Case Book 2024

YGCC
Yale Graduate Student Consulting Club

Full edition

April 2024

YGCC Case Book 2024: Introduction

Welcome to the 2024 edition of the Yale Graduate Student Consulting Club case book! In this book you will find 19 mock cases that have been written based on real interview examples, **and 6 new cases from recent case competitions**. Please take a moment before you begin the practices to read through this introduction – it will help you get familiarized with the case interview process and guide you on how to best make use of this book. In general, you can follow these steps when doing a case practice:

1. Pair up with a partner. Assign one person as the interviewer and the other as the candidate
2. Interviewer – take about 5 minutes to read through the case in your head. Then read the prompt to the candidate
3. Candidate – Note on paper important details from the prompt. Ask clarifying questions, then ask the interviewer if you can take about 1 minute to draw up a structured problem-solving approach. Then talk through your structure with the interviewer and ask for any additional information you think might be helpful
4. Interviewer – Listen carefully to candidate's structure and logic. Are there any crucial pieces he/she is missing? Is he/she going down the right track? If not, try to lead the candidate in the right direction. Provide additional information only when the candidate asks for them. Then go through the questions one by one, providing the exhibits as appropriate
5. Candidate – Take as much initiative as you can in answering the questions. Calculate whatever you think is relevant
6. At the end of the case, the interviewer should ask the candidate to summarize ("synthesize") the case. The candidate should give a very brief ~1 minute summary of his/her recommendations

Note: a typical case interview should be about 30 minutes long: dedicate 5 minutes to the opening, 20 minutes to the main body and 5 minutes to the closing

YGCC Case Book 2024: Introduction

Dear our valuable members,

I am writing on behalf of the Yale Graduate Consulting Club to express our sincere gratitude for your purchase of the casebook materials. Your generosity has been instrumental in completing this valuable resource, enabling us to compile a comprehensive collection of cases for the benefit of our members.

We also want to thank the previous leadership teams and the casebook competition participants for developing and contributing to the casebook. Your contribution demonstrates your dedication to your own growth and enriches your fellow members' experiences.

If you notice any errors within the casebook, please don't hesitate to contact us. Your feedback is crucial in ensuring the accuracy and quality of this resource. As a token of our appreciation, we're offering a special prize to the first person who reports a mistake.

Thank you once again for your dedication to the Graduate Consulting Club.

Warm regards,

Huan Li

President of the Year of 2024

Yale Graduate Consulting Club

Any questions or comments are welcome – please address them to yale.grad.consulting@gmail.com.

I hope you find this case book helpful, and best of luck in your application process!

Developed by Derek Chen, Huan Li, Jason Hou

YGCC Case Book 2024: Introduction

The following pages provide a brief description of each section in a given case and how they should be used by the interviewer and candidate.

Type of case	Firm	Qual.	Quant.
Industry	Round	1-5 (5 being the most difficult	1-5 (5 being the most difficult)

Prompt

This section is read by the interviewer to the candidate.

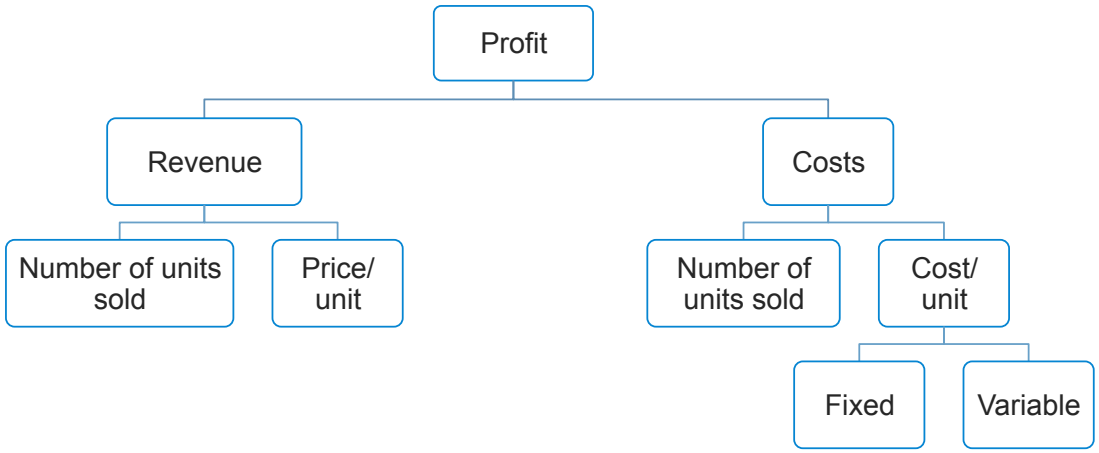
Additional Information *(provided on request)*

This section contains information that should only be provided to the candidate if he/she asks.

- Exhibits: Charts and graphs that are provided throughout the case as indicated in the "Analysis" section

Sample Structure *(any reasonable one is acceptable)*

An example of one way the problem can be structured. Note there are many ways to do this and candidate can come up with a completely different, yet equally good (if not better) structure. Most important feature is MECE (Mutually Exclusive and Collectively Exhaustive).



Analysis

There are two major case interview styles:

- Interviewer-led (McKinsey-type): Interviewer asks candidate questions in a logical sequence and candidate draws conclusions and gives insights based on data provided.
- Interviewee-led (BCG-type): Candidate comes up with their own approach to the case and asks for data as they go along. Interviewer can provide limited guidance if necessary.

The majority of cases in this case book are written in the interviewer-led style, but this can easily be converted into interviewee-led if interviewer doesn't ask all the questions.

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Summary

An example of a recommendation based on the analysis. Rule of thumb for giving a strong recommendation: RRRN (Recommendation, Reasons, Risks, Next steps) – candidate should cover all four in this order.

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Table of Contents (New ones, life science focus)

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Case 20: Vaccine Alliance

Operational	Case Comp	Qual.	Quant.
Public sector & healthcare		3	3

Prompt

Gavi, a vaccine alliance, recently set up an emergency fund of $30M to provide urgent delivery support to improve vaccination coverage. In August 2022, the world reached the tragic milestone of one million COVID-19 deaths in that year alone. Global vaccine inequity persists-63% of the total population across WHO member States have completed their primary vaccination, while only 18% and 23% off people have done so in lower-income countries (LICs) and Africa respectively. The chair of Gavi has asked our team to help investigate the current bottlenecks in vaccination in LICs countries. Additionally, our team has been asked to propose new strategies to improve primary vaccination coverage rate in African countries with vaccination rate lower than 10%.

Additional Information *(provided on request)*

What are success metrics for the Gavi?

Improve the vaccination coverage to at least 10%, and ideally 70% , especially for susceptible groups (healthcare workers and the elderly))

How to define the vaccination coverage?

People who have complete their primary vaccination series divided by the overall population

What are the key steps from manufacturer to vaccination?

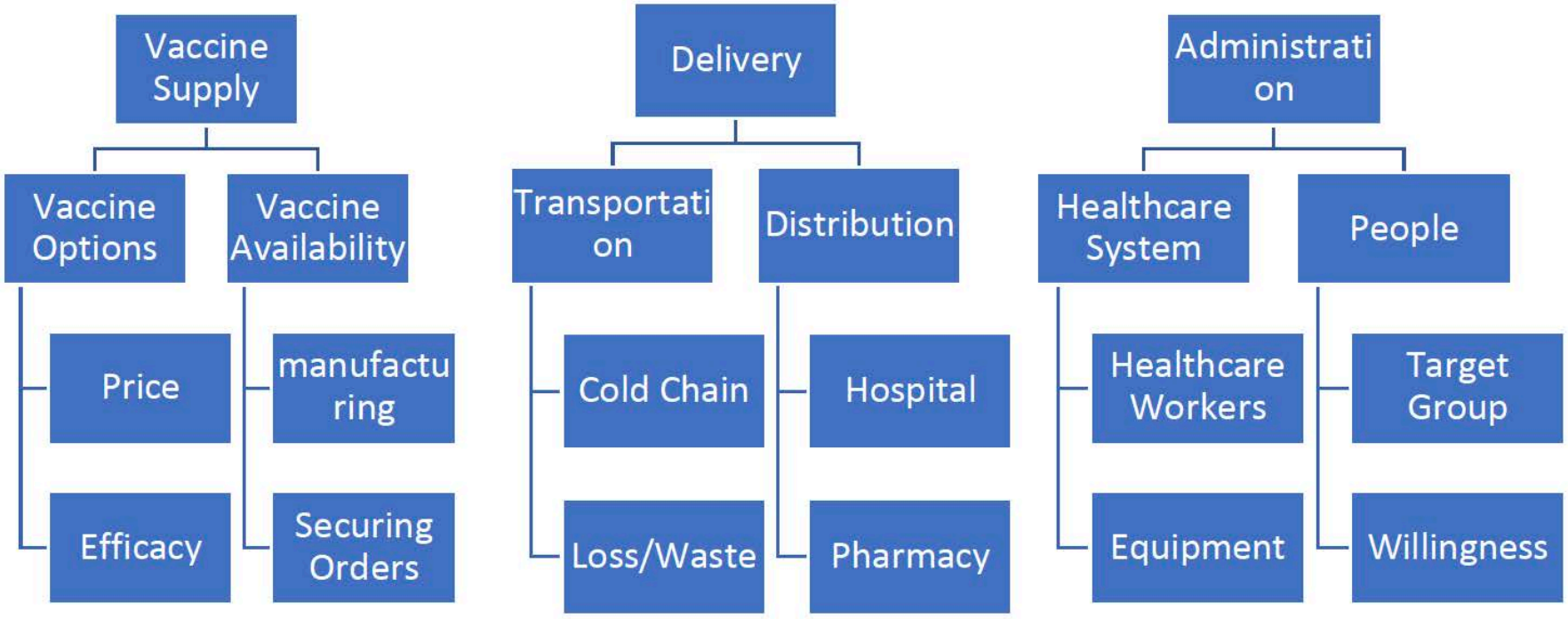
Place an order, deliver the vaccine, vaccine administration. The COVID-19 vaccines rely on cold chain delivery system.

Will $30M be allocated to pay for the vaccine ?

The government will pay for purchasing the vaccine. But Gavi will give recommendations about vaccine choice to local government. Gavi will do the research and estimate the funding budget for different countries.

Case 20: Vaccine Alliance

Sample Structure *(any reasonable one is acceptable)*



Case 20: Vaccine Alliance

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

- *Vaccination rates have surged globally but not equally. What are major bottlenecks for increasing vaccination coverage in low income countries?*

a. Vaccines among the 34 countries have mostly been secured, but neither delivered nor administered. Even including these vaccines, vaccination coverage does not reach the 70% threshold in all but 7 countries.

b. Within low income countries, there is wide heterogeneity in vaccination rates among countries, ranging from 1%-70%. This could be due to cultural differences in countries resulting in different levels of vaccine hesitancy, differences in levels of corruption affecting the vaccine supply chain, different levels of development of the vaccine supply chain or different levels of aid received by different countries.

c. Djibouti has a high portion of vaccines in the delivered but not administered stage. This suggests that their healthcare system infrastructures are not sound or people might reject vaccination.

d. Burundi, Yamen and Haiti are three countries with lowest vaccination rate and vaccine delivery support will improve the vaccination rate significantly.

Case 20: Vaccine Alliance

Analysis

- *Some vaccines requires standard vaccine refrigerators (2 to 8 ÁC), while novel mRNA vaccine requires ultra cold chain freezers (-60 to -80 ÁC). For many countries, ultra cold chain does not exist to support these novel vaccine. What are possible solutions regarding the cold chain delivery challenges in Africa?*

Vaccine Supply Chain:

Purchase vaccines that are less sensitive to temperature (Moderna)

Have smaller regular shipments to reduce need for cold storage along the rest distribution channel

Improve transportation (Refrigerated trucks, drones for last mile delivery where roads are not present)

Improve storage (Develop refrigeration infrastructure)

Have immunization campaigns to mass vaccinate people as soon as vaccines arrive, thus reducing storage time at the destination

Financing & Cost Recuperation:

Design with long term financial benefits in mind

Create adjustable temperature cold storage for later repurposing

Possible renting to the private sector to recoup costs or use for future public needs and vaccination campaigns

Case 20: Vaccine Alliance

Analysis

- *How heavily do current vaccines administered in low income countries in Africa rely on ultracold chain (< -10 ℃) delivery?*

a. Currently, the top 3 vaccines in Africa are J&J, Pfizer and AstraZeneca. This combination accounts for around 60% of vaccines administered in Africa, which rely heavily on the cold chain delivery system.

b. Pfizer and Moderna occupy around 30% of African vaccine market and they require a very strict set of delivery and storage temperature conditions (< -10 ℃).

c. Cold chain delivery is a significant concern, but limited ultra cold chain freezers could be a significant bottleneck for these low income countries in Africa that rely on Moderna or Pfizer.

d. Our client can optimize for vaccine types that can ideally be stored at 4 ℃, which could effectively save time and cost for ultracold chain delivery, and potentially improve vaccination coverage in Africa.

Case 20: Vaccine Alliance

Analysis

- *Gavi will recommend a new vaccine combination to the government before launch the delivery partnership program. What are optimal substitutes for vaccines relying on ultracold chain?*

  a. The common delivery condition for most COVID-19 vaccines on the market is 2 to 8 °C.
  b. The optimal substitute for Pfizer is the 2 dose Novavax considering its 89.7% efficacy, 2 to 8 °C delivery temperature requirements and recommended age.
  c. AstraZeneca, a 2 dose vector vaccine, is also good option considering its 79% efficacy and 2 to 8 °C delivery temperature requirement.
  d. Vaccines storage and delivery include digital temperature monitors to ensure vaccines' optimal temperature are maintained and not exposed to heat during transportation.
  e. Negotiate any secured orders from Pfizer and conduct research on Novavax regarding its safety and its potential supply in Africa.

Case 20: Vaccine Alliance

Analysis

- *Gavi has decided to allocate $3M funding to launch a partnership delivery program to support Burundi with the population of 12M. The current combination of vaccines in Burundi is 40% Pfizer, 30% J&J and 30% AstraZeneca. Based on Burundi's infrastructure and capabilities, Gavi has suggested a switch to 40% Novavax, 30% J&J, 30% AstraZeneca. How much will this increase vaccination coverage and will the new plan achieve Gavi's target of 10% coverage?*

Doses distributed:

- Current Combination: $3M/$2.5 = 1.2M
- Optimized Combination: $3M/$1.5 = 2M

Number of people vaccinated:

The candidate should note that J&J is a one-dose vaccine. All other vaccines require two doses.
Current Combination: 1.2 M*(0.4*0.5+0.3+0.3*0.5) = 0.78M
Optimized Combination: 2 M*(0.4*0.5+0.3+0.3*0.5) = 1.3M

Coverage Rate:

Current Combination: 0.78M/12M = 6.5%
Optimized Combination: 1.3M/12M = 10.83%
Coverage increase: 10.83% - 6.5% = 4.33% (67% increase)

Insights:

With the financial support from Gavi and the optimized vaccine combination, Burundi can increase the vaccination coverage by 67% achieving the vaccination coverage goal of 10%. The price of Novavax is also a bit lower than Pfizer, which could reduce costs for the government. Children younger than 12 years old however will still need to be vaccinated with Pfizer in the future. To reach this target group Burundi will need to build up its ultra cold chain system in the long term.

Notes for Interviewer
A good interviewee will provide a calculation structure before plug in numbers and walk through the math process. The insights about the final number are also very important. **Average Vaccination Delivery Cost:** - Standard Cold Chain (> -10 °C) Vaccines: $1.5/dose - Ultracold Chain (< -10 °C) Vaccines: $2.5/dose.

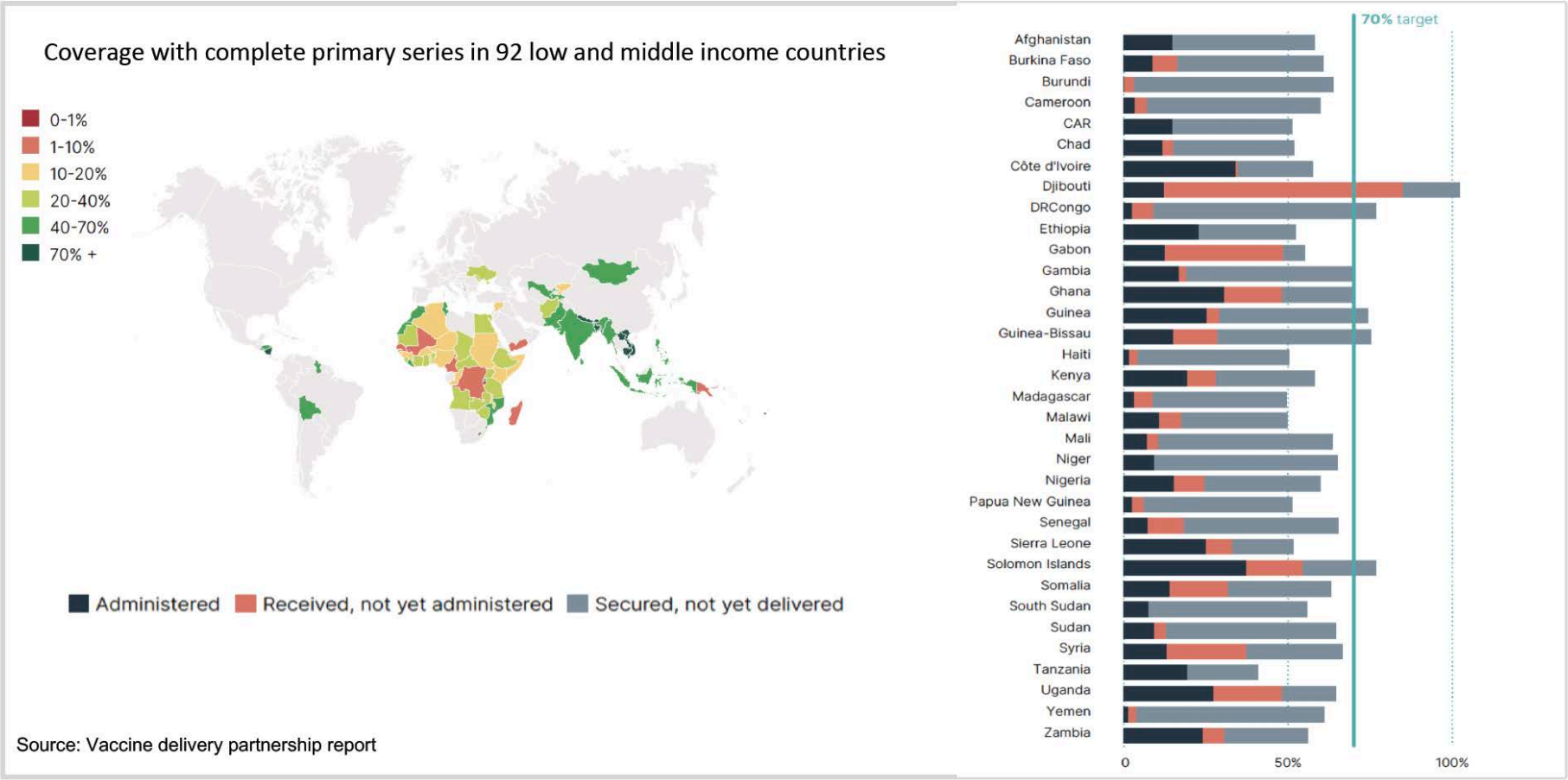
Case 20: Vaccine Alliance

Summary *(based on sample solution above)*

Recommendation:
I recommend Gavi launch the vaccine delivery support program and recommend Gavi's optimized vaccine combination to increase vaccination coverage in Burundi.
Reason:
Firstly, the current bottlenecks for low vaccination coverage are cold chain delivery issues in low income countries. Secondly, the vaccine combination should be optimized to be less dependent on ultra cold chain. Thirdly, if Burundi purchases Novavax and receives $3M in support, the vaccination coverage will increase by 67% and achieves Gavi's 10% vaccination target.
Risk:
It might be challenging to replace the all Pfizer vaccine with the Novavax vaccine if the current supply chain infrastructure in Burundi is too specialized. Additionally, the optimized vaccine combination risks leaving children under 12 unvaccinated and increasing the spread of COVID among this population.
Next Step:
Gavi should consult expert advice for optimal vaccine combination and encourage local government to look into ways to establish a domestic Novavax supply chain..

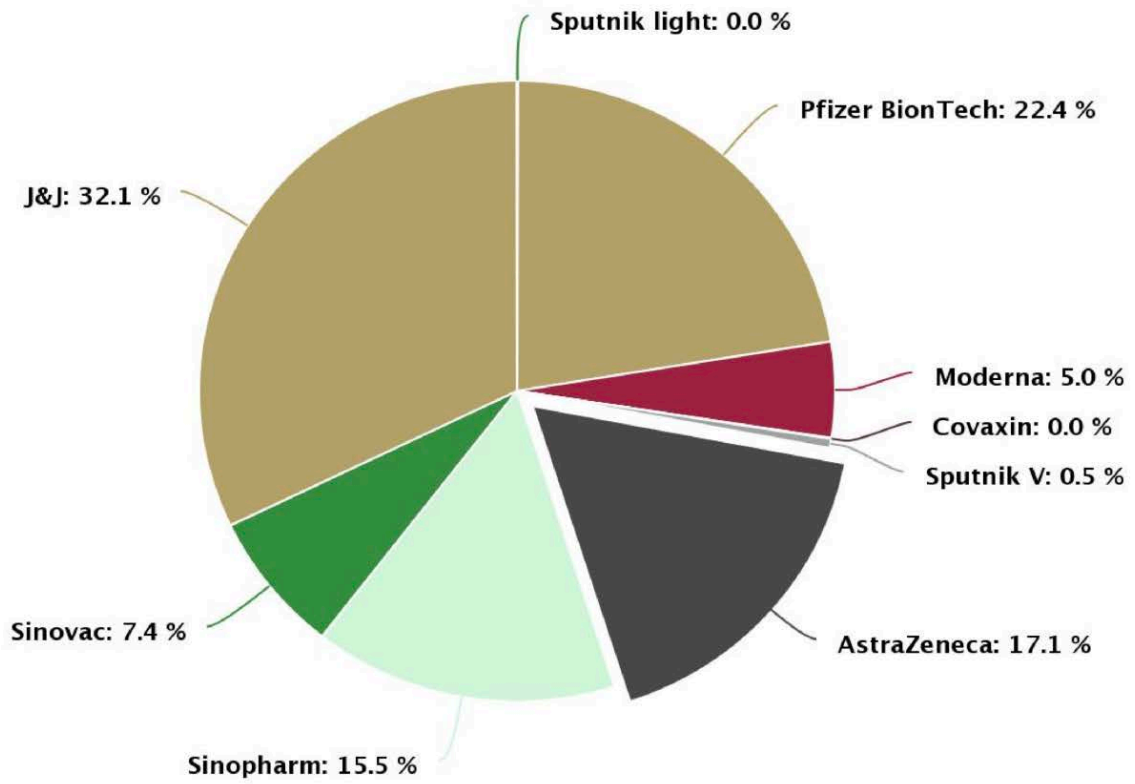
Case 20: Vaccine Alliance

Exhibit 1: Current breakdown of vaccine course along manufacturing to administration



Case 20: Vaccine Alliance

Exhibit 2A: Proportion of Current Vaccine Types in Africa



Source: Africa CDC

Case 20: Vaccine Alliance

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Exhibit 2B: COVID-19 Vaccine Options

Company	Type	Price	Efficacy	Delivery condition	Dose	Recommended age	WHO approved date
Pfizer-BioNTech	mRNA	$19.5	95.0%	-80°C to -60°C	2	6 months and older	2020.12.31
Moderna	mRNA	$25.0	94.1%	-25°C to -15°C	2	6 months and older	2021.4.30
Novavax	Subunit	$16.0	89.7%	2°C to 8°C	2	12 yrs and older	2021.12.20
Janssen/J&J	Vector	$10.0	66.0%	2°C to 8°C	1	18 yrs and older	2021.3.12
AstraZeneca	Vector	$3.5	79.0%	2°C to 8°C	2	18 yrs and older	2021.4.16
CanSino	Vector	$26.7	65.7%	2°C to 8°C	1	18 yrs and older	2022.5.19
Sinopharm	Inactivated	$19.0	78.1%	2°C to 8°C	2	18 yrs and older	2021.5.7
Sinovac	Inactivated	$13.6	51.0%	2°C to 8°C	2	18 yrs and older	2021.6.1

Source:WHO

Case 21: Innova Pharma

Special note:

This case is unlike the typical cases you might encounter during interviews. While firms may not often require massive quantitative-intensive calculations, this case's value lies in its ability to sharpen your analytical and structured thinking skills. The practice you gain from approaching this case will certainly contribute to your overall readiness for consulting interviews.

Therefore, we encourage you to approach this case with an open mind, focusing on the structured thinking process it facilitates rather than on the quantitative aspects.

Case 21: Innova Pharma

Market Entry	Case Comp	Qual.	Quant.
Healthcare		3	3

Prompt

Your client is Innova Pharma, a US-based biopharmaceutical company developing a medication to treat opioid addiction. Currently, the medication is under phase II clinical trial. The client market cap is $150M and its restricted cash position is $50M.

The client has asked you to assess the market and the most viable route to it.

Additional Information *(provided on request)*

Market identifications:

- Mechanism of action has same effectivity in men and women.
- In 2020 the incidence was 91,799 cases.
- National drug-involved overdose deaths growth rate ~ 19.33% (mean growth rate between 2014 and 2020).
- Overdose annual deaths are the incidence of opioid addiction cases.
- Competitors:
  1. Actual competitors (standard treatment and cost): Methadone: $126/weekly. Buprenorphine: $115/weekly. Naltrexone: $1,176/monthly.
  2. Prospective competitors: 4 drugs which are between phase 1 to 2 of the clinical trial.

Market economics:

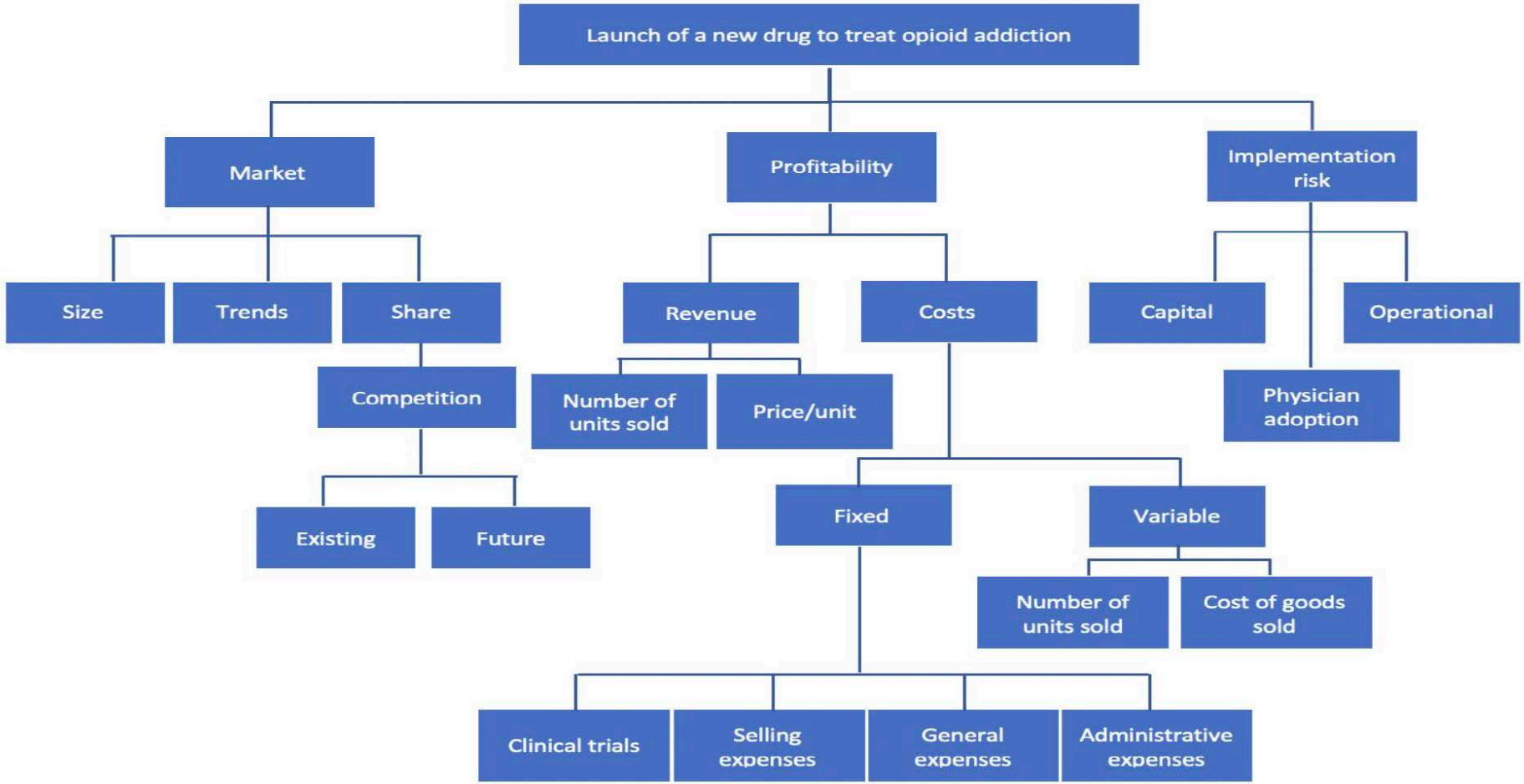
- Innova pharma annual treatment cost is $7,000 (12 doses) and its treatment lasts 1 year.
- Initial penetration is 2.5%. 10% penetrance by year 4.
- 3% annual price increase due to inflation.
- COGS is 45%. 3% annual increase.

