

Interview Academy Day 3

Case Interviews



14 February, 2019

Agenda

Introduction to Case Interviews

Types of Case Interviews

Binghamton Experiences

Practice Exercise

What is a Case Interview?

Generally used in addition to a behavioral interview

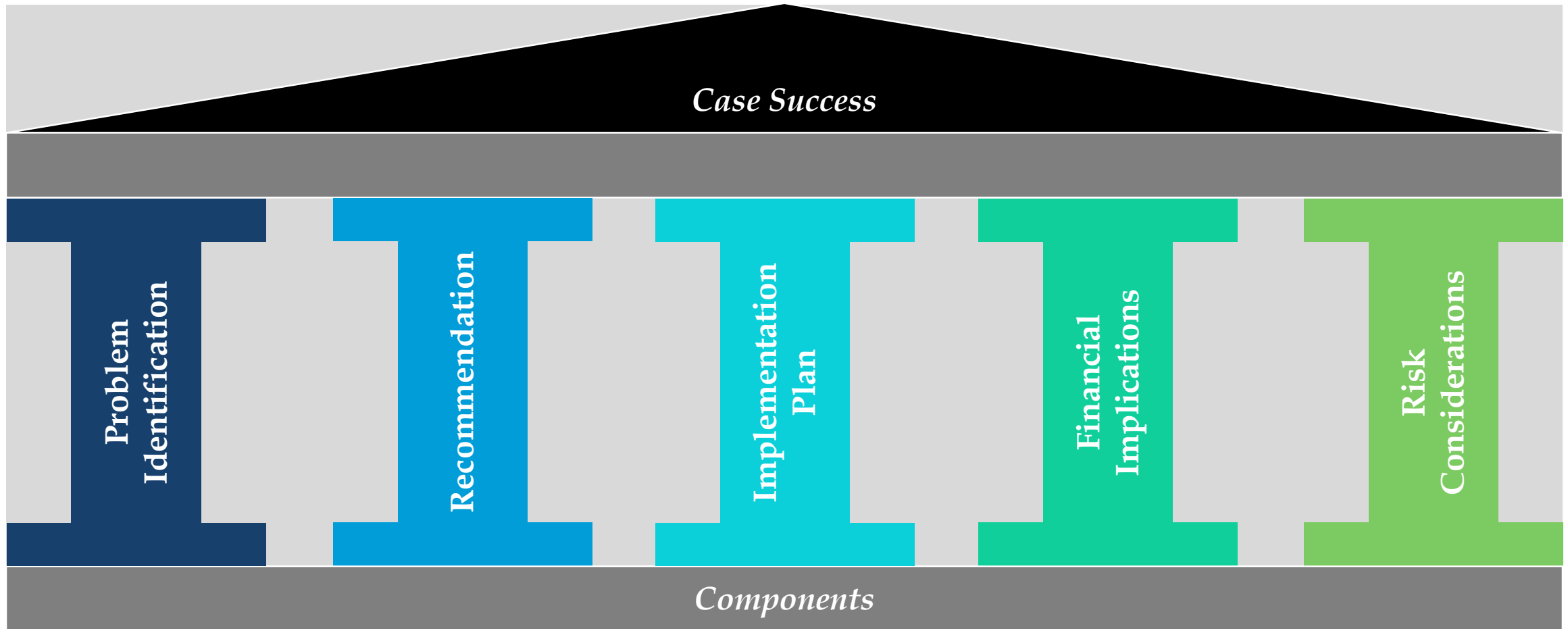
Business problem, estimating exercise, or logic problem

