CASE BOOK 2011

MANAGEMENT CONSULTING ASSOCIATION

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Case: Biologics Supplier

Case Type: Open-ended / Strategy / Revenue growth. **Difficulty:** Hard.

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Problem Statement Narrative

Your client is a supplier to manufacturers of biological drugs, also known as biologics. Biologics are manufactured through a complex process, and your client provides tanks, chemicals, steel pipes, and other inputs to that process. The biologics industry has been growing at a CAGR of 14% per year, and your client once shared similar growth. In the last few years, however, your client's growth has fallen to a CAGR of 4%. What could be causing the slowdown, and how can we fix it?

Case Commentary (Notes to the interviewer)

This is a case about a complex industry that tests a candidate's ability to focus on the key drivers of growth without any industry-specific knowledge.

Data Set (To be provided upon request)

-Our client's primary objective is to increase revenues. We're not focusing on profitability.

-Other suppliers to the biologics industry have been experiencing a similar slowdown in sales growth.

- This is a new industry; our client is only about a decade old, and our client's customers have been manufacturing biologics for a relatively short period of time.

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

Revenue Economics	Competitors	Customers
Price (have we decreased prices?) **Quantity** (is our volume growth stagnating?) **Product Mix** (are we selling cheaper supplies?)	**Current Competitors** (are they scaling up?) **New Entrants** (is the market getting crowded?) **Substitutes** (are our products replaceable?)	**Customer Segments** (large, small, specialty, etc.) **Customer Mix** **Customer Needs**

"Market" would be another fair area for analysis. However, the candidate should know from the initial information that the market is growing at a 14% CAGR.

Potential Areas for Analysis

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Revenue Economics

Price: There's been no change in our prices over the past few years.

Quantity: Quantities have grown at a CAGR of 4% a year. *(Takeaway: Problem is on the Q side.)*

Product Mix: Our product mix has remained relatively stagnant.

Competitors

Other suppliers to the biologics industry have been experiencing a similar slowdown in sales growth.

There have been no notable new entrants to the market.

No substitutes have developed for our products.

Customers *(key area in this case)*

Our customers are pharmaceutical companies (both major and minor) who produce biologics.

What could be causing customers to purchase fewer supplies? (have candidate brainstorm)

True answers in this case:
- Tanks and pipes are **long-lived assets**; after an initial ramp up in capacity, they don't need to be replaced for many years.
- **Learning effects/experience curves** allow our customers to manufacture drugs more efficiently with less equipment.
- Technological innovations have made **our products last longer.** A certain tank used to last 2 weeks before replacement, but now lasts 2 months.
- Biologics manufacturers **haven't been investing in enough capacity** to match expected demand (key point for next part of case)

Exhibit #1 and Math

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Questions

Question #1: Hand candidate Exhibit #1. Our team has put together some historical data and projections on demand and manufacturing capacity for biologics. What do you think?
Question #2: Candidate should get here on his or her own, but prompt if necessary. Why do you think demand is outstripping capacity?
Question #3: Math. What's the CAGR for the shortage between now (2011) and 2014?

Solution:

Exhibit #1: A good response identifies that after a brief period of overcapacity, demand is skyrocketing and leaving capacity in the dust. A great response tries to quantify the shortage and lays out one or more hypotheses for why it might be. For example: **1)** Does it take a long time to add capacity in this business? (Yes.) **2)** Are manufacturers colluding to try and keep prices high? (No.) **3)** Are there regulatory hurdles preventing additional plants from being constructed? (No.)
Math Question: Approximations are fine here. This is a question designed to panic the candidate and test their comfort with numbers – they shouldn't fall for it! *Using the CAGR formula would take several minutes; it's much better to approximate.* Shortage in 2011 is ~20 and grows to ~60 by 2014. Approximating, we know a 50% CAGR would be (20 -> 30 > 45 > 67.5) so that's too high. A 40% CAGR is a bit too low (20 -> 28 -> ~40 > ~56). 45% fits much better (20 > 29 > ~42 -> ~60).Alternate method: 20 * (1 + x)^3 = 60, so (1 + x)^3 = 3. Approximating the cube root of 3, it's <1.5 and >1.4, so .5 > x > .4.
Key Implication: The shortage is growing at an astounding rate – 45% compared to demand growth of 14%. Gravity has to take hold at some point – will there be a massive upswing in capacity in 2015/2016?

Brainstorming

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Question

Assume that we're pretty confident the numbers in Exhibit 1 are true and demand won't pick up through 2014. What are some other ways our client could increase revenues?

Question #2 Solution:

Candidate should brainstorm as many (and as creative) options as possible. Two important areas:

- **Gain share:**
  - -Cut prices or increase marketing and direct sales
  - -Innovate with better-quality product
  - -Change product mix toward items that need to be replaced more often
  - -Acquire a competitor and try to gain supplier power to increase prices
- **Create new revenue streams:**
  - -Get into services to help customers meet the upcoming capacity shortage
  - - Begin selling additional inputs into the biologics manufacturing process
  - - Get into the biologics industry ourselves! (Massive growth + capacity shortage.)

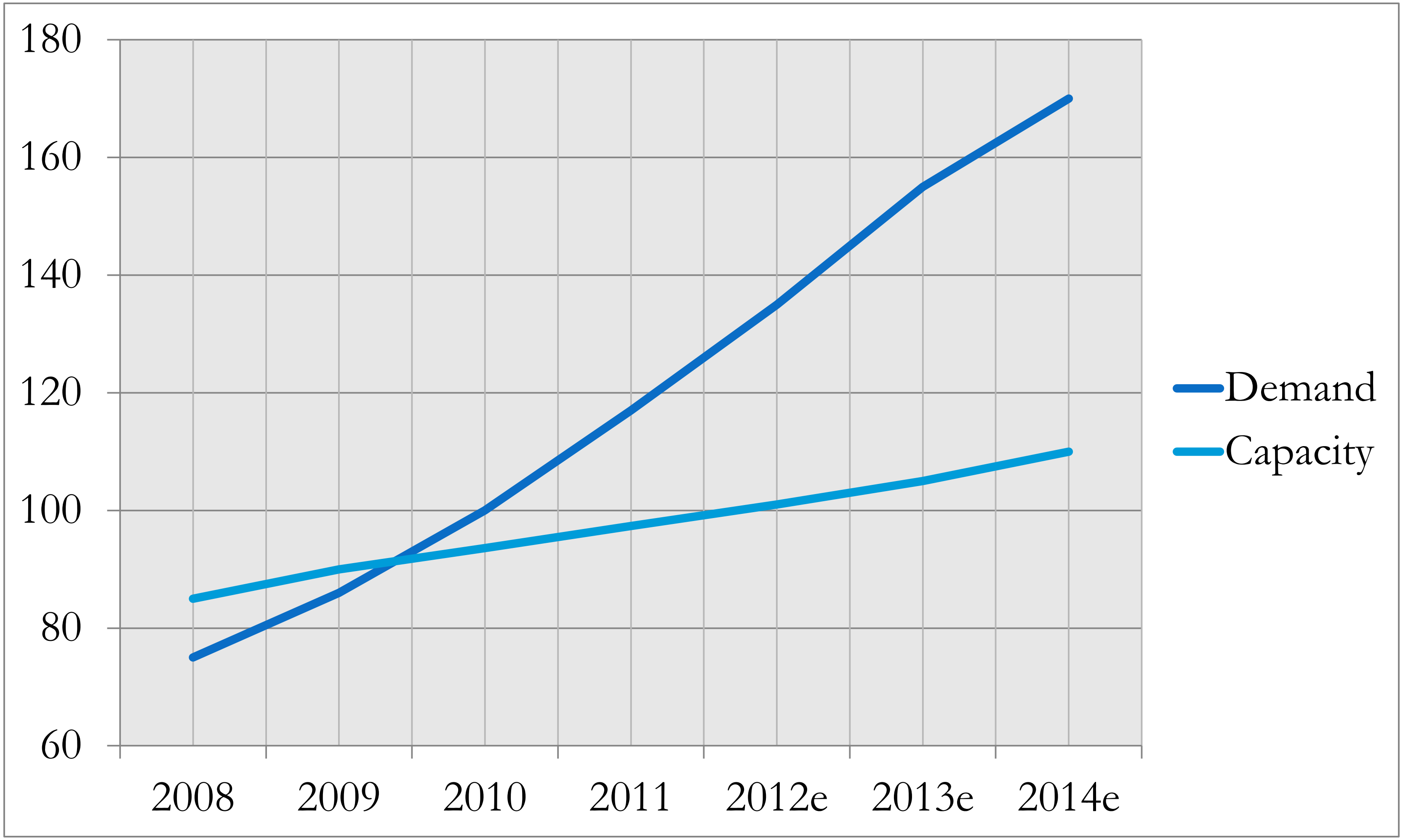
Conclusion

Example Recommendation
○ Our client should take advantage of the upcoming capacity shortage by getting into services to help our customers (the biologics manufacturers) ramp up capacity. *Note: Any recommendation is appropriate as long as it involves taking advantage of the capacity shortage in some way.*

Risks
○ **Risk #1:** Manufacturers aren't interested in ramping up capacity, prefer to try and drive prices up ○ **Risk #2:** We don't have any expertise in services ○ **Risk #3:** The market for services may be saturated

Next Steps
○ **Next Step #1:** Speak to our customers to ensure this is a viable model ○ **Next Step #2:** Assess our own expertise ○ **Next Step #3:** Assess the market for services

Exhibit: Biologics Demand and Capacity
(millions of units)



Case: TechCo Geographic Expansion

Case Type: Go/No-Go Decision, Business Planning

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Problem Statement Narrative

A technology company, TechCo, is considering expanding sales of its phones and computers to the island of Paradise. They're trying to determine the best way to go about doing so and currently have three strategies on the table: (1) opening retail storefronts, (2) selling products via the web, and (3) distributing through existing Mom-and-Pop shops on the island. Should they expand into Paradise, and, if so, which approach should they pursue?

Notes to the interviewer

The goal of this case is to, first, have the interviewee determine if there's a sufficiently compelling case for entering Paradise.

The interviewee should consider each entry strategy thoroughly; a good interviewee should bring to bear at least some outside knowledge of Apple, its brand, operations, and marketing.

The interviewee should focus exclusively on the viability of the phone and computer business lines, but the final recommendation can factor in the possibilities of selling a broader product suite.

Info/Data (To be provided upon request)

- **Paradise:**
  - **Population 3M, with the main (and only) city on the island very densely populated (nearly all locals live there, tourist operations are on the outskirts of the island)**
  - **Inhabitants generally wealthy (and wealth is well-distributed)**
  - **Island enjoys broadband and wireless access – in general, good infrastructure**
  - **Main industry: high-end tourism**
- **Right now, the island's inhabitants cannot purchase any Apple products (there are no regulatory hurdles preventing them from doing so, it's just that Apple and the various service providers have not decided to pursue the opportunity to date)**
- **The island has an unreliable shipping system (often problems getting products from multi-nationals imported)**
- **Paradise 'tuned into' mainstream media, so well aware of Apple brand**
- **Currently, there is one Mom-and-Pop style local manufacturer selling all of the island's electronics and appliances; 'utilitarian' in its approach (functional focus over style)**

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

First, I'd like to consider whether expanding onto the island makes sense:

- **Is their a market of desiring buyers? Can these buyers afford phones and computers? (Customers)**
- **Is it strategically sound for Apple to consider geographic expansion in the first place? (Company Capacity)**
- **How strong is the competition that currently sells electronics on the island? How realistic is the goal of carving out a profitable position in the market? (Competition)**

Then, I'd like to evaluate the three proposed strategies:

- **(1) Retail Storefronts:**
    - **Pros**
    - **Cons/Risks**
    - **Associated Costs**
- **(2) Web-based sales:**
    - **Pros**
    - **Cons/Risks**
    - **Associated Costs**
- **(3) Distribution through Mom-and-Pop storefronts:**
    - **Pros**
    - **Cons/Risks**
    - **Associated Costs**

Quantitative Problem Solving

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Sample Candidate Problem Solving: Economics

Interviewer: Sounds like a great framework. Let's address your first question around whether expanding onto the island makes sense. You should know that Apple has an internal hurdle rate it must believe it can clear before expanding into a new market – an average net margin of 10%.

