Yale SCHOOL OF MANAGEMENT

SOM Consulting Club

Casebook 2024

Acknowledgements

This first edition of the Yale SOM Casebook was made possible by the collaborative effort and hard work of many individuals in the SOM community; we would like thank the Yale SOM Consulting Clubs of ’23/24 and ’24/25 for their unwavering support in making this a reality.

A special thank you to our case writers, without whom this would not have been possible

Advesh Jalan ’25
Ayushi Kumar ’25
Bikesh Dahal ’24
Bobby Davis ’25
Claudia Wu ’25
Danning Gu ’24
Dorothy Chen ’24
Fabio Kammler ’24
Grant Hufham ’25
Katherine Wong ’25
Norris Blossom ’25
Rohit Gupte ’25
Shivansh Chaturvedi ’25
Shreya Arora ’25
Zach Humrich ’24

And to our editorial team for helping bring it all together

Bikesh Dahal ’24
Shivansh Chaturvedi ’25
Zach Humrich ’24

Thank you to our sponsors

Gold Sponsors

BAIN & COMPANY

Deloitte.

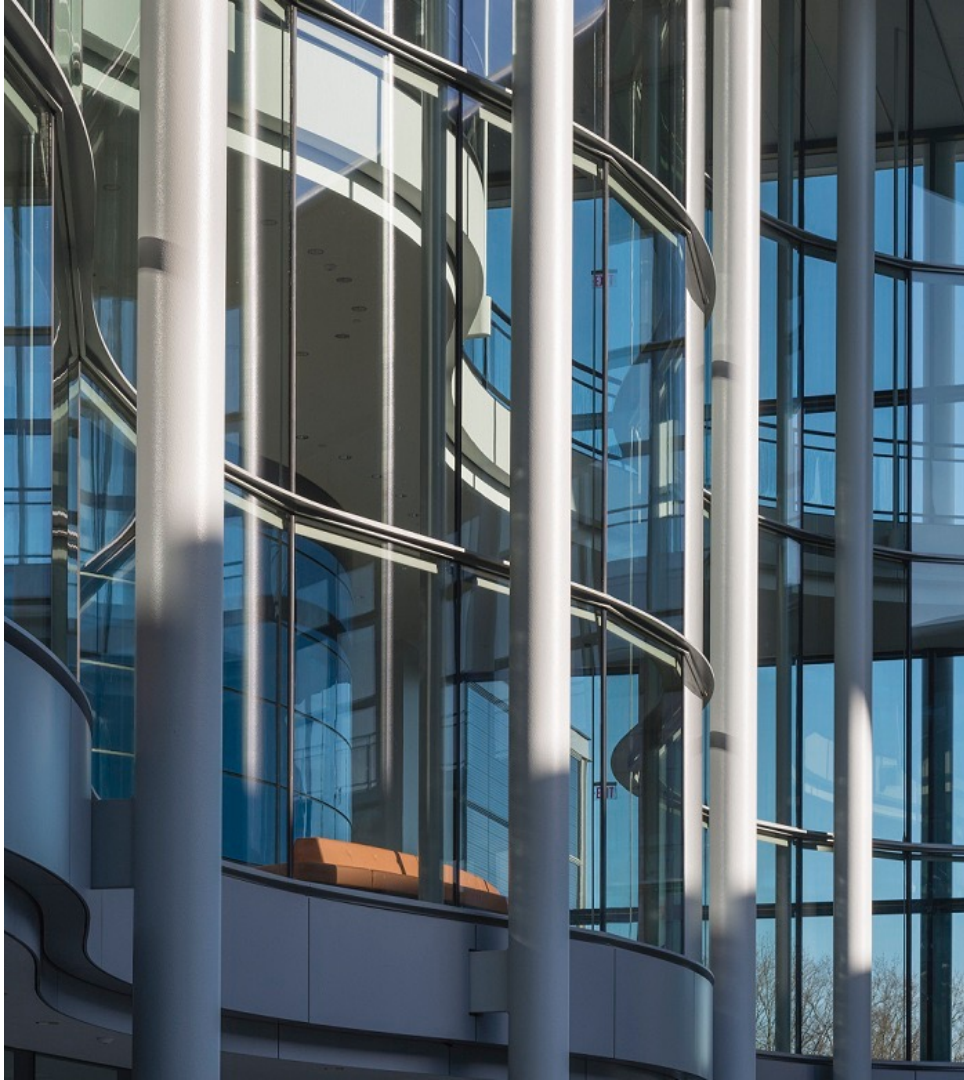
EY Parthenon

Silver Sponsors

KEARNEY

LEK™

Contents



Yale SCHOOL OF MANAGEMENT

Introduction to Consulting

What is consulting?

A consultant would say… “it depends”.

Broadly…
Professional problem solving across industries and functions.

What do consultants do?

Management consulting firms **advise their clients on how to address the challenges they face**, including:

How to direct organizational change management	How to make acquisitions or sell business lines	Whether to enter new markets, and which ones	How to make operations more sustainable	How to digitize old systems
How to sell more product	How to price products and services	How to cut outsized costs	What new products to develop	How to improve supply chain health

Consultants work across…

Industries

Healthcare	Technology & Media	Consumer
Energy	Telecom	Industrial Goods
Nonprofit & Philanthropy	Retail & Consumer	Metals & Mining
Public Sector	Utilities	Financial Services

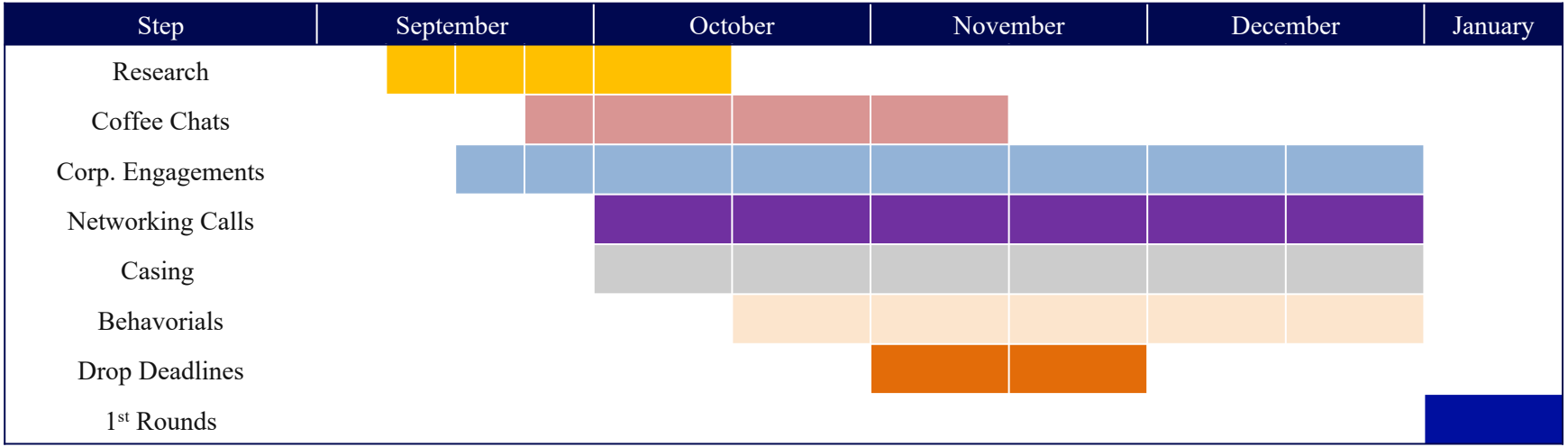
Functions

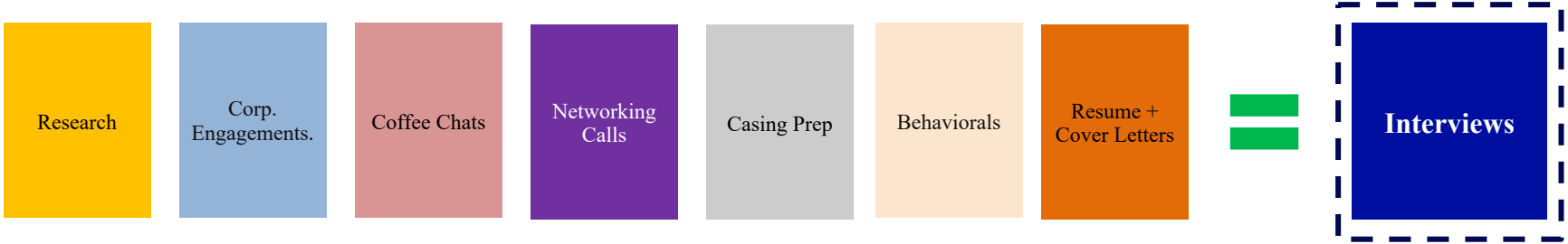
Organizational Design	Operations
Digital	Sustainability
Sales & Marketing	Human Capital
Change Management	Manufacturing

Yale SCHOOL OF MANAGEMENT

Recruiting for Consulting

Summer internship recruiting roadmap





Understanding the process

Research

- Determine if consulting is a fit for you
- Research about different firms and their offerings, staffing models, and previous work.
  - Google / self-guided research
  - Case Books
  - 2Y Coffee Chats
- Develop preferences for office locations to narrow down priorities for networking
- Create a firm engagement tracker/Excel list

Understanding the process

Corporate Engagements

- Attend corporate engagements for all firms you're considering
- If there's networking afterwards, **aim to make 1-3 connections** at the event
  - Focus on offices you're most interested in
  - **Quality** of connection **over quantity** of connection
- Follow up with those people with a personalized thank you note
  - Potentially ask to set up an informational call

Understanding the process

Coffee Chats

- Attend coffee chats for all firms you're considering
- Chats give a strong sense of firm culture and fit
- You **MUST ATTEND** all coffee chats you register for!
  - No-shows result in harsh penalties (e.g., ineligibility to be considered for any role at the firm) and reflect poorly on SOM
- Take notes after the chat
  - Useful for cover letters and behavioral questions
- Follow up with a **personalized thank you note**
- If the rep is not from an office you're looking at, ask to be connected

Understanding the process

Networking Calls

- Target firm reps within the offices or affinity groups that you're most interested in
- Connect with people you met at corporate engagements, or alumni from SOM, Yale University or your undergrad
- Email to find a good time to chat, try to work around their schedules
  - Send confirmation invites or calendar holds
- Write out and ask meaningful, specific questions
- Follow up with a personalized thank you note
- Again… **quality over quantity**!

Understanding the process

Casing

- Build the foundations of your casing practice by **attending Consulting Club meetings**!
- Engage regularly with your case team
- Use a case book (we have plenty on our CampusGroups, and now we have this document!)
- **Log your cases** in your case log and keep a casing journal with feedback
- Practice both quantitative and qualitative analyses (RocketBlocks!)
- Build “business knowledge” via classes, news, and podcasts

Understanding the process

Behavorials

- Learn about the format for behaviorals at the firms you will be interviewing with
- Practice a behavioral question at the beginning of each case
- **Write out and practice stories** to commonly asked behavioral questions
- Keep a behaviorals log
- Schedule time with friends to practice behaviorals back-to-back

Yale SCHOOL OF MANAGEMENT

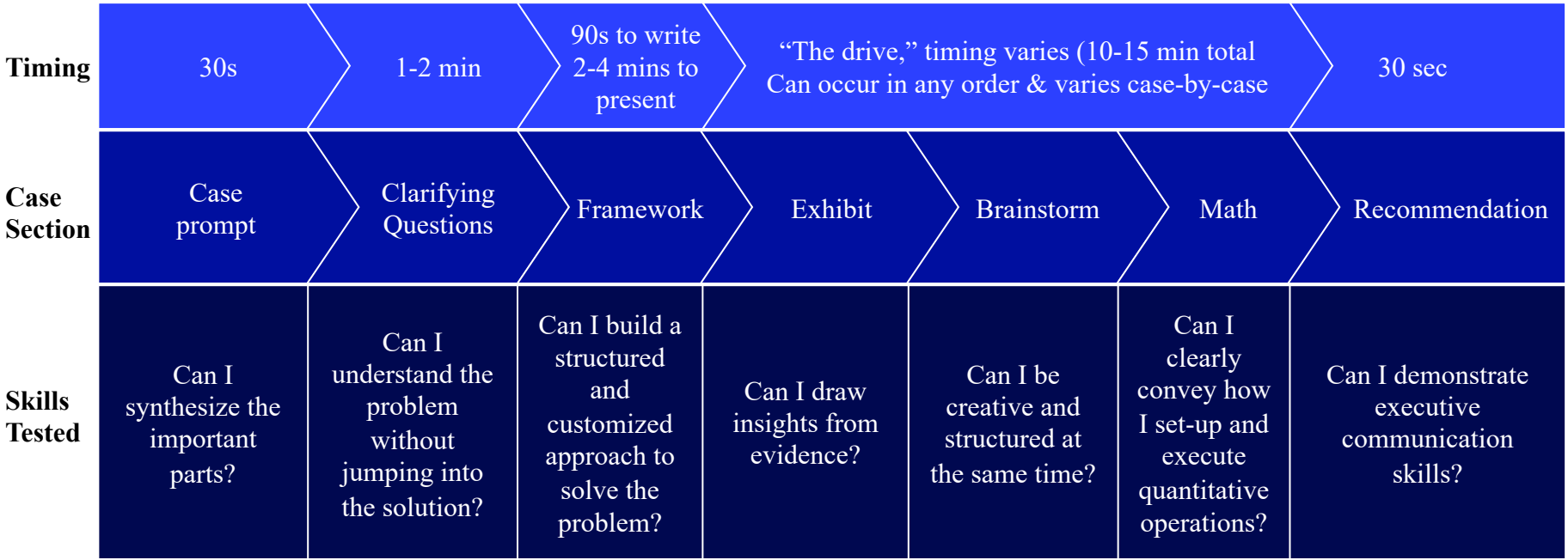
The Case Interview

What is it?

