

Cornell MBA Johnson Consulting Club Casebook 2020-2021

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Practice Cases

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14	Down Under	Profitability	Sports Goods	Deloitte	5	108
15	Munder-Difflin	Profitability	Industrials	Deloitte	5	119
16	Patient Operated Machines	Profitability/ Market Entry	Healthcare	N/A	5	130
17	Cell Phone Manufacturer	Market Share	Manufacturing	BCG	2	140
18	Auto Emissions	Market Share	Industrials	McKinsey	4	147
19	UN Polio	Market Share	Government/ Public Sector	N/A	4	153
20	Potash Co.	Competitive Response	Chemicals	N/A	5	164
21	CPG Acquisition	M&A	CPG	EY OTS	4	171
22	Surgical Robot	M&A	Medical	N/A	3	176
23	Rock Climbing	Go / No Go	Strategy	Bain	4	183
24	iPhat	Market Entry	Tech	N/A	4	190

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Practice Cases

#	Case	Type	Industry	Firm Style	Rating	Pg
25	Wireless Co	Market Entry	TMT	Altman Vilandire	4	199
26	Diabetes Device	Pricing	Medical	N/A	4	209
27	Workplace Insurance Co.	Market Sizing	Insurance	N/A	2	217
28	ERP Systems	Market Sizing	IT	L.E.K.	3	219
29	Vitriolic Wealth	Cost Cutting	Financial Services	N/A	3	221
30	Fin-Tastic	Pricing	Publishing	N/A	3	231

Retail Industry

The retail industry is a sector of the economy that is comprised of individuals and companies engaged in the selling of finished products to end user consumers. Multi-store retail chains in the U.S. are both publicly traded on the stock exchange and privately owned. An estimated two-thirds of the U.S. GDP comes from retail consumption. Therefore, store closings and openings are used as an indicator of how well the U.S. economy is doing overall. In 2016, a significant number of store closings and bankruptcies are an indication of both shifting consumer preferences, and an unsteady economy.

Size of retail industry

Worldwide, total retail sales were more than \$22 trillion in 2014, according to a report from eMarketer.com. In 2105 retail sales were expected to reach \$24 trillion in 2015. Total annual U.S. retail sales have increased an average of 4.5% between 1993 and 2015, according to the U.S. Census Bureau.

Largest Retail Companies

Measured solely by revenue numbers, the U.S. is the undisputed leader of the retail industry. Walmart is not only the largest global retailer, and it is also the largest company of any kind in the world. According to the 2015 Global Powers of Retailing report, 76 of the largest retailing companies in the world are based in the U.S. That's compared to 81 U.S. chains that revenues large enough to qualify them for the 2014 World's Largest Retailers list in 2014. Some of these world's largest U.S. based retail chains operate domestically, but a growing number of the large U.S. retail chains are establishing an international retail presence as well.

Two Methods of Retailing

Brick-and-Mortar Store Retailers – Those engaged in the sale of products from physical locations which warehouse and display merchandise with the intent of attracting customers to make purchases on site.

Non-Store Retailers – Those engaged in the sale of products using marketing methods which do not include a physical location. Examples of non-store retailing include:

Share of Sales by Retail Category

Sector	
Motor vehicle and parts dealers	20.47%
Food and beverage stores	12.81%
General merchandise stores	12.61%
Food services and drinking places	11.65%
Nonstore retailers	9.52% *
Gasoline stations	8.29%
Building mat. and garden equip. and supplies dealers	6.20%
Health and personal care stores	5.89%
Clothing and clothing access. stores	4.78%
Miscellaneous store retailers	2.23%
Furniture and home furnishings stores	2.00%
Electronics and appliance stores	1.91%
Sporting goods, hobby, book, and music stores	1.63%

*Internet shopping, catalog, direct sales, etc.

A Note on Nonprofits

A non-profit organization, also known as a non-business entity, is an organization that has been formed by a group of people in order "to pursue a common not-for-profit goal", that is, to pursue a stated goal without the intention of distributing excess revenue to members or leaders. After a nonprofit organization has been formed at the state level, the organization may seek recognition of tax-exempt status with respect to U.S. federal income tax, known as 501(c) status.

Commonly misunderstood facts about nonprofits

Nonprofits can earn a profit

Nonprofits can make a profit (and should try to have some level of positive revenue to build a reserve fund to ensure sustainability.) The key difference between nonprofits and for-profits is that a nonprofit organization cannot distribute its profits to any private individual (although nonprofits may pay reasonable compensation to those providing services). This prohibition against "private benefit" is because tax-exempt charitable nonprofits are formed to benefit the public, not private interests.

Nonprofits can lobby

Every charitable nonprofit can and should make its voice heard on issues that are important to its mission and to the people or cause the nonprofit serves. As advocates, nonprofits are sometimes required to speak up about policies, laws, and regulations; lobbying by nonprofits is permitted by law. However, tax-exempt charitable nonprofit organizations are NOT permitted to engage in partisan political activity, such as supporting or opposing any candidate for public office. For more information on lobbying, see our advocacy resources.

Nonprofits need to be properly funded

Operating costs, such as paying utility bills, rent, salaries, and investing in office equipment are referred to by a variety of names, including "overhead," "administrative costs," and "indirect costs." While the terminology varies, one thing does not: these costs are essential to delivering on a nonprofit's mission, and have no relation to the level of effectiveness or the outcomes a charitable nonprofit may deliver.

Diversity of funding

Foundation grants represent only a small part of the total amount of dollars contributed each year to the charitable nonprofit community. Private philanthropy, which includes both donations from individuals and grants from private and corporate foundations, represents only 12.3% of the total annual revenue to the charitable nonprofit community, and of that, the majority is from contributions from individuals.

Nonprofits have many paid staff, not only volunteers

According to the Bureau of Labor Statistics, in 2012, nonprofits employed 11.4 million people - that's 10.3 percent of private employment in the United States!

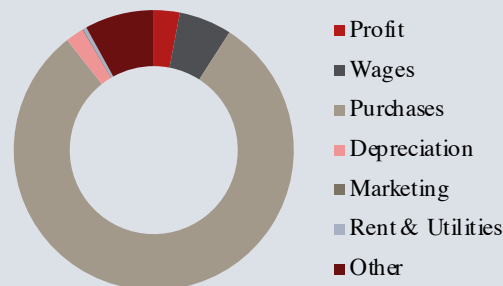
Go to <https://www.councilofnonprofits.org/> to learn more about nonprofit strategies and nonprofit data

Automotive Industry

Revenue Streams

- Vehicle sales
 - Exports – 44.2%
 - Dealerships – 26.1%
 - Wholesalers – 11.0%
 - Rental Companies – 12.2%
 - Government Agencies – 6.5%
- Vehicle financing
- Branding drives sales of similar product at differing price points

Cost Structure (% of Revenue)



Cost Detail

- Generally, companies in this industry perform the final assembly and design of vehicles
- Purchases account for the majority of industry costs at 80.3% in 2017
- Companies contain cost fluctuations by purchasing parts under contract with suppliers, which usually include provisions mandating annual price decreases
- Research and development (R&D) is expected to make up 3.7% of this segment.

Product Segments

- Products and Services
 - Mid-sized Sedans – 40.4%
 - Compact and subcompact cars – 42.5%
 - Luxury Cars – 2.2%
 - Large Cars – 14.9%

Distribution Channels

- Automobile wholesalers - distribute cars to car dealers
- New Car Dealers - Car dealers sell automobiles direct to the public.
- Car Rental - Car rental and leasing companies are significant purchasers of new vehicles

Recent Market Trends

- This industry is mature but decline will be at a lesser rate
 - Midsize and big cars has been contracting
 - Improved production efficiency
- Material costs anticipated to rise
- US dollar is expected to depreciate.
- Over the past five years, consumers have become increasingly concerned with fuel economy

Market Competition

- Moderate market concentration – top four companies account for 40-50% of industry output
- Competition in this industry is medium and the trend is increasing
 - Compete on price, fuel economy, reliability, styling and utility
 - Primary external competitor is SUV and Light Truck industry
 - industry experiences substantial external competition from foreign manufacturers

Economic Drivers

- Consumer Confidence Index
- Demand from new car dealers
- World price of crude oil
- World price of steel
- 10-yr Treasury Yield
- Trade-weighted index

Key Success Factors

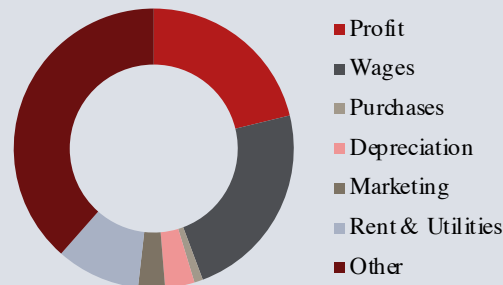
- Strong supply chain links
- Establishment of export markets
- Efficient work practices
- Optimum capacity utilization
- Technology
- Negotiate with workers' union

Commercial Banking

Revenue Streams

- Interest revenue from loan products
 - Real estate loans – 31.3%
 - Commercial Loans – 14.2%
 - Loans to individuals (ex credit cards) – 5.6%
 - Credit card loans – 5.3%
- Non-interest revenue from fees and products
 - Depository services and products – 34.8%
 - Other – 8.8%

Cost Structure (% of Revenue)



Cost Detail

- Loan and lease loss provisions have decreased substantially, while deposits have increased, resulting in increasing profit margins for a short while
- Other expenses includes interest expenses, noninterest expenses, loan and lease loss provisions and miscellaneous costs.
- Miscellaneous (5.5%) include general administrative costs, data processing and technology and telecommunication fees. Noninterest expense (7.1%) include Federal Deposit Insurance Corporation and other deposit assessments. Other noninterest expenses are expected to account for 20.2% of revenue in 2017 and employee benefits account for a large proportion of this category.

Product Segments

- Commercial bank customers include two major markets: retail customers and corporate clients. One-time transactions are under other
 - Retail customers – 48%
 - Corporate Clients – 49%
 - Other – 3%

Distribution Channels

- Bank Branches
- ATMs
- Mobile Banking
- Financial Technology
- Strategic Partnerships

Recent Market Trends

- This industry is mature
 - Well-defined products
 - Consolidation and convergence is increasing
 - Number of employees is stabilizing
- Economy is expected to continue to recover
- As the credit market thaws and interest rates recover from recessionary lows, bank lending is anticipated to rise
- Regulation may dominate the next five years
- Technology will play a significant role in pressuring industry profitability

Market Competition

- Concentration in this industry is low
- The subprime mortgage crisis has caused large-scale merger and acquisition activity
- Competition in this industry is high and the trend is increasing
- Competes with nonbank organizations, such as brokerage houses and commercial and manufacturing companies that offer financial services to facilitate their customers' purchases.

Economic Drivers

- Prime rate
- Aggregate household debt
- Corporate profit
- External competition
- Regulation of Banking Sector

Key Success Factors

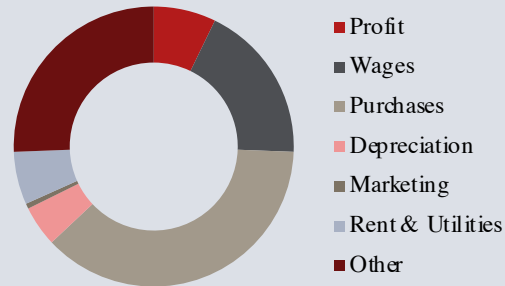
- Good reputation
- Joint marketing/distribution ops
- Financial and Debt Management
- Capture new revenue streams
- Economies of Scale
- Easy access for clients

Domestic Airline

Revenue Streams

- Passenger Transportation
 - Coach Class – 82.3%
 - First/Business Class – 14.4%
- Cargo Transportation – 1.9%
- Other – 1.4%

Cost Structure (% of Revenue)



Cost Detail

- Profit margins in the Domestic Airlines industry are highly volatile
- Purchases include the acquisition of materials such as aircraft, fuel, food, uniforms and similar items
- Purchases have declined due to significant decreases in the market price of jet fuel
- Employees in this industry include aircraft and freight handling crews, maintenance and repair workers and administrative staff

Product Segments

- Leisure Travelers – 69.1%
- Business Travelers – 28.9%
- Freight and Mail Markets – 2.0%

Distribution Channels

- Online travel agencies (Orbitz, Expedia, Kayak, etc.)
- Credit card travel agencies (Capital One, AmEx, etc.)
- Airlines' sales team: call centers, online, or kiosk
- Travel management companies (TMCs) serving corporate clients

Recent Market Trends

- This industry is mature
 - Services offered are segmented and stable
 - There is acceptance of industry services
 - Significant consolidation is occurring
- Continue to grow over the next five years
- Contracting profit margins are expected to slow the level of future investments
- All jobs within the industry, such as aircrew, engineers and customer service representatives, are exposed to automation

Market Competition

- Competition in this industry is high and the trend is increasing
- Compete for customers on price, frequency and capacity, route offerings, loyalty programs, promotions, rewards and service quality
- Providers of cheap air transportation have increased the level of price competition in the industry, raising the focus on quantity over quality
- The strongest competitive advantage an airline can have is exclusive coverage of a route.

Economic Drivers

- Domestic trips by US residents
- Per capita disposable income
- Corporate profit
- Inbound trips by non-US residents
- World price of crude oil

Key Success Factors

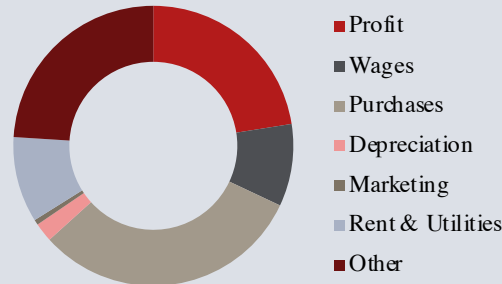
- Optimum capacity utilization
- Prompt delivery to market
- Well developed internal processes
- Effective cost controls
- Ability to expand and curtail ops easily
- Access to latest technology

Pharmaceuticals

Revenue Streams

- Pharmaceutical manufacturing industry is highly capital intensive with high revenue volatility
- The effect of seasonality is high on certain products (vaccines and cold medicine) and low on other products (pain medicines)
- Federal government grants for R&D

Cost Structure (% of Revenue)



Cost Detail

- Profit margins are high to reflect the considerable levels of risk associated with drug development
- Some purchase costs include chemicals & active pharmaceutical ingredients (APIs)
- R&D accounts for 15.9% of total revenue
- Depreciation costs reflect the capital-intensive technology involved and the heavy emphasis on the continual pipeline of new products essential to the industry's survival

Product Segments

- Primarily used by consumers
- Sold to pharmaceutical wholesalers, such as AmerisourceBergen, Cardinal Health and McKesson, before being distributed to pharmacies and other drug retailers.
- Major markets are segmented by end user distributors (e.g. retailers and hospitals).

Distribution Channels

- Food Stores
- Exports (24.7%)
- Chain Stores
- Clinics
- Mail Service Provider
- Nonfederal hospitals
- Independent retailers

Recent Market Trends

- This industry is mature:
 - The value of the industry is attributable to consolidation and cost cutting
 - Entrants is fairly low, and some operators are exiting the industry or consolidating
 - The rate of blockbuster drug development has been slowing
- Projected to grow over the next five years
- Healthcare reform established a regulatory pathway for generic biologic drugs, or biosimilars, to shake up the industry landscape

Market Competition

- Concentration in this industry is medium - four largest enterprises accounting for over 40.0% of total industry revenue
- Competition in this industry is high and the trend is increasing - pricing pressures from the government and health insurance providers, coupled with the proliferation of generic drugs, intensified competition for brand name pharmaceutical manufacturers

Economic Drivers

- Funding for Medicare & Medicaid
- Median age of population
- Number of people with private health insurance
- Regulation for the Brand Name Pharma Manufacturing industry
- R&D expenditure
- Trade-weighted index

Key Success Factors

- Establishment of brand names
- Undertaking pharma and medicine R&D
- Degree of globalization
- Control of distribution
- Alter goods and services in favor of market conditions

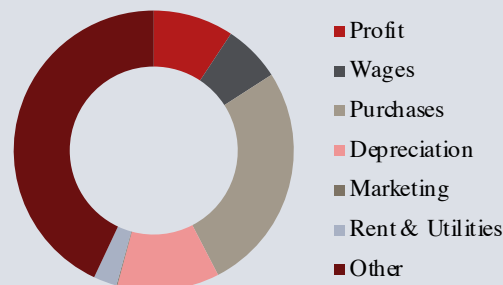
Oil and Gas

Revenue Streams

\$256B

- Crude Oil – 59%
- Dry Natural Gas – 34%
- Natural Gas Liquids – 6.2%

Cost Structure (% of Revenue)



Cost Detail

- Exploration – 26.5%
- Exploration is the lifeblood of companies in the industry because it provides reserves for future development
- Depreciation – 10%-15%
- Wages – 6.6%

Product/Customer Segments

- Major Markets
- Petroleum Refining Industry – 45%
- Natural Gas Distribution – 25%
- Industrial Users – 14.2%
- Exports – 9.5%
- Utilities – 6.6%

Distribution Channels

- Retail
- Wholesale
- Utilities and commercial

Recent Market Trends

- This industry is mature
- The industry has well-established products and participants
- The industry has begun using new techniques and technologies to capitalize on new resources
- The industry's major players are responding to market developments by merging operations
- The industry has discovered new resources to extract

Market Competition

- Competition in this industry is high and the trend is steady
- Price competition – reflects global supply and demand conditions; sensitive to supply disruptions
- Oil grades - Grades range from light to heavy, with light crude being the most attractive
- Impurities
- Security

Economic Drivers

- World price of crude oil
- World price of natural gas
- World production of oil
- Regulation for petrochemical manufacturing
- Total vehicle miles
- Trade-weighted index

Key Success Factors

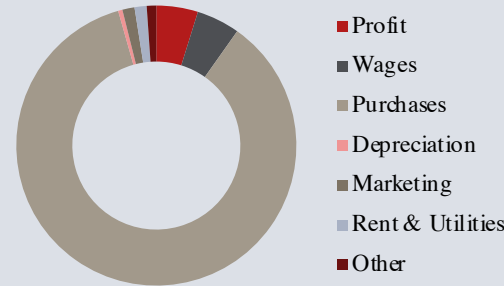
- Economies of scale
- Downstream ownership links
- Ability to find new resources
- Ability to accommodate environmental requirements

Medical and Health Insurance

Revenue Streams

- The majority of industry revenue is generated from premiums that are related to fully funded insurance policies (\$785B)
- Preferred providers organizations (PPO) – 14%
- Pharmacy Benefit Management (PBM) – 24%
- Medicaid plans – 15%
- High-deductible health plans (HDHPs) – 11.5%
- Medicare – 12.5%
- Health maintenance organization (HMO) – 9.3%
- Point-of-service (POS) plans – 13%
- Fee-for-Service - 0.8%

Cost Structure (% of Revenue)



Cost Detail

- Premiums increase in response to medical cost inflation
- Healthcare benefit expense (purchases) primarily includes costs of care for health services consumed by members, such as outpatient care, inpatient hospital care, professional services (primarily physician care) and pharmacy benefit costs
- BE often expressed as a ratio between premium payments and health expenses and is termed the medical loss ratio (MLR). A lower MLR can result in higher profit margins - Normally, the MLR stays within the range of 75.0% to 85.0%, although some companies experience ratios as low as 60.0% and some as high as 110.0%
- The MLR also depends on whether the insurer is providing health coverage under a government-sponsored program such as Medicare or Medicaid, or privately to individuals and businesses

Product Segments

- Major Markets
- Employer-sponsored health insurance – 50%
- Medicaid – 17.5%
- Direct-purchase – 14.5%
- Medicare – 14.5%
- Other – 4.1%

Distribution Channels

- Hospitals
- Doctor's office
- Nursing homes
- Outpatient surgery
- Other centers
- Medical equipment
- Pharmacies

Recent Market Trends

- This industry is mature
- Industry growth largely reflects increases in medical costs and legislation changes
- A steady amount of M&A activity has occurred
- Technological developments have slowed and have not changed product offerings substantially
- Fastest-growing component of health services and supplies will be government public health activities, due to age trends in the population

Market Competition

- Concentration in this industry is medium - top four companies accounting for an estimated 52.4% of total industry revenue in 2017
- Competition in this industry is high and the trend is steady
- Largely associated with policy pricing, which is often influenced by age, deductible levels, copayment costs and plan structure
- Varies on a state-by-state because some states have more health insurance providers than others due to the industry's highly regulated nature

Economic Drivers

- Total Health Expenditure
- Number of Employees
- Median age of population
- Number of physician visits
- Per capita disposable income

Key Success Factors

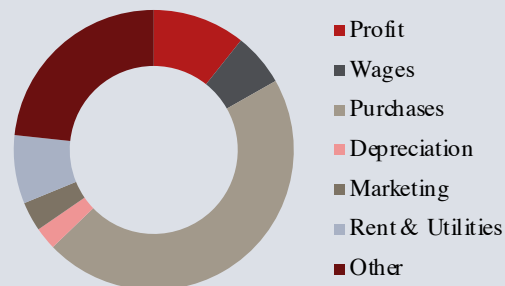
- Extensive Distribution/Collection network
- Good reputation
- Pass on cost increases
- Comply with regulations
- Cost Controls
- Diversify revenue streams

Wireless Telecommunications

Revenue Streams

- Cellular voice services – 53.6%
- Text messaging – 18.1%
- Other non-data services – 11.7%
- Advanced PCS services – 10.8%
- Other data services – 5.8%

Cost Structure (% of Revenue)



Cost Detail

- Over the past year, all four major companies have cut prices and offered greater flexibility in their services
- Purchases for this industry fall into two categories: cost of services expenses and equipment expenses - cost of services are majority - represents the cost of operating and accessing the wireless network, as well as roaming and long-distance costs
- Equipment purchases account for the largest purchase

Product Segments

- Households and individuals – 59.7%
- Business clients – 30.2%
- Government & NPOs – 10.1%

Distribution Channels

- Retail Channels
- Direct Sales

Recent Market Trends

- This industry is mature
- Strong consumer demand continues
- The industry is consolidating
- The industry's economic contribution is expanding faster than GDP
- The number of wireless subscribers is expected to continue increasing
- 5G trials in 2016 and are expected to invest a total of \$275.0 billion in R&D
- Major companies are expected to compete for already existing subscribers

Market Competition

- Concentration in this industry is high – the top four major players in this industry (Verizon, AT&T, T-Mobile, and Sprint) are expected to account for more than 90.0% of industry revenue
- Competition in this industry is high and the trend is steady – price, service, product innovation, geographic coverage, external competition (mobile virtual network operators)

Economic Drivers

- Number of mobile internet
- Percentage of services online
- Disposable Income
- Price of semiconductor and electronics components

Key Success Factors

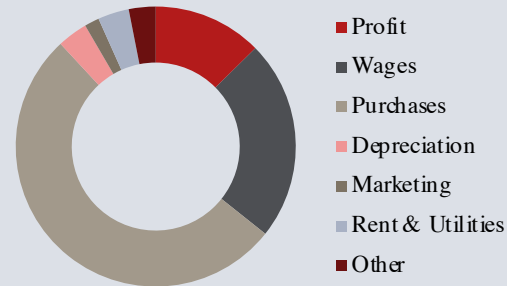
- Close relationships in other industries
- Ready access investment fund
- Access to new technology
- Brand high profile
- Exclusive product sales contracts

TV Media Production

Revenue Streams

- Advertising
- Licensing fees
- Subscription revenue

Cost Structure (% of Revenue)



Cost Detail

- Profit margins are relatively low for many small companies due to the high financial risks associated with film production
- Equipment rental can be a significant production cost for TV producers, especially as smaller companies have entered the industry that lack the capital backing and resources of a large studio. Purchases also include contracted postproduction services and licensing fees for musical or other content used in the production itself.

Product Segments

- Documentaries and news – 34%
- Dramas – 23%
- Reality and variety – 15%
- Sports – 12%
- Comedies – 11%
- Talks shows and other – 6%

Distribution Channels

- Domestic Cable Networks – 45%
- Domestic Broadcast Networks – 27%
- International Distribution – 15%
- Online Platforms – 13.1%

Recent Market Trends

- Industry is growing
- Contribution to the economy is expanding
- Undergoing technological growth
- Number of operators is growing
- Online models
- Live viewership is declining
- VoD is growing
- Major players are establishing own services
- New technology
- Viewers are screen agnostic, just care about content

Market Competition

- Concentration is medium – there are four players that own 66% of the market; share concentrating because of studio expansion
- Competition is high and increasing
 - Demand for talent
 - Licensing and syndication rights are pricey; demand is volatile
 - Other forms of entertainment pose a large threat (notable film industry)

Economic Drivers

- Demand from TV broadcasting
- Number of broadband connections
- Per capita disposable income
- Total advertising expenditure
- Number of cable subscriptions

Key Success Factors

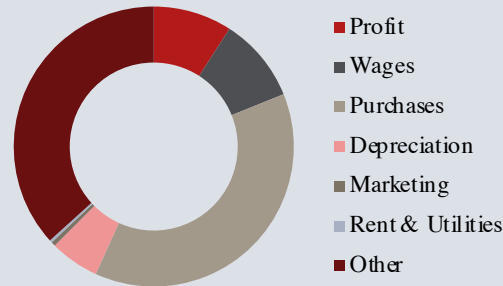
- Effective cost control
- Access to skilled and flexible workforce
- Managing contracts
- Access to technology
- Vertical integration or contracts with distributors

Electric Utilities

Revenue Streams

- Transmitted electricity is separated into two types:
 - Base load – primary source for downstream residential, commercial and industrial [Coal – 33%, Nat Gas – 33%, Nuclear – 20%, Hydro – 6%, Petroleum – 1%]
 - Intermittent – renewable energy: solar, wind (5%), biomass, and geothermal. Issues with storage

Cost Structure (% of Revenue)



Cost Detail

- Profit is driven by retail electricity prices, set by public utility commissions (PUC).
- Utilities must purchase electricity from generators or electricity wholesalers
- 40.0% of industry employees are engineers, electricians and other skilled technicians
- Transmission lines, meters, substations and other facilities are all expensive to construct and contribute to this industry's depreciation costs.

Product Segments

- Major Markets
 - Residential Households – 38%
 - Commercial Sector – 36%
 - Industrial Sector – 26%
 - Transportation Sector – 0.3%

Distribution Channels

- Transmission Grids

Recent Market Trends

- Industry is mature
- IVA is estimated to grow slower than overall GDP over the next 10 years
- Demand for electricity reflects broad trends in economic growth
- Transmission and distribution utilities are split from power generation companies, but some large operators are consolidating
- Industry technology is focused on improving efficiency rather than comprehensive overhaul of services

Market Competition

- Concentration in this industry is low
 - Power utilities operate at the regional and local level
 - Four largest own less than 20% of the market
- Competition in this industry is low and the trend is steady
 - No real substitutes for electricity
 - Requires high-skilled workers
 - Wholesalers are starting to pose a threat

Economic Drivers

- Power consumption
- Price of electricity
- Number of households
- Manufacturing capacity utilization
- Value of utilities construction

Key Success Factors

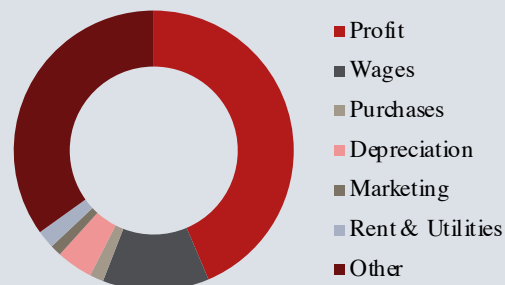
- Ability to pass on costs
- Pricing strategy
- Negotiation with regulators
- Efficient grid systems
- Diligent maintenance of systems

Private Equity

Market Summary

- Total Market Size: 89.2B
 - Private Equity – 58%
 - Hedge funds – 39%
 - Unit Investment Funds – 1%
 - Close-end funds – 2.3%

Cost Structure (% of Revenue)



Market Trends

- This industry is Growing
- Industry value added is growing faster than GDP
- The number of industry funds is increasing
- There is continued development of new investment products and strategies
- Regulations pose a threat to industry growth

Product Segments

- Major Markets
 - Pension funds
 - Wealth managers
 - Insurance companies
 - Funds of hedge funds
 - Sovereign wealth funds

Go/No Go Decisions for Private Equity Firms

- What financial levers can be pulled to make this more profitable (various ways to access cash, cap structures, etc.)?
- What operational levers can be pulled to make this deal better (more efficiencies, new management etc.)?
- What return on investment is required to make this investment worthwhile?
- What is the timeframe of return on this investment?
- Is there a better (more profitable) investment where money should be spent?

Market Competition

- Concentration in this industry is low - Four largest alt asset management firms are expected to generate 8.2% of industry revenue in 2017
- Competition in this industry is high and the trend is increasing
- Competition for capital; fee structure is how some funds differentiate (ie. Price).
- The industry is becoming increasingly concentrated, with institutional investors directing funds to larger funds and fund issuers.

Economic Drivers

- Demand from retirement and pension plans
- Access to credit
- S&P 500
- IPO Market
- Regulation
- 10-Yr Treasury Yield

Key Success Factors

- Good Reputation
- Willingness to outsource
- Complying with regulations
- Prior success

Section 1: Growth



Toothpaste Manufacturer

Behavioral Case Question

Spend 15 Minutes on:

- Describe a time when you worked in a high-functioning team

Case Prompt

Our client is a major toothpaste manufacturer based in the United States that serves the US market. Our client wants to lower costs and is considering moving manufacturing operations to Vietnam.

Case Overview [Interviewer-led]

- The primary purpose of the case is to test whether the interviewee can vet the pros and cons of offshoring manufacturing.
- The case has listed questions to ask the interviewee and more typical of a 1st round Bain interview. The case is somewhat interviewer-led, but more conversational.

Toothpaste Manufacturer

Case Information

- There is one major competitor and a few small players in the market. Our client's market share is about 30%.
- Competition is growing. All players are looking for ways to decrease costs, as costs have been steadily increasing over time.
- The plant is located on the east coast and ships to 4 distribution centers throughout the US
- Total fixed costs for setting up the Vietnam plant will be \$0.5B

Case Flow Guide

Part 1: Market Sizing

- Estimate the size of the US market for toothpaste. Given our client's market share, how many tubes does our client sell each year?

Part 2: Cost Analysis of Manufacturing in the US

- The client would like to do a cost analysis of their current manufacturing plant in the US. What costs would you include in the analysis?

After the interviewee brainstorms cost items, provide **Exhibit 1**

Part 3: Business Instincts

- Where would raw materials be cheaper and why?
- By what percent do you think labor is cheaper in Vietnam and why? What trends do you see in the future?
- By what percentage do you think shipping costs will increase?

Part 4: Cost Analysis of Moving Manufacturing to Vietnam

Provide **Exhibit 2** to the interviewee

- Do you think it's feasible or a good idea to move manufacturing to Vietnam?

Part 5: Brainstorming

- What considerations should be given for moving manufacturing to Vietnam?
- What are some risks involved with moving manufacturing?

Part 6: Final Recommendation

Toothpaste Manufacturer

Approach / Analysis

Question 1: Estimate the size of the US market for toothpaste. Given our client's market share, how many tubes does our client sell each year?

US Population x Client's Market Share x Number of tubes of toothpaste per year per person
= 300M people x 30% x 3 tubes / year / person = 270M

Question 2: The client would like to do a cost analysis of their current manufacturing plant in the US. What costs would you include in the analysis?

Major items include fixed cost (PPE), variable cost (labor, material, transportation, tax, ...)
After the interviewee brainstorms cost items, provide **Exhibit 1**. With the exhibit, let the interviewee estimate the cost of manufacturing at Vietnam. Reasonable estimates are acceptable.

Question 3: a) Where would raw materials be cheaper and why?

Vietnam as its closer to China, where the raw materials can be purchased for cheaper than purchasing in the United States. Raw materials are 40% less in Vietnam.

Toothpaste Manufacturer

Approach / Analysis

Question 3: b) By what percent do you think labor is cheaper in Vietnam and why? What trends do you see in the future?

75% cheaper (90-60% acceptable). As global wage gaps decrease, labor costs will rise.

Question 3: c) By what percentage do you think shipping costs will increase?

Approximately 100%, as it is now costly to ship from manufacturing in Vietnam to the distribution centers

Question 4: Provide Exhibit 2 to the interviewee. Do you think it's feasible or a good idea to move manufacturing to Vietnam?

Based on a market size of 90M people, with 3 tubes/year/person on average, it will take approximately 2 years to breakeven. Yes, it is feasible because it takes less than 2 years to breakeven.

The math is shown below:

Raw Material + Labor + Shipping = Variable Cost per Tube

In the US: $\$0.65 + \$1.00 + \$0.15 = \1.80

In the Vietnam: $\$0.25 + \$0.25 + \$0.30 = \0.80

Savings per Tube: $\$1.80 - \$0.80 = \$1.00$

If total fixed cost for opening plant in Vietnam is \$0.5B, the client will breakeven with 0.5B tubes.

Given that our client sells 270M tubes/year, they will break even in under 2 years ($0.5B/270M$).

Toothpaste Manufacturer

Approach / Analysis

Question 5: a) What considerations should be given for moving manufacturing to Vietnam?

