



Yale SCHOOL OF MANAGEMENT

Consulting Club

# Case Book 2013 – 2014

## (Working in progress)



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### **How to use the case book:**

Students who give the case should read and understand the cases thoroughly in advance.

Solutions provided should be used only as a guide to students. Your thoughts should not be constrained by the solutions provided.

### **Disclaimer:**

It is a WIP version of the case book. New cases are still being added to the case book. Since it is the first ever case book written by SOM Consulting Club from limited resources, we welcome any feedback. Please reach out to [yi.zhou@yale.edu](mailto:yi.zhou@yale.edu) should you have any question, doubt and/or feedback.

# Case One: 7-11 Market Sizing

## 7-11 Market Sizing (1<sup>st</sup> Round Bain Southeast Asia)

**Estimate the minimum population density for a 7-11 shop to breakeven in Singapore?**

*Remark: Interviewer specific mentioned no number will be given throughout the case*

Facts	How to give the case
<p><b>Industry</b> Convenient Retailing</p> <p><b>Singapore</b> Population: 5.3 million Size of the country: 710 km<sup>2</sup> (274 sq mi) GDP/capita: USD\$61,000</p> <p><b>7-11</b> Mainly franchised in the county with some “control stores” owned by 7-11 master franchiser 24-7 operations</p>	<p><b>Difficulty</b> Easy</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. Do not provide any number or information at the beginning, except some basic demographic information on Singapore if interviewee is not familiar with Singapore</li><li>2. Interviewee to drive the entire case throughout the case</li><li>3. Help interviewees only when they are stuck, provide some of the hints when interviewer see no progress</li><li>4. Proceed when interviewee can justify his/her assumptions</li><li>5. Challenge interviewee when assumptions are deemed unrealistic</li><li>6. Limit the case to 20 – 25 minutes</li><li>7. Be tough and sharp during interview</li></ol>



# Case One: 7-11 Market Sizing

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## Step 1:

**Estimate costs = COGS + \$23K**

Fix costs

Store	Typical store size, say $10 \times 8 = 80$ sqm, a residential apartment in central SG of similar size costs \$5000/mth, assume commercial rental doubles, i.e. $\$5000 \times 2 = \$10,000/\text{mth}$ or $\$120,000/\text{yr}$
Equipment	IT (2 computer, POS etc.) = \$5,000, 5 fridges = \$2,000, shelves = \$2,000, Others = \$1,000 → Total = \$10,000 with 5-yr straight-line depreciation, i.e. \$2,000/yr, or about \$200/mth
Staff	Day-time shift (3 staff) costs $3 \times \$2,000 = \$6,000/\text{mth}$ , Night-time shift (2 staff) costs $2 \times \$3,000 = \$6,000/\text{mth}$ , so \$12,000/mth
Variable costs	
COGS	Assume gross margin of 20% for 24-7 convenient store, so COGS = $80\% \times \text{Revenue}$ <b>(Hint: margin is much higher than supermarket)</b>
Utility	Main utility is from AC and fridges \$500/mth <b>(Hint: a home utility with 3AC and 1 fridge costs ~\$100/mth, so assume 5 fridges and a big AC cost ~\$500/mth)</b>



# Case One: 7-11 Market Sizing

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## Step 2: Estimate revenue

Average basket size = \$10 per purchase

(Hint: personal experience)

Average # of purchases per month = 3

(Hint: personal experience)

Revenue per customer per month = \$30

Customer conversion = 80%

(Hint: most people who go to 24-7 convenient stores know what they want to buy)

Customer penetration = 20%

(Hint: 7-11 customers includes young students and professionals & people with urgent needs , not major households)

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## Step 3: List the breakeven equation

**Revenue =**

Population × Penetration × Conversion × Revenue per month

Population × 0.16 × 30

**Cost =**

0.8 × Revenue + \$23,000

**Revenue = Cost**

Breakeven revenue = \$115,000/mth

**Solve**

Population × 0.16 × 30 = 115,000

**Population**

**24,000**



# Case One: 7-11 Market Sizing

## Conclusion and key learning

### Conclusion:

***To breakeven a 7-11 store in Singapore, it requires a population density of 24,000.***

With 5 million population in Singapore, that means the master franchiser should not open more than 200 stores in Singapore (*From author: in fact, Singapore now has over 500 7-11 stores*)

### Discussion:

1. This case requires basic framework on revenue and cost
2. Most likely interviewees will ask detailed information on COGS; direct them to gross margin
3. Tax should not be considered here for breakeven calculation
4. More sophisticated revenue or cost structures are ok, but monitor the time spent
5. Ok to round up/down numbers



# Case Two: Low Cost Carrier (Airline)

## Low Cost Carrier - Airline (1<sup>st</sup> Round Bain Southeast Asia by Bain Partner)

Read the following slide and work through the case with me

### Facts

#### Industry

Airline

#### Indonesia

Refer to Exhibit 1

### How to give the case

#### Difficulty

Medium

#### Hints on giving the case

1. LLC stands for Low Cost Carrier, FSC stands for Full Service Carrier; prompt interviewees if they don't ask about the name
2. Allow interviewees plenty of time to read and analyze the slide
3. Best way to summarize the information is to draw a map and put all information on the map while reading the slide
4. It is a very open-ended case, the main exercise is to ask interviewees to demonstrate a structural approach in problem solving and justify their recommendations
5. Understand the follow up questions well and ask these questions whenever interviewees tough upon those topics; if not, ask interviewees these questions at the end of [2] or [3]



## LCC 2 & Co.

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One client is LCC2 & Co. based in Indonesia. It is the 2<sup>nd</sup> largest low cost airborne carrier in the country. Its biggest competitor – LCC1 & Co. is 4 times bigger than our client. LCC1 is very strong in domestic market, but currently facing some issue with its expansion plan to international market.

In full service carrier space, there are 2 main players: FSC1, which is 1.2× size of LCC2, and FSC2, which has similar size as LCC2. FSC1 is strong in west Indonesia, while FSC2 is strong in the east.

Total market is split into 50% domestic and 50% international

20% of sales now is done online, the 80% is done via agents. It is noticed that 60 agents controls 85% of the traditional market, but LCC2 sells 95% of its ticket online

**Question: Analyze what LCC2 should do here. Focus on network and distribution only.**



# Exhibit 1 - Map of Indonesia



## Indonesia:

Population – 237 million

Land – 735,358 sq mi

GDP per capita - \$5,000 (117<sup>th</sup>)

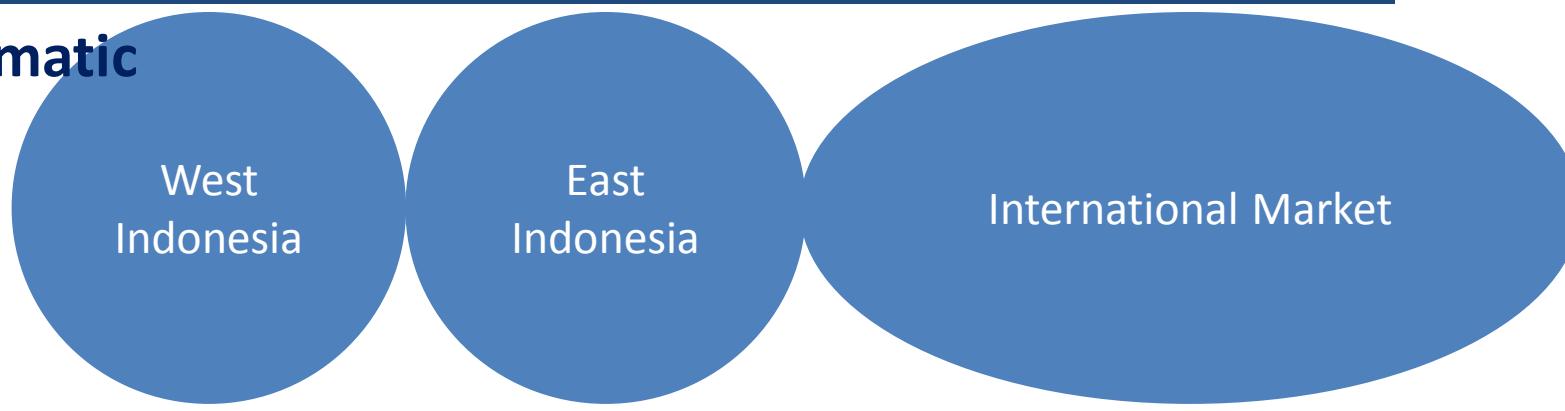
Total GDP: \$1,208 trillion (15<sup>th</sup>)

Gini: 37 (medium)



## Case Two: LCC2

Draw a schematic



*60 agents  
controls 85%  
of traditional  
ticket sales*

50%

50%

	W. Indonesia	E. Indonesia	International
LCC1 (80% agent)	4×LCC2 Strong	4×LCC2 Strong	? Facing issues
LCC2 (95% online)	?	?	?
FSC1 (80% agent)	1.2×LCC2 Strong	1.2×LCC2 Weak	?
FSC2 (80% agent)	1×LCC2 Weak	1×LCC2 Strong	?



# Case Two: LCC2

## Network

Expand domestically

- LCC1 is dominant, tough competition

Expand internationally

- It is an interesting idea, as LCC1 faces issues in international expansion

Expand to FSC

- FSC1/FSC2 are already established
- No competitive advantage to enter FSC

Partnership with FSC

- Finding a partner may be challenging
- Consider competitive response from LCC1

## Brainstorming



# Case Two: LCC2

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## Network

A few follow-up questions

### 1. A few plausible ideas for LCC2 to reduce its costs?

Hint: (a) reduce its turnaround time at airport, since many costs are fixed at airport; maximize utilization; (b) minimize extra services, focus on costs; (c) reduce human capital, increase automation

### 2. What is your hypothesis on the shift between FSC and LSC over the past decade?

Hint: many more low cost carriers have emerged from competition and become a serious threat to the profitability of FSCs; a lot airlines also adopted the “de-coupling” of services (such as option to opt out in-flight meal, in-flight entertainment, and luggage etc.)

### 3. What is the implication if LCC2 lowers its price? Is LCC1 likely to respond?

Hint: LCC1 is not likely to respond since it is 4× bigger than LCC2 (classic Bertrand question)



# Case Two: LCC2

## Distribution

Online

- Currently 95% of LCC2's sales
- LCC2 has great strength in online sales, so worthwhile to continue its strength
- Not many new opportunities unless it can fix some of the constraints
- Opportunities to de-constrain

## Brainstorming

Agent

- Very powerful agents in traditional ticketing market (80%)
- Agents may not be willing to forego existing business with current players (LCC1) just for LCC2?
- Explore possibility of partnering with FSC's agents



## Case Two: LCC2

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### Distribution

A few follow-up questions

#### 1. A few constraints on online ticketing in Indonesia

Hint: (a) access to internet, especially in rural area of Indonesia (it is a country with vast wealth disparity; (b) payment method/credit card, many people in a third-world country do not own credit cards; (c) fraud, credit card fraud in Indonesia and other third-world countries is not uncommon



# Case Two: LCC2

## Conclusion and key learning

### **Conclusion:**

***It is recommended that our client LCC2 consider expanding low cost carrier business beyond Indonesia as its network strategy***

***It is also recommended that LCC2 continue investing in online sales while finding ways to promote online platform; at the same time, LCC2 could consider partnering with FSC's agents in traditional ticketing market.***

### **Discussion:**

1. Bonus point if interviewees can discuss in-depth the trend in low cost carrier space over the last decade
2. Bonus point if interviewees can talk about the emergence of low cost carrier over the past decade
3. Interviewees should have structural approach in solving the real question behind the case – how to explore new business opportunities and compete against competitor



# Case Three: Water Utility Project in Middle East

## Water Utility Project in Middle East (2<sup>nd</sup> Round McKinsey)

Our client is an investment firm that is looking at a project in Middle East.

This Middle East government is looking at constructing a new city in the country that attracts new industries, business, and residents. The nearest existing city to this site is 25 kilometers.

The government wants our client to jointly invest in a for-profit water utility company that is going to serve the new city. McKinsey is hired to study whether it should make the investment.

Facts	How to give the case
<p><b>Industry</b> Water, Utility</p> <p><b>Middle East – some facts</b></p> <ul style="list-style-type: none"><li>Extremely wealthy</li><li>Lack of water</li><li>Underwent severe financial distress during crisis</li><li>Recent political unrest</li></ul>	<p><b>Difficulty</b> Medium</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. It is a typical McKinsey-led case. Interviewer is supposed to ask questions and prompt interviewees when needed</li><li>2. Ask questions in sequence, provide numbers only when asked</li><li>3. Request for accurate calculation; round-up and round-down is discouraged; use 365 days per year</li></ol>



# Exhibit 1 – Projected water demand

		3 <sup>rd</sup> year	10 <sup>th</sup> year	Remark
Industrial	Construction	23,550	18,000	Waste Water treatment needed
	Manufacturing	10,550	19,000	Various qualities needed
	Agriculture	8,000	12,000	No additives
	Airport	1,340	2,450	
Commercial	Hospital	40	100	High quality
	Office	30	130	Waste Water treatment needed
	School	20	160	High quality
	Tourism	1,200	16,000	
Residential	Residential	Unknown	Unknown	High quality



# **Case Three: Water Utility Project in Middle East**

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**Question 1:**

**Walk through the framework with me**

**Question 2:**

**Read Exhibit 1, and tell me what you think (hand out Exhibit 1 here)**

**Question 3:**

**Estimate residential water demand in 3<sup>rd</sup> year and 10<sup>th</sup> year**

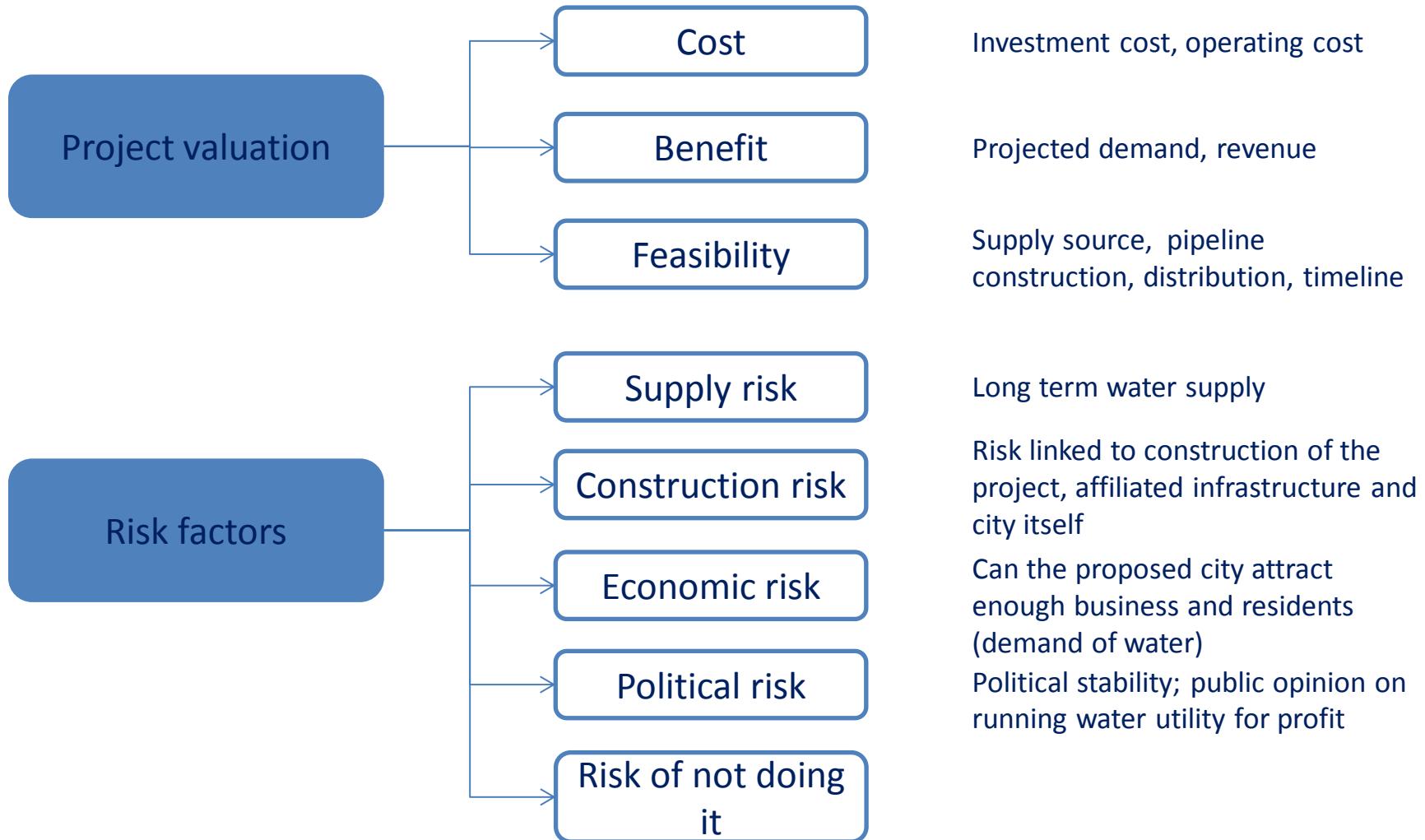
**Question 4:**

**Give recommendation**



# Case Three: Water Utility Project in Middle East

*Question 1: Walk through the framework with me*



# Case Three: Water Utility Project in Middle East

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*Question 2: Read Exhibit 1, and tell me what you think*

- Demand
  - Majority of the demand is from industrial
  - Demand growth from commercial (hence possibly residential) sector is much faster than industrial sector
  - Demand from construction will peak within next 10 years; while demand from non-construction activities will continue to grow
- Specification
  - Different quality requirements
  - Waste water treatment capability is needed for certain sectors
  - Commercial and residential tend to require higher quality water



# Case Three: Water Utility Project in Middle East

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*Question 3: Estimate residential water demand in 3rd year and 10th year*

Please provide below information **only when interviewees ask specifically**

1. The city is expected to have 70,000 workers by the 10<sup>th</sup> year
2. Average family size is 3
3. On average 1.2 members per family will work
4. Each person consumes about 5 L water per day

## ***Step 1***

*Calculate water demand in 10<sup>th</sup> year*

Calculate number of families =  $70,000 / 1.2 = 58333$

- (i) Total population =  $58333 * 3 = 175,000$
- (ii) Total water demand per day =  $175,000 * 5 = 875,000$
- (iii) Per year demand =  $875,000 * 365 = 319$  million L



# Case Three: Water Utility Project in Middle East

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## Step 2

*Estimate water demand in 3<sup>rd</sup> year*

Use Exhibit 1, it is observed that water demand from school grows 8 times; it is reasonable to assume that water demand from school correlates with school size (number of teachers and students); also, it is reasonable to assume that number of teachers is proportional to number of students.

Therefore, we estimate number of students grows 8 times.

We assume demographic profile remains relatively constant over years, i.e. number of students correlates with number of families in this city.

Therefore, we estimate population grows 8 times; hence water demand.

Result: we estimate residential water demand in 3<sup>rd</sup> year =  $319 \text{ ML}/8 = 40 \text{ ML}$



# Case Three: Water Utility Project in Middle East

## Conclusion and key learning

### **Conclusion:**

*In order to decide whether the firm needs to invest in this project, McKinsey recommends the firm consider the following: (1) the financial return of the project, and (2) the feasibility of the project. The projected water demand indicated that there is a healthy growth of water demand in the future, a positive sign.*

*However, serious due diligence on various risks needs to be conducted. These include but not limit to (1) risk of security of water supply in the middle of nowhere; (2) risk associated with the construction of the city itself (editor: use Masdar City as a case in point); (3) risk associated with macro economy, especially the inflow of talent and businesses; (4) risk associated with political situation, and (5) risk associated with not doing this project*

### **Discussion:**

1. The case is designed to test interviewees quantitative skills, as well as basic market entry strategy
2. Interviewees should avoid giving positive recommendation based on projected demand; instead, they should discuss in length the various risks associated with the recommendation
3. Bonus shall be given if interviewees can relate the topic to similar projects in Middle East, such as Masdar City project



# Case Four: Bright Paper & Co.

## Bright Paper & Co. (1<sup>st</sup> Round McKinsey)

Our client Bright Paper produces 10 million tons of pulp per year. It has a presence in Europe, South America, and North America. In recent years, there has been increased demand for whiter uncoated free sheet (pulp), which is perceived to be higher quality. Companies are spending time and money to improve their whitening processes.