Used to show ability to analyze information and structure an answer

There is often no right answer, thought process is more important

Every firm has a different interview process

Traditional Case Theory



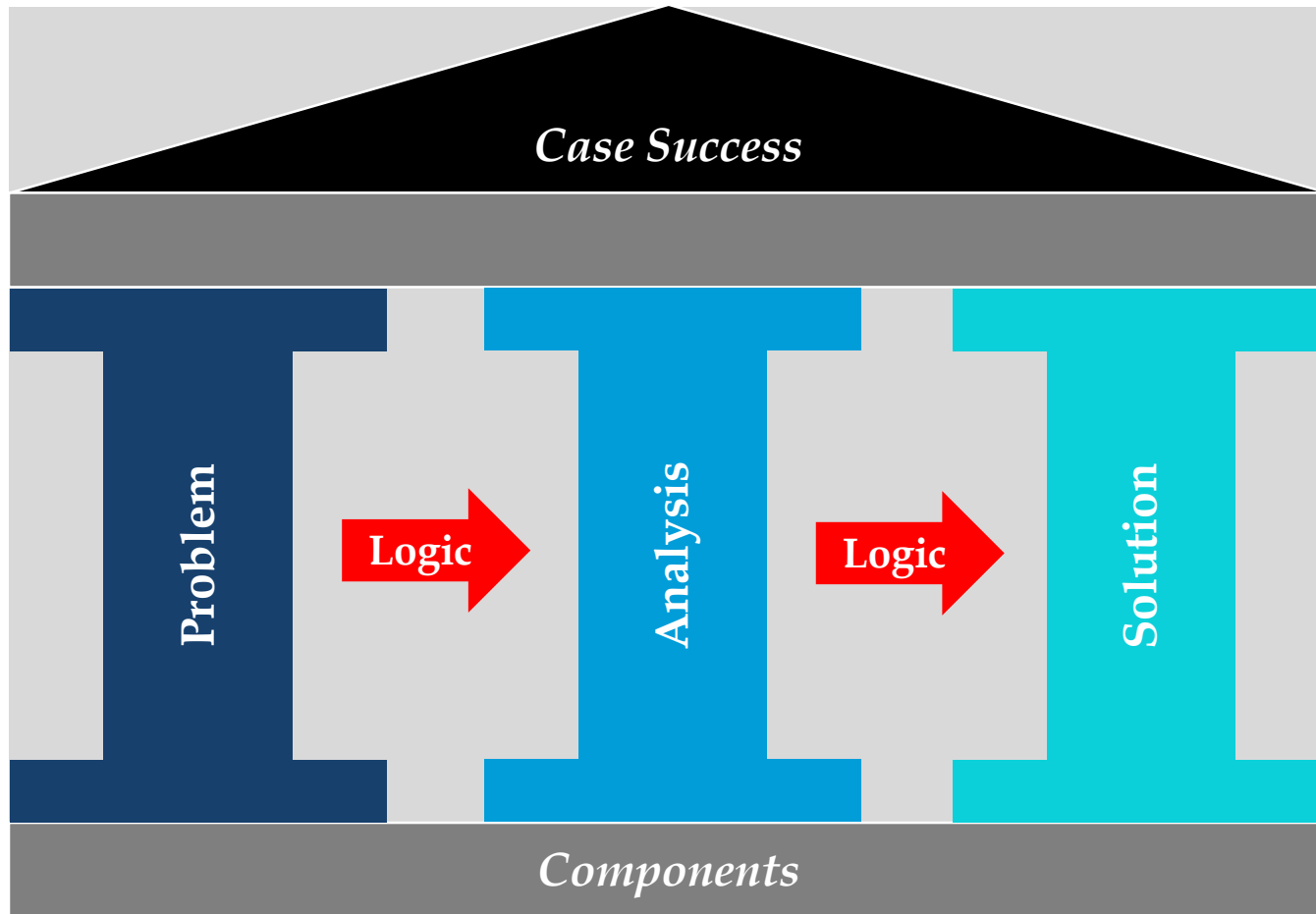
Introduction

Types of Interviews

Binghamton Experiences

How to Prepare

Case Interview Theory



Why Firms Use Case Interviews

- Firms know your GPA, past experiences and accomplishments
- Several questions to be answered:
 1. Does the candidate **efficiently structure his or her thoughts**?
 2. How is the candidate with **mental math**?
 3. Is the candidate able to **clearly communicate** ideas?
 4. How does the candidate **work with uncertainty and ambiguity**?
 5. Can the candidate **synthesize** lots of **information** and effectively **summarize ideas**?
 6. How might the candidate represent the firm (*when under pressure*)?

Clarify and Structure

Clarify

Know the question.

- Take good notes when reading/listening
- Listen to the instructions when they are given
- Be certain you know what the question is looking for
- Be certain of what metrics you are using to evaluate opportunities

Structure

Get organized and focused.

- Ask for a moment to organize your thoughts
- WRITE or DRAW as CLEARLY as possible so interviewer can follow your thought structure
- **Strongly suggested:** use tree diagrams
 - Clear separation of different ideas
 - Easy to refer back to

Solve and Recommend

Solve

Drive toward the solution.