Product safety standards, increased shipping time and less flexible response time, increased inventory and manufacturing lead time, less manufacturing oversight since it is geographically removed from headquarters, government regulations, geopolitics

Question 5: b) What are some risks involved with moving manufacturing?

Labor prices increase, oil price increase (increase shipping costs), Vietnamese political issues (coup, revolution, war), closing or disruption of shipping lanes

Question 6: What is your recommendation to the client?

Our client should move manufacturing overseas because of a short 2 year breakeven time, increased pressure to reduce costs, and a stronger competitive landscape.

- **Mediocre solution:** Only focused on pros and cons from an internal cost or product quality perspective
- **Good solution:** Provides additional insight into market competitor and customer reactions
- **Excellent solution:** Provides creative solutions to inherent risks of overseas production and external economic or political factors

Toothpaste Manufacturer – Exhibit 1

Variable Costs in the US

Type	Costs
Raw Materials	\$ 0.65
Labor	\$ 1.00
Shipping	\$ 0.15
Variable Cost per Tube	\$ 1.80

Toothpaste Manufacturer – Exhibit 2

Variable Costs in the US and Vietnam

Type	US	Vietnam
Raw Materials	\$ 0.65	\$ 0.25
Labor	\$ 1.00	\$ 0.25
Shipping	\$ 0.15	\$ 0.30
Variable Cost per Tube	\$ 1.80	\$ 0.80

Benjamin Carpet



Behavioral Case Question

Spend 15 Minutes on:

- Tell about a time when you were not able to build a successful relationship with a difficult person.

Case Prompt

Your client is the family owner of a company that serves residential and commercial markets and operates 5 days/week and 16 hours/day. The owner is looking to purchase a new machine to improve its current production process.

Case Overview [Interviewer-led]

Provide Exhibit 1 to interviewee before asking Question 1. Once each question is answered, move on to the next. Provide additional case information with each question.

Benjamin Carpet

Case Information

Current Process

- Purchase colored yarn
- Load correct colored yarn onto spools
- Weave carpet with colored yarn
- Back carpet
- Cut, roll, store

Considering new process

- Purchase uncolored yarn
- Load spools
- Weave carpet
- NEW MACHINE
(Inks, Dyes, Dries)
- Back carpet
- Cut, roll, store

Machine costs \$25M

Case Flow Guide

Question 1: Should Benjamin Carpet Co. purchase the machine? How would you structure your solution?

- Provide Exhibit 1 to interviewee

Question 2: What are some of the categories that will affect the calculations?

Question 3: Given the following information is the machine worth investing in?

Question 4: With the following additional revenue is the venture worth pursuing?

Benjamin Carpet

Approach / Analysis

This section provides a sample analysis for interviewer's reference

Question 1:

Should Benjamin Carpet purchase the machine? How would you structure your solution?

Two alternatives – Buy the machine or Don't buy the machine

Don't buy the machine

Current status quo

Buy the machine

Incremental Revenues – additional price / volume

Incremental Cost Savings via improved operations

NPV of costs and future cash flows

Risks – access to capital, risk to business of changeover

Benjamin Carpet

Approach / Analysis

Question 2: What are some of the categories that will affect the calculations?

Investment

Yarn (inventory management, waste, lower cost)

Operation Costs (Labor, Utilities, Die, Maintenance)

Useful life of the machine

Question 3: Given the following information is the machine worth investing in?

\$0.25 incremental savings per yard of yarn (currently \$10 per yard)

Annual yarn production is 10M yards

Machine has useful life of 10 years

$10,000,000 \text{ yards} * (\$0.25 / \text{yard}) = \$2,500,000$

$\$2,500,000 * 10 \text{ years} = \$25,000,000$ with 0% discount rate

With any realistic discount rate, the generated cash flow will not cover the initial \$25M CapEx cost

Benjamin Carpet

Approach / Analysis

Question 4: With the following additional revenue is the venture worth pursuing?

Currently produce & sell 10M yards / year

Current fully loaded cost \$10/yard

With new machine:

- Un-dyed yarn - \$0.50 / yard
- Inventory - \$0.50 / yard
- Labor - \$0.25 / yard
- Ops Cost + \$1.00 / yard
- \$0.25 / yard

Machine lasts 10 years

New technology allows for the creation of carpet with new textures and patterns which will attract high end customers

- Current customers pay \$16 per yard
- New customers will pay 25% more
- High-end market sells 70M yards / year
- Benjamin Carpet will capture 5% of the high-end market
- 30% of current market comes from high-end customers

70 million yards / year * 5% * \$20 / yard = \$ 70 million

10 million yards / year * 30% * \$20 / yard = \$ 60 million

10 million yards / year * 70% * \$16 / yard = \$112 million

New \$242 million

Old \$160 million

Additional Sales \$ 82 million

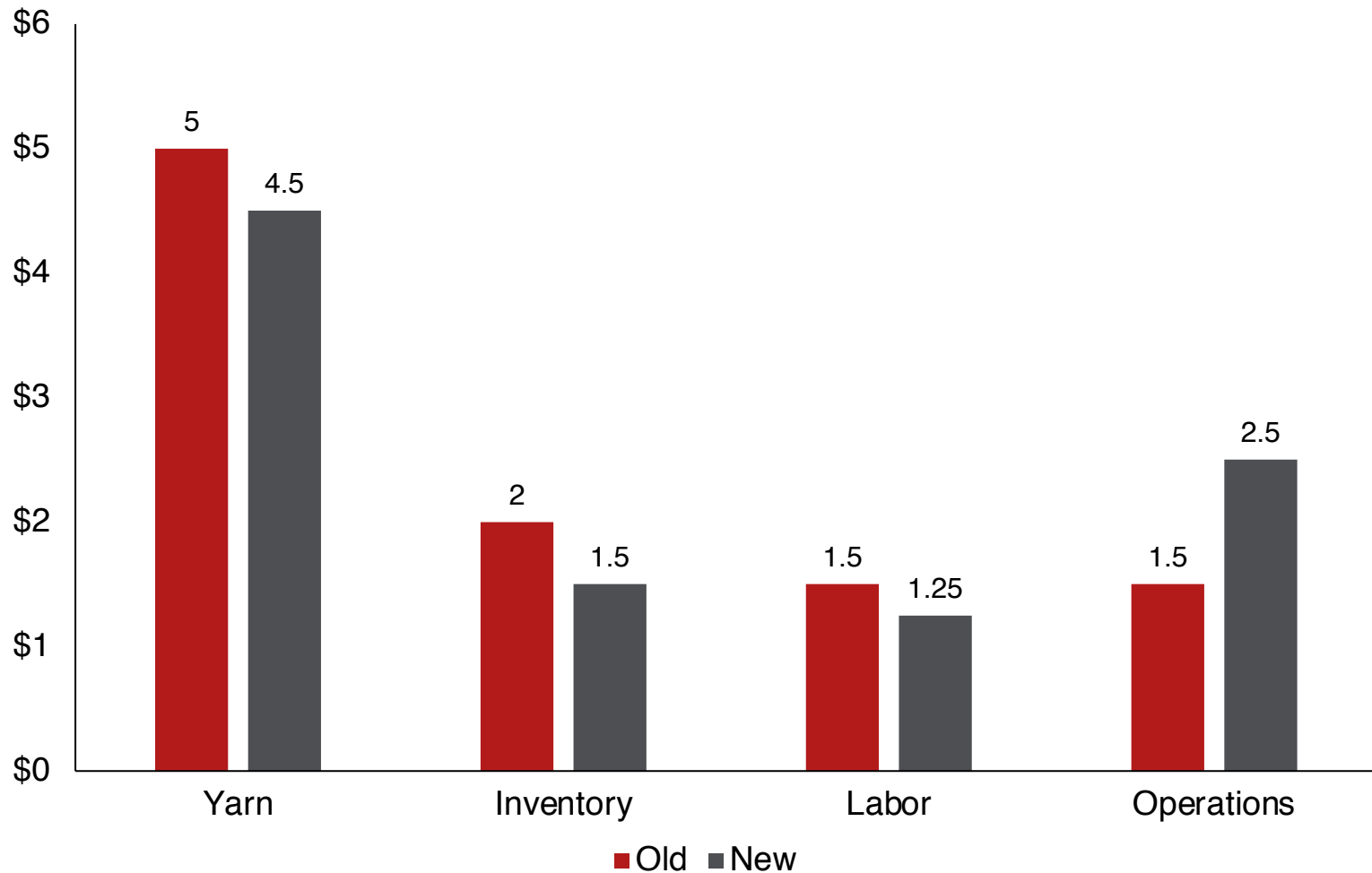
Incremental Fully Loaded Cost \$ 32 million ($\$9.75 * 70M * 5\% - \$0.25 * 10M$)

Profit \$ 50 million

Annual profit of \$50 million easily overcomes \$25 million cost and will be very profitable over 10 years

Benjamin Carpet – Exhibit 1

Cost of Old vs New Process (\$/yard)



Guidance on Exhibit 1

Exhibit Summary

- The new process improves costs across all areas except operations
- \$0.50 per yard savings for yarn
- \$0.50 per yard savings for inventory
- \$0.25 per yard savings for labor
- \$1.00 per yard increase for operations

Exhibit Analysis

Calculate incremental cost savings with the new process

Yarn	- \$0.50 / yard
Inventory	- \$0.50 / yard
Labor	- \$0.25 / yard
Ops Cost	+ <u>\$1.00 / yard</u>
	\$0.25 / yard savings



Business Situation

Our client, PayCo, is a global credit card company, with revenues over \$5B in 2010.

A recent trend in the credit card industry is the use of contactless (tap and go) payments technology to make small everyday purchases at places like fast food restaurants and convenience stores.

PayCo is looking to leverage contactless payments to drive top-line growth and has identified the transit vertical (i.e. subways, trains, buses, taxis) as an opportunity for growth since this is generally a cash dominated vertical. In support of this strategy, PayCo has developed proprietary technology (called “TAP”) to process contactless transactions specifically for transit applications, and is looking to commercialize this technology. A key challenge is whether transit authorities will implement this new technology or stay with current systems for fare collection.

We have been engaged to size the overall transit market globally, prioritize potential opportunities, develop a financial business case, and develop a go-to-market strategy for commercializing PayCo’s contactless technology

Problem Statement [Interviewer-led]

This is an interviewer-led case. **Your role on the PayCo engagement is to develop the business case for commercializing PayCo’s contactless technology**

1. Which market and transit vertical should PayCo target as a first priority?
2. What is the profitability of the “TAP” technology? Specifically, will PayCo break even on commercializing “TAP” in less than 5 years?
3. Would you recommend that the client pursue the commercialization of this technology?

[Note to interviewer: Provide data sheet 1 to the candidate as you ask question one. Same for data sheet 2.]

PayCo

Approach / Analysis [Provide Exhibit 1]

Question 1: Which market and transit vertical should PayCo target as a first priority?

A good answer will draw the following conclusions from the data provided:

- The answer we're looking for is **New York Subways**.
- Given the subway and bus detail, the candidate should quickly recognize that the country data is too high-level
- A quick comparison of subways and buses should rule out buses without any calculations
- Even though Tokyo is the largest, it actually has the smallest potential due to a low probability of winning a contract.
- New York has the highest potential revenue opportunity for PayCo based on the calculation below:

	Fare Collection	*	Prob of winning contract	= PayCo Market Opportunity
New York:	\$12M	*	90%	= \$10.8M
London:	\$13M	*	70%	= \$ 9.1M
Tokyo:	\$45M	*	20%	= \$ 9.0M

A better answer will include the items above and address additional elements around the data. Some findings include:

- Although Tokyo looks like a huge opportunity initially, they are not looking for a new system until 2015, while NYC and London are ready earlier (2012).
- The candidate may also raise the sensitivity of this assessment on the Sales Probability data point and point out how even a 5% increase for Tokyo would give it the highest value

A great answer will include the items above and also raise additional considerations beyond the data, including:

- How strong is PayCo's brand in each city?
- Is one city more strategically important to PayCo?
- Are there differences in cost or difficulty in going after these markets?
- Do PayCo's capabilities make one option more likely to succeed than another?

PayCo

Approach / Analysis [Provide Exhibit 2]

**Question 2: What is the profitability of the “TAP” technology for NYC?
Specifically, will PayCo break even on commercializing “TAP” in less than 5 years?**

A **good answer** would be:

Yes, PayCo will break even in 4 years, with a total profit (excluding time value of money) of \$250,000.

- A key insight is that the past investment in developing the “TAP” technology is a sunk cost in making the decision on commercializing the technology and should not be incorporated into the analysis
- Here is a summary of revenues and costs calculations as a guide for the interviewer:
 - Revenue = (TAP Fare Collection * TAP Processing Fee) + Annual License Fee
 - Costs = (# of transactions * cost per transaction) + Advertising and Promotion + SG&A

A **great answer** should:

- Be very well structured with clear calculations laid out in a grid (like a spreadsheet)
- Comfortably handle the variety of units (revenues in \$MMs, costs in \$000s, percentages)
- Acknowledge time value of money and suggest calculating an NPV to evaluate the investment

PayCo

Approach / Analysis

Question 3: Would you recommend that the client pursue the commercialization of this technology?

A good answer will include:

- Based on the cost/benefit analysis, commercializing “TAP” is estimated to generate \$250,000 in profit over 5 years and meets the client’s criteria for break even.

A great answer would recognize the above, but also include:

- Identification of risks in the assumptions, such as:
 - The 90% sales probability assumption for NYC
 - Revenue or cost drivers
- Identification of sensitivity in calculations, such as:
 - Forecasted transactions and fare revenue
 - Cost forecasts, particularly Advertising and Promotion
- Qualitative benefits of pursuing commercialization
 - Positive impact on brand and market share
 - Becoming market leader and growing to other cities
- Competitive Response
 - How might PayCo’s competitors respond to its launch of this technology?
- Defining next steps, such as further analysis or a high-level implementation plan

PayCo – Exhibit 1

Country Data¹

	US	England	Japan
Population (MM)	313	63	126
Population Growth (%)	0.96%	0.56%	-0.28%
GDP (\$Tr)	\$14.7	\$2.2	\$4.3
GDP Growth (%)	2.7%	1.6%	3.0%
GDP per Capita (USD)	\$47,400	\$35,100	\$34,200

Subway System Data

	NYC	London	Tokyo
Daily Passengers (MM)	11.5	8.5	14.3
Annual Fare Collection (\$B)	\$12	\$13	\$45
Timing for new system	2012	2012	2015
Probability of winning contract ²	90%	70%	20%

Buses Data

	NYC	London	Tokyo
Daily Passengers (MM)	3.0	4.5	5.8
Annual Fare Collection (\$B)	\$2.8	\$5.5	\$4.4
Timing for new system	2013	2013	2015
Probability of winning contract ²	90%	70%	20%

Notes:

1 Data from CIA World Factbook, extracted April 2011. GDP figures at purchasing power parity.

2 Probability of winning contract is based on estimates from the PayCo Business Development team, and can be used to determine the potential revenue opportunity for PayCo

PayCo – Exhibit 2

NYC Subway Forecast Data

	2011	2012	2013	2014	2015
"TAP" Transactions (MM)	1,500	2,000	2,500	3,000	3,000
"TAP" Fare Collection (\$MM)	\$3,750	\$5,000	\$6,250	\$7,500	\$7,500

PayCo "TAP" Assumptions

Revenue Assumptions	
Annual License Fee (\$000s)	\$250
"TAP" Processing Fee *	0.20%

Cost Assumptions	
Past Investment in "TAP" Development (\$000s)	\$1,000
Cost per transaction	\$0.005

* Processing Fee applies to dollar value of Fare Collections

Cost Projections (in \$000s)	2011	2012	2013	2014	2015
Advertising and Promotion	\$500	\$250	\$0	\$0	\$0
SG&A	\$50	\$50	\$50	\$50	\$50

Guidance on Exhibit 2

Exhibit Summary

Note to interviewer: Pro-forma financial statement – sample of what the interviewee could assemble from the source data

	2011	2012	2013	2014	2015	TOTAL
Revenue						
NYC Fare Collection Forecast (\$MM)	\$3,750	\$5,000	\$6,250	\$7,500	\$7,500	
* Processing Fee	0.20%	0.20%	0.20%	0.20%	0.20%	
Variable Revenue (\$000s)	\$7,500	\$10,000	\$12,500	\$15,000	\$15,000	\$60,000
+ Fixed License Fees for technology (\$000s)	\$250	\$250	\$250	\$250	\$250	\$1,250
TOTAL REVENUE (\$000s)	\$7,750	\$10,250	\$12,750	\$15,250	\$15,250	\$61,250
Costs						
NYC Transaction Forecast (MM)	1,500	2,000	2,500	3,000	3,000	
* Cost per transaction	\$0.005	\$0.005	\$0.005	\$0.005	\$0.005	
Variable Cost (\$000s)	\$7,500	\$10,000	\$12,500	\$15,000	\$15,000	\$60,000
+ Advertising and Promotion (\$000s)	\$500	\$250	\$0	\$0	\$0	
+ SG&A (\$000s)	\$50	\$50	\$50	\$50	\$50	
Fixed Costs	\$550	\$300	\$50	\$50	\$50	\$1,000
TOTAL COST (\$000s)	\$8,050	\$10,300	\$12,550	\$15,050	\$15,050	\$61,000
TOTAL PROFIT (\$000s)	(\$300)	(\$50)	\$200	\$200	\$200	\$250
<i>(cumm)</i>	<i>(\$300)</i>	<i>(\$350)</i>	<i>(\$150)</i>	<i>\$50</i>	<i>\$250</i>	



African Call Center



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time when you had to convince another stakeholder to see things your way

Case Prompt

Our client, Invest-4-Humanity (I4H), is an investment fund looking to open a call center in an African country. I4H is an altruistic investment firm that seeks to choose investments that not only yield positive financial returns but also provide maximum benefit to society. I4H has decided to invest in either a retail sales or banking service call center. Our objective is to advise I4H on how best to approach this investment.

Case Overview [Interviewer-led]

This is a McKinsey-style, interviewer-led case. Provide the interviewee with the prompt and answer any clarifying questions. Once the interviewee has no more questions, ask the case questions sequentially.

African Call Center

Case Information

A specific country has not been determined, but somewhere in Africa.

The retail call center is a telemarketing call center that makes calls to potential **US** customers.

The banking call center takes calls from the bank's customers.

- If I4H opens a banking center, they will be paid by a banking client.

The call center will make money through a combination of licensing fees and incentives from companies.

Case Flow Guide

Question 1: What key issues should I4H look at when deciding which country and type of call center they should invest in?

Question 2: After some initial research, the team thinks that operational risks will be especially important to understand. What are they key operational/logistical challenges that must be addressed when making this investment decision, and which call center is more affected?

Question 3: Provide Exhibit 1. Ask the interviewee for initial insights. Given that a call center requires at least 600 people to operate, which country and wage would you advise I4H to first consider?

Question 4: Look at Exhibit 1 and consider Country C. If the probability that a worker will accept the job at \$1.0 per hour is 0.8, how many workers can I4H expect to hire? (640 workers)

- The team has done some research and found that to operate a retail call center will require 700 workers. By what percentage must they increase the number of workers to reach this number?
- What are some ideas to gain the additional workers?

Question 5: Which call center makes more profit on an hourly basis? By what percent is it larger? What does your analysis imply for your recommendation for I4H?

Question 6: The CEO of I4H has just entered the room and wants an update on progress and preliminary recommendations.

African Call Center

Approach / Analysis

Question 1: What key issues should I4H look at when deciding which country and type of call center they should invest in?

Push the candidate to explain their thinking on each point – a canned framework applied blindly is not acceptable. For instance, 3Cs is not a good framework here. Likewise, a pure profit framework that does not go into the risks is not good either. One potential framework (whatever framework they use, make sure it is well structured and hit these key points):

Investment Cost: By country, By type of call center

Benefits: Financial, Social

Risk: Operational, Political, Economic

Question 2: After some initial research, the team thinks that operational risks will be especially important to understand. What are the key operational/logistical challenges that must be addressed when making this investment decision, and which call center is more affected?

Even though the candidate should have already hit upon this question at a high level in the initial framework, push the candidate to think of more ideas, and check that they do it in a structured way. The key here is to stay structured: the candidate would do well to ask for time to structure their thoughts and should use another 'mini-framework' when answering the question. One possible approach:

Operational/Logistic Challenges: Labor, Infrastructure, Time Zone

African Call Center

Approach / Analysis

Question 3: Provide Exhibit 1. Ask the interviewee for initial insights. Given that a call center requires at least 600 people to operate, which country and wage would you advise I4H to first consider?

It's clear that Country C gives the best yield of laborers for a given wage, but why? We don't have information on why, but a strong candidate should at least give some possibilities and how that affects I4H's objectives.

Country C at \$1.0 per hour is the best choice to look at initially because it **provides a reasonable chance** to get 600 people at the lowest hourly wage. The Exhibit refers to people who **would consider working, not who will work**, so Country C at \$0.5 per hour is not a good choice – it is unlikely to yield enough labor.

Question 4: Look at Exhibit 1 and consider Country C. If the probability that a worker will accept the job at \$1.0 per hour is 0.8, how many workers can I4H expect to hire? (640 workers).

The team has done some research and found that to operate a retail call center will require 700 workers. By what percentage must they increase the number of workers to reach this number? What are some ideas to gain the additional workers?

Make the candidate calculate the answer to one decimal place accuracy – 9.4%. They should see that I4H needs to increase from 640 to 700, or a gain of 60 workers. $60/640$ is about 9.4%. Do not let the candidate approximate 9% or 10%, make them go to at least one decimal place.

The candidate should then discuss in a structured format some ways to increase the response rate. One structure could be:

Benefits Promotion Partner with government

African Call Center

Approach / Analysis

Question 5: Provide the candidate with the following information:

The team has narrowed down the choice to Country C. Operating the retail call center will require 700 workers at \$1/hour, whereas the banking call center will require 450 workers at \$1.5/hour.

Further, the cost of labor in the retail call center represents 80% of total revenue, whereas in the banking call center is represents 75% of total revenue.

In addition to the labor costs, the banking center requires an additional 5% of total annual revenue to be spent on infrastructure backup – this is special equipment purchased from the bank client that backs up the phone and internet connections. The retail center does not require this additional expense. Ignore all other expenses and do not worry about the initial investment cost.

Which call center makes more profit on an hourly basis? By what percent is it larger? What does your analysis imply for your recommendation for I4H?

- Retail call center: hourly revenue is $\$700/0.8 = \875 , implies the hourly profit is **\$175/hour**
- Banking call center: hourly revenue is $(\$450 \times 1.5)/0.75 = \900 . The hourly labor cost is $\$450 \times 1.5 = \675 , and there is an additional 5% = \$45 for special equipment. The hourly profit is **\$180/hour**
- The candidate should note that the **banking** call center is **more profitable by about 3%**. However, they should also remember I4H's objectives include **social benefit**. The retail call center employs 250 more people than the banking call center and pumps in \$25 more dollars per hour into the local economy (700 versus 675 – the extra 5% going toward special equipment goes to the banking client).
- There is a strong case to be made that the retail call center, though slightly less profitable, more closely achieves I4H's objectives, given the information available.

African Call Center

Approach / Analysis

Question 6: The CEO of I4H has just entered the room and wants an update on progress and preliminary recommendations. The interviewee has 15 seconds to gather their thoughts.

The synthesis should get right to the point and include something like:

Based on our current analysis, we recommend that you pursue a retail call center in Country C. We have found that the retail call center will be almost as profitable as the banking call center, and provide greater social benefit.

A significant risk is not being able to find enough workers to run the call center, especially given the time difference between the US and Africa.

This risk can be mitigated by allowing for a flexible work schedule and working with the local government to provide additional incentive to potential workers.

Next steps include looking at potential retail clients and putting together capital to begin construction on the call center.

African Call Center – Exhibit 1

Number of employees who would consider working at the call center
for a given hourly wage

Wage Per Hour	\$0.50	\$1.00	\$1.50
Country A	562	645	795
Country B	521	620	840
Country C	615	800	1030

American Airlines



Case Prompt

Your client is American Airlines. As you may know, competition is fierce among the major airlines, with prices being driven steadily downward. After a year of weaker than average growth, they have hired our firm to devise a set of strategies for growth.

Objective (if asked to clarify): Assume management's goal is profitable revenue growth, rather than cost cutting.

Case Overview [Interviewee-led]

This is a qualitative version of a growth strategy case. There is only one calculation in the case and fairly limited quantitative data. The goal for the candidate should be to generate a wide range of suggestions rather than look to dig very deeply into one particular suggestion. Only give Exhibit 4 if the candidate notes that for routes served by few competitors, the company could raise prices. In addition, encourage them to make assumptions where necessary. However, they should look to gain insights from the qualitative data presented in the Exhibits, but these are not exhaustive of all possible solutions.

American Airlines

Case Information

Only give if requested:

- Pricing handled by computer system – currently based on class of seat (first, business, economy class) and time to flight – all inclusive in ticket price
- Market highly fragmented overall as there are over ten competitors in the market, each of which holds a relatively small share (no dominant player)
- However, many routes are only served by 1 – 2 companies
- There are two major segments in the air transportation market: vacationers and business travelers.
- Business travelers make up a slight majority of business class seats and a vast majority of first class seats. Essentially all economy class seats are taken by vacationers.
- For Exhibit 4, assume the variable cost with filling a seat is negligible

American Airlines

Case Information

Any solution should look at all possible areas of revenue growth: price and volume. Within price, they should likely rule out pure price increases due to the competitiveness of the market. However, one potential solution would be unbundling the ticket price (IE baggage check-in, snacks, etc. are extra, rather than part of the ticket price). In addition, they should note that vacationers are much more price sensitive, thus these strategies will be more effective in economy class and potentially business class.

For volume, they should examine ways to increase the number of customers, both by taking customers away from competitors and inducing new customers to enter the market. Also, they should look at ways to increase the number of flights per customer. One suggestion would be a loyalty program as this would increase the number of flights per customer and make them less likely to defect to a competitor.

American Airlines

Case Information

From Exhibit 1, the candidate should notice that quality of service is highly important to business travelers and thus this could provide a competitive advantage.

From Exhibit 2, the candidate should notice that the airplanes are almost fully booked during the winter season (typical vacationing season) and relatively empty during the summer. Thus a strong suggestion would also include some way to boost summer sales.

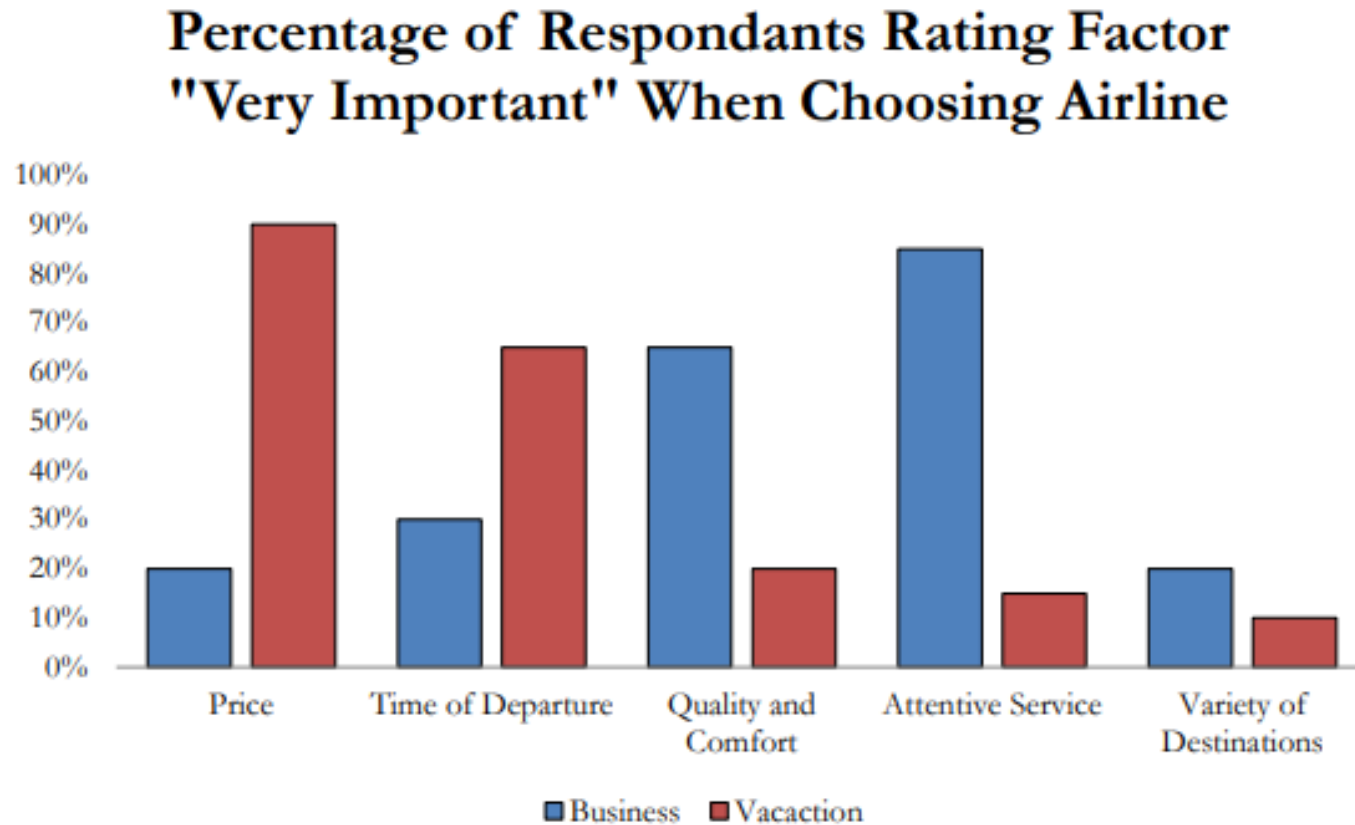
Finally, from Exhibit 3, they should notice that unbundling the baggage cost from the ticket price is likely to increase sales (as stated earlier) and that improving the company's listing on comparison websites will make them more likely to reach the proportion of consumers who use these sites.

From Exhibit 4, since variable costs are negligible, the candidate should look to maximize revenue. First, they should find the number of seats occupied and then multiply by price per seat to find :

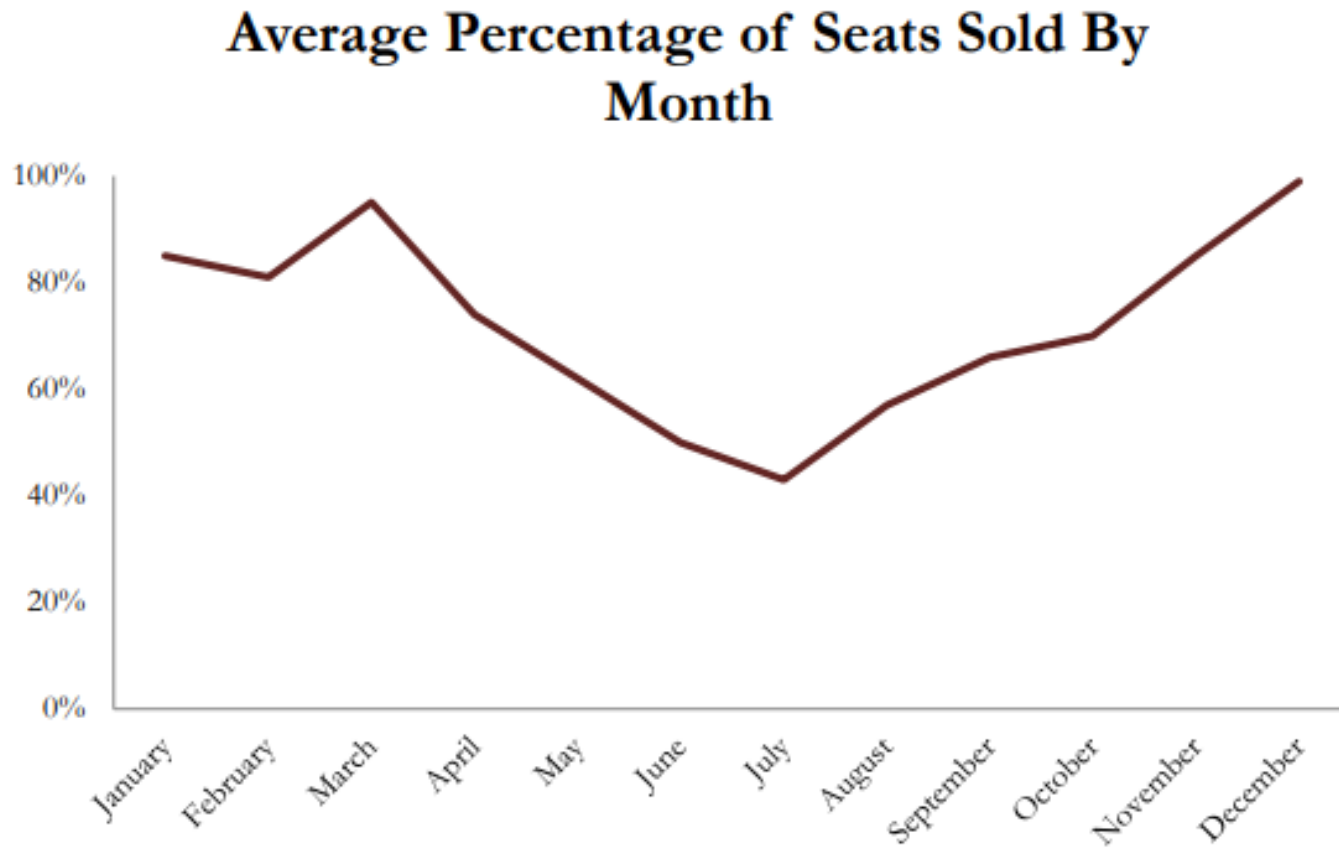
Occupancy Rate %	Actual Seats Occupied	Price Per Seat	Revenue
100%	200	400	\$80,000
90%	180	500	\$90,000
80%	160	600	\$96,000
70%	140	700	\$98,000
60%	120	800	\$96,000
50%	100	900	\$90,000

Thus revenue is maximized at a price of \$700 and an occupancy rate of 70%. If the candidate has seen Exhibit 2, a very strong point to raise is that occupancy is not constant over the course of the year. However, 70% appears close to the average over the year, so they could argue that this result makes sense as an average figure. These suggestions are not exhaustive of possible suggestions, any ideas that make sense in the highly competitive and price-sensitive air travel market are acceptable.