Route to market:

- Client restricted cash for R&D is $50M. Cost of R&D is $70M with $60M remaining for launching. In 2027 is the FDA approval. Market launch by 2028. 10-year patent exclusivity period.

Case 21: Innova Pharma

Sample Structure *(any reasonable one is acceptable)*



Case 21: Innova Pharma

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

- *What is the potential market size of the client?*

  In 2020 the market size was 91,799, with an annual growth rate of 19.33%:
  - 2028 market size: 316,351
  - 2037 market size: 1,552,477

- *What is the estimated revenue and profit after launching and while the patent is valid?*

  With the assumption that the annual treatment cost is $7,000. The treatment lasts 1 year. The initial penetration is 2.5% and by year 4 is 10%. Also that there is a 3% annual price increase and the COGS is 45% with a 3% annual increase, the revenue and profit after launching and while the patent is valid are the following:
  - 2028: $55,361,425 (revenue). 2029: $136,093,437 (revenue), $112,700,592 (profit). 2030: $250,914,997 (revenue), $226,097,528 (profit). 2031:$411,211,200 (revenue), $38,4882,347 (profit). 2032: $505,433,367 (revenue), $477,501,087 (profit). 2033: $621,244,891 (revenue), $591,611,535 (profit). 2034: $763,591,906 (revenue), $732,153,879 (profit). 2035: $938,556,472 (revenue), $905,203,868 (profit). 2036: $1,153,611,157 (revenue), $1,118,227,380 (profit). 2037: $1,417,941,251 (revenue), $1,380,402,602 (profit).

- *This is a quantitatively heavy case so the interviewee is allowed to use a calculator.*
- *If the interviewee asks for the predicted profitability, interviewer can point him towards the predicted trends displayed in exhibit 2.*

Case 21: Innova Pharma

Analysis

- *Is the client positioned to compete with the current and prospective medical treatments?*
  Competitive rivalry:
  1. Threat of existing competitors:
  - Current competitors have high relapse rate (greater than 40%). While the client medication during phase 2 has a relapse rate of 7.5%.
  2. Threat of future competitors:
  - High barriers to entry. Strict regulatory requirements.
  - Future competitors may have adverse effects as seizures, congestive heart failure, depression, and disorientation. While the client medication just have reported minor side-effects as nausea.
  3. Buyer power:
  - Large number of potential customers. Convenience of administration (oral). Competitively priced. Treatment last 1 year.
  4. Supplier power:
  - Strong partnership is needed.

- *Since this is a market entry case the interviewee should ask for additional information about competition.*
- *When the interviewee asks about the potential competition in the market, exhibits 3a and 3b could be handed out.*
- *Key step:*
  The interviewee should analyze clinical trial phase, route of administration, adverse effects, and price of the competition.

Case 21: Innova Pharma

Interviewer's Guidance for Exhibits

Exhibit Guidance	Next Steps:
The exhibits will be provided when/if the interviewee asks for them instead of being hand out by the interviewer by himself. • Exhibit 1: Market size Can be handed out when interviewee asks for more data about the market trends in the future. • Exhibit 2: Market economics Handed out when the interviewee asks for the predicted cost and revenue trends. If he asks for the predicted profitability ,interviewer can point him towards the predicted trends. • Exhibit 3a and 3b: Competitive landscape When the interviewee asks about the potential competition in the market, this could be handed out.	Key consideration areas: • Partnerships • Price • Potential side-effects • Convenience of administration • Relapse rates

Case 21: Innova Pharma

Summary *(based on sample solution above)*

Recommendation:

-Strong partnership is needed.

-Establish early contact with FDA and coding agencies.

-For an early-preclinical proof of concept (Ph2) licensing, present cost-effectiveness evidence and a business case with the required clinical data and market attractiveness.

Reason:

-There is a large market, high profit potential during the 10-year patency period, and also current and future competitors have disadvantages such as high relapse rates or several adverse effects.

-This is a small company in the phase II clinical trial stage, which has a restricted cash for R&D of $50 million and $60 million of R&D costs remaining before launch.

Risk:

-Regulatory approval: Prior to commercialization, Innova needs to complete regulatory evaluation/approval.

-Competitive response: Due to the large market size, new more effective opioid dependence therapies could be developed.

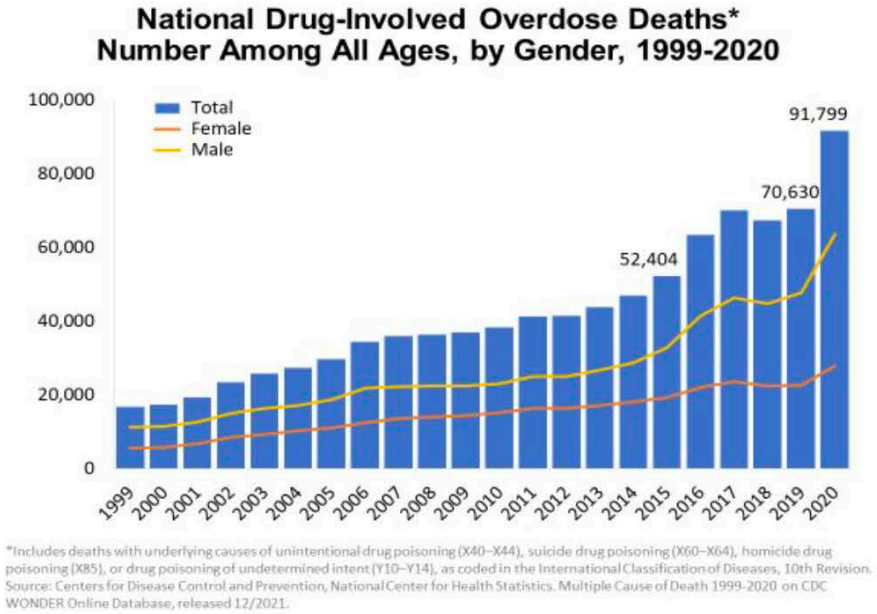
-Physician/patient adoption: The current standard treatment has been available and recommended by the WHO for a long time.

Next Step:

Validate preclinical results. Focus on the most efficient route to market. Competitive pricing and strong marketing.

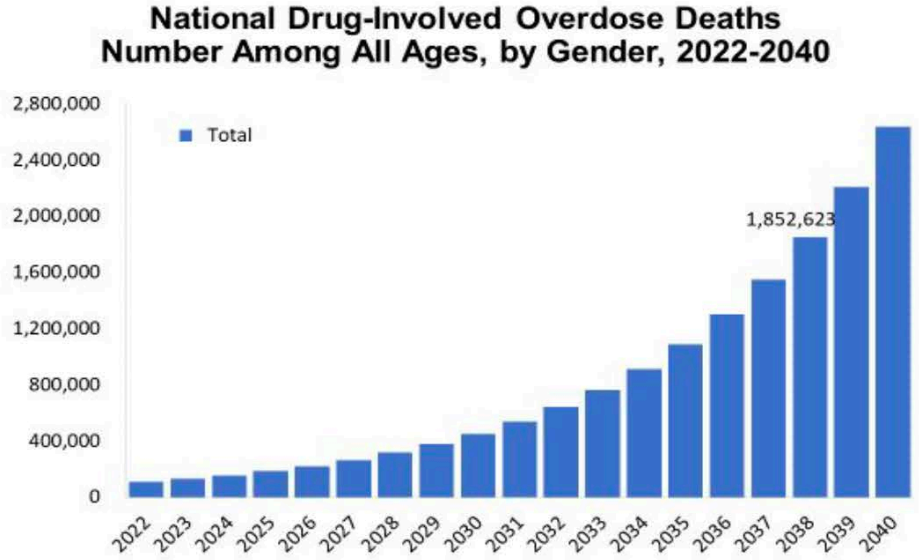
Case 21: Innova Pharma

Exhibit 1: Market size



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2020 on CDC WONDER Online Database, released 12/2021.

National Drug-Involved Overdose Deaths growth rate: ≈ 19.33%



Case 21: Innova Pharma

Exhibit 2: Market economics

Patent (Year)	1	2	3	4	10
Market (Year)	**2028**	**2029**	**2030**	**2031**	**2037**
Revenue					
Market size (Patients)	316,351	377,513	450,498	537,595	1,552,477
Penetration rate	2.5%	5%	7.5%	10%	10%
Customer size					
Treatment price (12 doses)	$7,000	$7,210	$7,426.3	$7,649.089	$9,133
Total Revenue					
Expenditure					
Cost of sales (per treatment)	$3,150	$3,244	$3,341	$3,442	$4,110
Total cost of sales	$22,050,000	$23,392,845	$24,817,469.3	$26,328,853.1	$37,538,649
Total costs	**$72,050,000**	**$23,392,845**	**$24,817,469.3**	**$26,328,853.1**	**$37,538,649**
Profit					

Case 21: Innova Pharma

Math Solutions Exhibit 2: Market economics

Patent (Year)	1	2	3	4	5	6	7	8	9	10
Market (Year)	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
Revenue										
Market size (Patients)	316,351	377,513	450,498	537,595	641,530	765,559	913,566	1,090,189	1,300,959	1,552,477
Penetration rate	2.5%	5%	7.5%	10%	10%	10%	10%	10%	10%	10%
Customer size	7,908	18,875	33,787	53,759	64,153	76,555	91,356	109,018	130,095	155,247
Treatment price (12 doses)	$7,000	$7,210	$7,426.3	$7,649.089	$7,878	$8,114	$8,358	$8,60	$8,867	$9,133
Treatments per year	1	1	1	1	1	1	1	1	1	1
Total Revenue	**$55,361,425**	**$136,093,437**	**$250,914,997**	**$411,211,200**	**$505,433,367**	**$621,244,891**	**$763,591,906**	**$938,556,472**	**$1,153,611,157**	**$1,417,941,251**
Expenditure										
Cost of sales (per treatment)	$3,150	$3,244	$3,341	$3,442	$3,545	$3,651	$3,761	$3,874	$3,990	$4,110
Total cost of sales	$22,050,000	$23,392,845	$24,817,469.3	$26,328,853.1	$27,932,280.3	$29,633,356.2	$31,438,027.6	$33,352,603.4	$35,383,777	$37,538,649
Total costs	**$72,050,000**	**$23,392,845**	**$24,817,469.3**	**$26,328,853.1**	**$27,932,280.3**	**$29,633,356.2**	**$31,438,027.6**	**$33,352,603.4**	**$35,383,777**	**$37,538,649**
Profit	**- $16,688,575**	**$112,700,592**	**$226,097,528**	**$38,4882,347**	**$477,501,087**	**$591,611,535**	**$732,153,879**	**$905,203,868**	**$1,118,227,380**	**$1,380,402,602**

Case 21: Innova Pharma

Exhibit 3a: Competitive Landscape

Current competitors

INN	Price*	Annual price*	Assumption	Administration	Patent status	Relapse rate
Methadone	$126/weekly	$6,552	Daily visits. Treatment lasts more than 1 year	Oral	Expired	43%
Buprenorphine	$115/weekly	$5,980	Twice-weekly visits. Treatment lasts more than 1 year	Sublingual/Oral	Expired	40%
Naltrexone	$1,176/monthly	$14,112	Related visits. Treatments lasts more than 1 year	Intramuscular	Expired	46%

Innova's medication

Price	Annual price	Assumption	Administration	Patent status	Relapse rate
$583/monthly	$7,000	Treatment lasts 1 year	Oral	Expected 2028-2037	7.5% (during phase 2)

Case 21: Innova Pharma

Exhibit 3b: Competitive Landscape

Novel therapies in development – Prospective competitors

Candidate	Route	Adverse effects	Preclinical	Phase 1	Phase 2	Phase 3	Commercialization
Drug A	Intranasal	Not identified					
Drug B	Oral	May cause seizures, stroke like signs, or heart attack symptoms					
Drug C	Oral	May cause congestive heart failure, edema, and weight gain					
Drug D	Oral	May cause depression					
Drug E	Intravenous	May cause disorientation					

Novel therapies in development – Innova's medication

Candidate	Route	Adverse effects	Preclinical	Phase 1	Phase 2	Phase 3	Commercialization
Innova medication	Oral	May cause minor side-effects as nausea					

Case 22: HIV Treatment Medicaid Plan

Implementation	Case Comp	Qual.	Quant.
Non-Profit & Healthcare		4	3

Prompt

Medicaid is the largest payer for HIV care in the United States. Some of the HIV+ patients served by Medicaid have limited access to the treatment. The New York State government has worked to remedy this issue by increasing the HIV+ patient budget to 20 million dollars. The plan is to expand the current Medicaid program for HIV+ patients and increase the access of treatment for them in the next five years.

There are two implementation options: 1) Decentralization: This gives grants to qualifiable agencies to provide services for HIV patients. The government will pay these agencies fees for using their rooms, equipment, and care services for patients; 2) Centralization: This aims to open a new HIV clinic to provide high-quality, comprehensive, multi-disciplinary care to patients living with HIV and their families.

Our client, the state government, would like advice on the implementation of both options and a decision on which option is better.

Additional Information *(provided on request)*

1. **Medicaid for HIV:** Medicaid covers a broad range of services, many of which are important for people with HIV and those at risk of contacting it. The services include prescription drugs, inpatient care, outpatient care, and preventive services.
2. **Limited access:** The reasons for limited access may include a lack of financial resources, a lock of health care resources available in the area, and a lack of transportation access.
3. **Demographics**: Low-income people have higher prevalence rate of being diagnosed as HIV+ (about two times higher).
4. **Government or state:** Medicaid is the joint partnership of the federal government and state.
5. **Treatment for HIV patients:** The treatment for HIV patients consists of two parts: the basic treatment and the advanced treatment. The basic care may include prescription medicines and other basic primary care. The advanced care may include professional surgeries and other high-advanced services.
6. **Goal:** Our client wants the cost as close to the budget as possible. We need to evaluate the situation to communicate the decision.

Case 22: HIV Treatment Medicaid Plan

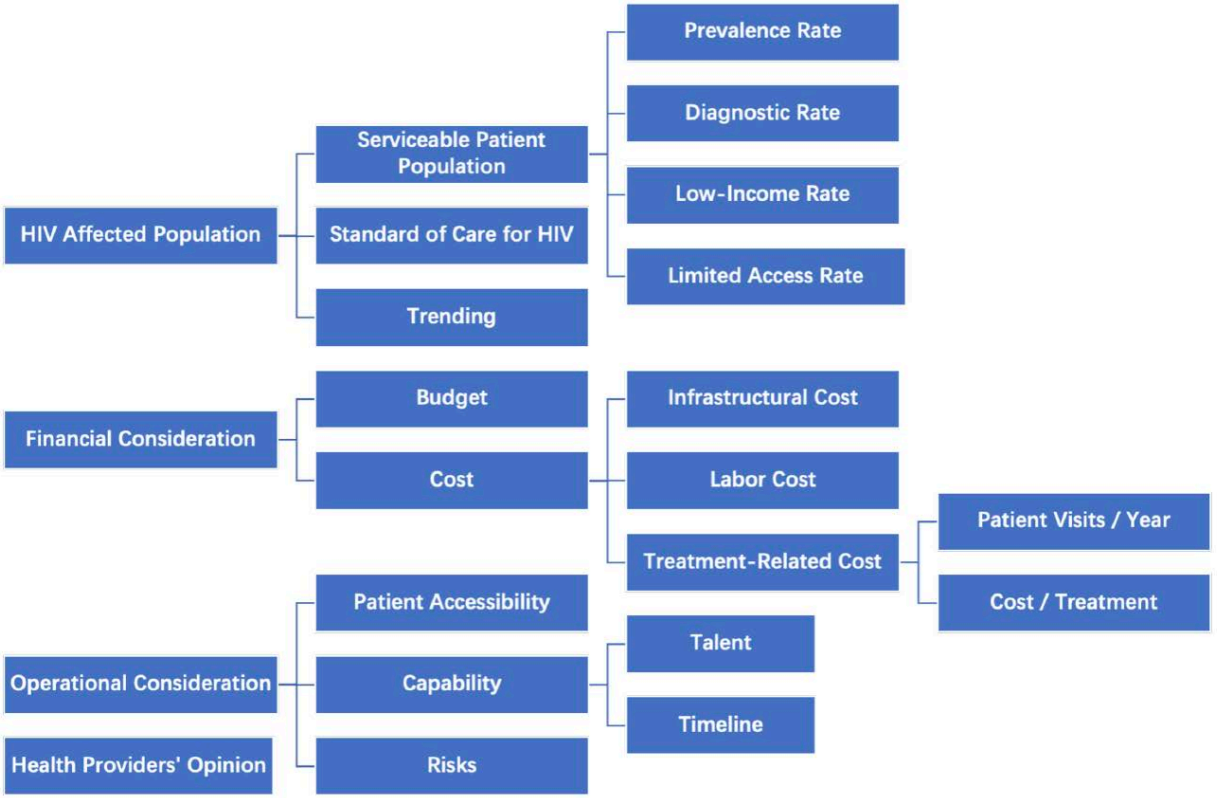
Sample Structure *(any reasonable one is acceptable)*

Notes for Interviewer

The interviewer can provide additional clarifying information if requested.

A good candidate will...
- start with estimation of the serviceable patient population
- consider in financial and operational perspectives

An excellent candidate will...
- consider a longer lifespan of centralization
- discuss the comparison between centralization and decentralization



Case 22: HIV Treatment Medicaid Plan

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

What is the HIV+ patient population that will benefit from this implementation?

Notes for Interviewer	Suggested Answers
A good candidate should … • confirm that the target population is the HIV+ low-income population • give an equation • ask for needed data • perform the calculation clearly and correctly An excellent candidate should … • ask if prevalence and diagnosis rate can be affected by socioeconomic status or other factors	Equation: targeted patient population = state population * prevalence * diagnosis rate * low income rate * Medicaid * limited access rate Additional info to provide: we know that the affected population in the state is 120,000, and low-income Medicaid covered 42% population. Of the HIV+ patients, 30% with Medicaid have limited access to HIV care. New equation: = affected population in the states (120,000) * % low-income Medicaid (42%) * 30% =120,000* 42% * 30% =15,120

Case 22: HIV Treatment Medicaid Plan

Analysis

How do you calculate the implementation cost with centralization and decentralization?

Notes for Interviewer

The interviewer can lead the candidate by giving an equation for the calculation first.

A good candidate will …
- consider the three segments in cost per unit: infrastructural cost, labor cost, and treatment cost
- know the different infrastructural costs in the comparison

An excellent candidate will …
- consider the segmentation of the treatment (conventional vs. advanced)
- consider the different numbers of clinics in the comparison

Suggested Answers

Total Cost = Cost per Unit * Total Units
Cost per Unit = Infrastructural Cost + Labor Cost + Treatment-related Cost

Type of Cost	Centralization	Decentralization
Infrastructural Cost	building fee	usage fee (rooms and equipment)
Labor Cost	high	low
Treatment Cost	patient visit * average cost per visit	patient visit * average cost per visit

Case 22: HIV Treatment Medicaid Plan

Analysis

Giving the current budget of $20M per year, how do you calculate and compare the implementation cost of centralization and decentralization?ow do you calculate the implementation cost with centralization and decentralization?

Notes for Interviewer

Provide the data if the candidate asks, lead the candidate to give the right formula and let them calculate the number.

Additional information if asked

- patients should have an average of 3 visits per year

A good candidate will …

- give the correct formula and calculate the correct cost of two options
- give 1-2 insights based on the results

An excellent candidate will …

- compare the visits with previous calculation number

Suggested Answers

	Centralization	Decentralization
# of Clinics	2	15
Infrastructure and Labor Cost / Clinic	3.5	0.4
Annual Visits (Under Estimation of Full Capacity)	10K	27K
Cost / Visits	$900	$500

The calculation will be:

Cost= # of clinics * infrastructure and labor cost / clinic + annual visits * cost / visit

1) Centralization: 2* $3.5M + 10K visits* $1.2K=19 million
2) Decentralization: 15* $0.4M + 27K * $0.5K = 19.5 million

Potential Insights:

- cost cannot differentiate the two options
- decentralization can increase the number of visits of HIV patients significantly
- the two options may have different abilities in serving conventional and advanced treatments

Case 22: HIV Treatment Medicaid Plan

Analysis

Our client did some preliminary research on the two implementation options. The results are listed in Exhibit #1. What insights can you get from the research?

Notes for Interviewer	Suggested Answers
The candidates are asked to brainstorm the implementation factors in these two options before being shown Exhibit #1. A good candidate will … ● brainstorm at least 3-4 implementation factors ● identify the pros and cons of being two options in relation to hiring needs, budget requirements, etc An excellent candidate will … ● recall the following primary goal: making maximum use of the budget and reaching a higher occupancy	**Possible Insights:** 1) Decentralization has more advantages over centralization such as lower requirements on hiring, a smaller budget for instruments, a higher expected occupancy, etc. 2) The strength of centralization includes having a long lifespan of facilities and a higher standard of quality control.

Case 22: HIV Treatment Medicaid Plan

Analysis

To consider patients and health care providers opinions into our implementation, we interviewed some healthcare providers about what factors to consider regarding HIV clinics (Exhibit #2)and followed with patient surveys (Exhibit #3). What insights can you get from Exhibit #2 and #3?

Notes for Interviewer	Suggested Answers
The interviewer needs to show Exhibit #2 and #3 together to the candidate. A good candidate will … ● identify two major groups of patients with different clinical needs ● understand the further segmentation of patient needs An excellent candidate will … ● discuss how to balance the needs of the two patient groups	**Possible Insights:** 1) HIV+ patients need more comprehensive and multidisciplinary services than regular patients 2) Current HIV specific clinics have limited resources for advanced HIV treatments 3) Different segments of patients have different preferences - The patients who only need prescription drugs and diagnosis prefer agencies closer to their home - Patients with complicated treatment plans prefer agencies with better quality control over the service provided

Case 22: HIV Treatment Medicaid Plan

Analysis

Our client would like to expand a prevention program for the general population. The prevention program includes preventative drugs, supplies (barrier contraceptives), diagnostic tools and education for HIV high risk people. What factors do they need to consider?

Notes for Interviewer
A good candidate will … • provide at least 4-6 thoughts. The interviewer will push the candidates more to give more thoughts An excellent candidate will … • hypothesize that the decentralized option has more advantages in prevention over the centralized option based on previous discussion. Additionally, the candidate will verify with the interviewer

Suggested Answers
1. Identify the high-risk population that needs more prevention a. estimate target population 2. Implementation a. motivate high risk populations to take the diagnosis b. recruit volunteers in the diagnosis campaign c. promote communication with the local community d. collaborate with local pharmacies to promote access to prevention medicine, barrier contraceptives, and diagnosis 3. Financial estimation a. budget b. capacity

Case 22: HIV Treatment Medicaid Plan

Summary *(based on sample solution above)*

Recommendation:
-I recommend the state government should pick the decentralized implementation.
Reason:
-Both options are close to the budget in terms of costs.
-Decentralization is estimated to have a higher number of annual HIV patient visits compared to centralization.
-The majority of patients only need the basic medicaid requirements.
-Decentralization is convenient in satisfying the needs of the majority of the population.
Risk:
However, The budget may be cut in the future, leading to an unsustainable investment in decentralization.
Professional services may be limited for patients with severe symptoms.
Next Step:
Next, I would suggest the state government:
-conduct healthcare provider interviews to collect their opinions.
-identify the best clinics to collaborate with based on location, facilities and talent.
-plan the prevention programs.
-explore hybrid modes of decentralization with centralization

Case 22: HIV Treatment Medicaid Plan

YGCC
Yale Graduate Student Consulting Club

Exhibit #1

Our client did some preliminary research on the two implementation options. The results are listed in Exhibit #1. What insights can you get from the research?

Research of the Two Implementation Options

Implementation Factors	Centralization	Decentralization
Location	Major Cities	Range of Population Size Areas
Talent Needed	Specialists at All Levels	Majority will be nurses, Less Need for Doctors
Ownership of Facilities	Government Owning	Shared Spaces in Existing Facilities
Expected Occupancy (% of Capacity)	65%	80%
Budget Flexibility	Less Flexible	Flexible
Construction Time Needed	2 year	< 1 year

Case 22: HIV Treatment Medicaid Plan

Exhibit #2

Physician Interview Summary:

All chronic HIV infection patients should have regular check-ups and antiretroviral therapy (ART). HIV+ patients usually have comorbidities such as cardiovascular diseases, cancers, diabetes, chronic renal disease and hepatitis (A,B and C). A portion of HIV+ patients need more advanced treatments such as surgeries and treatment plans specific to their comorbidity.

Currently, most of HIV specific clinics only provide primary care services for HIV patients. If advanced treatments are needed, referrals to external facilities are still required.

Exhibit #3

Patients Survey: What features of the clinics do you value most?

Patient Groups	Convenience (e.g. distance)	Quality of Services
Patients need basic care (prescribed drugs and diagnosis) only	70%	30%
Patients also needs advanced treatments (requiring surgeries and treatments for other comorbidities)	30%	70%

Case 23: Education International

Market Entry	Case Comp	Qual.	Quant.
Education		3	4

Prompt

Your client, Education International (EI) offers college admission support for entrance into undergraduate programs at UK universities to domestic and international students. The CEO believes EI should expand operations to more countries.

How would you advise EI?

Additional Information *(provided on request)*

Goals:
What are EI's goals? –To expand their global presence by entering a new foreign market and have a high ROI
What factors is EI considering when entering new markets? –Attractiveness based on customer demographics and competitiveness, not overall size.
Where does EI have offices? –UK, France, and Spain
What would be involved in expanding EI to new markets? –EI would need to establish a sales and marketing team in that country.

Background Info:
How does EI provide admission support? –Through an online platform
What does EI's product mix contain? –EI sells two packages: a £30,000 premium package that supports students through the entire process including preparation for exams, essays, interviews, and applications and a £5000 basic package that helps by reviewing applications
How do they attract current customers? –online webinars and in-person informational sessions at education expos
Do EI customers primarily attend public or private school? – 90% of EI students attend private school

Case 23: Education International

Sample Structure *(any reasonable one is acceptable)*

Notes for Interviewer	Possible Framework
After the interviewee has developed a framework & brainstormed on international expansion they may consider looking for data on current or proposed markets. If they don't guide them to this and present Exhibit 1	**INTERNAL/FEASIBILITY** Expertise: • **Talent to expand?** Does EI have the talent to expand to new markets? • **Knowledge of other markets?** Does EI understand the educational landscapes of other countries? • **Expertise in other languages?** Do they have expertise in supporting non-English speakers? Financial: • **Cash for expansion?** What investment is necessary to open in a new market and does EI have it? • **Able to take risks?** Is EI in a financial situation where they can afford to take risks? Alternatives: • **Safer or more lucrative options?** • **Expand product offerings in current countries instead?** **EXTERNAL** Market: • **Which market to enter first?** • **International market trends for UK schools?** Is the market for UK admission support growing for international students? • **Competitors?** What kind of competitors exist in each market? • **Similar customers?** Are customers in these markets similar to current customers (similar needs and finances)? • **Regulation?** What kind of regulations exist in the other country? • **Market size?** How big is the market? • **Like our product?** Do our services meet the customers' needs?] **IMPLEMENTATION** • **Expansion techniques:** Buy out existing admission support firm in that market or start new venture? • **Profitability & timeline of expansion?** How fast can EI break even after entering a new market?

Case 23: Education International

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

Which market would be most and least attractive for EI to enter? Why? In considering this question, EI is only interested in how attractive the market is for its population size. You do not need to consider how small or large the overall population of the country is.

Notes for Interviewer	Suggested Answers
A **good** answer will include three of the four market factors and will provide Australia, the United States, Egypt, or Russia as the most attractive. A **great** answer will mention all four market factors, will identify Australia as the best market, India as the worst, and mention other good options such as the United States, Egypt, or Russia.	After examining the exhibit, the interviewee should be able to explain and identify the following • The most attractive market will have a **(1) high percentage** of students seeking post-secondary education, **(2) high percentage** of private school students, **(3) large number of competitors** (fragmented market), **(4) high market growth** • **Most attractive: Australia**, why? Australia is the only market with a high percentage of post-secondary education, a high percentage of private school attendance, a fragmented market for easier entry, and high growth rate • **Least attractive: India**, why? India has a low percentage of post-secondary education, a low percentage of private school attendance, and consolidated market for difficult entry • **Also interesting options: United states** but market is highly concentrated, **Egypt** but percentage of private school attendance is low, and **Russia** but negative growth rate, huge risk from geopolitical factors • Once the interviewee has identified **Australia** as the best market to enter, move to question 2

Case 23: Education International

Analysis

Due diligence work done by an internal team at EI has estimated that Australians spend £100 M a year on college admission support to UK universities. They also estimated EI could capture 45% market share over the next three years. What is EI's project revenue at year 3?

Notes for Interviewer	Suggested Answers
Interviewee should assume that the Australian market will grow 20% per annum. Interview should supply this information only upon request. A good answer is between £75M and £80M A great interviewee should consider what the number 77.8 M means for EI. They should also begin considering the costs of expansion into Australia, calculating profits and break-even point.	£100M x 1.2 = £120M (year 1 market size) £120M x 1.2 = £144M (year 2 market size) £144M x 1.2 = £172.8M (year 3 market size) £172.8M x 0.45 = £77.8M (year 3 predicted EI revenue)

Case 23: Education International

Analysis

EI's team has also predicted that establishing a new office in Australia would cost £28M. Will EI meet its goal of 20% ROI by year 3.

Notes for Interviewer	Suggested Answers
Supply upon request: EI's market share will grow 15% a year EI's profit margin is typically 25% A great interviewee will check the assumptions and consider risks of expansion	£120M x 0.15 = £18M (year 1 revenue) £144M x 0.30 = £43.2M (year 2 revenue) £172.8M x 0.45 = £77.8M (year 3 revenue) £18M x 0.25 = £4.5M (year 1 profit) £43.2M x 0.25 = £10.8M (year 2 profit) £77.8M x 0.25 = £19.45M (year 3 profit) ROI = (£34.75M-28M) / £28M = ~24%

Additional Analysis

Ask interviewee if expansion into the Australian market is a good investment. **YES**, this is a good investment as it is expected to exceed the ROI target and achieves the firm's goal of expanding to new markets.