Case interviews are **discussion-based** interviews where you are given a business problem facing a client and will be asked to **provide a recommended solution or course of action**. Case interviews are a condensed version of what a consultant might be expected to do over the course of a client engagement; **they require structure, diligence and thoughtful analysis**.

While some firms have their own styles of case interviews, **they all test for the same traits** in an interviewee. Casing can be learned through **repeated practice and feedback loops**. Reading through the cases in this casebook (and others) can provide direction on how cases should go along with feedback for interviewees, but **it is always better to practice casing with a partner** to develop a true sense of the flow of cases, and to get feedback on performance.

What does a case look like?



Case Math

Approaching Case Math

1	2	3	4
Take a few seconds to **think through the approach**	**Collect all the data** you'll need	**Do the math,** and **explain as you go** – engage the interviewer	**Identify the "So what?"**
• Know the context and understand the goal: Why am I doing this? • Decide on the starting point, and how you will use the data • Start visually drawing / writing out • Walk the interviewer through your structure	• Do you need to make any assumptions? • Stay organized when there is a lot of data given • Don't be thrown off if interviewer does not have data that you are looking for it might come in a different form	• Practice talking through the math in front of someone else • Remaining calm and resilient if you make a mistake. • Use shortcuts, but ask before rounding	• Don't just breathe a sigh of relief when you finally get the number… • Determine what this number tells you about the question we are trying to answer

Key Case Math Formulas

Profits

$$\text{Revenue} = \text{Quantity Sold} \times \text{Price per Unit}$$

$$\text{Profit} = \text{Revenue} - \text{Total Costs}$$

$$\text{Gross Profit} = \text{Revenue} - \text{COGS}$$

$$\text{Gross Margin (\%)} = \left(\frac{\text{Revenue} - \text{COGS}}{\text{Revenue}}\right) \times 100$$

$$\text{Operating Margin (\%)} = \left(\frac{\text{Operating Income}}{\text{Revenue}}\right) \times 100$$

$$\text{Net Margin (\%)} = \left(\frac{\text{Net Income}}{\text{Revenue}}\right) \times 100$$

$$\text{Markup (\%)} = \left(\frac{\text{Selling Price} - \text{Cost Price}}{\text{Cost Price}}\right) \times 100$$

Supply chain

$$\text{Inventory Turnover Period} = \frac{\text{Number of Days in the Period}}{\text{Inventory Turnover Ratio}}$$

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Utilization} = \frac{\text{Actual Output}}{\text{Maximum Potential Output}} \times 100\%$$

$$\text{Price Elasticity of Demand} = \frac{\text{Percentage Change in Quantity Demanded}}{\text{Percentage Change in Price}}$$

$$\text{Cross Elasticity of Demand} = \frac{\text{Percentage Change in Quantity Demanded of Good A}}{\text{Percentage Change in Price of Good B}}$$

Market share

$$\text{Market Share (\%)} = \left(\frac{\text{Company's Sales or Revenue}}{\text{Total Market Sales or Revenue}}\right) \times 100\%$$

$$\text{Relative Market Share} = \frac{\text{Company's Market Share}}{\text{Largest Competitor's Market Share}}$$

Revenue & Cost Drivers

$$\text{EBITDA} = \text{Operating Revenue} - \text{Operating Expenses} + \text{Depreciation} + \text{Amortization}$$

$$\text{Payback Period} = \frac{\text{Initial Investment}}{\text{Annual Cash Flow}}$$

$$\text{NPV} = \sum_{t=0}^{n} \frac{\text{Cash Flow}_t}{(1+r)^t} - \text{Initial Investment}$$

$$CAGR = \left(\frac{\text{Ending Value}}{\text{Beginning Value}}\right)^{\frac{1}{\text{Number of Years}}} - 1$$

$$\text{ROE} = \frac{\text{Net Income}}{\text{Shareholders' Equity}} \times 100\% \quad \text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$$

$$PV = \frac{C}{r-g}$$, PV= present value of growing perpetuity; C= Annual cash flow; r= discount rate; g= growth rate

$$\text{Breakeven Point (in units)} = \frac{\text{Fixed Costs}}{\text{Selling Price per Unit} - \text{Variable Costs per Unit}}$$

Yale SCHOOL OF MANAGEMENT

The Behavioral Interview

What is it?

Behavioral interviews are a series of open-ended questions designed to assess specific skills, characteristics and experiences.

Behaviorals go by many names:

- Fit interviews
- Personal Interviews
- Personal Experience Interviews (PEI)

Format will vary by firms, but you don't need to worry about that yet! The prep you do will be useful for all firms.

You may get a behavioral as:

- A full interview (30 – 60 mins)
- An add-on; often done at the front-end of the interview but could also be at the end (2 – 10 mins)

The questions could be **very structured and traditional** i.e., "tell me about a time you led a team" **or unstructured, non-traditional** like "how was your summer", "do you like Yale SOM?"

DO NOT ignore behavioral prep; it is a way to showcase the unique skills you would bring to the specific firm/role and allows you to stand out among other strong case performers.

Tell me about a time when you…

… influenced/persuaded others
… improved the performance of a team
… used creativity or data to solve a problem
… convinced others of your point of view
… faced a major obstacle to success

Our Advice
Focus on your interpersonal skills and emotional intelligence here. Remember to keep it structured and simple to understand.
The case will test your quantitative and analytical skills later!

Headline - 5%	Situation - 20%	Action - 50%	Result - 25%
Recap the purpose of the story *"I'd love to tell you about a time when I influenced others..."* **1-2 sentence headline of the story, including the result.** *"When I persuaded my department head to invest in a new software system.."*	**Provide context** for the story you are telling Extremely important to be **concise** **Answer the questions:** *Why was this important? What was at stake? Time pressure? $ pressure?*	**What** did **YOU, specifically** do to resolve the crisis and address the situation? *"I was the responsible for..."* **Why** you did it? Avoid using the word "we" – use "I" **Apply structure** through lists, buckets, sections	**What was the final result of your actions?** Call out **both quantitative and qualitative** results How is this relevant to consulting? **Be ready for questions and discussion!**

Yale SCHOOL OF MANAGEMENT

Industry Primers

Airline

Overview

Industry is broadly defined in cargo and commercial airlines
Commercial airlines: Move travelers between destination
- **Segments:** international vs national vs regional; low-cost vs legacy carriers; charter airlines
- **Consumers:** Leisure (price sensitive) vs business (price inelastic)

Cargo: Move goods between destinations

Key Industry Trends

- Consolidation in industry
- Dependency on third-party booking websites (Expedia, Booking.com)
- Sustainability: Sustainable fuel, materials, supply chain
- Brand loyalty: loyalty programs, partnerships with hotels, car rental, and credit card companies
- Digital transformation

Revenue & Cost Drivers

- **Revenues**
  - **Ticket fees:** Economy, Business, First
  - **Baggage fees, Amenities:** Extra leg space,
  - **Ancillary:** reservation change, cancellation fees, Lounge
  - **In-flight purchases:** F&B, entertainment, magazine purchase
- **Costs**
  - **Fixed costs:** Gate leases, aircraft purchase, aircraft leases, marketing, tech, insurance & legal fees
  - **Recurring costs:** Fuel, crew & staff salaries, landing & take off
- **Key metrics**: Load factor x aircraft capacity

Manufacturing

Overview

Processes that involve transforming raw materials, parts and components into finished product using labor and machines
Key Industries: Automakers, Original Equipment Manufacturers (OEM's), parts, CPG, fashion, building materials, construction materials, etc
Capital and labor intensive
Customers: Primarily business, some end users

Key Industry Trends

- Outsourcing, Nearshoring: Manufacture goods closer to consumer to minimize supply chain disruptions
- Supply chain improvements: Just in time (JIT) inventory, AI
- Data driven analytics: Use analytics and AI to improve design, optimize production cycle, improve demand forecasting, inventory management and supply chain
- Tariffs: Regulatory tariffs between countries
- Sustainability: Sustainable materials, carbon credits
- Ongoing discussion about unions

Revenue & Cost Drivers

- **Revenues**
  - Volume (driven by product type and demand)
  - Contract length
  - Bundles: products and services, maintenance packages
- **Costs**
  - **Fixed costs**: R&D, plant, technology, marketing and advertising, utility, labor, financing
  - **Recurring costs**: Labor, raw materials, shipping, inventory holding, loss (damage, returns, recalls), discounts
- **Key Metrics**: Capacity utilization, inventory turnover

Consumer / Retail

Overview

Household durable and non-durable products; a mature, consumer-oriented industry. Segmentation arises from income, demographics, and age.
Customers: Retailers vs. end users
Products: Luxury vs. necessity
Channels: Department stores, discount stores, e-commerce

Key Industry Trends

- **Omnichannel:** Companies are adding distribution channels (brick & mortar, online, pick-up) to cater to consumer demand
- **Private label:** Retailers are starting their own private label brands (365, Good & gather, Kirkland) and eroding brand loyalty among products
- **Sustainability:** improved materials, supply chain, CSR
- **Digital transformation**: Use of digital marketing (Facebook), and big data. Curated shopping experience and advertisement using data. D2C trends

Revenue & Cost Drivers

- **Revenues**
  - Sales to consumers (higher margin), sales to retailers (low margin)
  - **Revenue drivers:** shelf placement, product portfolio, price, volume
- **Costs**
  - **Fixed costs:** rent, utility, labor, tech, marketing
  - **Recurring costs:** cogs, transportation, inventory, wages
- **Key metrics**: Inventory turnover, gross margin, contribution margin, basket size

Energy

Overview

Oil & gas, utility, solar and wind developers
Oil & Gas: Upstream (drilling and extracting), midstream (transportation), and downstream(refining and selling)
Utility: Sell electricity, oil and gas to consumers
Green developers: Develop solar and wind plants

Revenue & Cost Drivers

- **Oil & Gas:** Price of crude oil, transportation fees, sale of finished goods (oil, gas, bi products)
- **Utility:** Cost of installation, price/unit (kWh, kW, gallons)
- **Green developers:** price/unit (kWh, kW)
- **Fixed costs:** Exploration, drilling, extraction, refinery, plant,
- **Recurring cost**: labor, transportation, COGS
- **Key metrics**: Price of crude oil

Key Industry Trends

- OPEC accounts for ~50% of oil production and therefore controls the price of oil
- **Sustainability initiatives:** Solar, and wind, carbon credits, hydrogen, etc.; Paris climate agreement
- **Technology:** Fracking and horizontal drilling have increased productivity and reduced cost
- **Startups**: Traditional companies (Shell, BP) are increasingly investing in startups to increased their green portfolio

Financial Services

Overview

Offers services such as deposits, insurance, lending, investment, asset management
Banks: Commercial, retail, investment
Customers: retail, business, high net worth individuals
Products: Mortgages, loans, credit cards, insurance, checkings/savings accounts, investment portfolios

Revenue & Cost Drivers

- **Revenues**
  - **Main drivers:** # of customers, loan interest, insurance payments, investment fees, credit card interest
  - **Secondary drivers:** late fees, foreign transaction fees, etc.
- **Costs**
  - **Fixed costs**: Wages, rents, over head, utility, tech, security, loss
  - **Recurring costs:** interest on deposits

Key Industry Trends

- **Fintech:** Mobile and web banking, proliferation of online only banks, deposits from ATM
- **AI:** Financial firms are using AI and data analytics to provide tailored, customized financial products to consumers, better risk management
- **Sustainability:** Consumers are demand is increasing investment on green initiatives
- **Digital Transformation:** Chatbots, digital transformation of check deposit's, money transfer and verification

Healthcare & Life Sciences

Overview

Consists of facilities, distributors and service providers (hospitals, insurance, clinics, ed, outpatient, pharma)
Consumers: patients, hospitals
Government Regulations: Industry is dependent on government (FDA, etc.)
Pharma: Rely on R&D, production of new drugs and patent length (~20 years)

Revenue & Cost Drivers

- **Hospitals:** Insurance payments, co-pay.
  - **Costs:** Doctors, Nurses, supplies, insurance, utility, rent, etc.
- **Insurance:** monthly payments.
  - **Costs:** reimbursement to hospitals, labor, advertising,
- **Pharma:** Price of drugs, # of consumers
  - **Costs:** R&D, labor, plant, manufacturing, marketing, discounts, etc.
- **Key metrics**: # of patients, # of drugs, bed capacity utilization

Key Industry Trends

- Consolidation in industry
- **Data & AI:** Data and use of AI is supposed to reduce cost of treatment and improve patient outcomes
- **Price transparency:** Increased demand for price transparency in drugs, and hospital treatment procedures
- **Tech enabled services:** Proliferation of app and web-based consulting services
- **Bundled payments:** Insurance companies reimburse based on treatment and disease rather than per visit

Media & Entertainment

Overview

Create, license and distribute video, audio, and print
Consumer: Differentiated based on age, demographics, etc.
Network effect: Important to grow viewership and consumers

Revenue & Cost Drivers

- **Revenue:** Monthly subscription, advertising, licensing fees, on-time purchases, merchandising
- **Costs:** talent (actors, writers, editors, influencers), labor, marketing, tech, production costs, rent, utility, venues, commissions
- **Key metrics**: Viewership, Ratings

Key Industry Trends

- **Streaming:** Rise of Netflix, Hulu, Disney Plus, Amazon prime. Young consumers do not have cable.
- **E-Gaming:** Fastest growing segment (mobile & game streaming).
- **Music streaming:** Spotify, Apple music have changed the music industry. Artists rely on these services
- **Social Media:** Rapid rise of Tiktok, and Instagram have increased number of celebrities. Customized content and ads
- **AR/VR:** Investment on these technologies are increasing and companies are trying to win the battle

Telecommunications

Overview

Agencies that operate telecommunication services; AT&T, Verizon, T-Mobile
Consumers: Retail and business
New, smaller companies have emerged to compete with incumbents. High capital to enter, low marginal costs.

