

Lean Six Sigma Green Belt Certification Course

DIGITAL
OPERATIONS



Voice of the Customer



Learning Objectives

By the end of this lesson, you will be able to:

- 👁️ Identify the types of customers
- 👁️ Explain the VOC data collection methods and their importance
- 👁️ Explain the VOC table and its analysis



Scenario

An IT Call Center has the goal to increase its customer satisfaction rating.

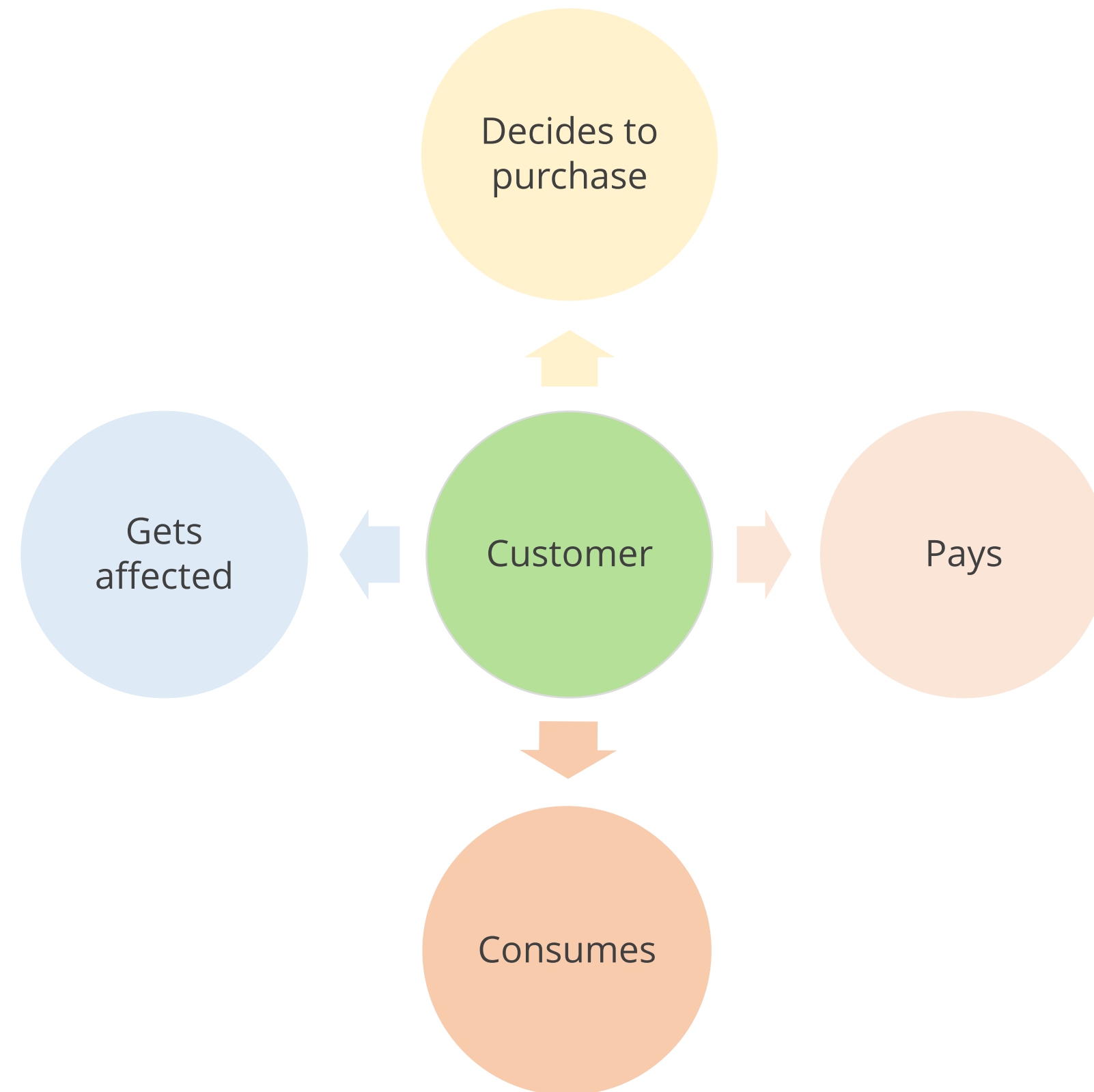
It is not likely that leaders would know WHAT to improve without knowing the issues that customers are experiencing. Therefore, we must gather the customer's needs or requirements.