Case 23: Education International

Analysis

After establishing Australia as a prospective market to enter, what might EI's go-to-market strategy entail? Additionally, what strategic moves would be good for EI to consider?

Notes for Interviewer	Suggested Answers
Many possible good/great answers here. Interviewer should assess the interviewees creativity as well as relevance and volume of answers.	Possible action items for a **go-to-market strategy** that the interviewee should consider are: • **Define their ideal customer profile (ICP)** for the Australian market • Thoroughly **research competitors** to understand how EI fits into the existing landscape • Understand the **regulatory environment** surrounding data and education in Australia • Develop effective **product messaging (marketing)** to maximize outreach in the Australian market • Set obtainable goals in terms of inbound and outbound sales (**performance metrics**) • **Establish partnerships** with companies in Australia having similar ICPs • Consider effective strategies for outbound and inbound **lead generation** for the Australian market Some of the strategies that the interviewee should consider are: • Pushing into cheaper price segments and pursuing public school market • Pursuing more in-person opportunities • Purchasing competitors • Finding ways to reduce costs • Finding more efficient marketing strategies

Case 23: Education International

Interviewer's Guidance for Exhibits

Exhibit Guidance	Next Steps:
Interviewee should note: • Which countries have higher and lower percentages of post-secondary education (higher: Australia and Portugal and lower: India) • Which countries have higher and lower percentages of private school students (higher: Australia and US and lower: Egypt and China) • Which countries have concentrated and fragmented markets (concentrated : Germany and Portugal and fragmented : Australia and China) • Which countries have higher and lower growth rates (higher: Australia and Egypt and lower: China and Russia)	Prompt the interviewee to answer the question following the exhibit and supply relevant information upon request

Case 23: Education International

Summary *(based on sample solution above)*

Recommendation:
-entering entering the Australian market
Reason:
-Australia is an attractive market with desirable features such as high postsecondary education rate, high private school education rate, high growth rate, and fragmented competition
-Projected ROI is high and exceeds the target
Risk:
-Costs for entering the Australian market may be higher than expected
-Profit margins may be thinner than expected in Australia
-Competition in the Australian market may concentrate and pose serious threat to EI profitability
-EI is based in Europe. Difficulty in having office so far away?
Next Step:
-Explore other markets thoroughly
-Consider product diversification and strategic moves to increase EI revenue and lower costs

(Look for strong support behind the recommendation and clear listing of risks)

Case 23: Education International

Exhibit #1

Country	% with post-secondary education	% Private Education	# of Competitors	Market Growth*
United States	35%	20%	3	2%
Germany	30%	15%	2	18%
Egypt	30%	5%	14	19%
China	20%	5%	16	-5%
Australia	45%	25%	18	20%
India	10%	8%	4	5%
Russia	55%	19%	15	-15%
Portugal	45%	10%	2	3%

*% annual growth of applicants to UK universities

Case 24: College post-COVID

Profitability	Case Comp	Qual.	Quant.
Higher Education		3	3

Prompt

Our client, Lumina College, is a small US-based, liberal arts institution which offers two bachelor's programs: B.S in Economics and B.A in English. Lumina College has experienced significant financial difficulties in recent years in the backdrop of COVID-19 and is on the brink of closure. Your objective is to help improve our client's long-term profitability and establish a resilient, future-oriented financial trajectory.

Additional Information *(provided on request)*

By "future-oriented", are there any potential disruptive changes/paradigm shifts that you anticipate and would like us to focus on?
- Nothing in particular, although you may use the disruption caused by the pandemic and its aftermath as a basis for the kinds of disruptions that the higher-education sector may experience.

Is there a specific bachelor's program that you would like me to focus on?
- For now, keep the analysis program-agnostic.

Case 24: College post-COVID

Sample Structure *(any reasonable one is acceptable)*

Notes for Interviewer

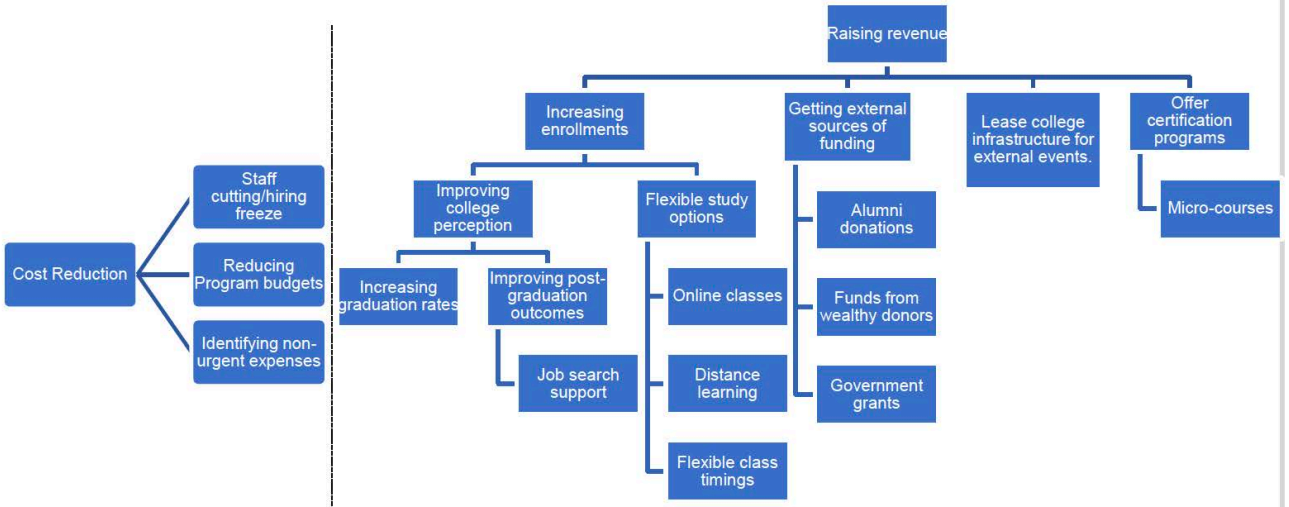
Candidate should request data regarding revenue and expenses based on their framework. When they do so, present them with Exhibit 1.

Continue questioning until they bring up certification programs and/or online courses because a subsequent question is based on them. A good candidate would identify the current trend towards online learning and bring up this revenue stream with an eye towards being future-oriented.

Bonus points if they identify non-traditional methods of generating revenue, such as leveraging college infrastructure.

Sample (Other reasonable frameworks are acceptable)

Sample Issue Tree:
This represents an illustrative framework for addressing the case at hand. There are many variations on structures that could apply to a given case; the candidate's structure may differ from this example. Regardless, a good structure should be logical and adhere to the MECE principle. Remember that there is always more than just one structure to solve the problem.



Case 24: College post-COVID

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

Drawing upon the information presented in Exhibit 1, what insights can you derive and what course of action should our client prioritize to reduce expenditure?

Notes for Interviewer	Suggested Answer
Raise this question after the candidate has presented their framework. (If the candidate asks) The infrastructure and staff salary expenses have increased the most between 2017 and 2023. Using this and their calculation, they must conclude that the infrastructure and salary expenses deserve the most attention.	From 2017 to 2023, the revenue has decreased from 100M to 60M, which corresponds to a **[**(100-60)/100**]** x 100= **40% decrease** From 2017 to 2023, the expenditure has increased from 40M to 100M, which correspond to a **[**(100-40)/40**]** x 100 = **150% increase** In 2017, the net profit margin was **[**(100-40)/100**]** x 100**]** = **60%** whereas in 2023, it was equal to **[**(60-100)/60**]** x 100 = **-40%** which corresponds to a **[**(60+40)/60**]** x 100 = **166.67% decrease** The rise in expenditure is rather drastic and deserves extra attention, despite a part of the increase being attributable to inflation, rising rents and infrastructure costs and the need for technology to facilitate online classes. Furthermore, the net profit margins have shown a drastic decrease from 2017 to 2023. The pie chart highlights that infrastructure accounts for the largest share of expenditure in 2023 (45%), followed by staff salaries (35%). Hence, these are the major focus areas to target for expenditure reduction. Expenditure breakdown for 2023: **Infrastructure (45M)**, **Staff Salaries (35M)**, **Student expenses (10M)** and **Miscellaneous expenses (10M)** (the total expenditure is 100M for 2023, so the expenses for each category are simply the percentages on the pie chart)

Case 24: College post-COVID

Analysis

Based on your insights from earlier, our client has decided to focus on reducing their staff expenditure. What is their best course of action to achieve this objective?

Notes for Interviewer

The candidate should ask for the staff expenditure breakup of our client. At this point, show them exhibit-2

(If the candidate asks)
The three colleges shown in exhibit-2 have similar size and student intake, making their staff budgets comparable.

The candidate can be asked to brainstorm on how one may achieve the necessary reduction in expenditure.

Suggested Answers

College	Total staff expenditure ($)	Admin staff expenditure ($)	Teaching staff expenditure ($)	Support staff expenditure ($)
Client	35M	0.6 x 35M = 21M	0.3 x 35M = 10.5M	0.1 x 35M = 3.5M
Competitor-1	30M	0.3 x 30M = 9M	0.5 x 30M = 15M	0.2 x 30M = 6M
Competitor-2	32M	0.4 x 32M = 12.8M	0.35 x 32M = 11.2M	0.25 x 32M = 8M

We can see from the above calculation that our client's administrative staff expenditure is **[**(21-9)/9**]** x 100 = **133.33%** higher than competitor-1 and **[**(21-12.8)/12.8**]** x 100 = approx. **64%** higher than competitor-2, both of which have similar size and student intake.

Our client can reduce administrative staff expenditure by downsizing and use digital tools and frameworks to improve staff efficiency, while streamlining administrative procedures.

Case 24: College post-COVID

Analysis

Our client is trying to identify an optimal price point for a semester-long online course, leveraging data on enrollment numbers for similar online courses by other colleges. Also, mention any compounding factors that come to mind which may not have been accounted for by the data provided.

Notes for Interviewer
(Only if candidate asks) Our goal is to generate 10M in total revenue and we want to know the number of years needed to reach this amount. A more mathematically inclined candidate will note the possibility of there being a more optimal price point between $400 and $500 which can be estimated using some kind of interpolation. But they don't have to do it.

Suggested Answers

Price of online course ($)	Average number of students enrolled per course iteration	Total revenue ($)
200	5100	200 x 5100 = $1.02M
300	4200	300 x 4200 = $1.26M
400	3310	400 x 3310 =$1.324M
500	2250	500 x 2250 = $1.125M
600	1760	600 x 1760 = $1.056M

The above calculation shows that revenue is maximized for a price of $400 for the online course, making it the suitable price point.

This data can be misleading if the colleges on which it is based have a significantly better perception than our client. In that case, the above enrollment numbers will be overestimates (more students would take a similarly priced data science course from Harvard than from a small liberal arts college) .

One round of the course generates 1.342M and since the course runs over 1 semester, we can run this course twice each year, generating an annual revenue of 2.684M. At this rate, we can see that our target revenue of 10M can be reached in under 4 years.

Case 24: College post-COVID

Summary *(based on sample solution above)*

Recommendation:

-On the cost side, I recommend that our client focus on downsizing their administrative staff and adopting digital frameworks to streamline administrative tasks and reduce the need for staff.
-On the revenue side, I recommend that they consider introducing multiple online courses.

Reason:

-Admin staff salaries resulted in $21M in expenses in 2023 and constituted 60% of staff salary expenditure, which in turn was 30% of total expenditure.
-We identified the possibility of generating about $2.65M revenue each year through a single online course. Scaling this up may prove to be fruitful. This can also help in improving our client's perception, which can result in increased enrollment.

Risk:

-Downsizing administrative staff may result in the existing staff being overworked, leading to many more resigning. The downsizing should be done gradually and strategically to ensure that the college's day-to-day operations continue smoothly.
-Running an online course would result in additional expenditure which must be accounted for – we haven't done this yet.

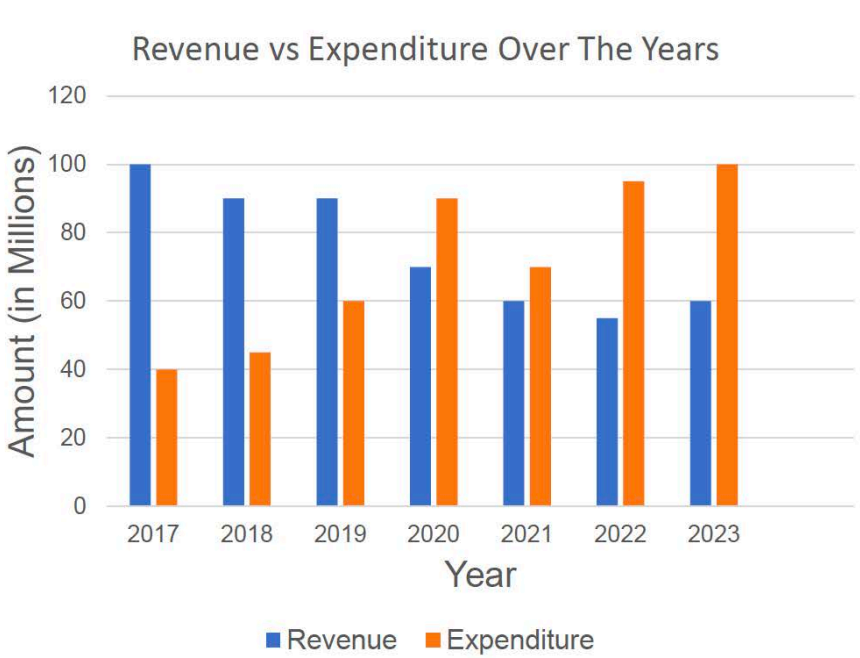
Next Step:

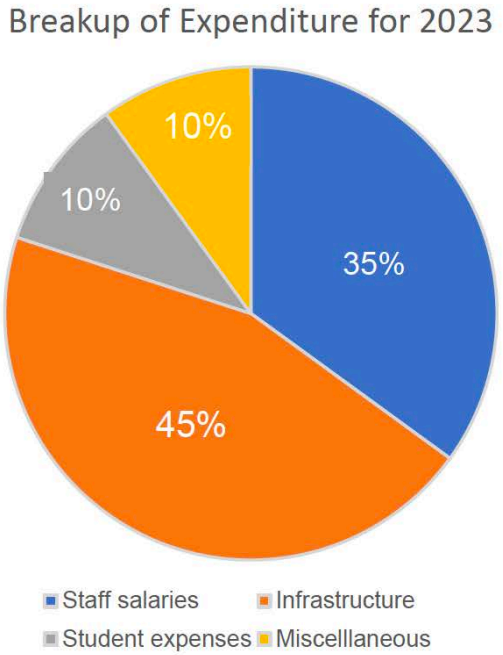
-Next, I would try leveraging their infrastructure to generate more revenue. This would help offset the high infrastructure costs. I would look at the cost of running an online course and factor that in to calculate the net profit that such a course would generate annually.
-I would also examine the enrollment numbers to see if it is declining and examine ways to reverse this trend.

(A good interviewee should ask 2-3 clarifying questions.
There can be multiple directions a candidate can choose to go along as part of the next steps. The interviewer must look for cogency of their arguments as opposed to specific details. The candidate may be asked on elaborate qualitatively on other parts of their framework.)

Case 24: College post-COVID

Exhibit-1:





Given this information, what is the breakdown of expenditures (in absolute amounts) for the year 2023?

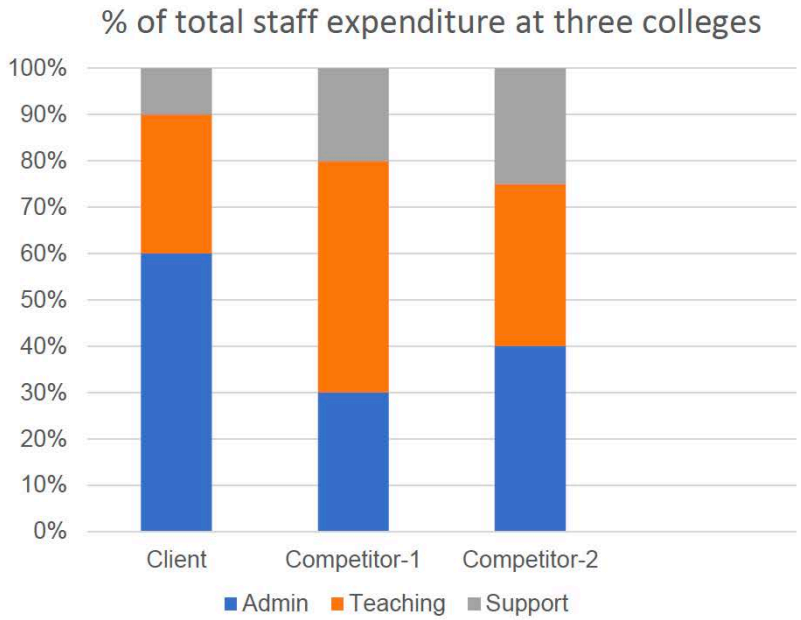
Case 24: College post-COVID

Interviewer's Guidance for Exhibit-1

Exhibit Guidance	Next Steps:
The exhibit shows a pie chart showing the percentage breakdown of the expenditure for the year 2023 and has a bar chart showing the trends in revenue and expenditure for our client. An astute candidate would note the sharp rise in expenditure and fall in revenue for the year 2020 and attribute it to the pandemic, while noting that these trends in the revenue and expenditure have continued post-pandemic.	After the candidate has addressed the question asked on the exhibit and identified the major sources of expenditure as infrastructure and staff salaries, move on to question-2.

Case 24: College post-COVID

Exhibit-2: Staff expenditure data for our client and two other competing colleges



College	Total staff expenditure ($)
Client	35M
Competitor-1	30M
Competitor-2	32M

Case 24: College post-COVID

Interviewer's Guidance for Exhibit-2	
Exhibit Guidance	**Next Steps:**
Support staff encompasses non-administrative roles, including janitors, technicians, security personnel, and others responsible for operational support within the college.	Once the candidate concludes that the administrative staff expenditure needs to be reduced, proceed to the subsequent question concerning the use of online courses to generate revenue (which should have been incorporated into their framework).

Case 24: College post-COVID

Exhibit-3: Number of students enrolled for similar online courses offered by other colleges at different price points

Price of online course	Average number of students enrolled per course iteration
200	5100
300	4200
400	3310
500	2250
600	1760

Case 24: College post-COVID

Interviewer's Guidance for Exhibit-3	
Exhibit Guidance	Next Steps:
The candidate should notice that the course has a duration for one semester and ask if the course can be repeated twice during a year without breaks in between - to which, the answer is **yes**.	After the candidate has answered this question, ask them for their recommendations and next steps.

Case 25: Miracle Therapeutics

Profitability/Market Entry	Case Comp	Qual.	Quant.
Healthcare		3	5

Prompt

The new antibody drug named “Miracumab”, developed by Miracle Therapeutics, represents a significant breakthrough in medical science. It has the potential to transform the lives of patients suffering from Melanoma, offering a new ray of hope. The drug is soon to get FDA approved. Miracle Therapeutics has exclusive ownership of the patent for this drug for the next 20 years.

Client’s Dilemma: Miracle Therapeutics is facing a critical decision: Should they enter the market bythemselves or sell their product to another pharmaceutical company?

Additional Information *(provided on request)*

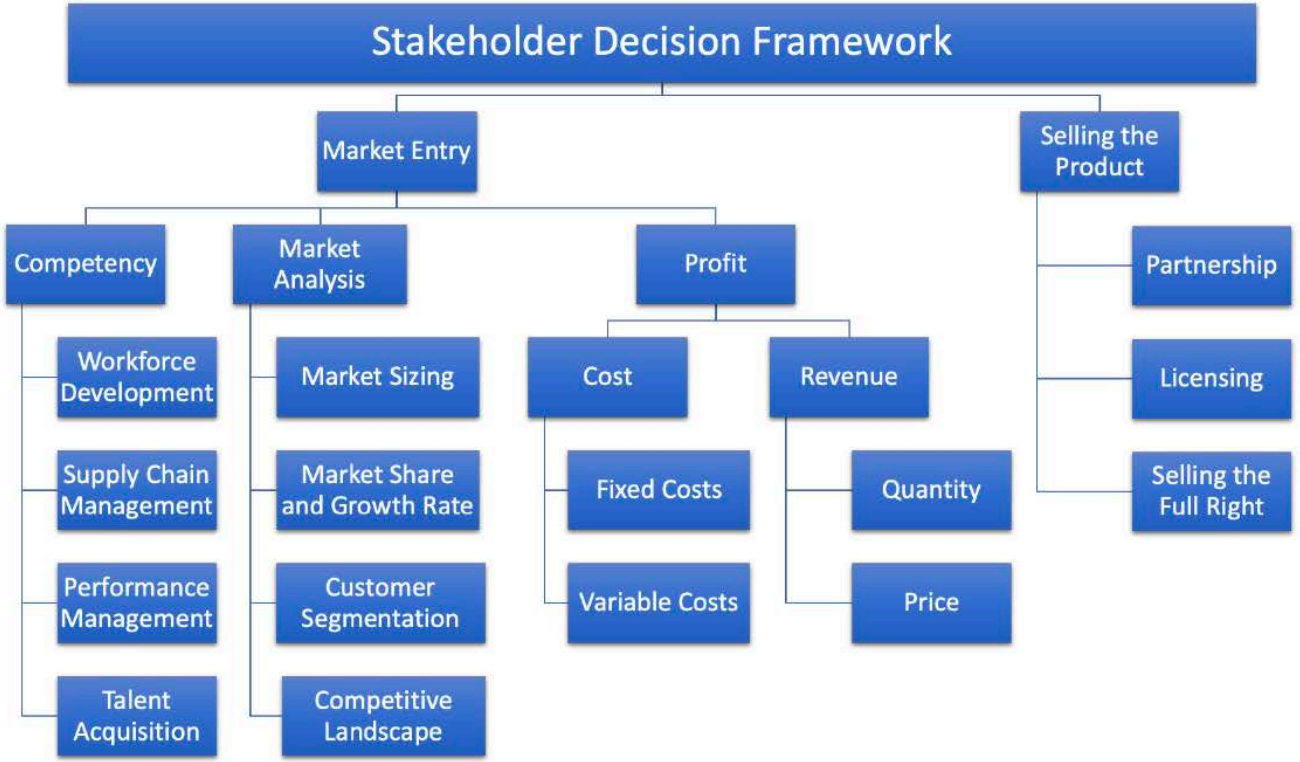
Objectives: The primary objective is profitability and to decide whether Miracle Therapeutics should 1) enter the market or 2) sell the product to another company.
Rationale: Independent selling offers the company control over branding and marketing, potential for maximizing profits, and flexibility in decision making. By selling the product, Miracle Therapeutics doesn’t need to worry about the drug liability, mass production/logistics/marketing of Miracumab to patients, and will have a quick profit.
Product Application: Miracumab has 70% efficacy while drugs currently in the market are only 50% effective in treating Melanoma.
Competitors: Miracle Therapeutics has three competitors in the market, each with a 33% market share.
Manufacturing: Assume glass vials are filled with Miracumab in-house.
Customers: Miracumab is sold directly to the health care providers (clinics, hospitals, etc.) and the Miracle Therapeutics doesn’t have any oncology marketing experience. Miracle Therapeutics has marketing experience in internal medicine.

Case 25: Miracle Therapeutics

Sample Structure *(any reasonable one is acceptable)*

Notes for Interviewer
A good interviewee would have mentioned: - competitor landscape in the market - potential market share and growth rate over time - costs associated with drug development and building mass production lane - comparison between the profit from entering the market and selling the product. **An Excellent interviewee would have mentioned:** - Risks associated with market entry, and distribution. - customer segments by age and geography. - Business competency requirement for market entry - Other potential routes for selling the product other than selling the full right such as partnership, and licensing

Sample (Other reasonable frameworks are acceptable)



Case 25: Miracle Therapeutics

Interviewer's Guidance for Exhibits

Exhibit Guidance	Next Steps:
The cost of Manufacturing and Distribution takes into account the setting up the supply chain and other associated manufacturing costs, but doesn't take into account one-time costs associated with drug development costs. There are also recurring costs that occur annually such as employee salaries, raw materials (active ingredients) and drug batch production costs.	From the data in the exhibit, the interviewee can calculate how much it would cost to manufacture the drug taking into account all of the various associated manufacturing costs.

Case 25: Miracle Therapeutics

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

What is the market size for Miracle Therapeutic's Miracumab drug (in # of vials)?

Notes for Interviewer	Suggested Answers
- assume 1 in 150 people above age 50 have melanoma - ~300 million US population with 50% above age 50 - Patients require 2 injections per week, for simplicity assume 50 weeks in a year = 1 million people living with melanoma in the US, market size of 100 million vials/year - Good interviewee would ask about the potential market share: 10% for the first 5 years, and additional 10% of the market every 5 years	There are approximately 300 million people in the US, 50% are above the age 50. 1 in 150 people above age 50 in the US have melanoma; (50% of 300 million) * (1 in 150 people) = 50% * 300M *1/150 = 1 million people with melanoma in the US. Dosing regime: 1 vial 2X a week = 50 weeks/year * 2 vials/week = 100 vials/year-patient Market Size = 1 million patients * 100 vials/year-patients = **100 million vials/year [Total US Market]** **Estimated market for Miracle Therapeutics upon entry assuming 10% upon entry and additional 10% of the market share every 5 years: [Assuming market size is constant]** Year 1-5 = 10 million [10% of the total market] Year 6-10 = 20 million [20% of the total market] Year 11-15 = 30 million [30% of the total market] Year 16-20 = 40 million [40% of the total market]

Case 25: Miracle Therapeutics

Analysis

What are the costs associated with entering the market alone?

Notes for Interviewer	Suggested Answers
The price for the treatment should also take into account costs associated with manufacturing the drug. Adjusting for a 10% increase in market share every five years Vials per year over 5 year period Year 1-5 = 10 million Year 6-10 = 20 million Year 11-15 = 30 million Year 16-20 = 40 million	Manufacturing related costs year 1-5: Sum of initial one-time costs (drug development costs)/20 years + Recurring costs per year [Supply chain and distribution + general and administrative + salary + marketing cost] + variable costs [cost of vials + cost of drug production] * # of vials = $100 million + $600 million + $100 million + $500 million + $500 million + ($20/vial + $1000/vial) * 10 million vials/year = $12 billion Year 1-5 cost = $12 billion /year * 5 years = $60 billion; Cost per vial = $1,200 Year 6-10 cost = $22.2 billion /year * 5 years = $111 billion; Cost per vial = $1,110 Year 11-15 cost = $32.4 billion/year * 5 years = $162 billion; Cost per vial = $1,080 Year 16-20 cost = $42.6 billion/year * 5 years = $213 billion; Cost per vial = $1,065 Total costs for Patent Ownership Period = Sum of costs from each 5-year period = **$546 billion**

Case 25: Miracle Therapeutics

Analysis

What are the profits associated with entering the market alone?

Notes for Interviewer	Suggested Answers
Median annual selling price of cancer drugs with ORR (overall response based) approvals from the FDA is ~$112,000 per patient Market size share assumed to reach 10% within the first year 10% increase every 5 years [cap of market 40%] 20 year patent ownership	Median selling price/vial = $112,000/100 vials = $1,120/vial Year 1-5: Revenue/year = $/vial * vials sold/year = $1,120/vial * 10 million vials = **$11.2 billion/year** Year 6-10: Revenue/year = $1,120/vial * 20 million vials = $**22.4 billion/year** Year 11-15: Revenue/year = $1,120vial * 30 million vials = $**33.6 billion/year** Year 16-20: Revenue/year = $1,120/vial * 40 million vials = $**44.8 billion/year** Year 1-5: Annual Profit = Annual Revenue - Annual Costs = ($11.2 billion/year - $12 billion/year) * 5 years = -$4 billion Year 6-10: ($22.4 billion/year - 22.2 billion/year) * 5 years = $1 billion Year 11-15: ($33.6 billion/year - $32.4 billion/year) * 5 years = $6 billion Year 16-20: ($44.8 billion/year - $42.6 billion/year) * 5 years = $11 billion Total Profit for Patent Ownership Period = -$4 + $1 + $6+ $11 = $14 billion **Estimated Profit for duration of Patent Ownership = $14 billion**

Case 25: Miracle Therapeutics

Analysis

Would selling the ownership of the product favor profit increase?

Notes for Interviewer	Suggested Answers
- Three companies are interested in buying the product with an upfront base + royalty per year: 1) Company A $8.5 billion 2) Company B $9 billion 3) Company C $ 9.5 billion - Royalties are ranging from 5-80 million $/ year depending on product sales for all 3 companies above. - Product sale is affected by the number of glass vial mass production (Exhibit 2) - Each company has a 15-year contract with the glass vial manufacturers.	If we sell the product, we would receive royalties each year (in addition to the up-front payment) ranging from $5-80 million/year depending on product sold. Product sold is directly related to vial production itself. Therefore it is very important that the manufacturers have promising performance. From the graph in Exhibit two, the glass vial average throughputs over the past 20 years were: (1) Miracle Therapeutics → ~90% (2) Company A → ~82% (3) Company B → ~80% (4) Company C → ~73% **Profit = upfront base + royalties over 20 years - initial drug development costs** Our initial cost of drug development was $2 billion Best Case scenario royalties are when throughput are high → 80 million* 20 years = 1.6 billion dollars Worst case scenario → $5 million *20 years = $100 million (1) $8.5 + 0.1 - 2 billion = $6.6 billion ≤ **Company A** ≤ $8.5 + 1.6 - 2 billion = $8.1 billion (2) $9.0 + 0.1 - 2 billion = $7.1 billion ≤ **Company B** ≤ $9.0 + 1.6 - 2 billion = $8.6 billion (3) $9.5 + 0.1 - 2 billion = $7.6 billion ≤ **Company C** ≤ $9.5 + 1.6 - 2 billion = $9.1 billion The largest profit possible might come from selling to Company C, but since there throughput has been lower than others, we might not be able to get as much in royalties as we expect. Therefore, the possible profit from selling will be less than **$9.1 billion**.