Revenue & Cost Drivers

- **Revenues:** Monthly subscription, data, security costs, foreign travel, device plans, insurance,
- **Costs:** Infrastructure, labor, marketing, advertisements

Key Industry Trends

- Consolidation in industry – T-Mobile and Sprint merged. Only 3 major players left in the US.
- **5G Network:** Next generation service with faster, reliable network
- **Data and Tech:** Use of data and AI to improve customer service (chatbots, voice bots)
- **Entrance of low-cost providers:** Entry of low-cost providers(Mint, H20) are driving cost conscious consumers away from incumbents

Cases

A quick note about casing

A case is **a distilled version of a business problem**, presented across a series of exhibits, questions, and brainstorms. **Every case is different** – a different flow, structure, and expected approach; some are led by the interviewer, some by the interviewee. Regardless, they test one's ability to approach ambiguity through structure without losing sight of the goal of the case.

In most case interviews, the case is given by an interviewer that worked on a version of the problem (many of the cases in this casebook come from SOMers who dealt with these problems in a consulting role or in their jobs). Case interviewers thus know their cases inside-out, to be able to lead cases confidently. For this reason, **it is recommended that the interviewer in a mock interview familiarize themselves** with the flow and structure of the case. **We also recommend watching some cases to understand** the process of casing first: you can find examples online, or by attending SOM Consulting Club meetings and working with your Case Team.

The cases in this casebook are arranged by relative difficulty; **starting with easier cases** from this book (among others, on SOM Consulting Club's CampusGroups) **can help build intuition for casing**. Note, also, that a lot of answer in the cases are **only suggestions**: there can be many versions of a framework, brainstorm answer, or recommendation. The critical **role of the interviewer is to recognize logical and sensible answers** and to **guide the case along accordingly**, even if it digresses from the sample answers. The **role of the interviewee is to drive to case forward**, asking questions and presenting analysis that can help produce an answer to the business problem posed at the beginning.

Good luck with your casing!

Index

Right Prlce Tea

Industry
CPG

Quantitative Difficulty
Easy

Qualitative Difficulty
Easy

Concepts Tested
Market sizing; market entry; breakeven analysis

Written by
Shivansh Chaturvedi ’25

Return to index

Case Introduction

Prompt

Your professor Larry Sellstuff has heard of your consulting aspirations and has a challenge for you: he wants you to consult him on a new product idea. He feels that a lot of people buy sodas over iced tea because of the price point and wants to change that by introducing a bottled iced tea that is cheaper than the competition – Right PrIce Tea. He needs your help in determining whether this product is a financially sensible one.

Clarifying Questions (to be provided if interviewee asks)

- **Goal**: Larry thinks that simply being profitable is a success to him.
- **Experience**: Larry has never had a company before but given that he is an economics PhD and business school professor, he is not worried about being able to manage the company.
- **Product**: It is an iced tea that Larry has perfected the recipe for; he knows how to brew it, where to source the raw materials, and can negotiate good rates himself.
- **Timeline/target**: No real timeline considerations, nor is there a profit number he has in mind.
- **Competition**: There are other iced tea and soda companies, but not much else is known.
- **Customers**: Anyone who is looking for a nice, refreshing beverage. Larry only wants to target the New Haven market for now.

Framework

Profitability Decomposition

- This is a simple profitability case, so a good start is through a profitability framework: decomposing profit into elements of Revenue and Cost.
- These can be further broken down, as seen on the right
- A good candidate should target a MECE framework for profitability
- A great candidate will immediately want to explore either revenues or costs; guide them towards revenues

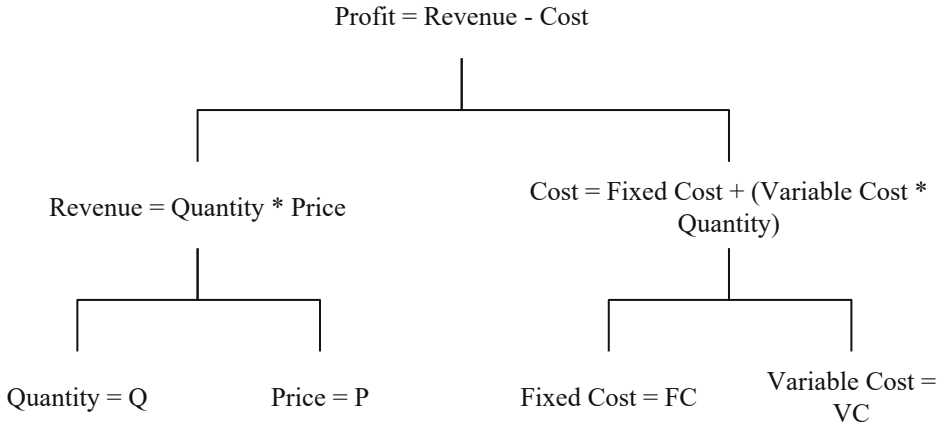


Exhibit 1

AnalyticsHaven Report: New Haven Demographics

- 150,000 residents
- 80% of the population are adults

AnalyticsHaven Report: Beverage Consumption in New Haven

- 50% of adults report purchasing and consuming non-alcoholic beverages from stores
  - 50% of that group is in the “High Consumption” category, buying 1 beverage a day
  - 50% of that group is in the “Low Consumption” category, buying 1 beverage every 2 days

Key Insights for Exhibit 1

Guidance

- Inform the candidate that we are assuming 300 days in a year
- Tell them that Larry only wants to look at adult beverage consumers, since tea has caffeine
- If they don't begin to do it themselves, ask them to give you the number of beverages sold and consumed in New Haven each year. Once they have a number, give them Exhibit 2.

Math Worked

150,000 residents x 80% adults = 120,000 adults x 50% drinking beverages from stores = **60,000 adults**	60,000 adults x 50% buying 1 beverage a day = 30,000 beverages x 300 days per year = **9 million beverages sold**	60,000 adults x 50% buying 1 beverage every 2 days (or 0.5 bevs per day) = 15,000 beverages x 300 days per year = **4.5 million beverages sold**	**Total Beverages Sold in New Haven = 9 million + 4.5 million = 13.5 million**

Exhibit 2

From: Larry Sellstuff <larry.sellstuff@yale.edu>
To: Me
Subject: Need Your Help! Can't figure out breakeven.

Thanks for the help with the market sizing! Next, I'd like to determine how much tea I'd need to sell to be able to break even. Providing you some details on the planned operation below.

- Target Price = $3
- Cost to buy a factory with all equipment = $490,000
- Cost to operate a factory every year = $50,000
- Cost of materials in every bottle of Right PrIce Tea = $1

Would love if you can tell me the number of bottles I would need to sell to break even on Right PrIce Tea!

P.S. For extra credit (High Honors in my class), can you tell me how much of the New Haven market that is?

Key Insights for Exhibit 2

Guidance

Candidate should use the new information to determine breakeven by referring to their framework

Math Worked

Revenue – Costs = Profit; Profit at breakeven = $0
(Price * Quantity) – (Fixed Costs + Variable Costs) = 0
($3 * Q) – (($490,000 + $50,000) + ($1 * Q)) = 0
3Q – 540,000 – Q = 0
2Q – 540,000 = 0
Q = 270,000
Larry can break even at 270,000 bottles sold.

270,000 bottles / 13,500,000 total market
= (135,000 * 2) / 13,500,000
= (135,000 / 13,500,000) * 2
= 1/100 * 2
= 2%
2% of the market is needed to break even.

Recommendation

Larry has called you to his office to hear your recommendation on his idea.

- **Recommendation**: Answer could go either way:
  - Yes: Larry should go ahead with the idea
  - No: Larry should not pursue the idea
- **Reasons**:
  - Yes: Larry only needs to capture 2% of the New Haven market to break even, and given his product is novel and has a good value proposition, would be attainable
  - No: 270,000 bottles is a lot in a small market like New Haven, especially given that there is competition (we don't have much else detail there)
- **Risks**:
  - Yes: Market may be saturated; entering a new business without prior experience can be hard
  - No: Could lose out on forming a new market and category
- **Next Steps**:
  - Yes: Conduct a market landscape and competitor analysis; collect customer willingness to pay; begin process of setting up factory and supply chain; determine retail outlets
  - No: Think of other business ideas

Eye-to-Eye

Industry
Non-profit, Education

Quantitative Difficulty
Medium

Qualitative Difficulty
Medium

Concepts Tested
Opportunity Comparison; Cost-benefit analysis; Non-profit thinking

Written by
Zach Humrich ’24
Claudia Wu’25

Case Introduction

Prompt

Our client is the principal of a public middle school in Connecticut, Bulldog Middle School. Currently, it is summer break, and she is thinking about ideas to improve the learning experience for students in the new school year. She has gotten feedback from teachers that students are not very engaged in classrooms and have a hard time grasping the material, especially for subjects like science and math.

With the release of new AR/VR devices, she wants to consider integrating them in the classroom. What factors should be considered as she explores introducing AR/VR devices in the classroom?

Definitions:

- *AR (Augmented Reality) augments surrounding by adding digital elements to a live view.*
- *VR (Virtual Reality) is a completely immersive experience that replaces a real-life experience with a simulated one.*

Case Introduction

Clarifying Questions (to be provided if interviewee asks)

- **What is the objective?** A better learning experience for students and teachers
- **What existing technology (if any) is being used now at Bulldog Middle School?** Assume the basics: laptops, reading tablets, software (Google Classroom, Youtube, etc.)
- **What AR/VR headsets are being considered?** Whatever is out on the market (think Apple, Meta, etc.), but more details shown later
- **Is cost a consideration?** Yes, this is a public middle school so there are limited funds. The maximum budget for this initiative is $30,000, coming out of the schools ~$9M overall budget
- **How big is the school (# of grades, # of classes)? How many students are in a classroom?** Bulldog Middle School has students grades 6-8, more specifics will be shown later
- **Is there a timeline?** Not really, but keep in mind the school year calendar (school starts in August, ends in May/June)

Framework

Financials

Revenue: no consideration (nonprofit)

Cost

Headset Acquisition
- # of Headsets Needed: # students, # classes, sharing across classes
- Price of Headsets: brand, discounts
- Training needed for teachers

Potential Cost-Savings
- Efficient class time
- Less tutoring or after-school time

Students

Receptiveness
- Learning curve: some students might be quicker
- Introduce headsets to classroom

How it will be used
- Subjects: math, science, etc.
- Take-home vs. In-class use
- Entire classes vs. Specific timeslots

School

Teachers
- Learning: teachers can also improve their own education
- Buy-In: how it will help them with their job
- Training: feeling comfortable using headsets and teaching with it

Parents
- Consent waivers
- PTA discussions to address concerns

Concerns/Risks

- Negative external press
- Pilot program: lower risk, more info
- Salvage value if it doesn't work out
- County school board reaction

Exhibit 1: Headset Decision

	Samsung Gear VR	Oculus Quest VR
Price Point	$140	$600
Year Designed	2016	2021
Graphics	Display of inserted Smartphone	LCD – 1832 x 1920 Resolution
Usable Programs	Smartphone Capable	Full range of VR programs
Mobility	Head Movement Supported	Head & Body Movement Supported
Lifespan	~2 Years	~3 Years

Key Insights for Exhibit 1

Information to be shared

- Budget for the headsets in total is $30,000
- Smartphones will be included in the cost of the listed price, sourced from a refurbished, used smartphone distributor.

Analysis

There is no exact mathematical solution here; candidate should highlight:

- Lifespan & cost differences
- Samsung will require a smartphone component
- Exploring what features are necessary for the intended use in classrooms, versus which ones are premium or superfluous features; preference should be given to the cheaper VR headset, which does not prevent intended uses

Candidate should prefer the cheaper Samsung Gear option given it achieves the goal at a lower cost, but could make the case for an Oculus if they can justify what would be achieved with the premium option

Brainstorm

What are the possible use cases for AR/VR headsets in the classroom?

Candidate should try to bring structure to brainstorm. Example of the classroom stakeholders:

- Teacher:
  - Lesson Planning: no need for as many supplies, more possibilities on topics to cover
  - In-class Teaching: more live examples, engaging presentations
- Student:
  - Encourages collaboration: students can work together on virtual projects
  - Engagement with immersive experiences: illustration of class concepts with real examples
  - Examples: traveling back in time for history, seeing the human body in detail for science, geometric shapes for math
  - Extra resources available to accommodate different learning styles (visual / auditory / kinesthetic) and make education more personalized

Question 1: Net VR Set Cost Estimates

Prompt, Guidance & Math Worked

Ask the candidate to determine an approximate cost to the school to purchase these devices.

- Provide the following information as asked:
  - Number of students: 600, equally split among grades 6-8
  - Number of students per teacher: 30
  - Will need 1 device for every student & teacher
- Cost of purchasing a Samsung VR (or Oculus if candidate went that route, adjust numbers accordingly):
  - 600 students + 20 (600/30) Teachers = 620 total Devices
  - **Total Cost = 620 Devices x $140 = $86,800**

Next, ask the candidate to think about opportunities for cost savings that result from switching to VR – what information would they need to begin an analysis of cost savings?