- Follow clues from interviewer
 - Not important? → Move on!
 - Important? → Dig deeper!
- Always have a hunch
 - Prepare for sudden prompt for solution
 - Be careful of anchoring and confirmation biases
- **Think out loud**
- Clearly mark your key findings

Recommend

Answer the question.

- Answer the original “Clarify” question
- Use findings from the “Solve” stage to support your answer
- DO NOT RAMBLE
 - **Be clear, concise, strong, and confident**
 - **Conclusion first, justification second**
- Take cues to wrap up
- **Star candidates:** include “next steps”

Types of Case Interviews

Interviewee-Led

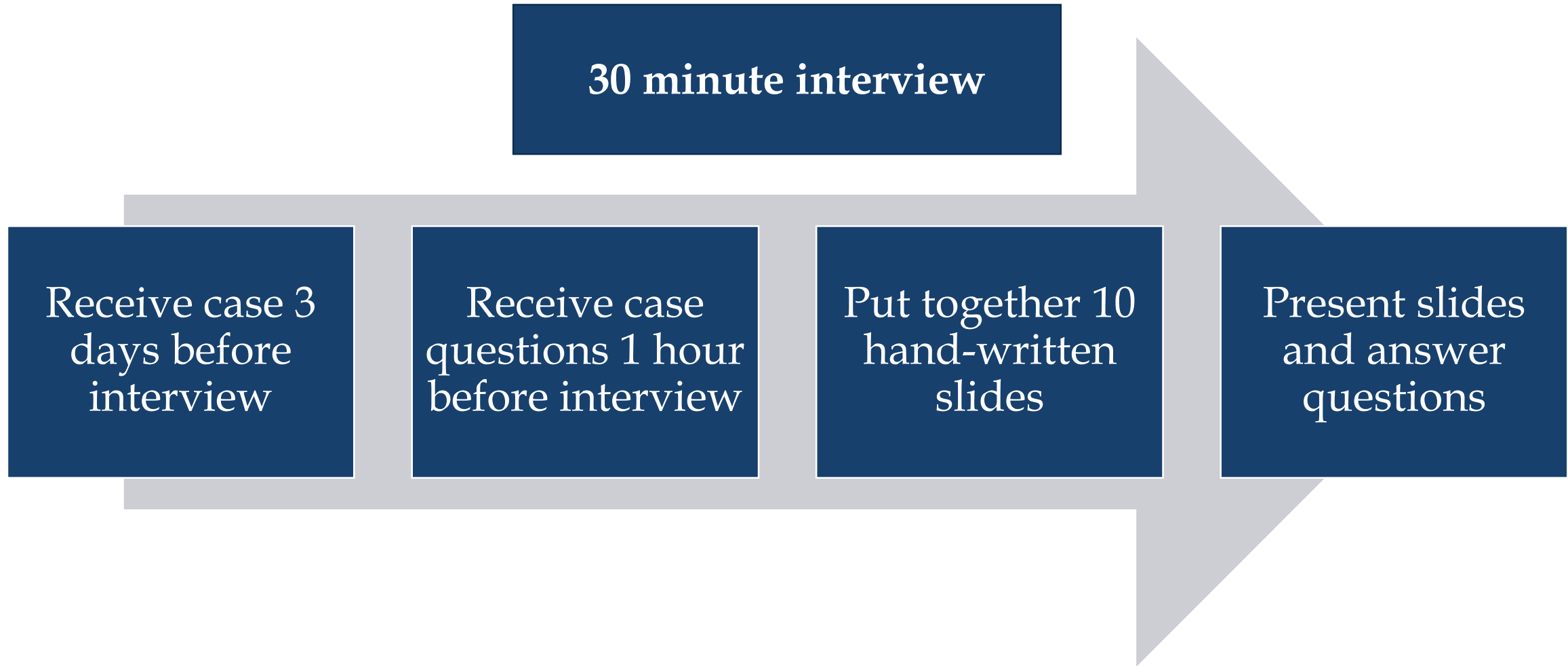
- In this scenario, you are in charge of developing the structure and then leading your interviewer through the structure you have created. Arguably harder, you build the house you live in, so your upfront structure has to be spot on.