Case 25: Miracle Therapeutics

Summary *(based on sample solution above)*

Recommendation:

-By adopting a direct entry strategy, Miracle Therapeutics can maintain greater control over the marketing, sales, and distribution of Miracumab and maximize returns. However, this approach requires a significant investment in terms of resources and time, but the potential rewards, given the groundbreaking nature of the drug, are substantial.

Reason:

-If properly priced and managed, the profit of $14 billion from 20 years of exclusive patent that Miracle Therapeutics hold will be higher than selling the product right now for $ 6 - 9 billion profit. In addition, they will have a built infrastructure for future profits after the 20 years. Furthermore, Miracle Therapeutics has a better vial production throughput

Risk:

-When pursuing a direct entry strategy, there are several risks that the company should address:
-- Regulatory and compliance risks
-- Market completion and acceptance
-- Slower update of the drug
-- Emerging players in the foreseeable future.

Next Step:

-Miracle Therapeutics should devise a more detailed strategic plan to evaluate all key sectors:
-- Financing, Human resource, Supply chain, Regulatory approval, Distribution of sales
-There should be a follow up meeting to discuss the routes in which the Miracle Therapeutics can take to minimize the risk upon entering the market alone.

(A good interviewee should ask 2-3 clarifying questions. An excellent interviewee would mention the $14 billion profit that would be generated by Miracle Therapeutics if entered the market alone during their recommendation.
Interviewer should provide the exhibits once asked about cost..)

Case 25: Miracle Therapeutics

Exhibit 1 for Question #2

The pricing of the drug should account for the costs associated with drug development (one-time cost) as well as the recurring costs yearly.

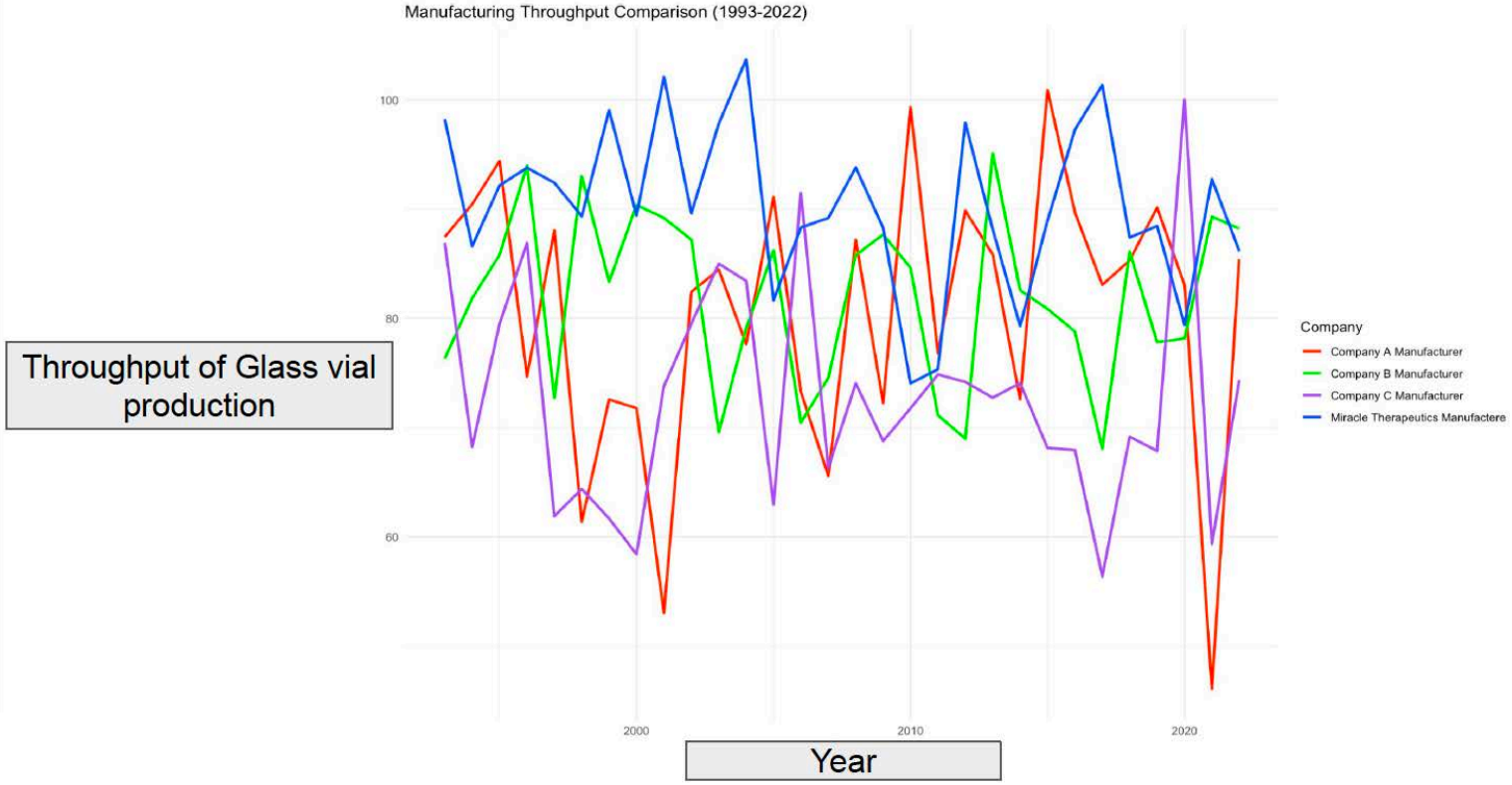
Variable Costs	Price in USD $ / vial
Raw materials and packaging costs	$20 per vial
Drug Batch production costs	$1,000 per vial of drug

Fixed Costs (One-Time)	Price in USD $
Drug Development Cost	$2 Billion

Fixed Costs (Yearly)	Price in USD $ / year
General and Administrative	$600 Million
Manufacturing and Distribution	$100 Million
Salary	$500 Million
Marketing	$500 Million

Case 25: Miracle Therapeutics

Exhibit 2 for Question #4



Case 1: Gas Station

Profitability	McKinsey	Qual.	Quant.
Oil & Gas	Round 2	4	2

Prompt

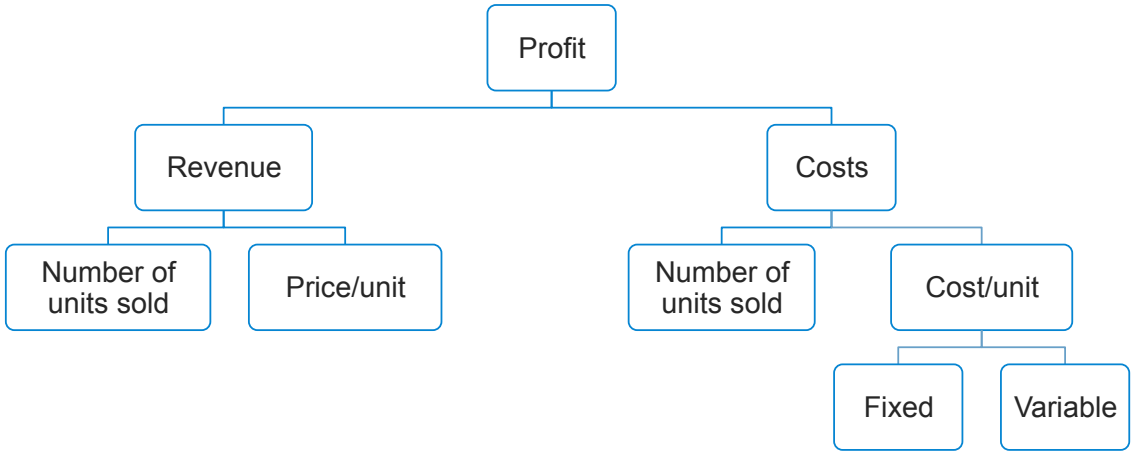
Our client is a large oil and gas company with branches all over the United States. Over the past year or so (2011-2012), they have noticed a decline in profits. What factors may be contributing to this and what can they do to alleviate the situation?

Additional Information *(provided on request)*

- The business has 2 segments: gas/filling station and convenience store
  - Gas station segment → traditionally lower profit margin
  - Convenience store → traditionally higher profit margin
- Some customers shop at the gas stations only. Some shop at the stores only and some go to both on the same trip
- The number of our client's gas stations/stores has remained constant in the past 3 years
- Our client's gas stations' revenues are within industry average, but prices of items in their convenience stores are higher than those of major competitors
- Exhibit 1: U.S.A. average gas and oil prices, 2008-2012
- Exhibit 2: Breakdown of sales and costs by segment
- Exhibit 3: Consumer demand by segment

Case 1: Gas Station

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors may be contributing to the decrease in profit?

This is a brainstorming question; possible answers include but are not limited to the following:

- Gas station segment:
  - Improvement in public transportation
  - New legislation to limit number of vehicles
  - Oil prices have increased, leading to a drop in demand
- Convenience store segment:
  - Increased competition from large grocery stores/supermarkets
  - Decline in quality of goods sold
  - Increases in COGS, rent, labor etc.

Case 1: Gas Station

Analysis

2. What do you think is responsible for the decrease in profit from 2011 to 2012?

Candidate should have touched on oil prices and revenue streams/costs from Question 1. Provide Exhibits 1 and 2. Candidate should make the following observations:

- Exhibit 1: Oil prices dropped suddenly at the end of 2008 but steadily went back up and have stayed fairly constant from 2011-2012. So this is likely not the major contributor
- Exhibit 2:
  - In fact, the gas station segment saw a profit increase of $1.5 billion
  - However, the convenience store segment saw a profit decrease of $4 billion
    - $4 billion drop in revenues, no change in costs
  - So overall, there is a profit decrease of $2.5 billion
- The major driver for the profit decline from 2011-2012 was the drop in revenue in the convenience stores

Candidate should come up with reasons why convenience stores are seeing a drop in revenue. If not, ask the follow-up question: Why do you think this is?

- This could be due to either or both of the following:
  - The overall number of customers is decreasing
  - Change in the distribution of customers

Now provide Exhibit 3. Candidate should make the following observations:

- Total number of customers dropped only slightly
- The number of customers that go to convenience stores only remained roughly the same
- There was a shift from the “both” segment to the “gas station only” segment
  - This led to a loss in revenue in the convenience stores

Case 1: Gas Station

Analysis

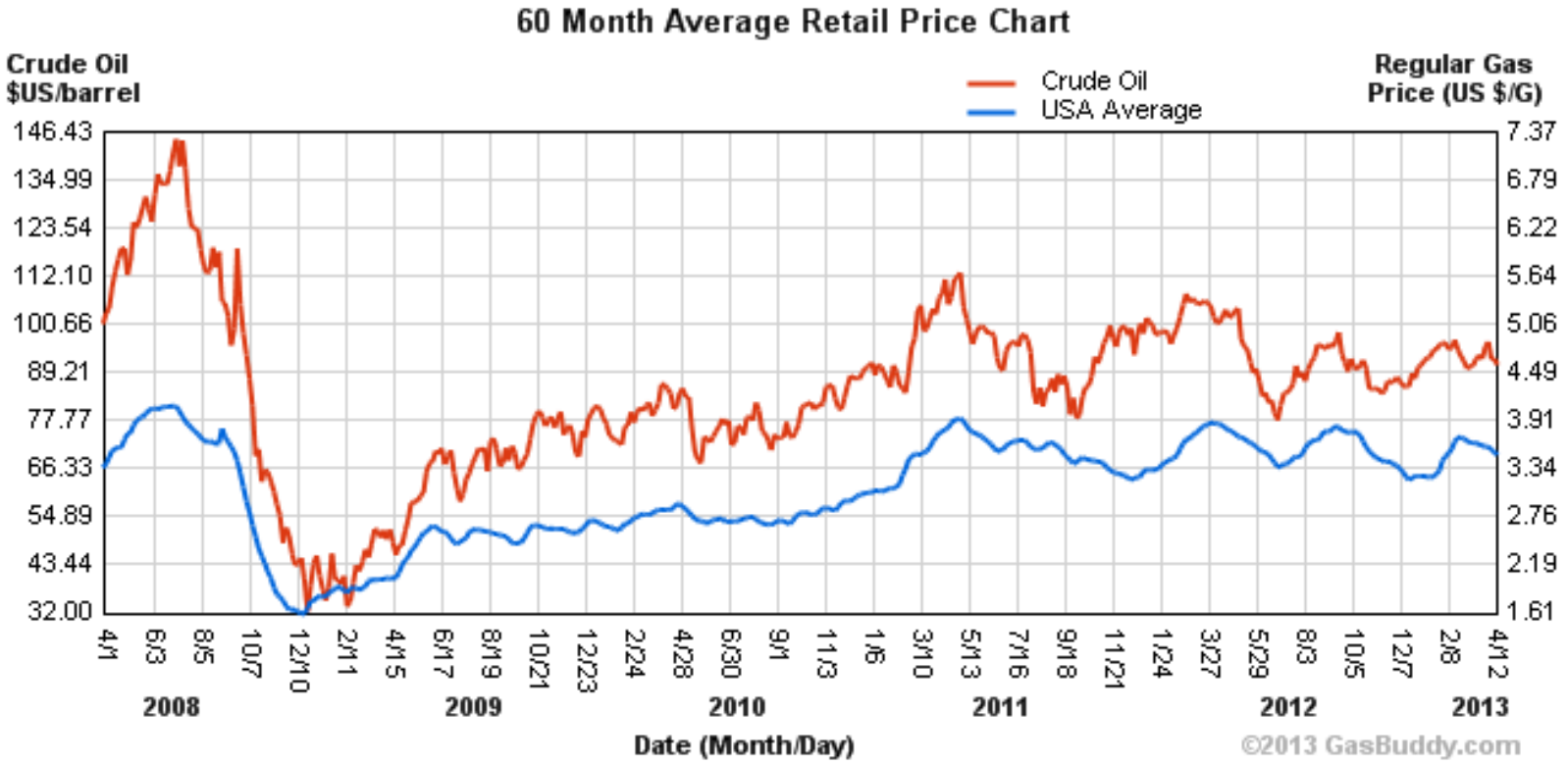
3. What can our client do to increase their profitability?
    - Customer survey to figure out if needs are being met and areas for improvement
    - Lower prices in the convenience stores
    - Promote synergy between gas station and convenience store segments
        - Give convenience store coupons every *N* gas fills
        - Give gas points for purchases over a certain amount at the convenience store

Summary

I recommend that the client focuses on improving the revenue at their convenience stores in order to increase profitability. My analysis indicated that the profit decrease from 2011-2012 was due mainly to a drop in the number of customers who visited both the gas station and convenience store segments on the same trip. Our client can try to alleviate the situation by promoting more synergy between the two segments, for example by offering store coupons for a fixed number of gas fills. However, it is possible that these measures do not solve the problem entirely, and so in terms of next steps, we recommend that the problem is investigated further to identify what caused the shift away from the convenience stores in the first place.

Case 1: Gas Station

Exhibit 1: U.S.A. average gas and oil prices, 2008-2012



Source: http://gasbuddy.com/gb_retail_price_chart.aspx

Case 1: Gas Station

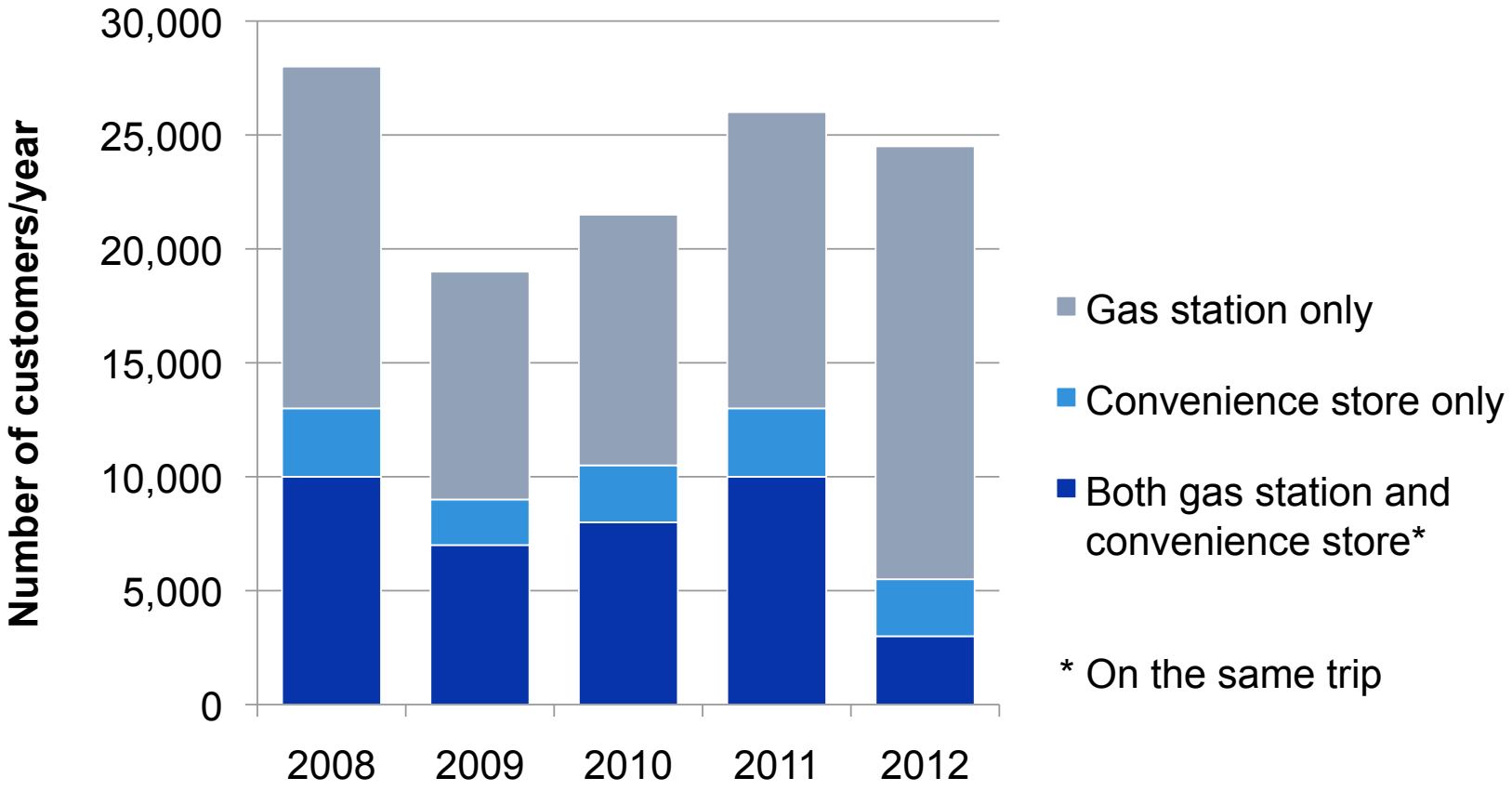
Exhibit 2: Breakdown of sales and costs by segment

Segment	Revenue ($ million)				
	2008	2009	2010	2011	2012
Gas station	15,000	8,000	12,000	20,000	22,000
Convenience store	13,000	7,000	9,000	10,000	6,000
Total	28,000	15,000	21,000	30,000	23,000

Segment	Costs ($ million)				
	2008	2009	2010	2011	2012
Gas station	10,000	9,000	9,000	9,500	10,000
Convenience store	5,000	4,500	4,000	5,000	5,000
Total	12,000	13,500	13,000	14,500	15,000

Case 1: Gas Station

Exhibit 3: Consumer demand by segment



Case 2: Baby Helmets

Market Entry	L.E.K.	Qual.	Quant.
Medical Devices	Round 2	3	4

Prompt

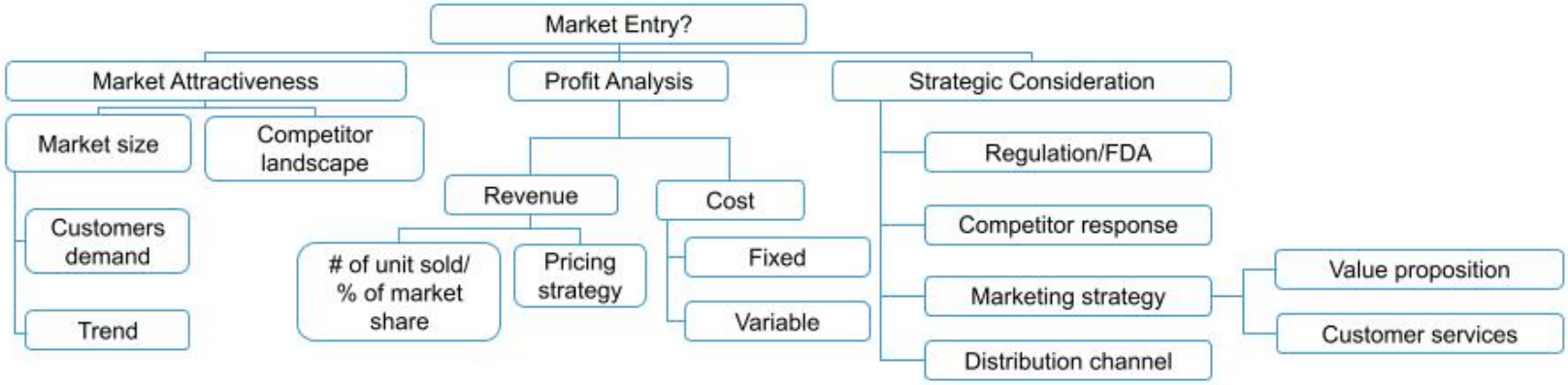
Our client is a manufacturer of casts and supports used in correcting bone structure. They recently developed 3 new baby helmets and would like to know if they should launch one or more of these products onto the market. Specifically, is a target profit of $1 million a year reasonable?

Additional Information *(provided on request)*

- Our client wishes to reach the target profit of $1 million within the first year
- Our client takes care of the entire manufacturing process themselves
- Baby helmets are used to correct the shape of the skull
- Helmets are once-use for a duration of a month; a baby will only need to use a correctional helmet once in his/her life
- Our client has developed one products in each of the 3 categories of helmets (strong, medium and weak)
- The current market for baby helmets is dominated by 2 major players, each with ~30% market share
- U.S. population = 320 million
- Exhibit 1: Need for baby helmets by age group

Case 2: Baby Helmets

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors should our client consider in deciding whether or not to enter the market?
    - Brainstorming question; see sample structure. Be sure to dive into case-specific factors (e.g. re: competition, how well do the competitor's helmets work?)
2. Please estimate the market size for baby helmets.

Candidate should estimate number of live births as follows:

- U.S. population = 320m
- Life expectancy ~80 years
- Number of live births = 320m/80 = 4m per year

Now provide Exhibit 1. Candidate should calculate the following:

- 4 age groups in total so ~1m babies per age group

Case 2: Baby Helmets

Analysis

- # babies/year that need helmets = 1m*2% + 1m*1.2% + 1m*0.4% +1m*0.4% = 40,000
- 40,000*1 helmet/baby/year = 40,000 helmets/year

3. Is a target profit of $1m a year realistic?

From Exhibit 1, candidate should calculate the following:

- Gross margins for the 3 products:
  - Strong helmets: $180 - $140 = $40
  - Medium helmets: $150 - $90 = $60
  - Weak helmets: $120 - $15 = $105
- Total profit for each of the 3 products:
  - Strong helmets: $40*1m*2% = $0.8m
  - Medium helmets: $60*1m*1.2% = $0.72m
  - Weak helmets: $105*1m*0.4%*2 = $0.84m
  - Total profit = $0.8m + $0.72m + $0.84m = $2.36m
  - To reach a target profit of $1m, client would need to launch all 3 products and capture a market share of >42%. This is rather high. Considering that the two major players in this market already have 60% share combined, this number is not realistic
  - Therefore, a target profit of $1m a year is not reasonable

4. Assuming that our client can get a maximum market share of 20%, what would be a more reasonable target profit? What can they do to achieve it?
   - At 20% share, their profit would be $2.36m*0.2 = $0.472m. Therefore, $0.4m is a more realistic target

Case 2: Baby Helmets

Analysis

- The client will have to launch all three of the helmets at once
- Since there is major threat from 2 competitors, the client may want to consider lowering the price of their products so that they can have more sales
- They can also try to lower costs (especially of the strong helmets) by outsourcing manufacturing or negotiating with suppliers of raw materials

5. What risks are associated with your proposed strategy?
    - The assumption that our client can capture 20% of the market share may be overly ambitious, especially in the initial stages of product launch
    - Launching all 3 products at once maximizes profit but also increases the chances of one product failing. If the client isn't as concerned with immediately maximizing profit, they can consider launching the 3 products one at a time

Summary

The target profit of $1 million a year is not realistic, even if the client launches all 3 products and manages to capture 20% market share. A more reasonable goal would be $0.4 million, but there are some major risks associated with simultaneously launching all 3 products. I recommend launching the 3 products one by one and charging lower-than-average prices initially to help drive sales. The client can then increase prices once they have established a strong customer base.

Case 2: Baby Helmets

Exhibit 1: Need for baby helmets by age group

Age group	% skull developed	% need of helmet in age group	Type of helmet needed	Average price ($/unit)	Average cost ($/unit)
0-3 months	20%	2%	Strong	180	140
3-6 months	40%	1.2%	Medium	150	90
6-9 months	60%	0.4%	Weak	120	15
9-12 months	70%	0.4%	Weak	120	15
12-18 months	90%	0%	None		
18+ months	100%	0%	None		

Case 3: Animal Drug

Relocation	McKinsey	Qual.	Quant.
Pharma/drugs	Round 2	3	5

Prompt

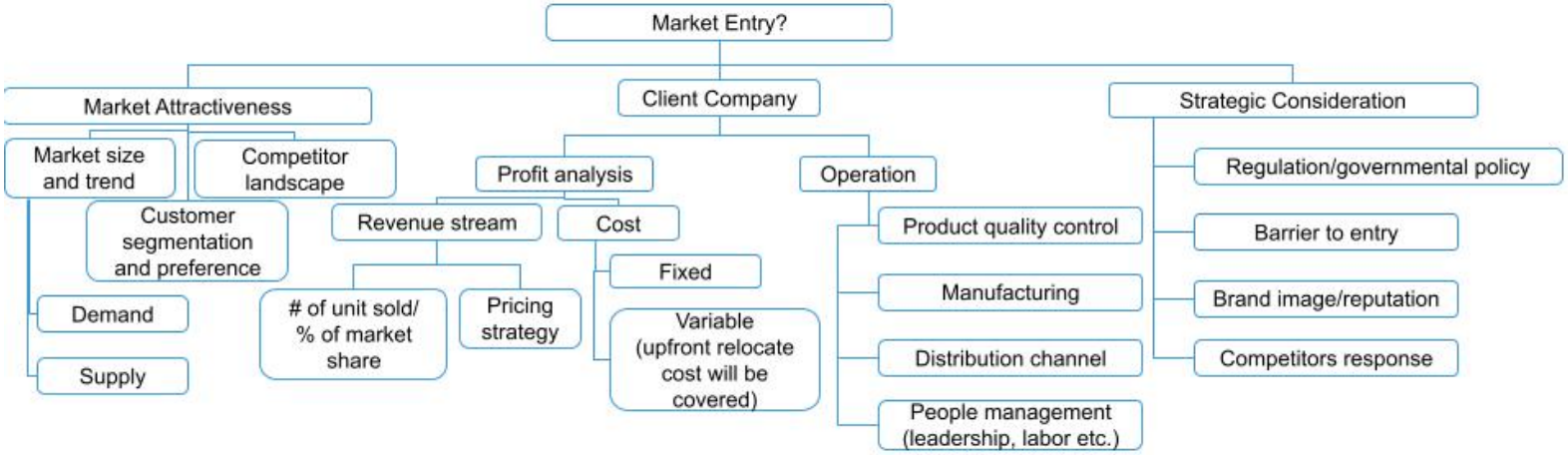
Our client is a U.S. based startup company that has recently obtained FDA approval for their only product, a new steroid hormone for pigs. Research reports have predicted the animal hormone market to be very promising in China in the near future. A generous individual has offered to cover all costs for our client to relocate the entire business to China in 2015. Should they accept the offer?

Additional Information *(provided on request)*

- The individual's offer is purely out of generosity; our client will not have to pay back any of the relocation costs
- Hormones used on Chinese farms are currently supplied exclusively by domestic producers
- Our client's new drug currently sells for $20/kg in the U.S.
- The pig hormone market in China is dominated by 3 major players
- Our client has a good global reputation and has received several prizes for high product quality
- Assume that production costs for this drug in China vs. the U.S. are roughly the same
- Exhibit 1: Pork consumption in China vs. U.S.A. (2012)
- Exhibit 2: Treatment of pigs with hormones in China vs. U.S.A. (2012)
- Exhibit 3: Pricing and volume of drugs sold by Chinese companies, 2008-2012

Case 3: Animal Drug

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors should our client consider in deciding whether or not to relocate to China?
    - Potential market; existing competitors; governmental policies barring entry; more listed in sample structure, and the factors the candidate mentions should be part of her structure
2. What is our client's potential market in China and in the U.S. in 2015?