There are currently 4 whitening processes, namely “bleach”, “dye”, “chemical addition”, and “feedstock change”. Since paper demand over the last few years has been quite stagnant, the downward price pressure pushes firms to reduce costs. So our client wants McKinsey to find ways to reduce the manufacturing cost of whitening paper.

Bright Paper mainly uses a “dye” process. It buys 90% of its dye supply from a single supplier, called Big Dye. Big Dye is a big player in the market (probably 20 – 30% of global market share).

Facts	How to give the case
<b>Industry</b> Industrial goods	<b>Difficulty</b> Medium
<b>Pulp industry</b> A good case to learn about the pulp industry is Yale Raw Case 10-037	<b>Hints on giving the case</b> <ol style="list-style-type: none"><li>1. It is a case on market analysis and competitive response</li><li>2. It is a McKinsey case, so it is an interviewer-led case. The interviewer will ask the questions in sequence and provide hints when needed</li><li>3. Encourage interviewees to brainstorm as many ideas as possible</li></ol>



# Questions

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1. Present all charts at the same time, and ask interviewees to walk through their thought process and observations
2. Brainstorm a few ways to reduce manufacturing costs, focusing on raw material costs
3. Provide some cost information, and calculate the breakeven utilization rate
4. Recently, Bright Paper's largest competitor just bought a Chinese dye exporter, who accounts for ~30% of the dye exports from China. What should our client's response be?



# Case Four: Bright Paper & Co. Question 1 – Observations

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*Question 1: Hand out Exhibit 1 – 6 and ask interviewees to summarize their observations*

**Answer:**

**Key observations from charts:**

1. Export trend: European export ↓, South American export stagnant, Chinese export ↑ drastically
2. 90% off Bright Paper's dye purchase is with Big Dye, so it is important to look at both firms' regional balance
3. Regional balance between Big Dye's market share and Bright Paper's demand: South America → balanced; North America → over supply; Europe → under supply
4. This means it is likely that Big Dye is exporting from North America to supply Bright Paper in Europe



# Case Four: Bright Paper & Co. Question 2 – Cost reduction

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*Question 2: Brainstorm a few ways to reduce manufacturing costs*

**Answer:**

**Cost reduction:**

## 1. Variable costs

- Reduce raw material cost: **consider alternative supplier, as a single supplier seems to be risky; introduce contract competition since it appears that dye is a commodity**
- Reduce processing cost: **consider alternative processes other than using “dye”**
- Reduce transportation cost: **from regional balance, it is inferred that the supply chain involves export from North America to Europe. We can suggest a product swap with co-producers or trading houses to reduce cross-continental shipping cost**

## 2. Other costs

- Consolidate all its manufacturing plants, stop inefficient plants and consolidate its productions to its most efficient plants
- Reduce R&D costs at plant level
- Reduce maintenance costs



## Case Four: Bright Paper & Co. Question 3 – Breakeven

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*Question 3: Hand out Exhibit 7 and ask interviewees: in order to breakeven, what is the minimal plant utilization?*

**Answer:**

**Set this minimal utilization rate as X**

$$\text{Revenue} = X \cdot 600$$

$$\text{Fixed costs} = \text{Machinery + Salary}$$

$$= 120 + 10 = 130$$

$$\text{Variable costs} = X \cdot (\text{Raw material + Processing + Additive + Utility})$$

$$= X \cdot (140 + 10 + 8 + 8) = X \cdot 166$$

**To breakeven**

$$X \cdot 600 = 130 + X \cdot 166$$

$$X = 30\%$$

Comment: This particular plant only needs to run 30% utilization rate in order to breakeven. This is an amazingly profitable plant.



# Case Four: Bright Paper & Co. Question 4 – Competition

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*Question 4: Recently, Bright Paper's largest competitor just bought a Chinese dye exporter, who accounts for ~30% of the dye exports from China. Why do you think they do it and what should be our client's response*

**Answer:**

## **Why**

1. Reduce purchasing cost via backward integration
2. Increase control over supply chain
3. Influence dye market as a key feedstock to the industry
4. Financial investment

## **Possible competitive responses**

1. Do nothing, continue procurement via contracting
2. Backward integration via acquiring a similar exporter
3. Find alternative process (not based on dye)



# Case Four: Bright Paper & Co. Question 5 – Recommendation

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*Question 5: Please summarize the case for me*

**Recommendation:**

*It is recommended that our client looks at cost reduction from both internal and external perspectives, in order to reduce its manufacturing costs.*

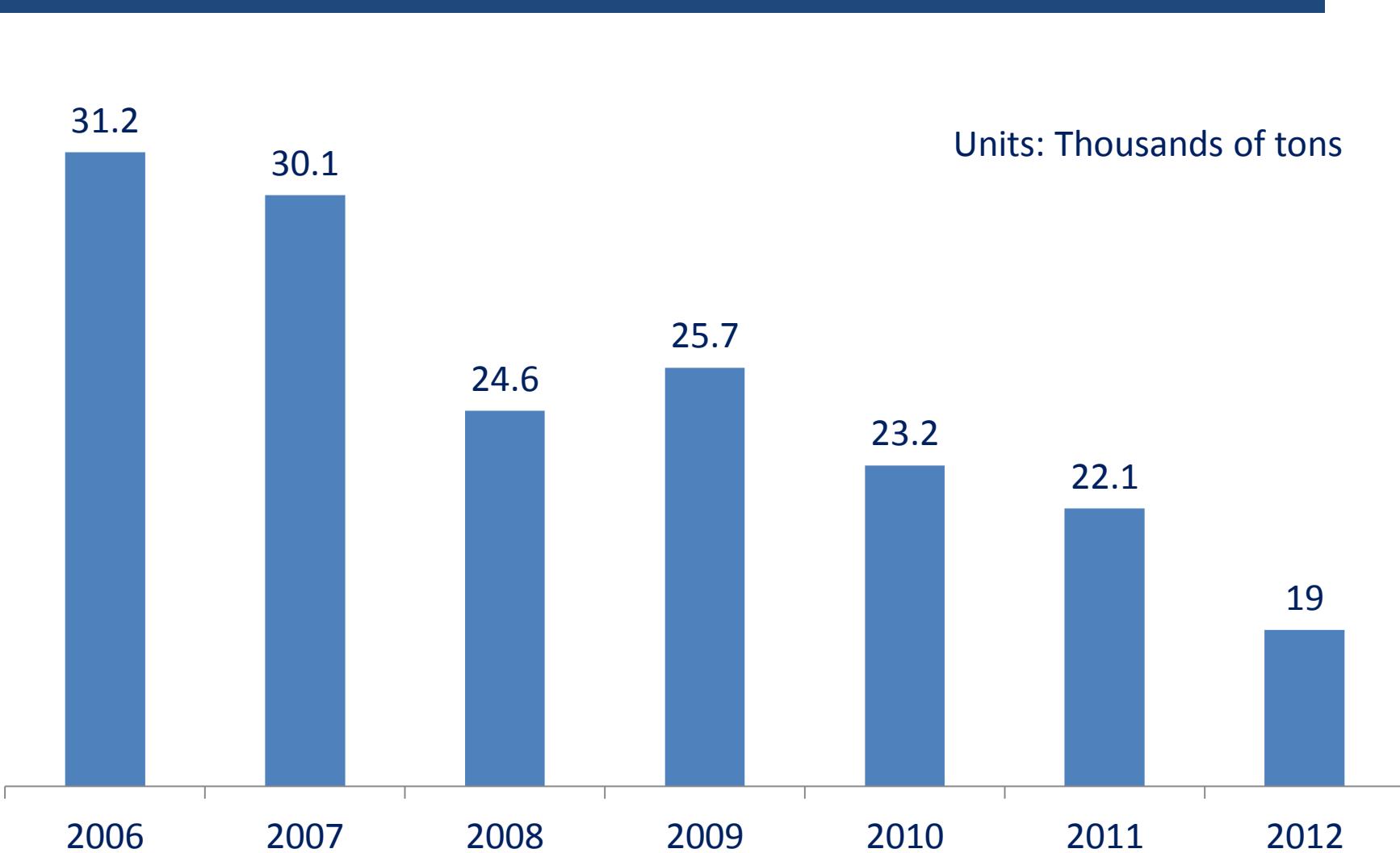
*Internally, it should look at cost reduction on variable costs such as raw materials, processing cost, and transportation cost. It also should look at consolidating existing assets to increase efficiency, as well as possible reducing non-core R&D and maintenance costs.*

*Externally, it should look beyond the current process, and explore a possible, cheaper alternative from “dye” process.*

*In order to respond to competitor’s recent move, Bright Paper could choose to maintain a status quo, integrate backwards by acquiring a similar dye exporter, or simply explore an alternative technology.*

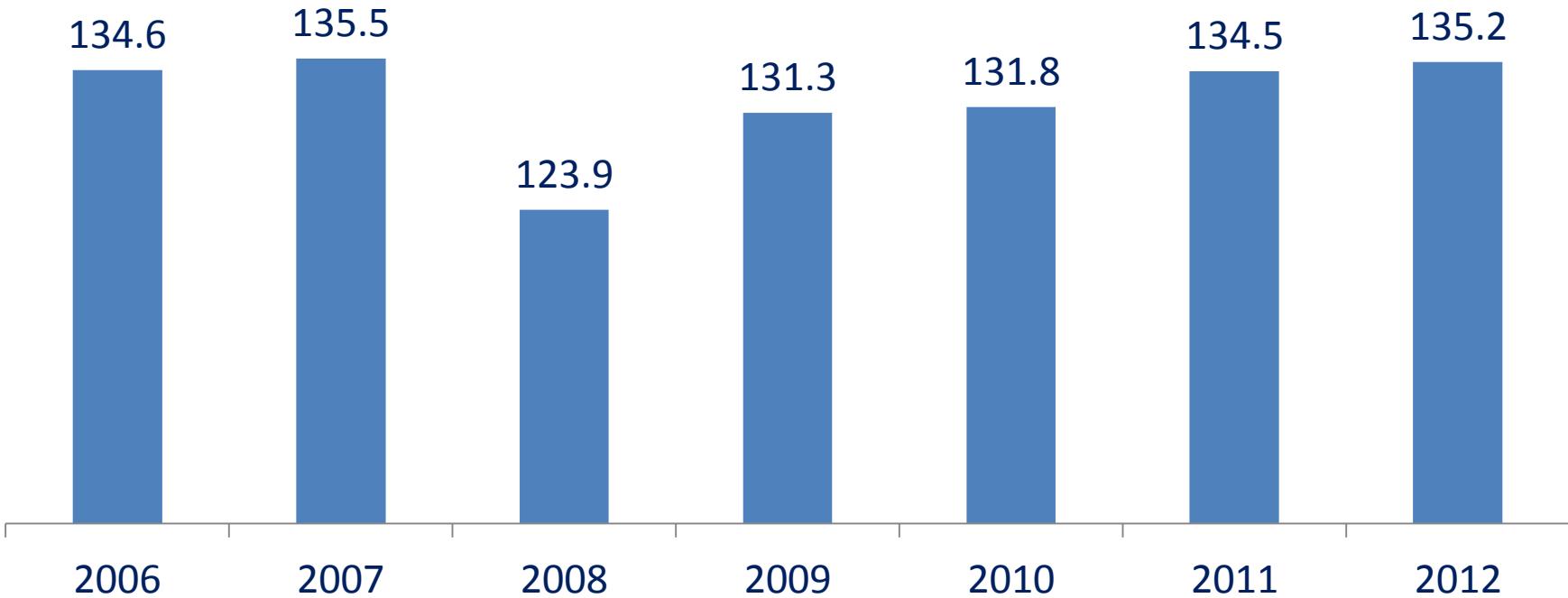


## Exhibit 1 – Dye exports from Germany



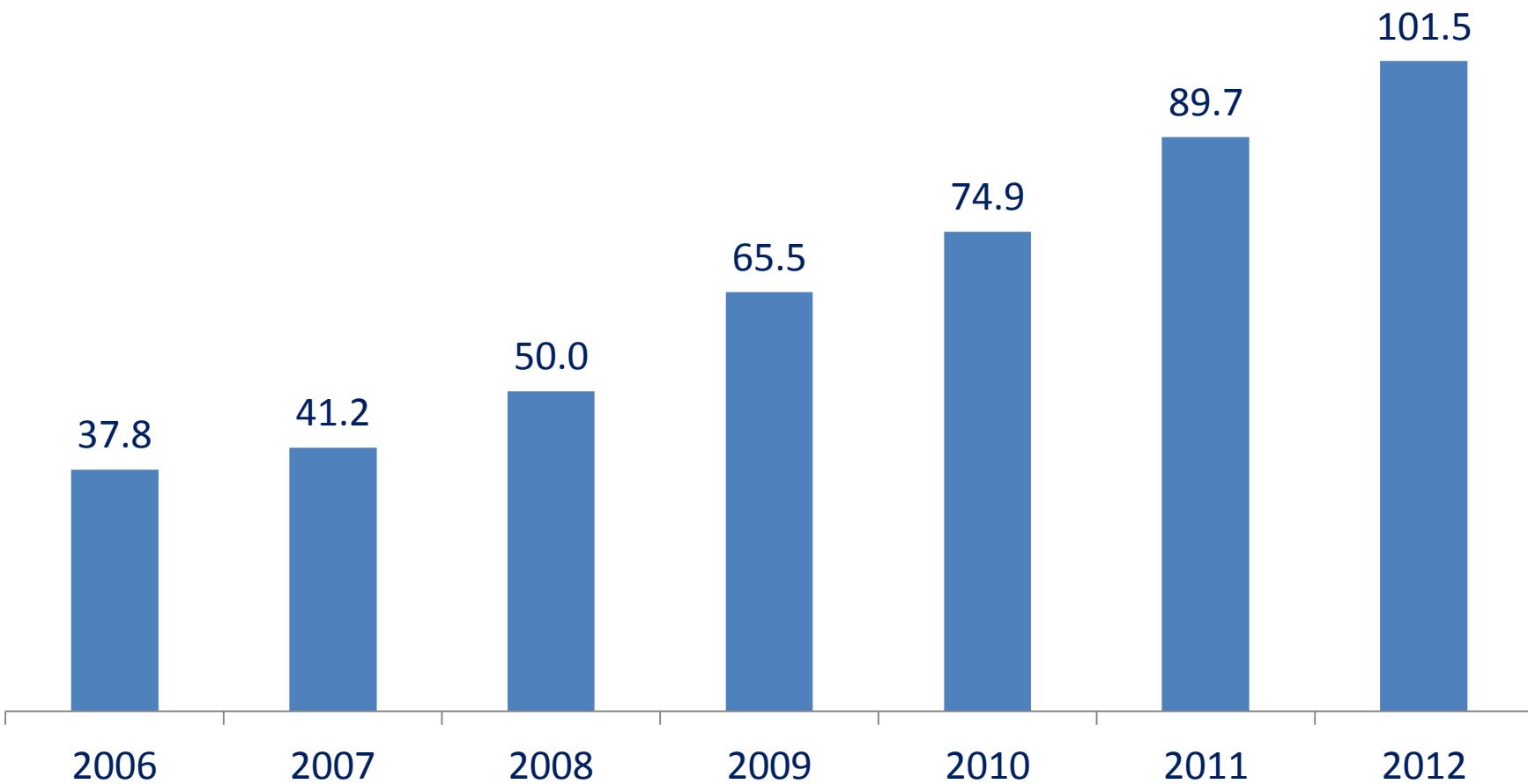
## Exhibit 2 – Dye exports from South America

Units: Thousands of tons



## Exhibit 3 – Dye exports from China

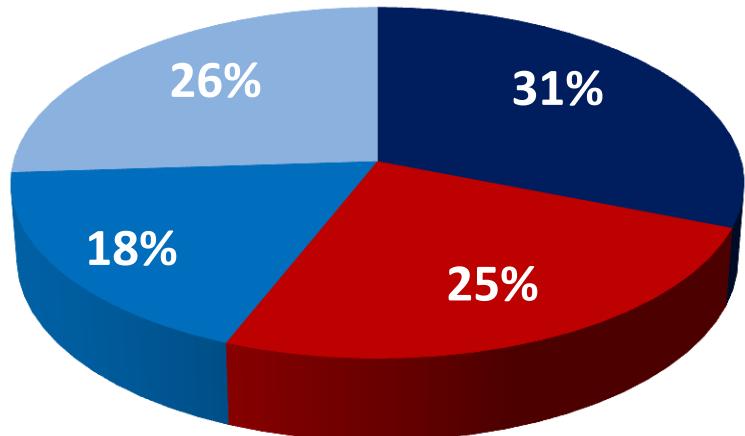
Units: Thousands of tons



## Exhibit 4 – South American market dynamics

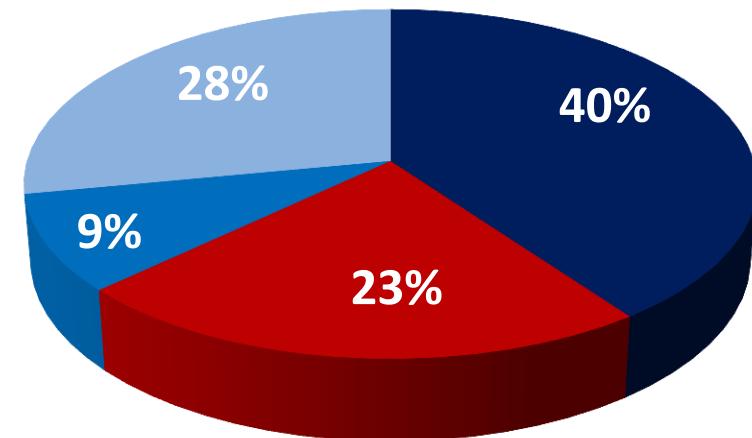
**Big Dye's South American Market Share**

- Competitor 1 ■ Big Dye
- Competitor 2 ■ Others



**Bright Paper's South American Market Share**

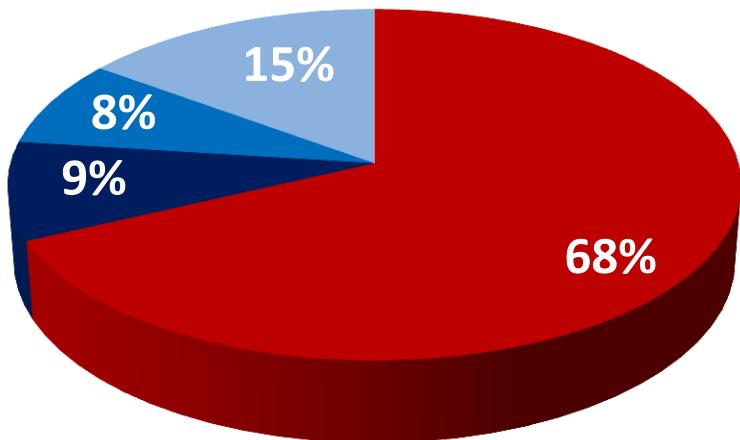
- Competitor 1 ■ Big Dye
- Competitor 2 ■ Others



## Exhibit 5 – North America market dynamics

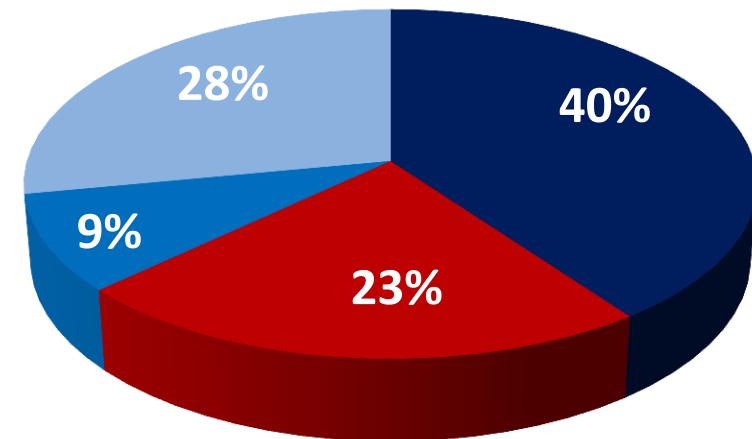
**Big Dye's North American Market Share**

■ Big Dye      ■ Competitor 1  
■ Competitor 2   ■ Others



**Bright Paper's North American Market Share**

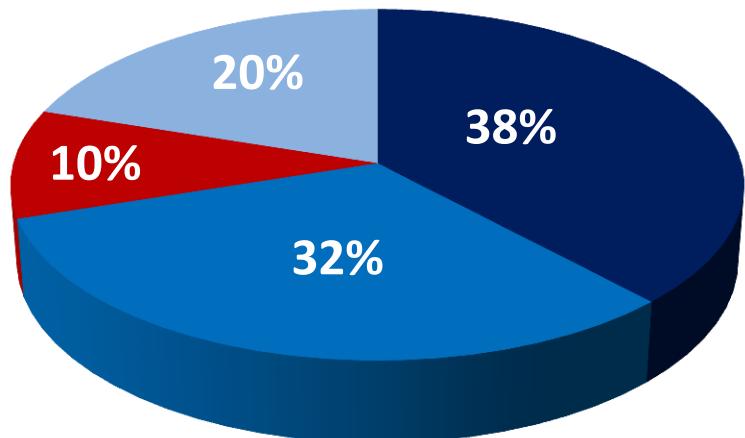
■ Competitor 1   ■ Big Dye  
■ Competitor 2   ■ Others



## Exhibit 6 – European market dynamics

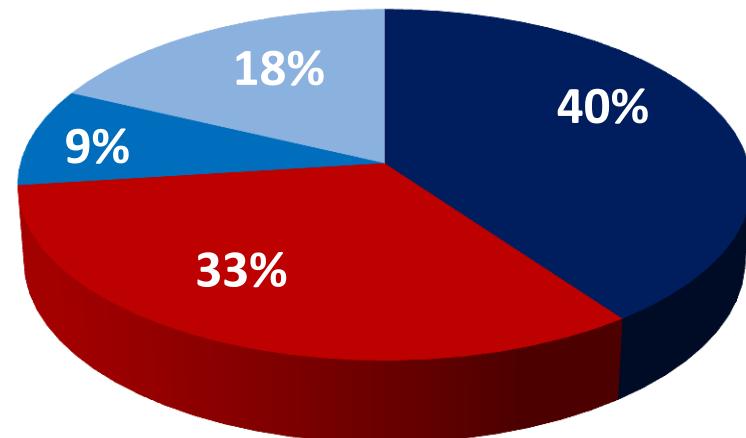
**Big Dye's European Market Share**

■ Competitor 1 ■ Competitor 2  
■ Big Dye ■ Others



**Bright Paper's European Market Share**

■ Competitor 1 ■ Big Dye  
■ Competitor 2 ■ Others



## Exhibit 7 – Cost information for manufacturing plant A

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### At 100% utilization:

Revenue	=	600
Raw material	=	140
Machinery cost	=	120
Processing cost	=	10
Additive cost	=	8
Utility	=	8
Salary	=	10

*Unit of measurement is per thousand tons of paper*



# Case Five: Insurance Company

## Insurance Company (McKinsey 2<sup>nd</sup> Round)

Our client is an insurance company which has 3 different business lines: car insurance, property insurance, and manufacturing equipment insurance. Its CEO has hired McKinsey to find ways to improve its ROE from current 10% to 15%.