Interviewee should ask if there's available data on Apple's margins per product.

Company plans to sell phones for $200, which will lead to a 5% net margin, and computers for $1,000, with a 20% net margin. This pricing is consistent with what the company offers in other developed markets.

Interviewee should ask whether Apple can make reliable forecasts as to what they'll manage to sell, or at least what the mix between phones and computers will be.

Apple anticipates that first-year sales will be 90% phones, 10% computers.

Interviewee should go about calculating whether the anticipated sales mix will clear the blended margin hurdle.

- **Phones: 5% net margin on $200 equals $10 return per sale ($200*0.05).**
- **Computers: 20% net margin on $1,000 equals $200 return per sale ($1,000*0.2).**
    - **Multiple approaches can be take to solve. Plug approach:**
        - **If Apple sells 100 products on the island, then 90 of these are phones and 10 are computers, which would imply $28,000 in revenue.**
        - **The blended margin would be:**
            - **Phones: $900 return ($10*90)**
            - **Computers: $2,000 return ($200*10)**
            - **Aggregate return: $2,900 on $28,000 in sales → $2,900/$28,000 = 10.357%**
            - **Clears hurdle rate!**

Qualitative Problem Solving

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Sample Candidate Problem Solving: Entry Approach (not exhaustive)

Retail storefront:

- **Pros:**
  - **Consistent with current model in most developed markets, in-store experience is key component of brand image ("Genius Bar," sleek design, etc)**
  - **Since Paradise's population is very concentrated, one store could theoretically address whole market**
    - **[Interviewer may ask if a store is justified, given the size of the market. Interviewee can take various approaches to rationalize here – e.g., Paradise has a population of 3M, NYC has a population of 8M and multiple stores just in Manhattan, so, yes, it seems justified.]**
  - **More seamless mechanism for introducing new products to customers, easier to get customer feedback**
- **Cons**
  - **More upfront investment required**
  - **If market doesn't bear fruit, more expensive to exit**
- **Associated Costs:**
  - **Real estate purchase or rental (interviewee can talk out logic here)**
  - **Employees**

Via website:

- **Pros: Low-cost way to test market**
- **Cons**
  - **People tend to want to test out phones, feel them in their hands, etc. (possibly less of a concern for laptops, e.g., Dell has had success with online order model)**
  - **Apple tends to sell a 'lifestyle,' this is more difficult to convey just through a website**
  - **Island has traditionally had difficulty with international shipments. Would Apple need to develop its own delivery process? How expensive would developing a partner with a FedEx or UPS be?**
- **Associated Costs:**
  - **Delivery, otherwise minimal**

Via Mom-and-Pop shops (current local player)

- **Pro**
  - **Sales infrastructure exists**
  - **Customers are comfortable with these outlets and the store owners know the local market very well**
  - **Might make it easier to make agreement with local service provider/carrier**
- **Cons**
  - **Could be difficult to form relationships with each mom-and-pop player (if interviewer hasn't shared that there's only one big electronics player on the island); once that info is shared → local player could squeeze Apple's margin, may have sales reps placing greater emphasis on the locally manufactured products**

Conclusion

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Recommendation

- If interviewee has made compelling case for Web-based sales, could go in that direction, but, more likely…
- Apple should proceed with entering Paradise because the island's citizens fit into the mold of the company's target market (affluent, well-connected) and because existing, sole competitor offers a product that's compelling on price rather than design. Give the firm's projections, the product sales mix will allow them to clear their internal hurdle rate. Given the importance of distinguishing between Apple and the cheaper, functional alternatives, Apple should open a retail store, which would be consistent with the firm's approach in other markets, allow them to create the holistic brand experience, and pave the way for more upselling and cross-selling of other products.

Risks

- Hurdle rate contingent on soundness of company's projections
- If other sleek tech providers (Android devices, etc) partner with the existing local franchise, the competitive dynamics change, possibly rendering the recommended strategy less attractive.

If you get through the case quickly and have extra time…

Scenario: Apple has decided to invest in a presence on the online and has built a retail store. The official opening/launch is this coming Saturday. It turns out the local player has secretly been developing a similar phone and laptop and it intends to announce the new products on Friday. General consensus is that the competitor's products are not as high-quality as Apple's, but the move upstream is of concern since it may threaten Apple's anticipate market share. The local player will be offering their phone at $100 and laptop at $600. An outside consultant has floated the idea of decreasing Apple's launch prices in response – dropping the phone to $150 and the computer to $800. Is that the right move?

Goal here is to get the interviewee to switch directions quickly with a new problem and see how consistent his/her approach to the business is. If the candidate has contended throughout that Apple's competitive advantage is design/quality over price, then the appropriate response is that Apple should focus on its marketing and product differentiation rather than pricing schemes. Additionally, interviewee should cite that such price decreases would affect the net margin calculations/conclusion. Recommendations on advertising/marketing messaging can be brainstormed. NB: if a strong candidate gets here quickly, the interviewer might ask if Apple should consider INCREASING its prices. Interviewee should note that it was previously mentioned that Paradise's inhabitants are well-connected to outside media and would be aware of the price discrimination, and accordingly resent it. This could hurt Apple's long-term prospects on the island.

Case: Beverage Company

Case Type: Profitability, Brainstorming

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Problem Statement Narrative

Your client is a beverage company. 5 years ago, the company earned $1 billion in sales. However, in the last 5 years, sales have fallen to $800 million. Profits have also fallen from $150 million to $100 million in the last 5 years. You have been hired to determine why this company is seeing a decline and to determine what they could do differently.

Case Commentary (Notes to the interviewer)

This is largely open-ended and a brainstorming case.

Data Set (To be provided upon request)

- The overall size of the market is $1.5 billion.
- There are 2 other main competitors:
    - Player B, market share $400 million
    - Player C, market share $300 million

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

Company
- Distribution channels
- Products, pricing
- Revenues/Costs
- Marketing/Advertising

Market
- Growing/flat/declining
- Competitors – products/pricing

Customers
- Brand perception
- Demographics
- Changing trends?

Question #1

Question #1:

What do you think has caused the declining sales and profits for the company?

Question #1 Solution:

Information to be provided upon request:

The company makes 2 products:
- Fruit Juice – 100% juice, healthy
- Fruit Drink – has sugar, chemicals, water; accounts for 95% of sales

Player B produces Fruit Juice and revenues have increased in the last 5 years.
Player C produces Fruit Juice and Fruit Drink, revenues have been flat over the last 5 years.

The candidate should determine that changing consumer trends towards a healthier lifestyle has caused an increase in the sales of the healthier fruit juice product. Costs have also gone up (leading to a decrease in profits) because it is more expensive to make a 100% fruit drink than one diluted with chemicals, water and sugar. Candidate should suggest the company reposition itself to focus on Fruit Juice products.

Question #2

Question #2:

Consumers like our client's brand and associate it with high-quality products. However, consumers question the client's credibility in the healthier Fruit Juice segment. Player B's marketing has especially been attacking the client's credibility. What should the client do?

Question #2 Solution:

Candidate should brainstorm. Possible solutions:

- Re-label products to emphasize 100% fruit juice, not from concentrate
- Highlight health association in marketing campaigns, advertising
- Market to parents, since kids don't care about healthy
- Partner with fitness centers to distribute trials, promotional materials

More Questions

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Question #3	Possible Answer #3
Profit margins on Fruit Drink are $0.25/case. Profit margins on Fruit Juice are $0.15/case. What should the client think about when determining how much production it should transfer from Fruit Drink to Fruit Juice?	The client will have to make a good case for moving production from Fruit Drink to Fruit Juice, given that the margins are $0.10/case higher for Fruit Drink. Client should conduct detailed market research to determine if the trend towards healthier lifestyles will continue in the future. Client may also consider raising prices on Fruit Juice or finding ways to reduce costs.

Question #4	Possible Answer #4
Let's say that the client is owned by a PE firm who is looking to sell the company in the next 3 years. What would you tell the PE firm in regards to changing the management team?	This depends on the PE firm. Does it own other complimentary companies in its portfolio with experienced management teams in this business? If so, the PE firm should use the outside management team if it has been successful at quick turnarounds in this business area.

More Questions

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Question #4	Possible Answer #3
Let's say instead that the client is owned by an agricultural co-op of 900 farmers. A big beverage company, say Pepsi, has offered to purchase the client at a significant premium. The co-op is hesitant to sell. Why do you think this might be?	A company like Pepsi has established supply sources. Pepsi may stop sourcing from the agricultural co-op, the farmers could lose profits, jobs. An issue of culture. The agricultural co-op does not want to "sell-out" to corporate America.

Question #5	Possible Answer #5
After this project, if you were to take a job with the client, what position would you want within the company and why?	Open-ended.

Case: Project Gemini

Case Type: Business Planning/Investment Decision-Making

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Problem Statement Narrative

You have twin siblings, Ron and Rhonda. They are into physical fitness and total body health. Having recently graduated from UConn's sports health and management program, they have decided that they want to start a chain of "Fitness Centers" dedicated to training, nutrition, and balanced life style.

They can raise some money from family and friends, but they will need to secure financing. They have been told they need a "business plan" in order to secure enough money to open their first five centers. Ron and Rhonda don't know how to go about writing a business plan, so they turn to you.

There are four questions to address: (i) What are the 3-5 big strategic questions you would ask your siblings about their business?, (ii) Please outline the topics you would cover in a business plan., (iii) What elements would you use to forecast first year revenues for the business?, (iv) Would you invest in this business? Why or why not?

Case Commentary (Notes to the interviewer)

This is a more non-traditional case. The interviewee should drive, but use the four questions above as guides, aiming to tackle each in the allotted time.

After the interviewee offers their 3-5 big strategic questions, take a step back and ask the interviewee to brainstorm potential sources of funds:

- friends and family
- loans (secured loans could be feasible because the business will likely have physical collateral)
- equity: corporate ventures/strategic partners, angel investors

Data Set (To be provided upon request)

No data. When asked, prompt the interviewee to brainstorm reasonable assumptions/numbers. There isn't really an expectation in this case that the applicant will do math, but you do want to push him/her to explain the inputs they'd draw on to do calculations.

