2

Frame and structure the problem

What makes a good structure?
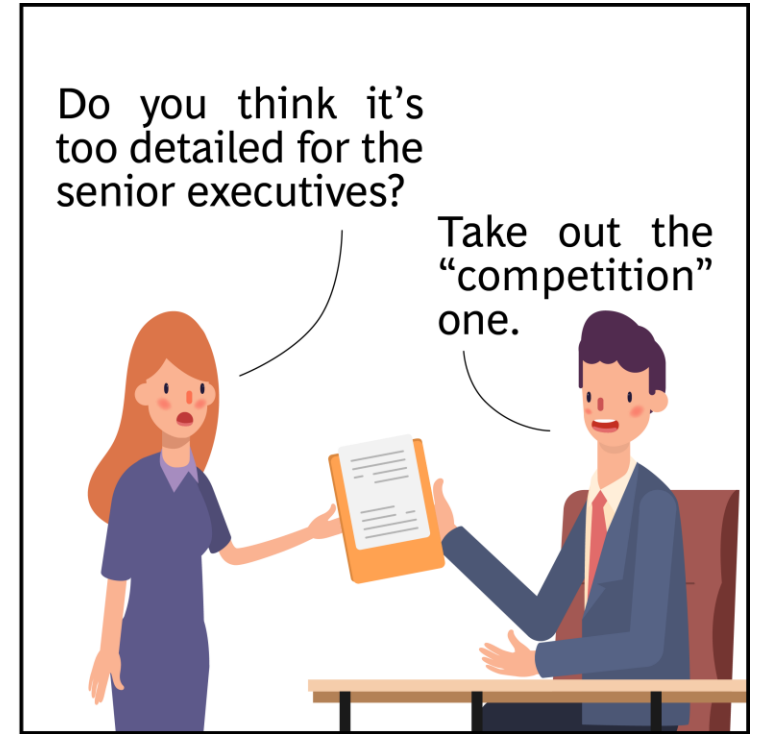
Why is structured problem solving relevant?

BCG has a very specific way of structuring problem solving

This approach is suitable when

1. The problem is atypical, and cuts across multiple issues, variables, functions, etc.
   - No standard procedure is available to achieve your goal
   - It is a question of finding the right way to approach the issue rather than correctly following a prescribed procedure

2. The solution is heavily dependent on the collection and analysis of data
   - The issues can be resolved or at least advanced by the exploration of facts, data collection, and analysis
   - The data sets required are novel and/or very large; risk of "boiling the ocean" if you are unable to focus on specific analyses
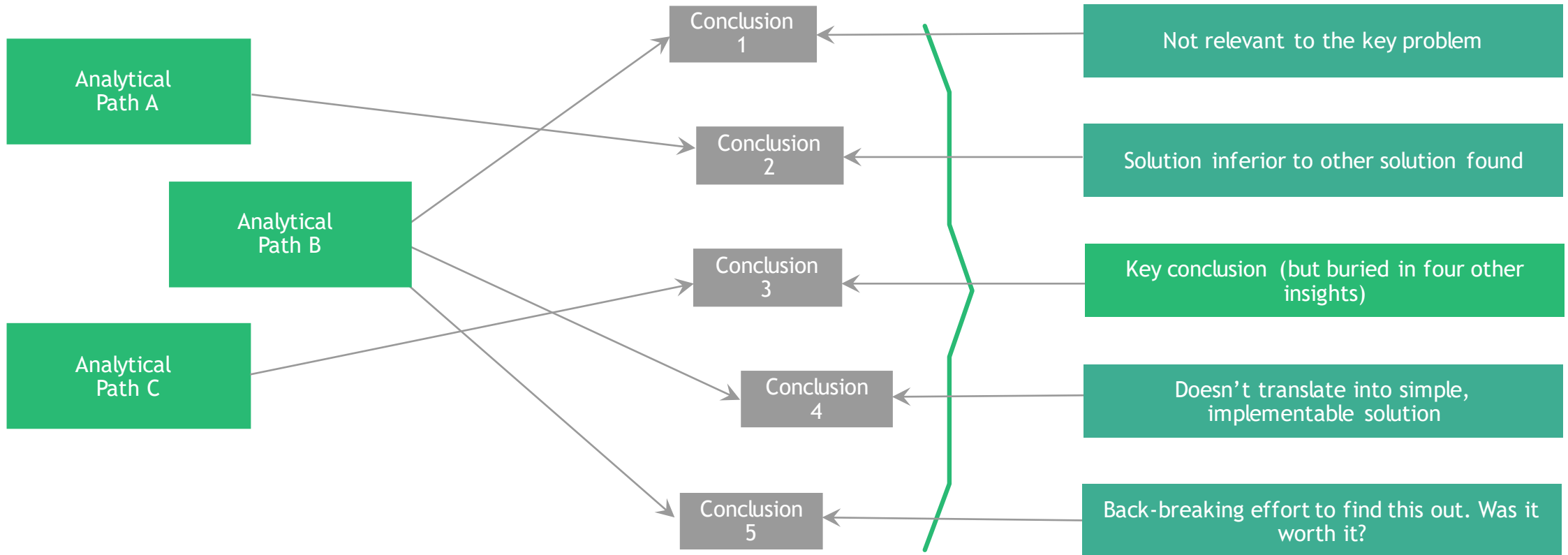
Strategic decisions are common examples of this kind of approach

What could happen if you don't structure appropriately

Starting from three analyses

Five conclusions reached

However...

Analytical Path A	Conclusion 1	Not relevant to the key problem
Analytical Path B	Conclusion 2	Solution inferior to other solution found
Analytical Path C	Conclusion 3	Key conclusion (but buried in four other insights)
	Conclusion 4	Doesn't translate into simple, implementable solution
	Conclusion 5	Back-breaking effort to find this out. Was it worth it?

BCG has a very specific approach to problem solving

Always have an answer

| Frame and structure the problem | Deliver high-quality analysis | Drive to insight |

