operations considering stakeholder and community responsibilities. In the scenario of maintaining their Russian presence, what specific actions could Dantwo AG undertake to enhance its reputation?

Background information (provide only if requested)

Financial Implications

- The European Commission will impose a penalty of €300 million on Dantwo AG when not leaving Russia.
- Additionally, the company will have to set aside €75 million for legal provisions related to cases in the EU and Russia.
- Companies that choose to leave Russia are eligible for subsidies amounting to €100 million.

Relocation Strategies

- Two scenarios are considered for relocating workers from Russia to another country:
 1. *Optimistic Scenario:* Assumes 30% of the workforce can be relocated, though this is risky.
 2. *Conservative Scenario:* Estimates that only 15% of the workforce can be relocated safely.
- All costs related to relocation are included in a provision of €100 million. No policy payments are required for relocated employees.
- All laid-off employees receive full salary for 3 months and all permanent employees receive a severance payment of 50% of their annual salary.
- Details in exhibits

Operations in Russia

- Operations consists of factories categorized as small, medium, and large, each with varying costs and margins. The company anticipates challenges due to the expected nationalization of facilities in Russia (details in exhibits).
- Dantwo AG's potential exit from Russia, as the region's main producer of essentials like water, dairy, and baby food, might cause a critical shortage of these supplies, leading to significant economic impacts and adverse health effects on children due to the scarcity of alternatives.

Quick Solution

- Conduct a quick evaluation of the immediate financial impacts of EU sanctions to develop a financial strategy for mitigating risks. In a risk-averse scenario, the strategy should favor staying in Russia, while in a scenario with a higher tolerance for risk, relocating to the USA would be advisable.



Case 16: Sanctions for Russia (2/5)

Exhibits

Exhibit 1: Expected depreciation

Expected Depreciation (in million €) after 2 and 5 years for the production location Russia due to nationalization.

Factory Size	Depreciation 1	Depreciation 2	Number of Factories
Small	2.5	2	20
Medium	5	3	10
Large	10	6	10

Exhibit 3: Estimated increase in profit of different production locations

Estimated increase in profit (in %) of the different production locations due to redeployment of the workforce. The Increase is linear to the Base Year FY22.

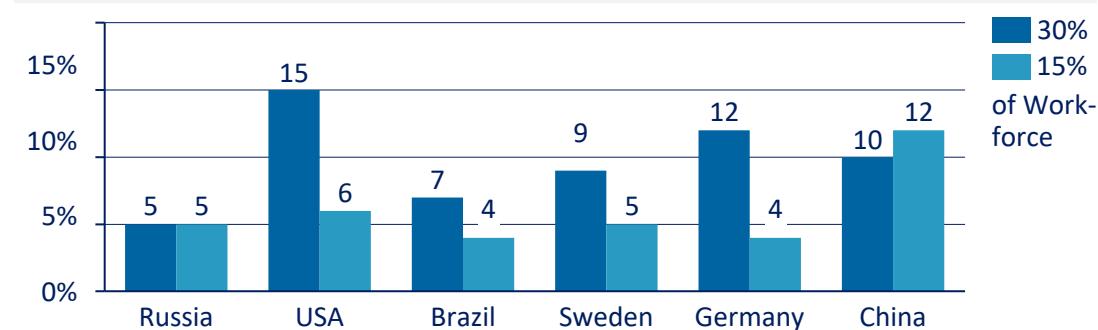


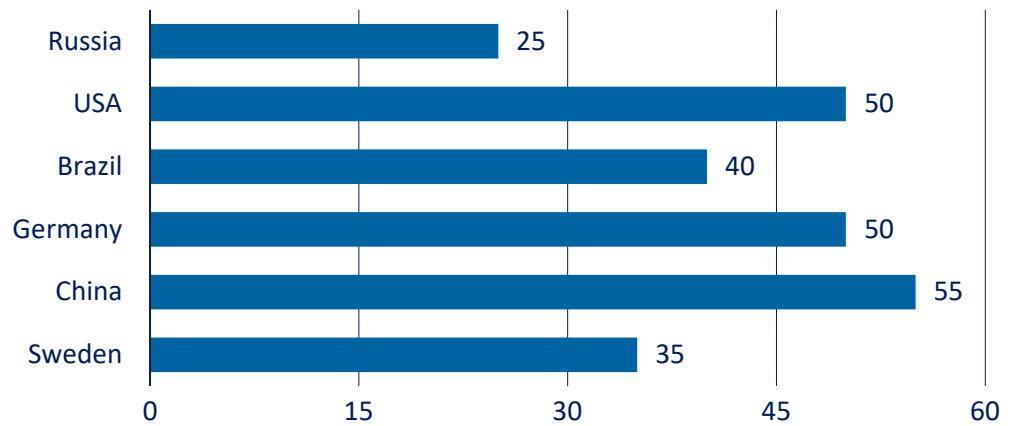
Exhibit 2: Salary breakdown

Salary breakdown of employees hired in Russia. Exchange rate €/Ruble is 1/100.