Sample Framework

(interviewee should use the 4 questions as a broad framework)

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Sample Candidate Framework

Question 1

Questions can go in a number of directions, but should aim to elucidate the economic case for the business, the vision and aspirations of the founders, and the market environment. Examples:

(1) How will you make money? (what are the revenue streams?)
(2) What will it cost to run your business successfully?
(3) How will you get customers? (what do these customers look like?)
(4) How big will your footprint be? (in the immediate, given funding goals, and in the future?)
(5) What's the competitive landscape? How is your proposed business different and better?
(6) What macro factors will impact your success? (to ensure your siblings are looking at the big picture)

Question 2

EXAMPLE:

- Mission statement (story focus): Why us? Why we care. Why now?
  - Management overview
- What we'll be creating. Fitness center components:
  - 1. training
  - 2. nutrition
  - 3. balanced life-style
- How we'll make money (detailing each business line)
- What is will cost (detailing each business line); distinguishing between fixed costs (physical, open/closed) and variable
- Profitability – breakeven time horizon, how we'll prioritize growth (debt repayment, equity, reinvestment)
- Competitive landscape/macro
- Formal customer acquisition
- Risks – present rosily, but acknowledge they're there
- Exit strategy –
  - Strategic buyers? Management buyout? (latter likely preferable to most potential investors, indicates entrepreneur commitment)

Sample Framework

(interviewee should use the 4 questions as a broad framework)

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Sample Candidate Framework

Question 3

Calculating revenues. More about setting up the approach than actually calculating:

- Revenue = Price * Quantity
  - How will we price our services and what are the rev implications?
    - Candidate should think about the pros/cons of bundling membership to the three business lines, talk through the anticipated customer bases, possibilities of a la carte strategies, etc.
      - Gym access
      - Training sessions
      - Counselors
      - Classes
      - Concierge services
      - Value-added services
      - Food, drink, towels, etc.
      - (Interviewee should discuss which aspects of the business would have the best margin)
    - Cross-selling, upselling
    - Pricing: flat-fee (monthly, annualized?), pay per use, training sessions a la carte, etc.
    -

A strong interviewee will develop a structure for addressing this individual question: e.g., formula for revenue, what would be a reasonable approach for anticipating price (pricing strategies) and quantity (what inputs would help form a reliable customer penetration model, etc).

Question 4

Investment decision should flow from views offered throughout the case, especially those brainstormed during the business planning section:

- is the market attractive/is there demand?
- does interviewee trust these siblings as operators?
- does the exit strategy seem sound/will there be an attractive ROI?
- any concerns about family businesses?

Case: Smartphone Acquisition

Case Type: PE / Market Entry. **Difficulty:** Medium to hard.

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Problem Statement Narrative

It's late 2006, and our client is a PE firm looking to acquire a company in the emerging smartphone industry. There are currently only two firms in the market: SmartCo and PhoneCo. Our client has decided to definitely purchase one of the firms, but they've hired us to help them figure out which one. How would you approach this problem?

Case Commentary (Notes to the interviewer)

- This is an exhibits-heavy case. After the framework, guide the candidate to Question #1 (market size) as

Data Set (To be provided upon request)

-The iPhone was announced in January 2007 and launched in June 2007, so it shouldn't be a factor in the initial decision.

-In the real world, there were more than two firms in the market. This is a simplified case, so what you know about RIM, Motorola, Nokia, etc. doesn't necessarily apply.

- Our client cares about the value of the firm at an exit in 5 years, so a DCF won't be necessary.

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

Valuation Economics	Smartphone Companies	Smartphone Customers
Revenues (Price and Quantity [Market Size and Share]) **Costs** (Fixed and Variable) **Discount Rate**	**Products** (SmartCo vs. PhoneCo) **Technology** (patents or other technological advantage) **Barriers to Entry** (how easy is each company to copy?)	**Segmentation** (behavioral? demographic? income-based?) **Needs by Segment** (keyboard? security? fast connectivity? etc.)

The discount rate isn't necessary here, but is a good thing to include in the framework. A great framework will address not only the economics of the deal (revenues and costs), but also discuss other reasons our client might want to purchase a particular company, including advantages with customer segments, technology and patents, capabilities (design, R&D, marketing)., etc.

Potential Areas for Analysis

Revenues and Costs

Variable costs are $150 per unit for SmartCo, $200 per unit for PhoneCo
- Price is $250 per unit for SmartCo, $300 per unit for PhoneCo
-Ignore fixed costs (but more sales mean fixed costs are less of an issue)

Market Size

Hand the candidate Exhibit #1 (see slide for notes).

Customers and Products

Hand the candidate Exhibit #2 (see slide for notes).

Exhibit #1 and Math

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Questions

Question #1: Hand candidate Exhibit #1.
Our client expects the mobile phone market as a whole to grow 5% over the next 5 years.
Our client also expects smartphones' share of the mobile market to grow 50% for businesses, 100% for prosumers, and 200% for consumers over the next 5 years.
What will the smartphone market be in Year 5 for each segment? What does that mean for us?

Solution:

Note: Approximation is fine for this question. (In fact, getting the exact numbers would take too long.)

	Business	Prosumer	Consumer
Total Market (Year 1)	$60b	$80b	$300b
Smartphone Market (Year 1)	$30b	$20b	$15b
Total Market (Year 5)	$63b	$84b	$315b
Smartphone Market (Year 5)	$47.25b	$40b	$45b
Smartphone Growth ($)	$15.75b	$21b	$29.25b
Smartphone Share of Mobile Market	75%	50%	15%

Solution: While all segments are approximately equal in Year 5, most businesses and half of prosumers are using smartphones. Meanwhile, only 15% of customers are using smartphones, which means the consumer market has much more room for growth. We should acquire the company that appeals to consumers.

Exhibits #2 and #3

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Questions
Question #1: Hand candidate Exhibit #2. Here's some data from a survey of *all* smartphone customers. What does this mean for our client? Is there any other information you'd want to know? **Question #2: Hand candidate Exhibit #3.** (Ideally, the candidate should ask for this data in the previous question.) Here's that same survey broken out into two segments. What does this mean for our client?

Solution:
Question #1: This is a red herring; there isn't much information here that is helpful to our client. A bad response tries to draw too much meaning from these numbers. A good response identifies that the phones are more or less equal to *all* customers. A great response identifies that this data might be different for each customer segment and asks whether there's any additional information on how each segment sees the two products. **Question #2:** A good response identifies that SmartCo appeals to consumers and PhoneCo appeals to businesses. (If asked, prosumers are a mix, but lean slightly toward SmartCo.) A great response ties this information together with the market size for consumers from the previous question and recommends that our client purchase SmartCo unprompted.

Conclusion

Recommendation

Our client should purchase SmartCo because they produce a phone that appeals to consumers. Consumers will be roughly a third of the market in five years, but since smartphones will only be 15% of the mobile phone market, the consumer segment will have enormous room for growth (whereas businesses and prosumers will not).

Risks

- **Risk #1: Competitive entry.** What if another player enters the market and tries to go after consumers?
- **Risk #2: PhoneCo.** What if PhoneCo sees the consumer growth numbers and comes after our market?
- **Risk #3: Customer preferences.** What if consumers value different attributes as the market grows?

Bonus Question

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Questions

Give this bonus question of the candidate has extra time and has correctly identified SmartCo as the most attractive acquisition option.

Based on your recommendation, our client has decided to purchase SmartCo. But before they sign the deal, Apple announces that they're releasing the iPhone. Does your recommendation change?

Solution:

The candidate can answer this question in three ways.

SmartCo is still the best bet. Potential reasoning:
-The consumer market is big enough for multiple players
- We're a 4.7/5 on style and a 4.8/5 on price – can Apple really beat that?
- The iPhone may be just as appealing to businesses and prosumers; PhoneCo won't be safe.

PhoneCo is a better bet. Potential reasoning:
-Why compete with Apple when we can have a niche to ourselves?
- Customers rank SmartCo highly now, but that might change when the iPhone is released.

Our client shouldn't acquire either player. Potential reasoning:
-There's too much uncertainty in the market.
-This is a very new industry, and anything can change; we should wait a few years to get a better picture.

Exhibit 1: Mobile Phone Market (2007 est.)

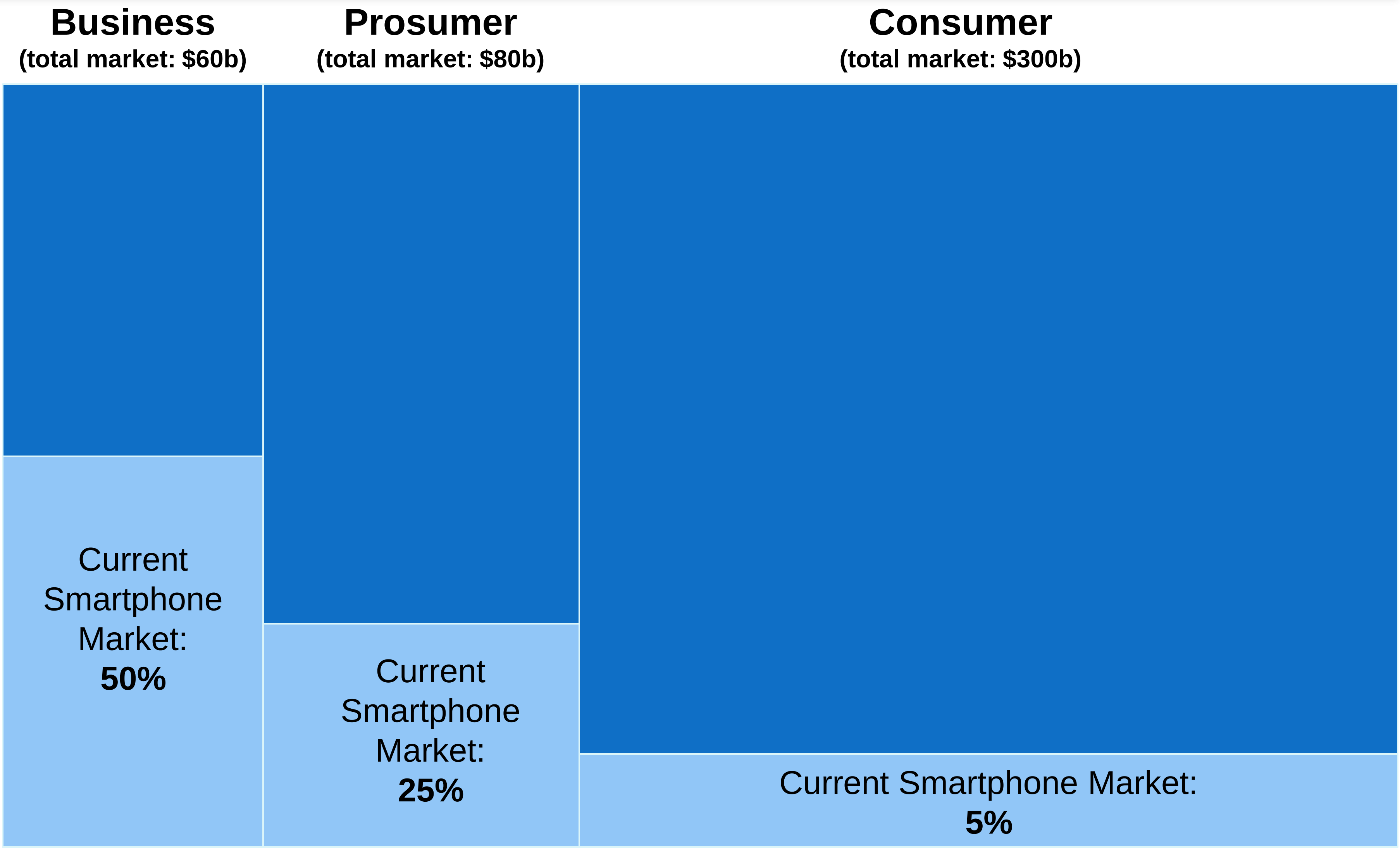

Exhibit 2: Customer Survey
(scale of 1 to 5)

Survey Question 1:
How ***important*** are the following attributes in a smartphone?

Survey Question 2:
How would you rate [SmartCo / PhoneCo]'s ***performance*** on each attribute?