American Airlines – Exhibit 1



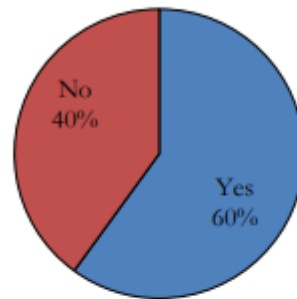
American Airlines – Exhibit 2



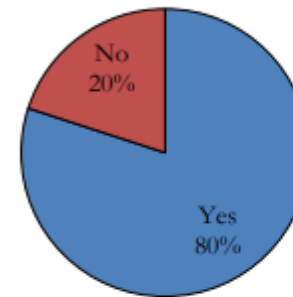
American Airlines – Exhibit 3

Price Sensitivity Survey – Percentage of Respondents Agreeing With Following Statements:

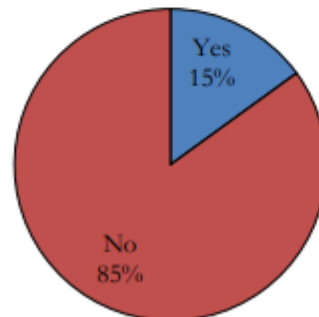
"I would take a worse departure time if it was cheaper"



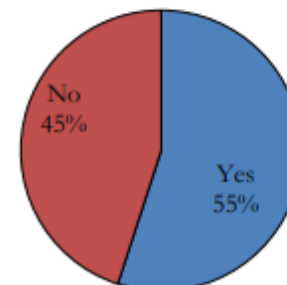
"I would reduce my amount of baggage if that reduced the price"



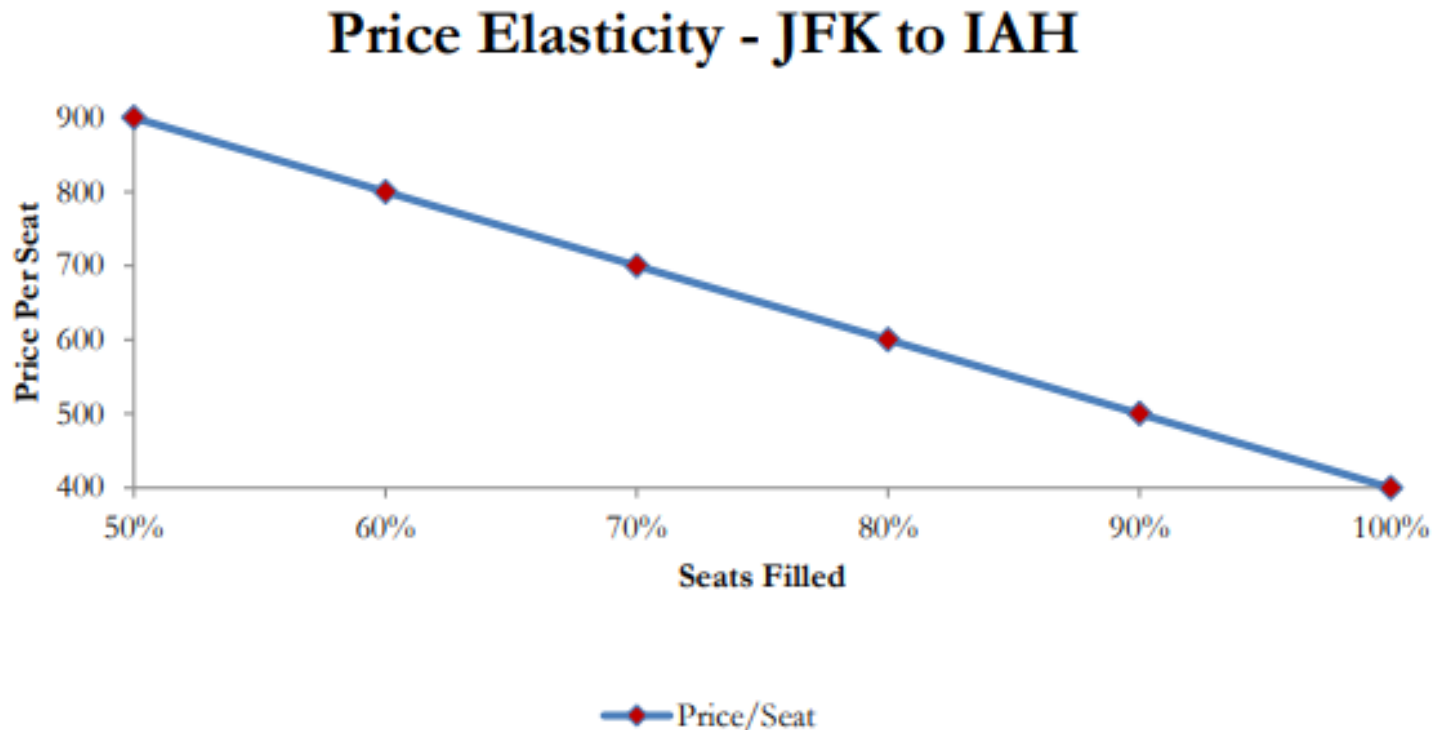
"I would take a layover overnight to save money"



"I use discounting services such as comparison websites when choosing my flight"



American Airlines – Exhibit 4



***Assume the capacity of American Airlines' domestic flights is 200 seats**

American Airlines

Approach / Analysis

Conclusion:

1. First, the company could look to lower its listed price by making some of the additional services into an extra charge, thus capturing the price-sensitive vacation market.
2. Next, they should boost the quality of their service for the first-class seats, which will provide sustainable differentiation over the competitors.
3. Finally, we should look into loyalty programs to boost overall sales and discounts or package deals with resorts during the summer months to boost sales in the typically under-booked summer.

Section 2: Profitability

Aces Delivery Service



Behavioral Case Question

- How would your teammates tend to describe you?

Case Prompt

Our client, Aces, is a package delivery firm that operates in Country XYZ. Five years ago, XYZ's government deregulated the package delivery industry, leaving three identical firms to fill the void. The only requirement for the firms is that each must operate in each municipality in the country.

The market in XYZ has been constant for nearly 3 decades (300 million packages per year). Since deregulation, Aces has charged \$0.44/lb and seen an average weight per package of 5 lbs.

For the first 45 months, Aces, along with Deuces and Jacks, maintained 33.3% of market share with each earning 10 cents in profits for every dollar it charges its customers.

About 15 months ago, Aces saw a dramatic drop market share (falling to 20%) and revenue. Three months later, they rebounded (market share reached 40% and revenue grew as well).

We have been hired to determine if any changes should be made within Aces in this new dynamic.

Case Overview [Interviewer-led]

- Follow the questions one-by-one, and share the exhibit to the interviewee during the case interview.

Aces Delivery Service



Question 1

Interviewer: Before jumping into the analysis of what happened, I would like your help to first calculate the revenue of Aces 15 months ago and over the last 12 months.

Calculations

Show candidate Exhibit 1

Revenue 15 months ago:

- Average price per package? $\$0.44/\text{lb} \times 5\text{lbs}/\text{package} = \$2.20/\text{package}$
- # of Aces' annual deliveries until 15 months ago? $33\% \times 300\text{M} = 100\text{M}$
- Aces' annual revenues until 15 months ago? $\$2.20 \times 100\text{M} = \220M

Revenue over the last 12 months:

- # of Aces' deliveries over the last 12 months? $40\% \times 300\text{M} = 120\text{M}$
- Aces' annual revenue over the last 12 months? $120\text{ million} \times \$2.20/\text{package} = \$264\text{M}$

Aces Delivery Service



Question 2

Next, I want you to calculate the profit of Aces 15 months ago, and over the last 12 months.

Calculations

[NOTE: Show candidate exhibit 2 and provide below information only when the interviewee asked for them.]

- **15 months ago, Facilities represented 10% of total costs. IT and Staffing each cost an additional 5% of total costs. The remaining costs were all transportation costs (depreciation of vehicles and fuel).**
- **Today (hasn't changed since 12 month ago), total non-transportation costs (Facilities, IT and Staffing costs) combined represent only 10% of total costs, despite no change in absolute \$ spent on them.**

Profit 15 months ago:

- Aces' annual costs 15 months ago? $\$220\text{M} \times (1 - 10\%) = \$198\text{M} = \$200\text{M}$ (rounded)
- Aces' annual profits until 15 months ago? $\$220\text{M} - \$200\text{M} = \$20\text{M}$

Profit over the last 12 months:

- Aces' non-transportation cost until 15 months ago? $\$200\text{M} \times (10\% + 5\% + 5\%) = \40M
- Aces' non-transportation cost over the last 12 months? $\$40\text{M}$
- % of Aces' non-transportation cost over the last 12 months? 10%
- Aces' annual cost over the last 12 months? $\$40\text{M} / 10\% = \400M
- Aces' profits over the last 12 months? $\$264\text{M} - \$400\text{M} = -\$136\text{M}$

Candidate should point out that the shift in transportation costs with the sudden increase in market share seems responsible for the negative earnings, and probe for why that should have changed as a percentage of revenue.

Aces Delivery Service



Question 3

Please describe what has happened to the XYZ delivery industry 15 and 12 months ago

Interviewer guidance

[NOTE: Provide below information to the interviewee directly and show the candidate exhibit 3)

The package delivery industry in XYZ is segmented into three groups:

- **Local, 0-50 miles, 60% of all deliveries**
- **Regional, 51 -150 miles, 20% of all deliveries**
- **Long-haul, 150+ miles, 20% of all deliveries**
- **Assuming 100% price sensitive consumers (only choose lower price companies)**

The candidate should realize that 15 months ago, Deuces broke the package delivery market into 3 segments and modified its pricing to dominate the high margin local segment and priced itself out of the regional & long-haul market. Three months later, Jacks followed suit.



Aces Delivery Service

Exhibit 1

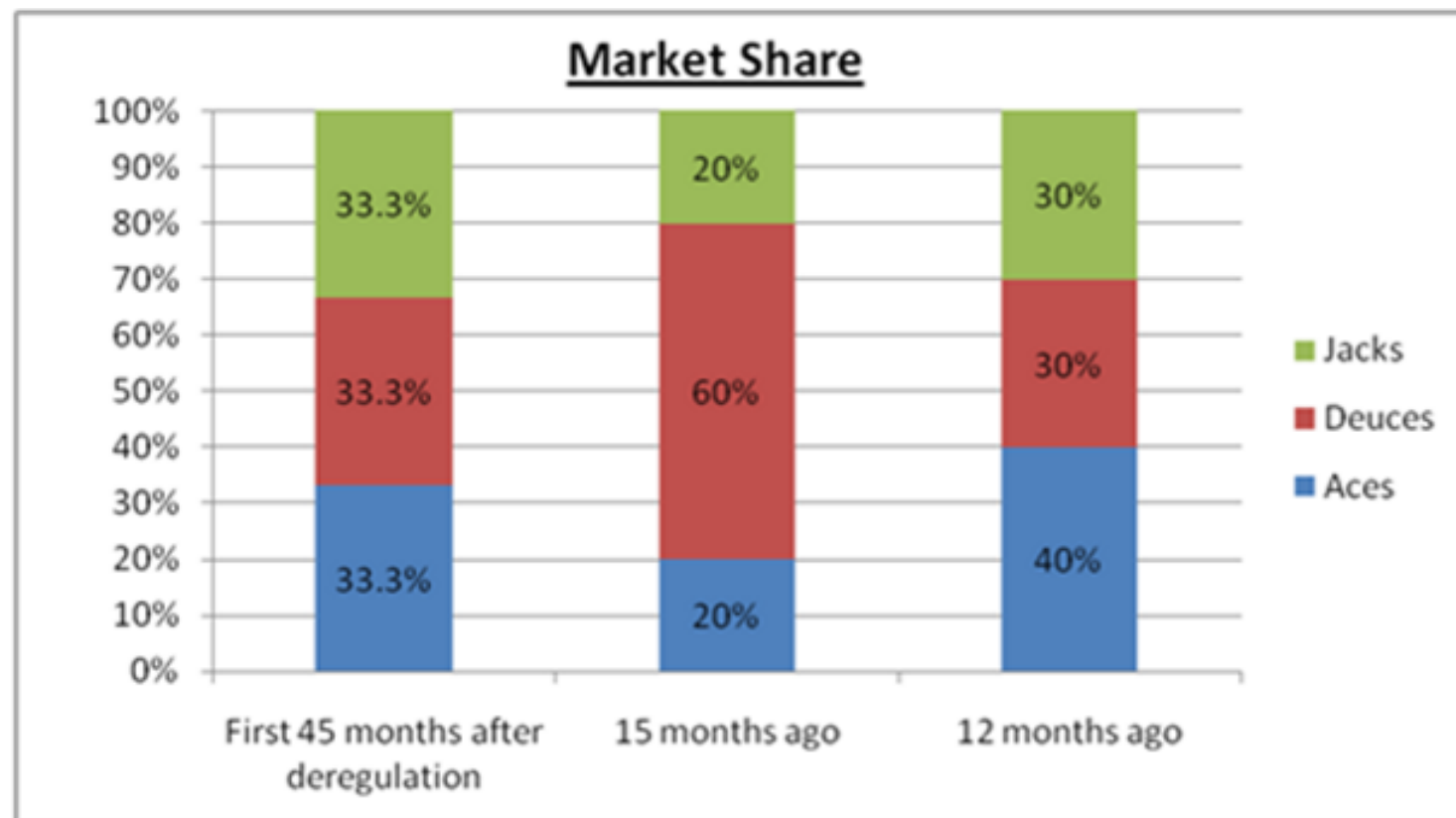


Chart to be given at the beginning when introducing the case. This chart is referred to again in Stage 3 after the market segments are explained.



Aces Delivery Service

Exhibit 2

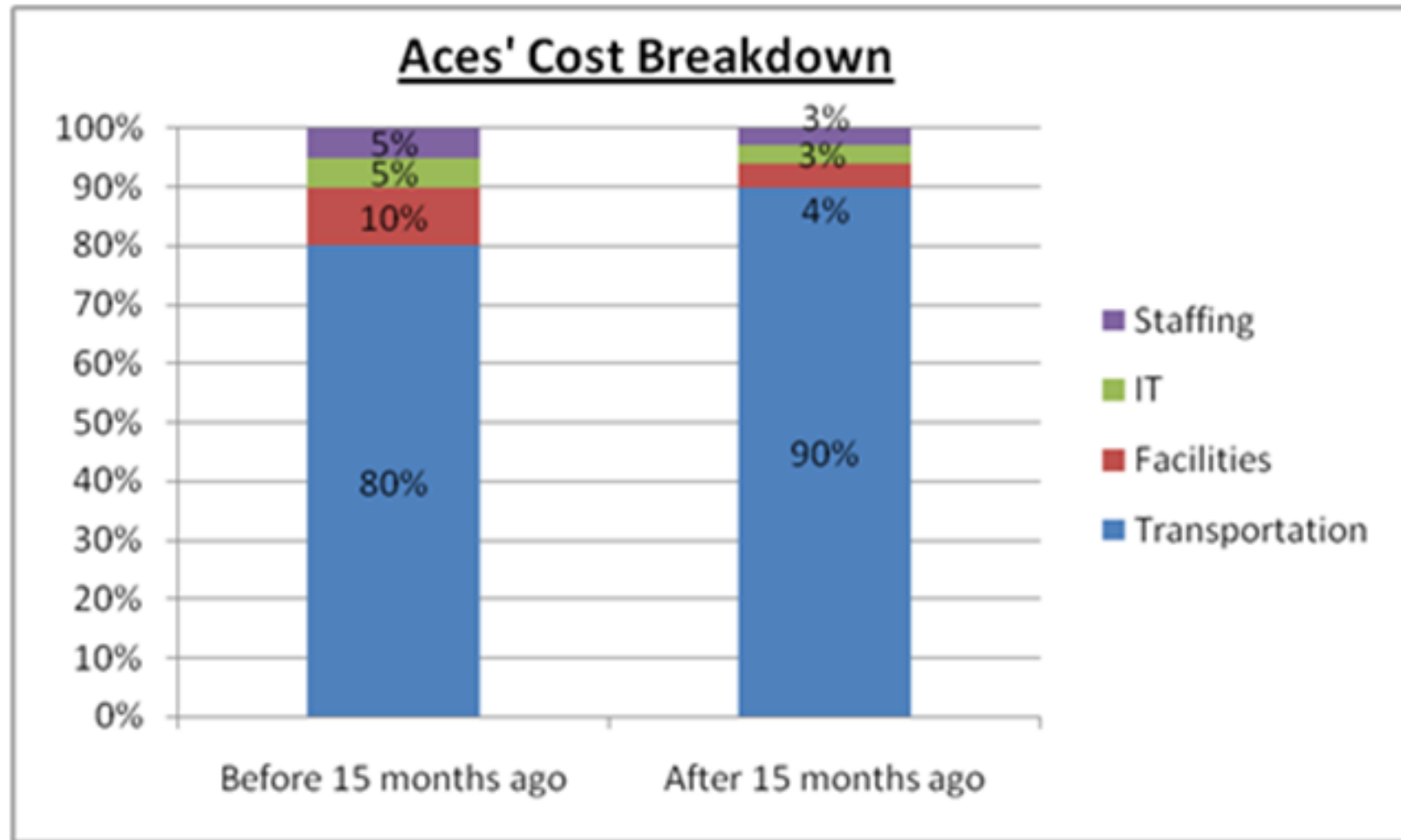


Chart to be given in Stage 2

Aces Delivery Service



Exhibit 3

Original System	Local	Regional	Long-Haul	Total Market Share
All firms	60%	20%	20%	100%
Jacks	20%	6.7%	6.7%	33%
Deuces	20%	6.7%	6.7%	33%
Aces	20%	6.7%	6.7%	33%
15 Months Ago	Local	Regional	Long-Haul	Total Market Share
All firms	60%	20%	20%	100%
Jacks	0%	10%	10%	20%
Deuces	60%	0%	0%	60%
Aces	0%	10%	10%	20%
12 Months Ago	Local	Regional	Long-Haul	Total Market Share
All firms	60%	20%	20%	100%
Jacks	30%	0%	0%	30%
Deuces	30%	0%	0%	30%
Aces	0%	20%	20%	40%

Aces Delivery Service



Question 4

How much are Deuces and Jacks' revenue and profit over the last 12 months?

Interviewer guidance

[NOTE: Provide below information only when the interviewee asked for them.]

- **Both Deuces and Jacks charges below prices for the different segments:**
- **Local: \$0.40/lb**
- **Regional: \$0.80/lb**
- **Long-Haul: \$1.20**
- **Due to shorter routes, Deuces and Jacks' transportation costs are only \$100 million, while their non-transportation costs are all in line with Aces'.**

For the last 12 months:

Jacks or Deuces' revenue for the last 12 months?	$\$0.40/\text{lb} * 5\text{lbs}/\text{package} * 90\text{M packages} = \180M
Jacks or Deuces' cost over the last 12 months?	$\$100\text{M} + \$40\text{M} = \$140\text{M}$
Jacks or Deuces' profits over the last 12 months?	$\$180\text{M} - \$140\text{M} = \$40\text{M}$

Aces Delivery Service



Question 5

What should Aces do?

Interviewer guidance

- Mimic competitors' moves and charge differently for different segment
- Or continue fortify dominance in the Regional and Long-Haul segment, and charge higher prices to increase profits
- Candidate might also recommend that Aces seek opportunities to decrease transportation costs and establish a sustainable competitive advantage in the regional and long haul segments.

Campaign Swag



Behavioral Case Question

- How would you evaluate the current strategy of your previous employer?

Case Prompt

Your client is the owner of a regional chain of convenience stores operating in the United States. It is an election year, and one of the leading candidates is a divisive personality. Those who approve of the candidate do so with gusto, and often display clothing and signs indicating their support. Those who disapprove of him oppose him strongly, and will often go to great lengths to ensure they are not mistaken for supporters of his campaign. Should the convenience store owner sell merchandise relating to this candidate's campaign in her stores?

Interviewer Guidance

Information to provide if asked:

- Merchandise would include T Shirts, hats, flags, lawn signs, mugs and bumper stickers. This merchandise would be visually distinctive and eye-catching. Shoppers would be sure to notice the addition of this merchandise in these convenience stores.
- The client operates across 25 locations across five states in the midwestern US and would launch across all stores.
- The store locations fall in a variety of political districts, some of which lean towards or against the candidate in question.
- The owner would like to make this decision based on profitability, but would like to know what other factors should be considered as well.
- There are six months remaining before election day, and we can assume none of this merchandise will be sold after that point.

Campaign Swag



Case Overview [Candidate-led]

- The candidate should drive to a profitability calculation of the campaign merchandise, benchmark this against current store performance by category and identify that regardless of the decision made on campaign merch that the store has an opportunity to improve its performance by eliminating trucker supplies. The campaign merchandise is one possible substitute, but the candidate should advise investigating (and may brainstorm) other moneymaking opportunities for the store.

Structure: Interviewer guidance

Guidance for Interviewer:

- A successful structure will evaluate the potential profits of launching this line of products (potential revenue minus upfront and ongoing costs) and attempt to compare them to the opportunity cost of doing so (how would those profits compare to the profits of the stores' existing product mix).
- Excellent structures will consider the cost/risk of alienating customers opposed to this candidate, and what to do with unsold inventory after the election.

Campaign Swag



Profitability

The candidate should evaluate the potential dollar profits and profit margin of launching this line. To do this, the candidate will have to calculate revenue, fixed and variable costs.

Interviewer Guidance

As candidate asks, provide the following information:

- The campaign will involve hats, shirts, flags, mugs, lawn signs and bumper stickers.
- The campaign will last for six months until the end of election season.
- There are 25 stores in the client's portfolio.
- Fixed Costs: Launching this campaign would involve a one time setup fee of \$19,000 and monthly licensing fees of \$1000.
- Pricing, Cost of Goods and Volume per month per store have been forecast below:

Pricing:

Hats and Shirts-\$20
Flags, Mugs and Signs-\$15
Bumper Stickers: \$5

Cost of Goods:

Hats: \$12
Shirts and Mugs: \$10
Flags and Signs-\$5
Bumper Stickers: \$0.50

Volume per month per store:

Hats: 50	Shirts: 30
Flags: 15	Mugs: 30
Signs: 10	Stickers: 100



Campaign Swag

Calculations

	PRICE	COST	PRICE-COST	VOLUME PER MONTH PER STORE	Gross Margin Per Store Per Month
Hats	\$20.00	\$ 12.00	\$ 8.00	50	\$ 400.00
Shirts	\$20.00	\$ 10.00	\$ 10.00	30	\$ 300.00
Flags	\$15.00	\$ 5.00	\$ 10.00	15	\$ 150.00
Mugs	\$15.00	\$ 10.00	\$ 5.00	30	\$ 150.00
Signs	\$15.00	\$ 5.00	\$ 10.00	10	\$ 100.00
Stickers	\$ 5.00	\$ 0.50	\$ 4.50	100	\$ 450.00
Total Revenue					\$ 1,550.00
	PRICE	VOLUME		Profit per store per month	\$ 1,550.00
				Number of stores	25
Hats	\$20.00	50	\$ 1,000.00	Total monthly profit	\$ 38,750.00
Shirts	\$20.00	30	\$ 600.00	Months remaining	6
Flags	\$15.00	15	\$ 225.00	Total Gross Profit of campaign	\$ 232,500.00
Mugs	\$15.00	30	\$ 450.00	Initial setup fee	\$ 19,000.00
Signs	\$15.00	10	\$ 150.00	Monthly licensing fee (6x1000)	1000
Stickers	\$ 5.00	100	\$ 500.00	Total Profit of Campaign	\$ 212,500.00
			2925	Profit Margin	0.484330484
		Stores	25		
		Months	6		
		Total Revenue	\$438,750.00		

If they ask, candidate may be given permission to round as appropriate:

\$1500 gross profit per store per month

\$40,000 total gross profit per month

\$225,000 total gross profit across campaign

\$200,000 total profit potential of campaign.

\$450,000 Total Revenue

45-50% Profit Margin

The important takeaway is that the total profit potential of selling this merchandise for six months is roughly \$200,000 at around a 45-50% profit margin, and in order to know if this is good or bad it must be compared to the potential profits of not selling this merchandise.

Campaign Swag



Opportunity Cost

Candidate should seek to benchmark the ~\$200,000 profit potential of the merchandise campaign against the profits of not selling this merchandise at all. Prompt the candidate to inquire how s/he would go about figuring that out, and guide towards an analysis of current performance of product categories in the convenience store. Show Exhibits 1 and 2.

Exhibit Analysis: Interviewer Guidance

The candidate should realize that Trucker Supplies are a dog. The category will generate only as much revenue over the next six months as the entire forecast profit of the campaign materials and at a significantly lower profit margin. Additionally, sales of Trucker Supplies have been trending downward for two years.

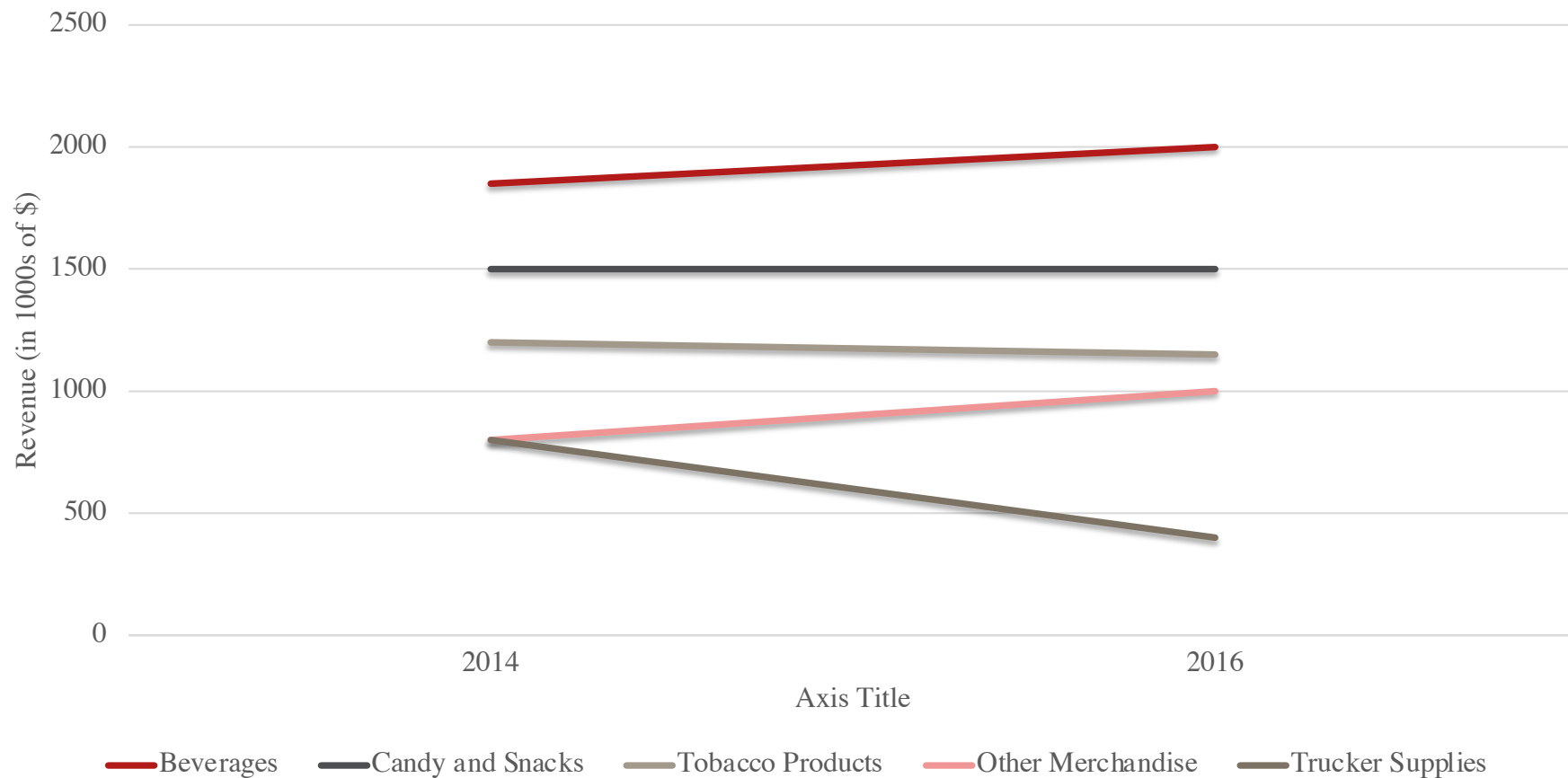
The store may be advised to reallocate shelf space currently occupied by Trucker Supplies. Great candidates will come to this conclusion AND realize that campaign merchandise is only one option to do this, and will drive towards the brainstorm.



Campaign Swag

Exhibit 1

Revenue by Product Category

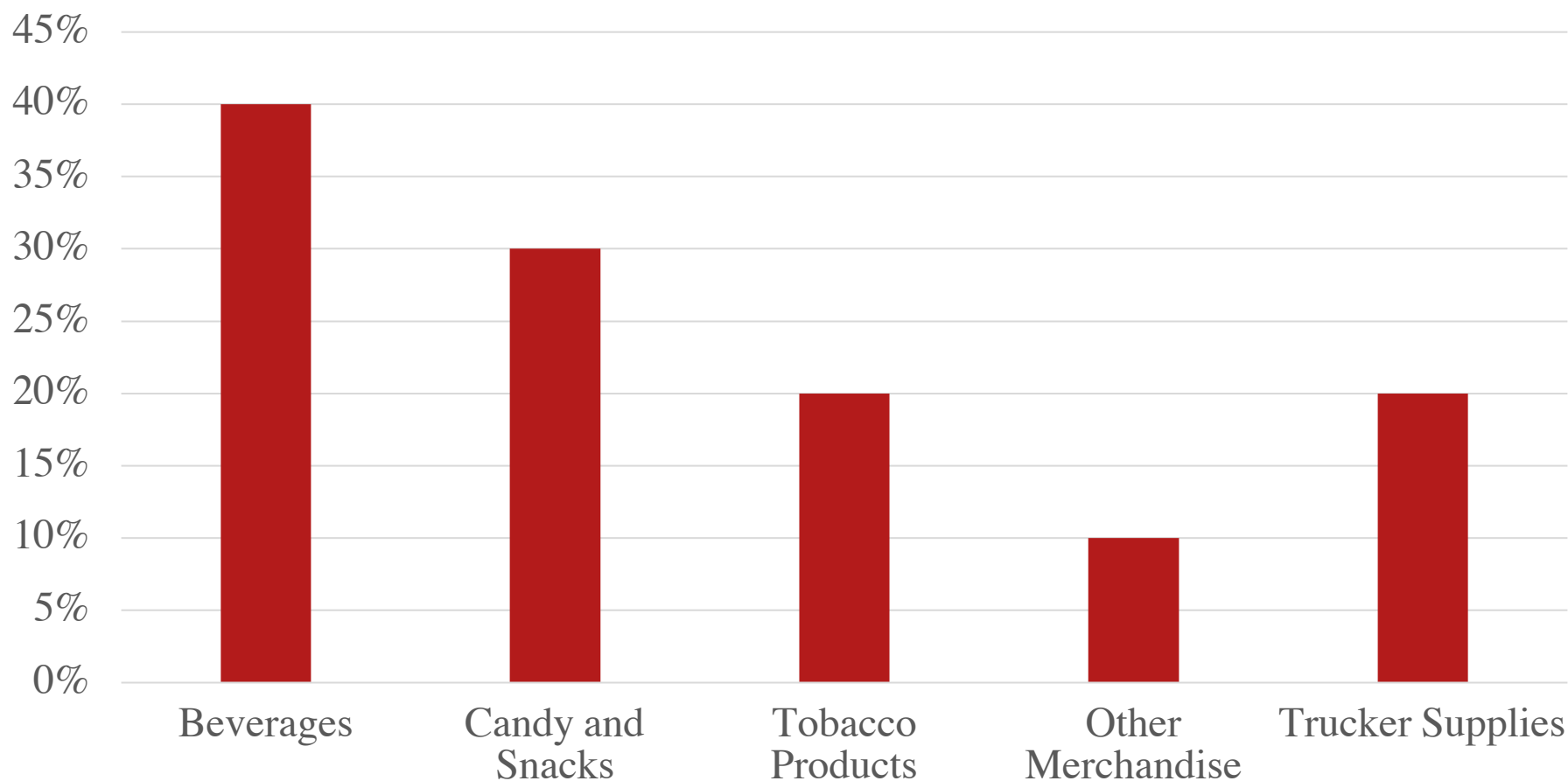




Campaign Swag

Exhibit 2

Profit Margin by Product Category



Campaign Swag



Brainstorm

Have the candidate brainstorm risks and benefits of replacing trucker supplies with the candidate's promotional merchandise. Good candidates will not get locked into the idea of selling candidate merch, and will seek out other opportunities to replace shelf space dedicated to trucker supplies. If the candidate does not point this out him/herself, guide the candidate to do a second brainstorm other options besides candidate merchandise.