Obtaining customer feedback, such as "I want the correct answer to my questions or issues" and "I don't want to be transferred around" could lead to a defined requirement of "get needed information" which is measured by the number of transfers and service times.

Focusing on a metric that has a direct relationship with the customer's definition of satisfaction will have a significant impact on the customer satisfaction rating. This can only be accomplished by obtaining the Voice of the Customer.

Customer Identification and Data

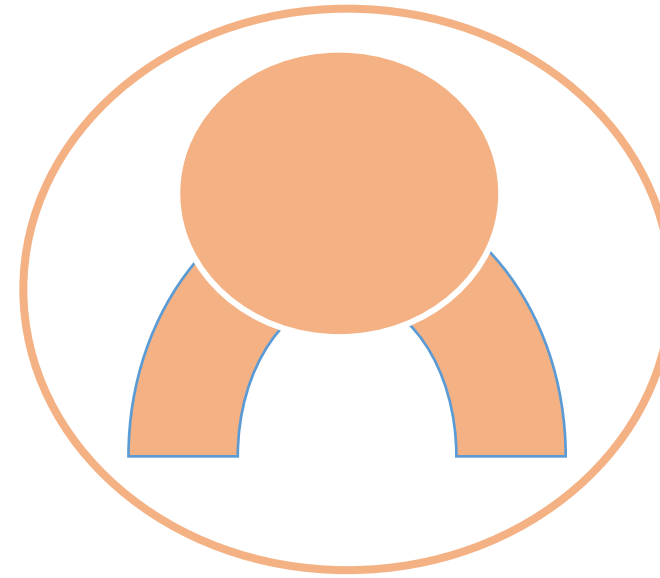
Importance of Customers



Types of Customers



Internal Customers



External Customers



Internal Customers

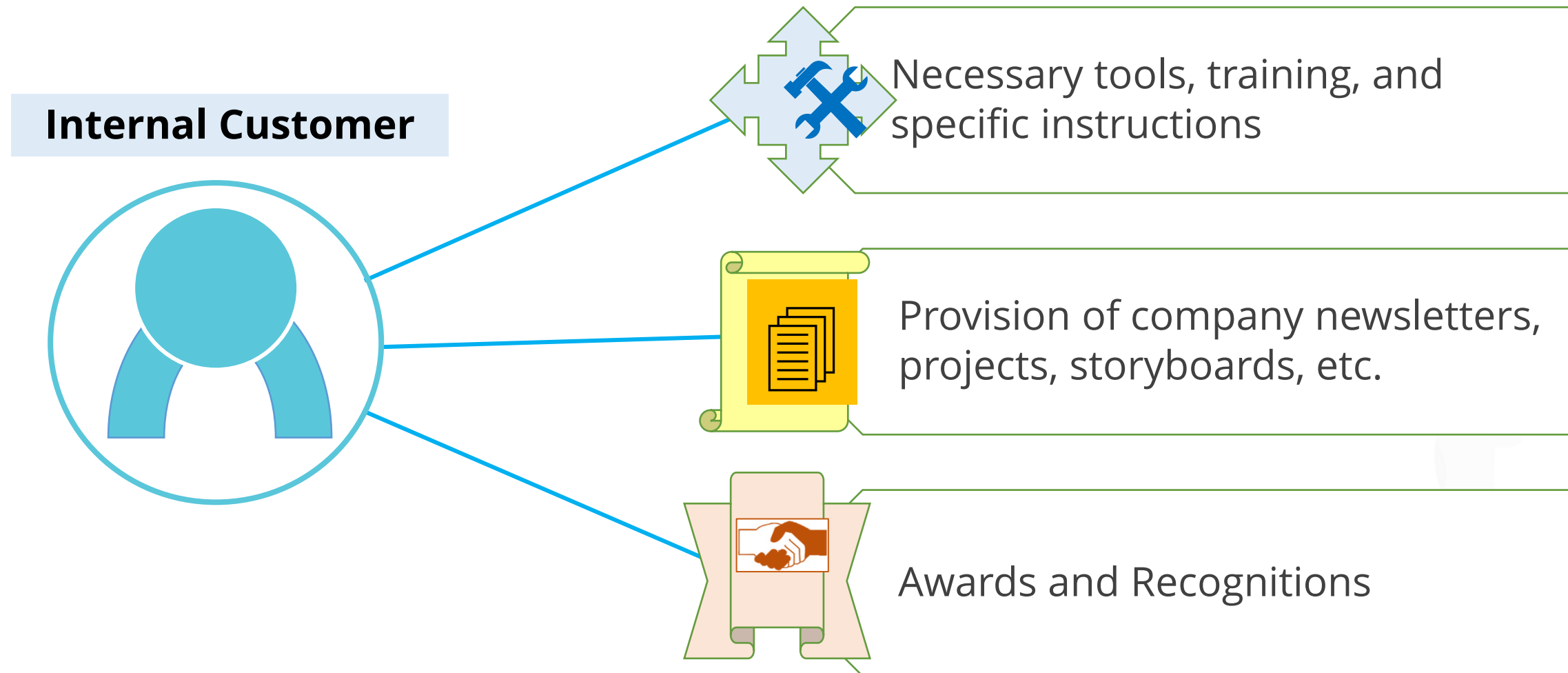
A person within the business system who is affected by the product or the service while it is being developed