Attribute	Web	Style	Price	Screen	Apps	E-mail
Importance	4.7	4.6	4.2	3.9	3.7	3.4
SmartCo	3.9	4.7	4.4	3.6	4.2	3.4
PhoneCo	4.5	4.2	3.6	3.7	3.0	4.4

Scale:
5 = highest
1 = lowest

Sample:
All customer segments

Exhibit 3: Customer Survey by Segment (scale of 1 to 5)

Survey Question 1:
How ***important*** are the following attributes in a smartphone?

Survey Question 2:
How would you rate [SmartCo / PhoneCo]'s ***performance*** on each attribute?

Businesses

Attribute	E-mail	Web	Screen
Importance	5.0	4.8	4.4
SmartCo	3.2	3.7	3.9
PhoneCo	4.7	4.5	4.0

Consumers

Attribute	Style	Price	Apps
Importance	4.7	4.6	4.2
SmartCo	4.9	4.8	4.4
PhoneCo	2.8	3.2	2.6

Scale:
5 = highest
1 = lowest

Sample:
Business segment customers
Consumer segment customers

Case: Pet Medication

Case Type: Revenue Growth, Customer Analysis

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Problem Statement Narrative

Your client is Petvascent, a pharmaceutical company that makes drugs for pets. One of the client's leading products is Clean Heart, a drug that is given to dogs with heart worms, has recently suffered declining sales. Petvascent has hired our firm to determine what the problem is and restore sales growth.

Case Commentary (Notes to the interviewer)

The interviewer will ultimately discover that some vets are making large purchases at wholesale prices and selling them to other pet stores. While this is a grey area in the law, it is ultimately not illegal and the interviewer must determine a creative way to restrict this practice. In addition, the interviewer must consider the implications of their method for preventing the redistribution of the drug.

Data Set (To be provided upon request)

- Once prescribed, Clean Heart is taken weekly for one year.
- Petvascent's patent on Clean Heart that will expire in 2020.
- There are other medications on the market for heart worms, but none is as effective as Clean Heart.
- There have been no changes in the proportion of dogs diagnosed with heart worms.
- Petvascent has an exclusive distribution agreement with PetCo, a national pet store chain, and also sells to vets so they can provide an initial dose to patients, who are then 95% more likely to purchase Clean Heart in stores.
- However, PetCo has recently complained that Clean Heart is available at other pet stores at a lower price, a clear violation of the exclusive distribution agreement.
- Begin by **showing Exhibit 1**, and ask the candidate to analyze the chart

Suggested Order for Case

Suggested Order for Case

- Read prompt & answer clarifying questions
  - *Candidate should lay out framework*
- Guide candidate to investigating competitors
  - Hand out Exhibit 1
  - Ask Question 1
- Steer candidate to what could possibly cause a decline in revenue
  - Price decrease vs. unit sales decrease
- Give Exhibit 2 to discuss unit sales
  - Ask Question 2
  - *Candidate should calculate profit and % change in profits*
- Why would vet purchases increase so much?
  - If necessary, remind candidate of lower priced Clean Heart available in stores outside of exclusive agreement with PetCo
- Knowing that vets are re-selling to other pet stores, what steps should Petvascent take?
  - Re-selling is not illegal if box is not clearly labeled
  - Besides changing label:
    - Limit purchases by vets
    - Change purchase agreements
- What are the risks of those steps?
- Recommendation

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

- **Vets**
  - Prescription rate
    - Alternative treatments
  - Relations with Petvascent
- **Pet Owners**
  - Trends in pet ownership
    - Frequency at vet
      - # diagnosed
      - # undiagnosed
    - Fewer dogs
  - Affordability
    - Seeking cheaper drugs
    - No treatment
- **Pet Drug Companies**
  - Marketing
    - Quantity
    - Type
  - New entrants
    - Pricing
    - Differentiators
- **PetCo**
  - Pricing
    - Increase in real price
  - In store
    - Change in displays
  - Retail competitors
    - Online
    - Other pet stores
- **Petvascent**
  - Unit sales
    - Patent?
  - Wholesale pricing
  - Marketing

Question #1

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Question #1:

[Give the candidate Exhibit 1] **What does this chart indicate about Petvascent's position in the market?**

Question #1 Solution:

- Petvascent is the market leader
- From 2008-2011, Petvascent's revenue declines faster than the market and is dragging the market size down
- Two new entrants appeared in 2005, neither appears to have grown significantly
- Bonus: Other competitors appear to be fairly stable, indicating that no one is stealing share from Petvascent

The candidate should now investigate other reasons that sales may have declined.

Potential Areas for Analysis

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Vets	Pet Owners	Drug Cos.	PetCo	Petvascent
• Have slightly increased recommendations of Petvascent • Most vets continue to order the same amount, a few have vastly increased their orders • View Petvascent positively	• Continue to own dogs at similar rates • Continue to take pets to vets at same rates • Continue to follow instructions from vets with same variety • Continue to spend money on pet medication • Trust in Clean Heart as best medication	• There have been new entrants • However, no new drugs have made significant improvements and remain low-level players • No changes in marketing quantity or type • No changes in price	• Observed declining unit sales • Orders replacements to replace sales • Has continued to price at $20/unit • Angered by presence of Clean Heart in other stores • Other stores charging $17/unit • Maintains online store presence that is comparable with industry leaders • Same marketing and display	• No changes to marketing, in quality or type • No changes to wholesale pricing • Unit sales have actually increased **(show Exhibit 2)** • Charges $17/unit to PetCo • Charges $10/unit to vets • Continues to only distribute Clean Heart through PetCo and Vets • No change to packaging

Question #2

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Question #2:

Estimate 2009 & 2010 profits. What is the % change in profit level?

Raw materials: $5/unit
Packaging: $0.5/unit
Transportation: $1/unit
SG&A: $50m (2009) and $55m (2010)
Vet Price: $10
PetCo Price: $17
Marketing: $100m (2009) and $110m (2010)

Question #2 Solution:

- The candidate must estimate units and revenue in each year from Exhibit 2; allow any reasonable estimate
- The candidate should sum the variable costs to find a single figure
- If the candidate asks, allow reasonable rounding
- Subtract points if the candidate fails to find the % change in profit level without prompting

Revenue	2009	2010
Vet Units	15,000,000	18,000,000
Vet Price	$10.00	$10.00
PetCo Units	22,000,000	20,000,000
PetCo Price	$17.00	$17.00
Total Rev	$524,000,000	$520,000,000

Costs	2009	2010
Total Units	37,000,000	38,000,000
Variable Costs	$6.50	$6.50
Total VC	$240,500,000	$247,000,000
Marketing	$100,000,000	$110,000,000
SG&A	$50,000,000	$55,000,000
Total Costs	$390,500,000	$412,000,000

Profit	2009	2010
Revenue	$524,000,000	$520,000,000
Total Costs	$390,500,000	$412,000,000
Profit	$133,500,000	$108,000,000
% Change		-19%

Conclusion

Recommendation

- Revenues have declined because vets are reselling Clean Heart to competing retailers at a lower price, which undercuts sales at PetCo.
- To combat this, Petvascent can (1) add “Not for Resale” to packaging (2) change sales contracts with vets and/or (3) limit purchases by vets

Risks

- New sales contracts may alienate vets who are good customers
- Customers may have grown used to lower priced Clean Heart

Next Steps

- Re-evaluate price elasticity of demand
- Discuss sales contracts with vets

Exhibit #1

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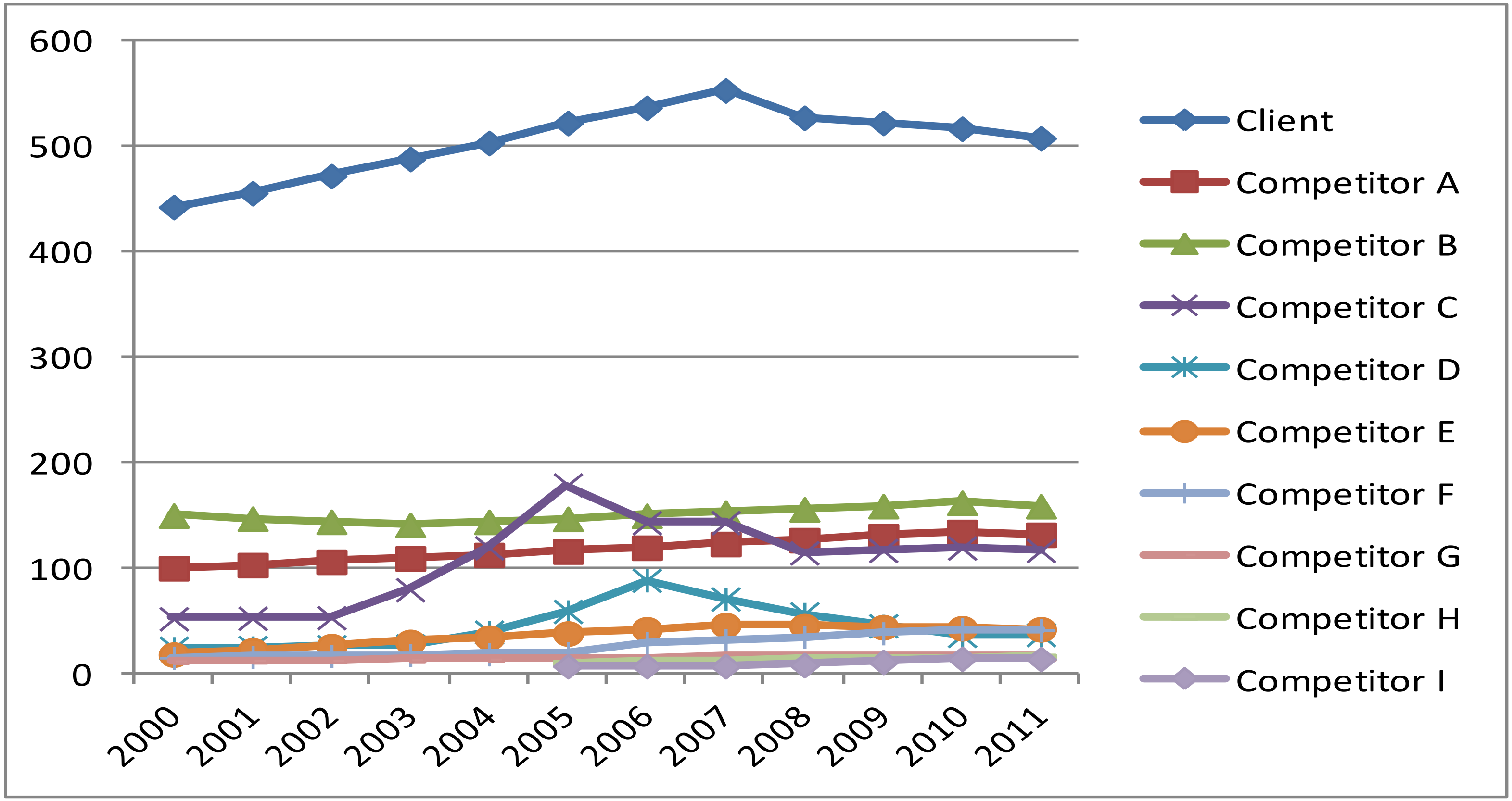
Revenues from heart worm drugs by Competitor ($ millions)



Growth Rates	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Market	n/a	2.40%	2.74%	5.72%	8.81%	12.20%	2.70%	1.23%	-4.36%	-0.09%	0.10%	-1.66%
Client	n/a	2.97%	3.57%	3.43%	3.11%	3.76%	2.76%	3.07%	-4.69%	-0.91%	-1.06%	-1.76%