Possible Brainstorm Structure

Risks

Benefits

Candidate Merch

- Alienate user base who does not support candidate and lose future business
- Left with unsold merchandise after campaign ends

- Immediately see higher profits by replacing trucker gear
- Gain loyalty from supporters of the candidate

Other Possibilities

- Survey truckers to see why sales are declining-can that business return?
- Increase shelf space for high margin popular candy and snacks
- Rotating seasonal merchandise-beach gear, winter hats, etc.

Campaign Swag



Recommendation

Interviewer guidance

Candidate can go in either direction, and should take into account risks listed in brainstorm if moving forward with campaign merchandise. Recommendation should be based on data. Next steps could be to evaluate profitability of selling multiple candidates' swag, cost/benefit analysis of lost business from those who dislike the candidate versus gained business from his fans.

No matter what, the candidate should advise moving away from trucker supplies and finding a better long term product category for that shelf space.



Ice Cream Truck

Behavioral Case Question

Spend 15 Minutes on:

- Tell me about the last time you admitted an error or mistake to your boss, client, or colleague

Case Prompt

Your client is an ice cream truck, operating out of a flea market in Houston, Texas. They're facing a variety of issues currently and are looking for help in determining a sustainable operating model and go-forward strategy. They have a variety of questions they are hoping you are able to address.

Case Overview [Interviewer-led]

This is an interviewer-led case, similar to EY OTS style. There are four questions to be asked sequentially during the course of the interview:

Question 1: What are drivers that could effect the financial position of this enterprise?

Question 2: What is the gross contribution margin?

Question 3: Assuming all factors stay the same (25 total customers/day, days/mo, mo/yr, price/scoop), how many people must order double ice cream cones/day to reach \$20K in annual revenue?

Question 4: What are some tactics the ice cream stand can introduce to increase its profit?

Ice Cream Truck

Approach / Analysis

Question 1: What are drivers that could effect the financial position of this enterprise?

Have the interviewee brainstorm potential drivers. Some examples include:

Revenue

- Prices
- Volume
- Mix of products
- Seasonality

Costs

- Variable Costs
 - COGS
 - Labor
- Fixed Costs
 - Insurance
 - Utilities
 - Rent
 - Depreciation
 - Repairs/Maintenance
 - SG&A
 - Tax
 - Interest

Ice Cream Truck

Approach / Analysis

Question 2: What is the annual gross contribution margin?

Provide the following information (note that this includes extraneous information):

Revenue

- They sell two products (Single/Double Scoop ice cream cones)
 - Single Scoop cones are priced at \$4.00
 - Double Scoop cones are priced at \$7.00
- There are 25 customers per day, of whom 15 buy Single Scoop and 10 buy Double Scoop cones
- The stand is open 30 days a month for 4 months a year

Costs

- There are two line-level employees scooping ice cream at \$8.00 per hour (for an 8-hour day, each working 4 hours) and there is a manager that is salaried at \$10.00 per hour
- COGS is 50%
- The truck lease costs \$1K to lease per month
- Insurance is \$3K per year
- Tax is 20%

Annual Gross Contribution Margin:

- **Revenue:** \$15,600
- **Variable Costs:** \$15,480 (hint: the manager is counted in SG&A and all other expenses are fixed)
- **Gross Margin: \$120**

Ice Cream Truck

Approach / Analysis

Question 3: Assuming all factors stay the same (25 total customers/day, 30 days/month, 4 months/year, price/scoop), how many people must order double ice cream cones/day to reach at least \$20K in annual revenue?

Interviewee may solve this either algebraically, setting the total revenue = \$20,000 and attempting to calculate the mix, or back into it by another method. A sample method used is found below:

First, we checked to see if the target of \$20K was viable. We assumed that all customers ordered Double Scoops only – 25 people ordered per day, at a rate of 30 days/month, for 4 months/year at a price of \$7.00 per cone. This yielded \$21K in potential revenue.

We then took the surplus above the target goal of \$20K, which happened to be \$1K, and divided that by the # of days/month, the # of months/year, and the price for a single scoop ice cream cone at \$4.00. This gave me the solution that a minimum of 2.08 customers would have to order a Single Scoop a day to hit \$20K exactly.

Since the # of consumers are integers, we would need to round down to 2 customers/day purchasing single scoop cones. This means that **23 people/day must order Double Scoop ice cream cones in order to make >\$20K a year in revenue.**

Total revenue assuming this customer mix/year = \$20,280

Ice Cream Truck

Approach / Analysis

Question 4: What are some tactics the ice cream truck can introduce to increase its profits?

The interviewee is free to brainstorm here as best they can (recommend that they create a mini-structure to guide their thoughts)

Examples of profitability drivers include:

- Change in mix of customers/products to focus on high-profit areas
- Expand into different seasons/locations dependent on projected customer volume
- Franchise the truck to reduce operational burden while receiving risk-free cash (disadvantage is lack of control of brand name)
- New product introduction (different flavor, cones, toppings)

Croger



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time you adopted a teammate's opinion which was different from yours?

Case Prompt

Our client, Croger, is a national grocery retailer that has seen declining profit margins within its frozen food section over the past 4 years. The CEO has brought you in to diagnose and recommend a course of action.

Case Overview [Interviewee-led]

Profitability case. Structure should be focused on Profitability, Company, Products, Value Chain, and Market.

Note: This case is designed to get the interviewee to think about profitability problems from a high level. For this case, math is not as important as the logic behind their thinking.

Croger

Case Information

Goal:

- Find what's causing margin % decline
- Recommend a solution

Business Model:

- We are a retailer. We buy products from manufacturers and sell them to end-consumers

Frozen Food Gross Margin:

- 2018 = 27%

Competition:

- Not a concern for this case

All Store Sales

- Not a concern for this case

Case Flow Guide

Part 1: Top-Line Frozen Food Sales

Part 2: Frozen Category Sales

Part 3: Ice Cream Sales

Part 4: Potential Solutions / Risks (Brainstorming)

Part 5: Recommendation

Croger

Approach / Analysis

Question 1: (After interviewee walks through structure and talks about revenues and costs, show Exhibit 1). What do you think is going on here?

Key insights

- Steady sales growth – over 10% YoY – therefore not a revenue issue
- High COGS growth – almost double sales growth YoY – therefore definitely a cost issue
- Gross Margin decreased from 38% to 27%

Note:

- This should be a very quick slide
- Interviewee should estimate the numbers and quickly determine this is a cost issue.

Croger

Approach / Analysis

Question 2: (After interviewee identifies the cost issue and asks for category or product sales, show Exhibit 2). We were able to pick up some top line data on category sales within our frozen food isles. What insights can you give me?

Key insights

- Pizza is not the issue – no change in margin over the past 4 years (50% margin each year)
- Novelties are not the issue – no change in margin over the past 4 years (20% margin each year)
- Other is not the issue – increase in margin over the past 4 years (20% to 23%)
- Ice Cream is the issue – margin declined from over 50% to under 20% over the past 4 years

Note:

- Since we identified this is a cost issue and not a revenue issue, the interviewee should focus on with gross margin or changes in COGS for each of the categories. For this case, its best to focus on margin.
- Interviewee should not assume that increases in revenue = increases in units sold

(Optional) Math Exercise: If interviewee does not talk about margins, ask him/her to estimate gross margins for each category in 2015 and 2018.

- Answers above

Croger

Approach / Analysis

Question 3: (After interviewee identifies ice cream's decreasing margin and asks for any ice cream product information, show Exhibits 3&4). We don't have brand cost information at this time, but we have some sales information on the types of ice cream products we sell. What do you take away from this information?

Key insights

- Premium Organic Ice Cream brands increased from 20% to 50% of ice cream revenues, with unit sales over doubling over the past 4 years.
- Croger's Private Label Generic Ice Cream declined from 50% to 20% of ice cream revenues, with unit sold cut in half over the past 4 years.
- Other Ice Cream brands remained static at 30% of ice cream revenues.
- Since 2015, overall ice cream revenues increased by almost 40%, while the number of units sold decreased by 15%.
- Therefore, low margin Premium Organic brands are cannibalizing Croger's high margin Private Label brands

Note:

- Private Label usually has a higher gross margin than Premium brands.

Question 4: What consumer insights do you suspect from this?

- Overall ice cream unit sales are decreasing
- Premium organic brands are selling more than generic brands for this product
- People are willing to pay more for premium quality brands

Croger

Approach / Analysis

Question 5: (After interviewee has identified low margin Premium Organic brands are cannibalizing the high margin Private Label brands). What are some potential solutions for Croger to increase its gross margin and associated risks?

Here are a few options:

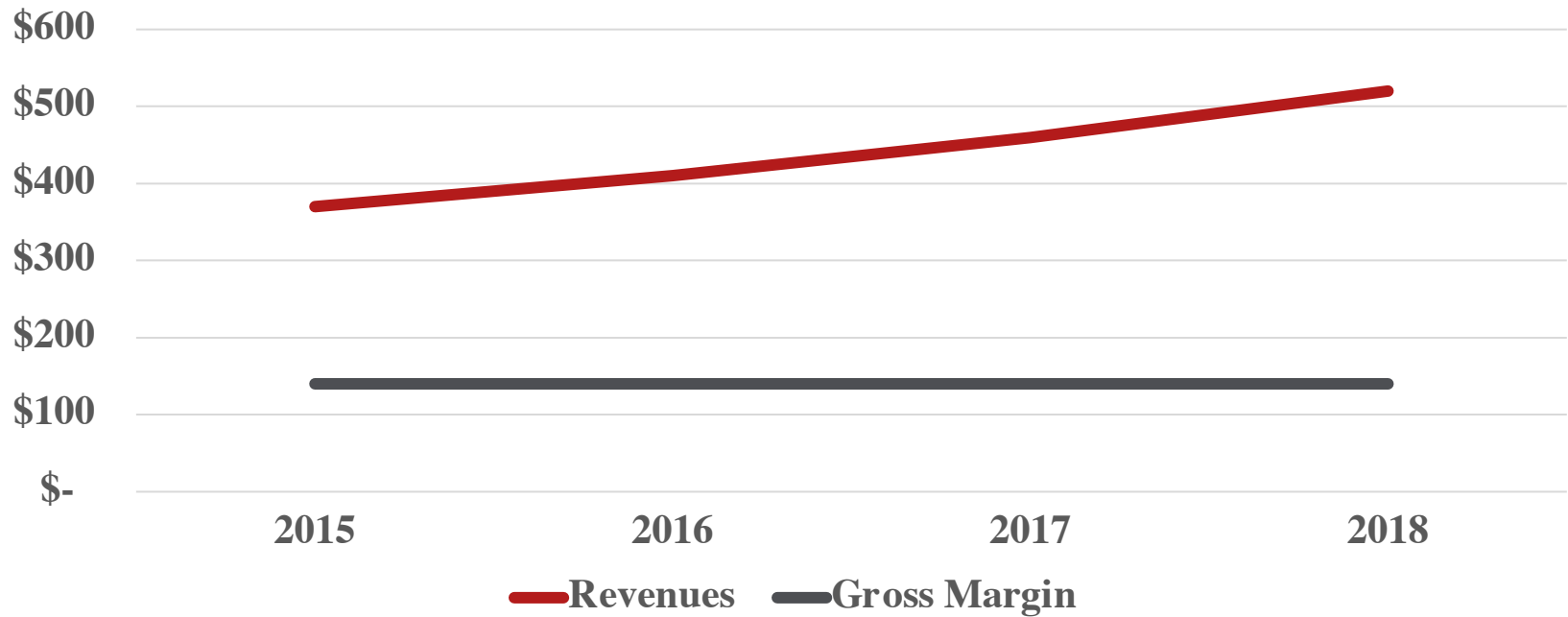
- Produce a private label ice cream to directly compete with Premium brands' ice creams
 - Risks: could be costly to add or transform operations, might not have capital
- Change placement of ice cream products within Frozen isles
 - Risks: Premium brands might pull out of store, might reduce overall ice cream sales further
- Run promotions on Private Label ice cream
 - Risks might not drive sales, could be costly
- Do customer research within a few stores to understand how to cross sell private label ice cream with other products and then test pilot marketing campaign in a specific location
 - Risks: costly to implement, customer adoption might not work
- Markup Premium brands further to generate higher margins
 - Risks: might reduce sales of Premium brand ice creams, Premium brands might not allow it

Question 6: CEO just walked in. What's your recommendation?

Note: Interviewee should relate all key insights from the exhibits to the recommendation

Croger

Exhibit 1. Frozen Food Sales



Croger

Exhibit 2. Frozen Food Category Sales

		2015	2016	2017	2018
Pizza	Revenues	\$ 70	\$ 80	\$ 100	\$ 110
	COGS	\$ 35	\$ 40	\$ 50	\$ 55
Novelties	Revenues	\$ 70	\$ 80	\$ 90	\$ 100
	COGS	\$ 56	\$ 64	\$ 72	\$ 80
Ice Cream	Revenues	\$ 130	\$ 150	\$ 160	\$ 180
	COGS	\$ 59	\$ 86	\$ 113	\$ 145
Other	Revenues	\$ 100	\$ 100	\$ 110	\$ 130
	COGS	\$ 80	\$ 80	\$ 85	\$ 100
Total Frozen Food	Revenues	\$ 370	\$ 410	\$ 460	\$ 520
	COGS	\$ 230	\$ 270	\$ 320	\$ 380

Note: Numbers in Millions

Croger

Exhibit 3. Ice Cream Sales

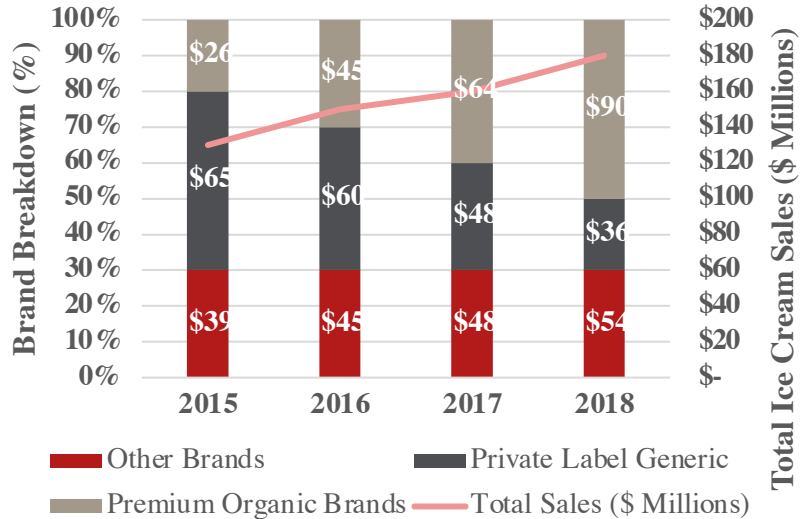
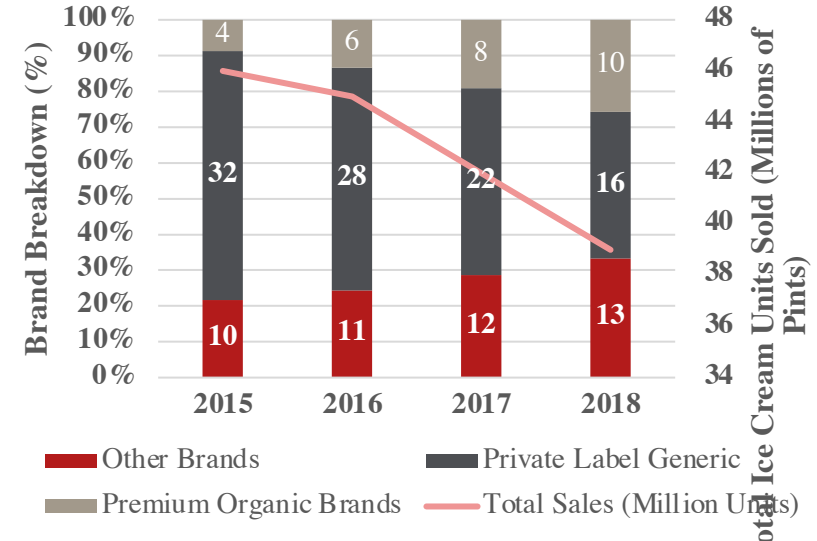


Exhibit 4. Ice Cream Units Sold



Bank Loan Operations



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time when you had to manage conflict within a team

Case Prompt

Your client is a bank that is considering changing their loan issuing operation to a new system. They would like you to evaluate the pros and cons of each system, and advise them on how to proceed.

Case Overview [Interviewee-led]

This is an interviewee-led case that tests profitability concepts and mental math. The interviewee must pay close attention to their math structure, or they can very easily get lost in the numbers.

Bank Loan Operations

Case Information

- The bank's original loan process has the following steps:
- A loan application is generated at a bank branch
 - The branch completes a first background check
 - If the applicant clears the first background check, it is sent to a central office for a second background check
 - The central office either approves or denies the loan

The bank is considering eliminating the first background check and relying only on the check at the central office. Because more scrutiny would be needed at the central office, the total background check cost for each application would increase from \$100 to \$110 per application.

For the original system, about 50% of all applicants make it through the first background check, and then 90% of those make it through the second background check.

For any "good loans" where the bank is re-paid, the bank makes \$0.20 per dollar loaned.

For any "bad loans" that are not re-paid, the bank loses \$0.50 per dollar loaned.

Should the bank proceed with the new system?

Case Flow Guide

Part I: Ask the interviewee to come up with a framework

Part II: Provide the interviewee with specifications and guide them to come up with a profitability analysis

Part III: Ask for recommendation

Bank Loan Operations

Case Information

Note: only provide the following information if the interviewee asks for it.

- The bank receives about 1,000 loan applications per year
- The average value of a loan is \$10,000
- The proposed program has a 40% acceptance rate.
- The original program resulted in about 10% bad loans.
- The proposed program would result in only 5% bad loans (due to higher scrutiny at the central office).

Approach / Analysis

The interviewee should look to evaluate the profitability of each proposed system.

- A good structure will show: strong profitability calculations and mental math.
- A better structure will show: a distinct layout of "original system vs. new system", along with some of the non-financial implications

Bank Loan Operations

Approach / Analysis

Original System:

$(\# \text{ applications}) * (\# \text{ approved}) * (\$ \text{ value of loans}) * (\text{amount earned per } \$ \text{ loaned})$

$(1000 \text{ applications}) * (50\% \text{ first round loans approved}) * (90\% \text{ second round loans approved}) * (\$10,000 \text{ per loan}) * [(90\% \text{ good loans} * \$0.20 \text{ per dollar good loan}) - (10\% \text{ bad loans} * \$0.50)] = \$585,000 \text{ expected revenue}$

$(\$585,000 \text{ expected revenue}) - [(\$100 \text{ cost per loan}) * (1000 \text{ loans})] = \underline{\$485,000 \text{ expected profit}}$

Proposed New System:

$(\# \text{ applications}) * (\# \text{ approved}) * (\$ \text{ value of loans}) * (\text{amount earned per } \$ \text{ loaned})$

$(1000 \text{ applications}) * (40\% \text{ loans approved}) * (\$10,000 \text{ per loan}) * [(95\% \text{ good loans} * \$0.20 \text{ per dollar good loan}) - (5\% \text{ bad loans} * \$0.50)] = \$660,000 \text{ expected revenue}$

$(\$660,000 \text{ expected revenue}) - [(\$110 \text{ cost per loan}) * (1000 \text{ loans})] = \underline{\$550,000 \text{ expected profit}}$

Bank Loan Operations

Approach / Analysis

Recommendation:

A proper recommendation would indicate that the bank should move forward with the new loan system.

An excellent solution/recommendation consist of correct math and structure, with additional considerations discussed such as legal regulations that may require multiple checks, or possible increased training costs for employees at the central office to handle the background checks in their entirety.

Discount Retailer | A.T. Kearney: Rd 1 FT 2018



Case Prompt

Your client is a clothing retailer that specializes in discount fashion (think of brands like Old Navy and Kohl's). The company operates exclusively in North America (US and Canada). In the last two years, your client has experienced a decline in profitability and has hired us to 1) diagnose the issue – what is causing the decline and 2) provide a turnaround strategy to get back on track.

Case Overview [Interviewer-led]

This is an operations / supply chain focused case. Ask the interviewees what they would ask each member of the c-suite. Provide them with additional case information as they ask the right questions.

Discount Retailer

Case Information

Industry (CMO)

- Market share in 2015 was 70%
- Market share in 2017 (now) is 60%
- 3 major competitors in this space
 - No new entrants recently
- No major shift in customer demographics
 - But people are moving away from cities
 - Our client operates in cities

Financials (CFO)

- Revenue decreased by 10%
- COGS increased by 30%
- Same-store sales decreased as people move away from cities to sub-urban areas

Supply Chain (COO)

- COGS increased because:
 - Raw material cost went up
 - Channel rebates went down
 - Less kickback / incentives to order more units

Case Flow Guide

Question 1: What would you ask the CMO?

Question 2: What would you ask the CFO?

Question 3: What is your recommendation to the CEO and the COO?

Discount Retailer

Approach / Analysis

Question 1:

What would you ask the CMO?

This initial question guides the interviewee to think from top-down, starting from a high-level view of the overall industry.

Good questions to ask include:

- Changes to market share (down to 60% from 70% two years ago)
 - Overall size of the industry remained the same but our client's market share declined? **NO**
 - The overall size of the pie grew but our client did not grow as fast? **NO**
 - New entrants stealing our market share? **NO**
- Changes to the products
 - New innovation? **NO**
 - New differentiating factor? **NO**
- Changes to the customer base
 - Different demographics now buying our clothes? **NO**
 - Changes in brand perception? **NO**
 - Changes in spending habit? **NO**
 - Changes to same-store sales? **YES, why is that happening?**
 - Our client's stores are in cities and people are moving to sub-urban areas
 - This indicates **1) sales are down** and **2) inventory issue (excess inventory, expensive holding cost, channel contracts)**. This is a hint for a deep dive into **inventory / COGS**.

Discount Retailer

Approach / Analysis

Question 2:

What would you ask the CFO?

Good questions to ask include:

- Changes to revenue
 - Change in price? **NO**
 - Change in volume? **YES, people are moving away from where our stores are**
- Changes to cost (ask the interviewee to brainstorm cost drivers)
 - Changes to fixed cost (e.g. store leases, salary, etc.)? **NO**
 - Changes to variable cost? **YES, what goes into variable cost & what could be happening?**
 - There is an increase in wholesale prices (passed down from manufacturer from an increase in raw material cost)
 - There is a decrease in rebates for volume (decline in channel promotions)
 - **These two issues led to a 30% increase in COGS.**

Question 2b: Given that in 2015 revenue was \$200M and gross margin was 40%, how much did gross profit change if volume decreased by 10% and COGS increased by 30% total in two years?

	<u>2015</u>	<u>2017</u>
Rev	200M	180M = (200M * 0.9) No change in price
COGS	120M	156M = (120M * 1.3) 120M plugged from 200M – 80M
GP(40%)	80M	24M = <u>gross profit decreased by 70%</u> = 1 – (24/80)

Discount Retailer

Approach / Analysis

Question 3:

What would recommend to the CEO and COO? (This is a hint to wrap up the case)

Good Recommendation

1. Answer the first question in the case prompt – Diagnose the issue
 - Profitability declined due to
 - 1) decrease in sales from people moving away from cities – 10%
 - 2) increase in COGS from increase in wholesale prices (passed down from manufacturer) and decrease in channel rebates – 30%
 - 3) 70% decrease in gross profit – urgent problem
2. Turnaround strategy
 - Fixed contracts to lock in rebates / promotions and wholesale prices
 - Rationalize SKUs and cut underperforming products
 - Close underperforming stores
 - New suppliers
 - Potentially open smaller stores in sub-urban areas to recapture lost customers

Big Wheel I Roland Berger: Rd1 Intern 2018

Case Prompt

Your client is Big Wheel Bike Share and they operate bike sharing services in two major cities, Washington DC and Chicago. Their bike sharing business is self-service, where they have stations across each city with a number of bikes docked and customers simply pay at the station kiosk to rent bikes. They operate as a monopoly in both Washington DC and Chicago. The management believes that their operation in Washington DC is more profitable. Our objective is to determine:

- 1) Is the management right that Washington DC is more profitable than Chicago?
- 2) If so, why?
- 3) How can Big Wheel improve their overall profitability?

Case Overview [Interviewee-led]

This is an interviewee-led case. The interviewee should customize their approach to analyze the revenue model for a bike sharing business and relevant cost drivers. The interviewee should also recognize that while Big Wheel is a monopoly, there are competition from other modes of transportation (e.g. public transit, driving, etc.)

Typical framework: Revenue/Cost for DC and Chicago, External Competition, Growth Strategies

Big Wheel

Approach / Analysis

Step 1: Revenue Model

If the interviewee does not think about this right away, have them brainstorm how a bike sharing service makes money.

Big Wheel Bikeshare Fares

Annual subscription - \$70 / year

Daily rate - \$10 / day (unlimited for 24 hours, 1 day pass = 1 ride)

Washington DC

200K annual subscribers and each person rents 10 rides a year

1M rides a year from daily rentals

Chicago

600K annual subscribers and each person rents 5 rides a year

1M rides a year from daily rentals

	<u>Subs Revenue</u>	<u>Day Pass Revenue</u>	<u>Total</u>	<u>Revenue / Ride</u>
DC	$(\$70 * 200K) = \$14M$	$(\$10 * 1M) = \$10M$	\$24M	$\$24M / (200K * 10 + 1M) = \8
Chicago	$(\$70 * 600K) = \$42M$	$(\$10 * 1M) = \$10M$	\$52M	$\$52M / (600K * 5 + 1M) = \13

Takeaway: Chicago makes more revenue in total and on a per-ride basis.

Big Wheel

Approach / Analysis

Step 2: Cost Drivers

If the interviewee does not move to cost drivers after revenue, ask them about the other side of profitability and begin brainstorming about potential costs.

Give interviewees **the percentages** and have them do quick math

	<u>Chicago</u>	<u>Washington DC</u>
Bike Depreciation	\$13M 26%	\$5M 25%
Rebalancing Inventory	\$16M 32%	\$5M 25%
Bike Maintenance	\$8M 16%	\$3M 15%
Station Cost	\$8M 16%	\$4M 20%
SG&A	\$10M 10%	\$3M 15%
	<u>\$50M</u>	<u>\$20M</u>
Revenue from previous section	<u>\$52M</u>	<u>\$24M</u>
Profitability	<u>\$2M</u>	<u>\$4M</u>
Profit per ride	\$0.5 = (\$2M / 4M rides)	\$1.33 = (\$4M / 3M rides)

Takeaway: Yes, the management was correct that Washington DC was more profitable. This is primarily driven by the lower cost of rebalancing inventory (moving bikes between stations).

Big Wheel

Approach / Analysis

Step 3: Competition Brainstorming

If the interviewee does not think about this right away, have them brainstorm other modes of transportation in a big city.

Public transportation, Driving, Carpooling, Ferry, Walking, On-Demand Ride Services

Step 4: Growth Strategy Recommendations

The interviewee can be creative here. For example:

- Target health-conscious commuters
- Promotions based on the number of miles biked a year
- Further tiered pricing
- Reduce rebalancing cost by using analytics to optimize the number of bikes at each station
- Corporate discounts

DrugCo



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time when you received negative feedback and how you dealt with it.

Case Prompt

Our client is pharmaceutical drug company. The company is less profitable on approved drugs than its peer companies. The client has engaged our team to diagnose the issue and provide a recommendation.

Case Overview [Interviewee-led]

This is a typical BCG first round interview case, interviewee-led and more conversational. The interviewee is expected to drive the conversation, diagnose the main issue, and ultimately brainstorm creative ideas for recommendations. Push back on the interviewee's ideas and push them to have an intellectual debate.

DrugCo

Case Information

Both the client and peer companies (the industry) have the same number of drugs before pre-clinical trial (e.g. 100 drugs).

After testing and approving, the client and the industry launch the same number of drugs.

- 100 → 5.4

No material differences between drugs from the client and the industry

Case Flow Guide

Part 1: After the initial framework, if the interviewee had not mentioned cost or approval rates, guide them toward that direction.

Part 2: Provide Exhibit 1 once they question the cost structure or the approval rate differences

- Push the interviewee to diagnose the issue and think about why the approval rates are inverted

Insights from Exhibit 1:

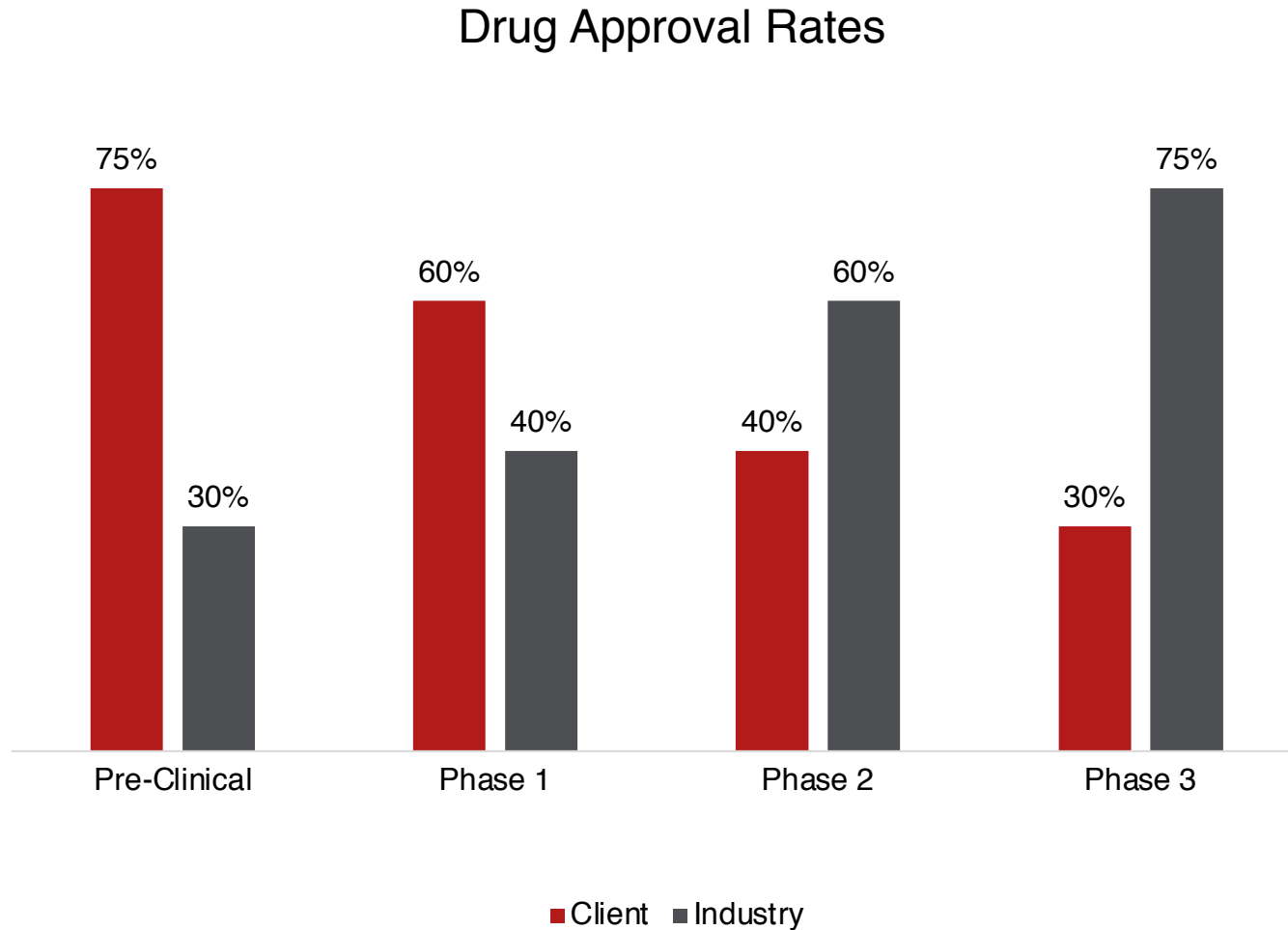
- The client has lax approval standards in the beginning phases, leading to more drugs going into the later phases of development versus the industry where they are ultimately declined approval.
- The problem is that the later phases are more expensive to test, thus even though the company launches the same number of drugs as the industry, the cost that is allocated across the approved drugs in sum is way higher because they are testing more in the phase 2-3.