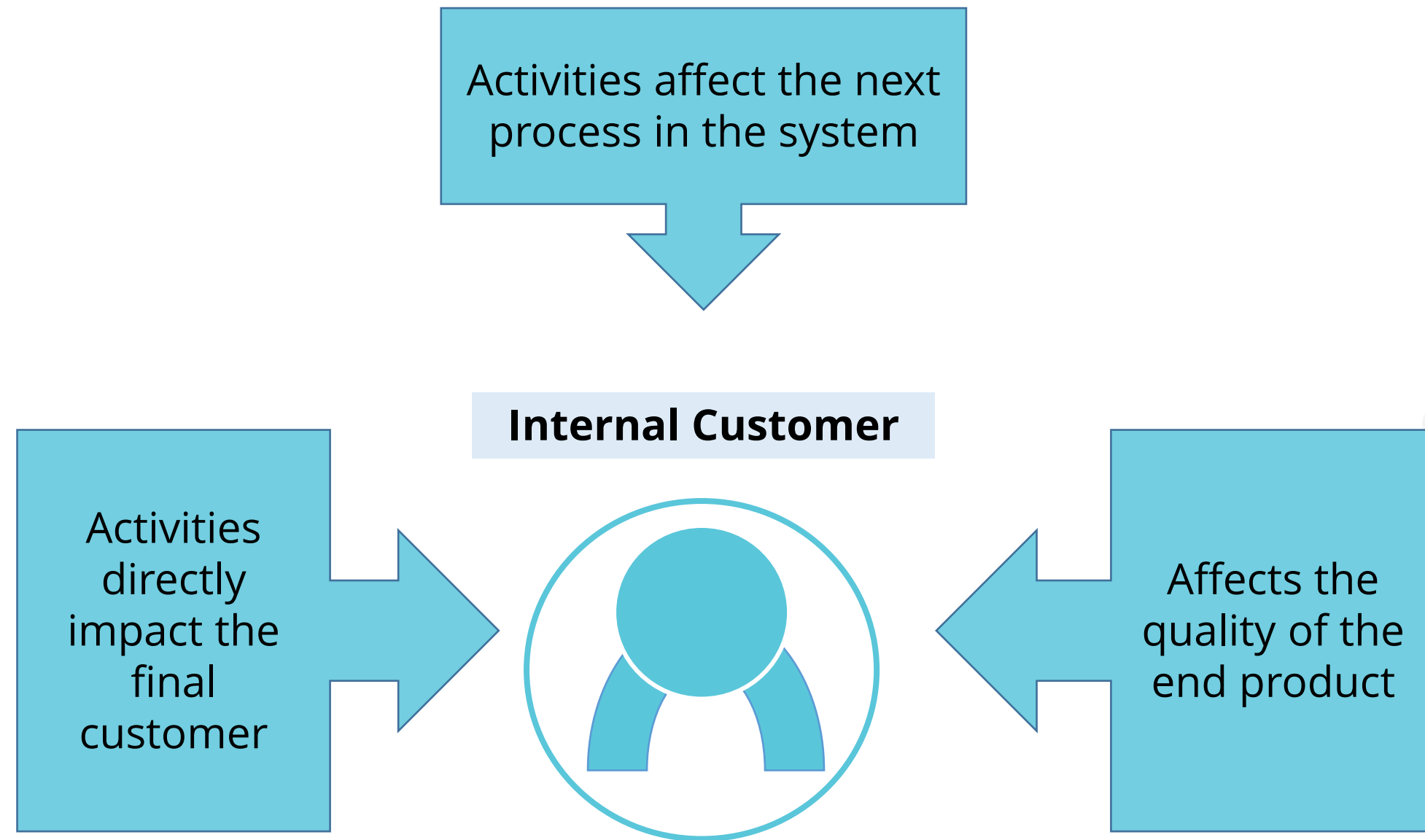
When the needs of the internal customers, especially the employees' needs, are met, they are more likely to maintain higher standards of quality and improve the productivity of the product or service.