Iterate if needed

80/20 Behaviour
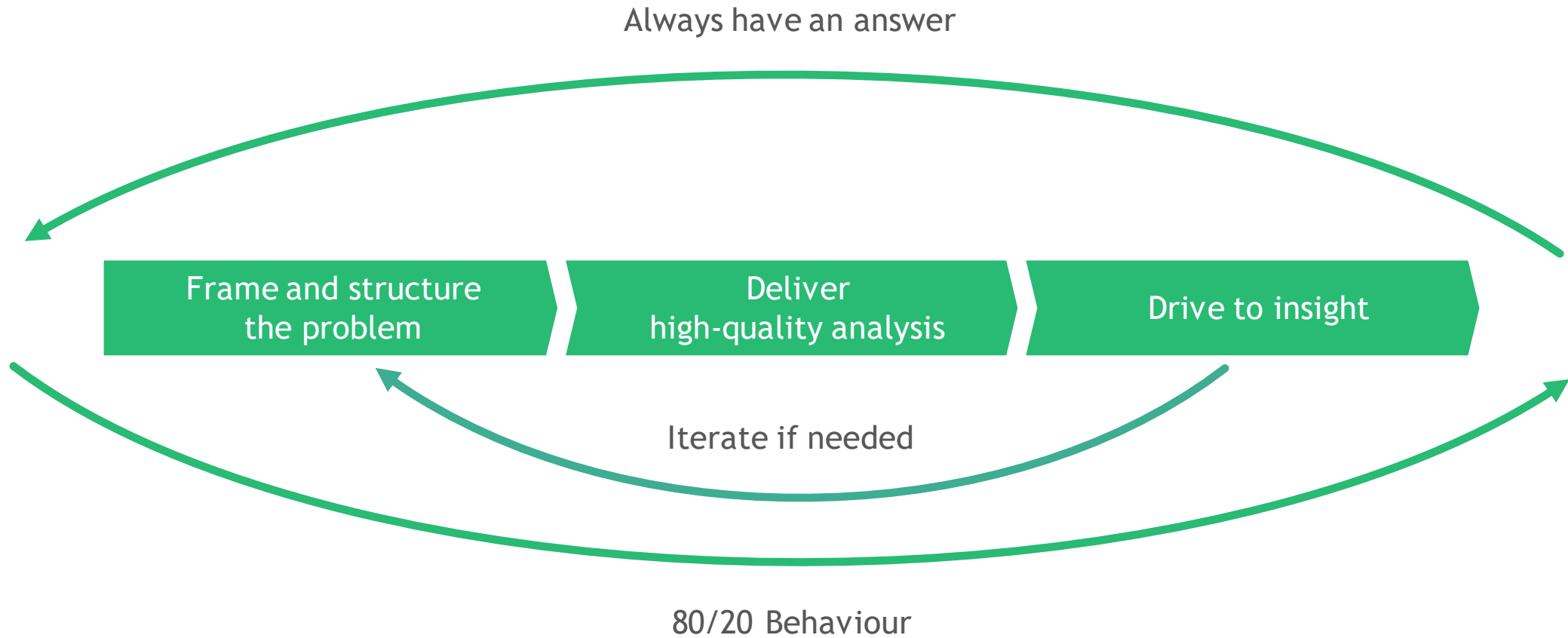
The main principle of this approach is that thinking drives doing

✕ Doing leading thinking

Mentality: Hope to collect "enough" data

Better do some customer interviews

Wallow with the data and see what happens

⌄

What are we going to ask them?

What data is already available?

⌄

- More work, more stress
- No idea where to go
- Sundays in the office …

Data death

✓ Thinking drives doing

Mentality: Hope to collect the "right" data

Open skies are about to appear. An issue is whether the airline can maintain its customer relationships in a more competitive environment

⌄

Better interview customers and generate data to probe relative
- Brand strength
- Network coverage
- Fare structures

⌄

- Get where you want to be
- More effective work
- Have fun with friends on weekends

Good structure allows us to answer client's question and to avoid "boiling the ocean"

How structure helps to solve the case?

What makes a good structure?

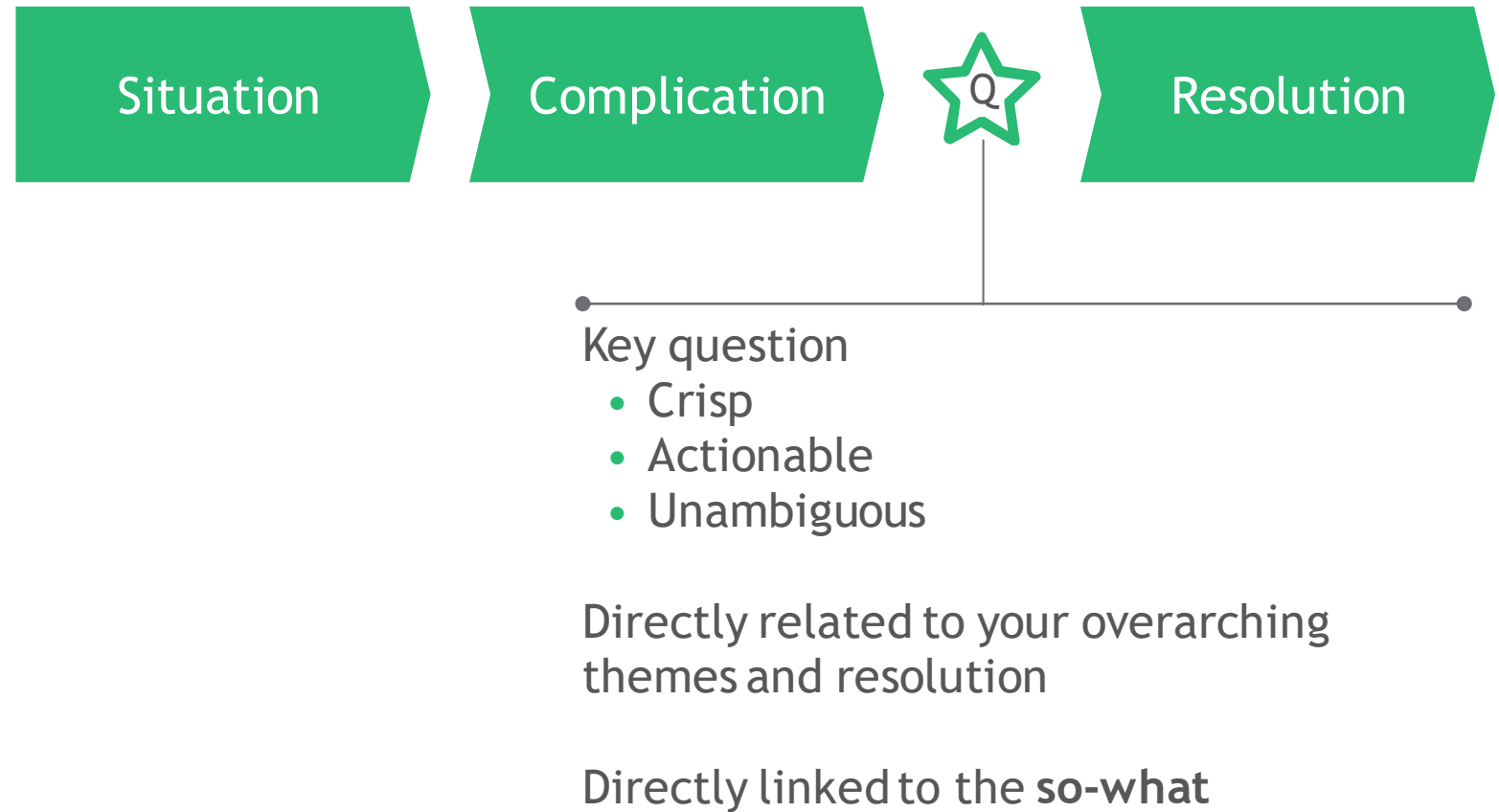| How structure helps to solve the case?	What makes a good structure?
Breaks down the problem into exhaustive sets of smaller parts	Mutually Exclusive, Collectively Exhaustive • No overlapping categories • Contains the entire universe of possibilities
Provides approach to identify real issue and solve the problem	Answer-focused • Will get to the answer • Deep enough to answer the question • Each driver answers a question necessary to solve the case
Focuses analysis and makes problem solving faster	Based on the hypotheses • Attempts to formulate the possible result of the project early • Adapted to the findings during the interview

How to structure the problem?