Type of Employment	Salary p.a. (in Rubles)	Number
Permanent	4,500,000	5,000
Freelance	3,500,000	1,700

Wage payments to employees in Russia in the event of a stay are considered in the margins.

Exhibit 4: Operating profit FY22 by Country (in million €)



Case 16: Sanctions for Russia (3/5)

Analysis

Suggested Solution: Cost overview for factories and workforce in case of exiting Russia

Costs from Depreciation of Factories					
Small	€ 2,500,000.00	€ 2,000,000.00	20	€ 50,000,000.00	€ 40,000,000.00
Medium	€ 5,000,000.00	€ 3,000,000.00	10	€ 50,000,000.00	€ 30,000,000.00
Large	€ 10,000,000.00	€ 6,000,000.00	10	€ 100,000,000.00	€ 60,000,000.00

Total costs are €330 million, calculated by adding all depreciation for the 5 years.

Costs from Wage Expenses due to Corporate Policy for Factory Staff				
Salary During Transition Period (3 Months)	100% Annual Salary	€45,000 / €35,000	5,000 / 1,700	€ 71,125,000.00 ¹
Severance Pay	50% One-Time Annual Salary	€45,000	5,000	€ 112,500,000.00 ²

Wage costs, when added to provisions of €100 million (from the task), total €283,625,000. To calculate the share of the actual costs that will be incurred, the redirected employees from salary continuation must be excluded. Therefore, 30% or 15% will be deducted from the calculated costs.

Approximately €280 million * 0.7 (0.85) = approximately €200 million (€240 million).

$$\begin{aligned} {}^1 (45,000 * 5,000 + 35,000 * 1,700) / 4 \\ = 71,125 \text{ mio.} \end{aligned}$$

$${}^2 (45,000 * 5,000) / 2 = 112,125 \text{ mio.}$$

Suggested Solution: Revenue when leaving Russia

USA			China		
Year	Revenue 15%	Revenue 6%	Year	Revenue 15%	Revenue 6%
1	57.5	53	1	60.5	56.1
2	65	56	2	66	57.2
3	72.5	59	3	71.5	57.2
4	80	62	4	77	58.2
5	87.5	65	5	82.5	58.2
Total	362.5	295	Total	357.5	286.9

- Only the USA and China are relevant as alternative locations, and calculations for just these are sufficient.
- USA/China → USA with slightly better revenue forecasts → uncertainty is the same in both cases, so the numbers suffice for this decision.
- Consider exiting Russia, as the opportunity costs of lost profits impact the company's cash flow.
- Results with 30% employee reallocation → €362.5 million - €143.75 million = €218.75 million.
- Results with 15% reallocation → €295 million - €143.75 million = €151.25 million.



Case 16: Sanctions for Russia (4/5)

Analysis

Suggested Solution: Revenue when staying in Russia

USA	
Year	5% Growth
1	26.25
2	27.5
3	28.75
4	30
5	31.25
Total	143.75

€143.75 million is expected in revenues in Russia if the company chooses to remain there.

From this, €300 million in fines to the EU for sanctions and €75 million in provisions must be deducted.
 → €143.75 mio. – €375 mio. = €-231 mio.

Overview

Scenario	Profit	Staff Costs	Factory Costs	EU Assistance	Total
Stay	-€ 231,000,000.00	Included in Revenue	n/a	n/a	-€ 231,000,000.00
Leave & 30% Reallocation	€ 219,000,000.00	€ 198,537,500.00	€ 330,000,000.00	€ 100,000,000.00	-€ 209,537,500.00
Leave & 15% Reallocation	€ 151,000,000.00	€ 241,081,250.00	€ 330,000,000.00	€ 100,000,000.00	-€ 320,081,250.00

Although the overall result is better if the reallocation of 30% of the employees is successful, the board's risk-averse stance necessitates a decision based on the numbers clearly in favor of remaining in Russia. The uncertainty is reflected in a difference of >€100 million. Therefore, it is necessary to act cautiously and prefer staying, for example, to prepare for a potential exit in the future. The figures do not need to be calculated to the decimal point, as the conclusion is not affected by how close the successful reallocation comes to remaining in Russia. In this consideration, the significant difference between the two reallocation scenarios is decisive.