Exhibit #2

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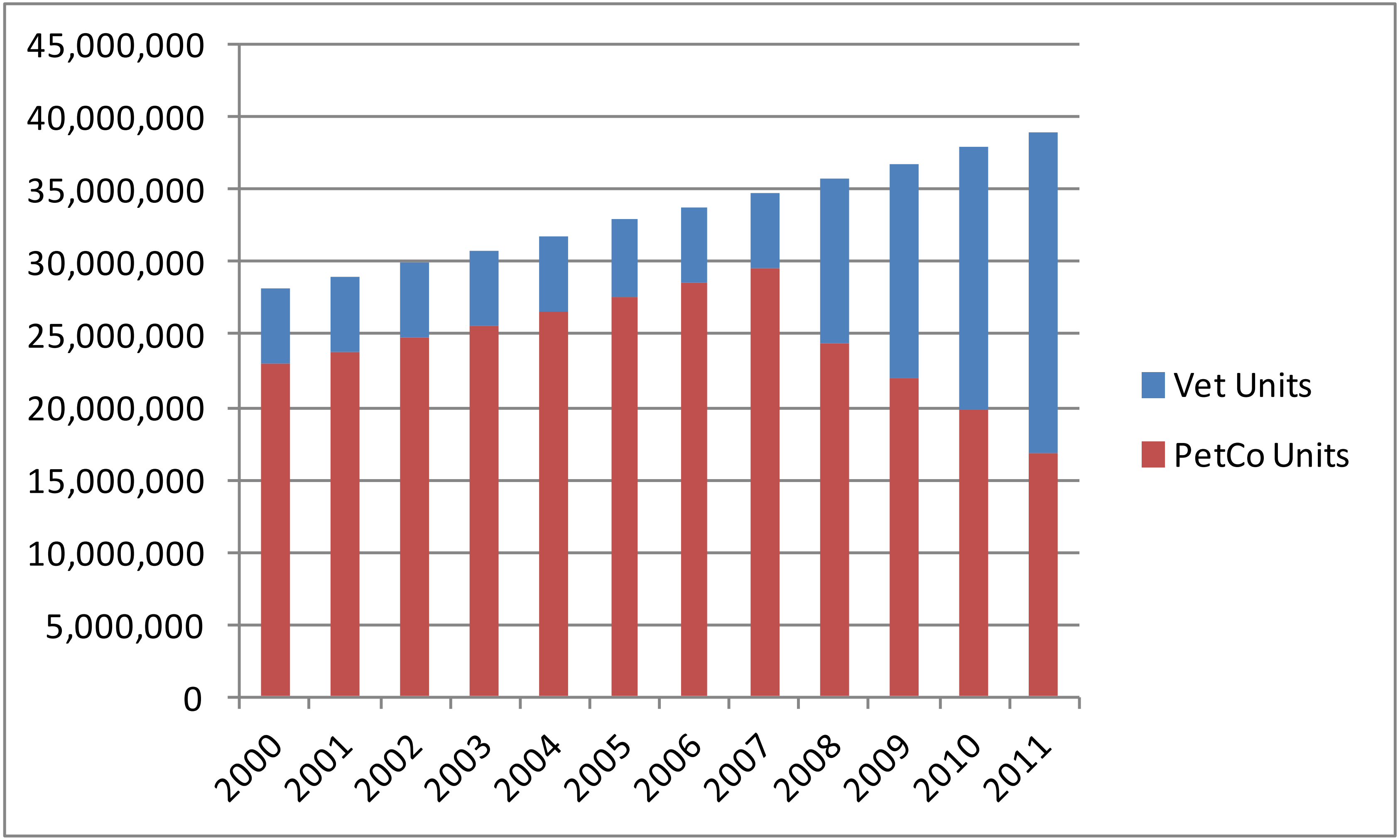
Petvascent's Unit Sales of Clean Heart by Distribution



Case: Struggling Conglomerate

Case Type: Improving Profitability

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Problem Statement Narrative

Your client, SupplyCo., has three business lines: paper, janitorial supplies, and packaging supplies. Profitability is low at SupplyCo. has hired our firm to figure out why and to develop a solution for the problem.

Case Commentary (Notes to the interviewer)

Basic analysis to determine that SupplyCo.'s profit has declined because the company's costs are too high as compared to competitors. The candidate will be asked to brainstorm at several points and should be pushed for more ideas. Finally, the candidate will be required to calculate profits for several alternative strategies.

Data Set (To be provided upon request)

- Provide Exhibits as instructed.

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

- **Profitability**
  - Revenue by business line
    - Quantity
      - Product mix
    - Price
  - Costs by business line
    - Fixed
    - Variable
- **Customers**
  - Preferences
    - Shift from paper
    - Green supplies
  - Who are they
    - B2B
    - B2C
- **Competitors**
  - Marketing
    - Quantity
    - Type
  - New entrants
    - Pricing
    - Differentiators
  - Substitutes
- **Distribution**
  - Volume
    - Internet
    - Direct Sales
    - Distributors
  - Time to sale

Potential Areas for Analysis

Profitability	Customers	Competitors	Distribution
• Prices have remained the same • Paper sales and packaging sales have declined; janitorial sales have remained steady	• Paper – large businesses, office supply stores • Janitorial supplies – large janitorial companies • Packaging – shipping companies, retailers with shipping service • Preferences remain the same • Demand for paper dropping with internet	• Marketing has remained similar across the business line • No new entrants • No specific differentiation across business lines; SupplyCos products are generally well regarded • Substitute – internet. Email has replaced printing and mailing, reducing demand for both paper and packaging.	• Has distribution by internet and retail • Time to sale has remained constant • Uses direct sales to large customers, internet sales for smaller customers, and distributors • This mix has not changed

Question #1

Question #1:

Profitability is declining – what are some reasons that could be?

Question #1 Solution:

- Costs
  - Increase in SGA
  - Increased marketing with no increase in sales
  - Increased material costs
  - Higher labor
- Revenue
  - Decreasing real prices – more discounts
  - Reduced quantity – change in preferences, competitor influence
  - Shift to less profitable products

Question #2

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Question #2:

How can we determine if our client's costs are too high? [Steer to Exhibit 1 – competitor costs]
[After analysis]
How could the client improve these ratios?
[could be improved by: (a) raising prices to increase sales (b) renegotiating supplier agreements (c) finding cost efficiencies in back office]

Question #2 Solution:

- SupplyCo is in the bottom 25% in all business units

					Competitors					
$ millions					Paper		Janitorial		Packaging	
	Paper	Janitorial	Packaging	Total	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%
Revenue	323	451	157	931						
COGS	291	400	138	829						
SG&A	31	42	15	88						
Inventory	100	180	51	331						
COGS/Revenue	90%	89%	88%	89%	79%	88%	77%	91%	83%	87%
SG&A/Revenue	10%	9%	10%	9%	4%	9%	5%	9%	3%	11%
Net Income	0.3%	2.0%	2.5%	1.5%	17%	3%	18%	0%	14%	2%
Inventory Turnover	3.2	2.5	3.1	2.8	5.1	3.7	4.3	2.7	4.9	2.9

Question #3

Question #3:

Brainstorm ideas for revenue growth.
[After initial brainstorm – push for more ideas]
[Distribute Exhibit 2]
If the company needs to gain another $50 million in profit, which of these scenarios should they pursue? They can pursue more than one at once.

Question #3 Solution:

- They should pursue Option B & C in tandem
- Option A should not be pursued because (A) expected share is unknown (B) it is completely outside from the company's competency
- Both B & C fail to achieve $50 million in profits

	A	B	C
ɑarket Size	$50,000,000,000	$2,700,000,000	$10,000,000,000
cted Share		10%	1%
Margin	35%	15%	10%
Profit	n/a	$40,500,000	$10,000,000

Conclusion

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Recommendation

- The client's costs are too high relative to its sales; the client must achieve greater synergies and should then pursue recycled products and expand its customer base in janitorial supplies.

Risks

- Reaching smaller companies for janitorial supplies may be more costly and could drive up SG&A costs
- Entering recycle products business will mean competing with established players

Next Steps

- Investigate costs associated with expanding janitorial supplies sales networks
- Seek financing to support simultaneous expansion in two markets

Exhibit #1

Costs by Business Unit

$ millions

	Paper	Janitorial	Packaging	Total
Revenue	323	451	157	931
COGS	291	400	138	829
SG&A	31	42	15	88
Inventory	100	180	51	331

Average Cost Ratios by Competitor

	Competitors					
	Paper		Janitorial		Packaging	
	Top 25%	Bottom 25%	Top 25%	Bottom 25%	Top 25%	Bottom 25%
COGS/Revenue	79%	88%	77%	91%	83%	87%
SG&A/Revenue	4%	9%	5%	9%	3%	11%
Net Income	17%	3%	18%	0%	14%	2%
Inventory Turnover	5.1	3.7	4.3	2.7	4.9	2.9

Exhibit #2

Option A: Pharma	Option B: Recycled Products	Option C: Janitorial Supplies for small/medium business
• Providing basic raw materials and supplies to pharmaceutical companies • <u>Market Size</u>: $50 billion • <u>Average Margin</u>: 35% • <u>Competition</u>: 8 competitors hold 10% each • <u>Customers</u>: Major pharmaceutical companies • <u>Likely share</u>: Unknown	• Providing recycle pulp and materials for paper, cardboard, and packaging to paper product companies, greeting card companies, etc. • <u>Market Size</u>: $2.7 billion • <u>Average Margin</u>: 15% • <u>Competition</u>: Other paper and packaging companies • <u>Customers</u>: Paper product companies, greeting card companies, suppliers to restaurants, coffee shops, etc. Uses existing customers that SupplyCo is acquainted with. • <u>Likely share</u>: 10%	• Provide janitorial supplies to small to medium sized businesses • <u>Market Size</u>: $10 billion • <u>Average Margin</u>: 10% • <u>Competition</u>: Generally smaller supply companies; regional players • <u>Customers:</u> small to medium sized businesses. Unknown customers, but similar demands as current customer list. • <u>Likely share</u>: 1%

Case: PayCo Credit Cards

Case Type: New Market Entry

Columbia Business School

Problem Statement Narrative

PayCo is a credit card company with over $5B in revenues in 2010. Their recently developed Tap & Go proprietary technology has been very successful, and they now want to leverage it to the cash-dominated public transportation sector.
PayCo has asked for our help in commercializing Tap & Go for transit transactions.

Case Commentary (Notes to the interviewer)

This is an exhibit-driven case. The interviewee should base the analysis on the information provided in the exhibits and identify the most important data points.

Data Set (To be provided upon request)

- Tap & Go is a feature that allows consumers to pay by simply tapping their credit card or mobile phone on a payment reader at checkout.
- Tap & Go is currently used for small purchases (<$25) at places like supermarkets, fast-food outlets, bars and parking lots.
- Our client has a 5 year investment horizon (2011-2015).

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

Market	Company	Economics	Execution
Market Size / Growth (What's the potential of Tap & Go for transit?) **Current Competitors / New Entrants** (similar offerings?) **Substitutes** (competing technologies such as the Google Wallet?)	**Customers** (segmentation, average spend on public transportation, willingness to adopt new technologies) **Capabilities** (patent, expertise with Tap & Go, partnerships that can be leveraged)	**Revenue** Price (lump sum fee from retailer + per transaction fee) x Quantity (# of transactions) **Costs** Fixed (R&D, SG&A, advertising, IT, support center) Variable (cost per transaction) **Upfront investment**	• **Access** to transportation authorities • **Regulatory barriers** • **Money on hand** for investment • **Opportunity cost**

Potential Areas for Analysis

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Market

- Market size: See exhibit 1
- Competitors: There are two major competitors in the market, including PayCo. They both offer Tap & Go services.
- Substitutes: Assume that the main payment method for public transportation is cash

Company

- Customers: Commuters, the majority of whom have credit cards
- Capabilities: PayCo has a strong track record with Tap & Go and a good brand name. Since public transportation is currently cash dominated, it does not have strong relationships with transit providers

Economics

- See Exhibit 2
- Assume a discount rate of 0%

Execution

No additional information to provide.
These points should be taken into consideration when assessing the risks.