Interviewer-Led

- In this scenario, the interviewer has a specific set of questions that they want you to address. Even if you start with your own dazzling structure, the interviewer may disregard it as they walk you through a predetermined line of questions they have in mind for you.

<https://managementconsulted.com/case-studies/advanced-case-tactics-interviewer-led-vs-interviewee-led-case-interviews/>

PwC Case Interviews - 2016



PwC Case Interviews - 2017

30 minute interview

10 minutes
Read one page
case

10 minutes
Present answers
to questions

5 minutes
Read additional
information

5 minutes
Present answer
and conclude

2-3 questions focused
on macro-economic
factors and firm-
specific issues

2 questions focused
on how new
information impacts
decision

PwC WCE Case Interview - 2018

45 minute interview

10 minutes
Read one page
case

15 minutes
Present answers
to questions and
additional q's

5 minutes
Read additional
information

10 minutes
Present answer
and conclude

2-3 questions focused
on macro-economic
factors and firm-
specific issues

2 questions focused
on how new
information impacts
decision

EY Case Interviews

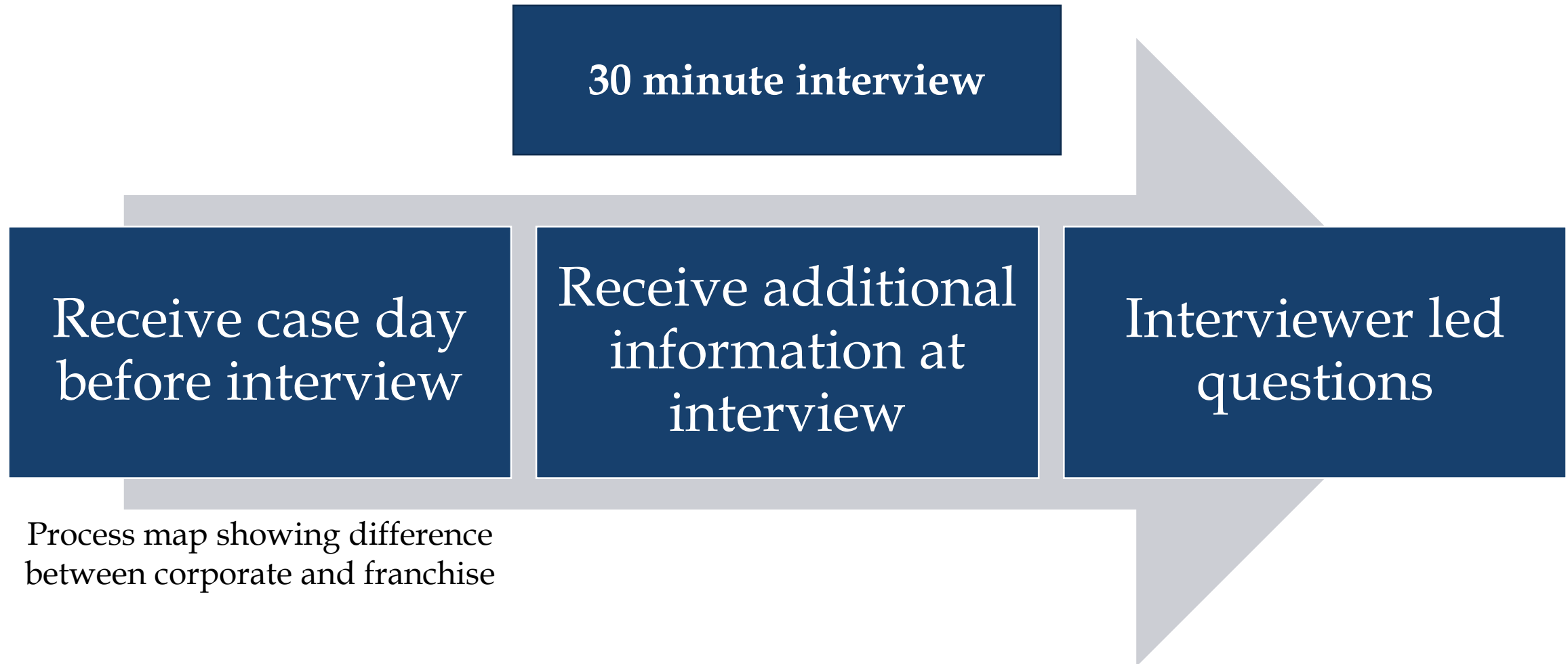
40 minute interview

Read short case
(about 3 pages)