Part 3: Brainstorm ways to have stricter approval rates at the beginning phases (open for ideation)

- Financial incentives, Management pressure, Equipment, Employee expertise

Part 4: Recommendation

DrugCo – Exhibit 1



Down Under - **Deloitte.**



Behavioral Case Question

Spend 15 Minutes on:

- Describe a time when you took the initiative to do something when it wasn't your responsibility

Case Prompt

Our client is Down Under Apparel an Australian based swim wear and lifestyle company. The company unexpectedly missed its internal earnings target. The CEO has called your team to help diagnose the problem and provide a recommendation.

Case Overview [Interviewer-led]

This is an interviewer-led case, guide the interviewee through the following:

- Develop structured approach to identify & recommend a solution to the problem
- Methodically learn more about the client to tailor the analysis
- Analyze the forecast & actual information through interpreting data
- Synthesize information to determine why Down Under missed its earnings forecast
- Brainstorm a potential solutions and deliver a recommendation

Down Under

Case Information

Competitors

- The client competes against a difference competitor set depending on the product. Historically, the Maui was the largest rival in the surf and athletic swim wear, but offered lower quality products at lower price points.
- The client has no interest in growth through competitor acquisition.

Customers

- **Surfers and Professional Athletes (30% of Revenue):** Values performance and cutting edge technology (hydrodynamic). Willing to pay for performance, yet low earnings for the average surfer and swimmer suggest limits to what they will pay
- **Luxury Seekers (70% of revenue):** Fastest Growing segment, contributing to the explosive growth. These are casual users who enjoy the performance but not a key to buying process. Values the brand and ascetics. Brand offers legitimacy.

Channel

- **Surf Shops:** Typically small independent retailers located in beach towns. Client has long standing relationships and entry point for any given market. See more Surfers and Professional Athletes. Carry limited merchandise due to small locations, almost exclusively performance wear.
- **Big Box Retailers** (think Dick's, not Walmart): Asking for products at targeted price points to appeal to their customers. Typically more price sensitive customers. Offers a wide variety of performance wear and equipment (boards, beach equipment etc.) some lifestyle products. Frequent Sales
- **Department Stores** (think Bloomingdales, not J.C. Penny): Least price sensitive customers. Offers a wide variety products focusing on the lifestyle wear. Only channel outside online that offers the resort collection.
- **Direct to Consumer** (Online): Attracts repeat customers who are already familiar with brand and products. Never puts anything on sale.

Down Under

Approach / Analysis

Step 1: Developing a framework

The candidate should summarize the case and create a framework

[The interviewer should evaluate whether or not the framework is MECE, which is a good indication of structured thinking]

Key considerations of this case:

- The candidate has to recognize that the **main topic of the case is identifying why Down Under Missed It's earnings forecast**
- **Understanding the client and industry** is key prerequisite before launching into a project
- **Concept of forecasts vs. actuals** and the ability to distinguish between the two
- **Segmenting data** is necessary for analysis and to draw insights (e.g., customer types, sales channels, etc.)
- **Precise questions** uncover additional data
- **Risks and challenges** of launching a new product

After the framework, the candidate should state a hypothesis and work through a framework to test it.
Redirect candidate that immediately requests data to learn more about the client

Note: The candidate should attempt to learn more about the client and then identify hypotheses

Down Under

Approach / Analysis

Step 2: Asking critical questions and analyzing data effectively

The candidate should come to the following conclusion: The client missed its earning forecast due to selling 2M fewer surfboards/ surf equipment at surf shops

The candidate can arrive to the conclusion in several ways. One potential path is below:

- Candidate asks about expected earnings and is provided **Exhibit 1**
- Candidate compares expected sales and costs to determine expected earnings = \$1,100 million
- Candidate asks for a breakdown of the sales forecast and is provided **Exhibit 2**
 - No analysis at this time. The candidate moves to actual sales and is provided **Exhibit 3**.
- Exhibit 3 provides the following information:
 - Actual Sales = \$12,000 million
 - **New category introduced** in 2014: Surf Equipment
 - Interviewer must provide the following when prompted: \$800 million sold at Surf Shops
 - Using the information on the sheet, $\$800 \text{ million} / \$400 = 2 \text{ million units sold}$
 - Compares this information to Exhibit 2 and determine that 2M is **only 50%** of units sold compared to forecast
 - **Revised hypothesis:** Missed surf equipment sales at surf shops is the issue for missing target
 - Proposes to validate through understanding cost information and is provided **Exhibit 4**
- Exhibit 4 confirms that costs are inline with expectations and costs are not a problem

Down Under

Approach / Analysis

Step 3: Brainstorming a solution

Candidate should propose potential solutions to increase sales at Surf Shops. If the candidate does not switch to “solutioning,” then guide him/her with the following question:

Thinking **about your own or a friend’s shopping experience**, how could the client increase sales?

A good response would include the following considerations:

- Tailor to the customer experience instead of sales overall
- Acknowledge but not focus on other ways to increase sales (e.g., working with the vendor, product modification, etc.)
- Outline potential challenges, risk, or other considerations

Note: The candidate should prepare a structure or framework to organize brainstorming

Down Under

Approach / Analysis

Step 4: Brainstorming a solution

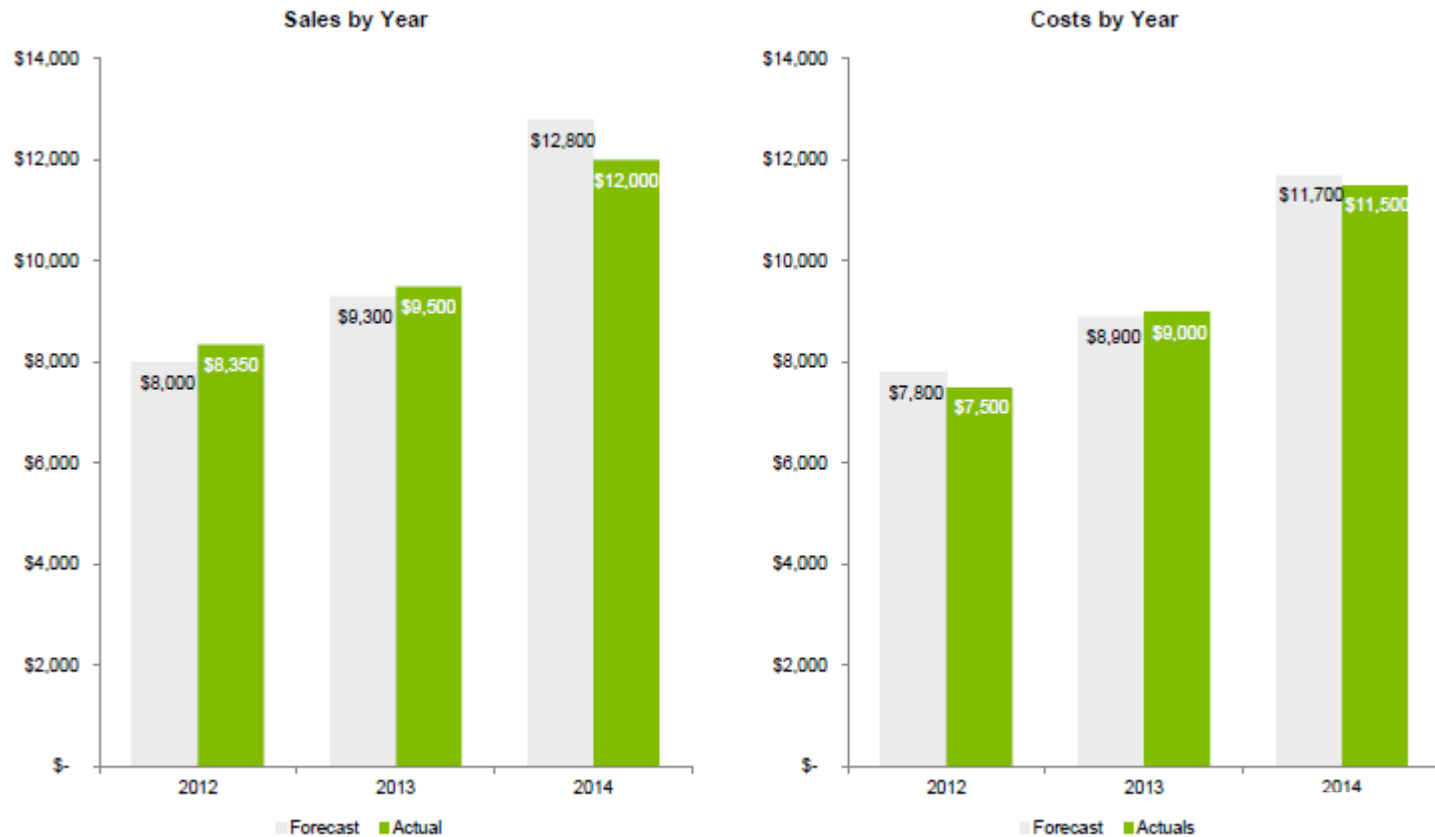
At this stage, the candidate should **recap the case and deliver a fact-based recommendation** on the best course of action for Down Under.

A good response will include the following:

1. **Recap the case:** The team was engaged by Down Under to identify the reason why the company missed its earnings forecast
2. **Share Insights:** Down Under missed its earnings forecast as a result of lower than expected sales of Surf Equipment at Surf Shops. The new product launch into a tangential category proved challenging for Down Under.
3. **Propose next steps identify risks:**
 - Propose options to increase sales (e.g., introduce surf equipment into new channels, developed actionable steps to increase sales with surf shops, increase product consideration, etc.)
 - Identify other considerations/challenges (lack of channel and consume awareness of product, movement away from core competencies, long term impact to brand)
 - Provide mitigation strategies for risks proposed

Down Under – Exhibit 1

Financial Trends



Note: in millions (\$)

Down Under – Exhibit 2

Forecast Details

2014 Sales Forecast by Channel and Category (\$MM)

	Big Box	Department	Online	Surf Shops	Total
Beach Attire	\$1,000	\$800	\$480	\$400	\$2,680
Casual Swim	\$1,400	\$870	\$580	\$435	\$3,285
Professional Swim	\$400	\$0	\$360	\$800	\$1,560
Resort Wear	\$1,050	\$1,100	\$450	\$675	\$3,275
Surf Equipment	\$400	\$0	\$0	\$1,600	\$2,000
Total	\$4,250	\$2,770	\$1,870	\$3,910	\$12,800

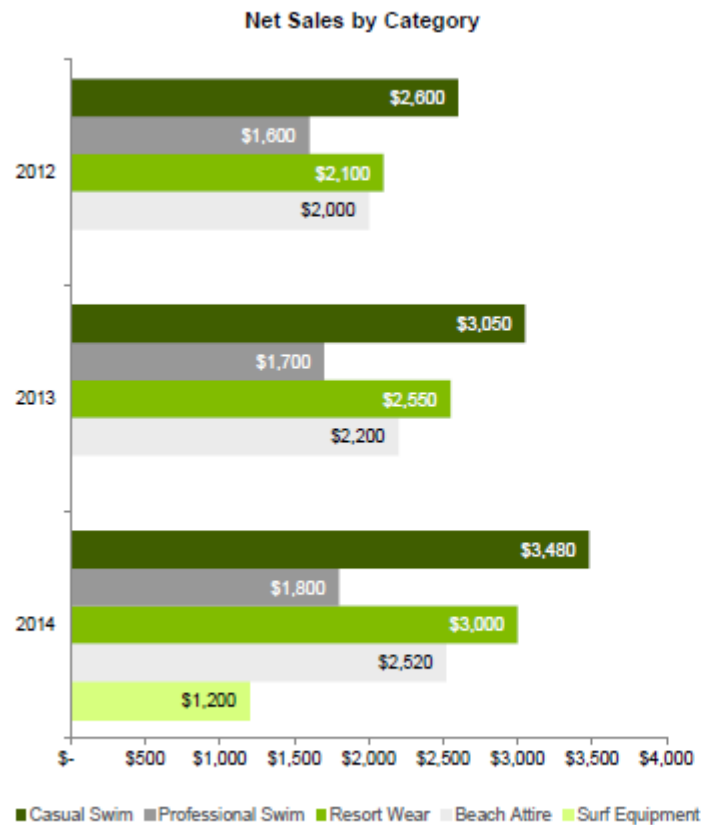
2014 Projected Units Sold by Channel and Category

	Big Box	Department	Online	Surf Shops	Total
Beach Attire	8	6	4	3	21
Casual Swim	11	6	4	3	24
Professional Swim	3	0	2	4	9
Resort Wear	7	6	3	4	20
Surf Equipment	1	0	0	4	5
Total	30	18	13	18	79

Note: in millions

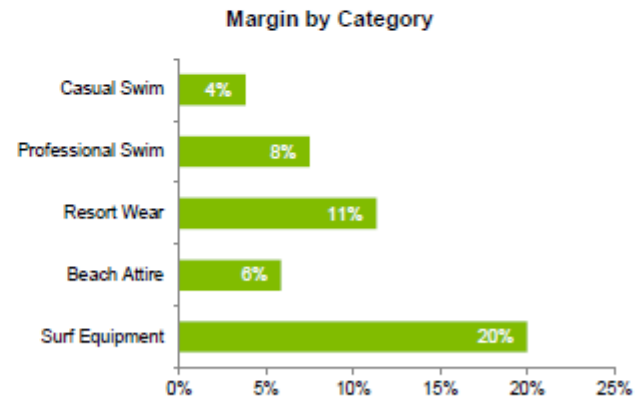
Down Under – Exhibit 3

Sales by Category (Actuals)



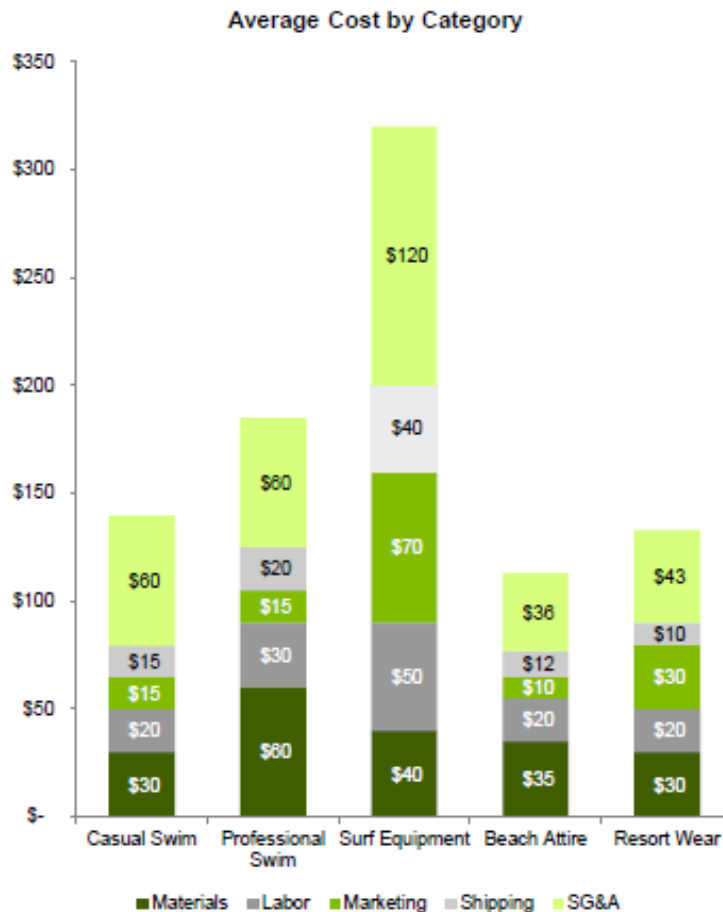
Note: in millions (\$)

Average Price by Category (2014)	
Beach Attire	\$128
Casual Swim	\$134
Professional Swim	\$173
Resort Wear	\$163
Surf Equipment	\$400



Down Under – Exhibit 4

Cost Structure (Actuals)



Other Information

- Down Under's offers free shipping for Direct to Customer sales due to competitive pressures
- Down Under is opening a new manufacturing and distribution center and consideration 3 sites:
 - Southern California
 - Mexico
 - Guatemala
- Five years ago, Down Under relocated many of its manufacturing facilities to South Asia from Australia boosting long term profitability
- FY 2014 costs are approximately the same as FY 2013 costs

Guidance on Exhibits

Case Information

Exhibit 1

Always provide Exhibit 1 before any other exhibits, even if the interviewee asks for specific information

Expected Profit = \$1,100M

Actual Profit = \$500M

Exhibit 2

Provide only if the interviewee asks for breakdown of the information in Exhibit 1

Key insight: Surf Equipment Sales at Surf Shops Forecast = \$1,600M, Units Forecast = 4M

Exhibit 3

The interviewee should notice that Surf Equipment is new. After making that observation, provide that:

- Surf Equipment is a recently launched category
- Products include surf boards, sold primarily at Surf Shops
- Sold only \$800M at Surf Shops this year (50% of the forecast)

Exhibit 4

- Since Surf Equipment is a recent launch, it has a relatively higher marketing cost as a percentage of overall costs
- For all other products, FY 2014 costs are approximately the same as FY 2013 costs
- This exhibit should inform the interviewee that costs are the main issue

Munder-Difflin - Deloitte.



Business Situation

Our client is Munder-Difflin (M-D), a \$6.6B business unit of a \$25B paper manufacturer. The business unit started out as a paper distributor to small and medium-sized companies and has grown in size by penetrating other market segments – janitorial supplies and packaging materials – through a number of acquisitions over its history. It distributes the products of both the parent company and some of the parent company's competitors.

M-D currently has a network of 100 distribution centers that carry variations of the company's portfolio of products. In addition to the distribution centers, M-D has over 120 "will call" locations where customers can walk-in to pick up smaller sized orders. Its main customers are small-mid sized printers, industrial manufacturers, building service contractors (companies that are in charge of cleaning and maintenance of large commercial buildings), and large national retailers.

In 2009, M-D saw revenue drop from \$8B to \$6.5B and earnings from \$150M to \$50M. M-D's performance fell far below expectations, operating below the parent company's cost of capital of 8.3%. M-D will need to develop a plan that significantly improves business performance by addressing both strategic (customers, products, channels, profitability) and operational (sourcing, warehouse/network) issues. **How can M-D reverse this revenue and earnings decline and become competitive?**

Problem Statement [Interviewer-led]

1. What are some key areas you would explore in order to understand M-D's decline in revenue and profitability?
2. Data sheet #1 shows a breakdown of revenue and OpEx for M-D. What is your assessment of its financial and operational performance?
3. Data sheet #2 shows a breakdown of client product mix and profitability as well as market segment information (size, growth rate and competitive landscape). Using this in conjunction with the information provided in data sheet #1, provide your strategic recommendations for each product line.
4. M-D's President would like to grow earnings by \$250M over the next 5 years. She believes that she can only get an additional \$100M in earnings from the company's core segments and would like you to evaluate three "white space" growth options. Review data sheet #3 and provide your recommendations as to which, if any, growth options M-D should pursue?

Munder-Difflin

Approach / Analysis

Question 1: What are some key areas you would explore in order to understand M-D's decline in revenue and profitability?

A good answer will be well-structured and demonstrate a clear understanding of the profitability equation, its components, and be able to walk through the critical P&L items, including:

- Volume (geography, segments, retailers, etc.)
- Prices
- COGS
- Logistics costs (warehousing, inventory, shipping)
- Commissions
- Customer service
- Other SG&A expenses

A great answer will incorporate the above items, but also address items such as:

- Customer mix, frequency of visits, changes in buyer segments
- Product mix, substitution with lower margin items (e.g., private label entrants)
- Competitive benchmarking to better understand how the client's revenue and cost figures compare to competitors
- Industry averages and trends
- Changes in the competitive landscape (e.g., competitive standing, new entrants)
- Macro trends (i.e., changes in the global market)
- Economic shifts (i.e., changes in price elasticity)
- External factors or shocks that have impacted variable costs
- R&D productivity

Munder-Difflin

Approach / Analysis [Provide Exhibit 1]

Question 2: Data sheet #1 shows a breakdown of revenue and OpEx for M-D. What is your assessment of its financial and operational performance?

A good answer will be well-structured and demonstrate a clear understanding of the critical P&L/Balance sheet items, including:

M-D Financials:

- Step change in revenue in 2008
- Higher trend in OpEx (as a % of sales) and lower earnings trends over the past few years
- COGS comprise the lion's share of spend
- Inventory represents the lion's share of working capital
 - $WC = CA - CL = Inv + A/R - A/P = 600 + 100 - 400 = 300$
- M-D not meeting its cost of capital (8.3%)
 - $ROS = \$100 \text{ EBIT} / \$6600 \text{ Rev} = 1.5\%$
 - $ROIC = \$100 \text{ EBIT} / \$1300 \text{ Total Assets} = 7.7\%$

Competitive Positioning / Benchmarking:

- M-D's COGS as a percentage of sales are in the bottom 25th percentile range
 - M-D operating at 83.3%
- M-D's logistics cost as a percentage of sales are in the bottom 25th percentile range
 - M-D operating at 9.1%
- M-D's commission and customer service costs as a percentage of sales are in the 50th to 75th percentile range
 - M-D operating at 3.5% and 1.8%
- M-D's inventory turns are close to the 25th percentile range
 - M-D operating at 9.2 turns (COGS/Inventory)

Munder-Difflin

Approach / Analysis [Provide Exhibit 1]

Question 2: Data sheet #1 shows a breakdown of revenue and OpEx for M-D. What is your assessment of its financial and operational performance? (cont.)

A great answer will synthesize the above items, and highlight the key areas to prioritize for improvement:

- M-D has significant opportunities in Planning, Procurement and Distribution
 - **Planning:** If M-D can reduce inventory by \$100M, it would increase turns by 2 points (meeting the industry median) and generate an ROIC equal to their cost of capital. The client could conduct an inventory segmentation exercise to determine turns by category, rationalize the set of SKUs and write off obsolete inventory.
 - **Procurement:** M-D stands to gain \$150M in savings by meeting industry average levels of COGS. The client could assess and address vendor and SKU proliferation by consolidating spend with major suppliers on the major SKUs
 - **Distribution:** M-D could gain up to \$70M by meeting industry averages for logistics spend.
 - Benchmark their transportation rates to determine cost efficiency. They should try to consolidate their freight spend with a few major or regional carriers
 - Conduct an insource vs. outsource study to determine if it makes sense to operate a private fleet (critical to understand service level implications here)
 - Conduct a distribution network analysis to optimize its physical footprint (distribution centers, cross-docks, lanes)

Munder-Difflin

Approach / Analysis [Provide Exhibit 2]

Question 3: Data sheet #2 shows a breakdown of client product mix and profitability for M-D as well as market segment information (size, growth rate and competitive landscape). Using this in conjunction with the information provided in data sheet #1, provide your strategic recommendations for each product line.

A good answer will address some of the following items and **a great answer** will address most of the following items:

Paper:

- M-D should look to maintain its market leading share in this declining market, (-2% CAGR), however it should curtail any investments in growing this product line as it is less profitable than other product lines and the market is declining while other markets are growing
- Paper contributed 75% of M-D's revenue but only 50% of its profits
- M-D's EBIT % is half of the industry average (1% vs. 2%) and they should determine why this is the case. They can do so by evaluating factors such as:
 - Does M-D have higher COGS than competitors, if so they should examine supplier relationships (mainly their purchases from the parent company) and leverage their size to command better pricing? Are they selling Paper at prices below market average? Are there significant differences in the operating structure (i.e., more overhead, more reps / account, more trucks)?
 - Are all of M-D's Paper customers profitable? There is a chance that M-D's Paper profitability is being dragged down by unprofitable customers. They should consider options to either make these accounts profitable or not retain them.

Munder-Difflin

Approach / Analysis [Provide Exhibit 2]

Question 3: Data sheet #2 shows a breakdown of client product mix and profitability for M-D as well as market segment information (size, growth rate and competitive landscape). Using this in conjunction with the information provided in data sheet #1, provide your strategic recommendations for each product line. (cont.)

Janitorial Supplies:

- M-D should look to invest in and grow its position by making selected investments in this product line as it is growing faster and is more profitable than its core Paper product line
- This market is highly fragmented, with no one company having >8% market share, and M-D has the 3rd highest market share with 4%. M-D could look to increase its presence in this market through **acquisitions in addition to organic growth**
- Janitorial Supplies accounted for only 15% of M-D's revenue but represented 25% of its profits
- M-D's EBIT % is below the industry average (2.5% vs. 3.5%) and they should determine why this is the case. They can do so by evaluating factors such as:
 - Are there any significant differences between M-D and their Janitorial Supplies competitors? Does M-D have higher COGS than competitors or are they selling Janitorial Supplies products at prices below market average? Are there significant differences in the operating structure (i.e., more overhead, more reps / account, more trucks)?
 - Are all of M-D's Janitorial Supplies customers profitable? There is a chance that M-D's Janitorial Supplies profitability is being dragged down by unprofitable customers. They should consider options to either make these accounts profitable or not retain them.

Munder-Difflin

Approach / Analysis [Provide Exhibit 2]

Question 3: Data sheet #2 shows a breakdown of client product mix and profitability for M-D as well as market segment information (size, growth rate and competitive landscape). Using this in conjunction with the information provided in data sheet #1, provide your strategic recommendations for each product line. (cont.)

Packaging:

- M-D should look to aggressively invest in growing its position in this product line as it is the most profitable and fastest growing market
- This market is relatively fragmented, with the top company having 15% of the market share and no other company having >8% market share, M-D has the 4th highest market share with 3%
- Packaging accounted for only 10% of M-D's revenue but represented ~25% of its profits
- There are several ways M-D can look to aggressively invest in and expand Packaging market share:
 - Pursue organic growth by hiring more sales reps, run promotional campaigns, increase their marketing / advertising spend in this product line, enter new geographic markets where Packaging is growing but they do not have a significant share etc.
 - Acquire a competitor or pursue a joint venture. When making an acquisition M-D will have to consider many options such as the NPV of the deal, strategic fit of the company they are acquiring etc.

Other Considerations:

- The recommendations outlined above would result in a considerable shift in M-D's product mix. While pursuing them, M-D will need to evaluate whether their existing organizational and operational structure may need to change to more efficiently and profitably serve the new product and customer mix

Munder-Difflin

Approach / Analysis [Provide Exhibit 3]

Question 4: M-D's President would like to grow earnings by \$250M over the next 5 years. She believes that she can only get an additional \$100M in earnings from the company's core segments and would like you to evaluate three "white space" growth options. Review data sheet #3 and provide your recommendations as to which, if any, growth options M-D should pursue?

A good answer will be well-structured and include points such as:

- M-D should pursue Growth Option #3
 - Large, growing and profitable market – can reach President's goal by gaining ~10% market share
 - In line with strategy to grow Packaging and Janitorial Supplies businesses
 - Already play in these product markets, growth option is a "channel" / "value chain" play and will require investment in the development of eCommerce and catalog capabilities
 - Will need to ensure that since it is a downstream industry, you do not upset your current customers

A great answer will incorporate the above items, but also address the following items:

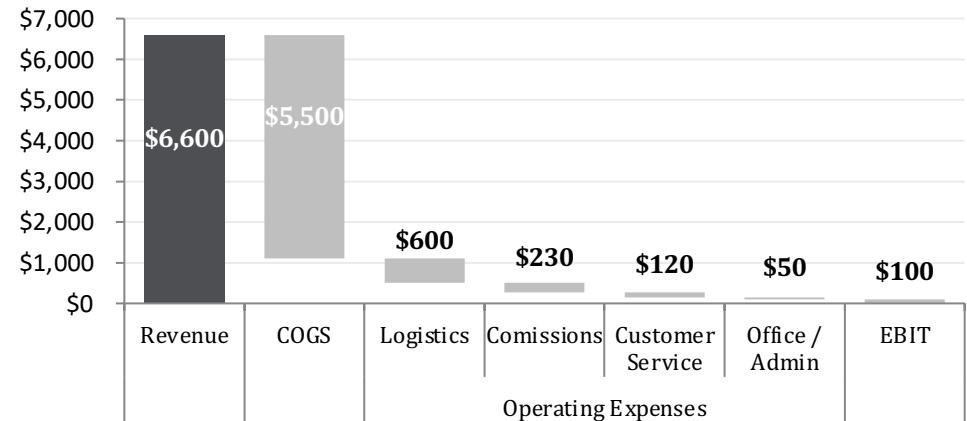
- M-D should pursue both Growth Option #3 and Growth Option #2
 - Growth Option #2 is very profitable and can leverage existing customer base and offer ancillary recycling services
 - Cannot pursue just Growth Option #2 because it will not meet the President's goals of \$250M in additional earnings because a 100% market share would only result in \$100M in earnings
- M-D should definitely not pursue Growth Option #1
 - Growth Option #1 is in a market (prescription pharmaceuticals) that is highly regulated and already has 3 main players, little / no overlap with current products / customers and therefore very low likelihood of success and low profit margins

Munder-Difflin – Exhibit 1

Financial History

	2008	2009	2010
Revenue (\$B)	\$8	\$6.5	\$6.6
COGS (\$B)	\$6.8	\$5.5	\$5.5
OpEx (\$B)	\$1.05	\$0.95	\$1B

P&L Summary 2010 (\$MM)



Balance Sheet 2010 (\$M)

Assets		Liabilities & Equity	
A/R	\$100	A/P	\$400
PP&E	\$600	LT liabilities	\$350
Inventory	\$600	Total Liab.	\$750
		Total Equity	\$550
Total Assets	\$1,300	Total L&E	\$1,300

Weighted avg. cost of capital = 8.3%

Industry Benchmarking Data

	Percentile Ranges		
	Top 25th	50th	Bottom 25th
COGS as a % of Sales	78%	81%	83%
Logistics cost as a % of Sales	7%	8%	9%
Commission cost as a % of Sales	3%	4%	5%
Cust Service cost as a % of Sales	1.0%	2.0%	3.5%
Office/Admin cost % of sales	0.5%	1.5%	2.0%
Inventory Turns	12.5	11.0	9.0

Munder-Difflin – Exhibit 2

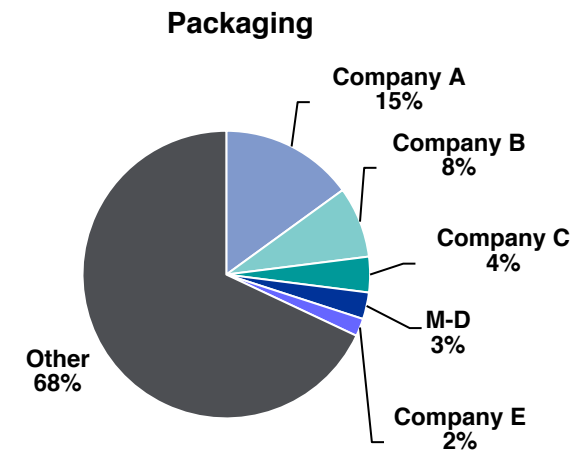
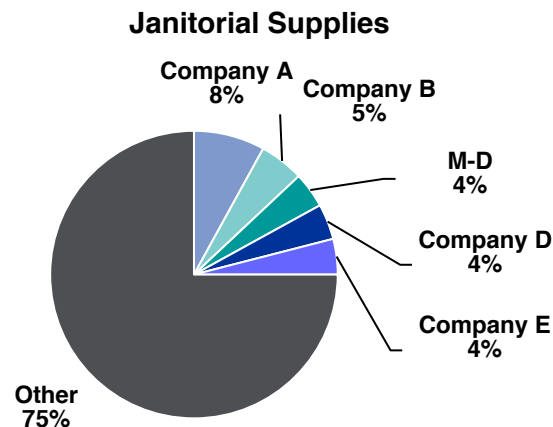
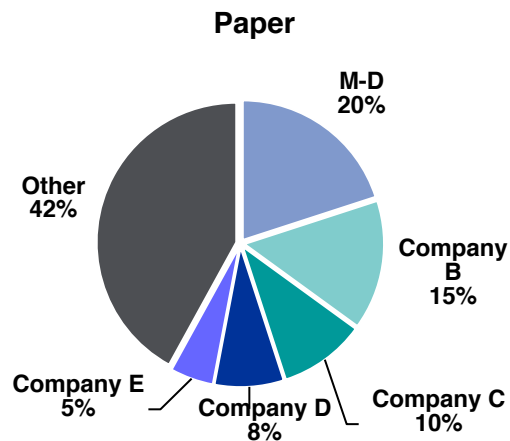
Client Product Mix

	Paper	Janitorial Supplies	Packaging
% of Portfolio (2010)	75%	15%	10%
% of Portfolio (2008)	85%	10%	5%
2010 EBIT (%)	1%	2.5%	4%

Market Information by Segment

	Paper	Janitorial Supplies	Packaging
Market Size (\$B)	\$25	\$25	\$20
Market EBIT (%)	2%	3.5%	4%
Market 5-YR CAGR	-2%	6%	8%

Competitive Landscape (Market Share Breakdown)



Munder-Difflin – Exhibit 3

Growth Options

Growth Option # 1:

- M-D is considering entering into the distribution of prescription pharmaceuticals
- The distribution of prescription pharmaceuticals is a \$200B+ industry and is expected to grow at 4% CAGR over the next 5 years as the US population ages
- Average profit margins for the industry are ~3%
- The industry is dominated by 3 companies (Canary, Marco and Astro), which combined have a >90% share of the market
- The downstream industries are primarily Hospitals, Nursing Homes, Clinics and Pharmacies

Growth Option # 2:

- M-D is considering entering into the collection of recyclable material (primarily paper and cardboard boxes) for SMBs
- Large businesses have well-established recycling programs in place with their traditional waste management companies, however the majority of small – mid sized businesses do not currently have clearly defined recycling programs
- This industry is currently \$500M and is expected to grow at 10% CAGR over the next 5 years as consumers place an increasing importance on “eco-friendliness”
- Average profit margins for the industry are ~20%
- The industry is extremely fragmented, with no one company having greater than 5% market share
- Many of M-D’s competitors are also considering entering this industry, however no direct competitors have entered as of yet

Growth Option # 3:

- M-D is considering entering into the market for the sale of Packaging and Janitorial Supplies orders under \$1000
- This industry is primarily composed of sales to very small businesses and directly to end-consumers through catalogs and eCommerce platforms
- This is currently a \$15B industry (not included in the previously shown Packaging and Janitorial Supplies distribution industry figures as this is primarily a downstream industry) and is expected to grow at 8% CAGR over the next 5 years
- Average profit margins for the industry are ~10%
- The industry is extremely fragmented, with no one company having greater than 5% market share

Patient Operated Machines



Case Prompt

Our client is a medical company that makes machines to test blood samples in hospital labs. These are large, complex machines that cost thousands of dollars, and are operated by professional lab personnel. They also make consumables for these machines, essentially a full range of re-agents – chemicals needed to run the blood samples. Currently, our client markets and distributes its products in the US only. Growth and profitability in the hospital business has been slowing and our client has started to look for new growth opportunities. One area they have been exploring is the idea to market patient-operated machines at homes for people who suffer from conditions that need frequent testing (e.g. diabetes). Our client has asked us to help them decide whether to enter this new market with a patient-operated machine. This machine is a home glucose-monitoring device for people affected by diabetes. They cost under \$200 and are typically bought and used by the patients themselves.