Correctly structuring the problem relies on implementing four distinct success factors

1 Define the right question
- Use SCQ-R[1] to drill down to the right question

2 Understand the root causes
- Apply the pyramid principle to identify business drivers

3 Conceptualize the problem
- Use structures and processes to describe the issue

4 Always have a hypothesis
- Choose the best hypothesis generation technique, develop the hypothesis

1. Situation, complication, question, resolution

9

Defining the "SCQ-R" focuses work on the key question

Situation ▸ **Complication** ▸ ⭐Q ▸ **Resolution**

Key question
- Crisp
- Actionable
- Unambiguous

Directly related to your overarching themes and resolution

Directly linked to the **so-what**

To get to the root causes, apply the pyramid principle to identify the problem's key drivers

Situation | Complication | Q | Resolution
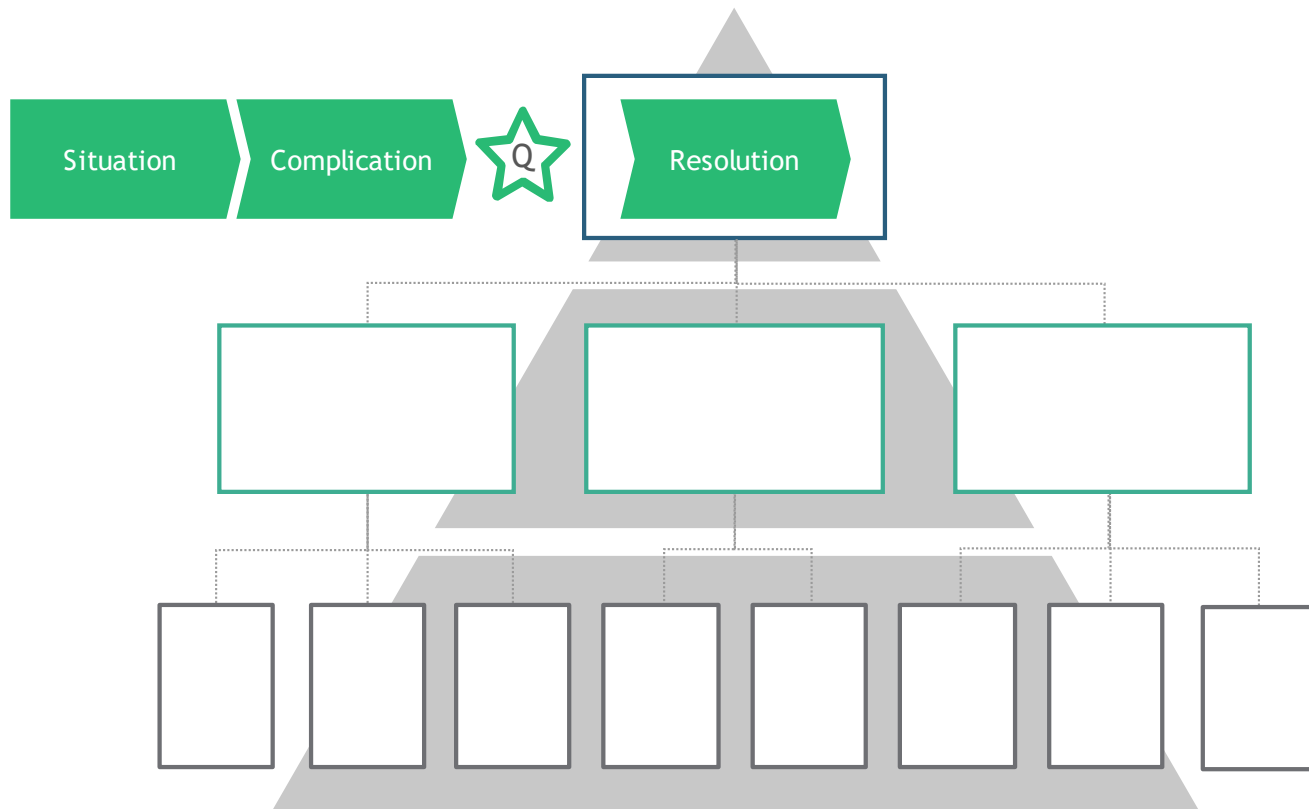
The principle states that ideas are easier to grasp if they
- … are organized as a pyramid under a single point
- … are directed toward answering an existing question
- … obey a limited number of logical rules

The structure follows a top-down sequencing and flow of key drives and issues to be analysed or communicated

Source: Barbara Minto Pyramid Principle website

Best practice tips when using the pyramid principle

Situation → Complication → Q → **Resolution**
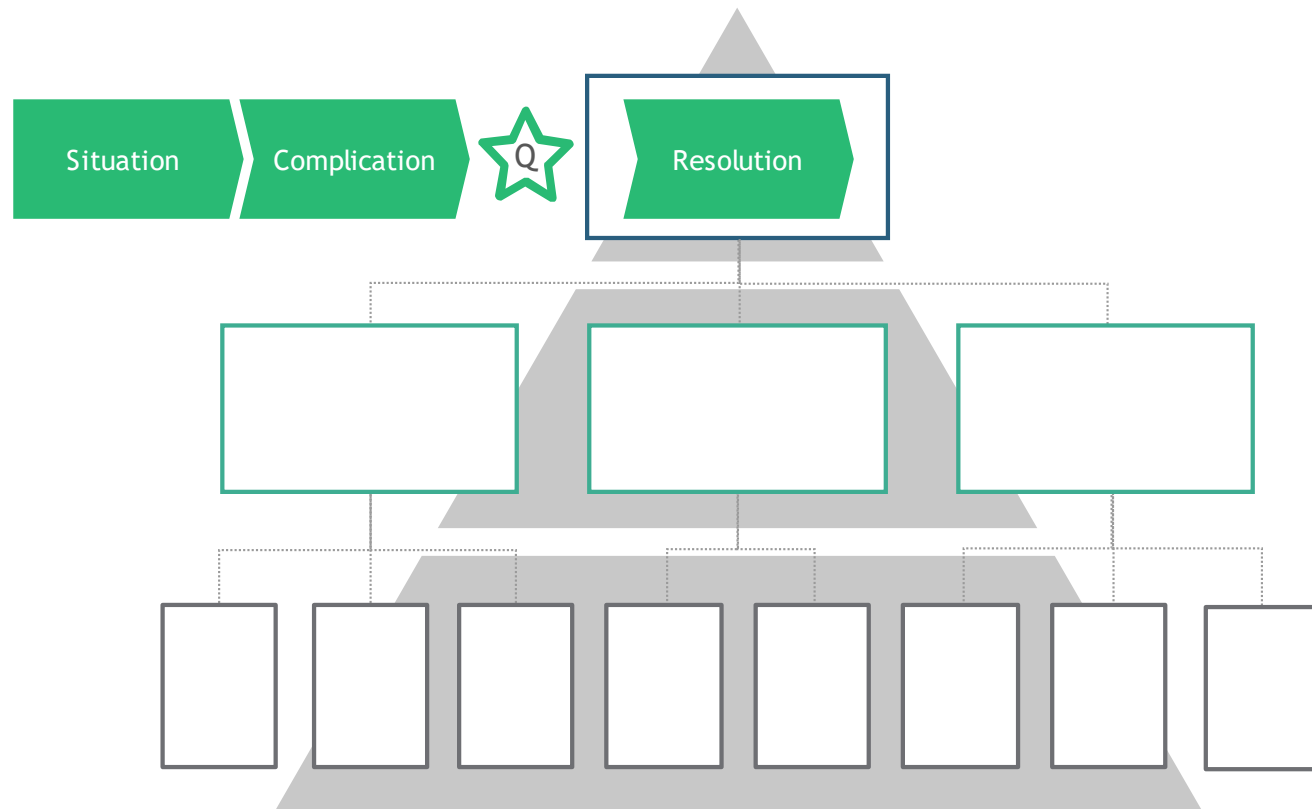
1. Vertical: Arguments support your statement (is the question "why" answered when you move one level down?)
   - If not you should ask yourself "so what?"