Facts	How to give the case
<p><b>Industry</b> Insurance</p> <p><b>Insurance</b> Revenue comes from both premiums collected that are not distributed via claims and income from reinvestment of premiums Some divisions in insurance companies have low profitability but provide steady revenue, these divisions are an important capital source</p>	<p><b>Difficulty</b> Medium</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. It is a McKinsey case, which is led by interviewer</li><li>2. Ask questions in sequence , and prompt interviewees with hints when needed</li><li>3. Once interviewees present and explain their frameworks, direct them to discussion on accounting and claim process</li><li>4. Expect to explain concepts such as Claim ratio and Expense ratio</li></ol>



# Case Five: Question 1 - Framework

*Question 1: Work through the framework with me*

**Answer:**

$$ROE = \frac{Net\ Income}{Equity} = \frac{Revenue - All\ Expenses}{Shareholders\ Equity}$$

Increase revenue

↑ price, ↑ # of insurance products, ↑ customer coverage and conversion,  
↑ cross selling, ↑ geographic coverage and expansion

Reduce all expenses

↓ overhead cost, downsize non-sales force, ↓ salaries or bonus, ↓  
additional benefit, ↓ expenses paid to 3<sup>rd</sup> parties

Reduce outstanding  
shares

Share buy back



## Case Five: Question 2 – Asset

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What may appear on the company's Balance Sheet as Assets?

**Answer:**

1. Cash and equivalent
2. Premium receivable
3. Financial instruments held by insurance companies
4. Reinvestment ???
5. PPE



## Case Five: Question 3 – Claim process of car insurance

*Question 3: The client has a pool of contractors (15 – 20 of them). When there is a car accident, customer would call our client, and client will call one of these contractors who would then dispatch a technical expert to the scene and assess the damage or fix the car. The client will settle the payment with the contractor later.*

*What are the ways for our client to improve ROE based on above description?*

**Answer:**

**Interviewees can draw a flow chart to understand the process**



## Case Five: Question 3 – Claim process of car insurance

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**Increase ROE – reduce expenses based on information provided**

1. Renegotiate terms with contractors
2. Reduce number of contractors in exchange of better terms from remaining contractors
3. Appoint an exclusive contractor for bulk discount
4. Acquire one of the contractors to reduce 3<sup>rd</sup> party expenses
5. Develop in-house expertise



## Case Five: Question 4 – ROE

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*Question 4: Current shareholder equity is \$3 billion; there are 1 million car insurance customers, 6% of customers have claims annually, and the average cost per claim is \$6000. What is the new ROE if our client can reduce the average cost per claim to \$4000? How can our client achieve this?*

### Answer:

1. Current ROE = 10%, with shareholder equity of \$3 billion → NI = \$300 M
2. Claim cost reduction =  $1 \text{ million} \times 6\% \times (\$6,000 - \$4,000) = \$120 \text{ M}$
3. New NI after cost reduction = \$420 M
4. New ROE =  $\frac{\text{New NI}}{\text{Shareholder Equity}} = \frac{\$420M}{\$3B} = 14\%$

Though client is not able to achieve 15% ROE target solely based on claim cost reduction, there are many other ways to reduce expenses (as discussed in Question 2). It is promising to achieve the 15% target.



## Case Five: Question 5 - Margin

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*Question 5: Present Exhibit 1 and ask interviewees to interpret the table and justify the existence of car insurance business*

### Answer:

1. Interviewees may need to clarify Claim ratio and Expense ratio. Claim ratio + Expense ratio = **Total costs as a % of revenue in that particular business.**
2. This means

Net margin (car insurance) = 0%

Net margin (property insurance) = 20%

Net margin (manufacturing equipment insurance) = 40%

3. Despite zero margin, car insurance supplies 60% of revenue for the entire company. It is the most critical source of premium/capital for insurance company to reinvest, and as a result, very important to the firm's income. Therefore, it can justify its existence.



# Case Five: Recommendation and Discussion

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## Recommendation

*In order to improve its ROE, our client should both increase revenue and reduce expenses. In car insurance division, client could think creatively to renegotiate the terms with existing contractors, reduce number of contractors in exchange of bulk discount, or even consider acquiring a contractor to reduce 3<sup>rd</sup> party expense. Despite zero margin, car insurance division contributes majority of revenue which is important to firm's capital and reinvestment.*

*The other two divisions are much more profitable, therefore, our client should also think creatively to improve their ROE at division level.*

## Discussion

1. Bonus if interviewees can relate Question 2 immediately to cost reduction
2. Bonus if interviewees can draw the process flow when trying to understand claim process
3. Interviewees need to understand the importance of source of capital and reinvestment in insurance business



## Exhibit 1 – Revenue and ratio breakdown

	Car	Property	Manufacturing equipment
% of total revenue	60%	25%	15%
Claim ratio (claim/revenue)	60%	50%	40%
Expense ratio (expense/revenue)	40%	30%	20%



# Case Six: Food and Beverage & Co.

## Food and Beverage & Co. (McKinsey 1<sup>st</sup> Round)

Our client is facing declining profits. The CEO wants McKinsey to look at the reason behind the decline in profit, and ways to improve the bottom line.

Facts	How to give the case
<p><b>Industry</b> Food and Beverage</p> <p><b>Food and Beverage</b> Typically high gross margin, but may have low net margin depending on other costs Typically there are low barriers to enter and very intense competition (i.e. low profit) Packaging and transportation can account for majority of the final product cost (e.g. Honest Tea case)</p>	<p><b>Difficulty</b> Easy</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. It is a McKinsey case, which is led by interviewer</li><li>2. This case is to test some basic quantitative skills, product differentiation and competitive strategy</li><li>3. Interviewer can “surprise” interviewees by NOT asking them to present a framework; instead, interviewer can immediately hand out Exhibit 1 and start asking questions; alternatively, interviewer can ask for a simple profitability framework and interrupt interviewees to proceed to Question 1. This is to mimic McKinsey’s sometimes “disruptive” nature of casing</li></ol>



## Case Six: Question 1 – Some calculation

---

*Question 1: (Hand out Exhibit 1) Read the table and calculate the material cost and ink cost for our client's packaging (Assume cube shape)*

**Answer:**

### **Material cost**

1. Calculate the surface area (assume cube shape)

$$\begin{aligned}\text{Surface area} &= 2 \times (L \times W + L \times H + W \times H) \\ &= 2 \times (5 \times 5 + 5 \times 10 + 5 \times 10) = 250 \text{ in}^2\end{aligned}$$

$$\begin{aligned}\text{Material cost} &= \text{Surface area} \times \text{unit material cost} \\ &= 250 \times 0.001 = \$0.25\end{aligned}$$

$$\begin{aligned}\text{Ink cost} &= \text{Surface area} \times \text{Ink\%} \times \text{Ink cost} \\ &= 250 \times 66\% \times 0.002 = \$0.33\end{aligned}$$

$$\text{Total Material cost} = 0.25 + 0.33 = \$0.58$$

*(significant element if selling price ranges between \$2.5 and \$4.0)*



## Case Six: Question 2 – Read the table

---

*Question 2: Please read Exhibit 1, summarize your key insights, and tell me what strategy Competitor 1 and Competitor 2 have adopted?*

**Answer:**

### **Material Cost**

Client: same cost structure as Competitor 2

Competitor 1: environmentally friendly material, though at a higher cost

Competitor 2: identical material cost

### **Size**

Client and Competitor 2: identical size

Competitor 1: smaller packaging volume

### **Price and quantity**

Competitor 1: high price, sell smaller quantity

Competitor 2: very low price, sell very large quantity

### **Ingredients**

Client: more meat, less vegetables and fruits

Competitor 1 & 2: less meat, more vegetables and fruits



# Case Six: Question 2 – Read the table

Some hypothesis on strategy by competitors

Competitor 1:

- highly differentiated, niche market;
- focus on “healthy” and “environmentally friendly” concept
- higher prices, higher margin

Competitor 2:

- focus on low price, hence drives much higher
- likely to be a low cost player



# Case Six: Question 3 – Suggestion on differentiation

---

*Question 3: What should our client do?*

**Answer:**

## Differentiation

- New differentiation, e.g. vegetarian, salads
- Other niche, e.g. organic, healthy, non-genetically modified
- Super expensive, e.g. fine dining concept
- Quantity: smaller quantity, quantity vs. quality
- Service, e.g. delivery, 24-7 operation, buffet style

## Other ways to increase revenue

- Understand demand elasticity, and adjust price
- Operate stores at better location
- Open more stores or enter new market
- Expand product line

## Reduce cost

- Change the ingredients profile, may use cheaper material (e.g. more veg)
- More automation, fewer labor
- Negotiate better supply contracts, bulk discounts
- Cheaper packaging and transportation costs



# Case Six: Recommendation and Discussion

## Conclusion and key learning

### **Conclusion:**

***We recommend our client explore both increasing revenue and decreasing cost.***

***From revenue side, client should consider clearer differentiation from its competitors in order to capture higher revenue, and consider new alternatives such as expansion or new product offering.***

***From cost side, client should find ways to reduce its purchasing and transportation cost, packaging cost, and possibly change its food ingredients creatively.***

### **Discussion:**

1. Bonus if interviewees can draw Cost vs. Quality curve to illustrate differentiation
2. Bonus if interviewees understand Food and Beverage industry tends to be very competitive
3. Bonus if interviewees actually can comment that \$0.58 out of selling price of \$2.5 – 4 is significant



# Exhibit 1

		Client	Competitor 1	Competitor 2
Packaging	Cap	Plastic	Plastic	Plastic
	Seal	Plastic	Recycled	Plastic
Body (unit: inch)	Length	5	4	5
	Depth	5	4	5
	Height	10	8	10
	Thickness	0.3	0.2	0.3
Material		Paper	Recycled	Plastic
Material cost (\$/in <sup>2</sup> )		0.001	0.0015	0.001
Ink		66%	100%	66%
Ink cost		0.002	0.003	0.002
Seal		0.05	0.10	0.05
Ingredients (lb)	Meat	0.5	0.2	0.3
	Veg	0.25	0.4	0.3
	Fruits	0.25	0.4	0.4
Price		4	6	2.5
Sales per day		500	500	2000



# Case Seven – Textile & Co.

## Textile & Co. (McKinsey 2<sup>nd</sup> Round)

Our client is a diversified textile products manufacturer who purchases raw materials (basically cloth) from market. It has 4 different product lines: (1) table cloth (2) bath tower (3) curtain (4) bed sheet.

Our client is known for its premium, high quality product with fluffy, soft feelings, which is very popular in the market. It does not want to change this product positioning. The question is how to reduce the procurement cost of the raw material for its bath tower line, without affecting the product quality.

Facts	How to give the case
<b>Industry</b> Textile	<b>Difficulty</b> Easy  <b>Hints on giving the case</b> 1. Keep pushing for ideas to reduce cost until interviewees exhausted all options. Please do this on purpose



# Case Seven: Question 1

---

*Question 1: Can you please walk through your thoughts on how to reduce procurement cost for its bath tower line*

**Answer:**

Raw material

(1) Shrink size, (2) Reduce thickness, (3) Switch to a cheaper material but maintain the feeling of the softness

Supply Chain

(1) Gain bulk discount, (2) Co-shipment with other raw materials if physically possible

Commercial terms

(1) Negotiate longer term contracts, (2) Exchange credit terms for discounts if cash flow is manageable, (3) Exchange exclusive contract for discounts



## Case Seven: Question 2

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*Question 2: Suppose customers do not care about the label on the tower, so one idea to reduce cost is to remove these labels from bath tower; client sells 23 million bath towers a year, and label cost about 2.5 cents per tower. How much savings can it generate? If client wants to save \$30 million, how many such ideas does it need*

Answer:

$$\text{Savings} = 23 \text{ million} * 0.025 = 575,000$$

If client wants to save 30 million, it needs  $30 \text{ million} / 575 \text{ K} = 52$  ideas

Comment:

The saving generated from such small improvements is small, therefore it needs many of such ideas in order to achieve the target saving of \$30 million. It is a very challenging task



## Case Seven: Summary

---

*Please summarize the case for me*

In order to reduce the raw material cost for the bath tower product line, the client can consider various ideas ranging from cutting raw material cost itself to leveraging supply chain and commercial terms to reduce cost. However, it appears that the savings generated from some of the ideas are relatively small, therefore it requires management to be creative and think out-of-the-box to achieve its ambitious cost-cutting target



# Case Eight – Market entry of an energy SOE

## Market entry of an energy SOE

Our client is a Fortune 500 state-owned energy company in an emerging market. It has grown significantly over the past decade and is considering its next steps. The CEO has asked you to look at whether it should enter a mature market: country A in Asia Pacific region.

Facts	How to give the case
<p><b>Industry</b> Energy</p> <p>This is a case derived from a real-life case in a top consulting firm</p>	<p><b>Difficulty</b> Medium</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. Let interviewee drive the case</li><li>2. It is very important to ask for the opportunity cost of the cash in investment decision</li><li>3. Interviewee is expected to use a top-down approach, i.e. after clarifying the problem, probe the market size, growth, competitive environment, profit pool and market share. This will define possible profit pool for the client.</li><li>4. Don't give hint on opportunity cost; let interviewee explore</li></ol>



## Case Eight: Step 1 – Clarify the basic facts

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- Interviewee should establish the facts about the company and the market by asking probing questions. Interviewer can give the following answers if interviewees ask following ***specific questions***
  - Home market: an emerging market in Asia Pacific region
  - Target country for entry : a mature economy in Asia Pacific region (specific country name: irrelevant)
  - Population of home country: about 70 million
  - Population of target country: about 20 million
  - Company: listed with MakCap of ~\$3.5 billion, state-owned by government from an emerging market
  - Growth: stable growth in home market backed by government support, easy credit; however, limited international expansion project (in fact, this is the first international expansion project beyond its home country)
  - Capex available: \$300 million cash



# Case Eight: Step 2 – Understand the target market in details

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## ***Interviewee should probe the target market in greater details***

- Target market size and growth trend
  - Total profit pool is about \$200 million p.a.
  - Market has somehow been saturated
  - Limited growth (CAGR of <2 % vs. GDP of 3-4% for the past 5 years)
- Existing competition in target market
  - 4 very experienced multinational energy companies (B, C, E, S) have been in A for about 50 years
- Market share
  - Each of B, C, E, S has about 20% market share
  - Each player is particularly strong in one region
  - Rest of 20% market share is taken by ~20 small players across the whole country
- Trend in competition
  - B is committed to the long-term growth in this market, and has recently made new investment
  - C has not been investing, but has most efficient cost structure
  - E and S have not been investing in the country for a decade and losing market share
  - S has put 60% of its assets on sale in the market
  - Small players have been very aggressive in consolidating among themselves and spending Capex in country A



## Case Eight: Step 3 – Understand investment needed and return

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- After completing Step 1 & 2, interviewee should by now developed an hypothesis that growth strategy in country A should be inorganic (i.e. acquisition)
  - Reasons: (1) stagnant growth; (2) established players; (3) on-going market consolidation and available assets in the market
- Interviewer then asks specific question on how much investment is needed
  - Investment needed to acquire E or S is ~\$500 million
  - Interviewer can ask how the client can achieve this with only \$300 million in hand (Answer: use debt to lever up the investment)
- Return (interviewee is expected to quickly do the following maths)
  - Total profit pool: \$200 million
  - Market share if acquire a player:  $20\% * 200 \text{ mil} = \$40 \text{ million}$
  - Hence,  $\text{return} = 40/500 = 8\%$



## Case Eight: Step 4 – Understand the opportunity cost

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- It is critical for the interviewee to ask the opportunity cost
  - Client has other investment opportunities
    - Option 1: invest in another emerging market I with ~250 million population, which has been growing at CAGR of 6%
      - Require investment of \$2 billion with a return of 10%
      - Low risk
    - Option 2: invest in a market M that was just open to foreign investment
      - Require investment of \$50 million with a return of 30%
      - High risk
    - Option 3: invest additional Capex in its home market
      - Requirement investment of \$150 million with a return of 6%
      - Low risk



## Case Eight: Step 5 – please summarize the case

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- Client should not invest in this mature market; reasons being
  - (1) the market is mature with limited growth upside
  - (2) existing inorganic growth options offers lower return than opportunity costs
- However, client should consider following options based on the resource available
  - (1) find a partner and lever up the investment to enter market I
  - (2) diversify investment by investing in both market M and home market



# Case Nine – Power market scan

## Power market scan

Client S is an power generator in an emerging market. It is looking at expanding its global asset footprint in several countries, namely A, B, C, and D. Please advise the CEO what should be the appropriate strategy in each of the country.