Case Overview [Interviewer-led]

After a good discussion through the structure, there are six questions that the interviewee should answer before making a recommendation to the client CEO.

Patient Operated Machines – Questions

Case Information

Question 1: What are important areas which you would need to investigate to help the client decide whether to launch the patient-operated device?

Question 2: The client has asked us to estimate what revenues they can expect from home testing machines only (disregarding revenues from consumable strips). Here is some information that the team used for a first estimate of potential revenues in the US:

US population is 300m people, 20% of whom are over 65

Prevalence of diabetes is 5% in those over 65 and 1% in those under 65

Each year, 10% of the diabetic population buy a new kit

Patient Operated Machines – Questions

Case Information

Question 3: The average price of a machine currently is \$180. In 2 years (the earliest date our client's product could be on the market), the average price is expected to have declined by one-third, and by a further 25% in 4 years. The marketing department tells you they expect to capture 25% market share, and that the total market will grow by one-third over the entire 4 year period. If this is correct, what revenue per year can our client expect from devices sold in the US in 4 years time?

Patient Operated Machines – Questions

Case Information

Question 4: The team also started to investigate the competitive situation for home testing kits in the US. Here is what our researchers found out:

US Sales Volumes in Home-Diabetes Testing Machines

Machine	4 yrs ago	3 yrs ago	2 yrs ago	1 yr ago	This year
A	45,000	90,000	130,000	150,000	155,000
B	50,000	95,000	125,000	150,000	150,000
C	25,000	35,000	60,000	75,000	80,000
D	50,000	55,000	60,000	65,000	65,000
Others	75,000	80,000	90,000	90,000	90,000
Total	245,000	355,000	465,000	530,000	540,000

What does this data tell you? Remember, our client told us that they estimate that the market will grow by 1/3 in the next 4 years.

Patient Operated Machines – Questions

Case Information

Question 5: The team also wanted to gain an understanding of the cost of launching the home-based device. Interviews with the R&D, manufacturing and marketing departments determine that the actual maximum price per unit in 2 years is \$120, and that the model will have a viable life of 5 years. The up-front fixed costs to develop the product (R&D, manufacturing, sales and marketing) are \$60m, and variable costs (labor, components) will be \$40 per machine. How many kits must our client sell over 5 years to cover the up-front fixed costs?

Patient Operated Machines – Questions

Case Information

Question 6: It appears that it will be difficult for our client to achieve the required volume to be profitable within the required time window. However, the situation in their hospital business is worsening, and analysts report that patient testing is “the future”. What options should be explored that might save our client’s new home-testing device from being shelved?

Patient Operated Machines Answers

Approach / Analysis

1. A typical answer for question 1 could be similar to this:

1. Typical structure should include: understanding market size, growth, profitability, and competition; customer preferences for this new device (and the pros and cons of this device vs. traditional lab testing) and their price sensitivity; profitability analysis (revenue vs. cost); and how the client can market, promote, and distribute this device.

2. A typical answer for question 2 could be similar to this:

Answer:

$20\% \times 300\text{m} = 60\text{m}$ people over 65

$80\% \times 300\text{m} = 240\text{m}$ people under 65

$60\text{m} \times 5\% = 3\text{m}$ diabetics over 65

$240\text{m} \times 1\% = 2.4\text{m}$ diabetics under 65

$3\text{m} + 2.4\text{m} = 5.4\text{m}$ total number of diabetics in US

$5.4\text{m} \times 10\% = 540,000$ machines could be sold per year

3. A typical answer for question 3 could be similar to this:

Answer:

$\$180 \times 2/3 = \120 average price in 2 years

$\$120 \times 75\% = \90 average price in 4 years

Market growing by one-third in 4 years: expect $540,000 \times 4/3 = 720,000$ kits sold in 4 years

Expect 25% of this = $25\% \times 720,000 = 180,000$ kits sold in 4 years

Expected revenues in 4 years p.a.: $180,000 \times \$90 = \16.2m

Patient Operated Machines Answers

Approach / Analysis

4. A typical answer for question 4 could be similar to this:

1. A and B are market leaders by volume.
2. Volumes of all current top players (except C) grew strongly until 2 years ago.
3. Volume growth of all current top players has slowed in the last 2 years.
4. To expect total market growth of one-third over the next 4 years may well be over-optimistic.
5. Based on estimation of 540,000 boxes sold, market is highly concentrated across these 4 players (total sales 450,000 this year).
6. Growth has slowed down in the last 2 years, indicating that the market is saturated. Overall volume sold in this year fits well with our estimate of 540,000 kits per year.
7. Our client's market growth estimates seem unrealistically high.
8. Our client would have to capture market share mainly from competitors if it entered the market, as the market will grow only slowly. Only with a significantly value added proposition to patients can our client be able to achieve that.

Patient Operated Machines Answers

Approach / Analysis

5. A typical answer for question 5 could be similar to this:

Answer:

Breakeven quantity = Fixed cost / (Price – Production Cost)

Breakeven quantity = \$60m / (\$120 - \$40) = 750,000

This means that to breakeven, the client would need to sell 150,000 units per year.

This means that even if the US market grows from 540,000 this year to 600,000 in 2 years, we would need a 25% market share to breakeven, which would be very difficult and highly improbable.

6. A typical answer for question 6 could be similar to this:

1. Find ways to reduce production costs (not discussed in case so far);
2. Find ways to reduce marketing and sales costs;
3. Broaden geographic focus beyond US;
4. Optimize pricing – consider effect on overall economics of raising unit price (leading to fall in volume) or price cut (leading to higher volumes, but potential competitor retaliation);
5. Market different products (with different attributes) to different diabetic patient segments; or
6. Find a partner – leverage our client's brand in hospital testing by partnering with existing small player.

Section 3: Market Share

Cell Phone Manufacturer



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time when you were in an ethically ambiguous situation

Case Prompt

This is 1996. Our client is a major cell phone manufacturer that has #1 market share globally, but are now #3 in the US. The US cell phone market has been growing at 15% CAGR and has an annual volume of 100M units. They would like to know what has happened to their market share in the US and how to go about restoring it to #1. They believe that the US market is key to their global dominance. Revenues have been increasing, while profits have remained flat; however, they believe this is due to the change in market share and is not a cost issue.

Case Overview [Interviewee-led]

This is a market share case. Possible structures includes 3C, External vs. Internal, etc. Industry landscape, competition, product, company, and channels are all reasonable starting points. The key to the case is that client shift from high margin product to low margin product, and as a result, the profit remained flat while the revenue increased.

Cell Phone Manufacturer

Case Information

It is essentially an oligopoly with 3 companies controlling almost the entire market.

If ask about international market: answer is to focus on US for now.

Timeframe:

Mid-nineties. iPhone is not the answer!

Case Flow Guide

Part 1: Show candidate the Exhibit 1, 2, and 3.

- What is the potential cause of the stagnant market size in the US?

Part 2: The client wants to focus on the low/very low end market.

- What are the pros and cons of this strategy?

Part 3: You walk into the CEO. What's your quick 2-minute recommendation?

- Ask the candidate to come up with the recommendation immediately. No time to think about the structure.

Cell Phone Manufacturer

Approach / Analysis [Provide Exhibit 1,2, and 3 in order]

Question 1: What is the potential cause of the stagnant market size in the United States?

Exhibit #1: The key takeaway is that market is growing at 15% CAGR (as given in prompt) so revenues are increasing, but profits remained flat. Repeat that this is due to a loss in market share but could also be about revenues/costs. If ask about revenues or product, go to Exhibit #2. If not, wrap up Exhibit #1 and direct them to #2.

Exhibit #2: The key here is to recognize that company's growth is below 15% (overall industry growth) in every segment. Be careful **not** to claim that it is underperforming in every customer segment since it is statistically possible that this is not the case. Other insight is that majority of unit sales volume is in very low and low end (75%). These sales could be lower margins and customers might be price sensitive. After these comments have been made move to Exhibit #3.

Exhibit #3: The key takeaways are that the 100+ range is where all of the growth is. Secondly, the below \$100 market is growing the slowest and is only area where client is outperforming market. The interviewee should note that the 100+ market as the source of market share and profitability issues.

Cell Phone Manufacturer

Approach / Analysis

Question 2: The client wants to focus on the low/very low end market. What are the pros and cons of this strategy?

The client recognized that majority of the growth comes from the 100+ segment, but they want to actually continue to penetrate the very low and low end of the market.

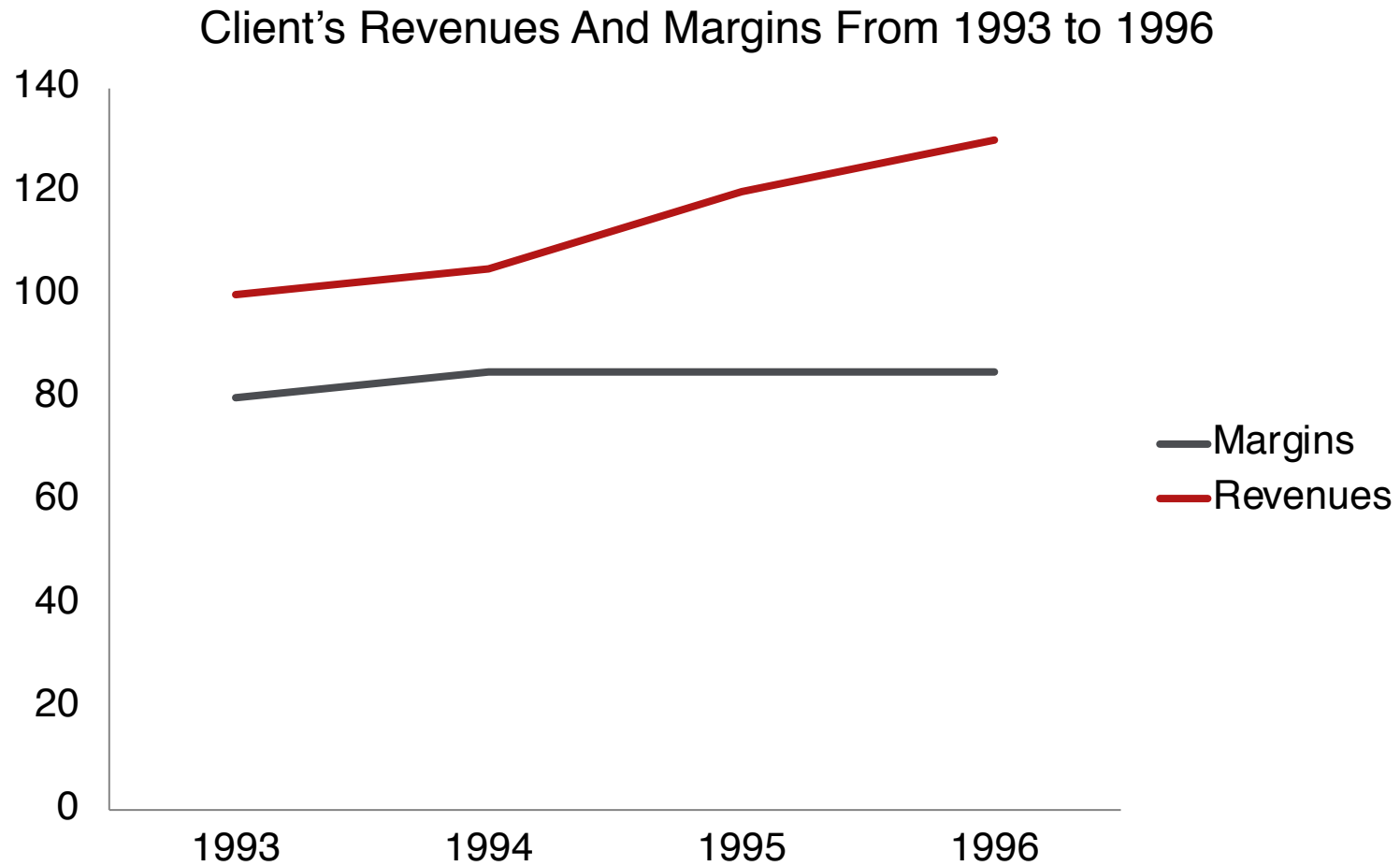
Pros

Client is #1 globally, has the scale to produce profitably (can mention experience curve), and is the natural owner of this segment. They could potentially get to #1 market share domestically, albeit via lower priced products. Additionally, focusing on the low/very low end market could help them globally as emerging markets open and rising incomes help spread the proliferation of likely lower priced cell phones.

Cons

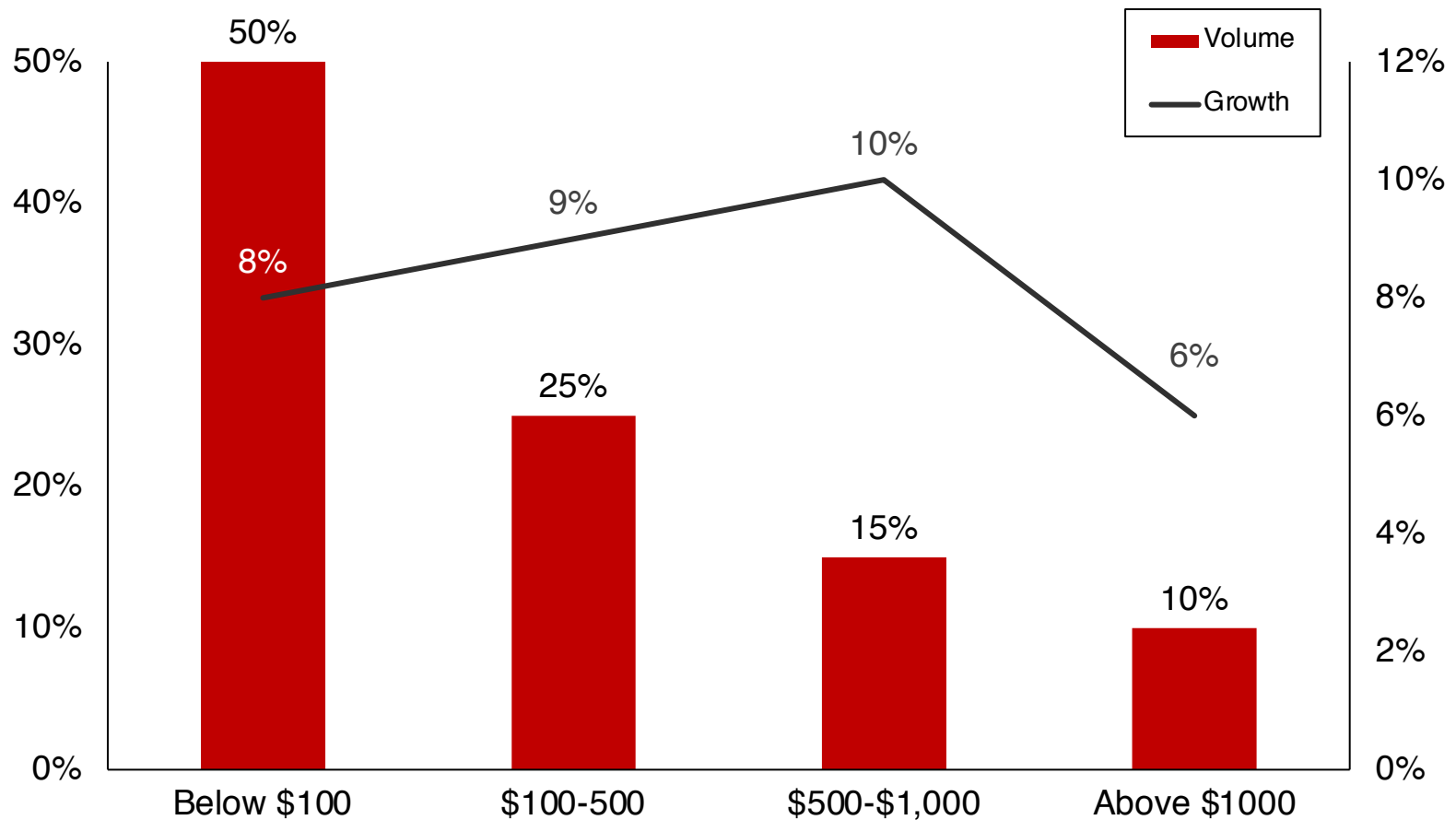
The 100+ segment is growing at 24% CAGR and will exceed the low end in a few years. From a long-term perspective, this growth will prevent the client from maintaining #1 share in the US even if they attain it in the short term through this strategy. It could be helpful to understand the motivations of the client and why they view US market share as the key.

Cell Phone Manufacturer – Exhibit 1



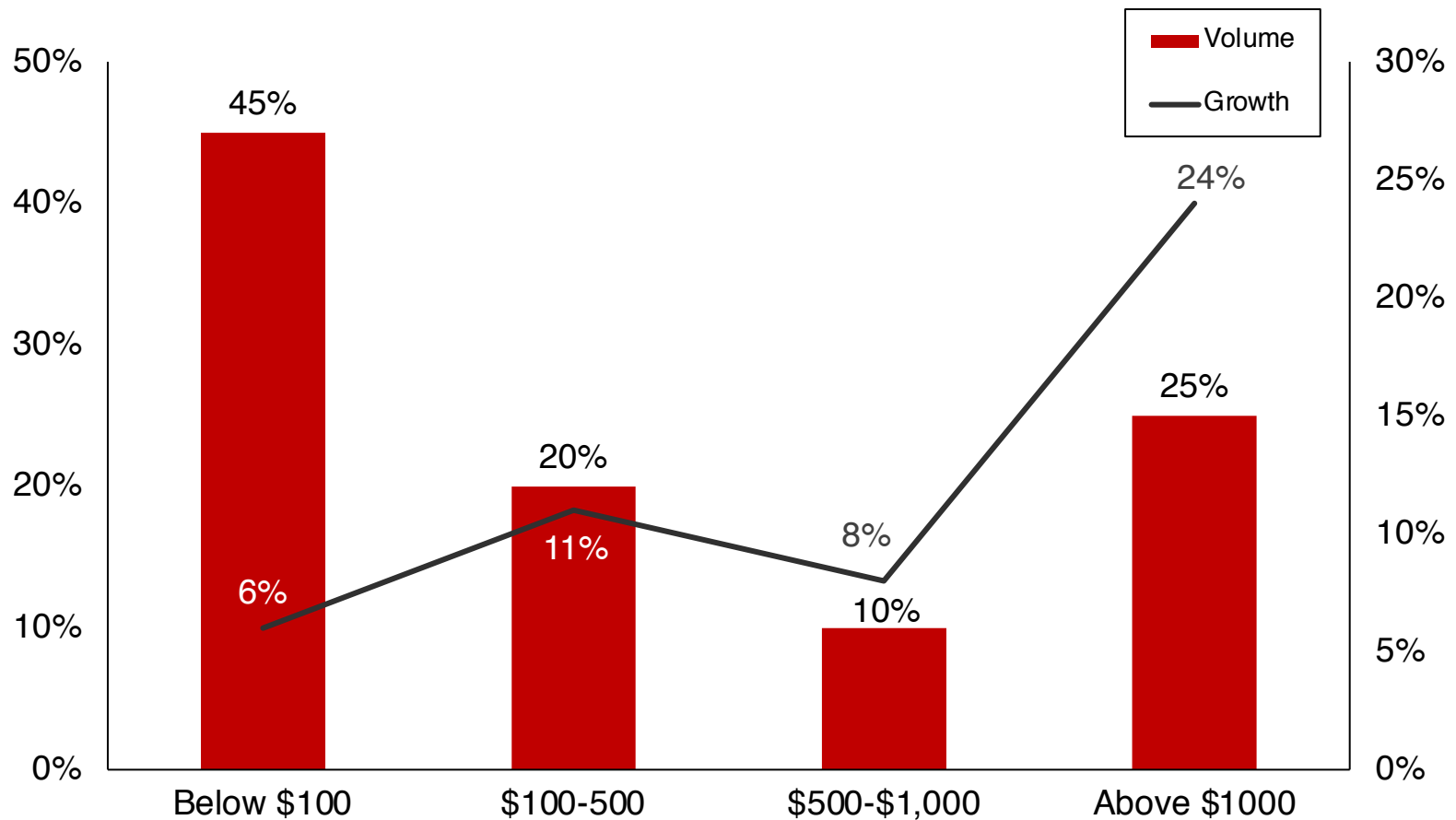
Cell Phone Manufacturer – Exhibit 2

Client's Volume and Growth by Segment (US)



Cell Phone Manufacturer – Exhibit 3

Industry's Volume and Growth by Segment (US)



Auto Emissions



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time when you had difficulty convincing someone to perform a task. What did you do?

Case Prompt

Your client is an industrial goods producer who primarily focuses efforts on planes, trains, and various automobile parts. Their R&D team recently developed a way of lowering emissions for diesel engines. Environmental regulation changes currently occurring will likely benefit their R&D finding in the future. To roll the product out to the market, your client plans to partner with diesel manufacturers and license its product to achieve revenue.

Case Overview [Interviewer-led]

This is a McKinsey-style, interviewer-led case. Provide the interviewee with the prompt and answer any clarifying questions. Once the interviewee has no more questions, ask the case questions sequentially.

Auto Emissions

Case Information

Objective: Your client has specifically asked you to look at the potential revenue over the next five years as well as looking for options to increase revenues afterwards.

Info to be provided when prompted

- Currently operating only within the US marketplace
- Most diesel engines are utilized for off-highway vehicles (John Deer, Caterpillar) → used in construction, heavy machinery, etc.
- This is a brand new product
- No competitors currently hold this product patent
- Patent is valid for another 20 years
- We currently already have relationships with all diesel engine manufacturers

Case Flow Guide

Question 1: What things do you want to consider in order to determine how much revenue we can gain in the next five years.

Questions 2: Looking at the chart provided, what are the big takeaways you see? → Which companies would you target to sell to?

Question 3: How much revenue could you gain from selling to your selected targets over the next five years?

Question 4: What are some options to increase revenues after the 5-year window?

Auto Emissions

Approach / Analysis

Question 1: What factors do you want to consider in order to determine how much revenue we can gain in the next five years?

- Interviewee is expected to provide a thorough and structured framework

Question 2: Looking at Exhibit 1, what are the big takeaways you see? → Which companies would you target to sell to?

- Provide Exhibit 1 to the interviewee
- Interviewee should point out **Navistar** has the highest priority in timing to lower their emissions for vehicles and should therefore be targeted first (additionally, it has the **highest** delta above emissions targets)
- **Deere** and **Komatsu** should also be targeted (both above the regulation threshold)
- Volvo should likely **not** be included as it appears they have technology available that can lower emissions rapidly (look at on-highway vehicles last year emissions level vs this years)

Auto Emissions

Approach / Analysis

Question 3: How much revenue could you gain from selling to your selected targets over the next five years?

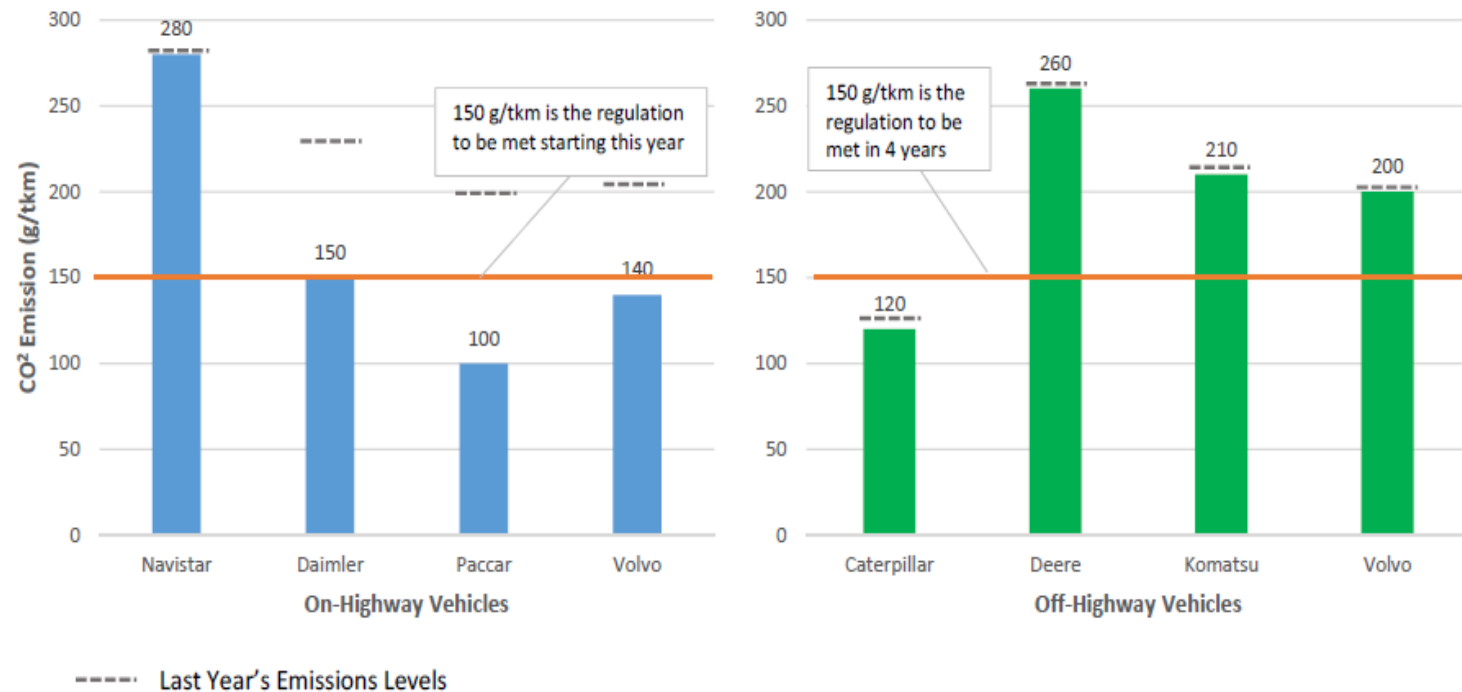
- Provide Exhibit 2 to the interviewee
- License fee is \$375 per vehicle
- Navistar – 30% Market Share * 400K Total Vehicles = 120K Vehicles
- Deere + Komatsu – 50% Market Share Combined * 120K Total Vehicles = 60K Vehicles
- $(120K + 60K) * \$375/\text{vehicle} = \$67.5M$ Revenue

Question 4: What are some options to increase revenues after the 5-year window?

- Guide the interviewee in brainstorming potential revenue opportunities. For example:
 - New geographic expansion
 - Expand offering to planes and trains

Auto Emissions – Exhibit 1

Emissions by Vehicle Category



Auto Emissions – Exhibit 2

Market Share by Type

On-Highway Diesel Engine Manufacturers	Market Share
Navistar	30%
Daimler	25%
Paccar	10%
Volvo	35%
Off-Highway Diesel Engine Manufacturers	Market Share
Caterpillar	36%
Deere	35%
Komatsu	15%
Volvo	24%
Road Type	Total Vehicles Annually
On-Highway	400,000
Off-Highway	120,000

U.N. Polio

Case Prompt

Your client is the United Nations, who have hired you to help them with their fight to eradicate polio. They're struggling with two related problems: 1) out of the countries that have requested their help to fight polio, which should they choose to go into first and 2) once they have chosen a particular location to go into, what factors need to be considered to ensure success.

To start, what are some of the characteristics you would look for to identify the best location for the UN to start with?

Case Overview [Interviewer-led]

This case is a very unusual scenario – most candidates will have little, if any, background on the minutiae of large-scale vaccination campaigns. However, this problem does force people to be able to apply structured thinking to cases even outside of their sphere of knowledge. Also unlike most cases, this case is fully interviewer-driven (a la McKinsey-style cases), since the interviewer will walk the candidate through a series of relatively independent questions until they reach the conclusion.

U.N. Polio

Approach / Analysis

This section provides a sample analysis for interviewer's reference

Question 1:

What are some of the characteristics you would look for to identify the best location for the UN to start with?

The candidate should list some factors, such as:

- prevalence of polio in the country
- overall population of the country
- death rate from polio
- quality of countries medical system
- quality of infrastructure (ease of transportation)
- cultural attitudes towards 'outsiders' and medicine in general

Make sure to ask probing questions so that the candidate fully explains the category and why they think it is relevant; this is especially important if the candidate comes up with an odd category in their response

U.N. Polio

Approach / Analysis

Once they've created a good list and justified all of the ideas they've listed, give them Exhibit 1. In this chart, they should notice the three important data points: **the prevalence of polio** as a percentage of the population, the **death rate**, and the **overall population** of the country.

Obviously a location that has high values for all three of these data will be the most attractive as a starting location. Based on this, the candidate should gravitate to one of two locations: **India** and **Pakistan**. Although Pakistan has a high prevalence and death rate, India's massive population means that it almost certainly has more cases overall. **Note:** If the candidate asks if they can choose two countries, tell them the UN wants only one country and thus they have to choose.

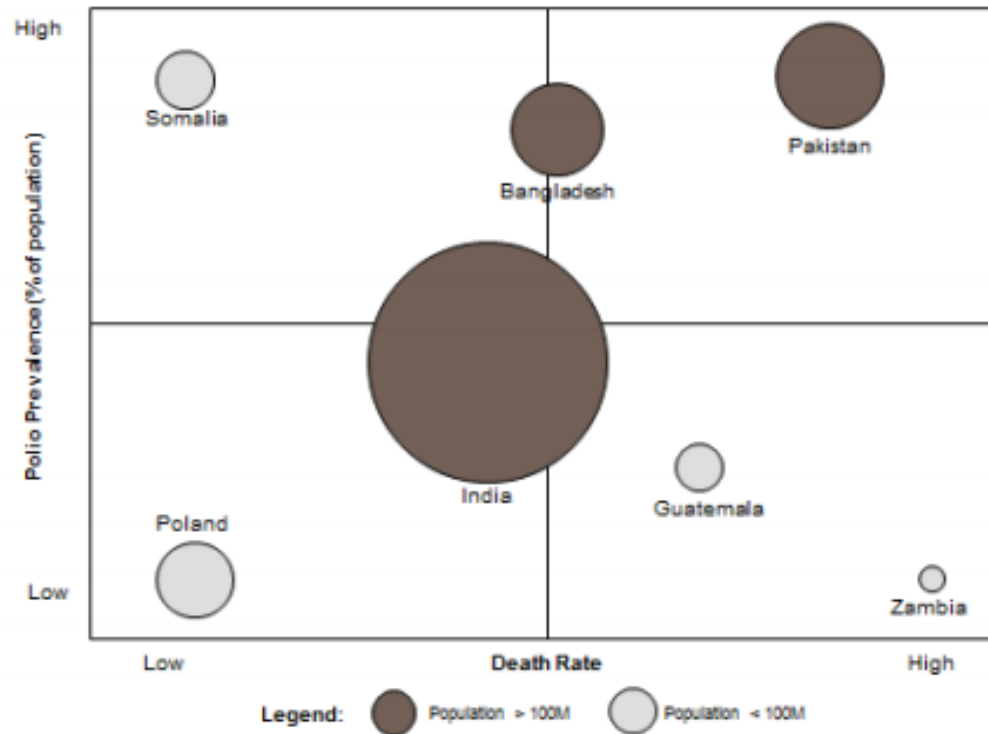
Question 1b - After they've made their choice, ask them:

"Let's suppose that the UN chose to start in Pakistan. They plan to fight polio by vaccinating uninfected people against the disease. **What factors do you think are most important to consider when they are planning their strategy for entering Pakistan?**"

Again, the candidate should give an number of different factors and explain their reasoning for including them. Be sure to test them if they seem uncertain about a particular idea, so that they keep only the ones they truly believe should be there.