Internal Customer: Needs

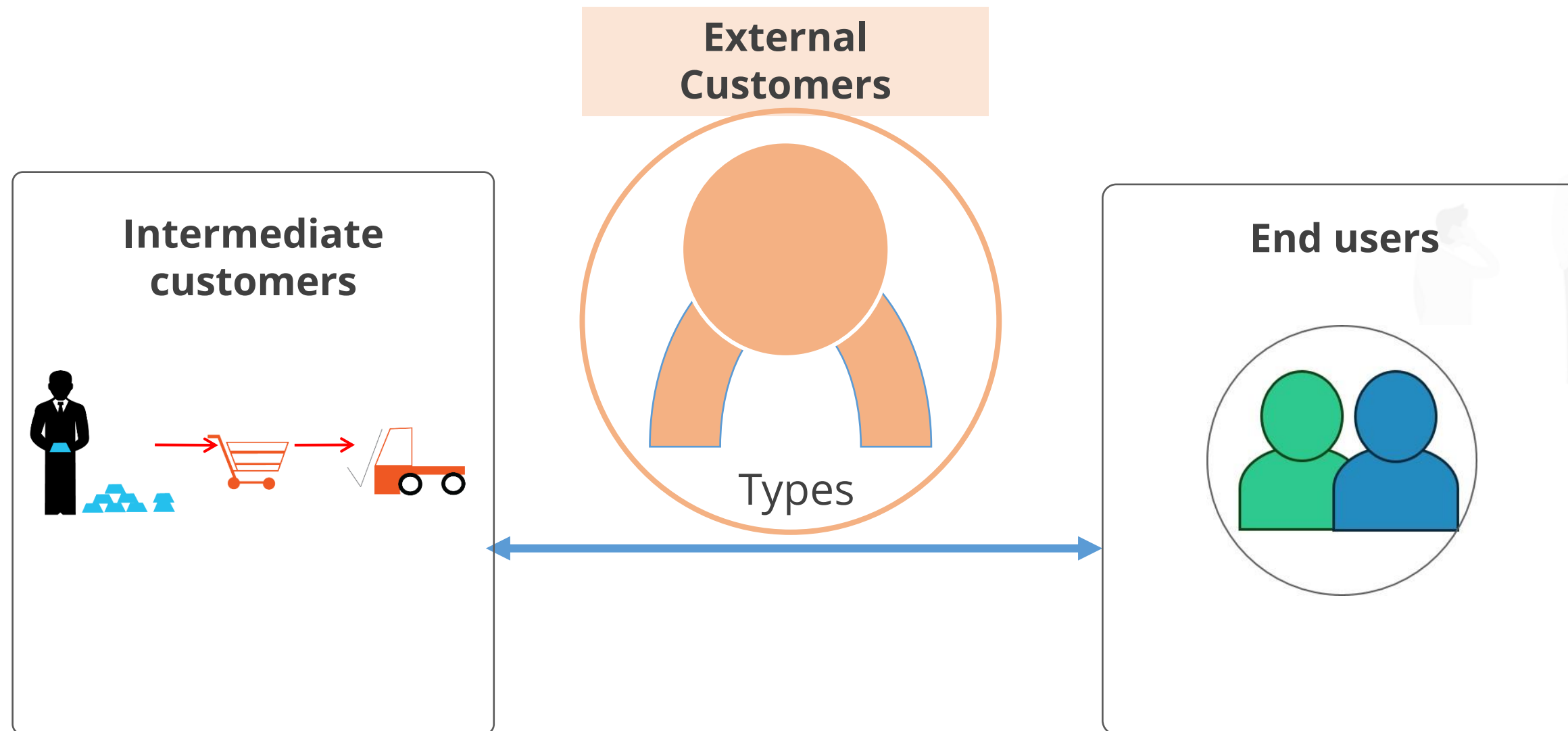


Internal Customer: Importance



External Customer: Definition

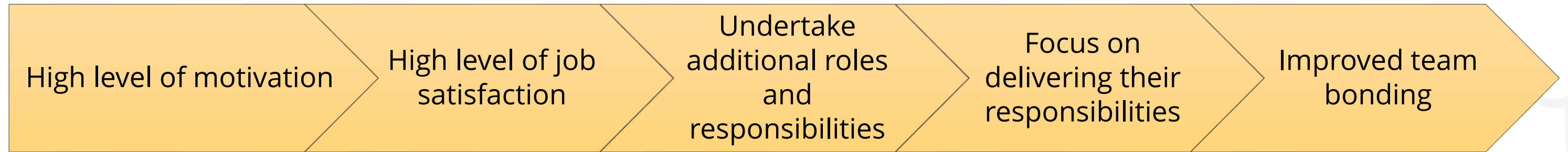
External customers are not a part of an organization but are impacted by it. They are the source of revenue for a business system.