I will give you a few slides now, please read them carefully and tell me the possible strategy in each of the markets

Facts	How to give the case
<p><b>Industry</b> Power</p> <p>This is a case derived from a real-life case in a top consulting firm, and is modified to be similar to Bain's case style</p>	<p><b>Difficulty</b> Medium</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. Show all the exhibits to interviewees at the same time, and ask interviewees to interpret the exhibits</li><li>2. After showing the exhibits to students, let them drive the discussion on the insights from the exhibits; only provide hints to students when they have difficulties interpreting the charts</li><li>3. Give limited time for each exhibits, so to test interviewee's ability to answer questions under pressure</li></ol>



# Case Nine: Key insights from Exhibits

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## Country A

Big market size, healthy growth, supply is tight – attractive profit pool, potentially a big emerging market

Annual growth of 11 GW can support > 4 world scale coal-fired power plant

Heavily relying on coal and a large volume of coal is imported – secure coal is critical to the growth of any new investment

Market is regulated and relatively closed – not easy to enter

## Country B

Small market size, over capacity, declining market – not attractive from profit pool perspective

Energy mix is much cleaner by heavily relying on natural gas and renewables – appears to be a mature economy

The country's financial situation seems to be bad with extremely high external debt

Market is open – it may be an economy in Europe

## Country C

Sizable growth, in fact the highest growing market among all – a medium size emerging market

Some fuels (such as coal and natural gas) are imported

Annual growth of 3.5 GW can support 1 – 2 world scale coal fired power plant or ~3 CCGT power plant

Investment grade

Market is relatively open and regulatory environment is good

## Country D

Sizeable growth – possibly a medium size emerging market

Limited imported fuel, a large chunk of the energy is hydro-driven – potentially not a great fit with client's key competency

Annual growth is not able to support new hydro plants, but possible to support CCGT or other renewables

Investment grade

Market is relatively closed

## Client

Only possess coal and natural gas technologies; does not have capability in hydro nor other renewables



# Case Nine: Suggested strategy

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Country A – should consider investing due to vast market potential

What to invest on: coal-fired plant (tight electricity supply)

How: greenfield project with local partners (market is relatively close, so may need local partners)

What is critical: coal supply to A

Country B – should be very cautious

Due to over supply and vast over capacity, the only way to invest is to find distressed assets during market consolidation

Country C – should invest, highest likelihood of success

What to invest on: coal-fired plant (tight electricity supply) or CCGT

How: greenfield project on its own

Country D – should not invest

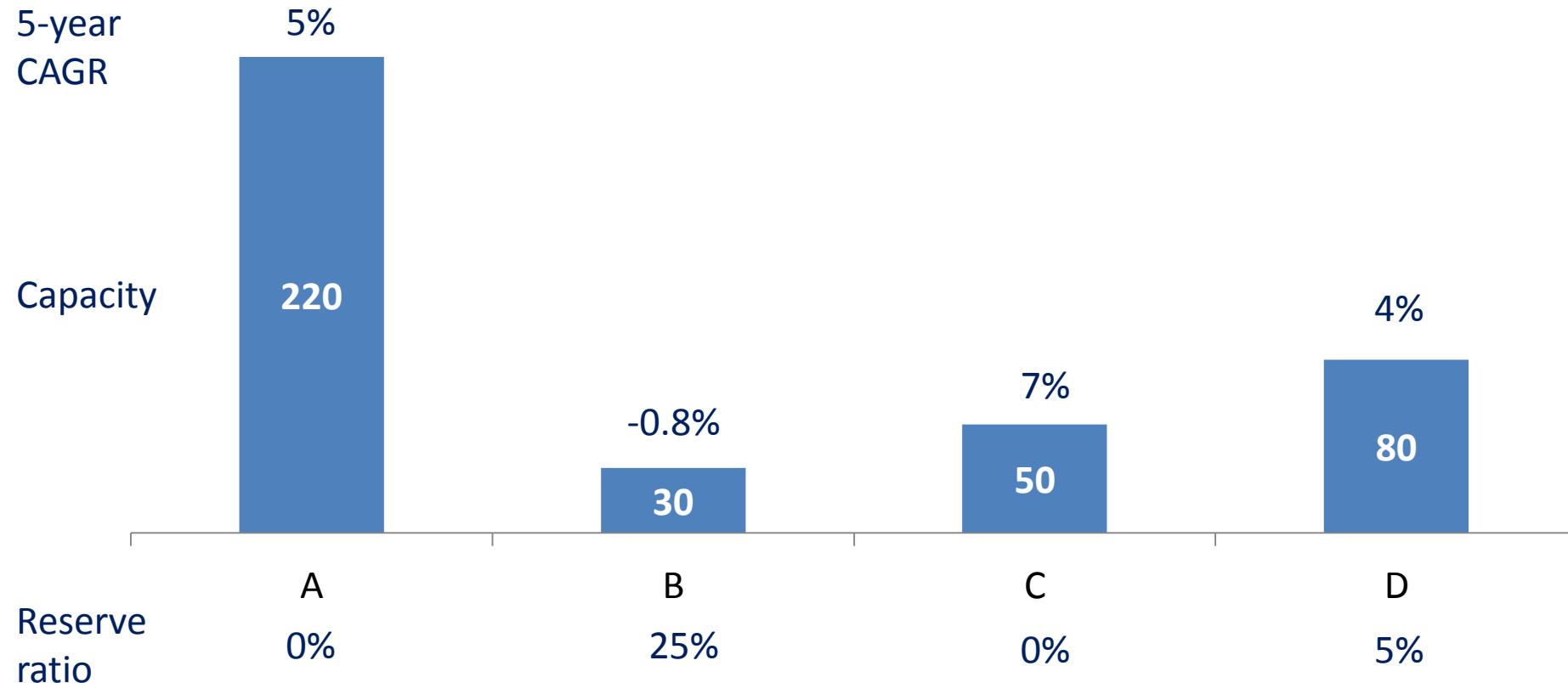
Too hydro-focus, outside client's expertise



# Exhibit 1 – Power market capacity and demand

Unit: GW, gigawatts

## Power market installed capacity and growth

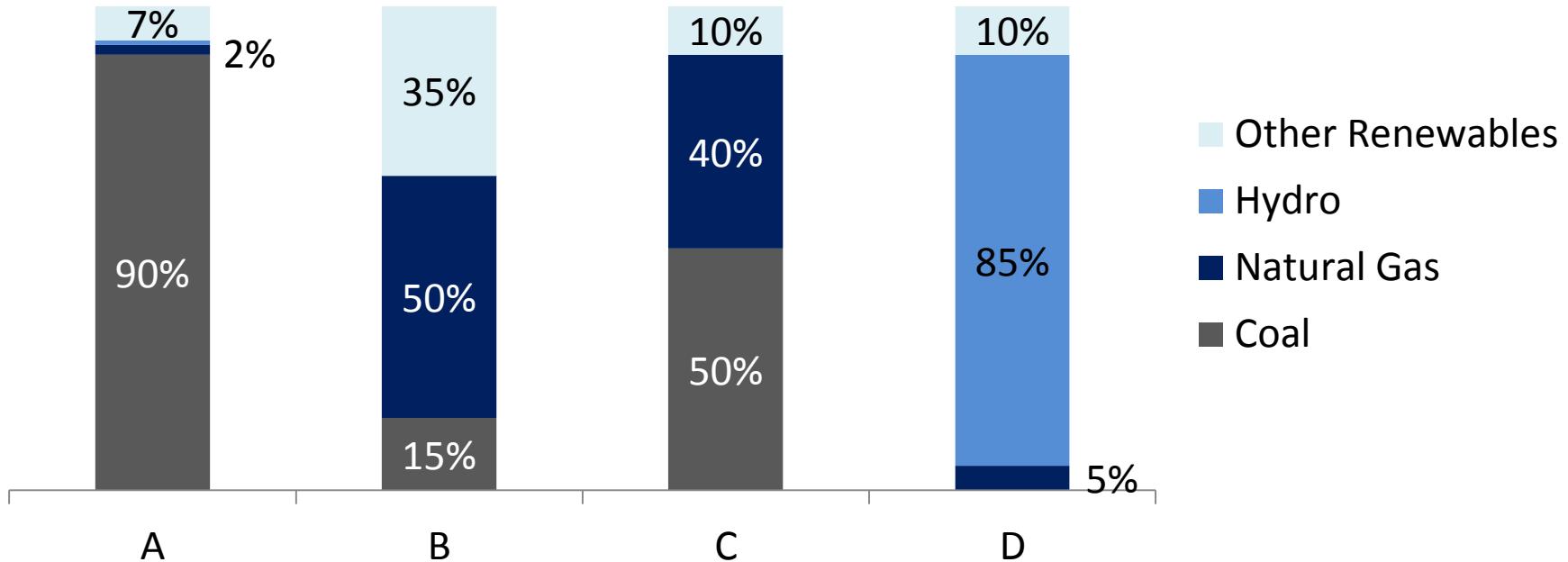


*Reserve ratio = spare power generation capacity during peak demand / peak capacity*



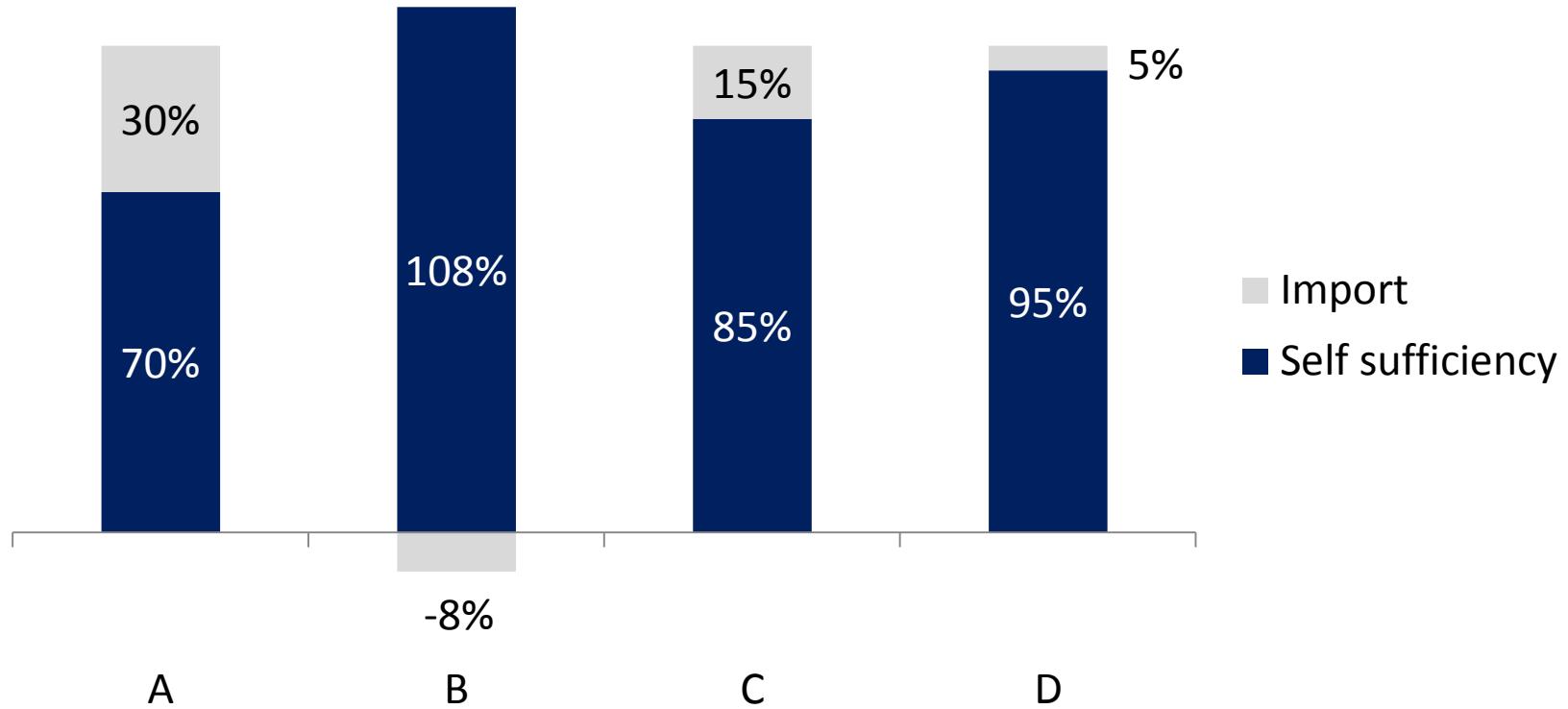
## Exhibit 2 – Power market energy mix by input source

Power market energy mix by input source



# Exhibit 3 – Fuel dependence of each country

Fuel dependence among the countries



## Exhibit 4 – Financial figures of each country

### S&P credit rating

Countries	A	B	C	D
S&P ratings	BBB-	BBB-	BBB	BBB
Outlook	Negative	Negative	Positive	Stable

*BBB: An obligor rated 'BBB' has adequate capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments*

### External debt to GDP

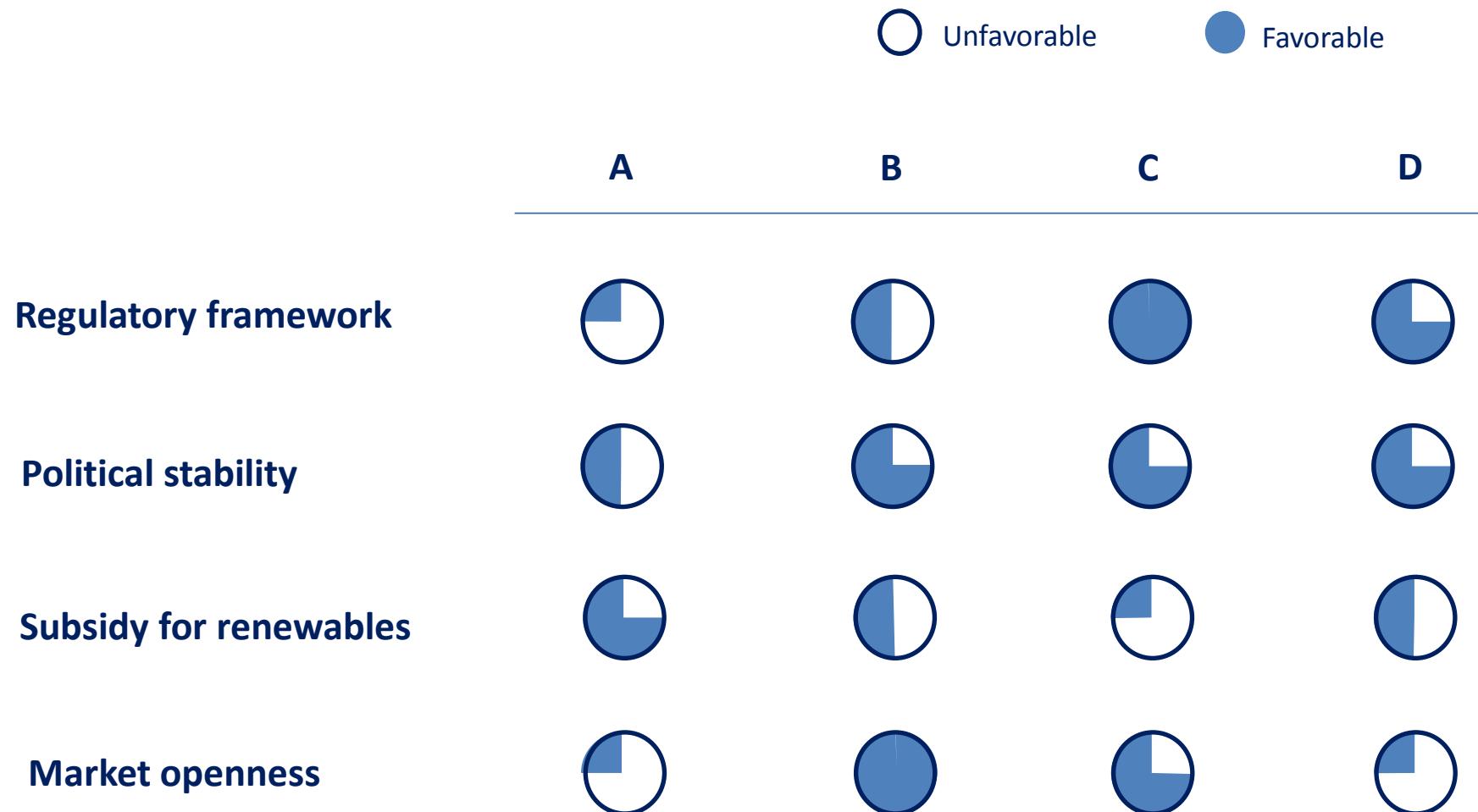
Countries	A	B	C	D
Debt to GDP %	20%	165%	20%	15%