U.N. Polio – Exhibit 1

Global Polio Study – Countries Requesting Assistance



U.N. Polio

Approach / Analysis

Question 2:

Give them Exhibit 2 and tell them: “The UN has conducted some research on polio vaccinations and have produced a chart to help guide our decision. What do you think about this data?”

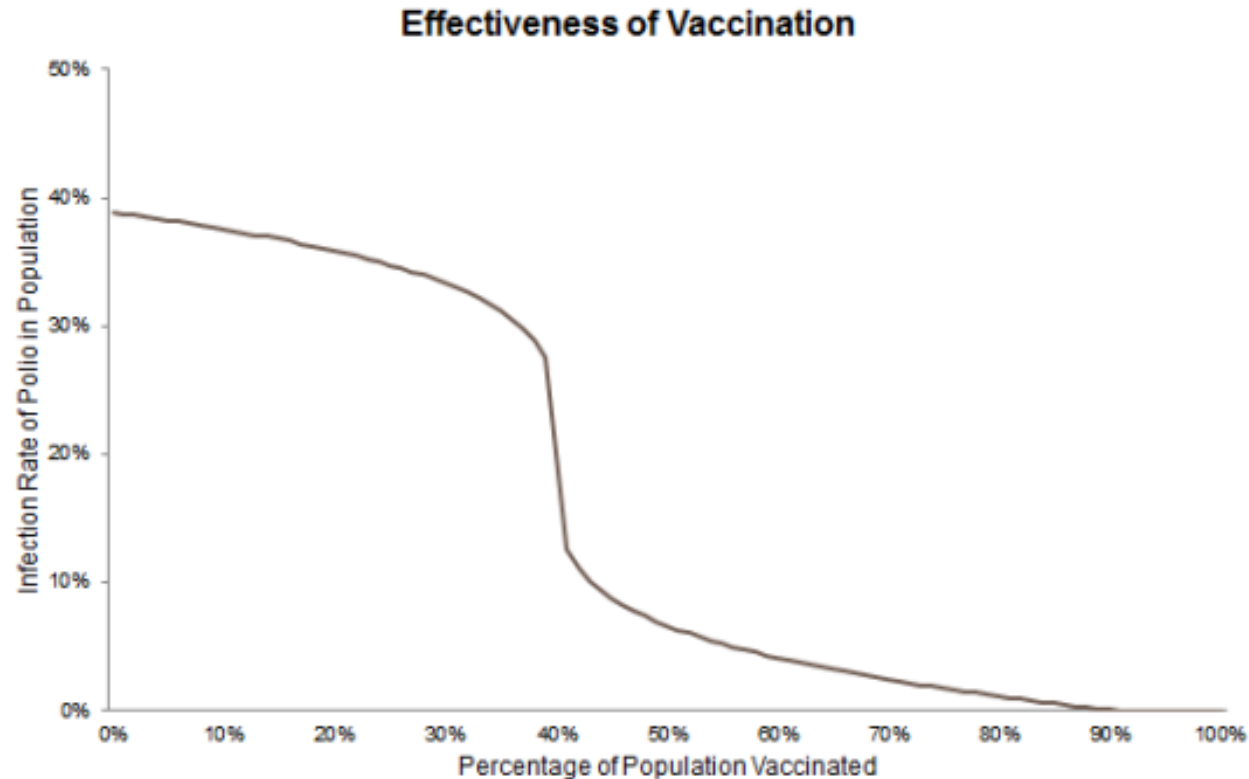
As soon as the candidate understands that the graph shows the decline in the infection rate as the vaccination rate increases, they will notice that at around 40% vaccination, infections decline dramatically.

Once they make that observation, ask them why this might be.

- The answer is the idea of ‘herd immunity,’ which is the concept that as more people are vaccination, there will be fewer channels of transmission for the disease.
- Since it will be less likely that any given person will encounter someone carrying the disease, the likelihood that they will contract it will fall as well.

U.N. Polio – Exhibit 2

Global Polio Study – Epidemiological S-Curve



U.N. Polio

Approach / Analysis

Question 3:

Once they've explained this phenomenon of herd immunity, ask them what vaccination rate the UN should target in the short and long term.

In the short term, a reasonable target would be some number around 50% - 60%. The reason for being above 50% is so that the UN can fully capture the sharp decrease that occurs around 40%. A common mistake is suggesting 40%, since this is where the decrease is the sharpest. However, this causes them to miss out on sharp declines just after 40% (e.g., at 40% vaccination, there's an infection rate of 20%, at 41% vaccination, infection rates are 13%, and by 50% vaccination, infections have fallen to 7%).

In the long term, they should target some number between 80% and 90% so that they can fully eradicate polio. As a result of the herd immunity effect, they do not need to vaccinate 100% of people to achieve a 0% infection rate (in this graph, infections hit 0% at 86% vaccination).

U.N. Polio

Approach / Analysis

Question 4:

Another area that they want us to look into is their distribution method. Broadly speaking, distribution strategies can be more **centralized**, operating out of a few of the largest cities, or more **decentralized**, with UN workers going out to the smaller visitors to distribute the medicine. **What are some advantages and disadvantages of each?"**

The candidate should come up with some of the following ideas, or others:

- from a financial perspective, centralized models will be cheaper for the nearby people, but more expensive to reach those farther away
- from a safety perspective, it will be much easier for the UN workers to administer a centralized model, rather than needing to go out to the villages
- from the perspective of maximizing vaccination, it is possible that under a centralized model, people from farther away will not come and get vaccinated, meaning that these smaller towns will remain susceptible to polio as their local vaccination rates will not be high enough to create herd immunity.

U.N. Polio

Approach / Analysis

Question 5:

The UN wants us to calculate the total cost of some of their different distribution methods. Pakistan has an overall population of 200M people and the UN wants to estimate the cost of vaccinating half of them. They are considering three different distribution methods, A, B, and C (in order from most to least centralized). **Method A** costs \$200 per person for the first 40M people and then \$800 per person for everyone after that. **Method B** costs \$300 per person for the first 80M people and \$700 per person thereafter. Finally, **Method C** costs \$500 per person for everyone. **Which method should they choose?**

The candidate should calculate the costs as shown below:

	Method A	Method B	Method C
Target vaccination number	100M	100M	100M
Vaccinations at lower rate	40M	80M	100M
Vaccinations at higher rate	60M	20M	0M
Low rate total cost	\$8B	\$24B	\$50B
High rate total cost	\$48B	\$14B	\$0
Overall cost	\$56B	\$38B	\$50B

Thus Method B has the lowest overall cost. Once they get this, ask the candidate what a potential issue with adopting Method B might be from a financial perspective. The insight is that the long-term target is much higher (~90%), so while Method B might be cheaper for the first 100M, Method C is likely to be cheaper for larger numbers (Method C becomes cheaper after 80% vaccination rates).

U.N. Polio

Approach / Analysis

Conclusion:

1. To start the UN's vaccination program, they should go into Pakistan, which has the highest polio prevalence and death rates among their population.
2. To ensure that all regions can achieve herd immunity, the UN should choose a decentralized distribution strategy, which will limit the costs of achieving high immunization rates.
3. Our estimates show that achieving full immunity will cost around \$90B, so this will need to be a long-term project for the UN.

Section 4: Other

Potash Co. – Competitive Response



Case Prompt

Your client is Karnalyte Resources, which is a small potash producer. On the morning of July 30th, Uralkali, the **dominant** Russian producer announced that it was separating from its partner, Belaruskali. What will this do to the industry and what should Karnalyte do?

Case Overview [Interviewer-led]

Although the case is framed as a response by a particular company to a **change in the industry dynamic**, the real core of the case is thinking through the industry structure and how this drastic change will affect the industry. If the candidate tries to move too quickly to strategies that Karnalyte can take, before fully understanding the implications of the industry change, push them to look at the big picture, before dealing with strategic alternatives. Once they understand the situation, they should realize that Karnalyte's only viable choice is to sell its assets at scrap value to try and pay off its debts. Thus this case also tests the candidate's ability to recognize a **hopeless situation**, since few cases typically have liquidation of the company as the correct answer.

Potash Co.

Case Information

Only give if requested:

- Potash is a main ingredient in fertilizer and is mined from potassium deposits in Russia and Saskatchewan.
- Historically, potash sales have been dominated by two companies: **Canpotex**, which represents Potash Corp, Mosaic and Agrium Inc (which are miners); and **BPC**, which represents Uralkali and Belaruskali.
- To ensure high profits, the two companies have restricted volumes and thus keep prices high: potash prices were \$440 the day before the announcement.
- The industry has significant excess production capacity, both because of unused capacity by the major producers and because of many smaller miners that either have a single mine or have a mine site that they could develop.
- Uralkali says that it plans to compete on volumes against its former partners.
- Karnalyte does not currently have any producing mines, they have one mine site that could be developed.
- Assume that any mine that earns exactly zero profits will continue production.
- The scrap value of Karnalyte's equipment is \$5 million and the scrap value of the mines is \$30 million.

Potash Co.

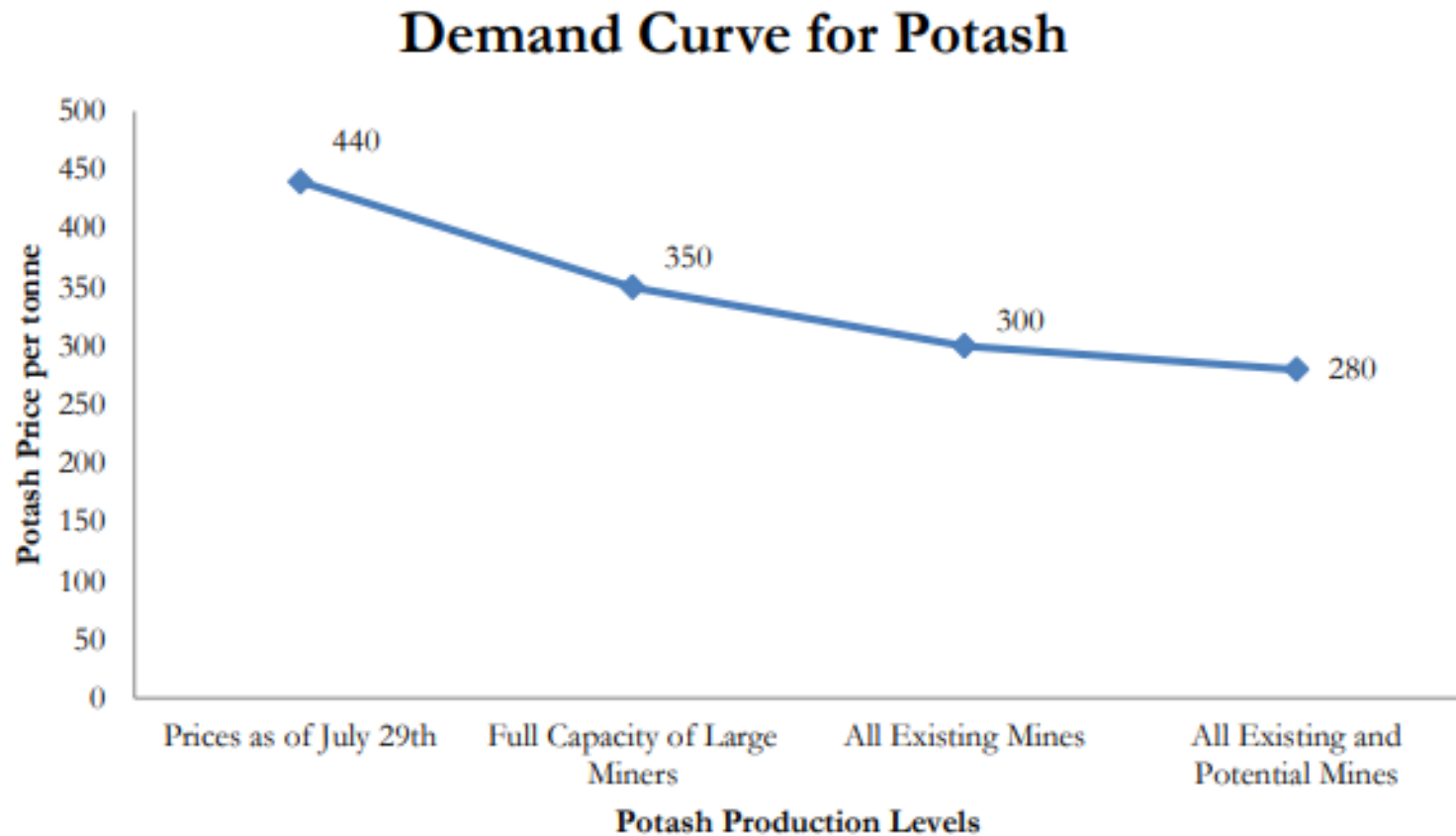
Approach / Analysis

The key insight is that previously, the major miners have been acting as a **cartel** and **colluding** to raise prices (and profits). Once Uralkali begins competing on price, **prices will fall** rapidly as the industry approaches full capacity.

When the candidate realizes that prices are going to fall, give them Exhibit 1 and have them figure out where prices will fall to. They should ask for the costs facing each level of miner to determine whether a given level will remain profitable after the price decline.

From Exhibit 2, they should work in reverse to figure out which groups will produce and thus, where prices will settle once the industry stabilizes.

Potash Co. – Exhibit 1



Potash Co. – Exhibit 2

Production Economics of Potash Mines

Status of Mine	Production Cost/tonne	Fixed Costs	Annual Production (tonnes)
Existing Large Miner	\$130	\$300 million	2 million
Existing Small Miner	\$200	\$50 million	500,000
Potential Mines	\$200	\$80 million	500,000

* Potential mines are those that have discovered potash reserves, but have not built the infrastructure to extract it.

Potash Co.

Approach / Analysis

If undeveloped mines produce, prices will be \$280.

Price	\$280/ton
Variable Costs	\$200/ton
Gross Margin	\$80/ton
Production	500,000
Revenues	\$40 million
Fixed Costs	\$80 million
Profits	(\$40 million)

Thus undeveloped mines will not produce. Now that this possibility is ruled out, move up the demand curve to the next point and evaluate small mines when prices are \$300

Price	\$300/ton
Variable Costs	\$200/ton
Gross Margin	\$100/ton
Production	500,000
Revenues	\$50 million
Fixed Costs	\$50 million
Profits	\$0

Since we know mines that earn zero profits will stay in business, the equilibrium price is \$300/ton. There is no real reason to calculate the profits of the senior miners, if the candidate does so, they should use the equilibrium \$300 price and find that profits are \$40 million. Focusing on Karnalyte, their mine has not yet been developed, so the prior analysis shows that they cannot develop their mine. The candidate should see from their balance sheet that they must come up with \$30 million by the next year and thus must liquidate their assets.

Potash Co.

Approach / Analysis

Conclusion:

1. This change in the partnership poses a serious threat to the potash market as higher volumes will push prices down to \$300 as all existing mines move to full capacity.
2. Since Karnalyte has not yet developed their mine and it no longer makes economic sense to do so, they should liquidate their assets.
3. Once they pay off their debts and employees, immediate liquidation will leave \$10 million for shareholders.

CPG Acquisition – M&A



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a recent transaction that has caught your eye. What about it interests you?

Case Prompt

Our client is a major global CPG conglomerate. Their star products are in home storage and home cleaning. They are acquiring an online platform that provides consumers with personal grooming products on a subscription basis. This target works like Amazon Pantry, in that it delivers their grooming products directly to the consumers' doorstep every month. But, unlike Amazon's services, the target produces all their products in-house. The target runs like a start-up and is based in San Francisco, and their consumer base is in the US. They have a strong social media following and have grown rapidly over the past few years. They have enlisted your services to help them think through the major considerations or risks as well as the biggest opportunities to manage.

Case Overview [Interviewer-led]

This is an interviewer-led case, similar to EY OTS style. There are three questions to be asked sequentially during the course of the interview:

Question 1: What are some synergy opportunities and risks or cost investments for this acquisition?

Question 2: What are some of the issues you foresee arising due to cultural differences? How can you mitigate these issues?

Question 3: How can you prioritize the considerations/synergy realizations? What do you feel are the critical decisions and what are the longer term items?

CPG Acquisition

Case Flow Guide

Clarifying Questions

- **What is the deal thesis? Are there any specific goals for the buy?**
 - They bought the Target primarily for the consumer insights.
 - They are not looking to integrate the products, they want the Target to be standalone and use them as an incubator to understanding changing consumer trends.
 - The Client has an unsuccessful personal grooming product that they will likely retire.
- **Does the client have any similar online platforms?**
 - No, they have a primarily retail channel strategy.
- **Is this a fragmented market?**
 - No, personal grooming is heavily dominated in the US by one competitor. However the target has been quite disruptive and amassed 20% US market share.

CPG Acquisition

Approach / Analysis

Question 1: What are some synergy opportunities and risks or cost investments for this acquisition?

Sample structure	HR	Finance	IT	Operations / Supply Chain	Brand
Synergy Opportunities	<ul style="list-style-type: none"> Employee rationalization System merging 	<ul style="list-style-type: none"> Employee rationalization System merging AR/AP Management 	<ul style="list-style-type: none"> Admin systems 	<ul style="list-style-type: none"> Distribution networks Raw material buy power Inventory management 	<ul style="list-style-type: none"> None
Risks/Cost Investments	<ul style="list-style-type: none"> Culture management Employee retention 	<ul style="list-style-type: none"> Reporting requirements and filings 	<ul style="list-style-type: none"> Security management Consumer data analytics SG&A data migration Costly & takes time 	<ul style="list-style-type: none"> Changed consumer experience 	<ul style="list-style-type: none"> Employee retention failure Social media strategy changes

CPG Acquisition

Approach / Analysis

Question 2: What are some of the issues you foresee arising due to cultural differences? How can you mitigate these issues?

Risk

Culture creators leave the firm

Client influence on new projects or initiatives

Retained employees don't welcome/motivated

Mitigation

Need to understand who drives culture in the Target firm and motivate them to stay

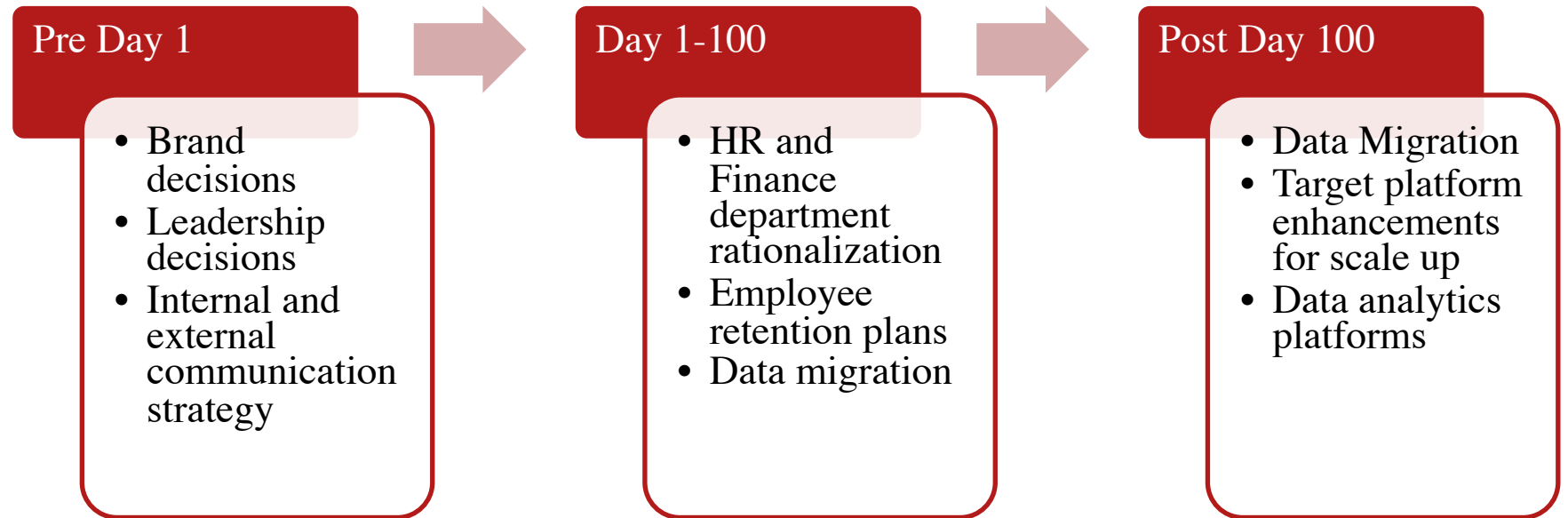
Need to identify the creative departments and ensure business process is not disrupted

Strong internal communication strategy that should be implemented by culture creators

CPG Acquisition

Approach / Analysis

Question 3: How can you prioritize the considerations/synergy realizations? What do you feel are the critical decisions and what are the longer term items?



Surgical Robot – M&A



Case 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 acquire Robot X?

Case Overview [Interviewer-led]

This is an interviewer-led case. 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?
2. Would Robot X be a good investment?
3. What other options does our client have for improving their services?
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?

Surgical Robot

Case Information

- 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

Surgical Robot

Approach / Analysis

Question 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

Question 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

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:

- $360,000x = 200,000x + 3,200,000$
- $160,000x = 3,200,000; x = 20$

Our client would break even after 20 years

This is unrealistically long (twice the lifetime of the robot) and so investment is not worthwhile

Surgical Robot

Approach / Analysis

Question 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:

- $315,000x = 100,000x + 1,500,000$
- $215,000x = 1,500,000$; $x = \sim 7$

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

Surgical Robot

Approach / Analysis

Question 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?

Surgical Robot

Approach / Analysis

Conclusion:

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.

Surgical Robot – Exhibit 1

Feature of Surgical Robots

Fold here for question 2

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

Rock Climbing – Go / No Go



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time you did something entrepreneurial to overcome a difficult challenge

Case Prompt

Looking into the future, I am trying to determine which path I should take professionally? Should I look toward re-joining the consulting world where my salary could be anywhere from \$125k to \$170k? Or should I look to pursue my hobby and attempt to open either one, or a chain of rock climbing gyms throughout the US?

Can you help me make up my mind?

Case Overview [Interviewee-led]

This is an interviewee-led case. The interviewee is expected to evaluate both options and provide a recommendation. Interviewer may assist when interviewee is side-tracked.

Rock Climbing

Case Flow Guide

Background information for the interviewer:

- In this role, you only care about money. You don't care about work/life balance or anything else that would give away or sway an answer.
- Likewise, you do not have a specific location in mind where you would like to live afterwards. Make the interviewee select a location that has the highest return potential for you.
- You are looking for what provides the best return over a **10-year timeframe** with zero growth in revenues or expenses.
- Pretend that you have some access to capital sources, or that you don't seem concerned about it.
- Don't make the interviewee consider any personal expenses, taxes, or anything on either opportunity. Likewise, assume all excess cash in the form of profit from the rock climbing gym flows to the interviewer as income.
- The interviewee might ask you questions about how many people are in a market, or at what price memberships are offered. **Tell them that you can only afford one market report showcasing projected sales, costs, and investment requirements for one type of gym in one state.** So, it is up to them to determine which state and gym type they should pursue.
 - At this point, they should have already chosen Oregon Bouldering market

Rock Climbing

Case Flow Guide

Information to be provided to the interviewee:

Information we DO NOT have:

- Pricing by location (in market report information you provide later)
- Demand figures by state (in market report information you provide later)
- Cost structure/investment cost of each kind of gym (in market report information you provide later)

Information we DO have:

To be provided while interviewee looks at photos of climbing facilities

- **Bouldering Gyms:** Traditionally smaller in square footage than Sport gyms, newer concept than Sport gyms, located in suburban areas in warehouse districts, lower revenue per climber than Sport gyms, and doesn't use rope systems
- **Sport Climbing Gyms:** Located closer to city centers, customers are typically 15+ years old, high revenue per customer, but significantly higher development costs, and uses rope systems
- **High level information on revenues and supply by states** (only if asked)

Push the interviewee to focus on what kind of gym to open up where

Don't encourage them to focus on a bottom-up strategy as they would be making too many assumptions

Provide them with the Mekko chart if they ask for revenues of the market or the table if they ask for (competitive landscape) supply in the market

Rock Climbing

Approach / Analysis

Why should someone select the Oregon Bouldering Market?

Takeaway from the table: There are very few standalone takeaways from the table.

- Bouldering supply is considerably smaller than Sport supply, thus less competition
- Texas is the largest state by supply while Oregon is the smallest
- The market is primarily located in four states, with “Other” making up the balance

Takeaway from the Mekko Chart:

- Unlike the table, bouldering makes up the majority of revenue making it incredibly attractive
- Dividing the revenue within a market by the total supply gives a good indication for the best state to enter into
- Oregon proves the most attractive market (\$1M/bouldering gym) relative to other markets
 - Only \$900K/bouldering gym for Texas

To be provided when candidate selects that they want to enter the Oregon Bouldering market

Investment: \$30/sq. ft * 100K sq. ft. for the gym (pre-fabricated w/equipment) → \$3M in upfront CapEx

Revenues:

Day Pass: \$20/pass, 85 consumers/day, 25 days/month, → \$510K annual revenue

Annual Pass: \$1,000/pass, 490 pass holders → \$490K annual revenue

Costs:

Variable Costs: 25% of revenues

FC/year: Marketing - \$25K, Insurance - \$50K, Utilities - \$75K

10-Year Timeframe: Consulting pays \$1.25M to \$1.7M, Gym profits \$3M (1M - 400K)*10 yrs - 3M CapEx

Rock Climbing – Exhibit 1



Bouldering



Sport Climbing

Examples of Rock Climbing Gyms

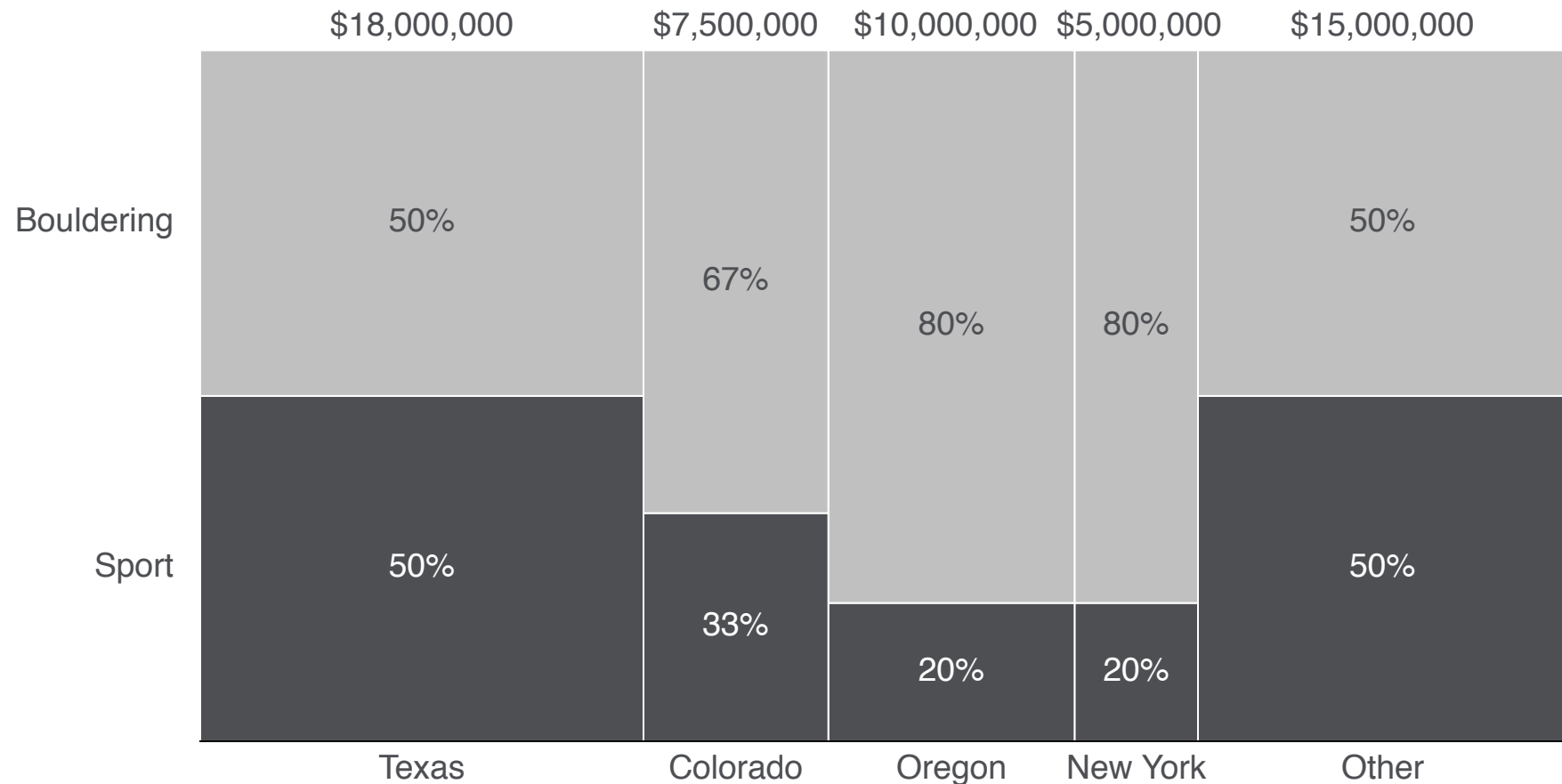
Rock Climbing – Exhibit 2

Number of Rock Climbing Gyms by State
in Domestic US Market

	Bouldering	Sport	Total Gyms
Oregon	8	32	40
Colorado	10	65	75
Texas	10	115	125
New York	8	92	100
Other	15	135	150

Rock Climbing – Exhibit 3

Rock Climbing Gym Revenues by State
in Domestic US Market



iPhat – Market Entry



Behavioral Case Question

Spend 15 Minutes on:

- Tell me about a time you did something entrepreneurial to overcome a difficult challenge.

Case Prompt

Our client, Apricot, is a cutting-edge tech company that has patented a new technology called iPhat and is considering potential applications for it. iPhat measures a person's BMI (Body Mass Index) by sending an electrical signal through a feedback loop within a portion of the body. The new hardware required for the signal and feedback mechanism is small (about the size of a penny). Apricot is unsure of how to bring this to market. Walk me through what how you would approach this?

Case Overview [Interviewer-led]

Structure can be more open ended, focused around product, company, competitors, and options for application. Note: Because this starts out open-ended, interviewee should display a highly structured approach, however, this is an opportunity for interviewee to show relatable personality (tech, health, getting in shape, etc.)

iPhat

Case Information

Goal:

- Apricot's shareholders are looking for the most strategic and financially beneficial entry for iPhat

Market Size:

- We will get to that in minute.

Competition

- No competitors for BMI within wearable tech

Apricot's Product Portfolio

Software B2C

- Personal Health Data Management (iOS)
- Women's Health Tracking (iOS)

Hardware B2C

- Fitness Tracking Rings (Finger)
- Smart Sneakers (not selling well)

Capital Concerns

- We will get to that in a minute

BMI

- Measures body fat, water retention, muscle density

Case Flow Guide

Part 1: Smartwatch Market (Market Sizing)

Part 2: Break Even Analysis (Math)

Part 3: Other Opportunities (Brainstorming)

Part 4: Key Considerations / Risks (Brainstorming)

Part 5: Recommendation

iPhat

Approach / Analysis

Question 1: Apricot has considered building its own brand of a smartwatch that utilizes iPhat. How would you size the market for smartwatches in the U.S.?

A good answer will be well-structured, have a good estimate on average smartwatch price, and narrow down the market size through at least a 4 tier hierarchy, including:

- U.S. Population (approx. 320M – choose this because it is easy to divide into age segments)
- Age Distribution (approx. 80yr lifespan, 10yr per segment, 40M per segment)
- Penetration rate (approx. average 12%)
- Market Size (approx. average \$200/smartwatch)

A great answer will include the above as well other segments with associated penetration rates such as:

- Gender
- Income
- Location
- Smartphone ownership

Note:

- 2018 U.S. smartwatch market size (\$3 Billion). Average price around \$200/smartwatch.
- Interviewee must walk through structure with the interviewer prior to doing the math.
- Interviewee must confirm assumptions while doing the math.
- Interviewee must recognize the “so what?” about the number he/she gets to at the end.
- Show some personality. For instance, “this number makes sense, because disposable income is at an all-time high” or “fitness/well-being is very important to consumers today. I work out everyday.” or “tech gadgets are super popular right now, every person in my family has a Fitbit. We even have a daily step challenge”.

iPhat

Approach / Analysis

Question 2: Show Exhibit 1. Apricot has done its own analysis of the market for the past 4 years. What are the pros and cons of entering this market?

Pros

- Industry leader is losing market share (Competition Power)
- Consumers are becoming less brand sensitive (Buying Power)
- Apricot has an opportunity to differentiate and drive value to consumer (Competition Power)
- Not a high level of substitutes for consumers (Substitute Power)

Cons

- Still a huge market leader that has economies of scale (Competition Power)
- More competition as other players gain market share (Competition Power)
- High entry barriers (New Entry Power)
- High fixed costs upon entry (New Entry Power)
- Difficult to exit, unless selling off to a competitor (New Entry Power)
- Suppliers gain power as more players enter the market (Supplier Power)

Note: Interviewee should use the 5-forces, but not outright say the structure.

iPhat

Approach / Analysis

Question 3: What are the costs associated with bringing an Apricot smartwatch to market?