2. Arguments are MECE at each level
   - Mutually Exclusive
   - Collectively Exhaustive

3. Arguments are of the same order and parallel at each level
   - Don't mix different levels of detail
   - Don't mix different types of arguments (i.e. actions)

4. Horizontal: Arguments are structured in a logical order
   - Deductive
   - Inductive
     – Importance, sequential events etc.

5. Never have more than 7 arguments in one group
   - Add additional groupings if you have more arguments

Source: Barbara Minto Pyramid Principle website

Structures and processes are used to better illustrate the framework

Structure
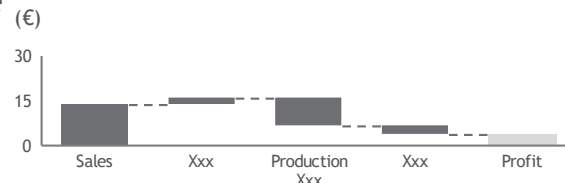
Charac-teristics

- Static
- Considering different structural elements
- All important elements are considered
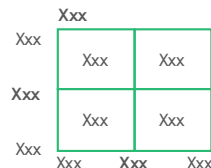
Examples

- Organizational structure
  - By function
  - By region

- Cost structure

- Matrixes

Process

- Dynamic
- Consists of different steps
- Each important step is considered

- Value chain

R&D	Production	Sales and marketing	Service

- Planning process

Annual planning			
Target setting	Plan development	Value-added review	Aggregation and approval

Tip: Identify main steps, don't go overly complex!
- Capture core issues only
- Think hard about the grouping
- Add only details that are necessary
- Keep the text brief

Highlight key activities or points mentioned in title

The differentiation between structure and process is a simple yet very powerful method to drive the thinking process forward

Unfortunately, people often bury the most important points
Hypothetical example

Question: Should we divest "business x"?

Title	"Business X" Review	

Chapters

Market Trends	Internal Capabilities	Implications

Subsections

Paragraphs

The market is steadily growing   Our business is growing slower than the market

Lack of recent investment   Capabilities "bottom-quartile" versus peers

Others would highly value the business   Customers don't need "business x" and their bank together

"Lifting" the answer or hypotheses in your pyramid increases impact
Hypothetical example

Question: Should we divest "business x"?

Title

Yes, we should divest "Business X"

Chapters

Despite steady growth, our share of the market is decreasing

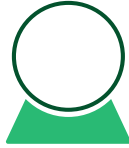Our capabilities are limited due to lack of investment over the past years

A sale would generate capital for reinvestment, without impacting our customers

Subsections

Paragraphs

The hypothesis is your running answer

The hypothesis bridges the gap between the problem conceptualisation and the analysis

Attempt to formulate the possible result

Hypothesis helps to be specific and focused
- Forces you to be explicit about what you expect to achieve
- More telling than a set of open questions

Allowed to be wrong
- Their use is to structure and focus approach
- No preclusion of results

Will be adapted to findings during analysis
- More and more specific
- Changing as the evidence evolves

A good hypothesis is specific, simple, testable, close to framework

Hypothesis improvement examples

Example 1: Broadcaster

We should duplicate our broadcast offering on an online platform

⌄

We can increase revenue by x% through a profitable online platform that reuses y% of our TV assets

Example 2: Sweets producer

We should examine better ways to manage retail prices at our channel partners

⌄

We can increase our margins by x% if we support and manage retail channels in setting retail prices

⚠️

Don't fall into the trap of doing extensive analysis to try to formulate hypotheses (you will waste a lot of time)

Don't be afraid to iterate and experiment with different hypotheses

A clear hypothesis helps you get to the resolution faster by being smart about how you structure your work and saves you from "boiling the ocean"

Situation

Complication

Q

Resolution
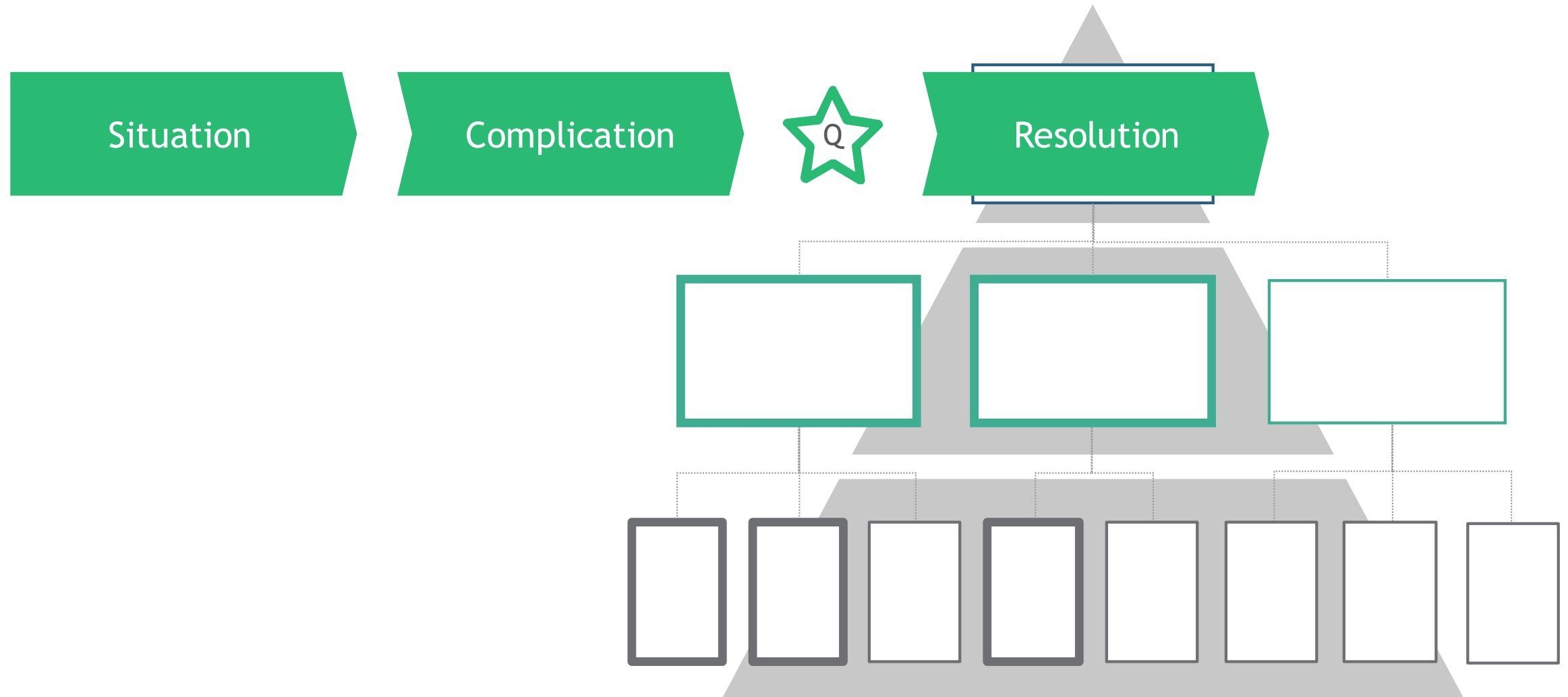
How to apply the Pyramid Principle?