Case 16: Sanctions for Russia (5/5)

Analysis

Suggested Solution: Ethical consequences of maintaining Russian Operations

- Indirectly supports the war through tax payments and the production of valuable goods.
- Remaining in Russia fundamentally bolsters the economy. While tax payments can potentially be minimized through other structures in Russia, making the long-term financial impact negligible, the short-term implications are still highly relevant.
- The Russian population also has a right to functioning basic supplies, especially for infants, etc., so a shortage of such products mainly affects particularly vulnerable groups.
- Employees would lose jobs → Weakening of Russia's economy if thousands lose their jobs – means to weaken in the war.
- However, political influence can be exerted through the EU, negotiating agreements, but these are the population groups affected, which can lead to conflicts within Russia.
- Corporate policies in the consumer goods sector often require special protective measures.
- Ethical dilemmas weigh the value of life (Ukraine – Russia).
- The corporation's utility assessments depend on the definition of benefit through the protection of persons.

Suggested Solution: Enhancing the reputation staying (many Ideas possible)

Marketing Campaign	Internal Restructuring Measures	Hedging
<ul style="list-style-type: none"> • Campaign against the war – Russia relies on critical food supplies, so they are unlikely to impose penalties. • Additional costs but compared to the losses and also the potential costs of restructuring if Russia is left, costs should not play a decisive role. International reputation is extremely important for such a company (e.g., Nestle). 	<ul style="list-style-type: none"> • More staff to rearrange on a freelance basis to minimize costs in future considerations. • Increase turnover through government contracts to compensate for losses. • Negotiate special sanctions with the EU to simplify future withdrawal – minimize penalty payments through contracts. 	<ul style="list-style-type: none"> • Protection against Russian attempts to nationalize foreign companies – legally and economically. • Communication must take place in consultation with EU institutions. • Maintain reputation and cooperation at the governmental level despite remaining.

7

About Us



Do not hesitate to leave feedback and help to improve the upcoming editions of the Case Book!

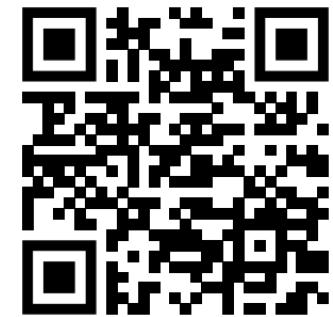
The Frankfurt School Student Consulting Case Book has been created by current students for current students aiming for a career in management consulting. In order to keep improving this Case Book in the upcoming years, we would highly appreciate if you could give us feedback on this version of the book! By clicking the link or scanning the QR-Code below, you will be able to rate and provide constructive feedback for each section of the book.

We are especially interested in hearing your experiences with the case section of the Frankfurt School Student Consulting Case Book! Within the form, you will be able to leave comments about your experience with each case from the perspective of the interviewer and interviewee and tell us what could be improved in the next editions of this book. Therefore, please do not hesitate to state your anonymous opinion about our work, as we can always bring the book to the next level.

We are looking forward to welcoming you again in the next edition of the Frankfurt School Student Consulting Case Book and thank you for your support and collaboration.

Good luck with your consulting interviews!

LEAVE YOUR FEEDBACK HERE!



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 Unternehmergeellschaft (UG). Since the end of December 2019, we have been operating as a GmbH. The student initiative currently consists of around 87 consultants who are studying in the various Bachelor and Master programs at Frankfurt School.

Our goal is to provide a **platform** for Frankfurt School students to...



... get to know the daily **life of a management consultant** during your studies and to gain first practical experience.



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



... exchange ideas with ambitious students and thus build up a **personal network** of like-minded people.

Support from the Frankfurt School



Frankfurt School
President Professor
Dr Nils Stieglitz

"Through close contact with renowned management consultancies, students have access to practical methods and applications which enable them to advise clients from start-ups to banks and industrial companies. Together with the theoretical knowledge that our students acquire in lively exchanges with Frankfurt School professors, they are able to offer high-quality consulting services and create added value for their clients."