Discuss findings/
recommendations

Ask questions
throughout

Protiviti Case Interviews - 2017



Process map showing difference between corporate and franchise

Practice Exercise

Read the case interview example on the next slide and write down:

What questions you would ask

What the most important things to know are

How you would structure your investigation

What your conclusion would be

Case Interview Example

McKinsey: Victor Cheng

“This company that we’re working with, the client, is a company that is in the garbage hauling industry. They’re a \$4 billion a year company, and the company primarily works with industrial and commercial buildings. So those big, very large trash dumpsters behind the building is what they would come for every day and pick them up, and dump it into the truck, and basically haul that trash away. They are considering starting a new business, a new division of the company, and they’re thinking of entering the moving industry. Their idea is that if you take a trash dumpster, you make it bigger, you put a padlock on it, you could put furnishings inside of it, boxes, and move it from point A to point B, which the rest of the industry would call “moving.” They think of it as just moving stuff, and they are very good at moving stuff, is kind of what they think. So they’ve asked you to come help them figure out whether this would be a good idea or not, and to figure out: if it is a good idea – why; and if there are any issues that are of concern, what those issues might be.”

Case Interview Example: Key Info

McKinsey: Victor Cheng

“This company that we’re working with, the client, is a company that is in the **garbage hauling industry**. They’re a \$4 billion a year company, and the company primarily **works with industrial and commercial buildings**. So those big, very large trash dumpsters behind the building is what they would come for every day and pick them up, and dump it into the truck, and basically haul that trash away. **They are considering starting a new business**, a new division of the company, and they’re thinking of **entering the moving industry**. Their idea is that if you take a trash dumpster, you make it bigger, you put a padlock on it, you could put furnishings inside of it, boxes, and move it from point A to point B, which the rest of the industry would call “moving.” They think of it as just moving stuff, and they are very good at moving stuff, is kind of what they think. So **they’ve asked you to come help them figure out whether this would be a good idea or not, and to figure out: if it is a good idea – why; and if there are any issues that are of concern, what those issues might be.**”

Potential Answers:

- Important info: industry, company size, main services, questions to consider
- Is the opportunity being evaluated on the basis of profitability? → Evaluate cost & revenue
- Does the company currently utilize all of their trucks for garbage? → Capacity & Equipment
- What does the competitive environment look like → Competitive Analysis

Practice Exercise Continued

BUSINESS SITUATION FRAMEWORK

New Market Entry, New Product, New Business, How to Grow, Strategy, Turnaround, Company Position Assessment

Customer

Who is the customer?

- identify segments (segment size, growth rate, % of total market)
- compare current year metrics to historical metrics (look for trends)

What does each customer segment want? - identify key needs

What price is each segment willing to pay? - determine price points and price elasticity/sensitivity

Distribution channel preference for each segment

Customer concentration and power* (does one customer control all the demand, the "Wal-Mart" effect)

Product

- **Nature of product** (think out loud about the product, its benefits, why someone would buy it)
- **Commodity good or easily differentiable goods** (could company increase differentiation)
- Identify **complimentary goods** (can we piggy back off growth in compliments or near compliments?)
- Identify **substitutes*** (are we vulnerable to indirect competitors namely substitutes?)
- Determine **product's lifecycle** (new vs. almost obsolete)
- Packaging (optional) - what's bundled, included (ex. Razor vs. razor blades, with w/o service contract... can change in packaging make product more likely to meet needs of specific customer segments.)

Company

- **Capabilities and expertise**
- **Distribution channels** used
- **Cost structure** (mainly fixed vs. variable - is it better to have higher fixed cost with lower variable, or vice versa. High fixed cost = barrier to entry... compare to industry, often insightful)
- Investment cost (optional: only if case involves an investment decision)
- **Intangibles** (e.g., brands, brand loyalty)
- **Financial situation**
- Organizational structure (optional: e.g., is team organization in conflict with how customers want to do business. Ex: We're organized by product line, but customers want one point of contact across all product lines)

Competition

- **Competitor Concentration* & Structure** (monopoly, oligopoly, competitive, market share concentration)
- Competitor behaviors (Target customer segments, products, pricing strategy, distribution strategy, brand loyalty)
- Best practices (are they doing things we're not?)
- **Barriers to entry*** (do we need to worry any new entrants to market?)
- **Supplier concentration*** (optional: ex: Microsoft or Intel in PC Market... use full 5 forces if this is a likely issue)
- Industry regulatory environment
- Life-cycle of industry

* From Porter's Five Forces: An excellent framework that I've incorporated into this one. I don't use five forces separately for no other reason than habit/preference (though I do use the concepts). If you're not familiar with five forces, it's worth reading up on it.