Approach
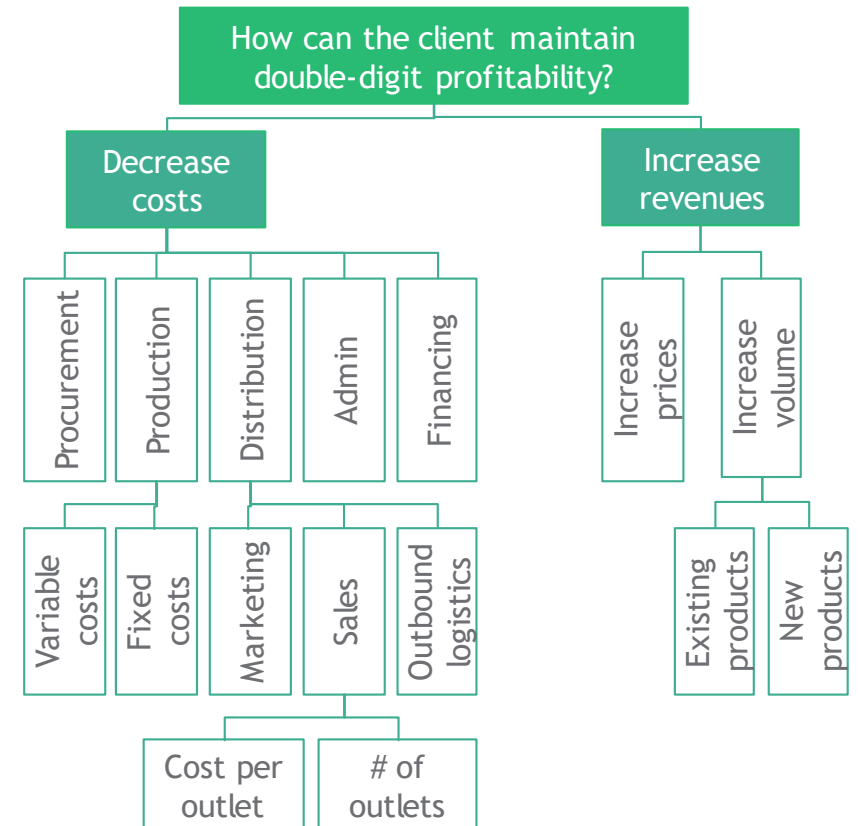
1 Put the key question at the top of the pyramid

Start with the key question from the "Situation-Complication-Question"

2 Break down the key question into relevant issues

Follow a logical approach, asking the questions "Why?" and "How?" to move one level down

Make sure that the sum of the issues matches the whole big picture of the key statement

Ensure that issues are disjunctive

3 Drill down issues into sub-issues and root-causes

Use similar approach as above

Repeat drilling down for as long as necessary

Identify possible root causes at the end of the path

Illustrative structure

How can the client maintain double-digit profitability?

- Decrease costs
  - Procurement
    - Variable costs
    - Fixed costs
  - Production
  - Distribution
    - Marketing
    - Sales
      - Cost per outlet
      - # of outlets
    - Outbound logistics
  - Admin
  - Financing
- Increase revenues
  - Increase prices
  - Increase volume
    - Existing products
    - New products
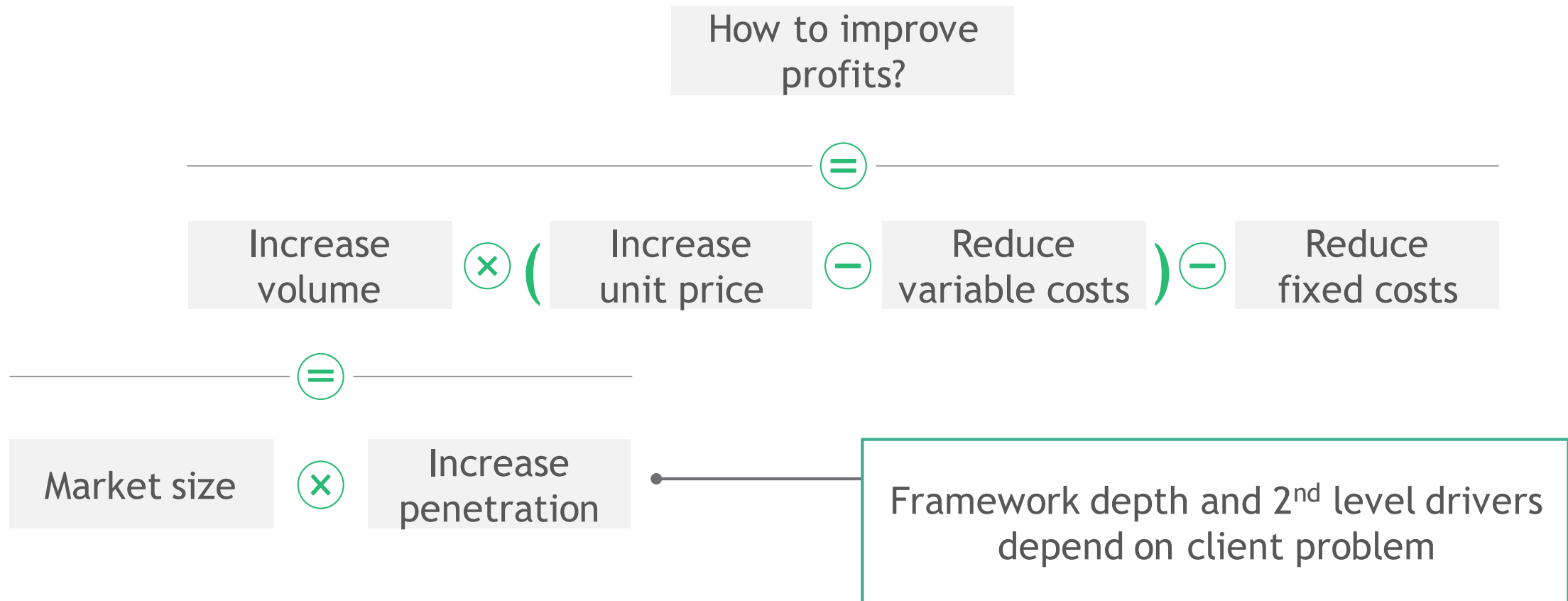
Examples of frameworks

Framework examples provided for inspiration purposes only – develop specific structure for your client context and question

21

Example 1: How to improve profits?