### Public debt to GDP

Countries	A	B	C	D
Debt to GDP %	50%	85%	35%	55%



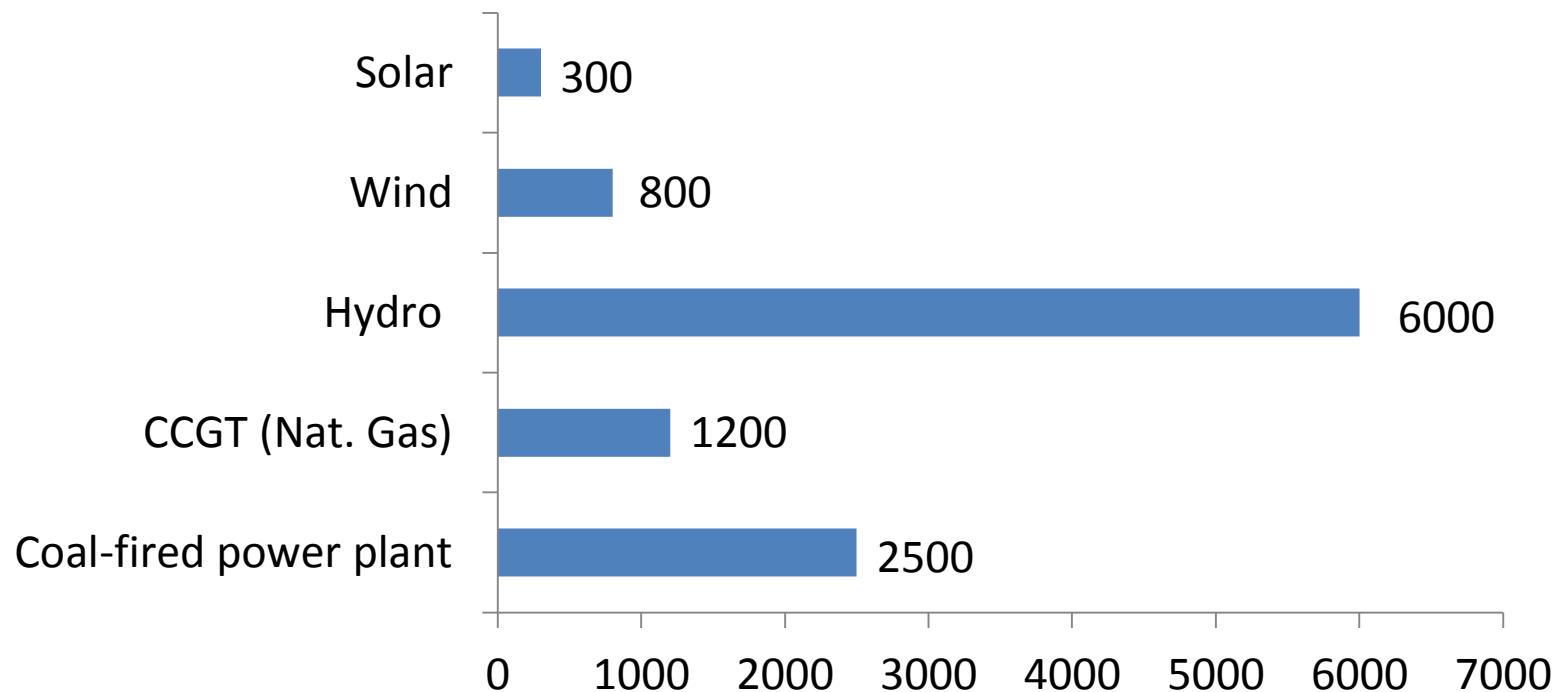
## Exhibit 5 – Regulatory environment



## Exhibit 6 – Typical project size by installed capacity

Unit: MW, megawatts

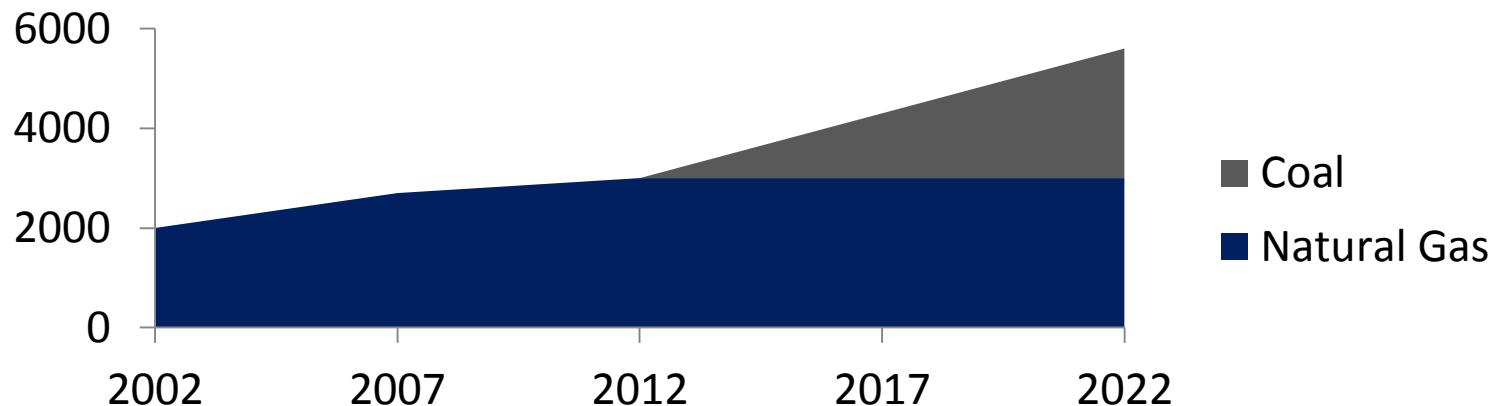
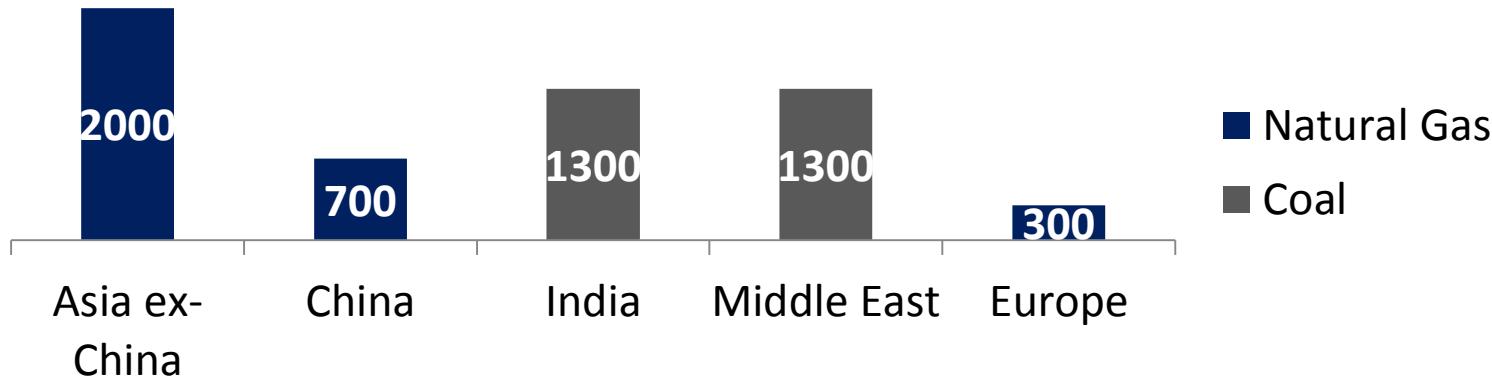
Typical world-scale power plant capacity by source



## Exhibit 7 – Energy mix of client S

Unit: MW, megawatts

Energy mix of client S



# Case Ten – Solar power generation

## Solar PV

Tell me how a PE firm should decide whether to invest in solar power generation and in which markets

(After the interviewee present his/her framework, please show the Exhibit and ask questions)

Facts	How to give the case
<p><b>Industry</b> Solar Power</p> <p>This is a case derived from a famous McKinsey chart</p>	<p><b>Difficulty</b> Easier</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. First, ask the interviewee to go through the framework, and answer a few follow up questions</li><li>2. Then ask questions specifically on the Exhibit</li></ol>



# Case Ten: Question 1 - Framework

Here is how I would approach the problem on whether to invest

*Market attractiveness and profit pool of solar PV sector*

- Total power market size, CAGR
- Power market supply/demand gap
- Solar radiation potential

*Investment vs. Return*

- Cost of PV panel/concentrated solar panel (CSP)
- Other cost such as installation, maintenance
- Electricity price to the grid, capacity
- Cost of capital

*Other qualitative considerations*

- Regulation, especially price to the grid
- Subsidy and predictability of future subsidy
- Relative cost of electricity generation (merit-order) and threat from substitutes



## Case Ten: Question 2 - Key characteristics of solar

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*What are the key characteristics of solar power generation*

*Answer:*

- (1) *Clean energy – no CO<sub>2</sub> emission*
- (2) *High fixed cost, very low variable cost – high fixed cost could be a barrier to entry*
- (3) *Susceptible to weather – unpredictable, not something that a power grid would like*
- (4) *Typically generate power when demand is high – a good source to meet peak power demand, which means price could be higher*

*Hint: direct the interviewee to discuss about the peak price*



## Case Ten: Question 3 – Interpret the Exhibit

---

*I have an Exhibit here, please read it and I have a few questions (show Exhibit 1)*

*Question 3A: which countries/states have the greatest solar radiation potential*

Answer: India, Texas, California, Hawaii

Reason: base on the definition of **Annual solar energy yield**, it says that south-facing 1kW peak-related module generates most electricity in these countries/states in a year

*Question 3B: does it mean we should invest in these few places*

Answer: No. Further information is needed since investor should understand the trend on grid parity and the regulatory environment on subsidy.

Reason: by reading the isoquants, it is clear that only Italy has achieve grid parity on solar energy as of now, and Hawaii and California will achieve grid parity by 2020. However, India will not achieve grid parity by 2020 so it may be economically challenging to compete against other sources of energy.



## Case Ten: Question 3 – Interpret the Exhibit

---

*Question 3C: what is the trend on the economics of the solar power generation in different countries*

Answer: (1) cost of production during peak hours is going down; (2) more countries will hit grid parity as time passes by; which means it makes more economic sense to use solar power in the future

*Question 3D: why do you think UK and Spain will hit grid parity at different times*

Answer:

- (1) Both markets have similar average power price and cost of production
- (2) Spain has better solar energy yield than UK does – that means Spain has better solar potential and a higher efficiency
- (3) This leads to the fact that Spain will hit grid parity much sooner than UK does



## Case Ten: Summary

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*Please summarize the case for me*

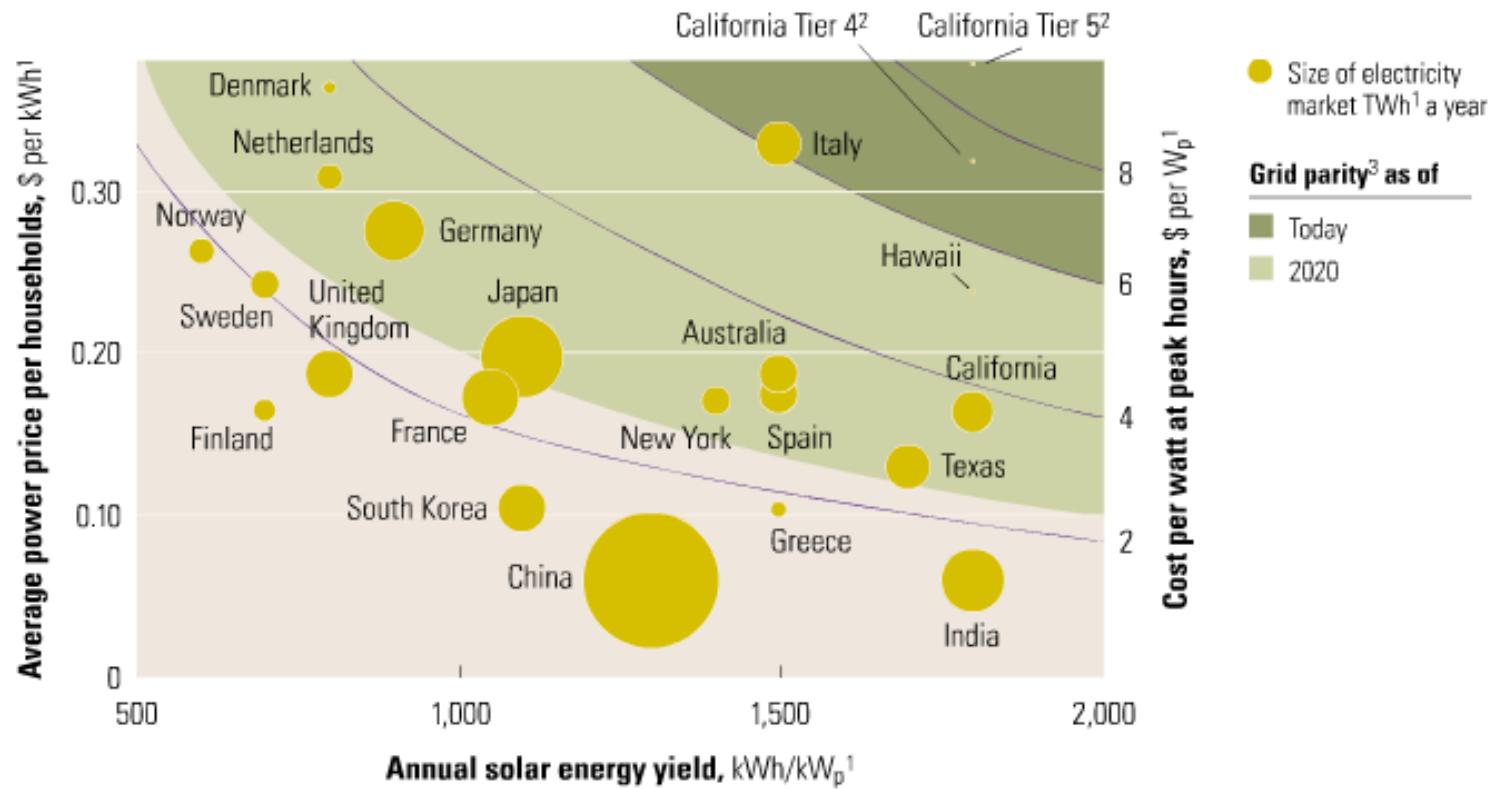
Summary:

In order to decide which market the PE firm to invest in, our client needs to determine the market attractiveness such as market size, profit pool and growth rates, calculate the investment required and the return the PE firm is likely to get from the deal, and consider other qualitative aspects such as regulations and changes in regulations, subsidies and competition from other energy sources

Given the market situation, more and more countries will hit grid parity over the next 5-7 years; in addition, given the fact that cost of solar panel has dropped significantly over the last few year, solar technology is becoming more attractive. However, the PE firm should avoid over investment if there are too many other investors.



# Exhibit 1



<sup>1</sup>kWh = kilowatt hour; kW<sub>p</sub> = kilowatt peak; TWh = terawatt hour; W<sub>p</sub> = watt peak; the annual solar yield is the amount of electricity generated by a south-facing 1 kW peak-rated module in 1 year, or the equivalent number of hours that the module operates at peak rating.

<sup>2</sup>Tier 4 and 5 are names of regulated forms of electricity generation and usage.

<sup>3</sup>Unsubsidized cost to end users of solar energy equals cost of conventional electricity.

Source: CIA country files; European Photovoltaic Policy Group; Eurostat; Pacific Gas & Electric (PG&E); Public Policy Institute of New York State; McKinsey Global Institute analysis



# Case Eleven: Economics of bundling

## A leading software security provider evaluating bundling strategy

Our client, a leading security software provider company, sells multiple products in over 100 countries. Most of the products produce high margins, as the marginal cost of replicating the software is negligible. However, due to the rising piracy and increasing competition, the client is seeking innovative ways to maintain its market position.

Client believes that bundling various software can provide customers with a clear better-together value proposition. Our team has been hired to evaluate key strategic drivers and assess the economics behind the bundling strategy.

Facts	How to give the case
<p><b>Industry</b> Technology</p> <p><b>Software technology</b> Typically a high margin business, as marginal cost of producing a software is negligible. Highly competitive as market barriers to entry are low and products are easily replicable. Customer is the key and offerings should be aligned with customer needs.</p>	<p><b>Difficulty</b> Medium - Hard</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. The interviewer must drive the case</li><li>2. It tests the candidate's knowledge in applying the concepts from economics and pricing; majority of candidates might not be able to relate classroom fundamentals – the interviewer should straightaway deep-dive into the concept of bundling and associated levers</li><li>3. After the candidate is clear with the concept of bundling; the interviewer should give Exhibit 1 and ask the candidate to share possible bundling opportunities; once done, give Exhibit 2 and ask candidate to re-evaluate his interim recommendation</li><li>4. Give Exhibit 3 and check the math skills</li></ol>



# Case Eleven: Potential buckets for framework

*Question 1: What do you understand by bundling? What are the key areas we should address before bundling different products and services?*

## Bundling (Concept)

- Bundling is primarily used to cross-sell or to sell more things to the same customer; the customer pays a lower price, but ends up paying a higher price, rather than buying each one separately
- In highly competitive markets, companies try to leverage their strength in one segment to grow the other – typically combining the one with a large market share with one in need for greater penetration

### Price attractiveness

- Price should be attractive enough to gain customer attention; not too low for customers to perceive it as inferior
- The bundled price must be competitive

### Customer needs

- Customers must be convinced that the bundle is appropriately designed to meet their needs
- Plus, the bundle should not include products with very low demand or with redundant offerings

### Buying process

- Process of buying the bundle should be easy

### Profitability

- Bundle should generate incremental profits for the client
- What are the level of discounts client ready to afford? What are the key factors driving those discounts?



# Case Eleven: Read the table

*Question 2: Please read Exhibit 1 and tell us what products are likely to get bundled.*

**Possible approach:**

**Fundamental concept:** ‘Bundling is efficient when a product with large market share is combined with the one that needs greater penetration’

**Key insights:**

1. Client has high market share and high margins in Product A – likely candidate for bundling, as the client could offer high discounts to offer a competitive price
2. Client already has a high market share in Product B, and since, it cannot offer to further lower the price, it is not an ideal candidate for bundling
3. Product C is a small market and shrinking – high risk and limited benefit
4. Product D is big and growing – ideal opportunity to penetrate deeper
5. Product E is half the size of Product D, but growing; with high profitability, client can bundle with other products by lowering its price

**Top candidates to bundling include Product A, D, and E**

*The candidate should mention that this is preliminary screening; more data required for validation: product offerings, level of competition, key customers, distribution channels, etc.*



# Case Eleven: Read the table

*Question 3: Please read Exhibit 2 and based on your previous understanding, tell us what products are likely to get bundled.*

**Possible approach:**

**Key insights:**

1. Product C is quite niche, and due to low market attractiveness, client should avoid considering it
2. Client has high market share in Product B; plus, due to high switching costs, the customer is ready to pay a premium – no need to lower the price

***Based on Exhibit 2, the candidate should highlight that the previous recommendation is validated***

1. Product A is a clear target that can be leveraged by the client for bundling
2. When compared with Product A (All PC users):
  - Product E (PC Windows only) targets only retail segment; also, the customer is willing to pay a premium for high encrypted security
  - Product D (Tablet and mobile users) offers complimentary services, targets same customer segments, and has a relatively large market size (from Exhibit 1)

***The candidate should mention that based on the information provided, Products A and D are likely candidates for bundling; next step is to evaluate the impact on profitability***



# Case Eleven: Break-even analysis

Question 4: What is the impact of bundling Products A and D on the operating margin, given that number of customers will grow by 33% from Product A and double from Product D? (there is no change in % profitability)

Possible approach:

Before bundling

	Revenue (USD million)	Average price (USD)	Number of customers	Operating income (USD million)
Product A	$40\% * 150 = 60$	20	3 million	$50\% * 60 = 30$
Product D	$3\% * 100 = 3$	10	0.3 million	$3\% * 3 = 0.09$

Total OI  
USD 30.09m

After bundling

	Number of customers	Average price (USD)	Revenue (USD million)	Operating income (USD million)
Product A	$3 * 1.33 = 4$	15	60 million	$50\% * 60 = 30$
Product D	$0.3 * 2 = 0.6$	15	9 million	$3\% * 9 = 0.27$

Total OI  
USD 30.27m



# Case Eleven: Recommendation and Discussion

## Conclusion and next steps

### ***Conclusion:***

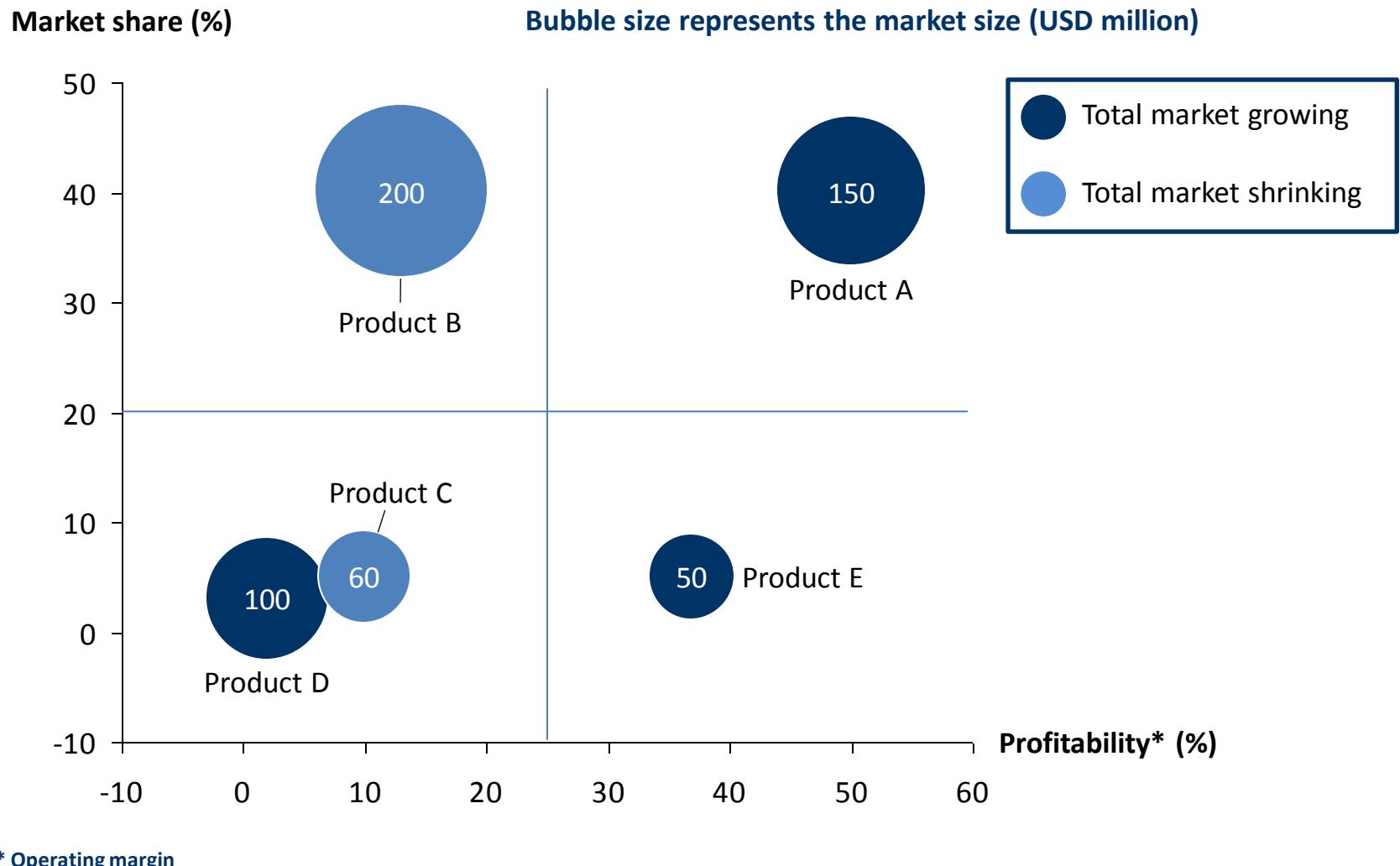
1. Although, there was a marginal increase in operating margin, the client was able to increase its customer base by 1.3 million (40% increase)
2. In a short-term, the client would achieve deeper penetration; in a long-term, there is a possibility to elevate price and boost overall profits

### ***Next steps:***

1. Being a highly competitive market, it would be important to assess the competitors' reaction
2. Evaluate the fixed costs (R&D, product development, packaging, etc.) for developing the bundled product
3. Develop a marketing strategy to promote the bundled offering