High Level Costs (Don't have to nail all of these, but should be close)

- Production – COGS, Facility Startup, Distribution, Labor, Raw Materials
- R&D – BMI Implementation, Platform Consolidation, Multiple Brands (High-End/Low-Cost, Male/Female)
- Marketing – Pricing, Promotion, Product Placement, Advertising, Focus Groups, Customer Acquisitions, Cross-selling
- G&A – Customer Service, Production Back Office Support
- Cannibalization (If interviewee asked about other Apricot products prior)

Question 4: Apricot's shareholders have determined that it would cost \$240 million in annual capital to produce smartwatches. How many units would Apricot need to sell to break even?

Show Exhibit 2. Tell interviewee the sell price if they ask or assume. Unit sell price is \$200/unit.

Answer: 3 million units, revenue of \$600 million, resulting in 20% market share in the U.S.

Note:

- Ignore cannibalization of other Apricot products.
 - Interviewee must calculate a contribution margin using the variable costs in order to get breakeven. Variable costs in Exhibit 2 are Raw Materials, Distribution, and Production Labor. All other costs are Fixed.
 - Interviewee should relate back to Exhibit 1 to compare Apricot's market share to incumbents' market share.
- Key insight, Apricot would need to become the 2nd leader in the market behind Apple in order to break even.

iPhat

Approach / Analysis

Question 5: What are some other applications that Apricot could implement iPhat in?

Interviewee should be structured in this open-ended brainstorming session.
Answer could include:

- Licensing/Partnerships – rising players in the smartwatch market
- Existing Apricot Products – Smart Sneakers
- Healthcare Industry
- Targeted opportunities in health tracking – chronic heart diseases, blood pressure, obesity

Note:

- Licensing is the biggest opportunity because market entry for smart watches is tough (Apple owning 50% of the market).
- The market is becoming more concentrated with the top players capturing more and more market share. Therefore, there is an opportunity to license to multiple companies.

iPhat

Approach / Analysis

Question 6: Apricot has also considered licensing iPhat to existing smartwatch players. What are the risks associated with this?

Note:

- This is open-ended. Don't have to nail these, but must use what they come up with in recommendation.
- Building in-house risks were mentioned during the market analysis
- Licensing – competition may build similar product, may lose IP, litigation against the brand, may not meet quality standards, end-customer misuse, buyers may want sole contract, may hurt the brand, may take focus from core competencies.

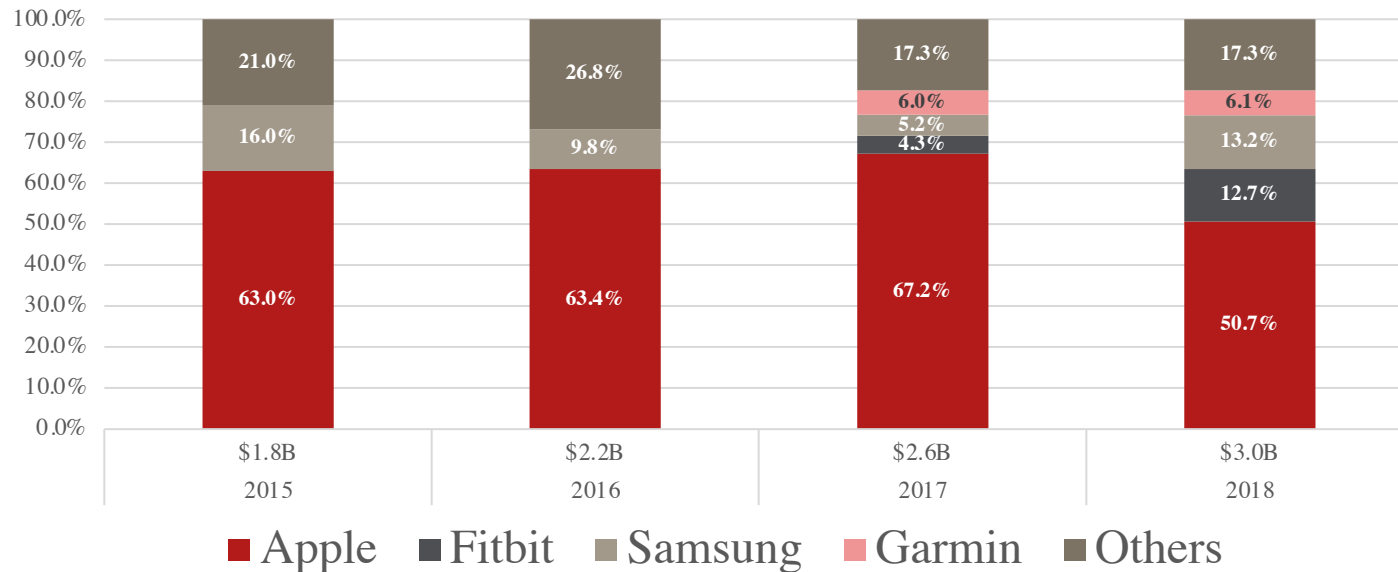
Question 7: Apricot's COO and CMO walk in. What's your recommendation?

Note:

- Interviewee should tailor recommendation to both audiences - Chief Operating and Chief Marketing officers

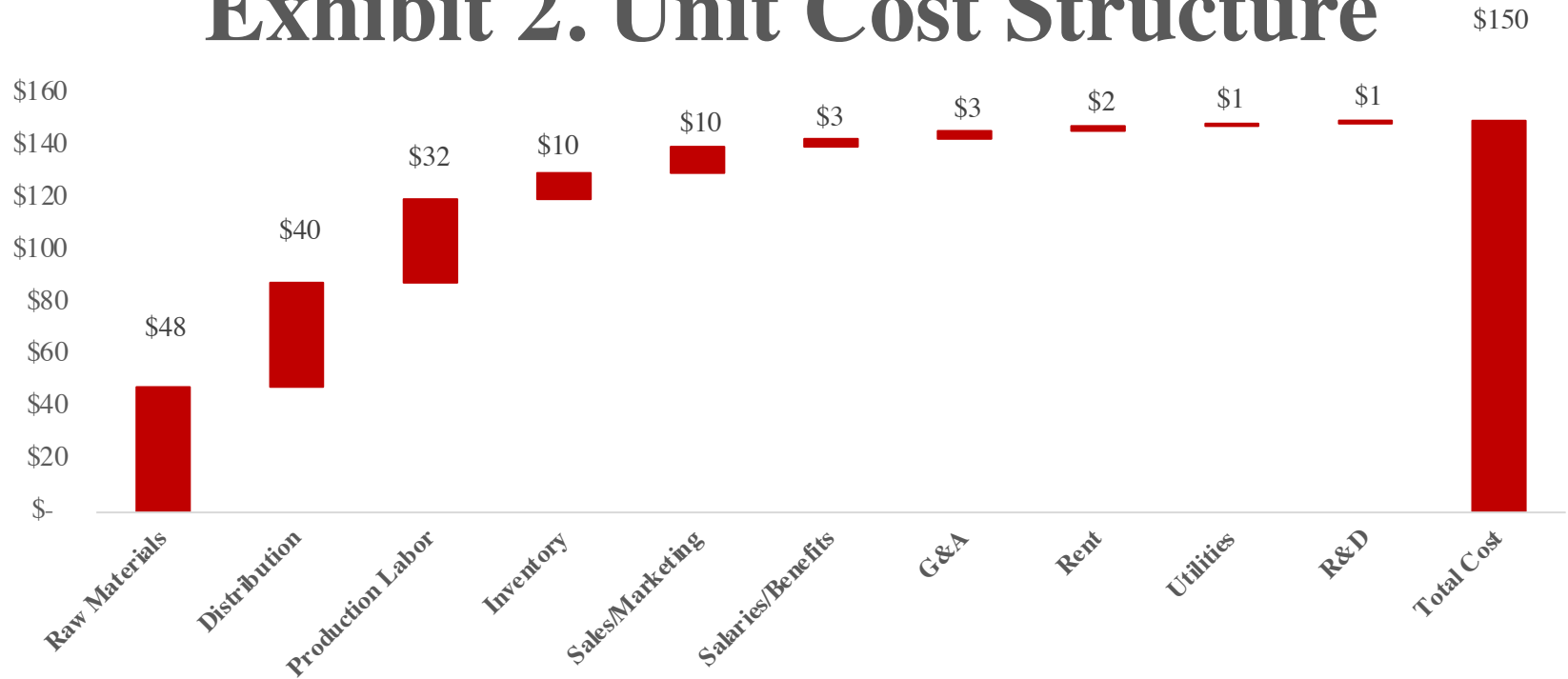
iPhat

Exhibit 1. Smartwatch Market Share



iPhat

Exhibit 2. Unit Cost Structure





Wireless Co. – Market Entry: Altman Vilandrie Rd 1 FT 2018

Case Prompt

Your client is a national wireless carrier (think Verizon or AT&T). They recently began offering workshops in a small subset of their stores. These workshops are scheduled time for customers to learn more about functionalities on their devices (e.g. getting the most out of maps, learning how to teach photos, etc.). The client wants us to 1) develop a framework to evaluate the success of these workshops and 2) determine if our client should roll out these workshops nationwide, and if so, provide a high-level plan to do so.

Case Overview [Interviewee-led]

This is an interviewee-led case but more conversational. This case can go in a completely different direction depending on the discussion. This is a sample analysis from a first round interview.

Wireless Co.

Approach / Analysis

Part 1: Framework to Evaluate Success

A good interviewee should clarify what success means to the client.

1. Shareholders' returns
2. The firm's profitability

Sample Framework

Financials

- Profitability of a workshop
 - Revenue (e.g. increased in foot traffic / spend / cross-sale)
 - Cost
- Stock Price (before and after)

Customers

- Customer Lifetime Value (before and after)
- Brand Perception
- Reviews / Anecdotes of the workshops

Value Chain

- Increase in Buyer / Supplier Power
- Exclusive Partnerships with Phone Manufacturers

Wireless Co.

Approach / Analysis

Part 2: Profitability Analysis

If the interviewee does not dive into financials first, guide them to brainstorm profitability drivers for these workshops.

Example of Profitability Drivers

- Device sales
- Accessory sales
- Data plan usage
- Customer Lifetime Value
 - Lower customer acquisition cost
 - Higher margin per customer
 - Better customer retention within the network

Wireless Co.

Approach / Analysis

Part 3: Deep Dive into Accessory Sales

Move the interviewee into a discussion of accessory sales. Ask them how would they evaluate success from accessory sales.

Ask: What are the drivers for the number of accessory sold per day? What would be the formula?

Number of accessories sold = (capacity of each workshop) x (fill rate at each workshop) x
(conversion rate of attendees to buyers) x (number of workshops per day)

Quick Math Exercise

Capacity of attendees at each workshop = 100 people maximum

Number of workshops per day = 8 workshops per day

Number of days in a year = 350 days

Currently 20 stores have workshops

Fill rate = 70%

Conversion rate = 70%

Average accessory spend = \$15

What is the total annual revenue from accessory sales from all workshop stores?

Multiply all the numbers above together = \$41.2M (interviewee is expected to estimate to about \$40M).

Wireless Co.

Approach / Analysis

Part 4: Nationwide Roll Out

Total annual revenue from accessory sales across all workshop stores = \$41.2M

Given that the total cost of these workshops in all current stores are \$45M, should our client roll out these workshops across the country?

This is a trick question. Reactive interviewees will be fixated on the number that they had just calculated and immediately determine that it is not a good idea, since the number calculated is less than the total cost ($41.2M < 45M$).

However, the number that they calculated is ONLY for accessory sales. Looking back at Question 1, a good interviewee would remember that there are other drivers of profitability. They would determine that the \$4M differential is small and with other profitability drivers, workshops would yield positive returns.

Part 5: How should the client roll out the workshops nationwide?

The interviewee can be creative here. Here are some example ideas:

- Identify popular workshops by devices and launch those first
- Launch at locations that are geographically and demographically similar to currently successful stores
- Receive incentives from particular phone manufacturers to run workshops

Brazilian Coffee Crisis - Revenue



Case Prompt

Our client is Buckstars. Buckstars is a nation-wide U.S. manufacturer and retailer of premium coffees. They have no international retail establishments, but they own their own coffee farms located in Costa Rica and Brazil. All of their current coffee manufacturing is coming from Brazil as the Costa Rican production is still being developed. The Brazilian Department of Agriculture discovered a viral strain of fungus that has appeared in the Brazilian coffee crop. In face of this news, the stock of Buckstars has dropped dramatically as worldwide coffee prices have both skyrocketed and become very unstable. Buckstars quarters follow the normal calendar and they need our help to come up with a strategic plan to maintain their revenue projection for the year. We are currently at the end of Q1 and Buckstars need help figuring out the revenue projection shortfall, ways to make it up, and what they should communicate to shareholders.

Case Overview [Interviewee-led]

This case is equally quantitative and qualitative. This case is interviewee led and requires strong brainstorming sessions from the interviewee. Only give exhibit one out after the interviewer asks for some sort of revenue breakdown. The historical revenue from exhibit one should be considered to be true for today and the future. Only show exhibit two when the interviewee discusses revenue generation options.

Brazilian Coffee Crisis

Case Information

Only give if requested:

- Buckstars planned on having \$1M in sales for each of their 500 stores located throughout the U.S.
- Buckstars has three different product segments
 - brewed coffees (coffees with no extra products added to them.)
 - coffee beverages (cappuccinos, frappuccinos, mochaccinos, etc.)
 - pastry products (muffins, bagels, mugs, etc.)

Brazilian Coffee Crisis – Exhibit 1: Historical Revenue*

Product	Q1	Q2	Q3	Q4
Brewed Coffees	50%	10%	20%	30%
Coffee Beverages	40%	30%	50%	40%
Pastry Products	10%	60%	30%	30%

	Q1	Q2	Q3	Q4
Percent of Total Sales	40%	10%	20%	30%

*Quarterly revenue has been remarkably consistent and the assumption is that they will hold.

Brazilian Coffee Crisis – Exhibit 2: Revenue Generation Options

Lever*	Projected Revenue Increase	Probability of Success	Days to Effective Implementation**
Switch All Operations to Costa Rica	60%	80%	240
Increase Marketing and Foot Traffic	40%	60%	120
Increase Prices	10%	30%	0

*Only one lever can be pulled

**Assume there are 30 days in a month

Brazilian Coffee Crisis

Approach / Analysis

Conclusion: Many answers, but the interviewee should be able to back up their claim

1. With \$500M in projected revenues, \$177.5M will remain due to the coffee crisis.
2. Switching all operations to Costa Rica will add \$21.6M to revenue only in Q4 due to days to implementation
3. Increasing marketing and foot traffic will add \$17.28M to revenue only over Q3 and Q4 due to days to implementation
4. Increasing pricing will add \$2.385 to revenue over the last 3 quarters
5. The option to switch operations to Costa Rica recoups the greatest amount of revenue, however, this option delays revenue over two additional earning seasons.

Diabetes Device - Pricing



Case 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 price and sell these products in order to maximize profit. What advice would you give them?

Case Overview [Interviewer-led]

This is a quant-heavy, interviewer-led case. 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?
2. Can you think of other pricing/selling strategies that may help increase profitability further?
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?
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?

Diabetes Device

Case 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

Diabetes Device

Approach / Analysis

Question 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: $(\$175 - \$40) * 40\% = \$54$

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

Diabetes Device

Approach / Analysis

Question 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

Diabetes Device

Approach / Analysis

Question 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 = $(150 + 60 \times 5) - 10 - (40 + 20 \times 5) + 7 = 307$
- 1:10 ratio: $(150 + 60 \times 10) - (2 \times 10) - (40 + 20 \times 10) + 14 = 504$
- 1:15 ratio: $(150 + 60 \times 15) - (3 \times 10) - (40 + 20 \times 15) + 28 = 708$
- 1:20 ratio: $(150 + 60 \times 20) - (4 \times 10) - (40 + 20 \times 20) + 56 = 926$

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 = $(150 - 40) + 5 \times (60 - 20) = 310$
- 1 injector + 10 cartridges = $(150 - 40) + 10 \times (60 - 20) = 510$
- 1 injector + 15 cartridges = $(150 - 40) + 15 \times (60 - 20) = 710$
- 1 injector + 20 cartridges = $(150 - 40) + 20 \times (60 - 20) = 910$

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

Diabetes Device

Approach / Analysis

Question 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

Conclusion:

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.

Diabetes Device – Exhibit 1

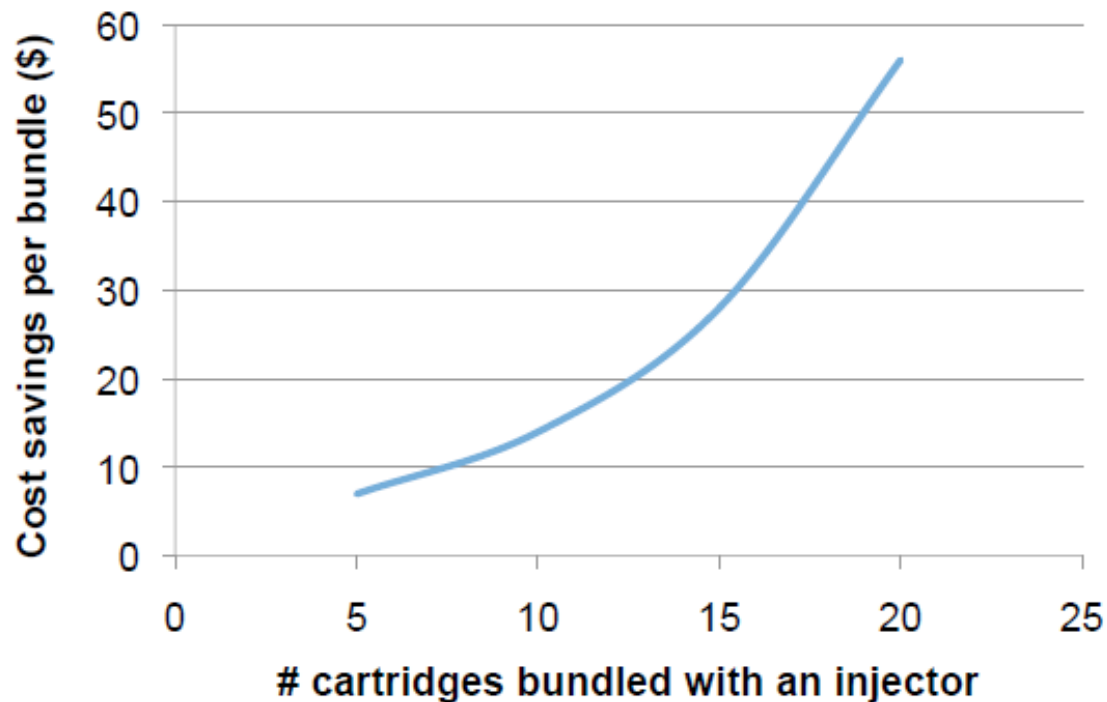
Price and Acceptance Rates for the Two Components

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

Diabetes Device – Exhibit 2

Cost Savings Per Bundle at Various Bundling Ratios



Workplace Insurance Co. – Market Sizing



Case Prompt

Our client is a large US insurance company that is thinking about launching a new type of insurance product that deals with injuries at a workplace – a form of workmen’s compensation for blue-collar workers. They have hired us to determine the potential market size and revenue potential for this new product (if they were to go ahead with the launch).

Case Overview [Interviewee-led]

This is a straightforward market sizing case with a lot of assumptions. The interviewee can go many directions, but must come up with sensible assumptions around market size and potential revenue. The more detailed the candidate gets with their assumptions while keeping math simple, the better.

Workplace Insurance Co.

Approach / Analysis

Potential structure for answering this case could include:

US population is 300m, workforce participation is mostly among people aged between 20-60, unemployment is approx. 3%; make an assumption about how many workers are blue-collar. Once candidate makes an assumption here, probe on what basis. One example could be GDP split (e.g. 40% of US GDP comes from companies or industries that involve blue-collar work, e.g. oil and gas, manufacturing, etc.).

Once the candidate computes an estimate for the number of employed blue-collar workers, they should make assumptions around the following:

Number of injuries;

Frequency of injuries per year;

% of injuries claimed by companies;

Average duration a worker is affected (i.e. unable to work as a result of the injury);

Average wage of blue-collar workers;

Average compensation to be paid to injured workers;

Market share client expects to reasonably capture with this new product (assuming similar products are being offered by competitors)

The more detailed the candidate gets with their assumptions while keeping math simple, the better.

ERP Systems – Market Sizing L.E.K. Rd 1 FT 2018

Case Prompt

Your client is an IT company that offers ERP systems to businesses. They are currently looking to enter the convenience store market in the U.S. and has asked us to help size that market.

Case Overview [Interviewee-led]

This is a typical market sizing, interviewee-led case. Key points of this market sizing exercise is to segment convenience stores by size and then apply revenue models. The interviewee can also segment the size of the companies and licenses by number of employees.

ERP Systems

Approach / Analysis

Given: 10M convenience stores in the U.S.

Assuming that 90% of the stores would use an ERP system (instead of spreadsheets), the addressable market becomes 9M stores.

Now individual companies can own multiple stores or just a single store, so we have to break these stores up into small, medium, and large companies. Let's assume that small companies account for 2M stores, medium-sized companies account for 3M stores, and large companies account 4M stores.

Each small company owns 1 store, each medium-sized company owns 10 stores, and each large company owns 100 stores. That means that there are 2M small companies, 300K medium-sized companies, and 40K large companies.

In terms of pricing, it is reasonable to assume that small, medium, and large companies all pay different prices for ERP systems. For simplicity, let's assume that one license works for one company, a small company would pay \$10K per license per year, a medium-sized company would pay \$100K per license per year, and a large company would pay \$1M per license per year.

With that, annual revenues would be \$20B from small companies, \$30B from medium companies, and \$40B from large companies, which totals to \$90B annually. This seems reasonable since Oracle and SAP, major players in the industry, had \$40B and \$25B in revenue respectively in 2018.



KAYses by Kay: Vitriolic

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Prompt

Your client, the President of Vitriolic Wealth Advisors, has come to you in a crisis. Vitriolic's Chief Financial Officer was recently found to have been committing high financial crimes, defrauding Vitriolic out of billions over the past decade and abusing sensitive client data in the process. After these allegations surfaced, Vitriolic lost nearly 60% of its clientele. Facing bankruptcy, your firm has been engaged to guide this client through what will undoubtedly be a tumultuous future for the company.

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Responses to Clarifying Questions

Note: This case was designed to be given virtually to well-practiced casers.

- **How much time does Vitriolic have left?**
- Our client is unsure, however knows Vitriolic will begin posting losses next quarter
- **Does Vitriolic have a specific plan to rebuild?**
- No, it does not. The severe decrease in revenue means Vitriolic cannot invest in any large-scale internal developments.
- **How quickly can Vitriolic regain its customer base?**
- Vitriolic is unsure of the rate at which it will be able

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General Structure Suggestions

The candidate should recognize

Financial Considerations:

- How much revenue does Vitriolic have left?
- What are some potential sources of short-term funding?
 - Stock vs. Short/Long-Term Debt
- How can Vitriolic decrease costs?

Non-Financial Considerations:

- Need to replace CFO
- Impact to brand image

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Question I: Attempt to Reduce Costs

Both acquisition and bankruptcy are extreme and more permanent options. Before resorting to one of these options, the candidate should first attempt to reduce costs.

When prompted, provide the following:

Pre-Scandal Revenue: \$8,500,000,000,000

Pre-Scandal Costs:

- Physical Buildings: \$800,000,000,000
- Salaries of Wealth Advisors: \$360,000,000,000
- General Overhead: \$3,200,000,000,000

Note: For the purposes of this case, General Overhead will include salaries of any non-wealth advisory employees

Question I: What was Vitriolic's pre-scandal profitability?

Expected Analysis:

$\$8.5 \text{ T} - \$800 \text{ B} - 360 \text{ B} - \$3.2 \text{ T} = \$4.14 \text{ T}$

Question II: Attempt to Reduce Costs

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Physical Buildings: Due to the time and complexity involved in selling physical land, costs cannot be reduced

General Overhead: Analysis reveals this may be reduced by 20%

Salaries of Wealth Advisors: It is a good idea to reduce the number of Wealth Advisors, as 60% of the clientele has left

- Number of Pre-Scandal Accounts: 12,000,000
- Average Employees Per Account: 3
- Average Accounts Per Employee: 15

Candidate should calculate number of employees to determine how many may be laid off

Expected Analysis:

$$\frac{12,000,000 \text{ Accounts} \times 3 \text{ Employees per Account}}{15 \text{ Accounts per Employee}} = 2,400,000 \text{ Employees}$$

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Question III: Attempt to Reduce Costs

Question III: Ask the candidate what Vitriolic's new profitability will be.

Detailed breakdown of math on next slide.

Allow candidate to reduce staff by any percentage they feel is appropriate. Vitriolic has lost 60% of its clientele, so reducing staff by 60% is justified. However, excellent candidates will recognize the probability for natural attrition is high, and Vitriolic should consider this when determining how many employees to lay off.

No matter what percentage of employees the candidate selects for layoffs, Vitriolic will not be profitable. After calculating Vitriolic's new profitability, ask the candidate what other options are available to the company.

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NOT AN EXHIBIT

Interviewer Reference

Vitriolic's Post-Scandal Profitability

Expected Analysis:

$$\frac{\$360,000,000 \text{ Salary Expense}}{2,400,000 \text{ Employees}} = \$150,000 \text{ Average Salary}$$

	Pre-Scandal	Post-Scandal (50% Reduction)	Post-Scandal (60% Reduction)
Revenue	8,500 B	3,400 B	3,400 B
Buildings	(800 B)	(800 B)	(800 B)
Salary Expense	(360 B)	(180 B)	(144 B)
Overhead	(3,200 B)	(2,560 B)	(2,560 B)
Profit	4,140 B	(140 B)	(104 B)

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Question IV: Become Acquired

Vitriolic has identified a buyer who is interested in purchasing the company. If purchased, only 10% of Vitriolic's Wealth Advisors will be laid off. However, Vitriolic's President will be given a severance package and asked to leave as part of the deal.

Question IV: What should our client consider when weighing this option?

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Conclusion

Summary

- Vitriolic is not profitable based solely on cost reduction **in time period zero**. Strong candidates may argue that a client base may be rebuilt over time, making cost reduction the more preferable option.

Recommendation

- Should emphasize both financial impacts as well as rebuilding brand image
- Strong candidates will pay particular attention to customer perception

Risks

- Misestimation of cost reductions
- For an acquisition, the deal could fall through

Next Steps

- Begin scoping cost reductions
- For acquisition, begin due diligence processes



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PROMPT

OUR CLIENT, FIN-TASTIC PUBLISHERS, IS A PUBLISHER OF BOOKS FOR CHILDREN AGES 4 – 9 YEARS OLD. OUR CLIENT PLAN TO LAUNCH A NEW BOOK NEXT QUARTER FEATURING A YOUNG TURTLE GOING TO SCHOOL FOR THE FIRST TIME. OUR CLIENT HAS ASKED US TO ASSIST IN DETERMINING WHAT PRICE POINT THE BOOK SHOULD BE SOLD AT.

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RESPONSES TO CLARIFYING QUESTIONS

IS THE NEW PUBLICATION EXPECTED TO CANNIBALIZE SALES OF CURRENT PUBLICATIONS?

NO, THERE IS NO EXPECTED CANNIBALIZATION RATE

IS THERE A GOAL BESIDES DETERMINING A PRICEPOINT?

NO, HOWEVER THE PRICEPOINT SHOULD BE SELECTED TO MAXIMIZE PROFITS

ARE ROYALTY PAYMENTS REQUIRED TO BE MADE TO THE AUTHOR?

NO, THE STORY IS THE INTELLECTUAL PROPERTY OF FIN-TASTIC PUBLISHERS

DOES FIN-TASTIC PUBLISHERS OWN THE RIGHTS TO THE TURTLE FEATURED IN ITS NEW STORY?

YES, THE TURTLE IS CONSIDERED THE INTELLECTUAL PROPERTY OF FIN-TASTIC PUBLISHERS



GENERAL STRUCTURE SUGGESTIONS

FINANCIAL CONSIDERATIONS:

- WHAT ARE THE COSTS ASSOCIATED WITH PRODUCTION?
- HOW WILL NON-PRODUCTION COSTS (EX. MARKETING) BE ALLOCATED?
- HOW HAVE PREVIOUS PUBLICATIONS BEEN PRICED?

NON-FINANCIAL CONSIDERATIONS:

- HOW WILL THE NEW BOOK BE MARKETING?
- WHO ARE THE CUSTOMERS? SCHOOLS? LIBRARIES?
- HOW COULD DEMAND INCREASE OR DECREASE OVER TIME?

EXHIBIT 1: PRODUCTION EXPENSES

Category	Expense
Setup: Production Setup Costs	\$55,000,000
Setup: Capital Equipment Costs	\$40,000,000
Indirect Labor	\$100,000,000
Direct Labor	\$280,000,000
Rent	\$15,000,000
Insurance	\$15,000,000
Ink	\$310,000,000
Paper	\$355,000,000
Equipment Depreciation	\$30,000,000
Desired Quantity Sold	200,000,000

NOT AN EXHIBIT

COST ALLOCATION

Category	Expense
Fixed Costs	\$200M
Setup: Capital Equipment Costs	\$40M
Indirect Labor	\$100M
Rent	\$15M
Insurance	\$15M
Equipment Depreciation <small>Note: Depreciation is not usage based for Fantastic Publishers</small>	\$30M
Variable Costs	\$1,000M
Setup: Production Setup Costs	\$55M
Direct Labor	\$280M
Ink	\$310M
Paper	\$355M
Desired Quantity Sold	200M

Price Per Unit

$$\begin{aligned}
 &= \frac{\text{Fixed Costs}}{\text{Quantity}} + \text{Variable Cost Per Unit} \\
 &= \frac{\$200,000,000}{200,000,000} + \frac{\$1,000,000,000}{200,000,000} \\
 &= \$6.00
 \end{aligned}$$

EXHIBIT 1 ACTIONS

THE CANDIDATE SHOULD NOTICE:

- PRICE MAY BE DETERMINED UTILIZING THE FOLLOWING FORMULA:

$$\text{Price Per Unit} = \frac{\text{Fixed Costs}}{\text{Q u a n t}} + \text{Variable Cost Per Unit}$$

- IF THE CANDIDATE ^{by} APPEARS STUCK, ASK THEM TO WRITE THE BREAKEVEN FORMULA AND MODIFY IT TO SOLVE FOR PRICE:

$$\text{Breakeven Quantity} = \frac{\text{Fixed Costs}}{(\text{Price Per Unit} - \text{Variable Cost Per Unit})}$$

TO MOVE ON:

- STRONG CANDIDATES WILL IDENTIFY THAT THIS PRICE REPRESENTS A BREAKEVEN POINT, AND NOT PROFITABILITY
- TO FURTHER ASSESS PRICING OPTIONS, PRESENT THE CANDIDATE WITH EXHIBIT 2.

EXHIBIT 2: PRICE SENSITIVITY



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EXHIBIT 2 ACTIONS

THE CANDIDATE SHOULD NOTICE:

- BOOKS CANNOT BE SOLD FOR LESS THAN \$6, OTHERWISE FIN-TASTIC PUBLISHERS WILL LOSE MONEY
- FIN-TASTIC PUBLISHERS WOULD LIKE TO SELL \$200M COPIES NEXT YEAR. THE PRICE POINT AT WHICH DEMAND DIPS BELOW THIS IS \$10
- THE BREAK-EVEN POINT ONLY IDENTIFIES THE POINT AT WHICH FIN-TASTIC PUBLISHERS HAS COVERED FIXED COSTS. AFTER THIS, THE PROFITABILITY OF EACH ADDITIONAL UNIT MAY BE DEFINED BY THE CONTRIBUTION MARGIN (PRICE – VARIABLE COST). THEREFORE, \$9 IS THE IDEAL PRICE:

Price	Purchases Over 200M	Contribution Margin	Profit
\$7.00	280M	\$1.00	\$280M
\$8.00	250M	\$2.00	\$500M
\$9.00	240M	\$3.00	\$720M



PROMPT THE CANDIDATE TO BRAINSTORM CREATIVE WAYS FOR
FIN-TASTIC PUBLISHERS TO MARKET ITS NEW STORY

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CONCLUSION

SUMMARY:

- A PRICEPOINT OF \$9.00 PERCOPYALLOWS FIN-TASTIC PUBLISHERSTO MAXIMIZE PROFITABILITY

RECOMMENDATION:

- SHOULD MENTION NEW THE\$9.00 AND EXPECTED PROFITABILITY (\$720M) OR REVENUE (\$3.96B)

RISKS:

- DEMAND COULD BE MISESTIMATED, AND BREAKEVEN CALCULATIONS DO NOT INCLUDE ESTIMATES FOR A MARGIN OF ERROR

NEXT STEPS:

- BEGIN MARKETING EFFORTS TO ENSURE DEMAND POST-PUBLICATION