How to improve profits?

$=$

| Increase volume | $\times$ (| Increase unit price | $-$ | Reduce variable costs |) $-$ | Reduce fixed costs |

$=$

Market size $\times$ Increase penetration

Framework depth and 2nd level drivers depend on client problem

Example 2. How to reduce costs?

How to reduce costs?

Framework can be applied after priority cost buckets identified

Reduce the need for resources

Meet the need with less resources

Reduce the costs of resources

Eliminate the need

Reduce the service level

Eliminate waste of resources

Improve productivity

Find cheaper alternatives

Renegotiate costs
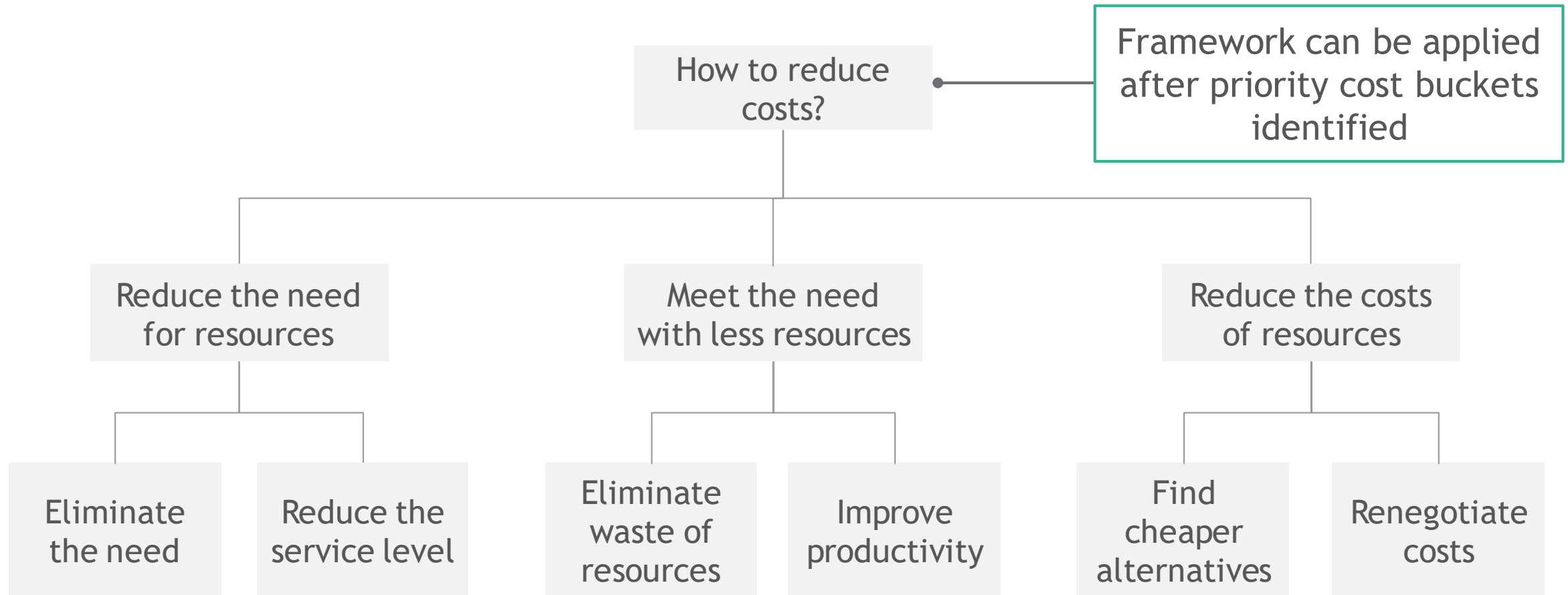
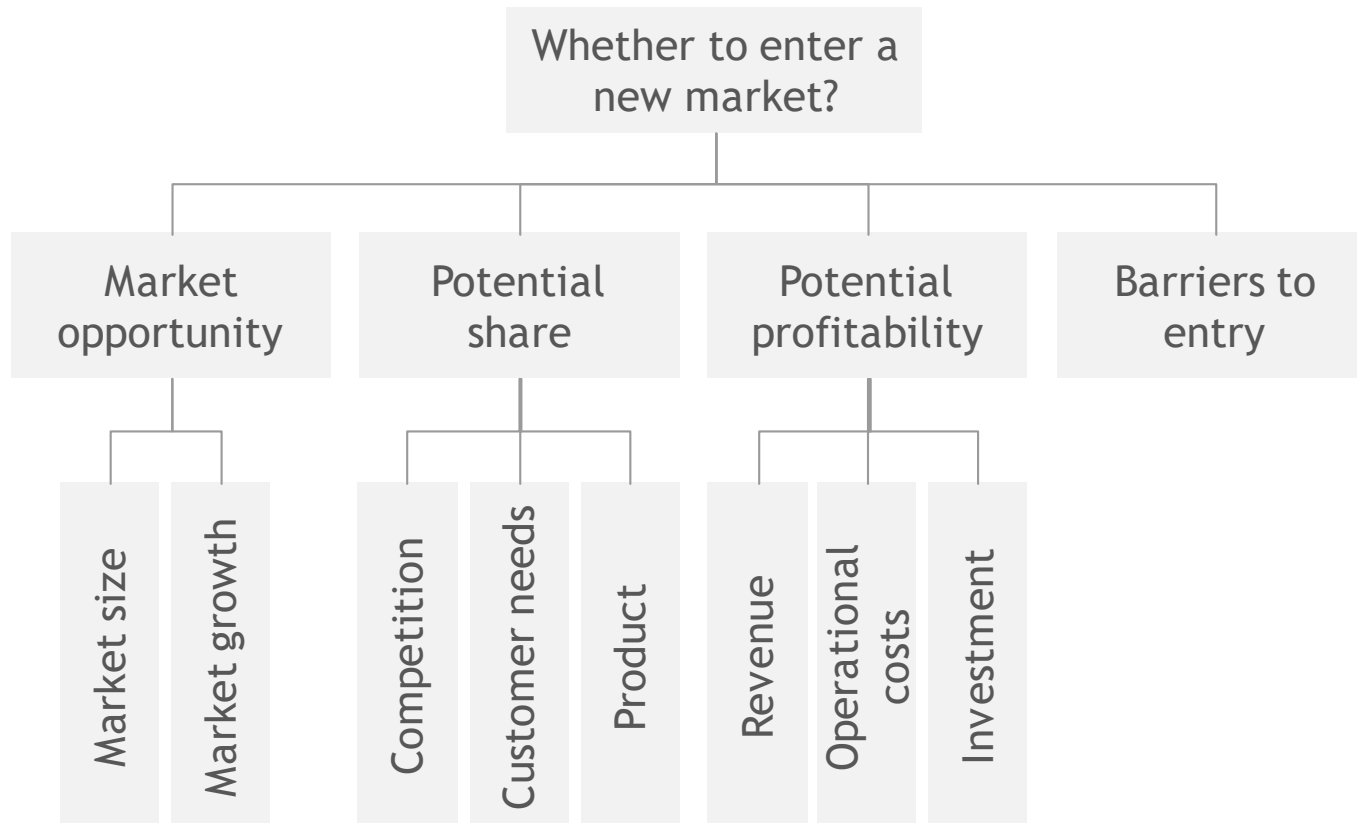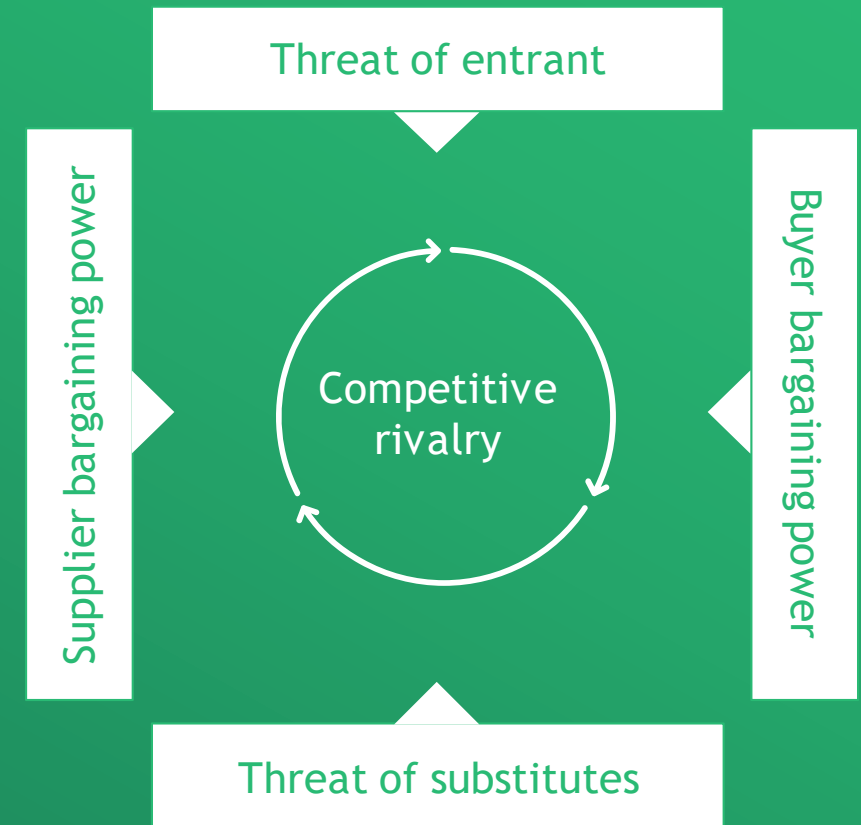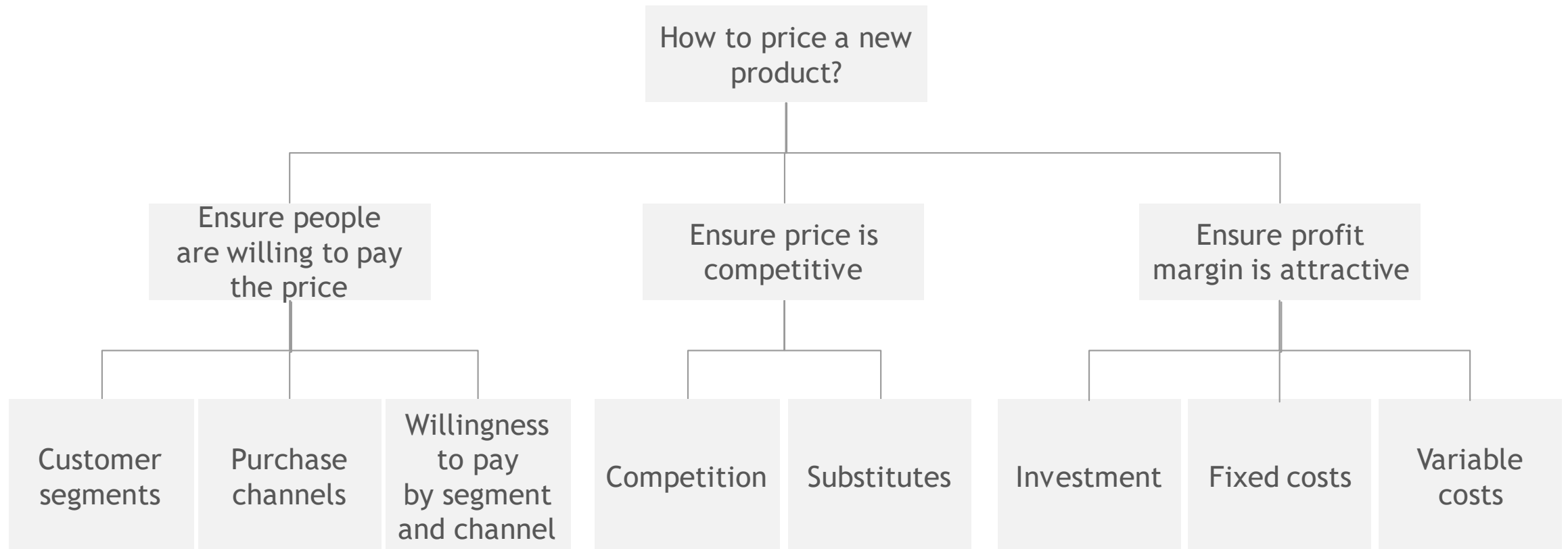# Example 3. How to grow the business?