# Exhibit 1 – Product evaluation



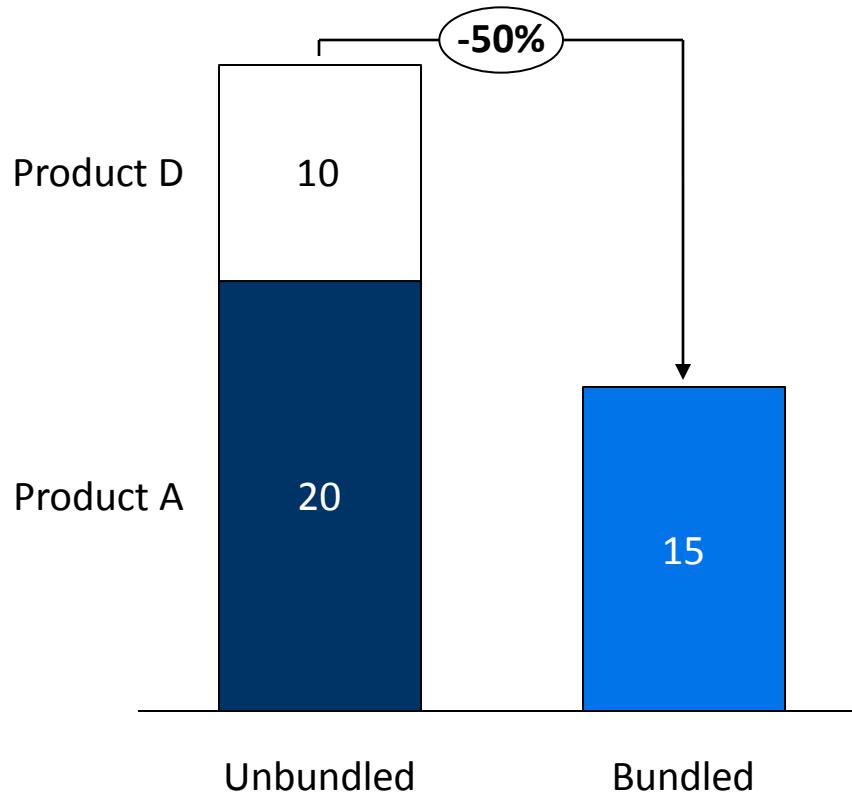
## Exhibit 2 – Product selection

	Product A	Product B	Product C	Product D	Product E
Overall market attractiveness					
Product characteristics	<ul style="list-style-type: none"> <li>- PC (Windows and MAC protection)</li> <li>- Automated antivirus and antispyware</li> </ul>	<ul style="list-style-type: none"> <li>- PC (Windows and MAC protection)</li> <li>- Automated antivirus and antispyware</li> <li>- Network security</li> </ul>	<ul style="list-style-type: none"> <li>- PC (Windows)</li> <li>- PC tune up: finds and fixes problems, and cleans and repairs registry</li> </ul>	<ul style="list-style-type: none"> <li>- Mobile and tablet protection</li> <li>- Automated antivirus and antispyware</li> </ul>	<ul style="list-style-type: none"> <li>- PC (Windows)</li> <li>- Cloud services</li> <li>- Online backup</li> <li>- Easy transfers between computers</li> </ul>
Competitive landscape	<ul style="list-style-type: none"> <li>- High competition</li> <li>- Computer manufacturers bundling with the price of PC</li> <li>- Customer is brand loyal</li> </ul>	<ul style="list-style-type: none"> <li>- Low competition, because of high infrastructure requirements and high customer switching costs</li> </ul>	<ul style="list-style-type: none"> <li>- High competition vs. computer manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>- High competition</li> <li>- Numerous providers are offering it for free: profitability is low</li> </ul>	<ul style="list-style-type: none"> <li>- High competition</li> <li>- Customer is sensitive to brand and level of encryption security: ready to pay a premium</li> </ul>
Key target customers	<ul style="list-style-type: none"> <li>- Retail</li> <li>- Education institutions</li> <li>- Small and home office</li> </ul>	<ul style="list-style-type: none"> <li>- Corporations and bigger offices</li> <li>- Big education institutions</li> <li>- Gaming</li> </ul>	<ul style="list-style-type: none"> <li>- Retail</li> </ul>	<ul style="list-style-type: none"> <li>- Retail</li> <li>- Education institutions</li> <li>- Small and home office</li> </ul>	<ul style="list-style-type: none"> <li>- Retail</li> </ul>



## Exhibit 3 – Break-even analysis

**Impact on price due to bundling**  
In USD



# Case Twelve: Warehouse automation

## A leading grocery chain planning to automate warehouse

Our client, a leading grocery chain in the US market, has plateaued its profitability in the past three years. The market is already saturated and prospects to growing the top line are limited. The client thinks that automating the warehouse operations would improve supply chain performance and unlock avenues to attain cost efficiencies.

Our team is hired to evaluate key drivers that could reduce expenses, improve distribution and enhance overall productivity

Facts	How to give the case
<p><b>Industry</b> Operations</p> <p><b>Warehouse automation</b> New competitors, overcapacity in the industry, multichannel growth and demanding customers create pressure on retailers to achieve greater operational efficiency and cost savings. Warehouse automation is an innovative way to achieve that.</p>	<p><b>Difficulty</b> Medium</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. Interviewee to drive the entire case throughout the case</li><li>2. It is a <b>quant-heavy case</b> structured around cost-benefit analysis</li><li>3. Help interviewees only when they are stuck</li><li>4. Be tough and sharp during interview</li></ol>



# Case Twelve: Potential buckets for framework

*The candidate should straight away develop a cost-benefit framework and highlight the key drivers in either buckets*

Benefit (B)	Costs (C)
<p><b>Reduction in overhead costs</b></p> <ul style="list-style-type: none"><li>• Reduction in labor</li><li>• Denser pellet cubes - efficient transportation and lower average shipping cost</li><li>• Flexible layout that could be reconfigured easily</li></ul> <p><b>Better space utilization to increase capacity</b></p> <ul style="list-style-type: none"><li>• Reduced inventory</li><li>• Increase in scale and improved fill rates</li></ul> <p><b>Increase in throughput</b></p> <ul style="list-style-type: none"><li>• Order to delivery cycle</li><li>• New customer models – ecommerce, etc.</li><li>• Reduce error and track productivity</li></ul>	<p><b>Fixed costs – large upfront costs</b></p> <ul style="list-style-type: none"><li>• New system implementation</li><li>• Large space requirements to install conveyor networks and cranes</li></ul>



# Case Twelve: Warehouse overview and options for automation

Then the candidate should probe the interviewer on the details of warehouse –

1. What is the warehouse used for?
2. What is the degree of automation?
3. What are the key processes/areas automation could impact the most?
4. How big is the warehouse? How many people are employed/contracted? What is the process of supply and distribution? Etc.

All these questions would help in estimating the cost savings

Key facts	Automation options
<p><b>Overview</b></p> <ul style="list-style-type: none"><li>• Client uses its warehouse primarily for packaging goods</li><li>• Key processes in the operations include – picking, checking, labeling and packaging of goods; highly labor intensive</li><li>• Uses trucks to transport the packaged goods to retail stores</li></ul> <p><b>Key objectives</b></p> <ul style="list-style-type: none"><li>• Reduce labor cost</li><li>• Enhance capacity utilization</li><li>• Improve order to delivery cycle</li></ul>	<p><b>Semi-automated retrieval system</b></p> <ul style="list-style-type: none"><li>• Increase picking productivity</li><li>• Track order progress and reduce errors</li><li>• Keep labor intensive processes in place</li></ul> <p><b>Full automated storage and retrieval system</b></p> <ul style="list-style-type: none"><li>• Includes all of the above</li><li>• Highly mechanized</li><li>• Denser pallet cubes with machines moving the load to storage area, determining a suitable location and storing the load</li></ul> <p><i>The interviewer should ask the candidate to list down the pros and cons for each</i></p>

NOTE: Information to be shared only when the candidate asks for



# Case Twelve Q1 – Math (1 of 3)

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*Interviewer should show the Exhibits 1 and 2, and ask the candidate to recommend a possible automation option for the client*

*Benefits could be structured in 3 broad buckets: Labor and storage, error reduction, delivery and customer acquisition*

## Current scenario

### Labor and storage

#### *Labor*

Number of laborers employed/contracted = 50

Average remuneration = USD 10,000

#### *Storage*

Number of cases turned around =  $10 \text{ hours} * 3,600 \text{ sec} / 60 \text{ sec/case} = 600 \text{ cases/day} = 150,000 \text{ cases/year}$   
(assuming 250 working days in a year)

Average land area utilized at any point in year =  $75\% * 40,000 = 30,000 \text{ sqft}$

Average land area used by one case =  $30,000 / 150,000 = 0.2 \text{ sqft}$

**It is important to note that the number of cases will increase from picking productivity, only; overall storage will also be a constraint as only 25% land area is unused**

### Errors

Number of cases with errors =  $10\% * 150,000 = 15,000$

Cost due to errors =  $\text{USD } 2 * 15,000 = \text{USD } 30,000$

### Delivery and customer acquisition

Number of trips trucks make =  $10 \text{ trucks} * (18 \text{ hours} / 6 \text{ hours}) = 30 \text{ trips/day} = 7,500 \text{ trips/year}$

Average truck load = 20 cases/truck



# Case Twelve Q1 – Math (2 of 3)

	Full-automation	Semi-automation
<b>Increase in # of cases</b>		
Picking productivity	10 hours * 3,600 sec / 40 sec/case = <b>900 cases/day</b> = <b>225,000 cases/year</b>	10 hours * 3,600 sec / 50 sec/case = <b>720 cases/day</b> = <b>180,000 cases/year</b>
Storage efficiency – land area under use	225,000 * 0.2 * 0.8 [20% efficiency] = <b>36,000 sqft ~ 90% utilization</b>	180,000 * 0.2 * 0.9 [10% efficiency] = <b>32,400 sqft ~ 81% utilization</b>
Either method could be used for automation, as average utilization is less than 40,000 sq ft		
<b>Error reduction</b>		
New error cost	225,000 * 10% * USD 2 = <b>USD 45,000</b>	180,000 * 10% * USD 2 = <b>USD 36,000</b>
Savings in errors	80% * 45,000 = <b>USD 36,000</b>	50% * 36,000 = <b>USD 18,000</b>
<b>Trucking and delivery</b>		
Due to denser pallet, more cases can be stored in a truck		
Average cases / truck	20 * 1.2 [20% storage efficiency] = <b>24 cases / truck</b>	20 * 1.1 [20% storage efficiency] = <b>22 cases / truck</b>
Required cases / truck	<b>225,000 / 7,500 trips/year = 30</b>	<b>180,000 / 7500 trips/year = 24</b>
# of more required	<b>(225,000/24) trips / (250 days) * (6-1)/18 = (180,000/22) trips / (250 days) * (6-1)/18 = 12.5 trucks ~ 13 trucks</b>	<b>9.1 trucks ~ 10 trucks</b>



# Case Twelve Q1 – Math (3 of 3)

	Full-automation	Semi-automation
<b>Benefits (B)</b>		
Increase in cases	$225,000 - 150,000 = \mathbf{75,000}$	$180,000 - 150,000 = \mathbf{30,000}$
Increase in revenues	$75,000 * \text{USD } 100 = \mathbf{\text{USD } 750,000}$	$30,000 * \text{USD } 100 = \mathbf{\text{USD } 300,000}$
Reduction in labor costs	$\text{USD } 0.4 * 225,000 = \mathbf{\text{USD } 90,000}$	<b>NIL</b>
Savings in errors	<b>USD 36,000</b>	<b>USD 18,000</b>
<b>Total benefit</b>	<b>USD 876,000</b>	<b>USD 318,000</b>
<b>Increase in costs (C)</b>		
Upfront cost	<b>USD 1,850,000</b>	<b>USD 600,000</b>
Cost of trucks	$3 * 50,000 = \mathbf{\text{USD } 150,000}$	<b>NIL</b>
<b>Total increase in costs</b>	<b>USD 2,000,000</b>	<b>USD 600,000</b>
Assuming 50% variable costs over revenues		
<b>Expected break-even</b>	$2,000,000 / (0.5 * 876,000) = 4.6 \text{ yrs} \sim < 5 \text{ yrs}$	$600,000 / (0.5 * 318,000) = 3.8 \text{ yrs} < 4 \text{ yrs}$

**Fully automated system leads to 3x annual savings vs. semi-automation system, at the cost of 3x more upfront costs and additional 1yr to break-even**



# Exhibit 1: Savings and associated costs of automation

	Full-automation	Semi-automation
<b>Benefits (B)</b>		
Labor cost	40 cents per case	NIL
Picking productivity	20 sec per case	10 sec per case
Storage efficiency	20% increase	10% increase
Error reduction	80%	50%
Improvement in loading, delivery and return	1/6 hours	1/6 hours
<b>Costs (C)</b>		
New IT systems	USD 100,000	USD 50,000
Machinery & infrastructure	USD 1,750,000	USD 750,000



## Exhibit 2: Assumptions for case

### Key assumptions

1. Total land area of the warehouse = 40,000 sq ft
2. Number of working hours = 10 per day for 250 working days in a calendar year
3. Average time to pick, load, find and store a case = 60 seconds
4. Average land area utilization at any time in year = 75%
5. Number of laborers employed / contracted = 50
6. Average labor remuneration = USD 10,000 per year
7. Error percentage = 10% per case
8. Average cost of errors = USD 2 per case
9. Number of trucks = 10
10. Average time of delivery and return = 6 hours
11. Operating hours of delivery = 18 hours
12. Average revenue per customer = USD 100 per case
13. Variable costs = 50% of revenue



# Recommendation and Discussion

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## Recommendation and discussion

### ***Recommendation***

***We would recommend the client to go ahead with the fully automated system. Although, in a short-run, the risks are greater due to higher upfront costs, over a long-term, terminal benefits are much bigger when compared with the ones from the semi-automated system.***

***Other benefits include superior customer acquisition, reduction in overhead costs and overall better utilization of land area***

### ***Discussion:***

1. Evaluate the time required to implement the system and assess the opportunity cost
2. Identify vendors for system installation
3. Work with the HR teams to draft a plan for organization restructuring – if it is a union, identify clear strategies to prevent possible delays and destruction



# Case Thirteen: Mining in India

## An Australian mining company to set up an extraction site in India

A major Australian mining company, is planning to set up an extraction site for iron ore in India.

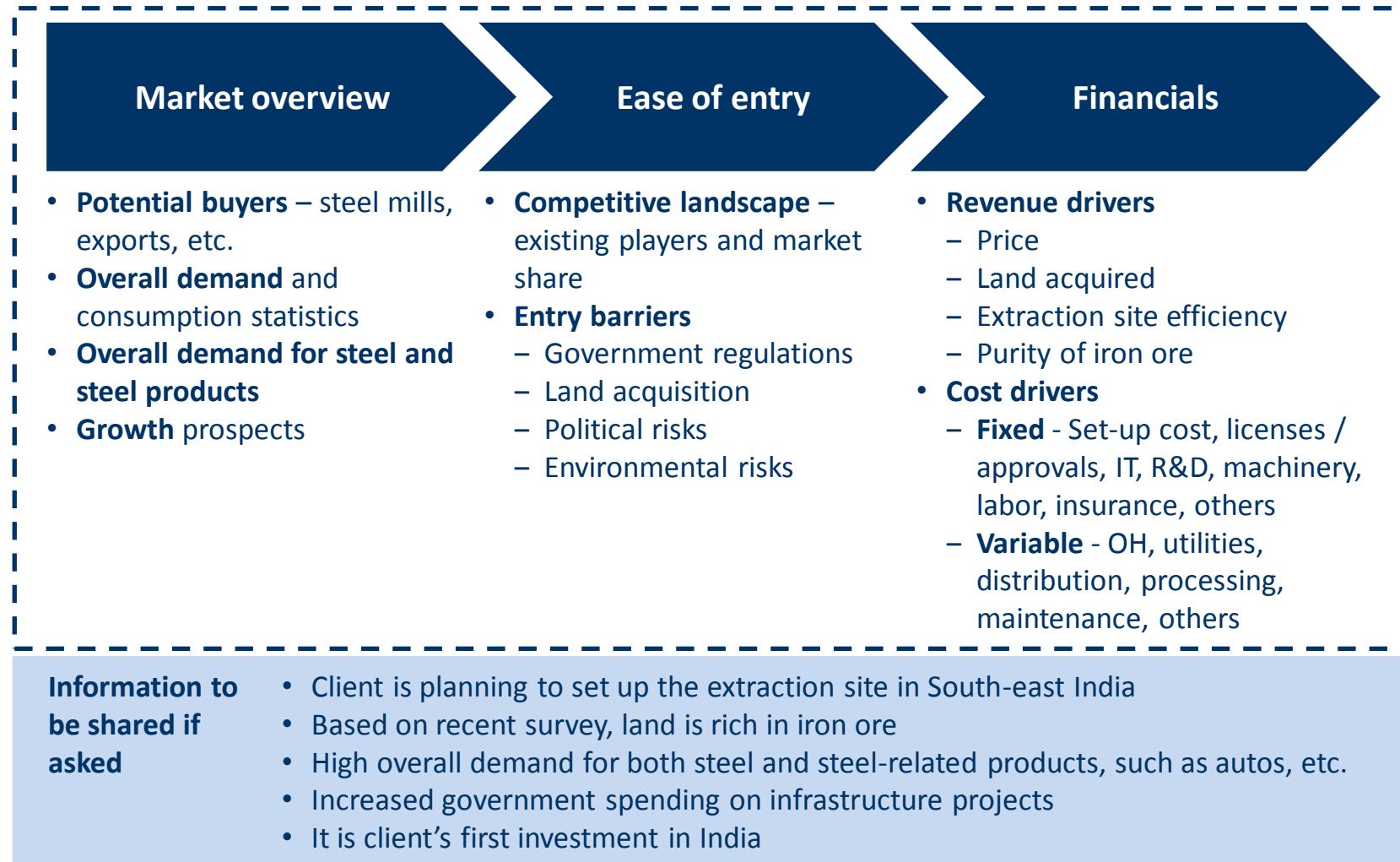
The company has hired us to evaluate the key factors that require consideration and recommend a market-entry strategy.