- Candidate may list multiple potential cost savings; give the candidate the following information (solutions italicized):
  - The school currently takes two field trips per year, that cost $1,500 each *[cost savings of $1,500 x 2 = $3,000]*
  - Extra tutoring lessons are offered for students, with a cost of $5 in materials, taught 4 times per day, for 180 lesson days per year *[cost savings of $5 savings/lesson * 4 lessons/day * 180 days/year = $3,600]*
- **Net Cost after savings = $86,800 – ($3,000 + $3,600) = $80,200;** a good candidate will immediately note that this is almost 3x the size of the budget for this initiative; strong candidates might point out that the benefits of the initiative are uncertain and will suggest ways to reduce the cost further by scaling down the initiative, including a potential pilot program, leading into Exhibit 3

Question 2: Pilot Program

Prompt

If the candidate does not get there themselves, guide them to thinking about a pilot program – once suggested, give them the following prompt: "**The school is considering running a pilot program with only Grade 8. What do you think about this, and what benefits do you think this would have?**"

Guidance & Math Worked

Candidate should scale down math for only one year of the school

- 200 kids + 7 teachers (approx.) = 207 headsets
- **Total cost = 207 headsets * $140/headset = $28,980**
- Ignore previous cost savings

Math should show that moving the program to only Grade 8 places it within budget, and viable for implementation. Candidate should also highlight various qualitative benefits to the pilot program – these can include:

- Understanding pain points of the program, and smoothing these out
- Creating some experience among a subset of teachers for implementation, to help with long term scale up if it proves successful
- Limits the risk if the program is unsuccessful, both financially & reputationally (fewer VR headsets to sell off or repurpose, plus risks of perception of failure)

Recommendation

What is your recommendation to the principal?

- **Recommendation**: Candidate should want to Start AR/VR pilot program with 8th graders.
- **Reasons**: Startup costs are within budget; high potential cost-savings (substitute field trips, less supplies, less teacher hours); able to test capabilities with lower risk; potential to use success to raise more money for expanding the program by applying to grants etc.
- **Risks**: High learning curve and adoption by classrooms could be slow; unknown salvage value if program does not work, wasting money that could have gone elsewhere
- **Next Steps**: Establish metrics for evaluating the success of the pilot program; do more research into headsets and usage; develop some training and educational resources around AR/VR; try to get a partnership or discount with AR/VR company

How Do I Get Ranked?

Industry
Higher Education

Quantitative Difficulty
Medium

Qualitative Difficulty
Medium

Concepts Tested
Strategic Moves; Human Capital Strategy; Graphical Interpretation

Written by
Bikesh Dahal ’24
Shreya Arora ’25

Case Introduction

Prompt

You have been hired as a consultant by the president of a leading university. The university has consistently ranked among one of the leading research universities in the U.S. However, with the market demand for AI, robotics, and climate professionals increasing, the president is worried that the university is behind other top universities in STEM. The president would like your help in developing a long-term strategy to boost its STEM rankings. What are some of the key initiatives the university should take to succeed?

Clarifying Questions (to be provided if interviewee asks)

- **What is the universities current ranking?** It is currently ranked in the top 25 but would love to move to the top 10.
- **What is the time horizon?** University would like to see steady upward movement to reach its target within 10 years.
- **What metrics decide university rankings?** Guide the candidate to figure this out themselves (through a framework).

Framework

Students

- Learning
  - Develop relevant STEM courses that attract high caliber students: AI, Data science, Computing
  - Offer better learning environment by optimizing teacher/student ratio in classrooms
- Career Resources
  - Form a strong Career Development Office
  - Form a talented team that provides career specific resources to STEM students
  - Engage with alumni in industry
  - Partner with companies and encourage them to offer school specific career events
  - Reveal employment statistics & salaries. Highlight key employers who regularly recruit
- Attract talented students
  - Outreach programs, tapping into the current student body
  - Scholarships

Infrastructure/Resources

- Facilities
  - Build new state of art facilities (including research, labs, libraries, classrooms)
- Speaker series & conferences
  - Host speaker series and invite world renown scientists, engineers, and leaders to attend
  - Host STEM conferences to offer students to network with alumni and industry leaders

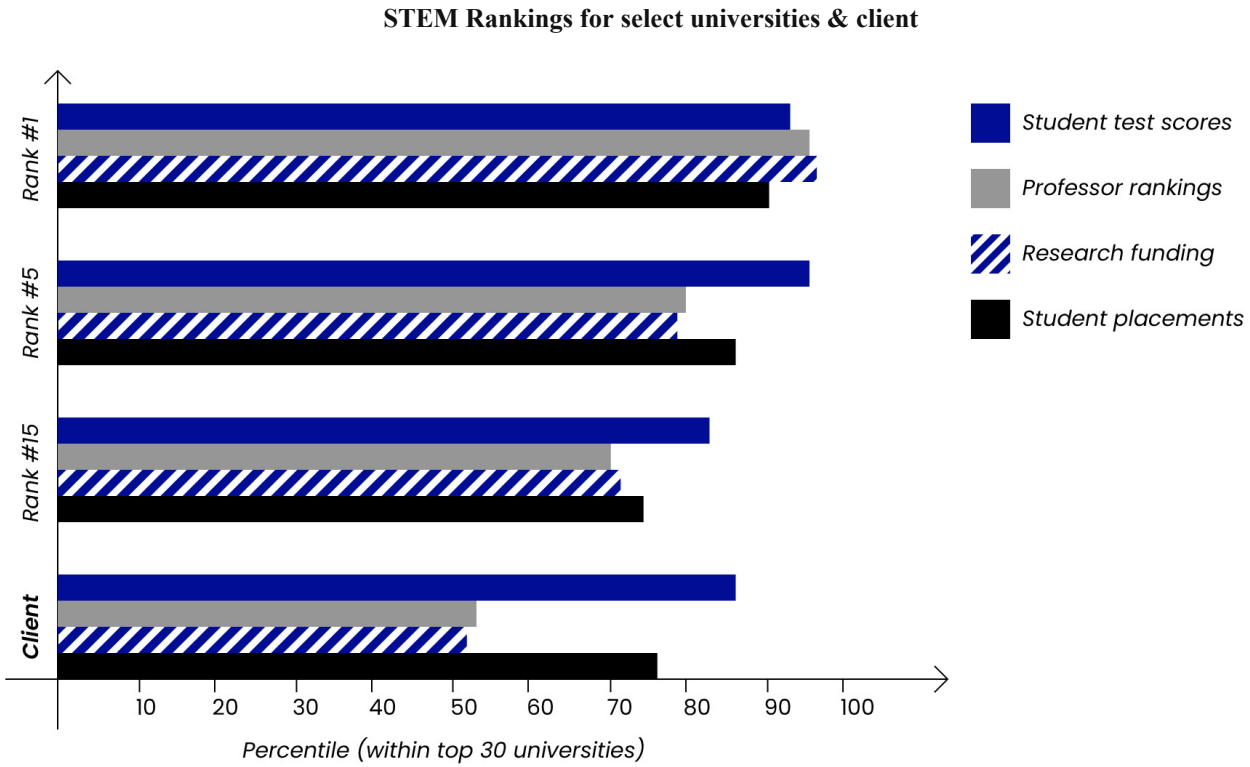
Research

- Build a strong research program
  - Hire Head/VP of research who reports directly to the President
  - Form a strong research team and platform
  - Streamline research application and funding process
  - Hire people to help identify, and target foundations, agencies, and individuals that fund research
- Attract new star professors
  - Target and hire star STEM professors
- Provide resources to professors
  - Help professors bid and win research grants and funds through increased support (grant writing, review, training)

For Interviewer:

- Candidates should build a framework that shows some key metrics needed to boost STEM rankings (Caliber of students, Research funding, Caliber of professors, post college employment, average/median salary of STEM students)
- After the framework, the interviewer should show candidates Exhibit 1. (Great candidates will ask if interviewer has data that shows what factors affect STEM rankings

Exhibit 1


STEM Rankings for select universities & client
Rank #1
Rank #5
Rank #15
Client
10
20
30
40
50
60
70
80
90
100
Percentile (within top 30 universities)
Student test scores
Professor rankings
Research funding
Student placements

Key Insights from Exhibit 1

Guidance

There are two major takeaways a good candidate should be able to grasp from the chart:

- Research funding and professor ranking is a problem area for our client, given that student placements and test scores are relatively high
- Research funding and professor rankings are strongly correlated. This insight should encourage candidate towards the eventual solution, which is attracting star professors
- A good candidate will ask about the school's strategy to hiring star professors and researchers.

Brainstorm

Prompt

Star professors have potential to bring significant research funds to the universities. In addition, these professors also attract high caliber PhD & post-doc students. Combined, this has a potential to significantly boost a university's ranking. However, recruiting star professors is hard. Other universities are also vying for the same talent. What are some of the key factors that professors consider when selecting a university? *Sample answer below, all answers should be structured.*

Finances

- Salary – adjusted for cost of living
- Fringe benefits
- Healthcare, pensions, 401K, life insurance, etc.
- Relocation

Reputation

- What is the reputation of the university? Especially in their field of choice
- Is it highly ranked by peers? What does the industry think about the university
- Are there other esteemed professors at the university?
- Will high caliber students join this department?

Infrastructure

- What kind of infrastructure does the university provide?
- Are their wet labs/dry labs? Are these state of the art?
- What about computing power?

Lifestyle

- What kind of lifestyle does the city provide?
- Would star professors want to come live in this city?
- Does the university have to offer additional benefits to lure professor from other attractive cities?
- Does this city have good schooling/ is it family friendly?

Question 1

Prompt

The university would like to calculate the cost of hiring new professors. What do you think will be the cost of funding the professors for per year?

Guidance

Ask the interviewee to identify the various cost factors needed to hire professors. After the interviewee has identified some key factors (# of professors and tiers, salary, benefits), provide them all other information needed by showing them Exhibit 2. Guide interviewee as needed. DO NOT let the interviewees round the numbers. Make them do exact calculations.

Math Worked & Analysis

Type	Salary	Benefits	Total Cost
Professor	= 6 * $150K = $900K	= 15% * $900K = $135K	$900K + $135K = $1.135M
Associate Professors	= 10 * $100K = $1M	= 15% * $1M = $150k	$1M + $150K = $1.150M
Assistant Professors	= 4 * $80K = $320K	= 15% * $320K = $48K	$320K + $48K = $368K
Total	$2.220M	$333K	**$2.653M + $200K (reloc.)**

- It costs ~$2.7M/yr to hire 20 professors
- It cost an additional $200K in one time relocation cost
- Good Candidates should identify that the cost seems reasonable. Based on the cost of hire, the university should pursue the strategy. They should ask to analyze if the the university can recoup at least some of the costs through the research revenues that the new hires will bring.

Exhibit 2

Market Rates for Academic Hires (by level and benefit)

	Full Professor	Associate Professor	Assistant Professor
Salary	$150k	$100k	$80k
Fringe Benefits	15%	15%	15%
Relocation	$10k	$10k	$10k

Question 2

Prompt

The university believes that an influx of these new hires will attract 5 additional government grants valued at $200K each. Corporate sponsorship, however, depend on professors and their connections. On average, (1) corporate sponsorship brings $700K. Cost of conducting research (hiring PhD's, post-docs, equipment, etc.) is 60%. Therefore, university keeps 60% of all received funding and uses remaining 40% to pay for professor salaries. How many corporate sponsorships do the new hires need to bring for the university to break even?

Math Worked & Analysis

Total funds for salary = $2.653M
$2.653M is 40% of the total funds needed, therefore:
Total funds needed = $2.653 / 0.4 (allow rounding to 2.6 only)
≈ 2.6 / 0.4 = **$6.5M**

Funds from grants: $200K * 5 = $1.0M, so this can be subtracted

Remaining funds needed = $5.5M
# of corporate sponsorship needed = $5.5M/$700K = 7.86 ≈ **8**

The math here should be easy to set up, but guide candidate as needed. If candidate does not know breakeven analysis, the case is dead. Allow candidate to round and ask them to ignore relocation. The professors/university needs to bring at least 8 corporate sponsors a year to break even; a good candidate would note that with 20 new hires, adding 8 new corporate sponsors seems very reasonable which means that the new hires will pay for themselves. In addition, the new professors will help attract bright new students and help boost STEM rankings.

Recommendation

The president of the university wants to know where to start…

- **Recommendation**: The university should try to hire star faculty to boost rankings through improving research productivity
- **Reasons**: There is a strong correlation between professor rankings and the research funding a university can attract, which significantly boosts rankings. Our client is already scoring high in other factors, such as student test scores and placements, that influence rankings; improved faculty would round out currently lacking research power.
- **Risks**: There is high competition for professors across the market, so they will have to be attracted with competitive salaries; this investment may not break even if the professors are unable to attract corporate sponsorships.
- **Next Steps**: Conduct a secondary analysis of what star professors look for in universities & focus on professors who have a track record of attracting funding.

Foreign Sounds

Industry
Non-traditional: Music Record Label

Quantitative Difficulty
Medium

Qualitative Difficulty
Medium

Concepts Tested
Market Assessment; Revenue Growth

Written by
Bobby Davis ’25
Norris Blossom ’25
Grant Hufham ’25

Case Introduction

Prompt

Your client is SK Music, a leading Korean Pop (K-Pop) label primarily focused on the East Asian market, with limited Western exposure. SK Music has seen stagnate growth recently and is looking for opportunities to turn things around. Leadership has noticed the success of foreign language artists like BTS and Bad Bunny in the United States and thinks expansion into the country could help to solve their problem.

Our firm has been asked to determine the opportunity for SK Music in the United States and assess whether they should formally enter the market.