From Exhibit 1, candidate can calculate the following:

- Total # pigs in China in 2012: 1.3b*0.4 = 0.52b = 520m
- Total # pigs in China in 2015: $520m*1.05^3$ = 602m (assuming constant growth rate)
- Total # pigs in U.S.A. in 2012: 300m*0.2 = 60m
- Total # pigs in U.S.A. in 2015: $60m*0.95^3$ = 51m (assuming constant growth rate)

Case 3: Animal Drug

Analysis

From Exhibit 2, candidate can calculate the following:

- Potential market in China: ~600m*(5%*5% + 70%*10% + 25%*80%) = 163.5m = ~164m
- Potential market in USA: ~50m*(10%*0% + 40%*20% + 50%*25%) = 10.25m = ~10m

Candidate can assume that our client will have 25% market share in U.S.A. and 2% in China

- Market captured by our client in 2015:
  - China: 164m*0.02 = ~3.3m
  - U.S.A.: 10m*0.25 = ~2.5m
- Client will be able to capture more market in China

3. If our client decides to relocate to China, at what price should they market their drug?

From Exhibit 3, candidate can make the following observations:

- In 2012, Company A made $15/kg*4,000 kg = $60,000; Company B made $10/kg*11,000 kg = $110,000; Company C made $5/kg*16,000 kg = $80,000. Therefore, Company B's pricing is the most profitable (assuming production costs are similar)

Now tell candidate that 0.001 kg of hormone is injected per pig per year.

- Our client can sell 3,300 kg in China and 2,500 kg in U.S.A.
- At $10/kg, client will make $33,000 in China while in U.S.A. (where price is $20/kg), client will make $50,000. At this price, client will make less profit in China
- For the drug to immediately bring more revenue in China than in U.S.A., client will have to sell it for more than 2.5/3.3*$20/kg = $15.15/kg

4. What other options does our client have?

- Stay entirely in the U.S.; enter Chinese market but not relocate; joint venture with a Chinese company; any other reasonable suggestion

Case 3: Animal Drug

Summary

This case is rather open-ended and both of the following options are good answers (bonus points if candidate comes up with both):

Option 1:

I recommend that the client relocates to China in 2015 and targets the state-owned farms as initial customers. The client needs to charge a price of at least $16/kg at the time of market entry for the drug to be immediately more profitable in China than in the U.S.A. Although $16/kg is expensive relative to similar drugs supplied by domestic producers, our client can leverage their reputation and quality guarantee to justify the high price, and should still capture 2% of the market share.

Option 2:

I recommend that the client does not relocate to China in 2015. Although they can capture a bigger market in China than in the U.S., they will face pressure from Chinese competitors (who sell their drugs at lower prices), and will find it difficult to sell the drug above $16/kg. Government policies in China may also be a barrier. Moreover, the client is already a dominant player in the U.S., and would benefit from focusing on maintaining this position.

Case 3: Animal Drug

Exhibit 1: Pork consumption in China vs. U.S.A. (2012)

Country	Pigs/person	Population	% Growth (2011 – 2012)
China	0.4	1.3 billion	4.7
USA	0.2	300 million	-4.6

Source: www.economist.com

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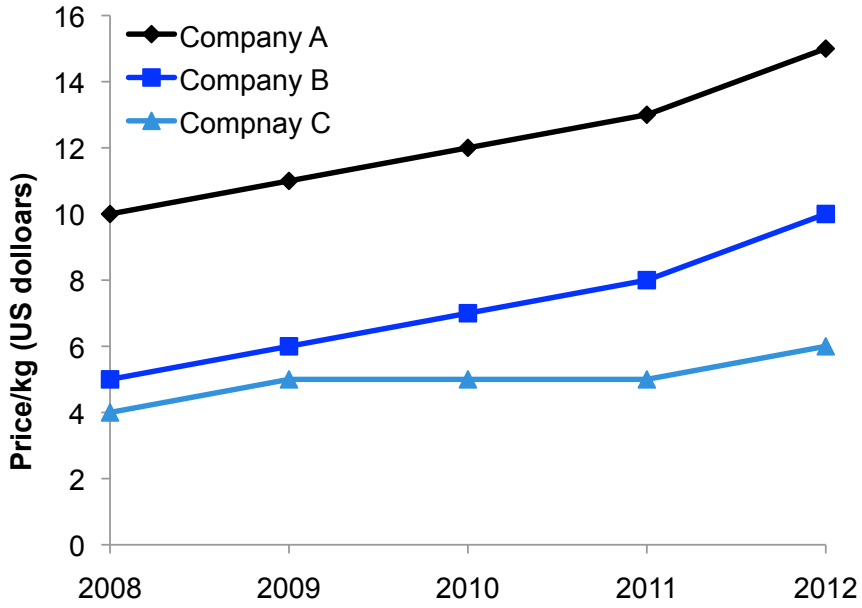
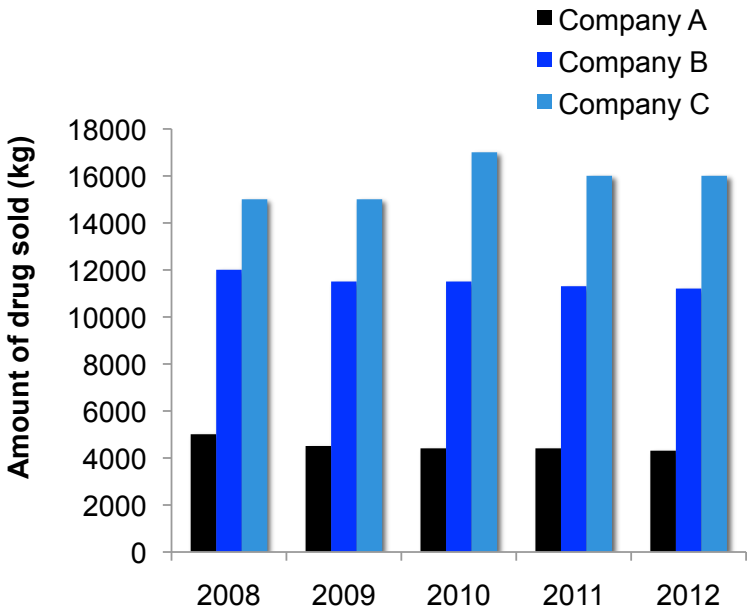
Exhibit 2: Treatment of pigs with hormones in China vs. U.S.A. (2012)

Type of owner	% of total pigs		% of pigs currently treated with hormones	
	China	USA	China	USA
Pet owners	5%	10%	5%	0%
Family-owned farms	70%	40%	10%	20%
State-owned farms	25%	50%	80%	25%

Case 3: Animal Drug

Exhibit 3: Pricing and volume of drugs sold by Chinese companies, 2008-2012





Case 4: Burrito Cart

Expansion	Bain	Qual.	Quant.
Food	Round 2	3	5

Prompt

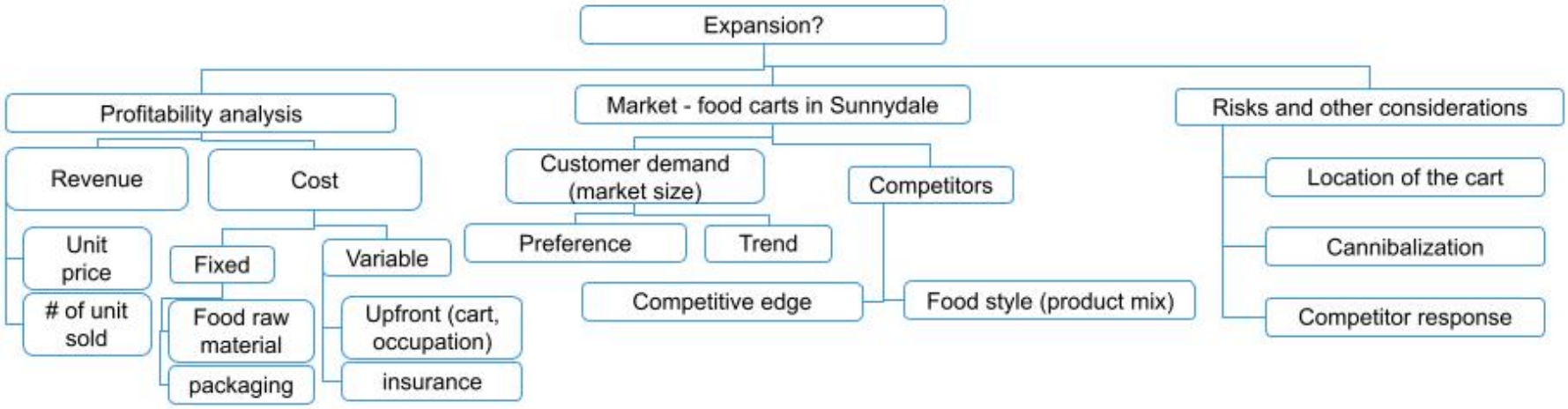
Our client is the owner of a burrito cart in the city of Sunnydale. His business is profitable but he wishes to expand it and increase profitability by operating a second burrito cart in the city. Would you recommend that he does so?

Additional Information *(provided on request)*

- There are 2 clusters of food carts in Sunnydale: Uptown and Downtown
- Our client's cart is currently uptown and he works 5 days/week, 4 weeks/month
- Our client charges a price of $5 per burrito, and sells no more than 50 burritos/day
- On average, one customer buys one burrito per day
- Prime hours of operation uptown are 11:30 am to 1:30 pm
- Prime hours of operation downtown are 11:00 am to 2:00 pm
- There are 100 customers/hour uptown and the 200 customers/hour downtown per day
- Variable costs for making one burrito is $1
- Fixed costs for operating a new burrito cart is $1,500/month
- For this case, upfront costs of getting the cart started (e.g. licenses) can be ignored
- Exhibit 1: Customer preference in the two clusters
- Exhibit 2: Map of food carts in the two clusters

Case 4: Burrito Cart

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. Would a second burrito cart be profitable?

Candidate should recognize that this is a market sizing question and ask for relevant information. Provide Exhibit 1 when candidate asks about customers. From Exhibit 1, candidate can calculate the following:

- Total number of customers at Mexican carts in each of the two clusters:
  - Uptown: 100 customers/hour*40%*2 hours = 80/day = 1,600/month
  - Downtown: 200 customers/hour*20%*3 hours = 120/day = 2,400/month

Case 4: Burrito Cart

Analysis

- Projected revenues for a new cart in each of the clusters:

Candidate should ask about the number of competitors before doing further calculations. Provide Exhibit 2 when prompted by candidate.

  - Uptown: 1,600 customers/2 Mexican carts = 800 customers/cart
    - $5/burrito*800 burritos = $4,000/month
  - Downtown: 2,400 customers/5 Mexican carts = 480 customers/cart
    - $5/burrito*480 burritos = $2,400/month
- Costs for a new cart in each of the clusters:
  - Uptown: $1/burrito*800 burritos + $1,500 = $2,300/month
  - Downtown: $1/burrito*480 burritos + $1,500 = $1,980/month
- Profits for a new cart in each of the clusters:
  - Uptown: $4,000 - $2,300 = $1,700/month
  - Downtown: $2,400 - $1,980 = $420/month
- A new cart will be much more profitable uptown than downtown

2. What other options does our client have to expand his business?

This is a brainstorming question; answers include but are not limited to the ones listed below.

- Introduce new items on the menu
- Open a cart that sells a different type of food (Asian, American etc.) or one that doesn't currently exist at all (e.g. ice cream or salad)
- Try to sell more burritos a day – client is not capturing the maximum number of customers possible

Case 4: Burrito Cart

Analysis

3. Our client currently has enough capacity to make a maximum of 50 burritos/day. Does this maximize their profit?
   - Currently, at 50 burritos/day:
     - Revenue = $5*50/day*20 days/month = $5,000/month
     - Total costs = $1*50/day*20 days/month + $1,500/month = $2,500/month
     - Profit = $5,000 - $2,500 = $2,500/month
   - There are theoretically 80 customers/day uptown. If our client sells 80 burritos/day, then:
     - Revenue = $5*80/day*20 days/month = $8,000/month
     - Total costs = $1*80/day*20 days/month + $1,500/month = $3,100/month
     - Profit = $8,000 - $3,100 = $4,900/month
   - Our client's profit is not maximized at 50 burritos/day. Selling 80 burritos/day will increase the profit to $4,900/month – an increase of $2,400/month in profits

   Candidate should then recognize the following caveat:
   - However, 80 burritos/day is a 60% increase – may be unrealistic in terms of capacity
4. How many more burritos would our client need to sell at their existing cart in order to make the same profit as opening a new cart?
   - Total profit for opening a new cart: $1,700/month/cart*2 carts = $3,400/month
   - Let x be the number of burritos that have to be sold per day at existing cart to achieve $3,400/month in profits
     - $5x*20 – (1x*20 + 1,500) = 3,400$
     - $100x – 20x – 1,500 = 3,400$; $80x = 4,900$; $x = 61.25$
   - They should sell at least 62 burritos/day (12 more/day) to equal the profits of a new cart

Case 4: Burrito Cart

Summary

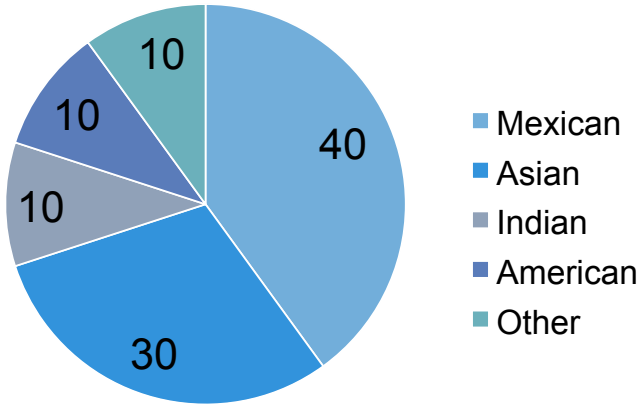
I recommend that the client does not open a new burrito cart, but rather, expands the capacity of the existing cart uptown to avoid added costs of maintaining a second cart. They will need to sell an additional 12 burritos/day, which is a ~25% increase from the 50/day they are currently selling. Moving forward, they should be wary of potential new competitors uptown, since there are currently 2 open slots. They should also make sure that they prepare themselves in the long term for selling even more burritos/day to capture as much of the unmet demand as possible.

Case 4: Burrito Cart

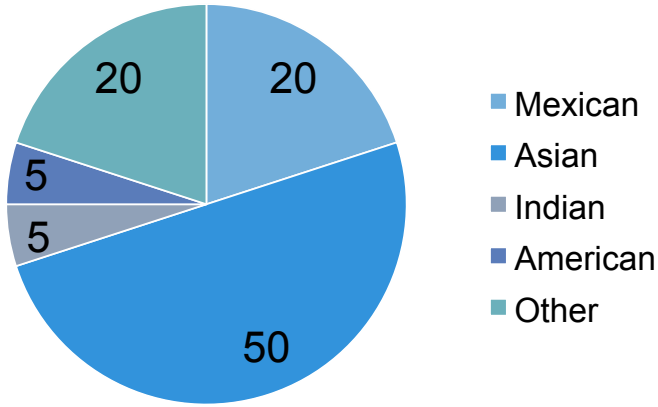
Exhibit 1: Customer preference in the two clusters

Note: 100 customers were surveyed in each cluster and were asked what type of food would be their first choice when they visit the food carts. The charts below show the breakdown in terms of preference:

Uptown

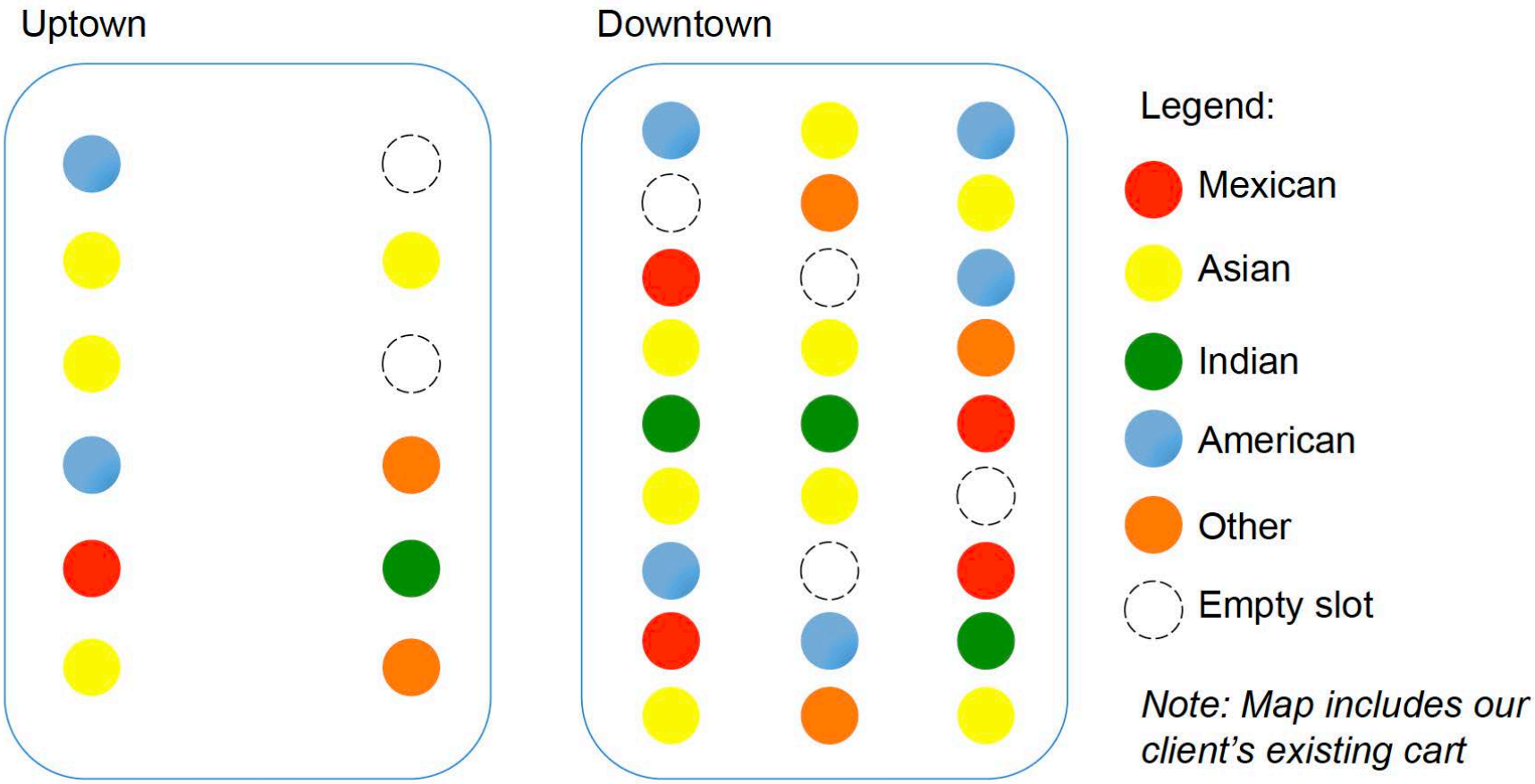


Downtown



Case 4: Burrito Cart

Exhibit 2: Map of food carts in the two clusters



Case 5: Sports Cards & Signed T-shirts

Expansion	Bain	Qual.	Quant.
Retail	Round 1	2	2

Prompt

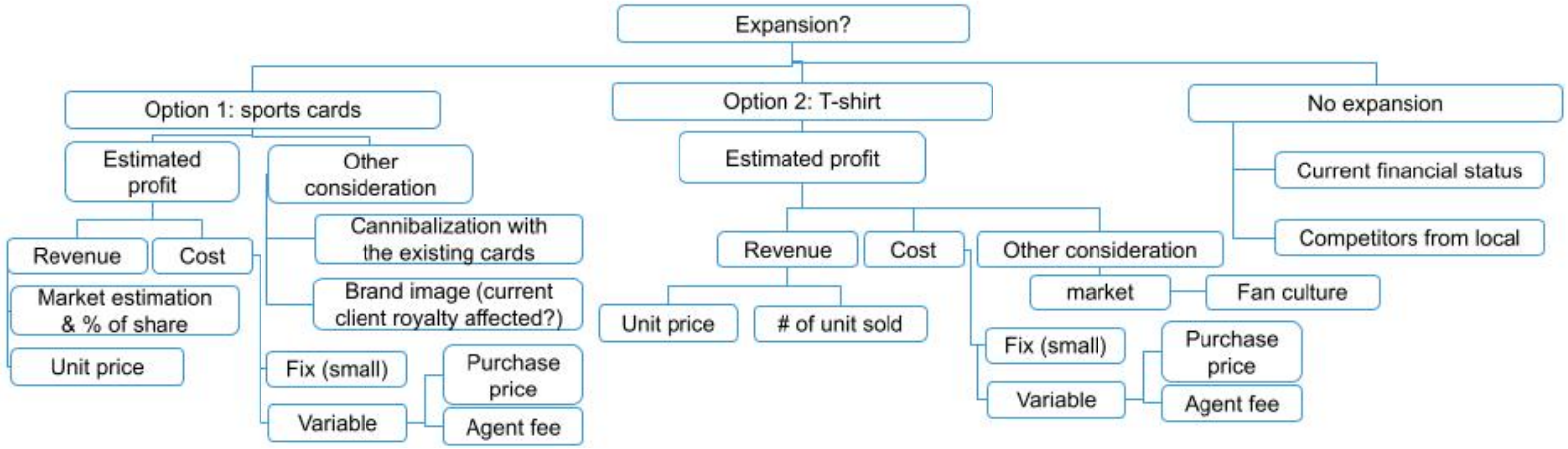
Our client is a vendor of sports cards with football, basketball and baseball stars. Their revenue in 2012 was $150 million. They wish to expand their business, and are thinking of 2 options: 1) selling new sports cards (e.g. golf or ice-skating stars) and 2) selling signed T-shirts with movie stars or pop singers. Which option should they go for?

Additional Information *(provided on request)*

- The sports stars are not directly contacted by our client, but rather, through their agents
- Our client has eyes on 8 athletes and 12 movie stars/pop singers
- Our client has no existing contacts with the potential athletes but is in contact with some of the movie star agents
- All featured stars are on a 5-year contract
- the interviewee needs to pick one of the options
- **NOTE FOR INTERVIEWER**: Also may consider not expand at all
- Exhibit 1: Projected profitability of sports cards vs. signed T-shirts

Case 5: Sports Cards & Signed T-shirts

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. How do the two options compare financially?

From Exhibit 1, candidate can calculate the following:

- 5-year revenue for sports cards: 8*($100,000*3 + $125,000*2) = $4.4m
- 5-year cost for sports cards: $50,000*5 + $4.4m*25% = $1.35m
- 5-year profit for sports cards = $4.4m - $1.35m = $3.05m
- 5-year revenue for signed T-shirts: 12*$75,000*5 = $4.5m
- 5-year cost for signed T-shirts: $150,000*5 + $4.5m*20% = $1.65m
- 5-year profit for signed T-shirts: $4.5m - $1.65m = $2.85m

Case 5: Sports Cards & Signed T-shirts

Analysis

- Both revenues would contribute just a small amount to the company's overall yearly revenue of $150m, so client should explore other growth opportunities
- Although sports cards is slightly more profitable, there is only a $0.2m difference between the two options. Therefore, client should consider ease of implementation, such as whether or not there are existing contacts

2. The CEO's college buddy, Mike, has contacts with many movie stars. The CEO assigned him 6 months ago as VP of the movie star business. For the past 6 months, he hasn't brought any revenue or signed any new contracts. Should the CEO keep Mike around? Why or why not?

Candidate can come up with any answer as long as they are justified.

- The CEO should not keep Mike as VP, but considering his relationship with the CEO and the potential human equity he can bring from his networking experience, he is still valuable to the firm. The CEO can consider assigning him a public relations position instead.

Summary

I recommend that the client starts selling signed T-shirts rather than new sports cards. The two options are similar in profitability but the client can leverage their existing contacts with movie stars to establish the products faster and more easily. At the same time, the client should explore other ways to expand their business since signed T-shirts will only contribute a small amount to their revenue.

Case 5: Sports Cards & Signed T-shirts

YGCC
Yale Graduate Student Consulting Club

Exhibit 1: Projected profitability of sports cards vs. signed T-shirts

Product	Revenue/year		Costs/year	
	Years 1-3	Years 4-5	Marketing	Other (rent, labor etc.)
Sports cards	$100,000/athlete	$125,000/athlete	$50,000	25% of revenue
Signed T-shirts	$75,000/star	$75,000/star	$150,000	20% of revenue

Case 6: Diabetes Device

Pricing	Simon-Kucher & Partners	Qual.	Quant.
Medical Devices	Round 2	2	5

Prompt

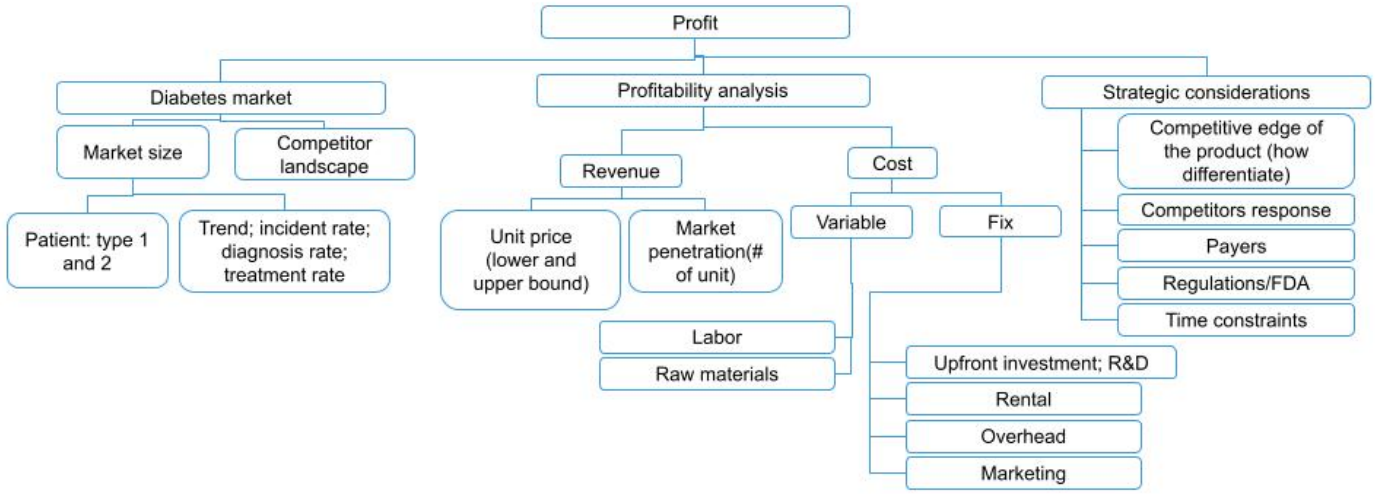
Our client is a manufacturer of medical devices used to treat chronic diseases. They recently launched a new device for treating diabetic patients. The device has two components – an injector and a disposable cartridge. They would like to know how they should sell these products in order to maximize profit. What advice would you give them?

Additional Information

- The production costs for each component are as follows:
  - Injector: $40/unit
  - Disposable cartridge: $20/unit
- Both the injector and cartridge are sold directly to patients with a prescription
  - Injector can be reused up to 20 times but cartridges are one-time use
- Our client has done some initial projections of acceptance rates at various prices based on customer surveys
  - Acceptance rate is defined as the percentage of customers who are willing to pay that specific price for the product
- Exhibit 1: Price and acceptance rates for the two components
- Exhibit 2: Cost savings per bundle at various bundling ratios

Case 6: Diabetes Device

Structure



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What prices should our client set the two components at in order to maximize profit?

*Candidate should calculate profitability at each price by taking gross margin*acceptance rate.*
To calculate gross margin, candidate will need to ask for costs of production.

- For the injector:
  - At $100: ($100-$40)*80% = $48
  - At $110: ($110-$40)*70% = $49
  - At $125: ($125-$40)*60% = $51
  - At $150: ($150-$40)*50% = $55
  - At $175: ($175-$40)*40% = $54

Case 6: Diabetes Device

Analysis

- For the cartridge:
  - At $60: ($60-$20)*80% = $32
  - At $62: ($62-$20)*75% = $31.5
  - At $64: ($64-$20)*70% = $30.8
  - At $66: ($66-$20)*65% = $29.9
  - At $68: ($68-$20)*60% = $28.8
- The most profitable prices are $150 for the injector and $60 for the cartridge

2. Can you think of other pricing/selling strategies that may help increase profitability further?

Candidate should brainstorm a few ideas, but the main point they should get at is the following:

- Bundle the two products together
  - Attractive to customers:
    - Complementary products – customers need to buy both anyway
    - Injector is reusable but cartridges are not
  - Beneficial for our client – helps save on costs

3. Our client thinks bundling is a good idea to save on costs. For every 5 cartridges bundled with an injector, they are also willing to take a $10 discount from the combined price of the components. Should our client sell the two components as a bundle? If so, in what ratio?

Provide Exhibit 2. Candidate will need to calculate gross margins for the 4 bundling ratios below:

- 1:5 ratio: Price – discount – cost + savings = (150 + 60*5) – 10 – (40 + 20*5) + 7 = 307
- 1:10 ratio: (150 + 60*10) – (2*10) – (40 + 20*10) + 14 = 504
- 1:15 ratio: (150 + 60*15) – (3*10) – (40 + 20*15) + 28 = 708
- 1:20 ratio: (150 + 60*20) – (4*10) – (40 + 20*20) + 56 = 926

Case 6: Diabetes Device

Analysis

Candidate should also calculate gross margins from the separate components without the bundle. Note: acceptance rates can be ignored for this question.

- 1 injector + 5 cartridges = (150 – 40) + 5*(60 – 20) = 310
- 1 injector + 10 cartridges = (150 – 40) + 10*(60 – 20) = 510
- 1 injector + 15 cartridges = (150 – 40) + 15*(60 – 20) = 710
- 1 injector + 20 cartridges = (150 – 40) + 20*(60 – 20) = 910
- A bundling ratio of 1:20 (injector to cartridge) would increase the gross margin by $16. The other bundling options are less profitable than selling the two components separately

4. Our client would like to compare their bundling strategy with the bundling strategies of other businesses. What other product bundles can you think of?