24
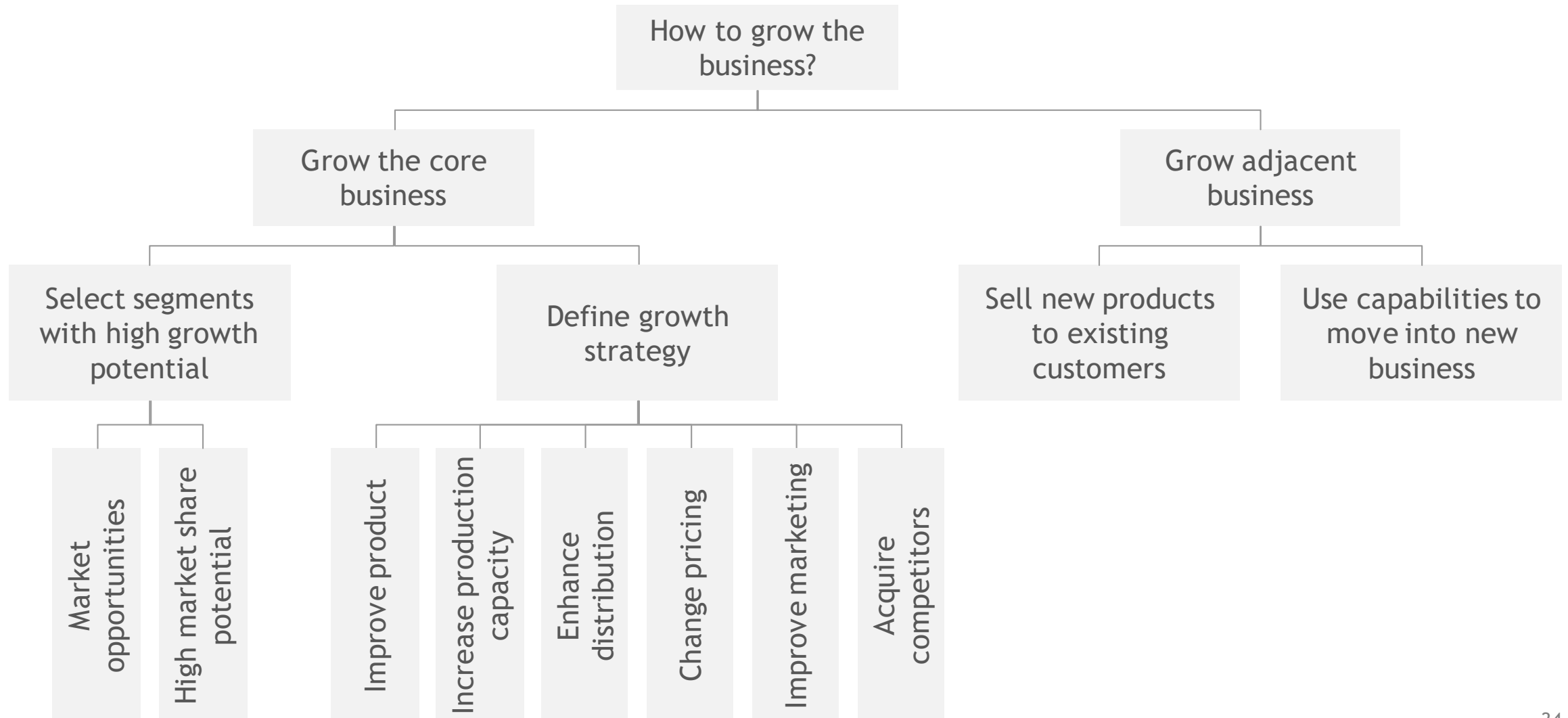
Example 4. Whether to enter a new market?
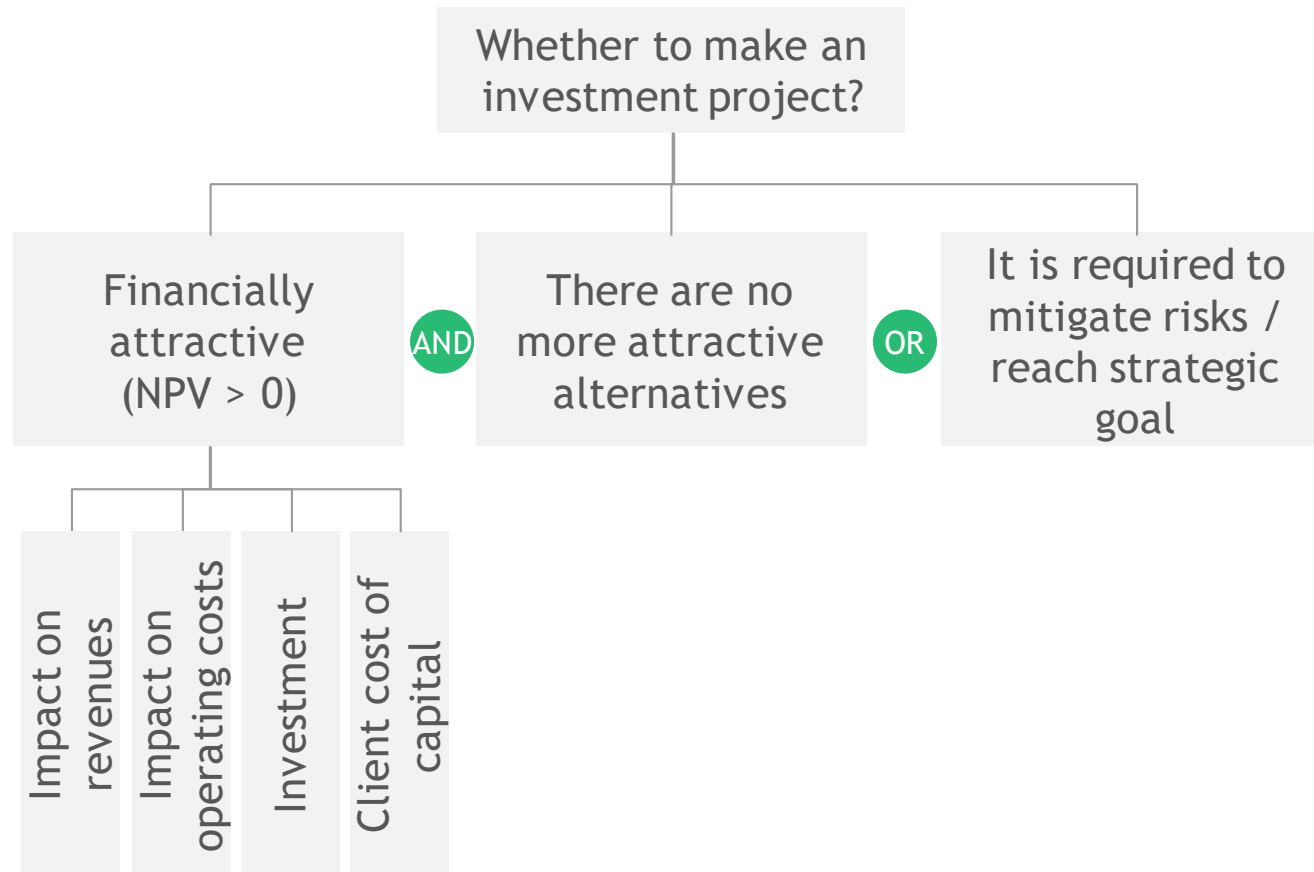