Case Introduction

Clarifying Questions (to be provided if interviewee asks)

- **K-Pop competition**: Competition in the US is generally fragmented, with varying degrees of fragmentation based on genre. However, SK Music is the leading K-Pop player in the East Asian market and believes it has the operational excellence to capture share in the US
- **SK Music's current US market presence**: SK Music has a limited presence in the US market via major streaming and video platforms, but has no dedicated US market strategy or team
- **Specific objectives or definitions of success**: SK Music is targeting an annual increase to revenue of 300M USD within a 3-year window. Cost is not a primary concern to SK Music currently
- **The broad K-Pop market**: K-Pop is a globally recognized genre with a significant US fanbase. However, interest in K-Pop has seen limited growth in recent years and SK Music wonders whether there might be additional opportunities to expand in the US via alternative genres. K-Pop has seen most successful pickup via video-based distribution channels
- **SK Music's business model or revenue channels**: SK Music generates revenue through streaming, advertising, concerts, merchandise, and licensing. In terms of business model, it operates as a conglomerate

Framework

Market Attractiveness

- K-Pop Market size
  - Audience base
    - Segmentation by demographics
  - Revenue per-listener
    - Segmentation by revenue stream
- Growth rate
  - Segmentation by audience base and revenue growth
- Competitive landscape
  - Concentration vs Fragmentation
  - Barriers to entry
  - Complementary players (streaming services, social platforms, etc.)

Client Opportunity

- Current Opportunity
  - Estimated market share
    - Segmentation by demographics
  - Estimated revenues
    - Segmentation by revenue stream
- Costs of entry
  - Direct Costs
    - Talent, PP&E, legal
  - Indirect costs
    - SGA
- Future opportunities
  - Grow share
    - New offerings
    - New genres, adjacent products and services

Methods of Entry

- Direct Entry
  - US sub-label with boots on the ground
    - Financial attractiveness
    - Operational attractiveness
  - Korea-based team dedicated to US market
    - Financial attractiveness
    - Operational attractiveness
- Partnership with US label
  - Partner fit
  - Financial attractiveness
  - Operational attractiveness

Client Capabilities

- People
  - Sufficient knowledge of the US market
  - Sufficient talent to exploit opportunity
- Process and Technology
  - Structural and strategic ability to win in US market
- Capital
  - Sufficient capital to execute initial expansion

Case Notes

For the interviewer to read through before proceeding with the case

- Candidate should begin by assessing the total size of the K-Pop market in the US and determine the share that can be captured by SK Music
  - Candidate should identify that the potential revenue available to SK Music is close to, but below, the target. A strong candidate will proactively consider opportunities to grow revenue in the US
- Candidate should brainstorm various ways to grow revenue in the US market
  - Interviewer to guide candidate towards opportunity for SK Music to explore entering a new genre
- Candidate should quantitatively evaluate the opportunity to enter a new genre in the US
- Candidate should recommend moving forward with US expansion contingent on successful implementation of genre expansion strategy

Question 1: Market Sizing

Prompt

The client would like you to assess the potential revenue available to SK Music if it were to enter the US market. What information would you want to know to answer that question?

Guidance

- Candidate to describe their approach to sizing the US market
- Following candidate's description, interviewer should guide the candidate to the metrics/assumptions used in the case, below:
  - 320M US population;
  - 10% of population are K-Pop listeners;
  - Breakout of listener intensity is 20% Active, 40% Moderate, and 40% Minimal;
  - Annual revenue per person by intensity group is $100pp for Active, $30pp for Moderate, and $10pp for Minimal;
  - SK Music's K-Pop penetration share is 20%
- If asked about growth rate, notify that the client is only concerned with the current market size for purposes of this calculation

Question 1: Market Sizing

Math Worked

US Population: 320M
x
K-Pop Listeners: 10%
x
Listener Frequency: Active (20%) // Moderate (40%) // Minimal (40%)
x
Revenue per Listener (annual):
Active ($100) // Moderate ($30) // Minimal ($10)

=
Total US K-Pop Market Size: 640M + 384M + 128M = 1.152B
x
SK Music Market Share: 20%
=
Total US Market Share for SK Music = 230.4M

Guidance

A good candidate should recognize that the market sizing analysis falls short of the $300 million target set out by the client.

A great candidate:

- Will identify potential holes in market sizing assumptions and consider how changes in numbers would change results
- Will identify that growth rates in any of several factors could dramatically change results of the market sizing analysis
- Will push to consider other avenues for the client to achieve the $300 million target and drive the case forward

Brainstorm

What are some ways in which the client could generate additional revenue in the US market, assuming it decides to enter?

Ask only if the candidate does not naturally drive the case towards alternative revenue strategies. Example structured framework below.

	Existing Customers	New Customers
Existing Products	• Increase prices where possible • Negotiate streaming contracts to capture larger share of revenue • Increase number of spending opportunities for fanbase	• Expand marketing and advertising reach • Collaborate with popular artists from other genres • Position musicians in popular TV or Film to increase exposure
New Products	• Podcasts with musicians • Artist meet-and-greets • Brand partnerships (Levis x SK Music) • Develop new artists	• Develop new talent targeting new genres • Enter adjacent industries like Film or TV

(Optional) Question 2: Genre Expansion

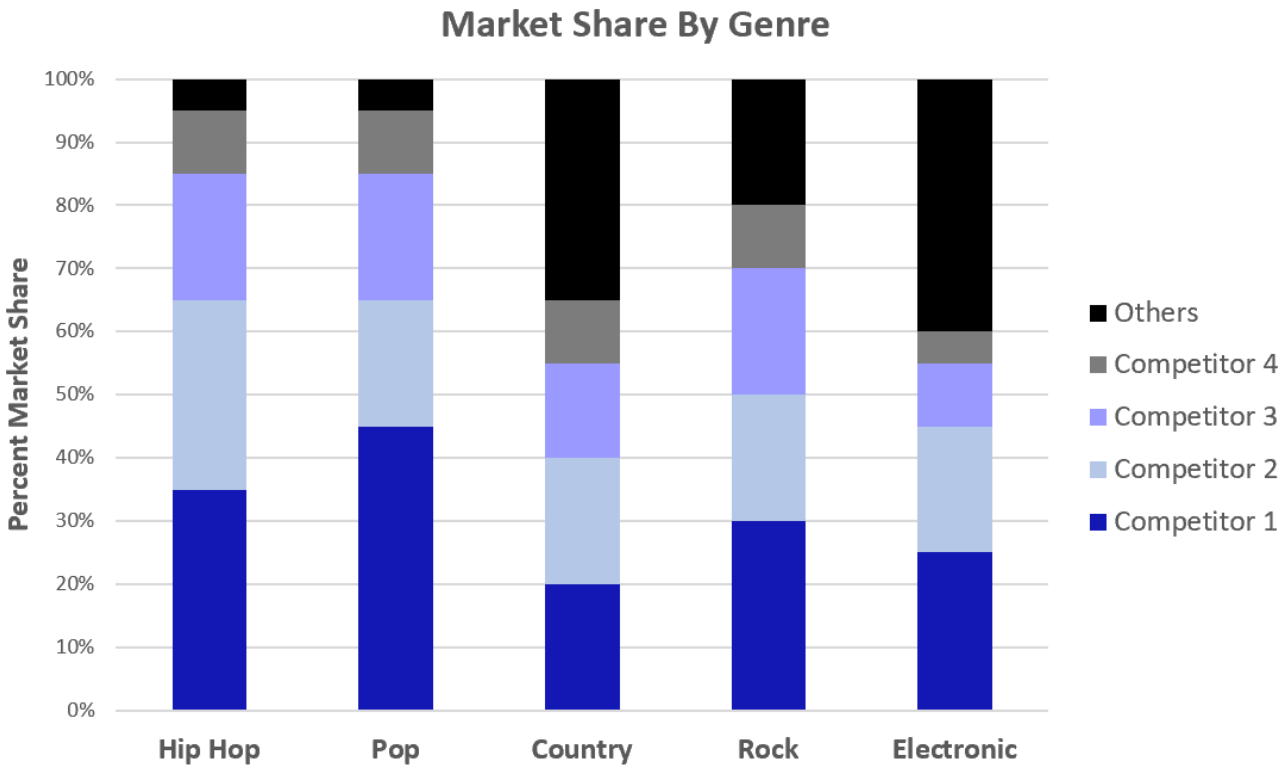
Prompt (only if time allows)

The client is considering creating a US sub-label producing artists of a new genre to supplement its current K-Pop offering. The client would like your help in determining the best genre to expand into.

Guidance

- Share Exhibit 1. Note that "Other" indicates 5+ players
- Once candidate assesses Exhibit 1, share Exhibit 2
- Note that the client can only feasibly consider expansion into one genre

Exhibit 1


Market Share By Genre
Percent Market Share
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Hip Hop
Pop
Country
Rock
Electronic
Others
Competitor 4
Competitor 3
Competitor 2
Competitor 1

Key Insights for Exhibit 1

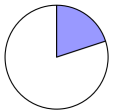
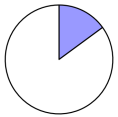
Analysis

Candidate should identify that Country and Electronic markets are most fragmented.

Guidance

- Excellent candidates will recognize that the market size, growth rates, and penetration rates are needed to further assess each genre's attractiveness
- Share Exhibit 2 following discussion of Exhibit 1
- Note that growth rate in Exhibit 2 is the entire growth over the 3-year period, so compounding effect does not need to be calculated

Exhibit 2

	Hip Hop	Pop	Country	Rock	Electronic
US Market Size	4.5B	6B	2B	3B	2.5B
3-Year Growth	10%	10%	5%	0%	10%
SM Potential Share	1%	2%	5%	2%	5%
Sonic Overlap with K-Pop					

Solution for Exhibit 2

	Hip Hop	Pop	Country	Rock	Electronic
US Market Size	4.5B	6B	2B	3B	2.5B
3-Year Growth	x (1+10%)	x (1+10%)	x (1+5%)	x (1+0%)	x (1+10%)
SM Potential Share	x 1%	x 2%	x 5%	x 2%	x 5%
SM Opportunity	49.5M	132M	105M	60M	137.5M

Key Insights for Exhibit 2

Analysis

- Candidate should calculate expected value in 3 years for each genre by multiplying Market size * (1+ growth) * SK potential share
- Result is that Pop and Electronic are most attractive, followed by Country

Guidance

- Candidate should recognize that Country is a bad sonic fit and discard it
- Candidate should develop logic behind expanding into Pop or Electronic
- Following discussion, move candidate to provide their final recommendation

Recommendation

The board at SK Music has invited you to Seoul for your opinion…

- **Recommendation**: The client should enter the US market with K-Pop while simultaneously expanding into Pop or Electronic genre
- **Reasons**: Total expected revenue gain of approximately 230M + 135M = $365M, $65M above the target 3-year number
- **Risks**: Success of entry is uncertain; competition is likely; market is unpredictable; cannibalization is possible
- **Next Steps**: Map out entry strategy; firm up numbers and consider K-Pop growth rate; determine costs of entry

Spruce Up Fir Real

Industry
Retail

Quantitative Difficulty
Medium

Qualitative Difficulty
Medium

Concepts Tested
Profit Calculations; Brainstorming; Interviewer-led

Written by
Danning Gu ’24
Ayushi Kumar ’25

Case Introduction

Prompt

Frosty Tree Farm is a traditional 120-acre Christmas tree farm in Connecticut. Their current customers are big box retailers like Home Depot. Although the industry is experiencing slow growth in general, Frosty has been struggling with declining profitability in recent years. The owner has approached your team to find out why the farm has been struggling and suggest ways to bring the farm back to life.

Clarifying Questions (to be provided if interviewee asks)

- It takes approximately 7 to 10 years for a Christmas tree to reach the typical retail height of 6 to 7 feet.
- Frosty has a wide variety of trees (Fraser Fir, Douglas Fir, Concolor Fir, White Pine, White Spruce & Blue Spruce). For the case, assume that there's no difference among the different types.
- The harvest season begins in late October and run until Christmas
- The farm has been in operations for the past 50 years

Question 1

Prompt

What are some of the factors that could have caused the profitability decline?

Interviewer should note that this is an interviewer-led case and should not let the candidate take time to create a framework. The sample answer below is essentially the framework they will need.

Farm Operations

Revenue

- Pricing at retailers
- Product mix (height & packaging of trees)

Cost

- Fixed cost (real estate, equipment & infrastructure, marketing & advertising, insurance, labor cost etc.)
- Variable cost (seedlings, fertilizers, water & irrigation, shipping costs etc.)

Market

- Overall economic conditions
- Change in consumer preference (customers may prefer eco-friendly options)
- Increasing competition (plastic tree vs real tree)

Environmental

- Climate change (e.g., frost, drought or excess rainfall)
- Pest & disease outbreak
- Changes on environmental policies

Question 2

Prompt

Given Exhibit 1, why do you think Frosty Tree Farm is lagging its competitors?