There are many possible answers for this brainstorming question. Here are just a few examples:

- Camera/film
- Hardware/software
- Water purification system/filter cartridges
- Cable/internet

Summary

I recommend that the client sells the injector for $150/unit and disposable cartridge for $60/unit. To further increase profitability, the client can bundle the two components at a 1:20 ratio of injector to cartridge. Moving forward, the client should conduct surveys to find the acceptance rates for each bundling ratio to more accurately estimate profitability.

Case 6: Diabetes Device

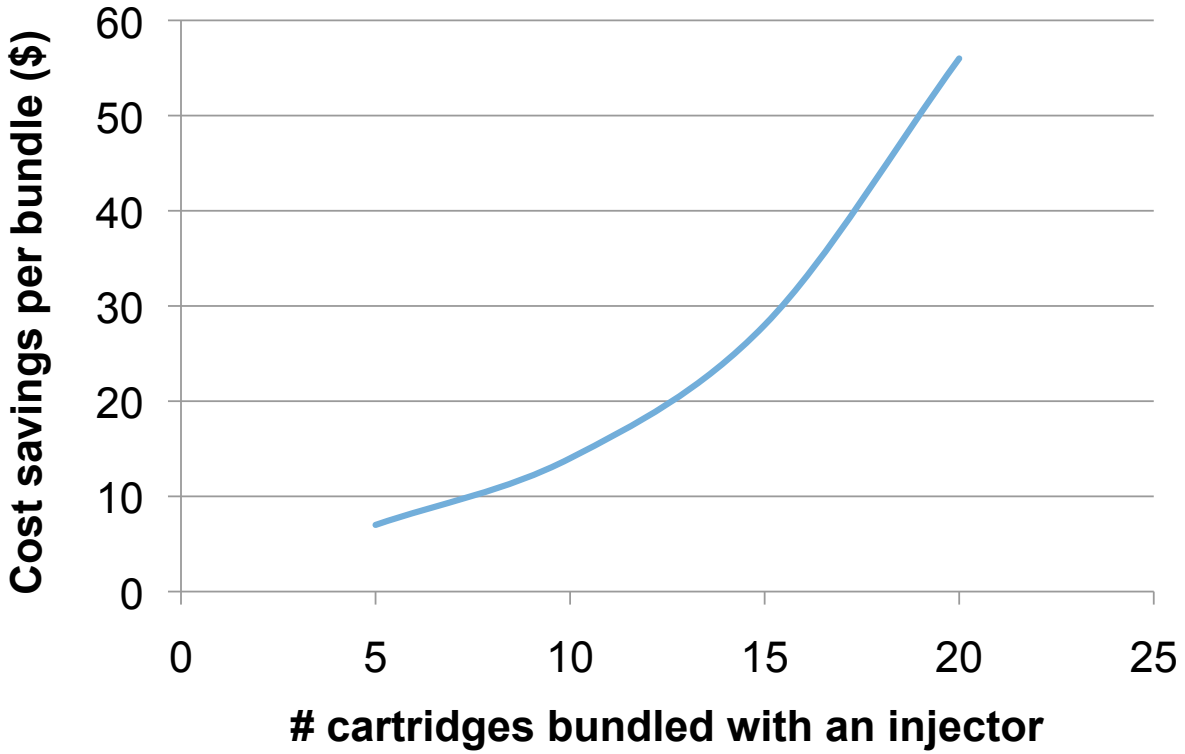
Exhibit 1: Price and acceptance rates for the two components

Injector	
Price ($/unit)	**Acceptance rate (%)**
100	80
110	70
125	60
150	50
175	40

Disposable Cartridge	
Price ($/unit)	**Acceptance rate (%)**
60	80
62	75
64	70
66	65
68	60

Case 6: Diabetes Device

Exhibit 2: Cost savings per bundle at various bundling ratios



Case 7: Apoplexy Drug

Market Entry	BCG	Qual.	Quant.
Pharma	Round 2	4	5

Prompt

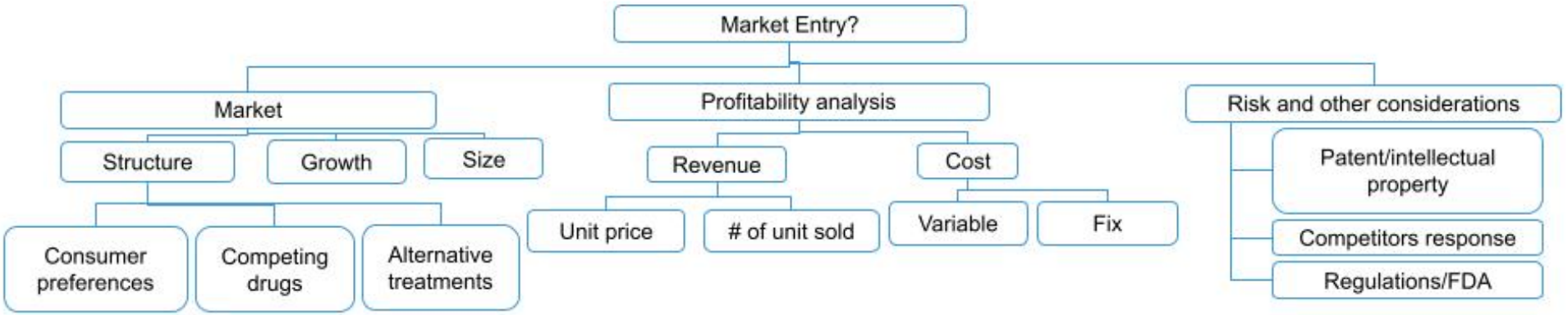
Our client is a pharmaceutical company who has recently developed a drug for apoplexy. The drug has been clinically proven to be safe and effective, and is the only product that is at this stage in our client's business. Should our client proceed with commercializing the drug?

Additional Information *(provided on request)*

- Apoplexy is another term for a stroke – patients suffer a sudden impairment of neurological function due to lack of oxygen in the brain
- There are 260,000 cases of apoplexy per year
- Treatment is only effective within the first 3 hours. The 1st hour is critical; patients who receive treatment within the 1st hour have much higher survival rates than those who get treated within the 2nd and 3rd hours
- Apoplexy drugs cannot be administered until patient reaches the hospital
- Our client is planning to charge $8,000 per use of the drug (1 use/patient)
- There is one competitor on the market; they charge $6,000 per use of the drug
- Our client's drug has a higher success rate than the competitor's in the 1st hour, and the same success rate as the competitor's in the 2nd and 3rd hours, and a similar set of side-effects
- Exhibit 1: Patient distribution by methods of help and geographic location

Case 7: Apoplexy Drug

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors does our client need to consider?
    - Potential market for the drug; projected revenue; see sample structure
2. How much revenue can the product generate per year?

Candidate should recognize that the number of patients who will receive the drug depends on how long it takes patients to get to the hospital. Only provide Exhibit 1 when candidate mentions the time sensitivity of the treatment process. From Exhibit 1, candidate should calculate the following:

- Number of patients with automatic trigger that reach hospital in the 3-hour window:
    - 260,000*20%*100% = 52,000 patients

Case 7: Apoplexy Drug

Analysis

- Number of patients who call ambulance that reach hospital in the 3-hour window:
  - 260,000*80%*60%*percentage that can get treatment in the 3-hour window

*Now give candidate the following information: It takes 8 minutes for an ambulance to dispatch and 10 minutes to load a patient. It takes 12 minutes one-way for an ambulance to go from the city to a hospital and an **extra** 8 minutes one-way to go from the suburbs to a hospital. Candidate should calculate the following:*

- Time it takes for a patient to go from the city to a hospital:
  - 8 + 10 + 12*2 = 42 minutes
  - All patients from the city should be able to receive treatment in the first hour
- Time it takes for a patient to go from the suburbs to a hospital:
  - 8 + 10 + (12+8)*2 = 58 minutes
  - Although patients from the suburbs reach hospitals in 58 minutes, 2 minutes isn't enough time for them to receive treatment. Therefore, these patients will most likely go for the competitor's drug (which is cheaper and has the same success rate after the first hour)
- Number of patients who call ambulance that get treated in the first hour:
  - 260,000*80%*60%*80% = 99,840 = ~100,000
- Total number of patients who will use our client's drug = 52,000 + 100,000 = 152,000
- Revenue = 152,000 patients*$8,000/patient = $1.2 billion per year

3. If fixed costs are $240 million/year and variable costs are $5,000 per unit, how much profit can be made from the drug per year?
   - Total costs = $240m + $5,000*152,000 = $1 billion; Profit = $200 million/year

Case 7: Apoplexy Drug

Analysis

4. Our client is thinking of lowering the price of their drug to $6,000 per use to capture more of the market. Is this a good idea?
    - In this case, our client will still capture all of the patients who will receive treatment in the first hour, which is 152,000 patients
    - In addition, our client will get 50% of the patients from the suburbs (since our client's drug is now identical to the competitor's after the first hour)
        - Number of patients from the suburbs = 260,000*20%*60%*50% = 15,600
    - Total number of patients who will use client's drug = 152,000 + 15,600 = 167,600
    - Total revenue = 167,600*$6,000 = ~$1 billion
    - Total costs = $240m + $5,000*167,600 = ~$1.1 billion
    - At this price, our client would not make any profit and would make a slight loss instead. Therefore, they should stay with charging $8,000 per use of the drug

Summary

I recommend that the client proceeds with commercializing the drug at $8,000 per use. This pricing strategy allows them to capture a reasonable portion of the market (given the higher effectiveness of their drug within the first hour), generating a profit of $200 million a year. Some major risks are competitive response and the possibility of new market entries, so moving forward, our client should develop a solid marketing plan, and push for the replacement of the competitor drug with our client's (using the argument that it will simplify the supply management of hospitals).

Case 7: Apoplexy Drug

Exhibit 1: Patient distribution by methods of help and geographic location

	Help method	
	Automatic trigger (sends special service)	**Call regular ambulance**
% of total patients	20%	80%
% patients that reach hospital within the first 3 hours for given help method	100%	60%
Time it takes for patients to reach hospital	30 minutes	Varies depending on location

	Geographic distribution	
	Cities	**Suburbs**
% of total patients	80%	20%

Case 8: Superstore

Expansion	McKinsey	Qual.	Quant.
Retail	Round 2	4	3

Prompt

Our client is a drive-and-park superstore based in the London metropolitan area. They recently expanded from the suburban areas to the city. However, their market share has decreased despite the opening of these new stores. What factors might be contributing to this and what should our client do?

Additional Information *(provided on request)*

- Our client sells products ranging from food to clothing (similar to Walmart, Target etc.)
- Retail industry in the are has a positive growth rate of around 2%
- Around the same time as our client's expansion, one major competitor opened their 14th, 15th and 16th store in the city
- There has been no change in our client's operations, management or product segmentation
- Our client currently has 24 stores in the area – 20 in suburban regions and 4 in the city
- On average, each customer buys 5 items per visit, with average price being $5/item
- The stores are open Monday – Friday 10 am to 10 pm and Saturday – Sunday 11 am to 5 pm
- Exhibit 1: Number of customers vs. number of stores

Case 8: Superstore

Sample Structure *(any reasonable one is acceptable)*

Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What are some reasons that sales are not increasing proportionally to the number of stores?
    - Growing competition – increase in number of competitors or increase in market share captured by existing competitors
    - Decline in customer base
        - Not meeting needs of customers in the city (customers have less purchasing power in the city)
        - Non-ideal store locations
        - Mismatch between products and customer preferences

Case 8: Superstore

Analysis

2. What is our client's yearly revenue?

To answer this question, candidate will need to know how many customers our client is getting, how many items are purchased per visit, and how much an item costs. Provide Exhibit 1 when candidate asks about customers.

- Suburbs
  - 20 stores in suburbs → 250 customers/hour in total
  - 12 hours/day*5 weekdays + 6 hours/day*2 weekend days = 72 hours/week
  - 72 hours/week*50 weeks/year = 3,600 hours/year
  - 3,600 hours/year*250 customers/hour*5 items/customer*$5/item = $22.5 million/year
- City
  - 4 stores in city → 100 customers/hour in total
  - 3,600 hours/year*100 customers/hour*5 items/customer*$5/item = $9 million/year
- Total revenue = $22.5 million/year + $9 million/year = $31.5 million/year

3. What can our client do to increase their market share?

- Get more customers by either of the following:
  - Open more stores in the city
    - Initially, the city attracts fewer customers but as the number of stores increases, the number of customers increases proportionally
  - Relocate stores from suburbs to the city
    - They have reached saturation point in the suburbs
- Establish an online store (this is just a suggestion; there's no actual evidence here for this)
- Establish membership/rewards program

Case 8: Superstore

Analysis

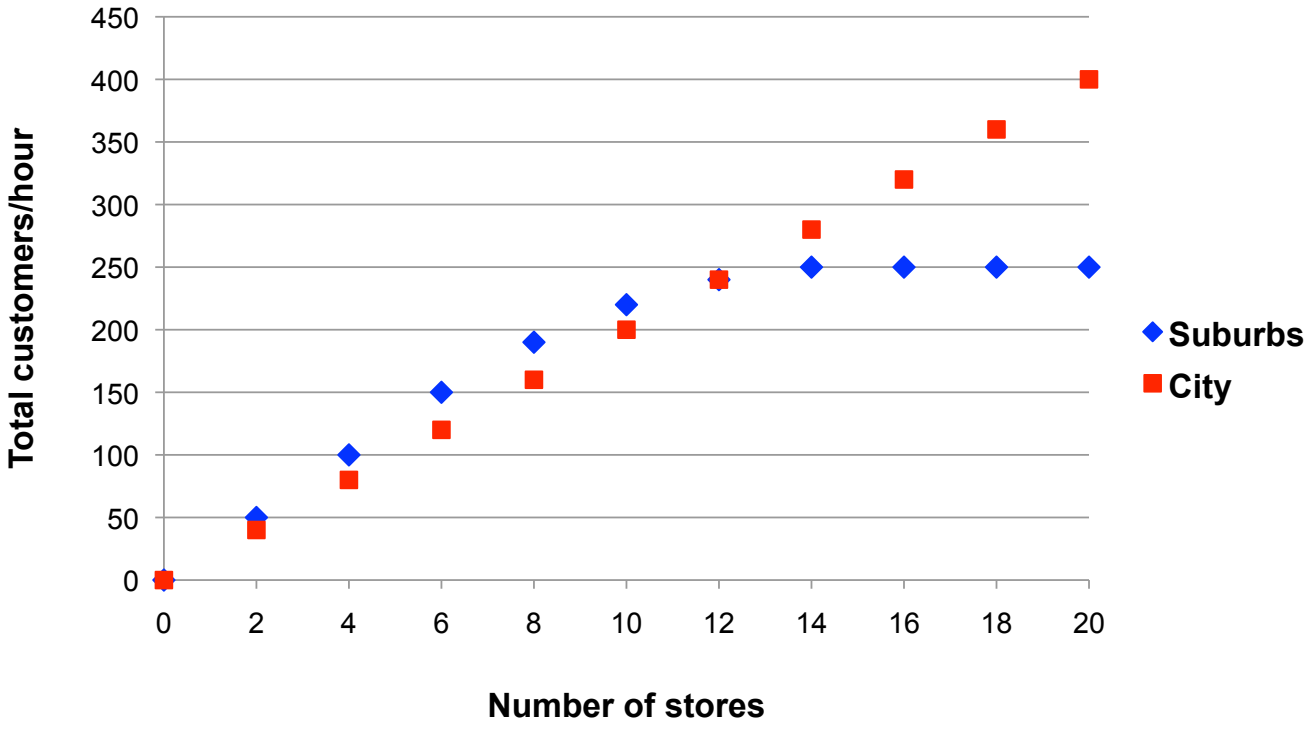
4. Our client does not wish to open any more stores, however, they are open to the idea of relocating up to half of their existing stores. What advice would you give them?
    - They should relocate their stores in a way that maximizes the number of customers/hour
    - They're willing to relocate up to 12 (half of 24) of their stores
    - The city is significantly more profitable than the suburbs after 12 stores, so if our client relocates 12 of their suburban stores to the city, they would have 16 stores in the city
        - 16 stores in the city → 320 customers
        - This leaves 8 stores in the suburbs → 190 customers
        - Total = 510 customers = $45.9 million/year in revenue
        - This would be an increase of $14.4 million/year (almost 50% increase)

Summary

I recommend that the client relocates 12 of their suburban stores to the city to maximize their revenue. They are seeing a decline in market share because the suburbs are reaching saturation and they do not have enough stores in the city. Without opening new stores, the fastest way to increase revenue is by moving more stores into the city. Risks include competitor response and increased costs. Moving forward, our client can also consider establishing online stores or rewards programs to attract new and retain existing customers.

Case 8: Superstore

Exhibit 1: Total number of customers vs. number of stores (industry average)



1. Suburbs reaching saturation
2. Not capturing market in cities

Case 9: Towels

Profitability	McKinsey	Qual.	Quant.
Clothing/textile	Round 1	3	4

Prompt

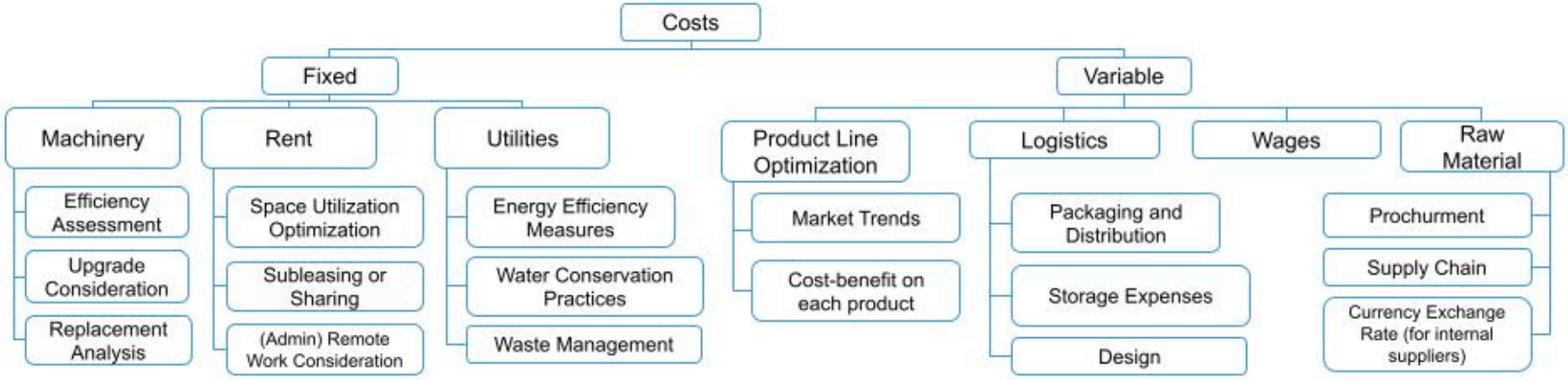
Our client is a manufacturer of linens and towels based in Germany. Their towels have recently suffered declines in profit, so they are thinking of cutting costs. What can our client do to cut costs without affecting product quality?

Additional Information *(provided on request)*

- The profit decrease is mainly due to a decrease in revenue; our client would like to counterbalance this by cutting costs
- Our client sells 4 different sizes of towels: small, medium, large and extra large
- Ideally, they would like to cut costs by 10%
- Exhibit 1: Costs of producing towels
- Exhibit 2: Number of towels produced and profit margins

Case 9: Towels

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. Which costs can our client cut down on?

First let candidate brainstorm costs associated with producing towels, then provide Exhibit 1.

Candidate should pick out the following two points:

- Packaging costs are the same for all towel sizes – client is overspending on packaging small and medium towels
- Refining/decorating contributes a lot to overall costs – this can be reduced since they are not essential to the quality of the products

Case 9: Towels

Analysis

2. Say our client can reduce packaging costs of small towels by $0.50/towel and medium towels by $0.25/towel, in addition to cutting all refining/decorating costs by $1/towel, how much will they be able to save per year?

Candidate should recognize that the number of towels produced varies with towel size. Provide Exhibit 2 when candidate asks about number of towels produced.

- Costs per towel: $8, $10, $14, $20 for small, medium, large, extra large respectively
- Sum of all costs: $8*500 + $10*1000 + $14*500 + $20*300 = $27,000
- After cutting costs,
  - Costs per towel: $6.5, $8.75, $13, $19
  - Sum of all costs: $6.5*500 + $8.75*1000 + $13*500 + $19*300 = $24,200
- Our client will save $2,800, which is over 10% of the original costs

3. What other ways can our client reduce costs?

This is a brainstorming question; answers include but are not limited to the following:

- Establish better relationships with raw material suppliers to lower materials costs
- Economies of scale
- Improve efficiency of machinery
- Reconsider distribution channels and focus on highest-margin channels
- Lay off workers (although not ideal)

Try to lead the candidate to the following point if they don't on their own.

- Produce fewer extra large towels (highest in cost but lowest in profit margin)

Case 9: Towels

Analysis

4. Instead of cutting costs, our client wants to know if they should just stop producing extra large towels altogether. Would this be a better option?
    - Without extra large towels, costs would be lowered by 300*$20 = $6,000
    - Profit would be lowered by $1,500/year
        - Profit margin of 20% means that Profit/Revenue = 20%
        - Revenue = profit + costs; profit/(profit + costs) = 20%
        - Profit/(profit + $20) = 20%; 0.8*profit = $4; profit = $5/towel
        - Assuming that our client sells all the towels they produce, profit = $1,500/year from extra large towels
    - Our client will save $6,000/year in costs and suffer a maximum reduction of $1,500/year in profits. This is a net gain of $4,500/year
    - This option is more attractive than cutting costs, which saves only $2,800/year
    - This option also frees up more resources to produce more higher-margin products

Summary

I recommend that our client cuts costs by terminating production of extra large towels. Although they can achieve >10% reduction in costs by cutting packaging costs of small and medium towels, as well as cutting decorating/refining costs, they save much more by cutting out the extra large towels from production altogether. Moving forward, they could still consider reducing packaging and/or decorating costs for all towels, although one risk of doing so is potential loss of product distinction, which may lead to a subsequent decrease in revenue.

Case 9: Towels

Exhibit 1: Costs of producing towels

	Cost/towel ($)			
	Small	**Medium**	**Large**	**Extra Large**
Materials	1	2	4	8
Processing	1.5	2	3.5	5
Coloring	0.5	1	1.5	2
Refining/decorating	2	2	2	2
Packaging	1	1	1	1
Transport	1	1	1	1
Labor	1	1	1	1

Case 9: Towels

Exhibit 2: Number of towels produced and profit margins

	Towel size			
	Small	**Medium**	**Large**	**Extra Large**
Number produced/year	500	1000	500	300
Profit margin	50%	40%	35%	20%

Case 10: Surgical Robot

Investment	L.E.K.	Qual.	Quant.
Medical Devices	Round 2	3	2

Prompt

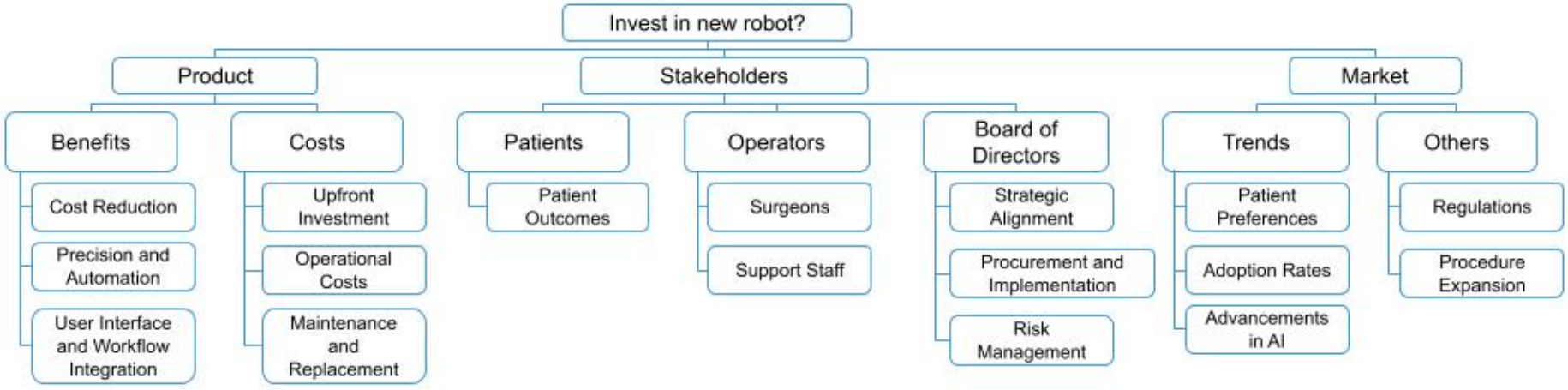
Our client is a privately owned hospital that offers high-tech surgical procedures. They would like to start using robots in their surgeries. Recently, a new surgical robot, Robot X, was developed and has now been on the market for six months. This robot is highly precise and drastically reduces human work in surgeries. Should our client invest in Robot X?

Additional Information *(provided on request)*

- Our client specializes in minimally invasive surgeries, but has never employed a full robot
- There are currently only a few surgical robots on the market; the Da Vinci Robot is the leader in the market
- Of the hospital staff who are authorized to perform surgeries, 70% are technicians (with Bachelor's degree) and 30% are medical professionals (with M.D.)
- Buying a surgical robot will allow our client to hire 5 fewer staff technicians per year
- Each staff technician is paid an annual salary of $60,000
- The hospital generates an extra $300/surgery that a surgical robot performs
- Technology replacement rate is ~10 years for surgical robots
- Exhibit 1: Comparison between the Da Vinci surgical robot and Robot X

Case 10: Surgical Robot

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What features of Robot X should our client consider in deciding whether or not to invest in it?
    - Monetary: potential gains, potential costs, costs of investment
    - Technical: durability, agility, ease of use, precision, size, surgical capabilities
2. Would Robot X be a good investment?

Provide Exhibit 1 when candidate asks about costs. Candidate should suggest calculating the break even point for the investment. If not, try to lead them in this direction.

- Break even is the point at which gains = losses

Case 10: Surgical Robot

Analysis

- Gains = 5 technicians*$60,000 + 200 surgeries*$300 = $360,000/year
- Losses = $200,000/year + $3.2 million (one time cost)
- Let *x* be number of years it takes to reach break even, then after *x* years:
  - 360,000*x* = 200,000*x* + 3,200,000
  - 160,000*x* = 3,200,000; *x* = 20
- Our client would break even after 20 years
- This is unrealistically long (twice the lifetime of the robot) and so investment is not worthwhile

3. What other options does our client have for improving their services?
   - Buy the Da Vinci Robot instead – *candidate should do break even analysis for this too*
     - Gains = 5 technicians*$60,000 + 50 surgeries*$300 = $315,000/year
     - Losses = $100,000/year + $1.5 million (one time cost)
     - Let *x* be number of years it takes to reach break even, then after *x* years:
       - 315,000*x* = 100,000*x* + 1,500,000
       - 215,000*x* = 1,500,000; *x* = ~7
     - Our client would break even after 7 years
     - This is only slightly shorter than the lifetime of the robot

Candidate should also brainstorm other ways the hospital can improve their services, including:

- Improve existing technology/equipment
- Employ more highly trained personnel (i.e. medical professionals)
- Specialize in a certain type of procedure

Case 10: Surgical Robot

Analysis

4. Aside from profitability, what other factors would likely influence our client's decision on whether or not to invest in a robot for surgery?
    - Operator preferences – ease of use of the robot would be a major determinant
    - Patient preferences – some patients prefer robotic surgeries; others prefer human operators
    - Board of directors – who is on the board, how much share they hold etc. can often have a big impact on decision-making, especially for private practices
    - Technology trends in the market – are our client's competitors all moving towards this technology? Would it give our client a competitive advantage?

Summary

I recommend that the client does not invest in a surgical robot. Preliminary analysis suggests that it would take our client 20 years to break even on the Robot X investment, and 7 years to break even on the Da Vinci Robot investment. 20 years is double the lifetime of Robot X, and while 7 years is slightly shorter than the lifetime of the Da Vinci Robot, the client will not make much profit before the technology is replaced. However, one major risk is that competitors may be employing robots in surgeries and therefore, the client should look into other ways of improving their services such that they would not lose their competitive advantage.

Case 10: Surgical Robot

Fold here for question 2

Exhibit 1: Features of surgical robots

Category	Robot X	Da Vinci Robot
Number of arms	8	4
Cleaning	Cleaned after every use	Cleaned after every use
Average durability	10 years	8 years
Additional surgeries/year	200	50
Remote operations	Yes	Yes
Size (length X width X height in ft)	5 X 4 X 5	6 X 7 X 6
Precision	98%	95%
Maintenance costs ($/year)	$200,000	$100,000
Price	$3.2 million	$1.5 million

Adapted from source: http://www.wikipedia.org

Case 11: Desert City

Investment	McKinsey	Qual.	Quant.
City Development	Round 2	3	4

Prompt

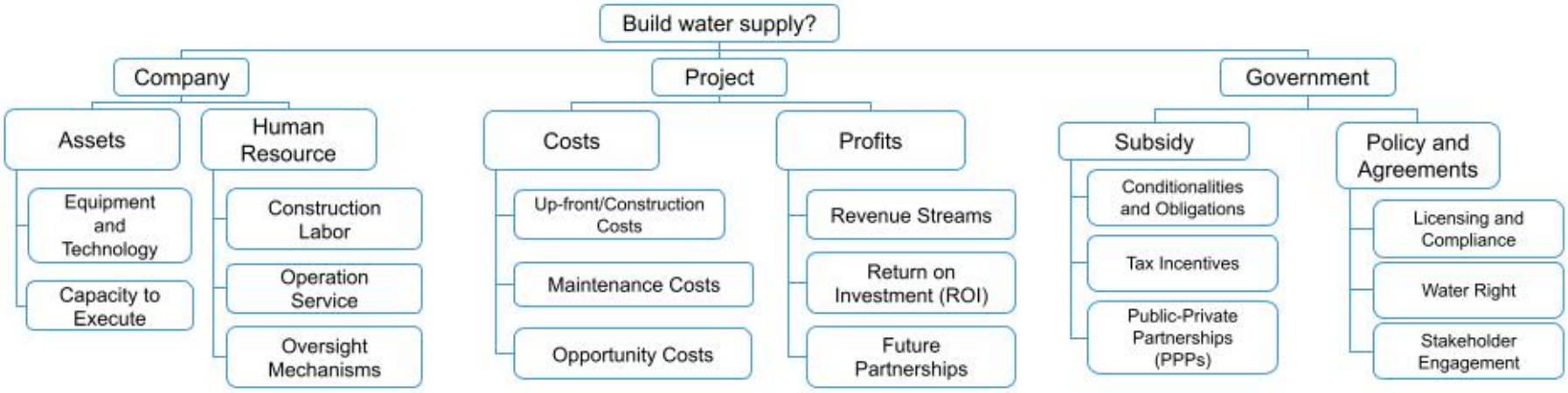
Our client is a city developer who has been approached by the government to take part in a city building project in a desert in the Middle East. Specifically, our client has been asked to build a water supply. Should our client agree to take on the project?