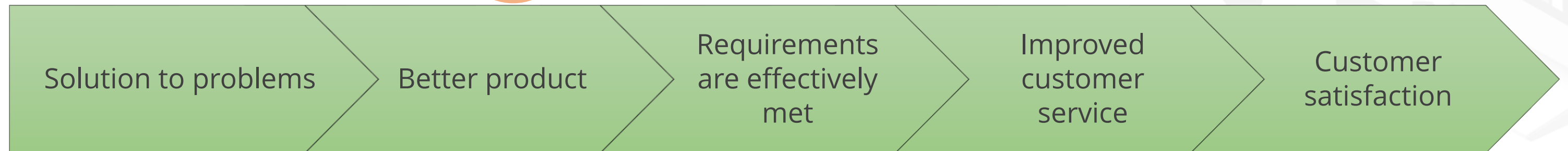
Customer Feedback: Importance



Internal Customers



External Customers



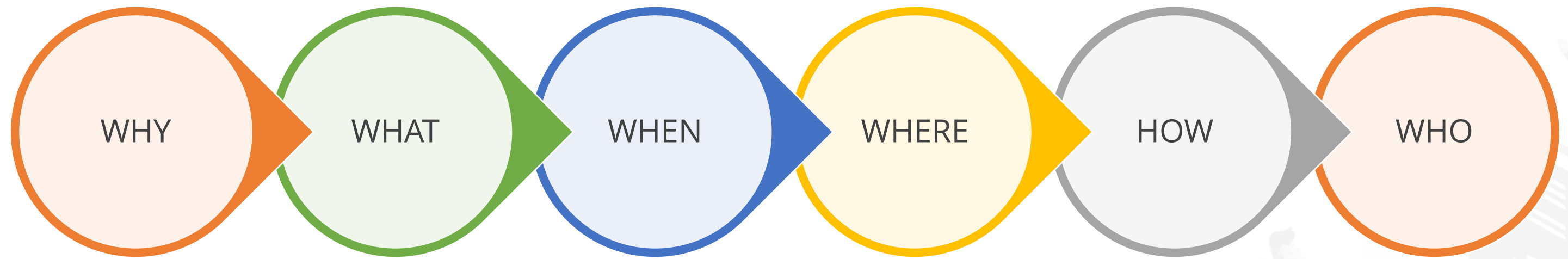
Voice Of The Customer (VOC): Perceived Value



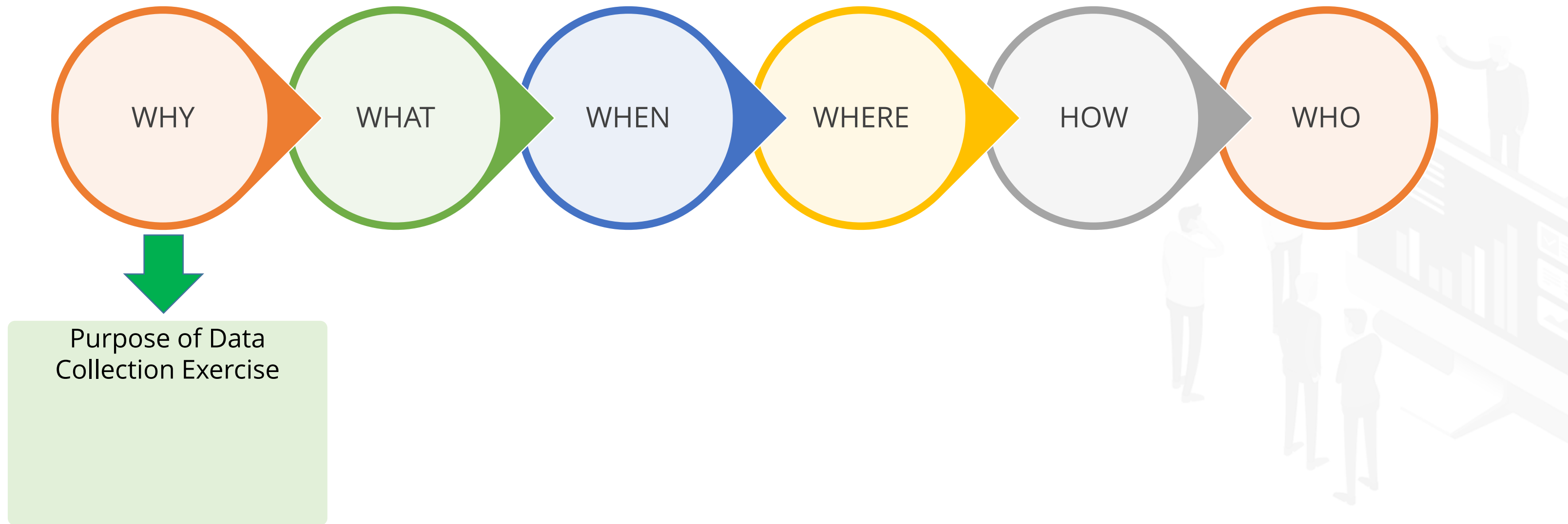
Value is the output the customer expects versus the cost to achieve that expectation.