Facts	How to give the case
<p><b>Industry</b> Mining</p> <p><b>Mining in India</b> Mining in India has been a major economic activity contributing significantly to India's GDP. Some of the key issues include political risks, lack of assessment of India's natural resources, un-skilled talent pool and corruption.</p>	<p><b>Difficulty</b> Medium</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. The candidate must drive the case</li><li>2. Being a market-entry case, the candidate should straight away deep-dive into the market-entry framework and highlight key areas of considering with regard to mining</li><li>3. Focus on structure and ensure that candidate covers most of the levers that drive the case</li><li>4. Time limit 20-25 minutes</li></ol>



# Case Thirteen: Potential buckets for framework

The candidate should hit these major buckets and highlight the key drivers in either buckets



# Case Thirteen Q2: Math-test

The client is seeking a potential land area of 5,000 acres with a market price cost of USD 40 million. With the help of government, the client can acquire 40% of total land, but at the same price – after overcoming the associated risks. The land has a potential of generating 40,000 tons of bauxite per year. Client wants to know if they could break-even in 5 years

*Key assumptions (to be provided when probed)*

It will take one year for set-up

Current average price of bauxite = USD 300 per ton (with 10% increase pa)

Other fixed costs = USD 5 million

Variable cost = USD 55 per ton

WACC = 10%

*Use OI for NPV calculation*

USD million	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
<b>Revenues</b>	-	12.0	12.0	12.0	12.0	12.0
<b>Variable cost</b>	-	2.2	2.2	2.2	2.2	2.2
<b>Operating profit</b>	-	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>
<b>Operating profit (calculation)</b>	-	<b>4.8 * (1.1)</b>	<b>4.8 * (1.1)<sup>2</sup></b>	<b>4.8 * (1.1)<sup>3</sup></b>	<b>4.8 * (1.1)<sup>4</sup></b>	<b>4.8 * (1.1)<sup>5</sup></b>
<b>Present value at year of sale</b>	-	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>

**NPV = 40 / 1.1 = USD 36.36 million => With FC of USD 24 million, break-even doesn't happen in 5 years**



# Recommendation and Discussion

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## Recommendation and discussion

### ***Recommendation***

We would recommend the client for a no-go, primarily because of 3 reasons:

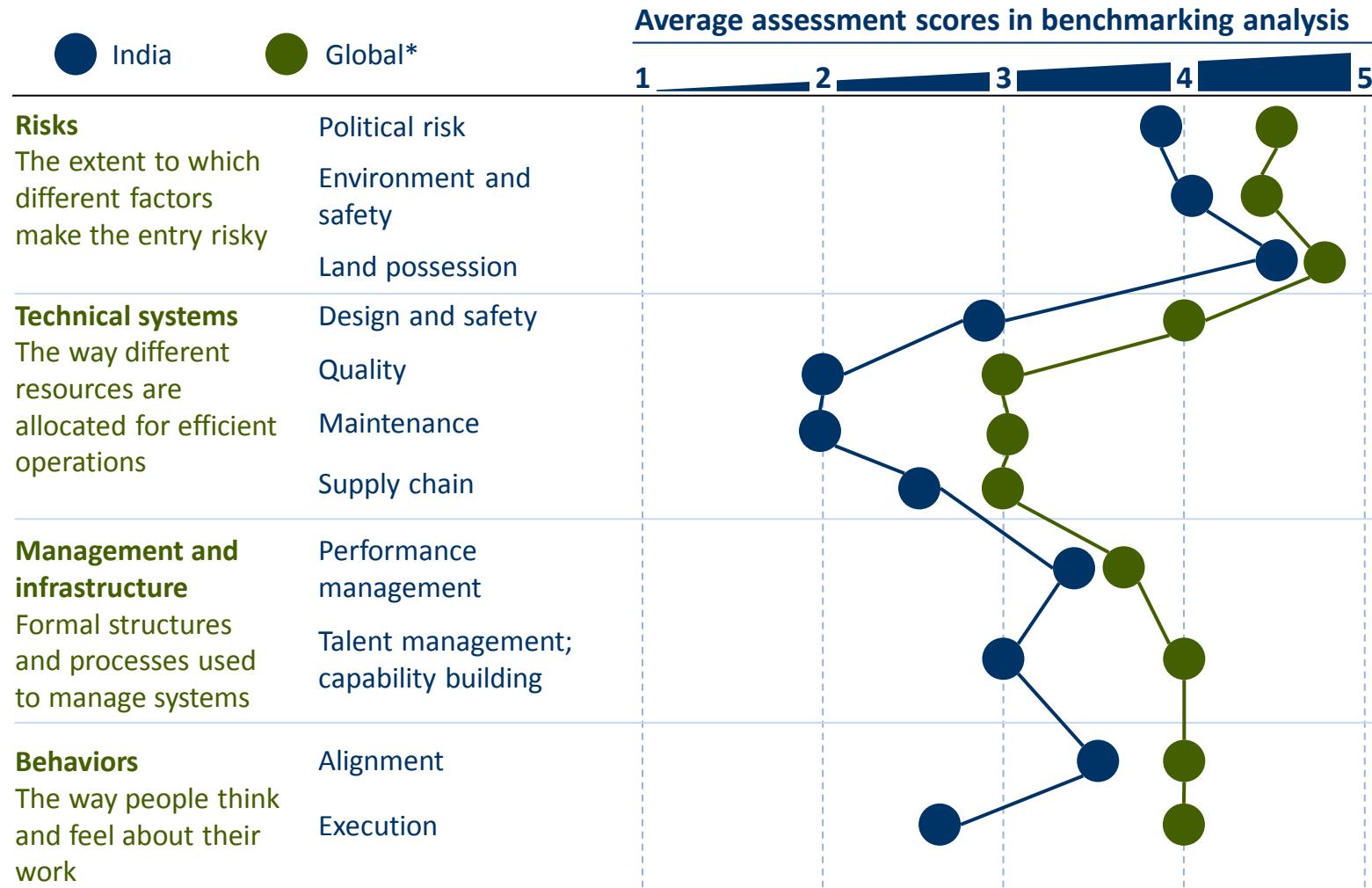
1. Significant upfront cost and break-even longer than target of 5 yrs
2. Considerable political risk and highly unsustainable operating environment
3. Lack of experience in operating in India

### ***Discussion:***

1. Considering the high potential, the client should definitely seek government support
2. Run a local survey and analyze local population behavior towards land acquisition
3. Seek investment opportunities in other countries



# Exhibit 1: Market evaluation (inspired by McKinsey)



\* Average scores of 50 leading countries of iron ore production



# Case Fourteen: Hoteling in India

## A US hotel chain to expand operations in India

Our client, a leading US hotel chain, is experiencing slow growth in its key markets, viz., US, Europe and Japan, despite its strong brand name and quality services.

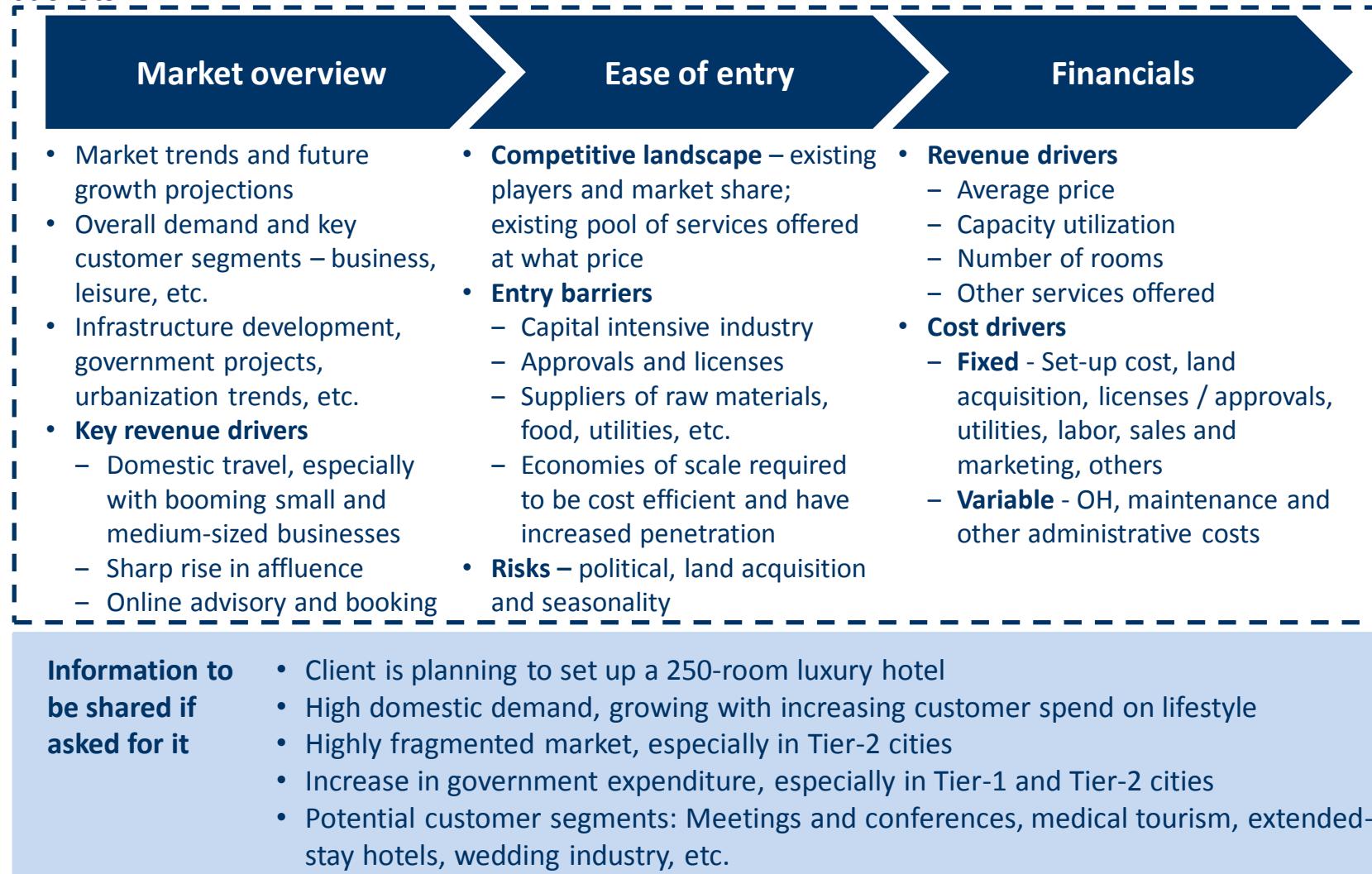
In order to expand the operations, our client has hired us to draft a market-entry strategy for India.

Facts	How to give the case
<p><b>Industry</b> Hospitality</p> <p><b>Hospitality industry in India</b> Hoteling in India is growing at unprecedented rates, primarily driven by domestic demand, thriving economy, and proliferation of small and medium-sized businesses.</p>	<p><b>Difficulty</b> Medium - Hard</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. Interviewee to drive the entire case throughout the case</li><li>2. Help interviewees only when they are stuck</li><li>3. Be tough and sharp during interview</li></ol>



# Case Fourteen: Potential buckets for framework

The candidate should develop a market-entry framework and highlight the key drivers in either buckets



# Case Fourteen Q1: Exhibit 1

Based on the Exhibit1, share your key findings and propose a go-to market strategy

Tier - 1	Tier - 2	Tier - 3
<p><b>Key insights</b></p> <ul style="list-style-type: none"><li>▪ High growth market</li><li>▪ Competitive market in the brand and luxury segment</li><li>▪ Significant growth opportunities, in both domestic and international</li></ul>	<p><b>Key insights</b></p> <ul style="list-style-type: none"><li>▪ Declining number of luxury hotels; high competition from budget hotels, local operators and small chains</li><li>▪ 20% growth in domestic travel; overall market size is high</li></ul>	<p><b>Key insights</b></p> <ul style="list-style-type: none"><li>▪ Difficult-to-target market segment with small market size and concentration of small inns</li></ul>
<b>Possible market strategies</b>		
<p><b>Key-city leadership</b></p> <ul style="list-style-type: none"><li>▪ Target the top cities and leverage the brand name to win both domestic and international business travelers</li><li>▪ Offer a full portfolio of services, from luxury to budget</li></ul>	<p><b>Broad-segment leadership</b></p> <ul style="list-style-type: none"><li>▪ Develop economies of scale outside the major cities</li><li>▪ Client, with its international brand, can capitalize on the inconsistent capabilities of small players and seek first-mover advantage in the mainstream or budget segment</li></ul>	<p><b>Selective-leadership</b></p> <ul style="list-style-type: none"><li>▪ Target the high growth Tier-3 cities, which have a presence of international brands; evaluate their performance and seek areas for first-mover advantage</li></ul>
<p><i>In order to make the recommendation, the candidate should ask for more quantitative data, such as expected market share, price points, capacity utilization, etc., and possible cost drivers</i></p>		



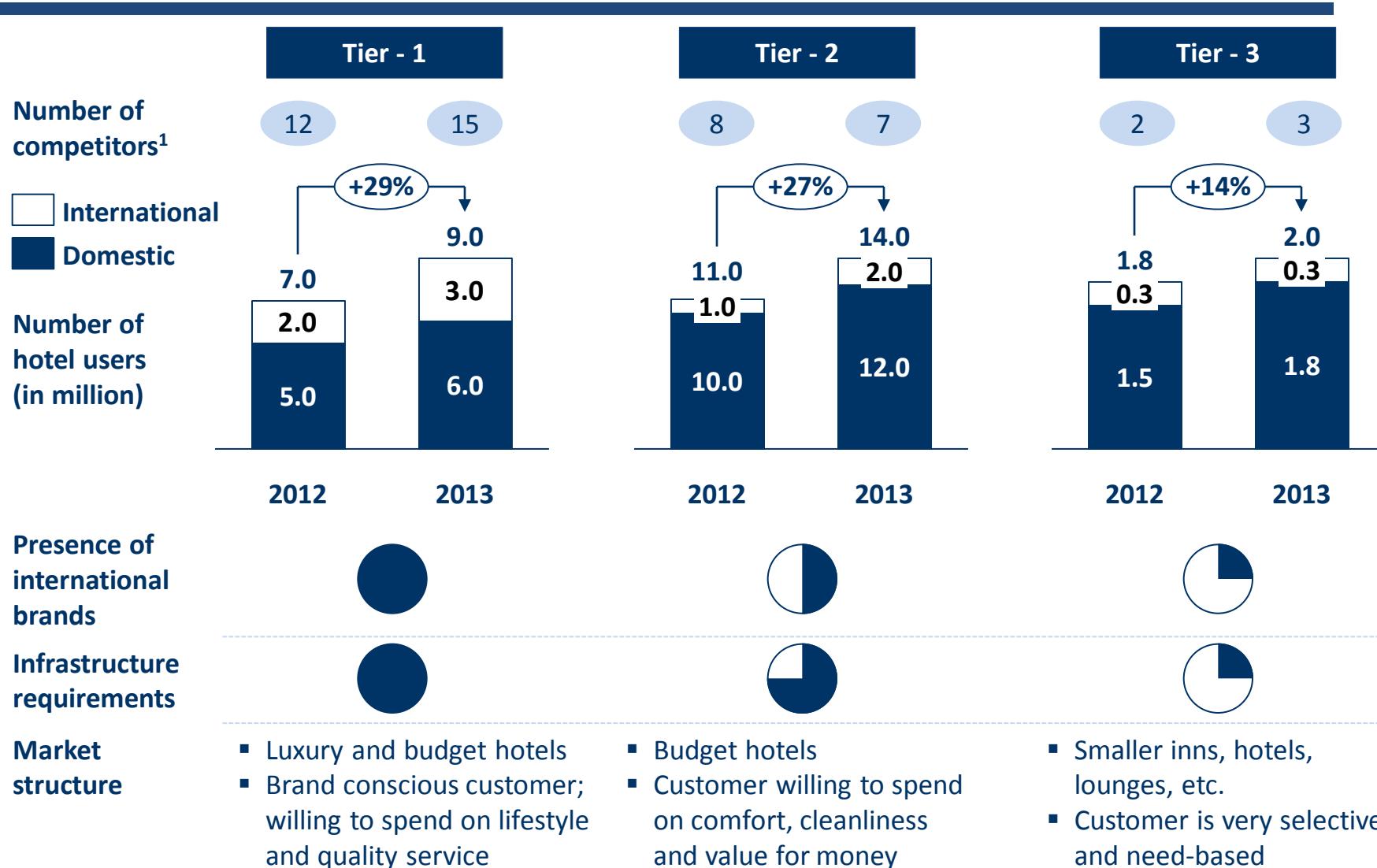
## Case Fourteen Q2: Exhibit 2

*Based on the Exhibit 2, what are the initial infrastructure requirements and possible break-even*

	Tier 1	Tier 2	Tier 3
Market share	2%	3%	10%
Market size (million)	9.0	14.0	2.0
Expected customers	$2\% * 9m = 180,000$	$3\% * 14m = 420,000$	$10\% * 2m = 200,000$
Average stay (number of days)	4	3	2
Total stay days	$180k * 4 = 720,000$	$420k * 3 = 1,260,000$	$200k * 2 = 400,000$
Total stay days after adjustment of capacity utilization	$720k / 50\% = 1,440k$	$1,260/60\% = 2,100k$	$400k/40\% = 1,000k$
Number of hotels required (assuming 400 calendar days)	$1,440k / (250*400) = 14.4$	$2,100k / (150*400) = 35$	$1,000k / (50*400) = 50$
Expected investment	$14.4 * 50 = 720m$	$35 * 25 = 875m$	$50 * 5 = 250m$
Expected revenue	$720k * 200 = 144m$	$1,260k * 100 = 126m$	$400k * 75 = 30m$
Operating margin	$50\% * 144 = 72m$	$60\% * 126 = 75.6m$	$70\% * 30 = 21m$
Break-even	$720/72 = 10 \text{ yrs}$	$875/75.6 = \sim 12 \text{ yrs}$	$250/21 = \sim 12 \text{ yrs}$



# Exhibit 1: Hoteling industry in India (inspired by BCG)



<sup>1</sup> Average 150-room hotels with an average daily rate of USD 150, initial occupancy of 40 percent, and food-beverage revenues of 25%



## Exhibit 2: Quantitative data

	Tier - 1	Tier - 2	Tier - 3
<b>Target market share (Yr 1)</b>	2%	3%	10%
<b>Average capacity utilization</b>	50%	60%	40%
<b>Average hotel size</b>	250 beds	150 beds	50 beds
<b>Average stay</b>	4 days	3 days	2 days
<b>Average price</b>	USD 200	USD 100	USD 75
<b>Cost of building one hotel</b>	USD 50 million	USD 25 million	USD 5 million
<b>Variable cost</b>	50%	40%	30%



# Recommendation and Discussion

## Recommendation and discussion

### *Recommendation*

***The client should target selected Tier-1 cities and establish key-city leadership by leveraging existing brand and quality service to satisfy market-specific needs. Once attained, the client can seek Tier-2 cities to develop economies of scale and establish broad-segment leadership.***

### *Discussion:*

1. **Build brand and customer loyalty** - Strong marketing and PR campaign to drive awareness and positioning the portfolio; increased revenues from customer retention and loyalty programs
2. **Slice the demographic variability** - Due to the varied demographics, run a customer survey to identify market-specific needs
3. **Competitor response** - Evaluate competitor landscape and project market share going forward
4. **Local partnerships** - Seek assistance from local developers and owners to further evaluate source of business opportunities
5. **Cost-containment** – Assess possibilities of outsourcing staff, hiring vendors on contracts, etc.



# Case Fifteen: Electric-car battery manufacturer

## An electric-car battery manufacturer facing declining margins

Our client, an American electric-car battery manufacturer, produces cell components and configures them into larger modules. These modules are sold to car manufacturers, which integrate these modules into the vehicle structure. Client was the only player in the US market, before it started facing competition from a Chinese low-cost manufacturer. Both its market share and margins are depleting since then.

The client has hired us to deep-dive into the key drivers lowering profitability and recommend steps to regain market position.