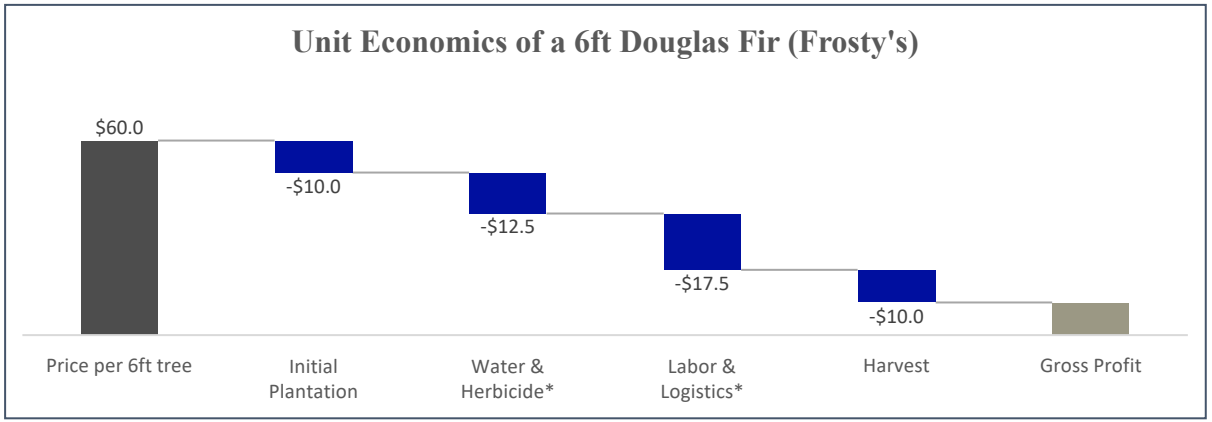
Guidance

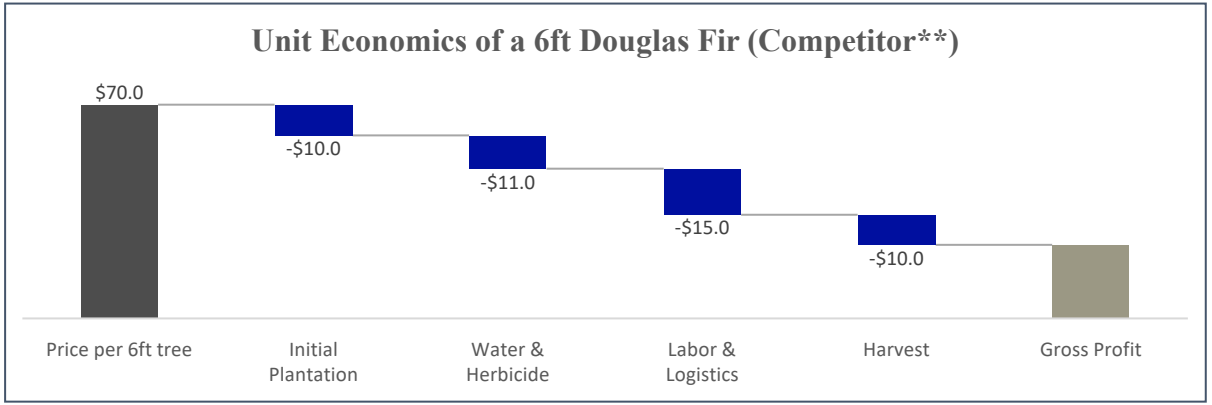
- A good candidate should recognize that this is a gross profit waterfall chart, and should proceed to do a quick calculation to compare between Frosty Tree Farm ($10) and competitors ($24) gross profits
- The candidate should highlight that Frosty Tree Farm is lagging competitors in unit revenue, water & herbicide cost, as well as labor & logistics
- From the additional information, candidates should recognize that U-cut model is likely more profitable than the current wholesale model of Frosty Tree Farm – this should be incorporated in the final recommendation

Clarifying Information, if asked

- Initial plantation is incurred in Y0, while harvest is incurred in Y6.
- Water & Herbicide, Labor & Logistics are incurred Y1-Y6; numbers quoted are total costs incurred throughout the 6 years.
- Assume the competitor represents a typical Christmas tree farm in New England

Exhibit 1





** Water & Herbicide and Labor costs are incurred annually; assume flat distribution across 6 years*

*** The competitor mainly uses a U-cut model, where they let customers choose their trees directly instead of selling to wholesalers*

Question 3

Prompt

Given the unit economics of a Christmas tree in Exhibit 1, could you estimate what is the annual gross profit of Frosty Tree Farm?

Information to be shared

- The farm is 120-acre (shared during prompt). Assume they plant 1,000 trees per acre. Assume all trees survive.
- Assume all trees are sold at 6-feet after six years since plantation. Therefore, every year the farm sells 1/6 of their entire crop.

Guidance & Math Worked

- Calculate gross profit per tree: $60 – $10 – $12.5 – $17.5 – $10 = $10/tree
- Estimate number of trees sold per year: 120 acres * 1000 trees / acre * (1/6) = 20,000 trees sold / year
- Estimate gross profit for tree farm: $10/tree * 20,000 tree = $200,000

Question 4

Prompt

The farm is now considering an option to let the tree grow for another year to sell it for $67.5 at 7-ft tall. How much more can they make per tree? What are the risks?

- Consider discount rate of 10%
- If the candidate asks – there's no need to consider that the farm will only sell 1/7 of its crop as this question is only about unit gross profit

Guidance & Math Worked

- Variable cost incurred for one year is the sum of water, herbicide & labor (found in previous graph): ($12.5 + $17.5) / 6 = $5
- If selling at 7-ft next year, discounted additional profit = ($67.5 - $60) / (1+10%) = $6.8
- Therefore, $1.8 additional gross profit
- Risks include climate risks, consumer / retailer preferences, competitor response, etc.

Question 5

Prompt

How can Frosty Tree Farm improve their profitability?

Guidance

This question should read as a brainstorm, and candidate should accordingly provide structure in the answer.

- Revenue
  - Tree related: Expand product selection; online sale & marketing; U-Cut – let customers pick their own trees
  - Non-tree related: Christmas / Halloween market; Bed & Breakfast; explore other industries like construction (e.g., gravel & sand) during the non-active months
- Cost
  - New irrigation technology; invest in reservoirs
  - Invest in automation equipment to cut down labor cost (e.g., drones to transport tools & products)
  - Anything else that make sense (interviewer discretion)

Plant-Powered Gains

Industry
Private Equity, CPG

Quantitative Difficulty
Easy

Qualitative Difficulty
Hard

Concepts Tested
Market sizing; Growth projections; Complex exhibits

Written by
Dorothy Chen ’24
Advesh Jalan ’25

Return to index

Case Introduction

Prompt

Our client, Yale Capital, is a large private equity firm that is considering buying Alt Meat, the fourth biggest meat substitute company in the United States. Yale Capital wants our help in assessing what the revenue growth for Alt Meat could look like over the next 5 years taking sustainability considerations into account.

Clarifying Questions (to be provided if interviewee asks)

- What are the sustainability targets of Yale Capital?
  - They don't have a quantitative target and are open to ideas on measuring sustainability impact.
- Do they only produce meat substitutes or have other alternative products (dairy etc.)?
  - Only meat substitutes for now.
- What is the estimated timeline of investment?
  - 5 to 7 years.
- When are they looking to make the investment decision?
  - As soon as possible.

Framework

Alt Protein Market in the US	Competitive Dynamics	Consumer Preferences	Sustainability Considerations
• Market Size • Top-Down • Bottom-Up • Growth Trends	• Number of Competitors • Market share of Alt Meat • Growth trends of competitors compared to Alt Meat • Competitive Advantages of Alt Meat	• Traditional Meat vs Alternative Protein • Primary considerations while purchasing • Differences across demographics, products, or geographies	• Life cycle analysis of the product

Question 1

Prompt

How would you approach sizing the plant-based meat market in the US?
Provide information as asked by the candidate. Showing the exhibit is optional.

Guidance & Math Worked

- A top-down approach would start with the size of the meat industry and its growth percentage followed by the portion addressable by plant-based meats and the proportion that can be captured by Alt Meat.
- A bottom-up approach would look at households and restaurants. Retail stores can be used as a proxy for household consumption. The analysis would be number of units * sale price per unit.
- Let the candidate explain their approach, and then encourage them to use the bottom-up calculation.

Total Addressable Market
= (75k x 9k) + (90k x 19k)
= 675M + 1710M
= 2385M = 2.385B

Market in 5 years
= 1.05 x 2.385 = ~2.5B *OR*
= 2.385 + 0.05 x 2.385 = ~2.5B

Exhibit 1

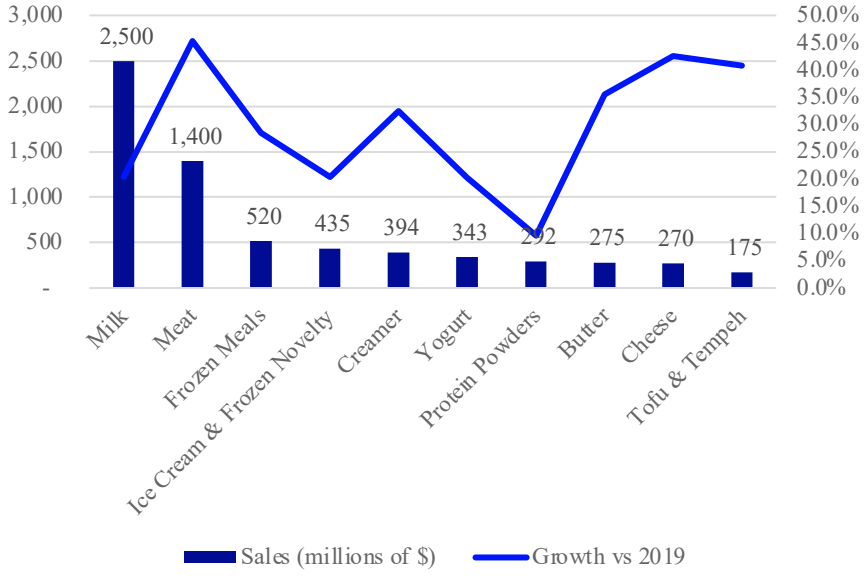
Market Summary for Plant-Based Meat-Purchasing Establishments

	Number of Establishments	Average Annual Sales per Establishment
Retail Stores	75,000	$9,000
Restaurants	90,000	$19,000

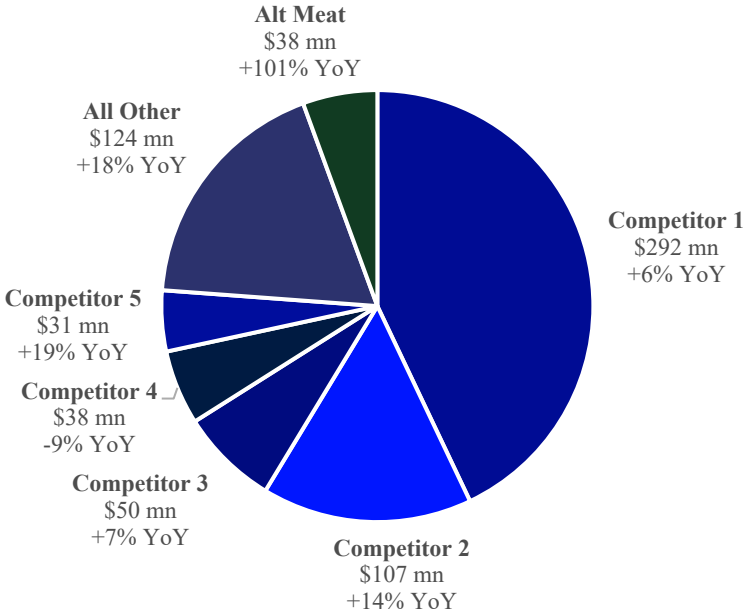
Note: The population in the US is expected to grow by 5% over the next 5 years.

Exhibit 2

Sales and Growth from 2019 of plant-based meats and dairy products in the US in 2020



Meat Alternatives (Dollar Sales, % Change YoY)

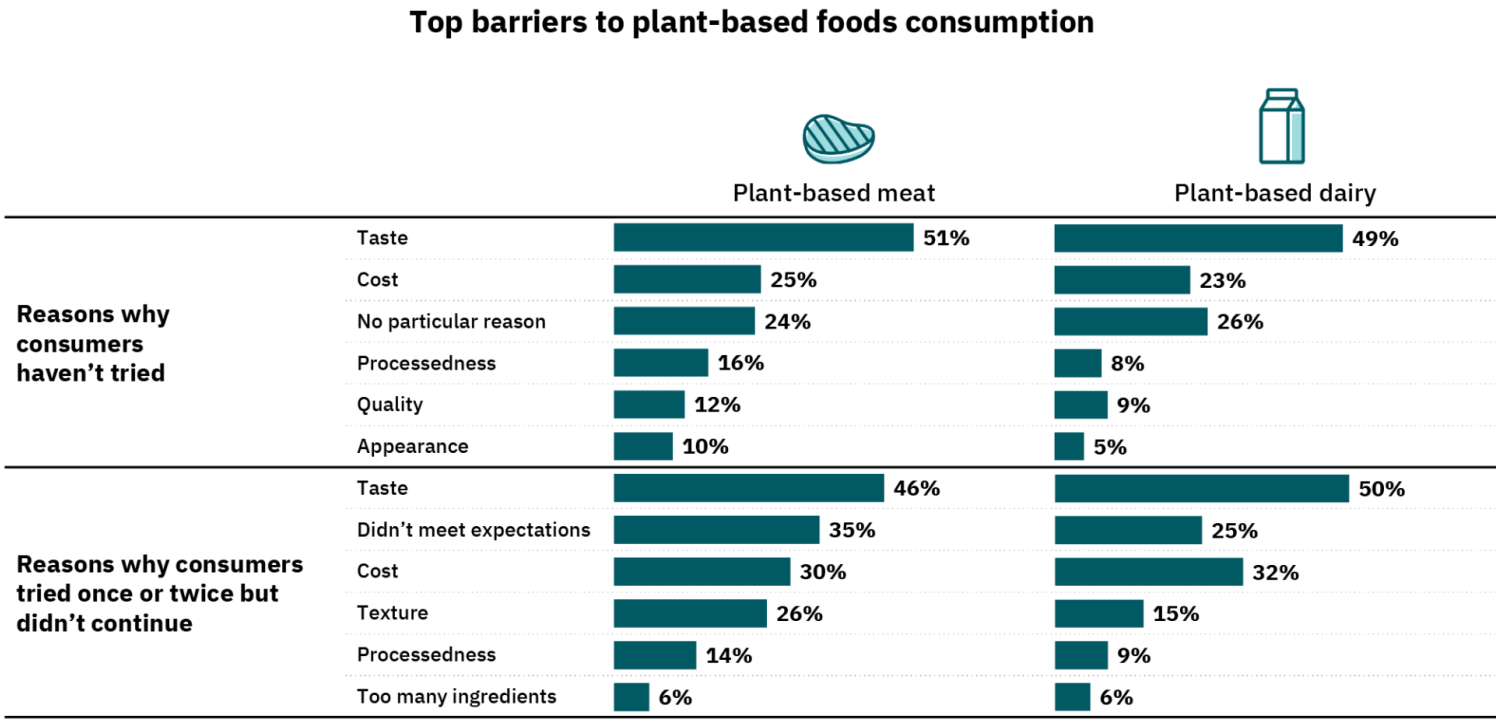


Key Insights from Exhibit 2

Guidance

- The candidate should notice that the plant-based meat market is worth $1.4B at the time of the case and had a 45.3% YoY growth, compared to Alt Meat which grew by 101% YoY.
- **Follow-up questions to ask the candidate:**
  - Why do you think the size of the meat market here is different from that calculated in Exhibit 1?
    - Answer: It's the total addressable market vs what's being captured right now, i.e., there is whitespace and opportunities for it to be captured.
  - Is Alt Meat's advantage sustainable over time?
    - Answer: Candidate should ask to see consumer preference data and ask for Alt Meat's differentiating factors.
- Provide Exhibit 3 and give the information that based on consumer survey data, Alt Meat tastes better and uses healthier ingredients than its competitors.