$$\text{VALUE} \uparrow = \frac{\text{FUNCTION}}{\text{COST}} \downarrow$$

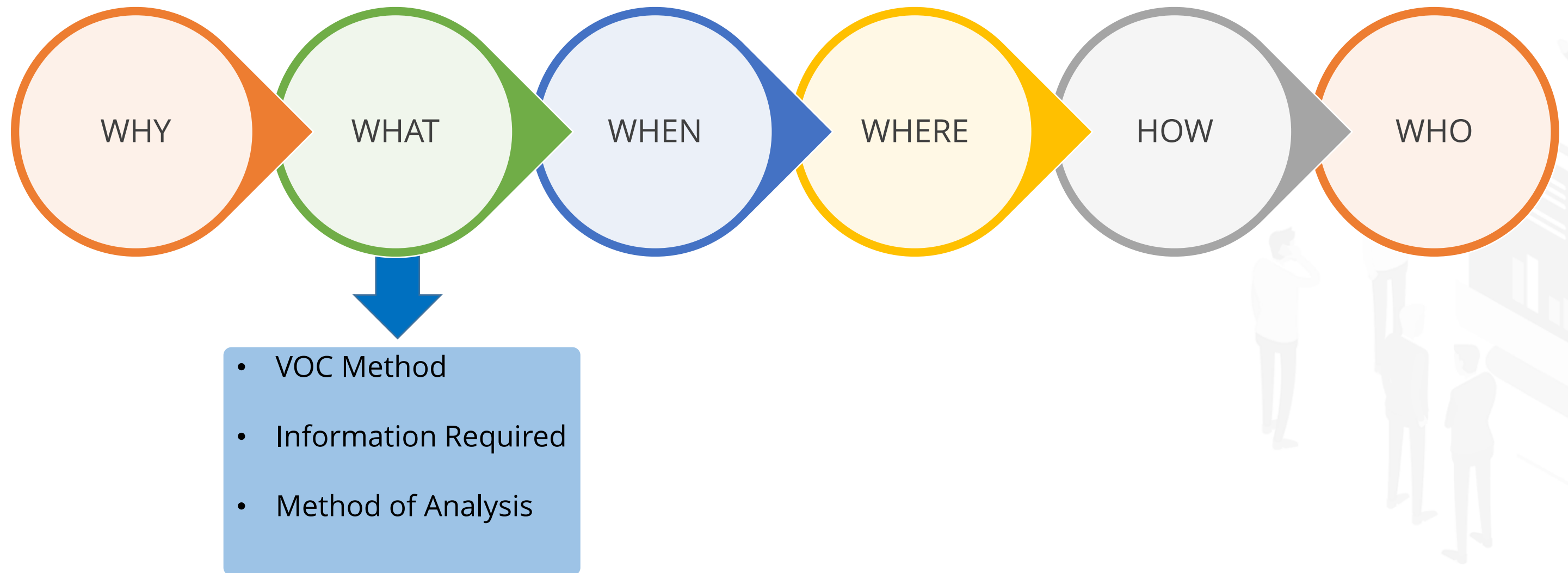
VOC Data Collection Plan



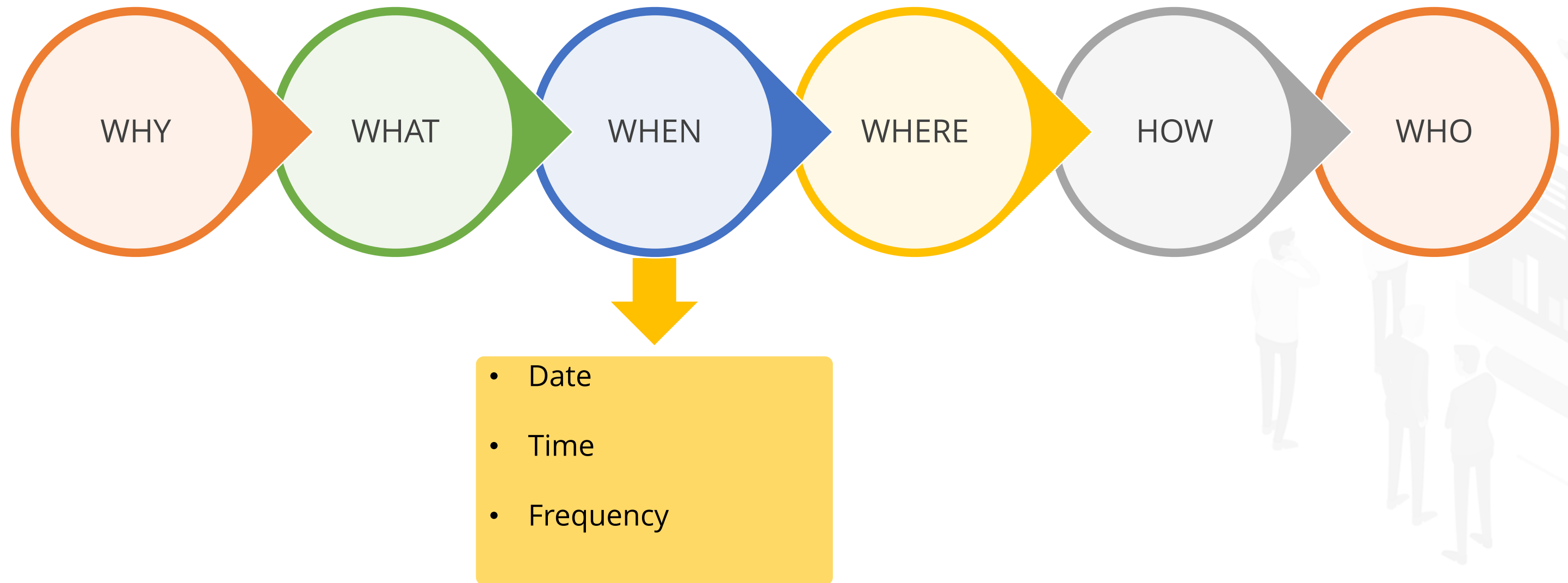