Facts	How to give the case
<p><b>Industry</b> Energy and environment</p> <p><b>Electric-car battery technology</b> The value chain of electric-car battery consists of five major steps: component production, cell production, module production, module assembly, and integration of the battery in electric car.</p>	<p><b>Difficulty</b> Medium - Hard</p> <p><b>Hints on giving the case</b></p> <ol style="list-style-type: none"><li>1. Interviewee to drive the entire case throughout the case</li><li>2. Help interviewees only when they are stuck</li><li>3. Be tough and sharp during interview</li></ol>



# Case Fifteen: Potential buckets for framework

The candidate should create a profitability framework and highlight the key drivers in both buckets

## Revenue drivers

- **Loss in customers**
  - Existing **product mix** not satisfying customer needs
  - Overall **customer perceptions** are changing
  - **Industry wide problem** and declining sales of electric cars
  - **Supply chain issues:** products not reaching the customers on time
- **Fall in price**
  - Significant **reduction in price** to match competition

## Cost drivers

- **Cost drivers**
  - **Fixed:** Utilities, labor, sales and marketing, fabrication and research, and others
  - **Variable:** Cost of material, distribution, OH, maintenance and other administrative costs

*The candidate should focus that as next steps, he would like to have more information around the product offerings, customer segments and revenue split, and the profitability across different products*

Information to  
be shared by  
interviewer  
if requested

### Market information

- Due to the increasing fuel cost, market is growing for electric cars
- Asian companies with low cost structures entering the market
- Government is promoting foreign investment through subsidies and tax rebates
- Customer is focused on safety, quality, life span and performance of electric cells

### Client information

- US based company operating for over a decade
- High quality provider and strong emphasis on research and development
- Electrolyte is a key cell component and the only 2 suppliers in the market considerably raised the prices in US
- Manufactures lithium-cobalt oxide (LCO) cells



# Case Fifteen Q1: Exhibits 1 and 2

*After being asked for more information, the interviewer should provide the Exhibit 1 to the candidate, ask for key insights and develop a hypothesis*

## **Key insights:**

1. Declining revenues, -10% in 2011 and 2012
2. Reducing gross margins due to increasing COGS of electrolyte from the limited suppliers
3. Operating expenses are falling, in absolute terms (*the candidate might highlight that the operating expenses are increasing. Yes they are – in percent, but not in absolute terms*)
4. Cash is burning faster than the overall profitability – a clear indication of inefficient operations
5. Chinese manufacturer has captured over 30% MS in 2 years; also, high gross margins, possibly due to low cost of production

*Once the candidate highlights the key issues with declining profitability, show the Exhibit 2 to allow a deep-dive into the product mix*

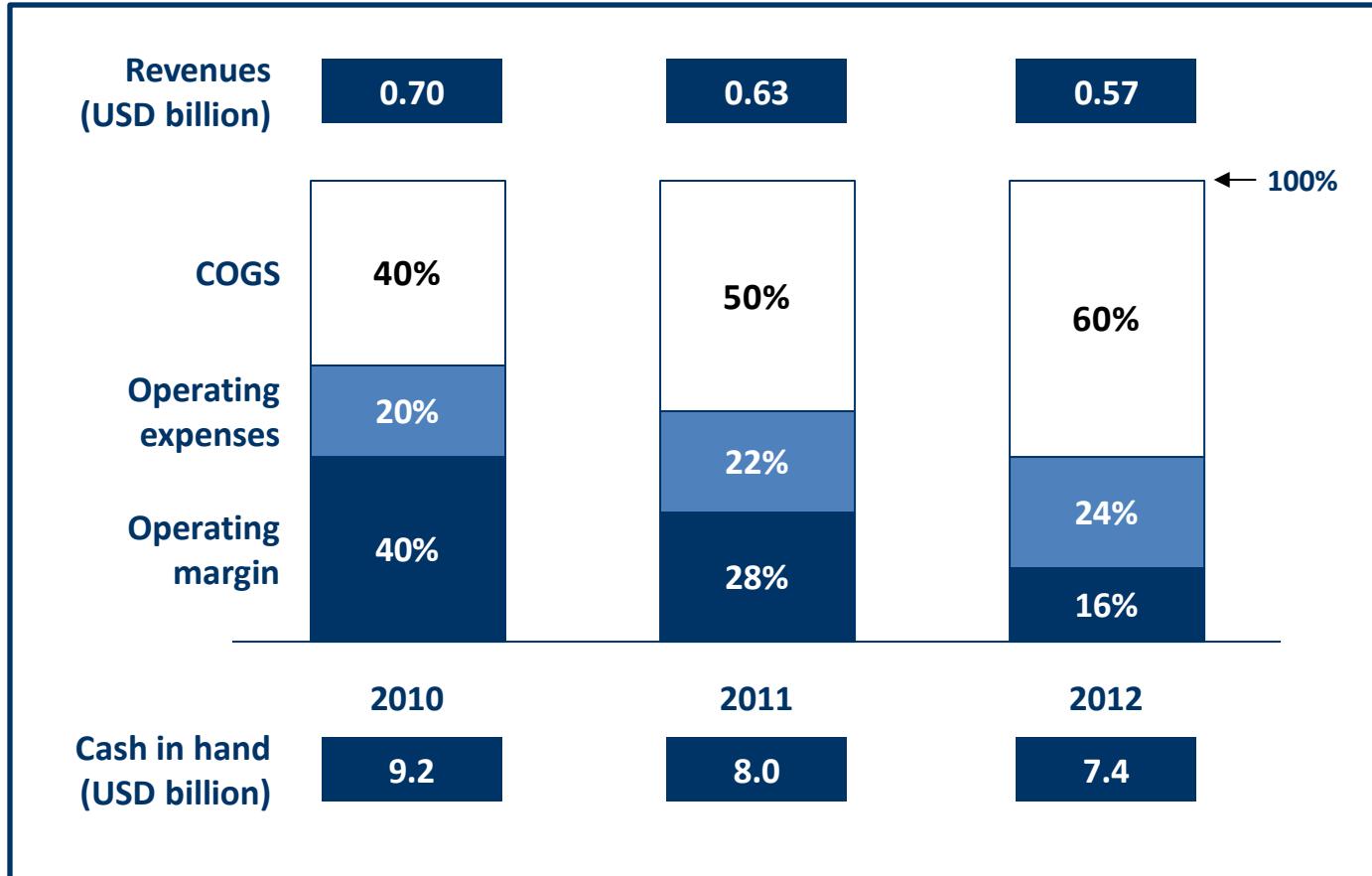
1. Client has been manufacturing LCO, which is inferior in terms of safety – a critical factor governing customer preferences
2. Being a monopolist, the client possibly charged a high price; also, due to lack of safety, the cells were used in conjunction with rigorous safety systems, which pushed the costs further up
3. Products offered by the competitor, viz., NMC and LTO, are superior in terms of safety and cost, but lags across other parameters of LCO

*In a nutshell, the client is facing multiple problems – lack of product acceptance, high COGS and rising cash burn rate*



# Exhibit 1 – Financials

Client



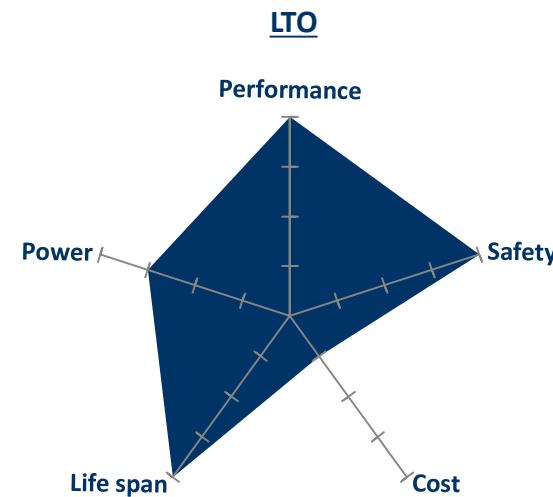
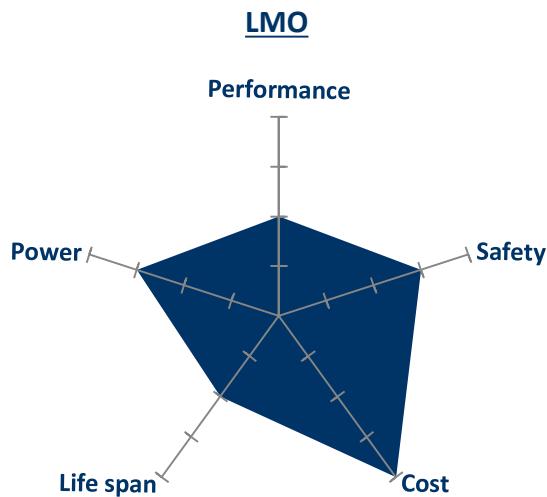
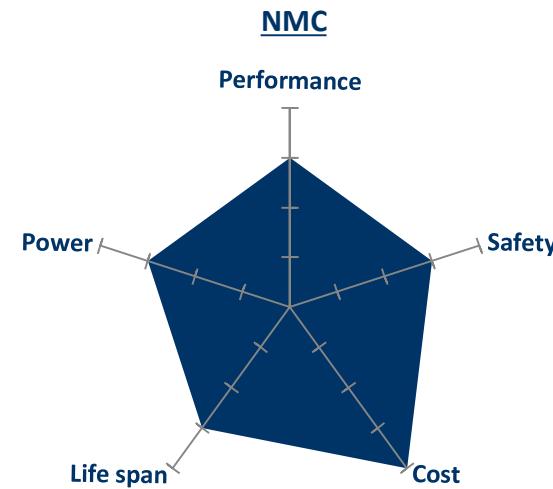
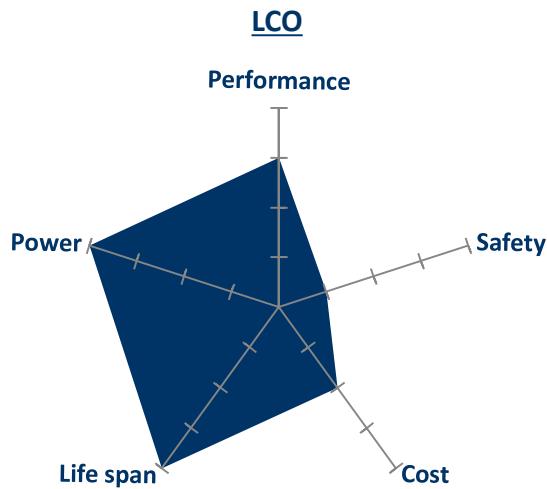
Chinese competitor

## 2012 performance

- Revenues of USD 250 million (25% CAGR from 2010-2012)
- Average gross margin of 65%; local manufacturing
- Product offerings:
  - Lithium nickel manganese cobalt (NMC) and lithium titanate (LTO), which are new technologies in automotive applications
- Established strong ties with local suppliers and distributors



## Exhibit 2: Benchmarking of different electric-car batteries



LCO: Lithium cobalt; NMC: Lithium nickel manganese cobalt; LMO: Lithium manganese spinel; LTO: Lithium titanate

NOTE: The farther the colored shape extends along a given axis, the better the performance along that dimension



# Recommendations

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## Recommendations

*Possible recommendations (not exhaustive)*

*The client must straight away do the following:*

- 1. Work with the R&D team to make improvements in existing product; else, develop a new technology on the lines of other product offerings*
- 2. Identify new suppliers for electrolyte or sign definite volume contracts to negotiate a better price*
- 3. With significant cash-in-hand, evaluate opportunities to vertically integrate or to establish synergies inorganically*
- 4. Introduce cost-cutting measures to further reduce the operating expenses, e.g., outsourcing production, contract labor, cut bonuses, etc.*
- 5. Seek partnerships with other Chinese manufacturers planning to enter into US*



# Case Sixteen: Blood testing equipment profit stagnation

(1<sup>st</sup> round BCG)

## Prompt

Our client has been selling medical equipment for blood tests for the past five years. They manufacture and sell two types of products; a blood test machine as well as the test tubes used to hold blood in the device. These tubes can only be used once and are disposed of after use. The machine and the tubes are sold directly to three types of customers, (1) major medical institutions like hospitals, (2) mid-sized clinics, and (3) small, specialized medical offices. In the past two years our client has seen that profits hit a plateau while the number of machines and tubes sold has been growing 2-3%. The client wants to know why their profits are decreasing.

## Facts (only provide when asked)

- Test tubes are sold in 250-bundle crates
  - Crate costs \$150 to manufacturer, retails for \$250
- Blood test machine
  - Manufacturing cost: \$14,000
  - Average sales price: \$20,000
  - Works for 10 years before needing a replacement
- Sales for blood test machine
  - Customers
    - Large: \$2.4 million
    - Medium: \$300,000
    - Small: \$200,000
  - Profits
    - Large: \$750,000
    - Medium: \$20,000
    - Small: \$60,000

Sales force is incentivized by # of sales, not revenues, so selling one medical device is roughly equal to selling one order of test tubes. Turns out the medium-sized clients are most reluctant to purchase the equipment so the sales force is giving them deep reductions on the equipment (below cost) to get them to purchase it.

## How to give the case

**Difficulty:** Easy

**Hints on giving the case**

1. Read the prompt in the beginning
2. Interviewee to drive the entire case
3. Help interviewees only when they are stuck
4. Proceed when interviewee can justify his/her assumptions
5. Challenge interviewee when assumptions are deemed unrealistic
6. Limit the case to 20 – 25 minutes
7. Be tough and sharp during interview



# Case Sixteen: Blood testing equipment profit stagnation

1 Profits = Revenues - Costs

## Revenue by customer

Large customer revenues  
Medium customer revenues  
Small customer revenues

## Costs by customer

Large customer costs  
Medium customer costs  
Small customer costs

2 Interviewee should recognize that on a per-customer basis, medium sized customers are least profitable but have more volume than small sized



Interviewee should probe into why this is happening; disclose incentive in facts



Ask interviewee to lead an ideation session about how to change the sales force's behavior; push interviewee on rationale behind suggestions



# Case Sixteen: Blood testing equipment profit stagnation

## Conclusion and key learning

### **Conclusion:**

*The ah-ha moment is that the sales force is giving deep discounts to their mid-sized customers to get them to purchase test tubes later on, so suggestions should include ways to incentivize sales people to focus on firm-wide revenues*

*Ideation and creativity are highly encouraged during this case when the interviewee is coming up with ways to change workforce*

### **Discussion:**

1. This case requires basic framework on revenue, cost, profit, customer segmentation, and sales force incentives
2. More sophisticated revenue or cost structures are ok, but monitor the time spent
3. Ok to round up/down numbers



# Case Seventeen: Bus company with shrinking profit margins

(1<sup>st</sup> round BCG)

## Prompt

Our client is a transportation company that operates buses in major metropolitan areas throughout the U.S. Their profit margins decreased from 15% to 10% over the past five years. They have come to us to figure out why their profit margins are shrinking and to get a few recommendations about how they can bring profits back up to 15% in the next two years.

*This case is a two part case where the caser must calculate how much the company should lower their costs, and then come up with ideas on how to reduce those costs primarily through gas reduction initiatives.*

## Facts

- The client operates school buses so they cannot cut routes or buses to save on fuel or time. They must pick up and drop off the kids at the same time each day.
- Revenues have stayed the same the past 5 years, only the profit margins have changed
  - Revenues have been \$1.5 million
  - *Have the caser calculate the profits based on the numbers given at the beginning of the case. The client needs \$225,000 in profits, which means they need to cut costs by \$75,000*
- Gas prices have increased from \$100,000 to \$150,000 in the past five years
- Wages of drivers have increased from \$500,000 to \$525,000
- Wages cannot be negotiated since they are unionized
- We can assume all other costs are fixed and will not increase in next five years
- Gas efficiency
  - Drivers idle to keep the A/C on since we are in Arizona
  - Buses must leave depot by 6:30AM regardless of first pickup time

## How to give the case

**Difficulty:** Medium

### Hints on giving the case

1. Read the prompt
2. After the framework, read the italicized text to the left
3. Interviewee to drive the rest of the case
4. Help interviewees only when they are stuck
5. Proceed when interviewee can justify his/her assumptions
6. Challenge interviewee when assumptions are deemed unrealistic
7. Limit the case to 20 – 25 minutes



# Case Seventeen: Blood testing equipment profit stagnation

1 Profits = Revenues - Costs

Revenues

Costs

*Interviewee should realize that costs have gone up and cost-cutting needs to happen*

2

*Interviewee should eventually hit on fuel efficiency*



*Ask interviewee to think about ways to reduce fuel costs*



*Have interviewee present their ideas to the CEO of the bus company*



# Case Seventeen: Bus company with shrinking profit margins

## Conclusion and key learning

### ***Conclusion:***

***Interviewee should identify that costs have increased but that fuel efficiency is the only way to cut costs for the firm***

***Ideation and creativity are highly encouraged during this case when the interviewee is coming up with ways to cut fuel efficiency***

### ***Discussion:***

1. This case requires basic framework on revenue, cost, profit, customer segmentation, and ideation
2. More sophisticated revenue or cost structures are ok, but monitor the time spent
3. Ok to round up/down numbers



# Case Eighteen: Unhappy diabetic customers

## (1<sup>st</sup> round Innosight)

### Prompt

Our client is a decentralized healthcare company that has four areas of expertise: over-the-counter drugs, devices, beauty, and medication. We are working with them in the diabetes space where they are the top seller of a glucose meter. They make and sell the meter, the strips that are used to measure the glucose level, and an insulin pump to regulate insulin levels. In the last few years sales and revenues have started to taper. We are only focusing on the diabetes portion of their business. They have come to Innosight and want to know why their sales have plateaued and what they can do about it.

### Facts

- Most of their customers are teenagers in high school
- Teenagers don't like the current process of pricking their finger and inserting it into the machine, they find it embarrassing and invasive
- Their main competitor's product is not as good but is much less invasive and is gaining traction in the space

### How to give the case

**Difficulty:** Medium

**Hints on giving the case**

1. Read the prompt
2. Interviewee to drive the case
3. When they hit on user experience, switch to ideation session
4. Proceed when interviewee can justify his/her assumptions
5. Challenge interviewee when assumptions are deemed unrealistic
6. Limit the case to 20 – 25 minutes



# Case Eighteen: Unhappy diabetic customers

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- 1 List of reasons why sales would stagnate, e.g.:

**Demographics**

**Price**

**User experience**

**Substitutes**

*Interviewee should hit upon the fact that consumers don't like the experience of the product*

- 2

*Interviewee should start to think about ways to make the user experience better*



*A candidate will stand out based on quality of ideas, rationale behind them, and bonus points for considering implementation for the client*



# Case Eighteen: Unhappy diabetic customers

## Conclusion and key learning

### **Conclusion:**

***Consumer experience is key for Innosight and interviewee should know that entering the case***

### **Discussion:**

1. This case focuses on ideation, creativity, rationale, and ability to empathize with consumers
2. More sophisticated revenue or cost structures are ok, but monitor the time spent
3. Ok to round up/down numbers



# Case Nineteen: Furniture shop

## Retail

Your client is a furniture shop operator. It has both control stores and license stores. Control stores means the client actually owns and operates the store; while license stores means that client will license the brand name out to licensees. License stores are typically located at less populous cities.

The client is facing some issues with its profit margin and want you to help them identify the root causes and possible solutions

Facts	How to give the case
<b>Industry</b> Retail	<b>Difficulty</b> Difficult  <b>Hints on giving the case</b> <ol style="list-style-type: none"><li>1. This case has very limited information</li><li>2. The interviewer should help interviewee if he or she lost directions</li><li>3. The key differentiator in this case is how quickly interviewees can establish the hypotheses and drive the case forward</li><li>4. Interviewees should still present a profitability framework at the beginning of the case</li></ol>



# Case Nineteen - Analysis

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*Please read the Exhibit and tell me what you think*

Clearly, all the cost elements from Control Store are higher than those from License Store – therefore, a detailed analysis on costs needs to be done

Analysis:

The biggest cost differential is rental, so expect interviewee to start from this. If now, direct interviewee to start from rental

If asked why Control Store has a higher rental cost, tell interviewees that actually both stores have exactly the same rental (in terms of absolute figure), same size, similar utility bill (basically the two stores are sort of identical)

It should then prompt the interviewee to calculate actual costs as the following

	Control Store		Licensed Store	
Revenue (million)	200 million		300 million	
COGS	70%	140 million	66%	200 million
Rentals	15%	30	10%	30
Sales and Marketing	12%	24	8%	24
Utilities	4%	8	3%	9
Other SG&A	5%	10	5%	15
<b>Total</b>	<b>-6%</b>	<b>-12</b>	<b>10%</b>	<b>30</b>



# Case Nineteen - Analysis (cont.)

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## Analysis on rental

- Both shops incur about the same cost, with similar size and utility expense; however, license store has a much higher revenue. It means license store is not as efficient in sales
- Possible solutions are (1) reduce the size of the control store to increase sale psf; (2) move the store to a less expensive location; (3) redesign the layout of the store so that part of the space can be used for other means

## Analysis on sales

- Assume cost per salesperson is about the same (if interviewee doesn't reach here, direct him/her to make this assumption); it means both stores hire about the same number of salespersons
- Revenue per salesperson is much higher in license stores than that in control store, meaning salesforce is much more effective in license store
- Possible solutions are (1) reduce number of salespersons to reduce cost; (2) design incentives so that salespeople are incentivized to sell more furniture



# Case Nineteen - Analysis (cont.)

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## Analysis on COGS

- Control stores have higher COGS (70%) than that in license stores (66%)
- Possible solutions to reducing COGS: (1) consolidation of suppliers; (2) negotiate with suppliers for partnership contracts; (3) combine supplier contracts with license stores; (4) reduce inventory cost in order to reduce COGS etc.



# Case Nineteen - Conclusion

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*Please summarize the case*

Based on our analysis, the key root cause of negative profit margin in client's control store is due to higher costs. In order to improve its profit margin, we recommend the following actions

- (1) Reduce rental cost by renting a smaller shop, relocate the shop to a less expensive location, or redesign the shop so that client can generate more revenue in a given space
- (2) Reduce cost associated with salespeople by downsizing the ineffective salespeople, and incentivizing salespeople to sell more furniture (e.g. variable income linked to sales)
- (3) Reduce COGS by combining purchasing contracts with license shop, re-negotiating supplier contracts for better terms or forging partnership with suppliers

Of course, there are risks associated with these actions, such as losing customers if moving to a less expensive location, hurting employee morale if starting to fire salespeople, tying up to a longer term supplier contract without being able to switch.



# Exhibit 1

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	Control Store	Licensed Store
Revenue (million)	200 million	
COGS	70%	66%
Rentals	15%	9%
Sales and Marketing	12%	8%
Utilities	4%	3%
Other SG&A	6%	5%
<b>Total</b>	<b>-7%</b>	<b>9%</b>