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Common interview math problems include:

Market Sizing

Profit Margin

Break Even
Analysis

Discount Cash
Flows and
Terminal Value

Return on
Investment

Customer
Lifetime Value

Elasticity

Product Life
Cycle

Rule of 72

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Tips for Case Interview Math

Make
assumptions

Make
REASONABLE
assumptions

Round your
numbers to 5's or
10's

Write down your
intermediary
steps

Be conscious of
what units you
are in

The more you
practice, the
better you will
get

Market Sizing

- Common interview component
- Be sure to clarify desired units of answer (markets can be sized by revenue, volume, etc.)
- Option 1: Formulaic approach
 - No. of Customers Targeted = Total Pop. * % in Segment
 - Total No. Units = No. of Customers Targeted * No. Units Purchased per Year
 - **Total Annual Market Size** = Total No. Units * Price per Unit
- Option 2: Build a tree

Market Sizing Practice

Estimate the size of the of the disposable diaper market in the U.S. in terms of annual diaper volume

Market Sizing Practice

Assumptions:

- 320 million Americans
- Average age expectancy of 80
- Even numbers of people in age group
- Children wear diapers from age 0 to 3

Math:

$320 \text{ million} / 80 = 4 \text{ million per age group}$

$4 \text{ million} * 3 = 12 \text{ million kids wearing diapers}$

Estimate 80% of children wear DISPOSABLE diapers

$\sim 10 \text{ million} * 5 \text{ diapers a day} = 50 \text{ million diapers a day} * 365 = \sim 18 \text{ billion diapers a year}$

Market Sizing

Helpful knowledge for market sizing:

Population Estimates	
World	6.6 B
United States	320 M
New York City	8 M
Los Angeles	4 M
Europe	740 M
Great Britain	60 M
London	7 M
China	1.3 B
India	1.2 B
Japan	125 M

Segmentation Examples
Age
Gender
Geography
Income
Married / Single

Important Notes for Preparing

Find a partner
who knows what
they are doing

Practice being
both the
interviewer and
the interviewee

Do not read the
case before you
practice it

Simulate a real
case interview
when practicing

The more you
practice, the
better you will
get

Who to Practice With

Friends who are also preparing

- Mutually beneficial

Other friends, roommates, parents, etc.

- Give them an overview of how to interview you first

Consulting professionals

- Utilize your network

Additional Resources

Career Services
(Mocks)

Caseinterview.com
(Victor Cheng)

Caseinterviewprep.
Deloitte.com

Mconsultingprep.com

MCG E-Board

Questions?

Appendix

Profit Margin

Gross Profit

$$\text{GPM \%} = \frac{\text{Gross Profit}}{\text{Revenue}}$$

OR

$$\text{GPM \%} = 1 - \frac{\text{COGS}}{\text{Revenue}}$$

Net Profit

$$\text{NPM \%} = \frac{\text{Net Income}}{\text{Revenue}}$$

OR

$$\text{NPM \%} = 1 - \frac{\text{COGS} + \text{All other expenses}}{\text{Revenue}}$$

Contribution

$$\text{CM} = \text{Revenue} - \text{Variable Costs}$$

THEREFORE

$$\text{CM\%} = \frac{\text{Revenue} - \text{Variable Costs}}{\text{Revenue}}$$

Break-Even Analysis

- Useful when trying to decide whether to launch a new product or commit to some sort of large investment

$$\text{BE Volume} = \frac{\text{Fixed Costs}}{\text{Revenue} - \text{Variable Costs}}$$

$$\text{BE Price} = \frac{\text{Fixed Costs}}{\text{BE Volume}} + \text{Variable Cost per Unit}$$

$$\text{BE Market Share \%} = \frac{\text{BE Volume}}{\text{Total Market Volume}}$$

Helpful Tricks

Rule of 72

Years to Double = $\frac{72}{r}$ (where r is equal to the rate of return)