Question #1

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Question #1:

PayCo has identified three key cities on which it would like to focus. As a first step, it would like to enter one city and service one mode of transportation. Based on the information we gathered and given a 5 year horizon (2011-2015), which city and mode of transportation should PayCo target?
(Present the interviewee with Exhibit #1)

Question #1 Solution:

• Not all data points in the exhibit are necessary for reaching a conclusion. The interviewee should focus on the most relevant information.

• The industry in question is credit cards, and so the interviewee can assume that the main source of revenues will be fees (as a % of transactions). Since we don't know anything about potential differences in the size of the fees, costs or penetrations rates, we'll assume they're the same for all three cities.

• An expected value approach can be used to assess which city / mode of transportation are most attractive.
Expected Value = Revenue * Number of Years * Probability of Implementation (* unknown % fee).
For example, the value of the New York Subway is (% fee) * ($12B*4*90%) = $43.2B*%fee.
Repeating the same exercise for the New York Bus: $5.4B*4*80%*fee = $17.3B*%fee
London: Subway = $36.4B; Bus = $16.2B Tokyo: Subway = $9.6B; Bus = $13.8

• Based on the expected value analysis, the New York Subway seems like the best target.
The New York population growth and GDP also support entering this market.

Question #2

Question #2:

Our analysis of the New York subway market yielded the following results. Would PayCo be able to break even within 5 years?
(Present the interviewee with Exhibit #2)

Question #2 Solution:

- Upon request, provide the information that the upfront investment in the launch is $5M.
- PayCo will break even in 2014 (see further information on the calculations on the next page)

		2011	2012	2013	2014	2015
Revenues	License	250K	250K	250K	250K	250K
	Proc. Fee	7.5M	10M	12.5M	15M	15M
Costs	Per Trans.	6M	8M	10M	12M	12M
	A&D	2M	1M	500K	0	0
	SG&A	50K	50K	50K	50K	50K
Profit		-300K	1.2M	2.2M	3.2M	3.2M

Question #2 (Continued)

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Question #2 Calculations:

• Transaction fee: 0.2% of transaction.
In 2011 there are transactions worth $3.75B, so the revenue would be 3,750,000,000*0.2% = 3,750,000,000*(2/1000) = 3,750,000*2 = 7.5M

• Cost per transaction: $0.004 per transaction.
In 2011 there are transactions worth $3.75B. Given an average transaction size of $2.5, the total number of transactions is 3,750,000,000/2.5 = 1,500,000,000.
The cost per transaction is hence 1,500,000,000*0.004 = 1,500,000*4 = 6M

• Annual profit = (license fee + total transaction fees) – (total transaction cost + A&P + SG&A)

• Breakeven will be reached when total profits will cover the upfront investment of $5M.
This will happen in 2014.

Conclusion

Recommendation
○ PayCo should enter the New York Subway market: it has a high revenue potential, a high probability of implementation and a shorter-than-required break-even period
○ It would make sense to enter additional cities / modes of transportation in the next 5 years

Risks
○ Our projections of the implementation probability and number of transactions may be inflated
○ Response from our major competitor
○ Regulations resulting from privacy and security concerns

Next Steps
○ Create an implementation plan for entering the New York Subway market
○ Build relationships with the Metropolitan Transportation Authority
○ Analyze additional markets to identify further opportunities

Exhibit #1

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City	New York	London	Tokyo
Population	8.2M	7.8M	13.1M
Pop. Growth	0.9%	0.7%	0.8%
GDP	$1,406B	$565B	$1,479B

Subway	NYC	London	Tokyo
Annual ridership	1.604B	1.107B	3.160B
Annual revenues	$12B	$13B	$16B
Expected Year of Implement.	2012	2012	2014
Probability of Implement.	90%	70%	20%

Bus	NYC	London	Tokyo
Annual ridership	0.747B	1.780B	1.946
Annual revenues	$5.4B	$9B	$11.5B
Expected Year of Implement.	2012	2014	2013
Probability of Implement.	80%	90%	40%

Exhibit #2

Columbia Business School

Economics of the New York Subway Tap & Go Market

	2011	2012	2013	2014	2015
Average Size of Transactions	$2.5	$2.5	$2.5	$2.5	$2.5
Annual Transactions	$3.75B	$5B	$6.25B	$7.5B	$7.5B
Advertising and Promotions	$2,000,000	$1,000,000	$500,000	$0	$0
SG&A	$50,000	$50,000	$50,000	$50,000	$50,000

License Fee: $250,000/year
Transaction Fee: 0.2% of transaction

Transaction Cost: 0.004 cents/transaction

Case: Packaging Operations Integration

Case Type: Private Equity Post-Merger Integration

Columbia Business School

Problem Statement Narrative

Our client is a Private Equity fund that has made a number of acquisitions in the past few years, mainly in the pulp, paper and packaging industries. Our client just made a recent acquisition of Packaging Inc., a large US-based packaging company in the hope of driving synergies with one of the funds existing portfolio companies, Aluminum Inc. One of the main areas where our client thinks they can achieve synergies is in the companies' supply chains. Do you agree with this assumption and if so, what synergies do you think are possible and how would you quantify the potential benefits?

Case Commentary (Notes to the interviewer)

- The aim of this case is to firstly see whether the interviewee can think strategically about where potential synergies might arise and then to test the interviewees ability to understand data and make conclusions
- The interviewees initial framework should incorporate at least some of the elements on the next slide
- Each question will have an exhibit for the candidate to analyze

Data (To be provided upon request)

- Ignore operations outside of the US
- Packaging Inc. sells food packaging containers (mainly made out of foam) to Retail customers (e.g. Wal-Mart type stores) and to Restaurant customers, mainly via large distributors.
- Aluminum Inc. sells aluminum packaging products to Retail and Restaurant customers
- Packaging's products are very light but take up lots of room and Aluminum's products are dense (i.e. heavy but take up little room)
- Assume 'supply chain' can be defined from the procurement of raw materials all the way to the final delivery of finished products
- Seasonality: Packaging Inc. has a peak in the summer and Aluminum Inc. has a peak around Thanksgiving
- Only if requested, you can provide the map (Exhibit 1) to show the two companies' current footprint

Sample Framework

(This is one approach, remember that there are other potential frameworks)

Columbia Business School

Sample Candidate Framework

- **Better Understand the 2 Companies**
  - Baseline various supply chain costs
  - Understand the two companies' businesses, their customers, strengths/weaknesses
- **Potential Synergies**
  - Procurement
    - Raw materials
    - Services (e.g. transportation, warehousing labor, etc.)
    - Other (e.g. machines, repair parts, etc.)
  - Manufacturing
    - Number of plants
    - Utilization of manufacturing lines at each plant
    - Expertise / techniques (i.e. shared knowledge)
  - Transportation
    - In-bound from raw material sources
    - Out-bound to customers
    - Optimized truck loads
  - Warehousing
    - Consolidation of footprints (i.e. reduced facility fixed costs)
    - Reduced overall labor (i.e. reduced facility variable costs per unit of output due to economies of scale)
  - Inventory
    - Less impact from seasonality of products
    - Fewer holding locations
- **Quantifying Potential Benefits**
  - Benchmarks
  - Data modeling
  - Comparing existing contracts

Notes to Sample Framework

(This is one approach, remember that there are other potential frameworks)

Columbia Business School

Sample Candidate Framework

• **Procurement**: *Buying in bulk and consolidating the number of suppliers can reduce unit costs*
• **Transportation**: *More volume being transported on the same transportation routes can drastically improve economies of scale*
  • **In-bound from raw material sources**: The interviewee should recognize that because the two companies make different products and therefore use different source materials, this is probably a relatively minor opportunity
  • **Out-bound to customers**: The interviewee should have recognized that the two companies probably share many of the same customers, which would make this a significant opportunity
  • **Optimized truck loads**: Packaging Inc. has very light products to ship because their products are made out of foam but Aluminum Inc. has very heavy products. That means that Packaging Inc. will exceed the volume of a truck but not weigh it out, but Aluminum Inc. would do the exact opposite. Therefore by mixing the two companies' products, you can better use your trucks
• **Inventory**
  • **Less impact from seasonality of products**: Aluminum Inc. has a big demand spike near Thanksgiving when people are roasting turkeys whereas Packaging Inc. has a seasonal spike in summer when people are purchasing cups to drink outdoors
  • **Fewer holding locations**: By consolidating facilities, you have fewer locations that need to hold inventory and therefore you have more stable demand patterns
• **Comparing Existing Contracts**: E.g. if Packaging Inc.'s labor contracts are cheaper than Aluminum Inc.'s because Packaging Inc. is a much bigger company, Aluminum Inc. could benefit from these cheaper rates

Question #1

Columbia Business School

Question #1:

- What do you learn about the two companies and the potential synergy opportunities by looking at this map?
  - If the interviewee did not ask for the map prior to creating the framework, give it now

Question #1 Solution:

- **Observations**
  - Many more Packaging Inc. sites than Aluminum Inc. sites
  - Most plants and warehouses are co-located
  - Heavy footprints in California, Chicago area and the eastern seaboard
  - Most locations are near or in large metro-areas
  - Packaging Inc. has many combined Retail/Restaurant facilities but Aluminum Inc. does not
  - Packaging Inc. has very few dedicated Retail facilities, but their average sizes are very large
  - Aluminum Inc.'s facilities are much smaller on average
- **Opportunities**
  - More locations could help Aluminum Inc. sells its products in more regions, or at least reduce it's freight cost of transporting heavy products long-distance across the country to customers
  - Consolidate facilities where there are some regional overlaps (e.g. southern CA)
  - Consolidate facilities where Retail and Restaurant are not being stored in the same locations
  - Small and very large (i.e. >800k ft^2) facilities can start to become inefficient – potential to create optimal size warehouses

Exhibit #1: Current Footprints

Business Unit	Packaging Inc.		Aluminum Inc.	
	Facilities	Total ft²	Facilities	Total ft²
Restaurants	15	4.3m	5	0.2m
Retail	2	1.7m	6	0.8m
Both	19	9.9m	0	0
Total	36	15.9m	11	1.0m

Manufacturing Plant
Packing Inc. Warehouse
Aluminum Inc. Warehouse
Other Warehouses

Question #2

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Question #2:

- Given exhibits 2 and 3, what freight savings can you estimate by combining the two companies?