Additional Information *(provided on request)*

- Our client has successfully built water supplies in the past, but never in a desert
- Our client would like to start making a profit within 3 years of completing the project
- Projected total water consumption is 1 million metric tons/year
- Rates for water usage are different depending on the type of consumption; rates are determined by both our client and the city council
- If our client agrees to take on the project, they will be the only company building the water supply in the desert city
- Exhibit 1: Costs of a water supply
- Exhibit 2: Projected water consumption

Case 11: Desert City

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What facilities do you think are associated with building a water supply?

This is a brainstorming question; let candidate come up with as many facilities as they can think of, then make adjustments/corrections to their list as appropriate.

- Extraction, sterilization, storage, transport, waste treatment

2. How much would it cost to build the water supply?

Provide Exhibit 1. For this question, candidate only needs to look at upfront costs.

- Sum of the upfront costs = $110 million

Case 11: Desert City

Analysis

3. Calculate the break-even point for this investment.

In order to calculate this, candidate would need to know how much water is consumed per year. Provide Exhibit 2 when prompted.

- Break even point is the point at which gains = losses
- Revenue and costs per year:
  - Revenue = 1m*67%*210 + 1m*25%*172 + 1m*5%*200 + 1m*3%*200 = $199m
  - Fixed costs = 27m
  - Variable costs = 1m*150 = 150m
- One-time costs of building = 110m
- Let *x* be number of years it takes to reach break even, then after *x* years:
  - 110m + (27m + 150m)*x* = (199m)*x*
    110m = (22m)*x* ; *x* = 5
- Our client would break even after 5 years of building the water supply – this is longer than they would like

4. Our client would like to know if there are any ways to shorten the time it takes to break even. What options do they have?

- They can reduce costs or increase revenue
  - Increasing revenue would be difficult since the rates are pre-negotiated with the city council
  - Reducing costs would be more feasible especially since this project was proposed by the government
  - Our client should ask the government to subsidize the project

Case 11: Desert City

Analysis

5. After several discussions with our client, the government has agreed to subsidize 40% of the upfront costs. Would this change our client's decision?
   - 40% subsidy means client will pay 60% of 110m = 66m
   - So now the equation becomes:
     - 66m + (27m + 150m)x = (199m)x
       66m = (22m)x ; x = 3
   - The government subsidy would shorten the break even point to 3 years after construction of the water supply

Summary

I recommend that the client takes on the project, but on the condition that the government is willing to subsidize the costs of building the water supply. Without subsidy, it would take our client 5 years to break even, but this would be shortened to 3 years if the government is willing to cover 40% of upfront costs. One risk is that this project is in an area that our client has not had experience with, so they should make sure they do enough research beforehand to familiarize themselves with the technical specifics. Moving forward, our client should maintain a good relationship with the government as well as the city council.

Alternative recommendation: Client should not take on the project – risks are too high and return isn't that attractive. Getting a 40% government subsidy of upfront costs may also be a challenge.

Case 11: Desert City

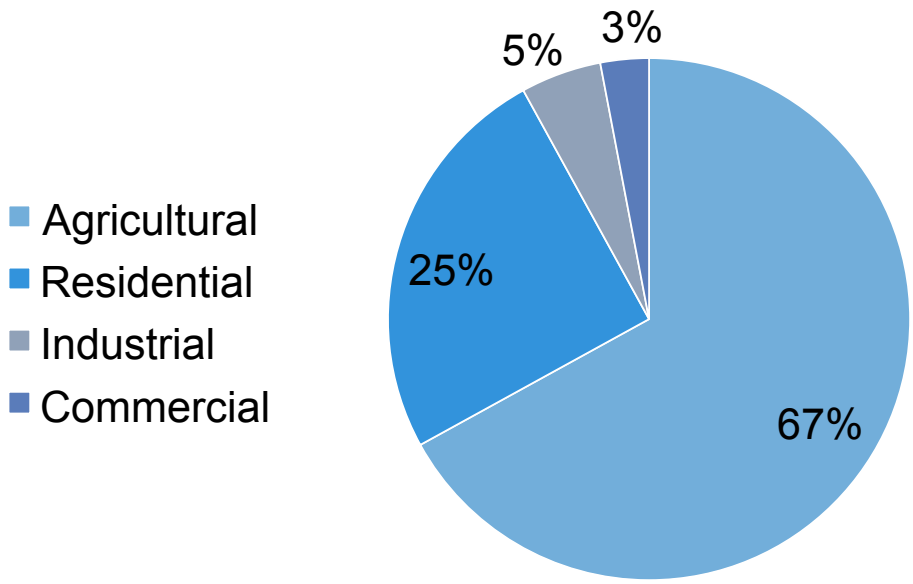
Exhibit 1: Costs of a water supply

Facility	Upfront ($)	Fixed ($ per year)	Variable ($ per metric ton consumed)
Groundwater pump (extract)	30,000,000	8,000,000	20
Sanitization (sterilize)	50,000,000	7,500,000	50
Recharge basin (store)	5,000,000	1,500,000	25
Pipes (transport)	3,000,000	1,500,000	10
Wastewater treatment (recycling)	20,000,000	7,500,000	35
Other	2,000,000	1,000,000	10

Adapted from source: http://web.sahra.arizona.edu/phoenixzoo/

Case 11: Desert City

Exhibit 2: Projected water consumption



Type of consumption	Price/metric ton ($)
Agricultural	210
Residential	172
Industrial	200
Commercial	200

Adapted from source: http://web.sahra.arizona.edu/phoenixzoo/

Case 12: Call Center

Expansion	McKinsey	Qual.	Quant.
Information	Round 2	4	4

Prompt

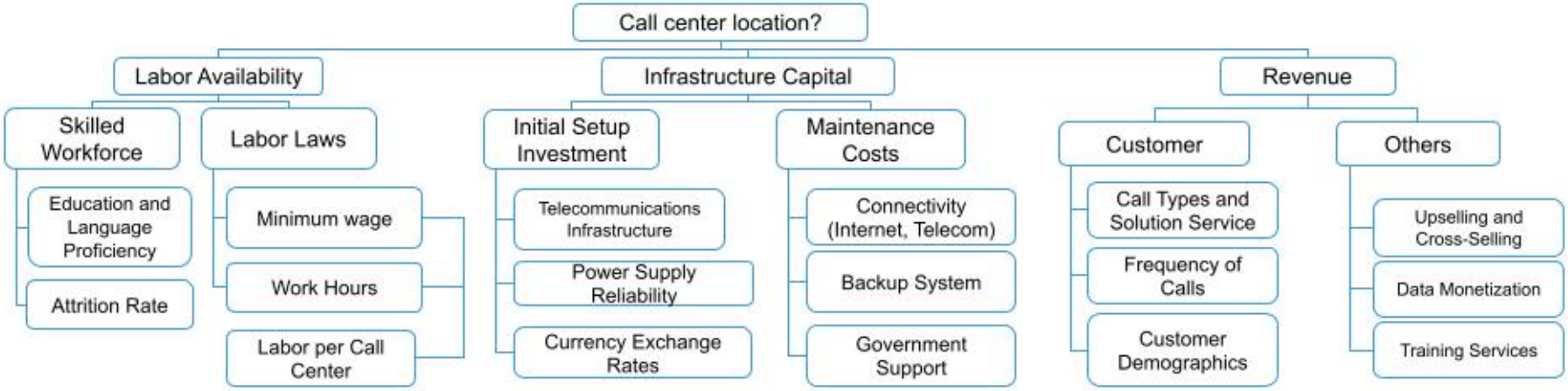
Our client is an international company who is setting up a call center in South Africa. They are considering one of 5 different cities. They would like your advice on which city they should go for. What would you tell them?

Additional Information *(provided on request)*

- Our client is a major cable/internet supplier
- The purpose of the call center is to 1) offer general product support and 2) promote products
- The call center serves customers all over the world
- The call center will be open 24 hours a day, 5 days a week
- Employees will work 6 hour shifts a day and 5 days a week
- Our client is willing to pay up to $1.5/hour per employee
- Exhibit 1: Details of call services
- Exhibit 2: Survey of workers in 5 different cities
- Exhibit 3: Cable/internet users and suppliers in the 5 cities

Case 12: Call Center

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors does our client need to consider in choosing a location for the call center?

This is a brainstorming question; candidate should list all factors they can think of.

- See above – a good structure is key to solving this case correctly

Tell candidate that the focus of this case is on the supply of labor, then ask the following:

2. What is the minimum number of employees needed at the call center?

From Exhibit 1, candidate can calculate the following:

- For service calls:
  - one employee answers 60 mins/10 mins/call = 6 calls/hour
  - 600 service calls/hour means that 100 employees are needed per hour

Case 12: Call Center

Analysis

- For retail calls:
  - one employee answers 60 mins/6 mins/call = 10 calls/hour
  - 300 retail calls/hour means that 30 employees are needed per hour
- In total, 100 employees (service) + 30 employees (retail) = 130 are needed per hour
- There are 24/6 = 4 shifts a day, so in total, 130*4 = 520 employees are needed per day

3. In which cities can our client find enough employees for the call center?

From Exhibit 2, candidate can calculate the number of employees who are willing to work for each listed wage/hour. The most efficient way is to calculate the numbers under the $0.5 column, then use those numbers to extrapolate to the other data points. Calculated numbers are given below:

City	Population	% Surveyed who are willing to work for listed wage/hour		
		$0.5	$1	$1.5
Baviaans	20,000	200	400	**1000**
Cape Agulhas	30,000	150	300	450
Ikwezi	10,000	100	200	400
Hantam	18,000	360	**720**	**1080**
Laingsburg	8,000	240	320	400

- The cities of Baviaans (at $1.5/hour) and Hantam (at $1/hour) will have enough interested workers for our client's call center
- Setting up call center in Hantam will be less costly

Case 12: Call Center

Analysis

4. What are some reasons other than wage that people may reject a job offer made by our client?

This is another brainstorming question; some examples of answers are below:

- Lack of job security
- Lack of benefits (health insurance etc.)
- Poor working conditions, e.g. lack of air conditioning in the summer
- Inconvenient shift hours

5. Our client currently doesn't provide service anywhere in Africa. They think it might be a good idea to set up cable/internet services in the same city as the call center. Considering this, what city would you say is the best option?

Candidate can assume number of cable/internet users will stay constant. Provide Exhibit 3.

- In Baviaans, 7,200 people currently use cable/internet. There is 1 competitor, so if our client enters now, they will have 7,200/2 = 3,600 customers (assuming market share will be split evenly in the long term)
- In Hantam, 6,000 people currently use cable/internet. There are currently 2 competitors, so if our client enters now, they will have 6,000/3 = 2,000 customers (assuming market share will be split evenly in the long term)

Now tell candidate that each customer generates $30/month:

- In Baviaans,
  - Revenue = 3,600*30 = $108,000/month
  - Labor costs for call center = 520 employees*$1.5/hour*120 hours/employee/month = $93,600/month
  - Revenue - labor costs = $108,000 - $93,600 = $14,400/month

Case 12: Call Center

Analysis

- In Hantam,
  - Revenue = 2,000*30 = $60,000/month
  - Labor costs for call center = 520 employees*$1/hour*120 hours/employee/month = $62,400/month
  - Revenue - labor costs = $60,000 - $62,400 = -$2,400/month
- Baviaans is a better choice because revenues are much higher in Baviaans, although labor costs are slightly lower in Hantam

Summary

I recommend that our client sets up a call center and cable/internet services in the city of Baviaans. Our client can potentially get a lot more customers in Baviaans, allowing them to generate much more revenue than in Hantam, although labor costs would be slightly lower Hantam. Major risks include competitor response and possibility of new market entries. Moving forward, our client should establish a solid customer base and offer promotions in the initial stages of market entry to attract customers.

Case 12: Call Center

Exhibit 1: Details of call services

	Service	Retail
Average call duration	10 mins	6 mins
Average # calls/hour	600	300
% all calls	67%	33%

Case 12: Call Center

YGCC
Yale Graduate Student Consulting Club

Exhibit 2: Survey of workers in 5 different cities

City	Population	% Surveyed who are willing to work for listed wage/hour		
		$0.5	$1	$1.5
Baviaans	20,000	1%	2%	5%
Cape Agulhas	30,000	0.5%	1%	1.5%
Ikwezi	10,000	1%	2%	4%
Hantam	18,000	2%	4%	6%
Laingsburg	8,000	3%	4%	5%

Case 12: Call Center

Exhibit 3: Cable/internet users and suppliers in the 5 cities

City	Population	% Population who currently use cable/internet	Number of suppliers currently
Baviaans	18,000	40%	1
Cape Agulhas	30,000	10%	3
Ikwezi	10,000	10%	1
Hantam	20,000	30%	2
Laingsburg	8,000	20%	1

Case 13: Candy Stand

Investment	Bain	Qual.	Quant.
Food	Round 1	2	2

Prompt

Your friend is out of work and he is asking you if opening a candy stand outside Grand Central station is a good idea. What would you advise him?

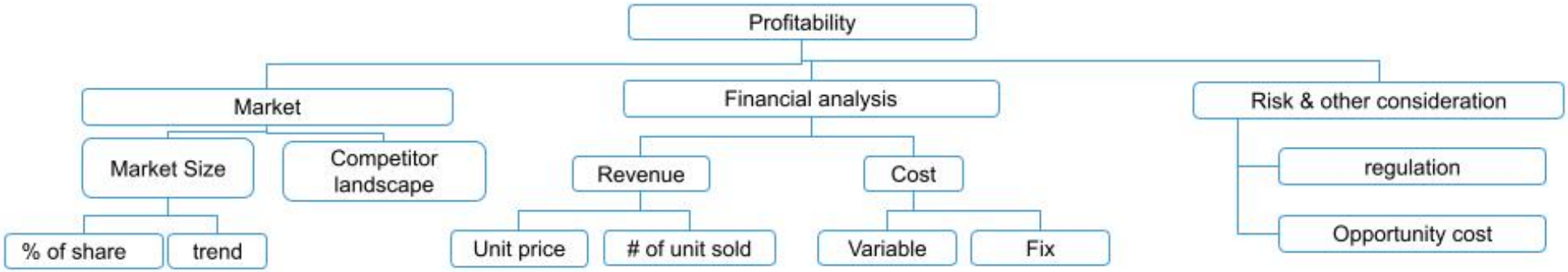
Additional Information *(provided on request)*

Interviewer note: This is an interviewee-led case. Ask the candidate to estimate numbers. If they are in the right ballpark, they should use the numbers they came up with themselves. Provide numbers below only if estimates are too far-off.

- There are 4 million jobs in NYC, and ~5% travel trough Grand Central per day
- Grand Central has 5 main exits (can assume are identical in terms of traffic)
- On average, 0.5% of those exiting Grand Central buy items from stands
- Each person buys 1 item per visit
- Each item is priced at $1 on average
- Your friend would like to work 20 days/month
- Licensing costs = $20,000/year; candy stand costs = $10,000/year; variable costs = $0.25/item

Case 13: Candy Stand

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially.

1. How much profit can your friend make from the candy stand per year?
    - Calculating yearly revenue:
        - Number of people passing through Grand Central = 4 million*5% = 200,000/day
        - Number of people going through each exit = 200,000/5 = 40,000/day
        - Number of people who will purchase from stands per exit = 40,000*0.5% = 200/day
        - Daily revenue = 2,00*1 item/visit*$1/item = $200 per day
        - Total revenue = $200*20*12 = $48,000 per year

Case 13: Candy Stand

Analysis

- Calculating yearly cost:
  - Fixed: $20,000 + $10,000 = $30,000/year
  - Variable: $0.25/item*200 items/day*20days/month*12 months = $12,000
  - Total costs = $30,000 + $12,000 = $42,000/year
- Profit = $48,000 - $42,000 = $6,000/year
- This is not an attractive amount at all – definitely not enough to cover living expenses in New York City

2. Can you think of any ways to improve revenue?

This is a brainstorming question; answers include but are not limited to the following:

- Put up catchy signs to attract customers
- Diversify product inventory (e.g. sell magazines, drinks etc. in addition to candy)
- Benchmark pricing with neighboring carts then increase prices to see if demand drops proportionally
- Nevertheless, it is difficult to increase profits significantly, so it is still a bad idea to launch a candy stand outside Grand Central

3. What other things are important for the success of the business, apart from the financials?

This is another brainstorming question; answers include but are not limited to the following:

- Motivation and capabilities of the owner
- Contacts/relationships with suppliers of raw materials
- How personable the owner is and how well he interacts with customers

Case 13: Candy Stand

Analysis

4. You tell your friend that he should not open the candy stand but he disagrees. What would you do?
   - Walk through the math with him and double check the numbers
   - Ask him if he disagrees with any calculations or assumptions
5. Your friend is extremely stubborn and refuses to admit that opening a candy stand is a bad idea, even after going through the numbers. What would you tell him?
   - Your friend is likely in denial because you had just crushed his hopes
   - Consider his skills/interests and suggest other ways for him to make a living in New York

Summary

I wouldn't recommend that my friend opens a candy stand outside Grand Central station because he would only be making around $6,000 in profits a year, which is not nearly enough to cover living expenses in the city. This is because the fixed costs (e.g. licensing) are too high even though the margin per item is reasonable. Therefore, I would suggest that my friend continues to look for other job opportunities in New York.

Case 14: Bakery

Profitability	Booz	Qual.	Quant.
Food	Round 2	3	2

Prompt

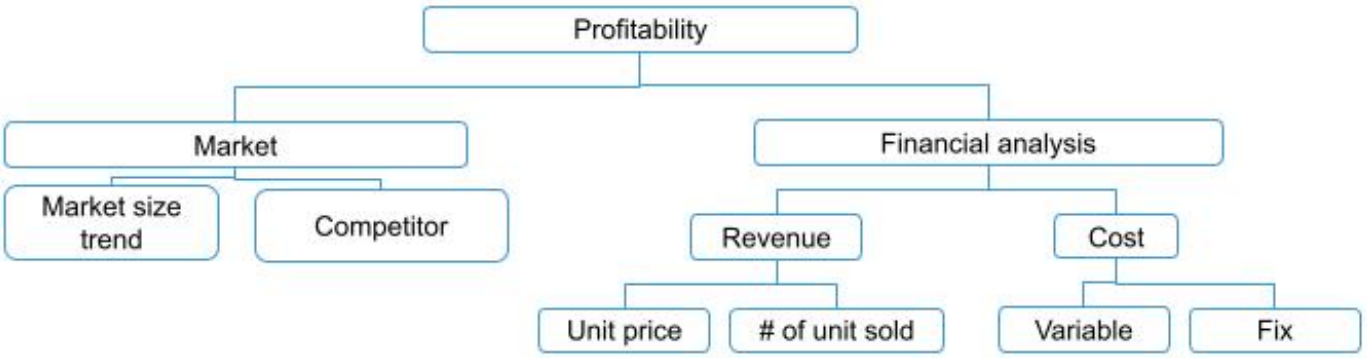
Interviewer note: Tell candidate this is a role play case. Interviewer will play the role of James, one of candidate's friends. Candidate is an associate at Booz. Please read the following to candidate:
"Hey buddy, I need your help. You know the bakery I've been operating on the side? I haven't checked the balances in a while, but last week, I went through the financials and realized that the business has been making a loss. Can you help me figure out what the problem is and how to bring it back in the black?"

Additional Information *(provided on request)*

- Since this is not James's main job, he does not check his balances regularly
- James only has time one full day and 3 half days a week to manage the bakery
- The bakery is open Mondays 10 am – 5 pm and Tuesdays to Thursdays 10 am – 1 pm
- The bakery is in a rich neighborhood and attracts mostly local customers
- The main selling point of the bakery is that every item is handmade and ingredients are organic
- There have been no changes in the overhead, rent and labor costs of the business
- The bakery has 6 employees in total (excluding James)
- Exhibit 1: Items sold by the bakery
- Exhibit 2: Number of customers on different days of the week

Case 14: Bakery

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What do you think is the main reason for the drop in profits?

From Exhibit 1, candidate can calculate the following:

- Margin for bread = $6 - $1 = $5; margin for cookies = $10 - $4 = $6; margin for cakes: $30 - $10 = $20
- Between April 2012 to January 2013, each product saw following decreases in margin:
  - Bread: $5*(160-140) = $100
  - Cookies: $6*(230-200) = $180
  - Cakes: $20*(55-50) = $100
- Therefore, drop in cookies sales contributed most to drop in profits

Case 14: Bakery

Analysis

2. What should I do immediately to bring profits back up?
    - Since cookies is the most problematic segment, you should focus immediately on boosting their sales through promotions (e.g. buy 3 get 1 free) or free samples
    - However, bread and cakes cannot be neglected since the sales of these products are also on the decline. You can use a similar strategy to promote these as you used for the cookies
    - On the cost side, try to establish better relationships with suppliers to negotiate lower costs for materials. Also, if feasible, cut down on # of employees
3. What long-term strategies can you think of that would help me with my business?

Only provide Exhibit 2 if candidate prompts discussion on hours of operation.

- It seems like the peak hours for the business are between 3-5 pm on a weekday (based on Mondays*, although candidate should recognize sample size is small*). You can try shifting the hours on Tuesday to Thursday from 10 am – 2 pm to 1-5 pm
- You can take advantage of social media (Facebook, Groupon etc.) to spread the word, especially since customers are from a small wealthy community

Summary

Candidate should keep in mind he/she is talking to a friend and should respond in a casual tone.

I think the reason you're seeing the recent drop in profit is due to declining sales in all of your products, especially cookies. You should focus on boosting sales (especially of cookies) in the short-term, while looking into changing the business hours and using social media for advertising.

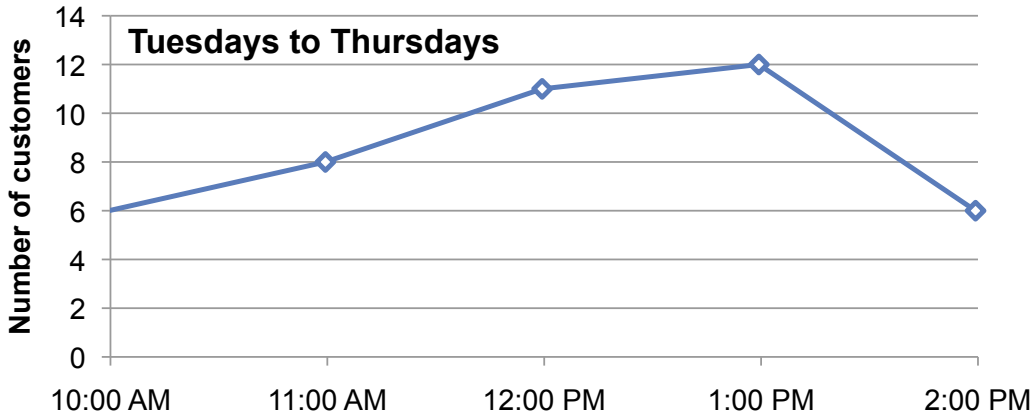
Case 14: Bakery

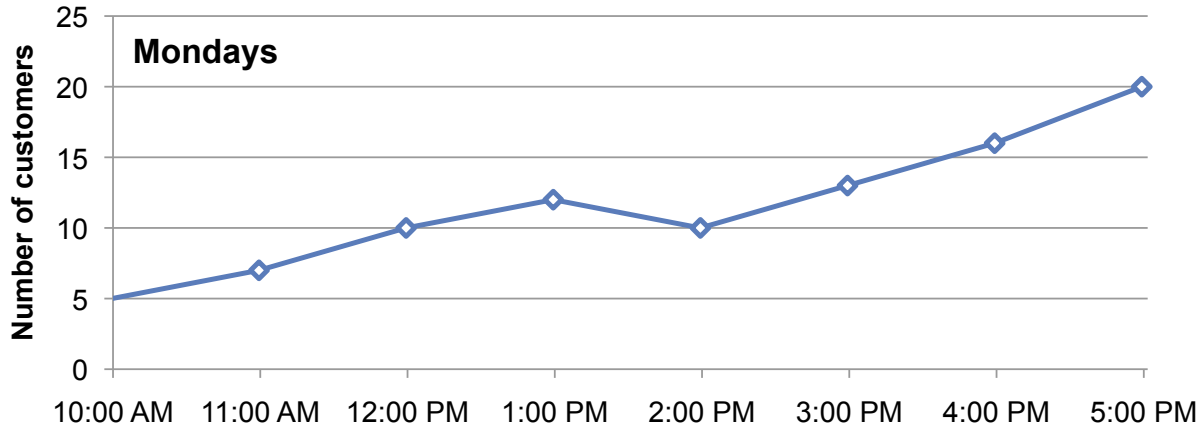
Exhibit 1: Items sold by the bakery

Item	Average price ($/unit)	Variable Cost ($/unit)	Number sold (over one month)		
			January 2013	October 2012	April 2012
Bread (loaf)	6	1	140	150	160
Cookies (bag)	10	4	200	215	230
Cakes (whole)	30	10	50	52	55

Case 14: Bakery

Exhibit 2: Number of customers on different days of the week





Note: Each data point is the number of customers at a particular hour averaged over 3 (non-consecutive) weeks

Case 15: Diagnostic Test

Market Entry	L.E.K.	Qual.	Quant.
Healthcare	Round 2	3	4

Prompt

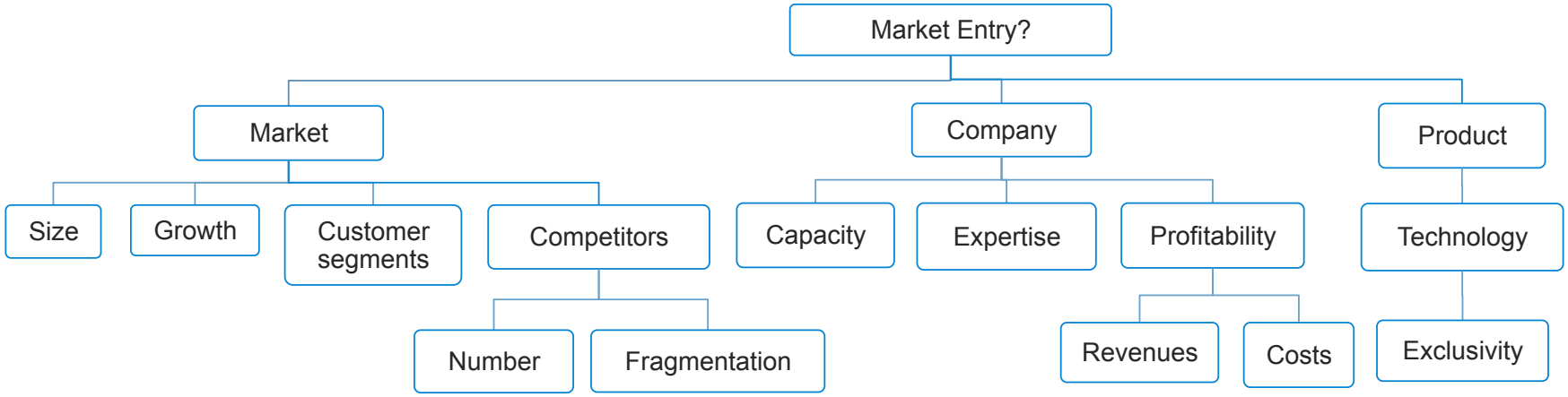
Our client is a company that specializes in disease diagnostics. They have recently developed a prenatal test for diagnosing Down's syndrome and would like to know whether they should launch this test on the market.

Additional Information *(provided on request)*

- The test has been FDA approved
- There are currently two other prenatal tests for Down's syndrome on the market
  - Most low-medium risk women take the blood test; most high risk women take the amnio
- Our client has a patent on their test which will expire in 10 years
- 1 in every 1000 babies are born with Down's syndrome
- U.S. population = 320 million; life expectancy = 80
- Total costs are $1,000 per test
- Most insurance policies do not cover prenatal testing
- Last year, our client's total net profit was $500 million on $1.5 billion total revenue
- Exhibit 1: Risk levels of pregnant women giving birth to babies with Down's syndrome at various age groups
- Exhibit 2: Comparison between diagnostic tests for Down's syndrome

Case 15: Diagnostic Test

Structure



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors should our client consider in determining whether or not to enter the market?
    - Market size and growth; customers – number and segmentation
    - Competitors – number and fragmentation; market share our client can capture
    - Company – capabilities; expertise; revenues; costs; customer base
    - Product – Exclusivity of technology; profitability; pricing
    - Government policies
2. What is the current market size for prenatal Down's syndrome tests?