Halves and Tens

“Sales last year were 450 million with a gross profit margin of 35%”

Calculate gross profit:

$$450 \text{ M} * 10\% = 45 \text{ M}$$

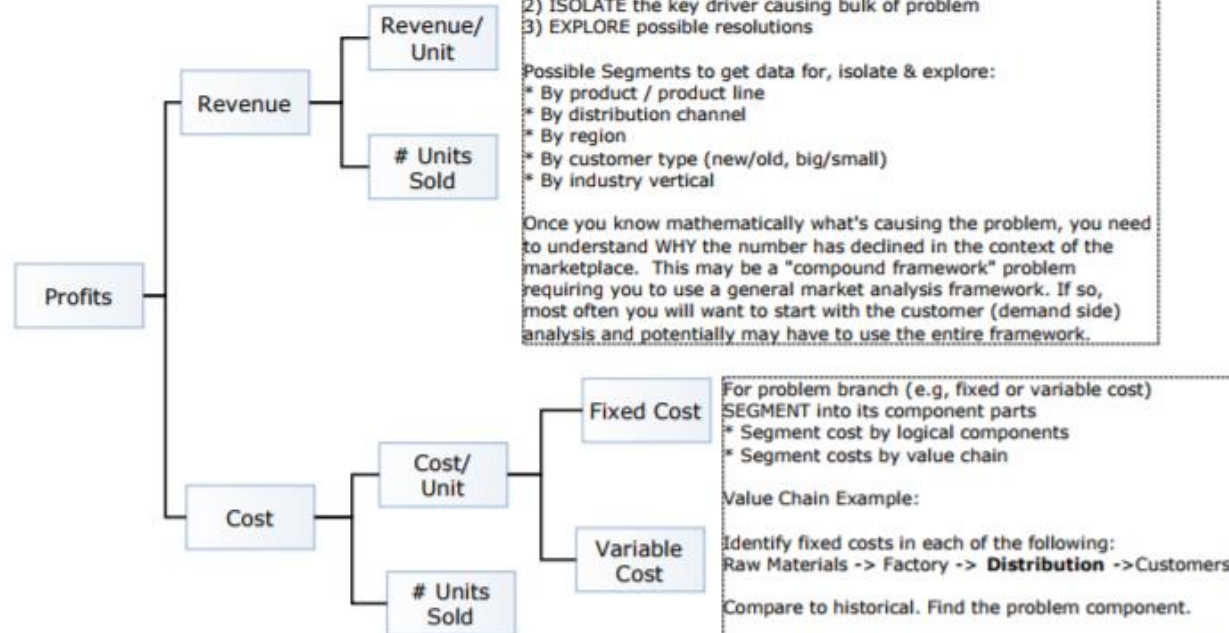
$$45 \text{ M} * 3 = 135 \text{ M}$$

$$450 \text{ M} * 5\% = 45 \text{ M} / 2 = 22.5 \text{ M}$$

$$135 \text{ M} + 22.5 \text{ M} = 157.5 \text{ M}$$

Profit Equation

PROFITABILITY FRAMEWORK



For the problem branch (e.g., Revenue/Unit or # Units Sold)
1) SEGMENT the number, break it up into its component parts, compare to historical metrics to find where the shift is coming from
2) ISOLATE the key driver causing bulk of problem
3) EXPLORE possible resolutions

Possible Segments to get data for, isolate & explore:

- * By product / product line
- * By distribution channel
- * By region
- * By customer type (new/old, big/small)
- * By industry vertical

Once you know mathematically what's causing the problem, you need to understand WHY the number has declined in the context of the marketplace. This may be a "compound framework" problem requiring you to use a general market analysis framework. If so, most often you will want to start with the customer (demand side) analysis and potentially may have to use the entire framework.

For problem branch (e.g, fixed or variable cost)

- SEGMENT into its component parts
- * Segment cost by logical components
 - * Segment costs by value chain

Value Chain Example:

Identify fixed costs in each of the following:
Raw Materials -> Factory -> **Distribution** -> Customers

Compare to historical. Find the problem component.