Assessment of the market attractiveness with the five forces model by Michael Porter

Example 5. How to price a new product?

26

Example 6. Whether to make an investment project?


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                    ┌─────────────────────┐
                    │  Whether to make an │
                    │ investment project? │
                    └─────────────────────┘
          ┌───────────────────┼───────────────────┐
  ┌────────────┐      ┌────────────┐        ┌──────────────┐
  │ Financially│      │ There are  │        │ It is required│
  │ attractive │ AND  │ no more    │  OR    │ to mitigate   │
  │ (NPV > 0)  │      │ attractive │        │ risks / reach │
  └────────────┘      │ alternatives│       │ strategic goal│
        │             └────────────┘        └──────────────┘
  ┌─────┼─────┬─────┐
```

- Impact on revenues
- Impact on operating costs
- Investment
- Client cost of capital

NPV can be used to assess if investment is creating value in excess of the cost

Present value (PV)	Future cash flow (CF) multiplied by discount factor that reflects risk and time value of money
Net present value (NPV)	PV of CF minus initial investment – need to be >0
Discount factor	Calculated as: $1/(1+r)^n$ - n – time period - r – return / cost of capital

	Year 0	Year 1	Year 2	Year 3	Year 4
Cash Flow	$5000	$5000	$5000	$5000	$5000
Discount factor	$1/1.1^0$	$1/1.1^1$	$1/1.1^2$	$1/1.1^3$	$1/1.1^4$
PV	$5000	$4545	$4132	$3757	$3415
Total PV			$20849		

27

Example 7. Where to locate a new facility?