Exhibit 3



Source: FMI, The Power of Plant-Based Foods and Beverages 2022

SPINS gfi Good Food Institute

Key Insights from Exhibit 3

Guidance

- The candidate should notice that taste is the primary consideration factor for consumers. They should tie is back to Alt Meat's competitive advantages.
- Good candidates will notice that consumers place an excess emphasis on quality and processedness when buying plant-based meat compared to plant-based dairy. They should tie it back to Alt Meat's focus on healthier ingredients.
- **Follow-up question: How do you think Alt Meat can accelerate growth over time?**
  - A wide range of ideas are acceptable. Ideas should try to address primary consumer concerns.
  - Some reasonable responses include but are not limited to investing in R&D for improving taste and texture, offering free samples in grocery retail stores, improving branding around health, and playing up sustainability benefits.
  - A strong candidate would talk about improving the product mix to cover different types of meats, and entering the frozen food segment where competition with traditional meat is lower.

Brainstorm 1

What non-financial considerations and risks are important to consider before PE makes a final decision?

This answer could go many ways but should remain structured. An example is below:

- Policy Risks
  - Governmental regulations
  - Subsidies for traditional meat products
  - Meat industry lobbying
- Consumer Risks
  - A cap in consumer willingness to try plant-based meats
  - Consumer preference for newer innovative products like cultivated meat

Brainstorm 2

How would you measure the environmental and sustainability impact of Alt Meat?

Candidate could give answers ranging from carbon emissions to water usage to Scope 1/2/3 emissions. Answers should remain structured, such as in the example below.

- Lifecycle analysis of traditional meat and Alt Meat products. This includes emissions through:
  - Inputs: Ingredients, land, and water use. Includes crops fed to animals in producing traditional meat, preservatives, and fertilizers.
  - Process: Enteric emissions from animals, processing plant and equipment, electricity (scope 2 emissions).
  - Waste management: Waste disposal and emissions over degradation time.

Recommendation

Yale Capital's CEO is on the phone. Please provide her with a summary of our findings so far.

- **Recommendation**: The candidate should talk about the total market size and the whitespace realized.
- **Reasons**: They should highlight the competitive position of Alt Meat in light of consumer preferences and its revenue growth prospects relative to the overall plant-based meats sector. They could also mention the sustainability considerations.
- **Risks**: The candidate should mention risks of having only done a short-term financial analysis including several assumptions along with 1-2 non-financial considerations/risks.
- **Next Steps**: Next steps could include conducting a more robust financial analysis and quantifying lifecycle emissions for Alt Meat.

Excellence Corporation

Industry
Energy/Utilities, Digital

Quantitative Difficulty
Medium

Qualitative Difficulty
Hard

Concepts Tested
Strategic Cost Reduction; Opportunity Comparison; Cost-Benefit Analysis

Written by
Shivansh Chaturvedi ’25
Rohit Gupte ’25

Case Introduction

Prompt

Excellence Corp is the country's largest electric parent company and largest electric utility operator in the US. Excellence's Utilities companies are distributed across 6 states, serving over 8 million customers. With the increasing costs of purchasing energy from generators, and given that utility pricing is regulated, Excellence is looking to reduce the cost of operating its utility businesses and has hired you to help it determine the best places to cut costs across the organization.

Clarifying Questions (to be provided if interviewee asks)

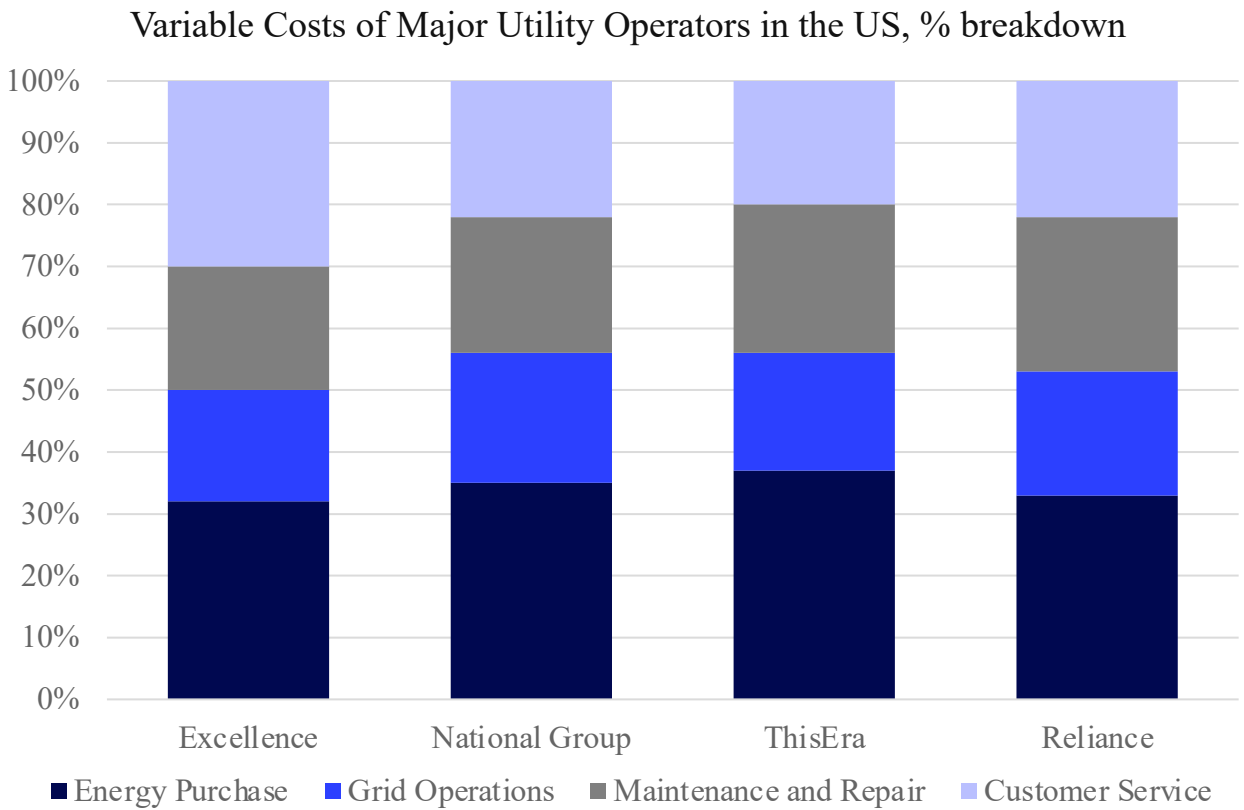
- **Operations**: Excellence buys energy from one supplier, which has been negotiated to be as low as possible. All of Excellence's utility companies buy energy and sell at the same rate, there are no arbitrage opportunities
- **Competitors**: Excellence is a utility, so candidate should recognize that there are no true competitors (natural monopoly); there are, however, comparable companies in other states
- **Revenues/Costs**: Revenues come from electricity bills; Excellence has various fixed and variable costs; if asked, tell candidate we will discuss costs more closely after they provide a framework of how they will approach the problem
- **Timeline/target**: Management wants a long-term solution; at least $3 million per year in cost reduction

Framework

Cost Breakdown	Industry Comparison	Costs/Benefits, Risks
• Interviewee should suggest investigating breakdown of Excellence Corp's costs • Prioritization of areas that can be reduced • Breaking this down into fixed and variable costs is ideal	• Interviewee should think about looking at other utility companies to compare cost structures relatively • After identifying the best areas of the cost structure to target for improvement, suggesting steps and methods to reduce costs	• Interviewee should opt to calculate the impact of the suggested improvements and how it compares to the current costs • Detailing risks for each option is also positive

- *Note to interviewer: try and let the candidate take guesses throughout the case, only guiding them when they have exhausted their options. This case should be a process of exploring all avenues if necessary.*
- If the candidate's framework is only FC/VC, ask them to think more about how they'd identify which ones are higher than normal, to get them to ask for industry comparisons
- After candidate gives a framework, ask them where they'd like to start; if they do not start with cost breakdown or benchmarking, encourage them to do so by saying that our team has collected industry research on variable costs across the industry; show Exhibit 1.

Exhibit 1


Variable Costs of Major Utility Operators in the US, % breakdown
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Excellence
National Group
ThisEra
Reliance
Energy Purchase
Grid Operations
Maintenance and Repair
Customer Service

Key Insights for Exhibit 1

Guidance

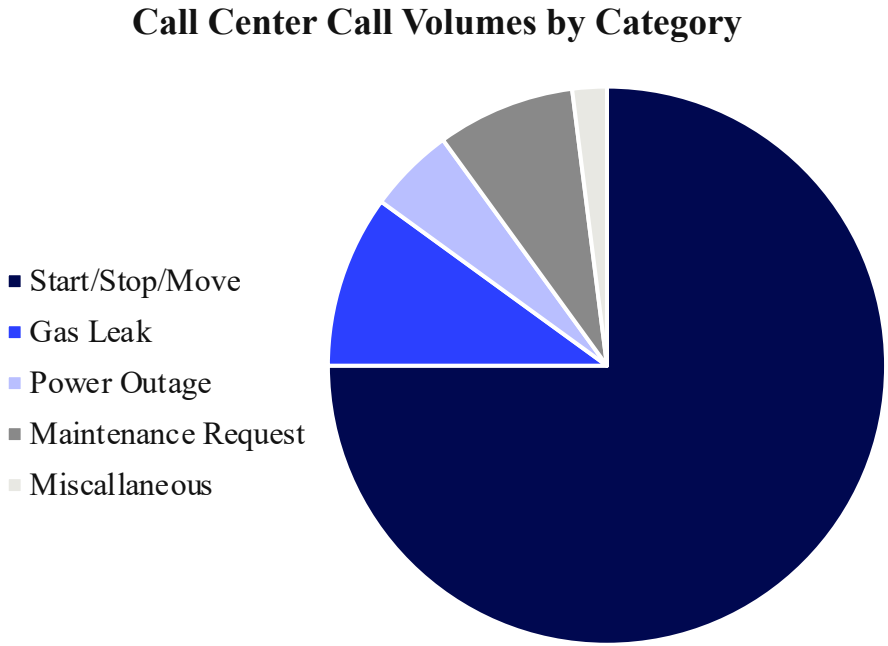
- Explain that fixed costs cannot be changed in the short term (takes many years to change utility infrastructure), so variable costs will be the focus.
- The variable costs are energy costs (purchasing), maintenance and repair of infrastructure, grid operations (cost of keeping the system running), and customer service (call center operations, billing, and meter reading)

Analysis

- Interviewee should note that Exhibit 1 shows that Excellence's cost of customer service is significantly higher in comparison to other utilities: almost 30%, compared to 20-22% for other companies.
- **A good candidate should want to explore the structure of customer service at Excellence: they should ask what makes it different that the other utilities.**
    - If asked, explain to that Excellence uses in-house customer care through a call center to answer calls and help customers start, stop or move service.
    - If candidate does not go to ask about customer service, guide them to think of why Excellence's customer service costs are such a high percentage. Once candidate asks about call centers, give them Exhibit 2.

Exhibit 2

Excellence Call Center Operations Details (2023)	
Number of calls (in millions)	2.4
Average call length	8 min
Call center charge per hour of call time	$25



Key Insights for Exhibit 2

Guidance & Math Worked

- Exhibit 2 gives the interviewee details on the operations of the call center
- Interviewee should note that start/stop/move calls are the highest volume
  - If asked for detail on what this category is, tell them that it is when customers call in to the call center to ask to start or stop their electric or gas service when they move
  - Inform them that Excellence hires more call center workers than any other utility company due to the demand they face from customers calling to start or stop their service
- A good candidate should try to determine how much it costs to operate the call center, and how much of that is start/stop/move-related calls.
- Math:
  - Total cost: (2.4 million calls * 8 minutes per call * $25 per hour) / 60 = $8 million/year
  - Start/stop/move costs = Total cost * 75% of all calls = $6 million/year

Brainstorm

What are ways that Excellence Corp can reduce the costs associated with Start/Stop/Move related services at its call centers?