Keep "drilling down" by finding the problem segment, and drill down on THAT segment until you ISOLATE what's mathematically causing the majority of the problem (aka. Find the LEVERAGE point)

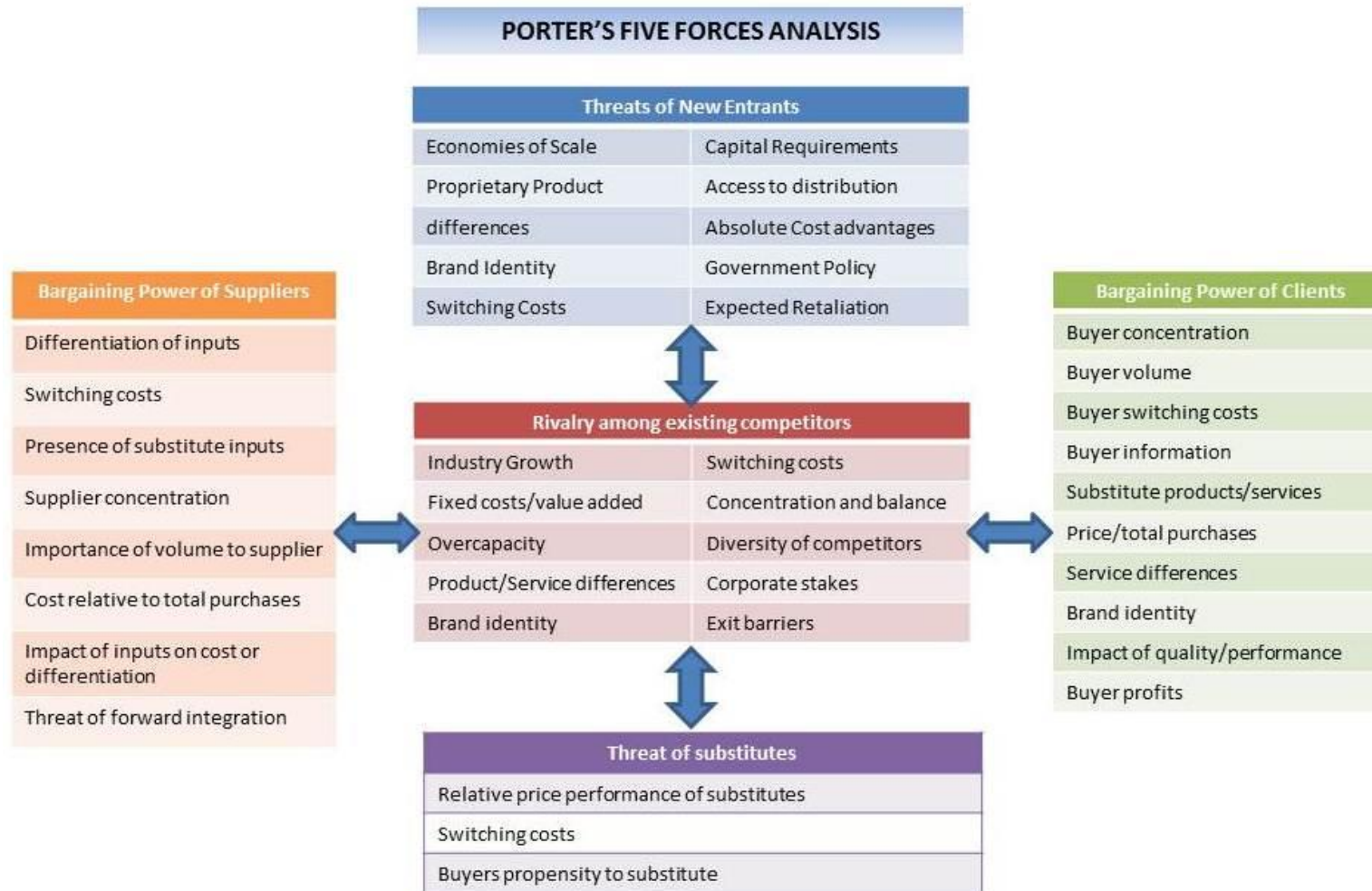
Tips:

- 1) Keep drilling down until you isolate the problem
- 2) If you realize a branch (or sub-branch) is NOT the problem come up a level and work the remaining branches
- 3) The name of the game is PROBLEM ISOLATION
- 4) When "units sold" decline, it's useful to compare the company's numbers to its competitors to determine if it's an industry-wide or company-specific issue

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Porter's Five Forces



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Marketing Mix

Price

Product

Promotion

Placement

Questions?

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