Question #2 Solution:

- There are different ways to calculate this. One way is first to calculate the effect of reduced rates and then to calculate the effect of mode optimization:

New Freight Expenses Due to Rate Optimization ONLY

	Packaging Inc.	Aluminum Inc.	Total
Truckload	**92** (unchanged)	**24** (reduced by 33%)	**116**
Less Than Truck Load	**4** (unchanged)	**10** (unchanged)	**14**
Intermodal	**26** (unchanged)	**3** (reduced by 25%)	**29**
Small Package	**2** (reduced by 33%)	**8** (unchanged)	**10**

New Total Freight Expenses

	Before	After	Math
Truckload	**116**	**108.75**	**87 + (1 - 25%) x 29**
Less Than Truck Load	**14**	**10.5**	**7 + (1 - 50%) x 7**
Intermodal	**29**	**29**	
Small Package	**10**	**10**	
	TOTAL	158.25	

- **Total savings = 183 – 158.25 = 24.75m (13.5%)**

Exhibit #2:

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Total Freight Expenses by Mode ($m)

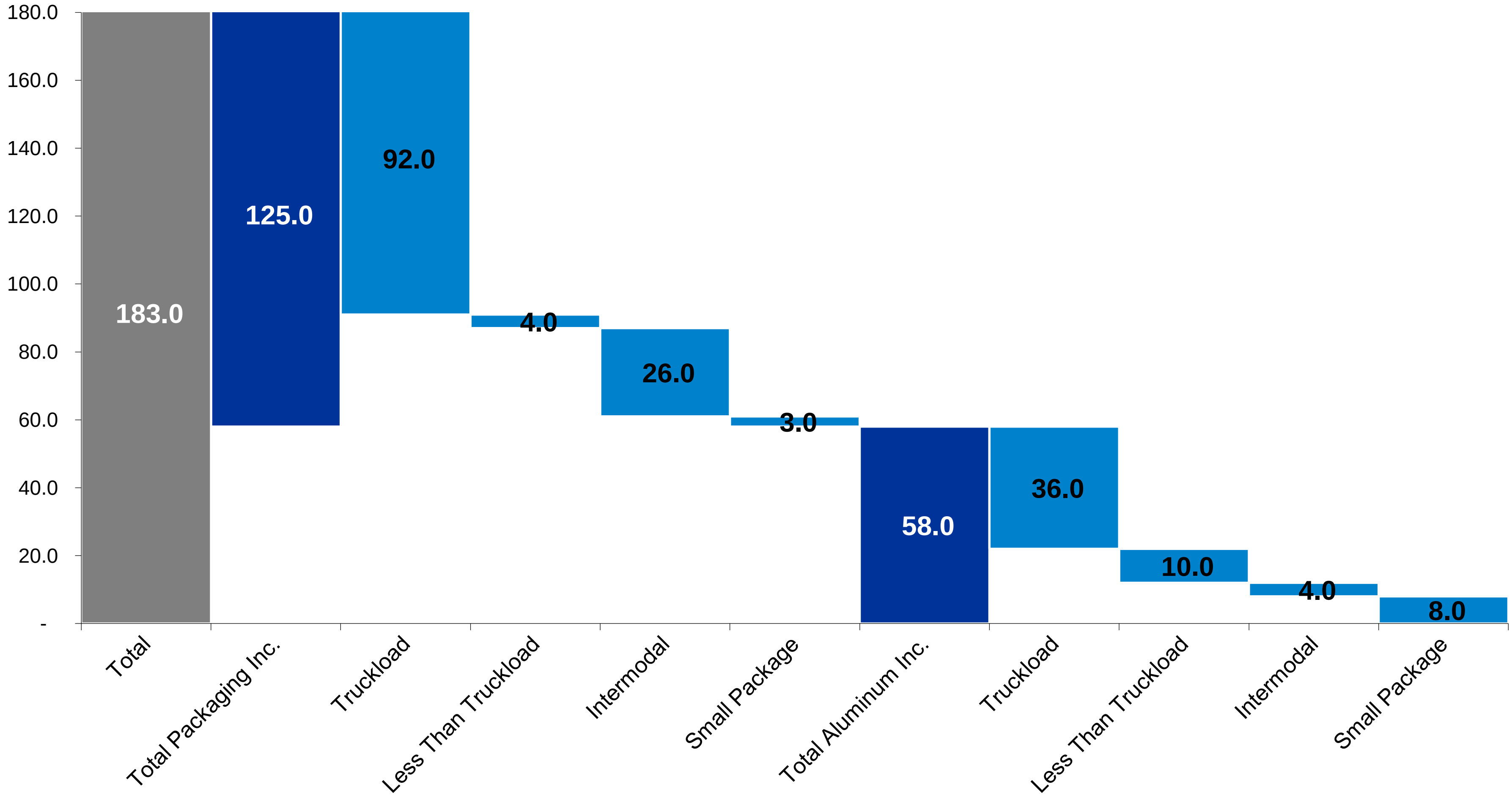

Exhibit #3:

Cost to Transport 1 Pound, 1 Mile By Mode

	Packaging Inc.	Aluminum Inc.
Truckload	$1.00	$1.50
Less Than Truck Load	$2.00	$2.00
Intermodal	$0.75	$1.00
Small Package	$3.00	$2.00

Assumptions *after* integration

- Either company can benefit from optimal rates
- 50% of previous Less Than Truckload shipments can now go Truckload
- 25% of previous Truckload shipments can now go Intermodal
- 30% of previous Small Package shipments can now go Less Than Truckload
- Total miles and total pounds shipped do not change prior to integration

Conclusion

Recommendation

- Significant synergies in supply chain merger: Procurement, manufacturing, freight, warehousing, inventory
- Freight savings alone would be $24.75m per year

Risks

- Freight savings assumptions might be too aggressive (i.e. how much of the rates we could actually share and how much of the modes we can actually optimize)
- Freight is significant but we don't yet know if the other supply chain areas will yield similar levels of savings
- These efforts are complicated to implement and can lead to significant operational disruptions

Next Steps

- Investigate other supply chain opportunity areas to prioritize implementation initiatives
- Assess capital requirements to value the projects' NPVs
- Begin implementation first on highest NPV projects

Case: Accountware

Case Type: Acquisition Screen

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Problem Statement Narrative

Our client, Accountware, is a software company that makes accounting software for public companies. After several strong years, Accountware is looking to make an acquisition. The CEO has narrowed the list of potential targets down to 3 companies: BankWeb, HospitalAccount, and Retail Inventory. Accountware has hired our firm to determine which target it should pursue.

Case Commentary (Notes to the interviewer)

This case is designed so that candidate will compare the 3 firms on both a financial and strategic basis. The prompt is purposefully broad; the candidate should recognize the need to analyze both elements of each target. Ultimately, the candidate will be asked to pick a target and then suggest a buying price.

The case can be given as interviewer-led by asking the questions, or the interviewer can allow the candidate to lead by using the information answering the questions.

Data Set (To be provided upon request)

- **If asked for more information on goals: the CEO wants the acquisition to make both financial and strategic sense.**
- **BankWeb makes websites for banks, HospitalAccount makes accounting software for hospitals, and Retail Inventory makes inventory software for clothing stores.**
- **If asked, Accountware does not work in web development, inventory tracking, or provide accounting software to hospitals.**

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

- Our client
  - Financials
    - Cash/debt – can buy?
    - Profit
  - Strategic
    - Market
      - Geography
      - Size/growth/share
      - Customer – who?
    - Culture
    - Capabilities
      - Strengths/gaps
- BankWeb
  - Financials
    - Multiples
    - Profit
    - Synergy
      - Cost
      - Revenue
  - Price
    - Comparable Multiples
  - Strategic
    - Market
      - Geography
      - Size/growth/share
      - Customer – who?
    - Capabilities
      - Alignment?
    - Competitors
      - Differentiators
    - Ownership – want to sell?
    - Culture – match?
- Hospital Account
  - same
- Retail Inve.
  - same
- Other
  - Regulatory

Potential Areas for Analysis

Accountware	BankWeb	Hospitalaccount	Retail Inventory	Other
• Strong financials; have $150mn in cash • Serve US public companies under $1bn in revenue • Across multiple industries • Help with reporting for SEC filings • Strong software development team, located in both NYC and Palo Alto, CA • Considered industry leading in space • Culture: professional	• Makes websites for regional commercial banks • Currently serving 5 regional banks on east coast of US • Provide ground-breaking websites that have won best website from Forbes • Competes with internal IT departments and other website companies • For regional banks, estimated at 10% market share • Flat market growth • Started by two college grads in 2006 • Culture: start-up	• Manufactures accounting software for hospitals • Developing software that accounts for disclosures required by new health care policies • Mid-tier quality • 2% market share • Was 2% market growth; accelerated to 5% last 4 years • Has been run by same CEO, the founder, since 1995 • Culture: professional	• Inventory tracking system for clothing retailers • Looking to expand into other retail categories with perishable goods • Competes well with other inventory tracking systems created by larger companies • 5% market share • Market growing at 3% CAGR • PE ownership, purchased the company 18 months ago • Culture: professional	• There are no regulatory concerns with the acquisition of any of the targets

Question #1

Question #1:

From a strategic prospective, discuss the advantages and disadvantages of each target.

Question #1 Solution:

- BankWeb
    - Pros: Industry leading, excellent quality. Rapid growth.
    - Cons: Flat market growth; not core to what Accountware does
- HospitalAccount
    - Pros: Familiar capability set, positioning for new growth with healthcare disclosures, rapidly growing market
    - Cons: Middle of the road capabilities, small market share
- Retail Inventory
    - Pros: Strong competitor with larger companies; poised for growth
    - Cons: Non-core capabilities, low market share

Question #2

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Question #2:

From a financial prospective, which looks like the best target? [Give Exhibit 1]

If asked:

- **Do not expect synergies from BankWeb**
- **Do not expect synergies from Retail Inventory**
- **Prompt candidate to suggest synergies for HospitalAccount**

Question #2 Solution:

- BankWeb appears to be very attractive because of its high EBITDA margin
- A good candidate will recognize that synergies from the merger would make HospitalAccount's financials more attractive
- A superior candidate will observe that HospitalAccount has far more sales people and developers than necessary and will make a specific suggestion as to how those numbers could be brought in line proportionally to Accountware's numbers (look at Revenue/person ratios for both sales people and developers)
- See Exhibit 1 solution (finding these precise answers is not necessary; the key is recognizing that Accountware's familiarity with accounting software development combined with its scale should help improve HospitalAccount's financials)

Question #3

Question #3:

Which target should Accountware pursue and why?

What price should Accountware expect to pay? [Give Exhibit 2]

Question #3 Solution:

- The candidate should use the comparable numbers provided in Exhibit 2 to estimate a price based on their choice of targets.
- Candidate should develop an industry average and should ignore one of the companies from each industry.

Conclusion

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Recommendation

- Based on both strategic and financial fit, Accountware should pursue Hospitalaccount. This acquisition will allow Accountware access to new customers while using its familiarity with the product to reduce costs at the target.

Risks

- Cultural fit – is the CEO going to retire and is he the key to the organization?