- Answer should be structured into categories or buckets. Examples of solutions could be:
  - Non-digital:
    - Outsourcing the call center operations abroad (can't do because of regulations)
    - Changing to fixed salary vs. per-hour cost (union rules / employment contracts make this difficult)
  - Digital:
    - Having a chatbot
    - Automated phone system
    - Building a web platform/app (encourage candidate to explore this idea)
- If candidate does not go towards app, tell them that our firm's digital arm has suggested a transformation: building a mobile and web app that allows customers to start, stop or move their utility service.
- Once candidate discusses app, show them Exhibit 3 – an email from our firm's digital arm.

Exhibit 3

RE: Excellence Digital Transformation Project – Proposed Team & Cost Structure
Please find attached approximate team structure and cost per resource for the proposed transformation project. We believe this project will take 13 months with all resources billing.

Resource	Count Needed	Billing rate per resource per month
Software Engineers	4	$20,000
UI/UX Designers	2	$10,000
QA Testers (offshore)	4	$2,500
Product Manager	1	$25,000
Managing Director	0.25	$60,000
In addition, client will be billed an annual maintenance cost of $500,000 for upkeep.		

Key Insights for Exhibit 3

Guidance & Math Worked

- Exhibit 3 is an email that gives the interviewee the team and cost structure for a digital transformation
- A good candidate should immediately begin to calculate the total cost associated with the digital transformation; if asked about cash, say it is available
- Math:
  - Monthly cost: (4*20k + 2*10k + 4*2.5k + 1* 25k + 0.25*60k) = $150k
  - Total cost: $150k * 13 months ≈ $2 million
- Candidate should mention that going digital will result in large cost savings for Excellence, going from $6 million per year to $500k per year after a one-time expense of $2 million.

Brainstorm

The executives are bought in on the potential cost savings but are wondering about any further considerations of going digital. What can you think of?

- Answers should be structured; example below is pros/cons.
  - Pros:
    - Increase customer satisfaction through no waiting times and nice UI/UX
    - Reduce wait times for those that want to speak to a person
    - Could build more features in the future to tackle other cost streams at low marginal costs
  - Cons:
    - Will require bringing in tech talent if not already available
    - Data and security considerations
    - May have to lay off some call center employees

Recommendation

The CEO of Excellence has walked in, and wants to know what you've found…

- **Recommendation**: Candidate should want to go with digital; candidate should suggest that Excellence Corp should move to a digital program, such as a mobile or Web-based application to handle the start/stop/move services outside of the call centers.
- **Reasons**: Excellence Corp is experiencing high costs for service/operations and moving to virtual services will reduce the cost of call centers from $6 million per year to a one-time cost of $2 million and an annual cost of $500k.
- **Risks**: Reduction of human touch points may change the experience of customer service; potential difficulties in initiating IT infrastructure due to lack of experience with building such applications; data and security considerations; may require layoffs at the call center
- **Next Steps**: Investigate web/mobile app development resources; scope out work to build the IT infrastructure; formulate a transition plan to move this specific service from call center to the app; and investigate human resource or workforce reduction implications

Battery Co.

Industry
Private Equity

Quantitative Difficulty
Hard

Qualitative Difficulty
Hard

Concepts Tested
Valuations; Synergies; Complex Math

Written by
Fabio Kammler ’24
Katherine Wong ’25

Case Introduction

Prompt

Our client is Whitney Avenue Capital, a leading U.S. private equity firm. Whitney Avenue invests in a variety of industries, ranging from tech to consumer goods and heavy industry (mining). They are considering acquiring Battery Co, a Connecticut-based provider of energy storage solutions with a mission to help drive a lower-carbon future.

Whitney Avenue Capital engaged us to help answer two questions:

- What is Battery Co worth?
- Should Whitney Avenue Capital acquire Battery Co?

Case Introduction

Clarifying Questions (to be provided if interviewee asks)	
What is the motivation for the deal?	Maximizing investment value, along with some other fund considerations as brainstormed.
Fund constraints? Tax incentives?	No need to worry about hurdle rates, taxes, fund structure, holding periods, or specific return targets.
Geography?	Fine to assume current business is U.S.-based, expansion up to you.
Other bidders?	For simplification, sufficient to assume non-competitive bidding process with no pressure to transact.
Valuation method?	Up to you, can use sensible multiple or discount rate, to be discussed later in the case.
Fund expertise?	Mostly capital allocator, some functional expertise they will try to use.
Who does Battery Co sell to?	Some B2B (larger modules for industrial clients), some B2C (smaller modules for residences).

Framework

- ***Ask**: "What are key considerations when a private equity fund makes an investment decision?"*
- If candidate does not touch on all three areas, push them to think more
- Strong candidates might develop a "What you have to believe for something to be a good investment" checklist

Market	Target	Fund
• Size? • Growth? • Competition? • Fragmentation? • Pen stroke risk?	• Customer sentiment? • Growth? • Right to win? • Management team? • Financials? Profitability? • Right to enter other segments?	• Investment thesis? • Success metrics? • Investment length? • Fund size relative to acquisition? • Transferrable experience? • Customer reaction to PE entry?

Exhibit 1: Financials

Item	Value
Total units sold	20K
Share of B2B modules (quantity)	*10%*
Share of B2C modules (quantity)	*90%*
SG&A	$120M
Building-related expenses (e.g., leases, energy costs, depreciation, machines)	$70M
Licensing fees	$22M
Salaries	$50M
COGS per unit B2C battery	$6K
Variable cost per B2C battery (excluding COGS)	$3K
Gross margin per B2C battery	30%
COGS per B2B battery	$800K
Variable cost per B2B battery (excluding COGS)	$100K
Price per B2B module	$1M
Units serviced per year	20K
Average cost per serviced units (e.g., wage, materials)	$5K
Average service fee per serviced unit	$10K

Key Insights for Exhibit 1

Math Worked (Costs & Revenues)

B2B

- Volume: 20K * 10% = 2K
- Revenue: 2K * $1M = $2B
- Variable Cost: ($100K + $800K) * 2K = $1.8B
- Profit contribution: $2B - $1.8B = $200M

B2C

- Volume: 20K * 90% = 18K
- *Formula for Gross Margin:*
  Gross Margin = (Revenue – COGS) / Revenue
- Revenue per unit: $6K / 30% = $18K
- Revenue: $18K * 18K = $324M
- Variable Cost: ($6K + $3K) * 18K = $162M
- Profit Contribution: $324M - $162M = $162M

Service

- Contribution Margin: $10K - $5K = $5K
- Profit Contribution: $5K * 20K = $100M

Fixed Costs

- Total fixed costs: $120M + $70M + $22M + $50M = $262M

Key Insights for Exhibit 1

Math Worked (Valuation)

Item	Value
B2B	+$200M
B2C	+$162M
Service	+$100M
Fixed Costs	-$262M
Total Profit	**$200M**
Candidate should make assumptions about the below	
Discount Rate	~5-10%
EBITDA Multiple	~10-15x
Valuation	**~$2-4B**

Discussion

Ask: *"What is the company worth?"*

- Help guide to solving for profit / net income, if needed
- Ignore tax / subsidy impact for simplicity
- Validate sensible valuation methods, then give Whitney Avenue Capital's valuation of $2.8B

Provide: *"The seller is asking for $3B. What do you think we should do?"*

- Strong candidates might drive to "we should only acquire if we can make improvements to the business"

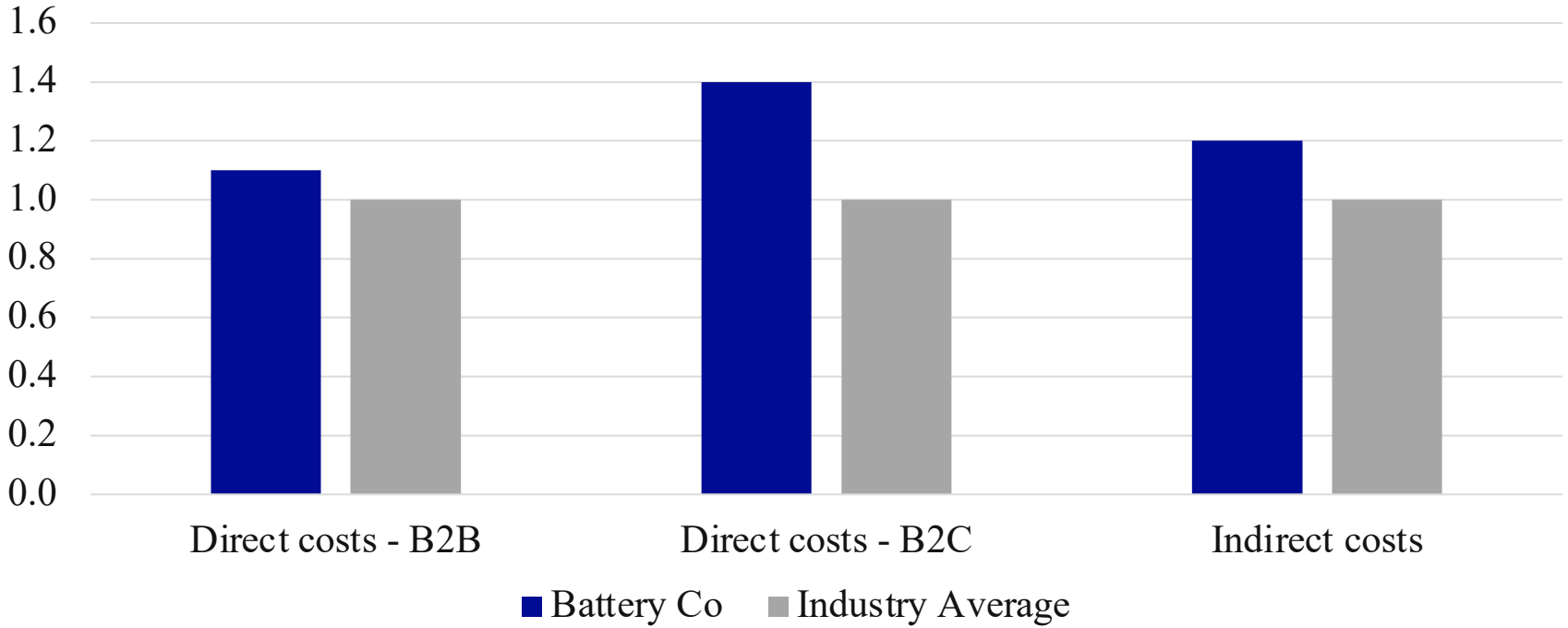
Brainstorm

What are potential ways to increase revenues at Battery Co?

- Candidate should be specific about potential actions, as well as structured in approach
- If candidate does not qualify proposed approaches by difficulty, push them to do so
- Strong candidates might develop a MECE framework with little (e.g., <30 sec) time to think; example below

	Existing customers	New customers
Existing product offerings	• **Low difficulty** • Bundling, pricing changes, volume discounts • Investment in sales force (e.g., on-shore vs. off-shore?)	• **Medium difficulty** • Investment in sales force and marketing (e.g., conferences, outbound marketing) • Expansion of geographical footprint (other regulation friendly countries?)
New product offerings	• **Medium difficulty** • Investment in R&D (e.g., new technologies and chemistries) • Move into adjacencies (e.g., installation, solar panels)	• **High difficulty** • Investment in R&D and sales force (e.g., self-development, grid services) • High-risk, significant thought regarding right to play and right to win required • M&A

Exhibit 2: Cost Benchmarks



Note: Industry average indexed to 1; for Battery Co, "Direct costs – Service" is 1

Key Insights for Exhibit 2

Exhibit 2 Math Worked (Cost Benchmarks)

Item	Value
Variable Cost - B2B	$1.8B
Delta to Benchmark	10%
Opportunity - B2B	**$180M**
Variable Cost - B2C	$162M
Delta to Benchmark	40%
Opportunity - B2C	**$64.8M**
Variable Cost - Service	$100M
Delta to Benchmark	0%
Opportunity - Service	**$0M**
Fixed Costs	$262M
Delta to Benchmark	20%
Opportunity – Fixed Costs	**52.4M**
Total Opportunity	**$297.2M**

Discussion

- ***Ask***: *"How much money can we save looking at the cost side?"*
- If necessary, remind candidate of current cost bases
- Strong candidate might challenge numbers or wonder whether Battery Co products are comparable to market average
- Candidate should drive to using the synergies (revenue, costs) to arrive at new pro-forma valuation

Key Insights for Exhibit 2

Additional Guidance & Comments

- Candidate should recognize that full realization of cost synergies would allow Whitney Avenue Capital to pay the asking price of $3B.
- No explicit quantification of revenue synergies necessary.
- Candidate should mention risks and that synergy realization (even partial) will be challenging.
- Strong answer would consider potential next buyer and timeline to achieve some of the synergies necessary to justify purchase price.

Recommendation

The CEO of Whitney Avenue Capital has called you in for a decision…

- **Recommendation**: Both "buy" and "do not buy" are valid recommendations as long as rationale is clear
- **Reasons to buy include** company is in a strong position; market dynamics are likely favorable; synergies (especially cost synergies) are apparent and achievable; likely strong lineup of future buyers
- **Reasons to not buy include** nominal valuation is below asking price; company would have to be bought on pro-forma basis; achieving synergies is risky and time-consuming; case did not provide sufficient information on market and competition to give clear buy recommendation
- **Risks**: potential pen stroke risk if subsidies are reconsidered; insufficient information on competitive dynamics / management team in case; overpaying would make achievement of sufficient returns more difficult; achieving synergies would bind significant capacities; fund ability to operationally drive synergy realization is unclear
- **Next steps**: develop view on synergy realization likelihood and tradeoffs; develop 100-day plan; prepare acquisition / source alternative deals depending on recommendation

Yale SCHOOL OF MANAGEMENT

Educating leaders for

BUSINESS & SOCIETY