Candidate should estimate numbers and interviewer should correct as appropriate.

- U.S. population = 320 million
- Life expectancy = 80 million

Case 15: Diagnostic Test

Analysis

- Number of people/year = number of pregnancies/year = 4 million

Provide Exhibit 1 when candidate asks about % of pregnant women who get tested.

- Number of women who get tested = 4 mill*(5%*5% + 85%*20% + 10%*60%) = 0.93 mill

3. What would be a reasonable price for our client's test?

Provide Exhibit 2. Candidate can assume that price increases linearly with accuracy of the test.

- Slope = ($2,000 – $50)/(99% – 80%) = $1950/(~20%) = ~$97.5/1%
- Price increase of client's test from blood test = (95% – 80%)*$97.5/1% = $1,462.5
- Absolute price for our client's test = $1,462.5 + $50 = $1,512.5 = ~$1,500
- Our client can charge roughly $1,500 per test

Alternatively, an arbitrary price point that is well justified is acceptable.

4. Which age group(s) should our client target?

- Currently, most low-medium risk pregnant women prefer the blood test, likely because the amnio test is too expensive
- Our client's test is 25% cheaper than the amino test, but almost as accurate, which makes our client's test more desirable to low-medium risk pregnant women
- Our client should focus marketing efforts especially on the medium risk group (age 16-35)

5. How much profit can our client make before its patent expires?

Candidate can assume 10% market share for year 1-3, 33% share for year 4 onwards and no new market entries within 10 years. Market size can be assumed to stay constant.

- Total tests sold over 10 years = 3*10%*0.93 mill + 7*33%*0.93 mill = ~2.45 mill
- Profit per test = $1,500 - $1,000 = $500
- Profit over 10 years = $500*2.45 mill = $1.225 bill = average ~$120 mill a year

Case 15: Diagnostic Test

Summary

I recommend that the client launches their test on the market and charges around $1,500 per test. They should focus on the medium risk (age 16-35) group to maximize market share. Taking into account the market share they are projected to capture (up to 33%) over the next 10 years, they will generate on average $120 million a year in profits, which is a significant increase (>20%) over their profits last year. However, the projections may be overly optimistic, and does not take into account fluctuations in population/change in pregnancy age distribution. Also, patient preferences may not change as expected. Moving forward, the client should focus efforts on marketing and could conduct a price sensitivity analysis to maximize profits.

Case 15: Diagnostic Test

Exhibit 1: Risk levels of pregnant women giving birth to babies with Down's syndrome at various age groups

Age group	% of all pregnant women	Risk level	% that do prenatal tests
<16	5%	Low risk	5%
16-35	85%	Medium risk	20%
>35	10%	High risk	60%

Fold here

Exhibit 2: Comparison between diagnostic tests for Down's syndrome

Test	Accuracy	Safety	Price per test
Blood	80%	100%	$50
Amniocentesis	99%	99%	$2000
Our client's	95%	100%	TBD

Case 16: Taxi Service

Private Equity	BCG	Qual.	Quant.
Transportation	Round 2	4	4

Prompt

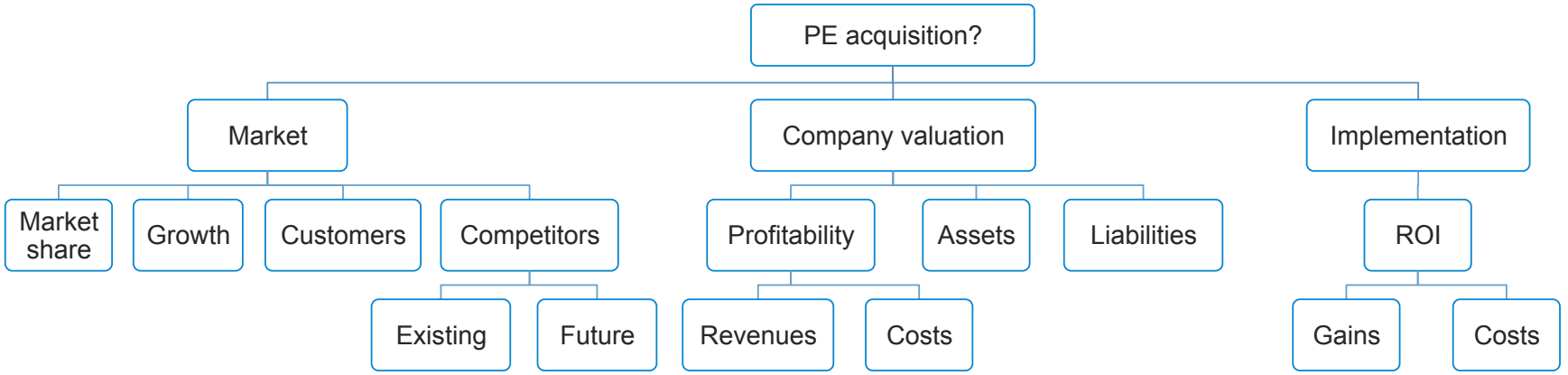
Our client is a private equity firm who is considering investing in a taxi service, TaxiCall, in Venezuela. Should they make this investment?

Additional Information *(provided on request)*

- The taxi industry in Venezuela is growing
- TaxiCall services cities all over Venezuela
- TaxiCall is currently the second largest taxi service in Venezuela, with roughly 33% market share
- Venezuela population = 30 million
- Exhibit 1: Customer segmentation
- Exhibit 2: Probability and frequency of taxi usage by customer segment
- Exhibit 3: Distance and fare of taxi service by customer segment

Case 16: Taxi Service

Structure



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors should our client consider when deciding whether or not to buy TaxiCall?
    - Climate of the market:
        - Size and growth
        - Competitive landscape
    - Value of the company:
        - Profitability
        - Assets and liabilities
    - Implementation: gains and costs of investment
2. How would you size the market for taxi services in Venezuela per year?
    - Market ($) = Population × % who take taxi × rides/person/year × miles/ride × fare/mile

Case 16: Taxi Service

Analysis

3. What factors determine how frequently a taxi service is used in a given location?

This is a brainstorming question; possible answers include but are not limited to the following:

- Ease of public transportation
- Prevalence of car ownership
- Road traffic
- Income of population in the area

When candidate mentions income, provide Exhibits 1, 2 and 3, then ask the following question:

4. What do you notice from these charts?

From Exhibit 1:

- Low-medium income is the largest customer segment

From Exhibits 2 and 3:

- The greatest taxi usage comes from commuting between home and work
- High-medium income segment generates the most revenue per customer

5. The majority of TaxiCall's customers commute from home to work. Considering this, which customer segment would generate the most revenue for TaxiCall?

Candidate only needs to compare low-medium with high-medium segments, since the other two are clearly much smaller. Using a variation of the equation in Question 2, candidate can calculate:

- Revenue ($) = Population × % population in segment × probability of taking taxi × rides/month × 12 months/year × miles/ride × fare/mile
- Low-medium income: Revenue ($) = 30 million*45%*20%*40*12*10*1 = $12.96 billion
- High-medium income: Revenue ($) = 30 million*20%*35%*40*12*15*1 = $15.12 billion
- High-medium income generates the most revenue (~$5 billion at TaxiCall's market share)

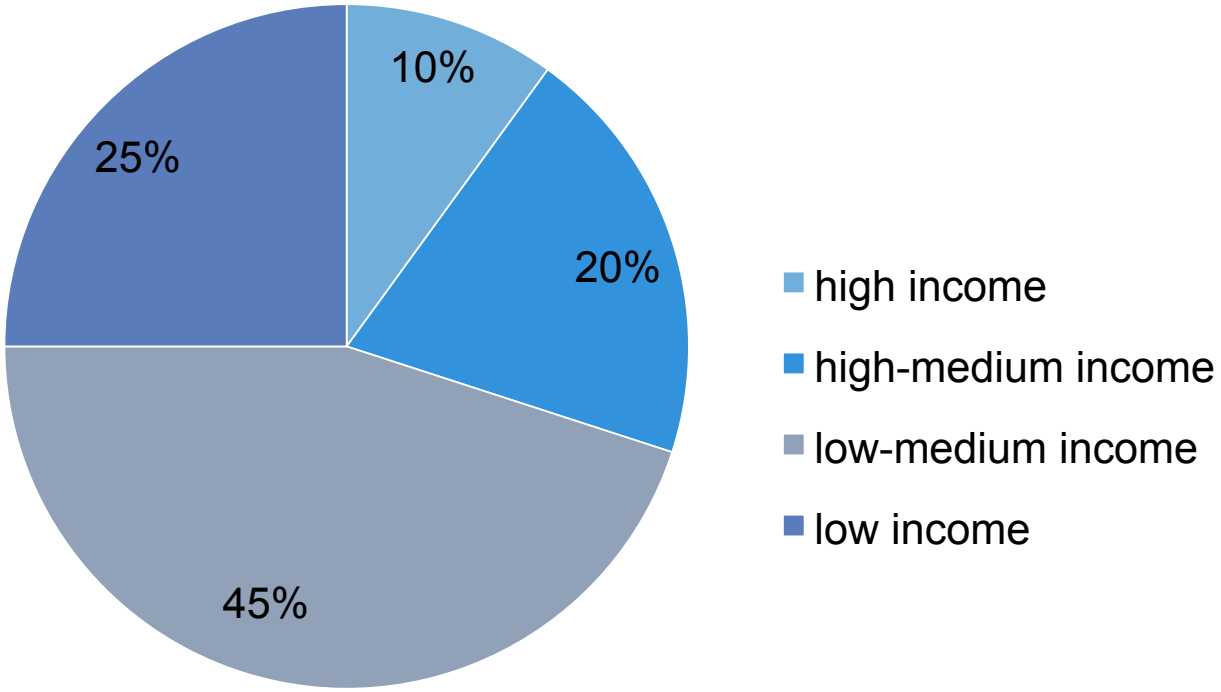
Case 16: Taxi Service

Summary

I recommend that our client invests in TaxiCall. TaxiCall is a large taxi service in Venezuela, with a 33% share in a growing market. The majority of their customers commute from home to work, which currently generates the most revenue. As long as TaxiCall maintains their position in the market and continue to focus on the home-work commuters, they can make close to $10 billion in revenues per year. Our client should expect the value of TaxiCall to increase in the next few years. Nevertheless, our client should keep in mind that other financial aspects of TaxiCall (e.g. costs, assets, liabilities) should be analyzed to minimize risk in their final decision.

Case 16: Taxi Service

Exhibit 1: Customer segmentation



Case 16: Taxi Service

Exhibit 2: Probability and frequency of taxi usage by customer segment

Income level	Probability of using taxi service (%)			
	Home - shopping	Home - work	Home - sports	Work - shopping
High	15	20	20	15
High-medium	10	35	35	20
Low-medium	10	20	15	10
Low	5	5	0	5
Income level	**Frequency of using taxi service (/month)**			
	Home - shopping	**Home - work**	**Home - sports**	**Work - shopping**
High	20	40	20	10
High-medium	20	40	30	20
Low-medium	15	40	10	20
Low	10	40	0	10

Case 16: Taxi Service

Exhibit 3: Distance and fare of taxi service by customer segment

Income level	Distance traveled per taxi ride (miles)			
	Home - shopping	Home - work	Home - sports	Work - shopping
High	10	12	12	10
High-medium	10	15	12	12
Low-medium	8	10	8	12
Low	7	10	8	5
Income level	**Fare ($/mile)**			
	Home - shopping	**Home - work**	**Home - sports**	**Work - shopping**
High	1	1	1	1
High-medium	1	1	1	1
Low-medium	1	1	1	1
Low	1	1	1	1

Case 17: Paper Company

Profitability	McKinsey	Qual.	Quant.
Chemicals	Round 2	3	5

Prompt

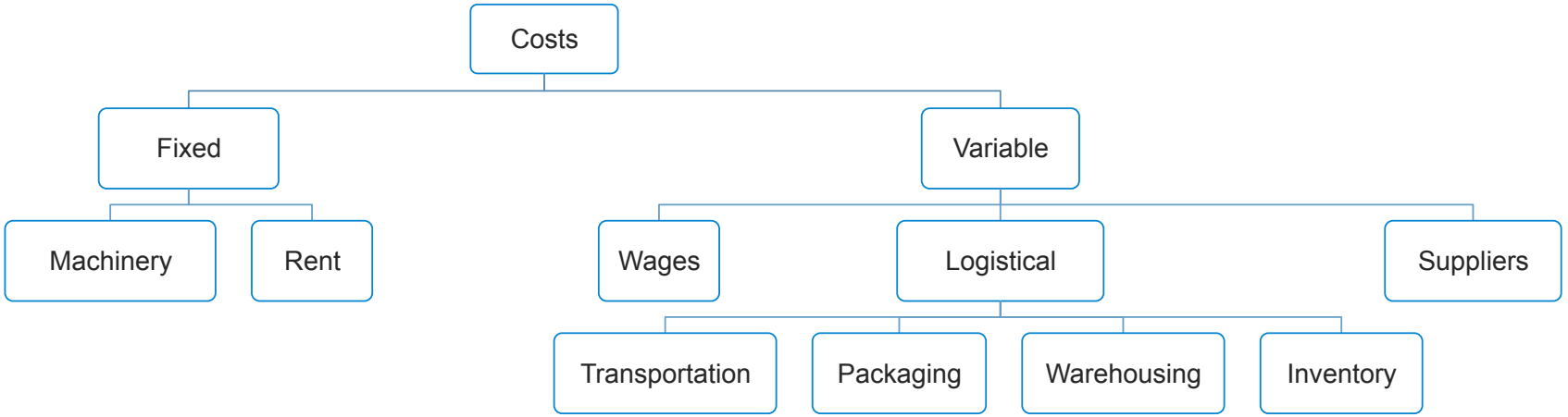
Our client is a global company that specializes in manufacturing different types of paper. They wish to reduce costs and would like to know the best way to do so. What advice would you give them? Is it possible for them to reduce costs by 25%?

Additional Information *(provided on request)*

- The company makes 2 types of paper: white and colored
- Our client has all the machinery for the entire manufacturing process, but they buy materials and dyes from various suppliers
- They produce equal quantities of white and colored paper
- Fixed costs like machinery and rent cannot easily be reduced in the short run
- Exhibit 1: Costs of producing different types of paper
- Exhibit 2: Our client's contracted suppliers of dyes

Case 17: Paper Company

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What factors may be contributing to high production costs for paper?

This is a brainstorming question; possible answers include but are not limited to the following:

- Outdated machinery – high costs for maintenance
- Increases in rent
- High labor costs
- Increasing costs of woods or dyes
- Logistical inefficiencies – sales moving online; client not adapted to new distribution web

Case 17: Paper Company

Analysis

2. What are the major costs for our client?

Provide Exhibit 1. Candidate should calculate the following:

- For both the white and colored papers, the dyeing process contributes the most to costs
- Our client should look into ways to reduce costs for the dyes

3. How much does our client spend per kg on white and colored dyes?

Provide Exhibit 2. Candidate can calculate how much the client spends on each type of dye by taking the sum of the weighted costs per kg for each supplier – i.e. Σ(price/kg% of purchase):*

Supplier	Amount spent by client per kg of dye ($)	
	White	Colored
A	100*5% = 5	160*10% = 16
B	80*40% = 32	120*40% = 48
C	90*10% = 9	130*20% = 26
D	100*5% = 5	140*20% = 28
E	75*40% = 30	150*10% = 15
Total	81	133

- Our client currently spends $81/kg on white dye and $133/kg on colored dye = $214/kg in total

Case 17: Paper Company

Analysis

Candidate should then brainstorm ideas to reduce costs, but if not, interviewer should prompt them and lead them to the following answer:

- They can shift to purchasing all of their dyes from a single supplier and try to negotiate a discount

4. Our client would like to purchase all of their dyes from supplier B. How much discount should they negotiate per kg of dye in order to achieve an overall 25% reduction in costs?
   - Currently, the cost to produce paper is $32/kg. In order for our client to achieve a 25% reduction, they would need to cut costs by $8/kg. Currently, the white and colored dyes together contribute $16/kg, so our client would need to cut costs for dyes by 50% in order to achieve the target saving
   - Currently, our client pays $214/kg of dye → this needs to be reduced to $107/kg
   - If our client buys both dyes from supplier B, this would cost them $80 + $120 = $200/kg
   - For the cost of dyes to be reduced to $107/kg, they would need to negotiate a discount of at least 46.5% off
   - Obtaining a near 50% discount from supplier B is unrealistic
5. What risks are involved in our client's proposed strategy?
   - Our client would be "putting all eggs in one basket" and will have to rely entirely on supplier B for their dyes
   - Supplier B may not have enough capacity
   - Supplier B may increase their pricing at any time and lead to higher costs for our client
   - If our client wishes to add suppliers later, going from one supplier to two is much harder than going from two suppliers to three

Case 17: Paper Company

Summary

The solution to this case is not obvious given the provided data, and candidate can come up with a variety of reasonable recommendations. However, in general, candidate should recognize that (1) purchasing dyes from one supplier is not a good option and (2) cutting costs by 25% is not achievable in the short run. An example of a sound recommendation is as follows:

I recommend that our client cuts the costs for dyes in order to reduce overall costs. Currently, dyes contribute half of their total costs and they are purchasing from 5 different suppliers. Their goal of reducing costs by 25%, however, is unrealistic, as this would require them to negotiate a near 50% discount with one supplier. Nevertheless, they can achieve a smaller cost reduction by making all their purchases from 2 or 3 of the cheaper suppliers, which will also help mitigate the risk of relying entirely on a single supplier.

Case 17: Paper Company

Exhibit 1: Costs of producing different types of paper

	Cost/kg of paper ($)	
	White	**Colored**
Materials	1	1
Dyeing	7	9
Packaging	2	3
Storage	1	1
Inventory	1	1
Other processes	2	3

Case 17: Paper Company

Exhibit 2: Our client's contracted suppliers of dyes

Supplier	Price/kg of dye ($)		% of client's dye purchase	
	White	Colored	White	Colored
A	100	160	5%	10%
B	80	120	40%	40%
C	90	130	10%	20%
D	100	140	5%	20%
E	75	150	40%	10%

Case 18: Hepatitis Drug

Market Entry	ClearView	Qual.	Quant.
Healthcare	Round 1	3	2

Prompt

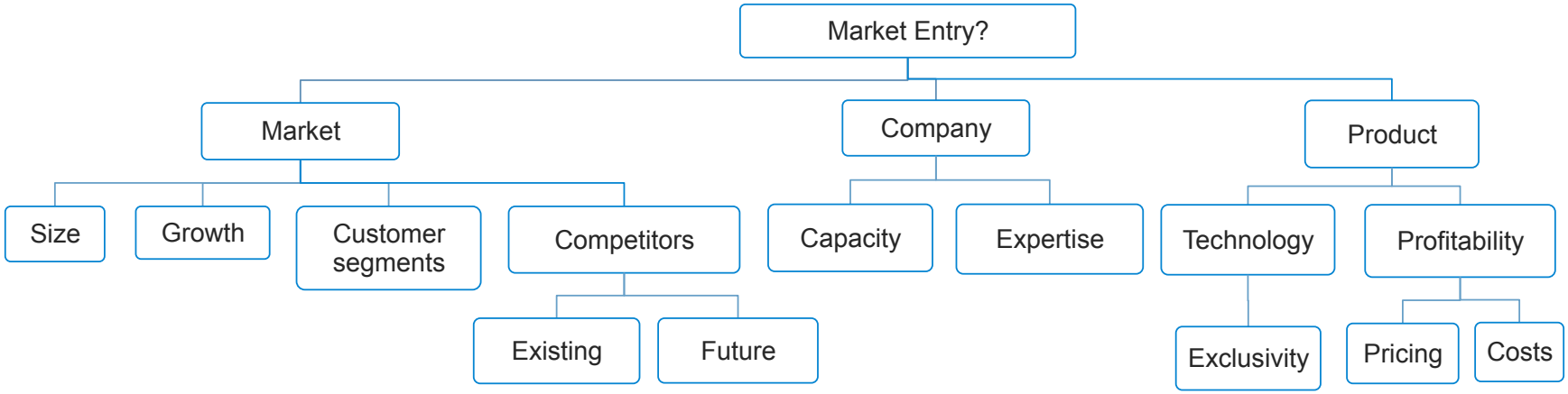
Our client is a large pharmaceutical company who has recently developed a drug for treating Hepatitis C positive patients. Should they launch this drug on the market? If so, when?

Additional Information *(provided on request)*

- There are currently 2 FDA approved Hepatitis C drugs and 5 in clinical trials
- Our client's drug is in Phase III clinical trials
- All Hepatitis C drugs (approved and in trials) are delivered intravenously, and would need to be administered on a regular basis for the rest of the patient's life
- The Hepatitis C virus is transmitted through blood
- Patients who are hepatitis C positive can remain asymptomatic for 30 years
- U.S. population = 320 million
- Hepatitis C infection rate = 1%
- Diagnosis rate = 10%
- Treatment rate = 25%
- Exhibit 1: Comparison of Hepatitis C drugs (FDA approved and in clinical trials)

Case 18: Hepatitis Drug

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: ask the following questions sequentially and provide Exhibits when prompted.

1. What is the size of the Hepatitis C drug market?

Candidate should come up with the following relationship and ask for relevant numbers. Provide Exhibit 1 when candidate asks about price.

- Market size ($) = Population × % infected × % diagnosed × % treated × price per unit drug
  = 320 million*1%*10%*25%*(50%*$10,000 + 50%*$60,000)
  = $2.8 billion

2. The treatment rate for patients with Hepatitis C is rather low (25%). Why do you think this is?
   - Patients can remain asymptomatic for 30 years, so some (especially older patients) may refuse to receive treatment in exchange for better quality of life

Case 18: Hepatitis Drug

Analysis

- The drugs are delivered intravenously, which may increase the risk of patient contracting other blood-transmitted diseases
- Drugs are expensive ($10K to $60K per dose), and may not be covered by insurance
- Lack of awareness of the severity of the disease may delay treatment

3. Several government agencies are jointly launching a new campaign this year to help raise awareness for Hepatitis C. Experts estimate that this can potentially increase the number of patients who receive treatment by 8% per year. Assuming this estimation is accurate, how long would it take for the number of treated patients to double?
   - Applying the rule of 72: 72/8 = 9 years
4. Recently, some insurance companies have also decided to include full coverage for Hepatitis C treatment in their plans. Given the high cost of these drugs, why would this be financially beneficial for these insurance companies?
   - The infection, diagnosis and treatment rates for Hepatitis C are all low, which means that the likelihood of the insurance company having to pay for the drugs is also low
   - Including Hepatitis C treatment would attract more customers and help generate more revenue in the long run
   - Part of moving to a higher "tier" plan within the healthcare exchanges
5. If our client were to launch their drug, what would be a reasonable timeline? Assume that it would take another 3 years for the drug to obtain FDA approval.
   - Our client faces significant competition (2 drugs approved; 1 drug with NDA submitted)
   - Given the high market growth rate, our client may benefit from waiting 1-2 years after FDA approval to launch their drug

Case 18: Hepatitis Drug

Summary

I recommend that our client launches their Hepatitis C drug on the market 1-2 years after obtaining FDA approval. The current market is $2.8 billion, which is a reasonable size, however, our client faces significant competition from 3 other drugs that either have or is about to have FDA approval. Due to new campaigns to raise awareness, the market is projected to grow rapidly and expected to double in less than 10 years. Therefore, launching the drug at a later time may benefit our client. In the meantime, our client should focus on passing the clinical trials and monitor the market trends closely before deciding on a specific launch date.

An excellent candidate should recognize that the discrepancy between the two approved Hepatitis C drugs in terms of efficacy and price implies that there are actually 2 markets – our client's drug (90% efficacy) would fit into the high-efficacy market. With the right marketing strategy, they should be able to "push out" drug B in the long run and achieve between 25-50% of the total market (i.e. 50-100% of the high-efficacy market).

Case 18: Hepatitis Drug

Exhibit 1: Comparison of Hepatitis C drugs (FDA approved and in clinical trials)

Drug	Stage in FDA drug review process	Price per dose ($)	% efficacy	% all treated patients who take drug
A	FDA approved	10,000	60%	50%
B	FDA approved	60,000	80%	50%
C	Phase II	TBD	70%	N/A
D	NDA submitted	TBD	85%	N/A
E	Phase I	TBD	75%	N/A
F	Phase I	TBD	75%	N/A
G	Phase II	TBD	80%	N/A
Client's	Phase III	TBD	90%	N/A

Case 19: 7-Eleven

Market sizing	Bain	Qual.	Quant.
Retail	Round 2	5	4

Prompt

Interviewer note: Before reading the prompt, ask candidate to pick a city that he/she is familiar with. Then read the following:

Our client is 7-Eleven. They would like to open a new store in [*your city of choice*]. What is the minimum population density the area should have?

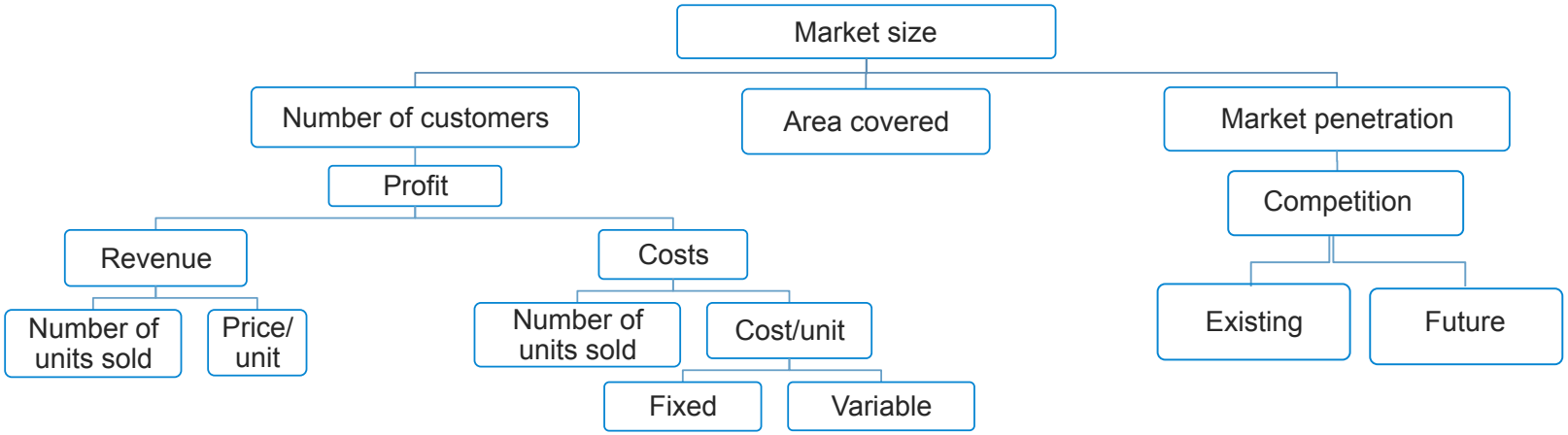
Additional Information *(provided on request)*

There is no additional information for this case. Candidates are asked to estimate all numbers from scratch. At the end of the interview, interviewer should check that the number is reasonable given the size of the city of choice.

Note: the goal of this case is not primarily to get an accurate number, but rather, to come up with an exhaustive list of things to consider in the absence of provided information.

Case 19: 7-Eleven

Sample Structure *(any reasonable one is acceptable)*



Analysis

Interviewer note: this is a entirely candidate-led case. There are many different approaches. Below is just one example of a solution:

- Start with the basic equation: $\pi = \pi_i * V - C_F = (R_i - C_i) * V - C_F$
  - π = profit
  - π_i = incremental profit
  - V = volume
  - C_F = fixed costs
  - R_i = incremental revenue = revenue per unit
  - C_i = incremental cost = variable cost per unit

Case 19: 7-Eleven

Analysis

- Next, population density is given by the relationship: $V = d*A*p*V_i$
  - d = population density
  - A = area reached by a given store
  - p = market penetration
  - V_i = volume per customer
- Then solve for V in first equation and then use V to solve for d in second equation:

Candidate should give reasonable estimates for each variable.

  - C_F (fixed costs) = $105,500/month
    - Area of store: 2,000 sq ft
    - Number of employees: 5
    - Rent: $50/sq ft/month*2,000 sq ft = $100,000/month
    - Utilities: $0.25/sq ft/month*2,000 sq ft = $500/month
    - Labor: $1,000/employee/month*5 employees = $5,000/month
  - R_i (incremental revenue) = $10
  - C_i = (incremental cost) = $2/item
    - Wholesale: $1.5/item
    - Transportation: $0.5/item
  - Now solve for V in first equation: $\pi = (R_i - C_i)*V - C_F = 0$ (breakeven)
    - Rearranging equation gives $C_F = (R_i - C_i)*V$
    - $105,500/month = ($10 – $2)*V = $8*V
    - V = ~13,200 items/month

Case 19: 7-Eleven

Analysis

- Then solve for d in second equation: $V = d*A*p*V_i$

Again, candidate should give reasonable estimates for each variable.

- A (area reached by store) = 0.5 miles*0.5 miles = 0.25 sq miles
- p (market penetration) = 50%
- V_i (volume per customer) = 3 items/sale*10 sales/customer/month = 30 items/customer/month
- V = ~13,200 items/month = d*0.25*50%*30
- d = 3,520 customers/sq mile

Summary *(based on sample solution above)*

In order for the new 7-Eleven store to be profitable in this city, it needs to be located in an area where the population density is at least 3,520 people per square mile. Our client should keep in mind that this was calculated based on the assumption that they will be able to capture 50% of the potential customers, which may be an overestimate depending on the exact location.

Tips for this case:
Since this is a very open-ended case, it is important for the candidate to take a proactive approach and come up with reasonable numbers for each variable. Note that the numbers in the above solution can vary drastically depending on the city of choice. Breaking down the problem into as many components as possible and keeping track of the units are key to solving this case correctly.