Next Steps

- Need to examine willingness to sell of ownership
- Look at cultural fit

Exhibit #1

	Bank Websites	Hospital Accounting	Retail Inventory	Accountware
Revenue	15,000,000	35,000,000	30,000,000	100,000,000
COGS	7,500,000	28,000,000	21,000,000	60,000,000
Gross Profit	7,500,000	7,000,000	9,000,000	40,000,000
SG&A	1,500,000	7,000,000	3,000,000	10,000,000
EBITDA	6,000,000	0	6,000,000	30,000,000
Sales people	15	70	30	100
Software Developers	30	93	60	200

Exhibit #1 Solution

as % of Sales	BankWeb	HospitalAccount	Retail Inventory	Accountware
COGS	50%	80%	70%	60%
Gross Profit	50%	20%	30%	40%
SG&A	10%	20%	10%	10%
EBITDA	40%	0%	20%	30%
Revenue/person				
Sales people	$1,000,000	$500,000	$1,000,000	$1,000,000
Software Developers	$500,000	$375,940	$500,000	$500,000

Revised Forecasts

	BankWeb	HospitalAccount	Retail Inventory	Accountware
Revenue	15,000,000	35,000,000	30,000,000	100,000,000
COGS	7,500,000	21,000,000	21,000,000	60,000,000
Gross Profit	7,500,000	14,000,000	9,000,000	40,000,000
SG&A	1,500,000	3,500,000	3,000,000	10,000,000
EBITDA	6,000,000	10,500,000	6,000,000	30,000,000
Sales people	15	35	30	100
Software Developers	30	70	60	200

Exhibit #2

Recent Acquisitions

Company	Market	Industry	Sales	EBITDA	Acquisition Price
			($ millions)		
Clothing Tracking	US	Inventory software	50	10	50
Retail Counter	US	Inventory software	70	15	75
Restaurant Tracker	US	Restaurant Inventory software	1,500	200	400
Japan Accounting	Japan	Accounting software	150	75	675
AccountMan	US	Accounting software	30	7	42
QuickCounting	US	Accounting software	48	12	72
Web Fast	US	Web development	30	8	96
Quick Web	US	Web development	5	2	30
Web Flash	US	Web development	40	10	120

Exhibit #2 Solution

Recent Acquisitions

Company	Market	Industry	Sales ($ millions)	EBITDA	Acquisition Price	Sales multiple	EBITDA multiple	Comparable EBITDA
Clothing Tracking	US	Inventory software	50	10	50	1.00	5.00	
Retail Counter	US	Inventory software	70	15	75	1.07	5.00	5
Restaurant Tracker	US	Restaurant Inventory software	1,500	200	400	0.27	2.00	
Japan Accounting	Japan	Accounting software	150	75	675	4.50	9.00	
AccountMan	US	Accounting software	30	7	42	1.40	6.00	6
QuickCounting	US	Accounting software	48	12	72	1.50	6.00	
Web Fast	US	Web development	30	8	96	3.20	12.00	
Quick Web	US	Web development	5	2	30	6.00	15.00	12
Web Flash	US	Web development	40	10	120	3.00	12.00	

Should ignore Resturant Tracker (too big), Japan Accounting (wrong market), and Quick Web (too small)

Case: Madecasse

Case Type: Non-profit

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Problem Statement Narrative

Two entrepreneurs have a launched a non-profit chocolate bar manufacturing company called Madecasse. The goal of Madecasse to improve conditions for people in Madagascar by selling chocolate bars to consumers in the United States. Our firm is working with Madecasse on a pro-bono basis to determine (1) where to source materials (Venezuela, Madagascar, Columbia) (2) how to market the bars in the United States.

Case Commentary (Notes to the interviewer)

This case examines a relatively straight-forward business question from a non-profit prospective. A strong candidate will recognize that maximizing profit for Madecasse is not the best result and will instead focus on maximizing impact for people in Madagascar.

Data Set (To be provided upon request)

- **If asked to clarify the goal of Madecasse, the interviewer should emphasize that the mission of Madecasse is to improve the economic welfare of people in Madagascar.**
- **Assume that Madeccase will be able to sell as many chocolate bars as it makes.**
- **Manufacturing will take place in the same location as the coco.**

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

- Madagascar
  - Social
    - Demographics
      - Income distribution
    - Culture
      - Family structure
  - Political
    - Stability
    - Rule of Law
  - Economic
    - Industries
- Sourcing Options
  - Venezuela
    - Climate for coco?
    - Agriculture
      - Crops per hectare
      - Available land
      - Technology use
    - Infrastructure
    - Costs
      - Fixed
      - Variable
  - Madagascar
  - Columbia
- US consumers
  - Preferences for chocolate
    - Dark/milk
    - With(out) nuts/fruit
  - WTP
    - Normal bar
    - Bar with cause
  - Average spend
    - By demographic group
- Distribution options
  - Retail/grocery
  - Online
- Other chocolate bars
  - # other options
    - Current share
    - Marketing approach
  - Types
- Other
  - Regulations

Potential Areas for Analysis

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Madagascar	Sourcing Options	US Consumers	Other bars/Distrib.
• Population of 22M • Literacy: 70% • GDP/capita: $900 • GDP is 30% agriculture • Population below poverty line: 50% • Fairly stable government now, recent history of instability	• Labor costs are highest in Venezuela and lowest in Madagascar • Venezuela employs more technology and thus can harvest more rapidly • Fields yield more crops per hectare in Venezuela and least in Madagascar • Colombia has most available land, Madagascar the least	• Growing taste for dark chocolate • Typically buy chocolate bars as impulse buys at grocery store or convenience stores • Generally willing to pay $2/bar • Top 25% of income earners willing to pay more for high-end bars • Growing tendency to pay more for items associated with a cause	• 3 primary brands with multiple products • Typically have ingredients outside of chocolate (e.g. nuts, caramel) • Sold through grocery stores, convenience stores, and gas stations

Question #1

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Question #1:

Where should Madecasse source its coco beans? They are considering three options: (1) Madagascar (2) Colombia (3) Venezuela.
Questions:
(A) What subjects would you consider in comparing these 3 sources?
(B) [Give Exhibit 1] Which market should they source from?

Question #1 Solution:

- The candidate should quickly brainstorm a way to compare the markets or can build on work from the initial framework. Potential subjects include: Costs (labor, transportation, equipment, etc.), quality, harvest size, export issues, tariffs, local government issues, environmental concerns.
- See "Exhibit 1 Solution" for math explanations
- The candidate should find that greater profit is available by producing in Colombia or Venezuela.
- However, the overall impact on Madagascar that Madacasse can make is greater by producing in Madagascar because all of the labor costs are actually contributing to local well-being. Therefore, the company can have the greatest impact by sourcing coco beans from Madagascar.

Question #2

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Question #2:

What considerations should Madacasse take into account when selling bars to American consumers?

[The goal of this section is to have a discussion with the candidate. The candidate should brainstorm ideas and can use initial framework. Guide the conversation to cover (1) the target demographic (2) probable distribution channels (3) how to position the bar vs. competitors]

Question #2 Solution:

- Target demographic: should include wealthier individuals who tend towards purchasing higher-end foods.
- Distribution channels: higher-end grocery stores and convenience stores in wealthy neighborhoods. Could include partnerships with wine stores, coffee shops, etc.
- Positioning: Various solutions are possible, but should include (1) proceeds to charity and (2) emphasize quality

Conclusion

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Recommendation

- Madacasse should source its coco from Madagascar, which will result in an impact of $375m. The chocolate bars should target wealthy American consumers and be sold through high-end stores and partnerships with coffee shops.

Risks

- Even wealthy consumers may not be willing to pay $5/bar, especially in a recession
- A resurgence in instability in Madagascar would disrupt operations

Next Steps

- Interview consumers about WTP for bars
- Find reliable suppliers in Madagascar

Exhibit #1

	Madagascar	Colombia	Venezuela
Pounds/hectare	3,000	5,000	6,000
Available hectares	12,500	20,000	17,000
Manhours to harvest a hectare	6	5	3
$/man hour	$1.50	$1.75	$2.25
Bars/pound of beans	2	2	2
Price per bar	$5.00	$5.00	$5.00

Exhibit #1 Solution

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	Madagascar	Colombia	Venezuela
Pounds/hectare	3,000	5,000	6,000
Available hectares	12,500	20,000	17,000
Total Harvest	37,500,000	100,000,000	102,000,000
Manhours to harvest a hectare	6	5	3
Total Time to Harvest	225,000,000	500,000,000	306,000,000
$/man hour	$1.50	$1.75	$2.25
Total Labor Costs	$337,500,000	$875,000,000	$688,500,000
Cost/Pound	$9.00	$8.75	$6.75
Cost/bar	$4.50	$4.38	$3.38
Bars/pound	2	2	2
Bars	75,000,000	200,000,000	204,000,000
Price per bar	$5.00	$5.00	$5.00
Revenue	$375,000,000.00	$1,000,000,000.00	$1,020,000,000.00
COGS	$337,500,000.00	$875,000,000.00	$688,500,000.00
Profit	$37,500,000	$125,000,000	$331,500,000
Spending in Madagascar	$337,500,000		
Impact to Madagascar	$375,000,000	$125,000,000	$331,500,000

Case: Canadian Retailer

Case Type: Private Equity Investment

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Problem Statement Narrative
Your client is a Canadian Retailer, CR, that has $4 billion in annual sales spread over 400 stores. They specialize in general merchandise, i.e. hardware, housewares, and seasonal goods. Recently Walmart and Home Depot have decided to enter the Canadian market. To prepare for the impending threat, CR has hired your company to help them determine how to increase profits by $100 million in the next 12 months.

Case Commentary (Notes to the interviewer)	Data Set (To be provided upon request)
This is a standard revenues / profits / costs case that chooses to focus on the cost savings side.	

Sample Framework

(This is one approach, remember that there are other potential frameworks)

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Sample Candidate Framework

- **Increase Revenues:**
  - Increase Price
    - Customization
    - Add Value
    - Cross-sell and bundle
  - Increase Volume
    - Sell in new markets
    - Increase frequency of purchases (customer loyalty programs)
    - New products (beware of cannibalization)
    - Steal share
    - Decrease prices
    - Promote more
    - Establish deals with distributors to increase distribution channels
- Decrease Costs
    - Fixed Costs
      - PP&E
      - Marketing
      - SG&A
    - Variable Costs
      - COGS
      - Consolidate purchasing
      - Volume discounts
    - Labor

Potential Areas for Analysis

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Market

What is overall market growth potential? How much market share does CR anticipate losing (if any)? What does the competitive landscape look like?

Current players

- Mom and Pop stores (70% mkt share)
- CR (30% market share)

Future Players: Walmart, Home Depot, CR, Mom and Pop

Company

What is the overall pricing strategy for CR? Where can CR cut prices and where can it raise them? How much would each store need to make to get to the $100 million?

Price – CR runs a promotional pricing strategy where it has prices that are both lower and higher than its competitors depending on the good. They execute this strategy by using coupon books, ads in the paper, and radio

Revenue

- Distribution across Canada
- Segmentation
- Demand cycles across the days of the week; seasons of the year

Cost

How much does each store need to save to reach the 100 million? If its going to be a permanent change, it should be in the variable costs. What kind of variable costs would the store have? Extra info: profit tends to be 0-10% of revenues with an average of 5% (they should determine profit of 200 million from this info)

Variable – as a percentage of sales

COGS – 80%
Labor - 10%
Rent – 5%

Question #1

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Question #1:

Looking at the variable costs, where would you look for opportunities?

Question #1 Solution:

Labor:
- How is labor tasked – store manager discretion
  - Cashiers, greeters, janitorial staff
  - One issue CR has noticed is that they don't differentiate between the work week and the weekend in terms of labor required. This leads to long lines on Saturday and undertasked employees during the week. Do they need the same amount of cashiers all the time? Can employees do more than one activity?
- Demand cycles
- Average transaction time
- Service level

Rent:
- Pretty non negotiable and CR doesn't have an interest in rural areas that would be very cheap

COGS:
- Could negotiate with suppliers
- Forecasting might help buy in bulk
- Not really savings but what about exclusive products?

Conclusion

Recommendation

Recommendation: To maintain their stronghold on the Canadian market CR should focus on decreasing its costs. It can do so by focusing on Divest excess capacity or using excess capacity for another purpose, leasing store space instead of buying, relocating somewhere cheaper outside of Canada, reducing marketing and relying on its known brand equity within the Canadian market, look for opportunities to decrease SG&A and infrastructural costs. CR should also specifically look at its labor practices to determine if there is an opportunity for costs savings there.

Next Steps

Next Steps: CR should now move to take a closer look at its supply chain and internal costs to identify Specific opportunities to decrease its costs and increase its ability to be competitive in the market. CR should also determine the feasibility of the measures recommended.