VOC Data Collection Process: Steps



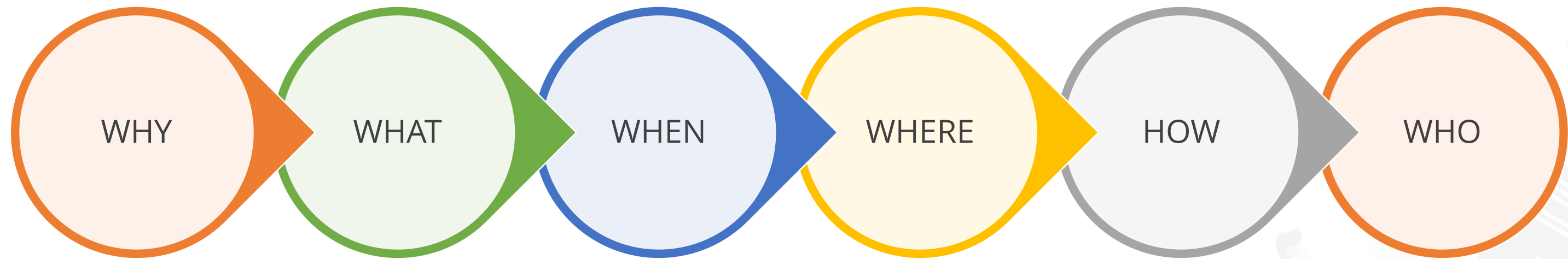
VOC Data Collection Process: Steps



VOC Data Collection Process: Steps

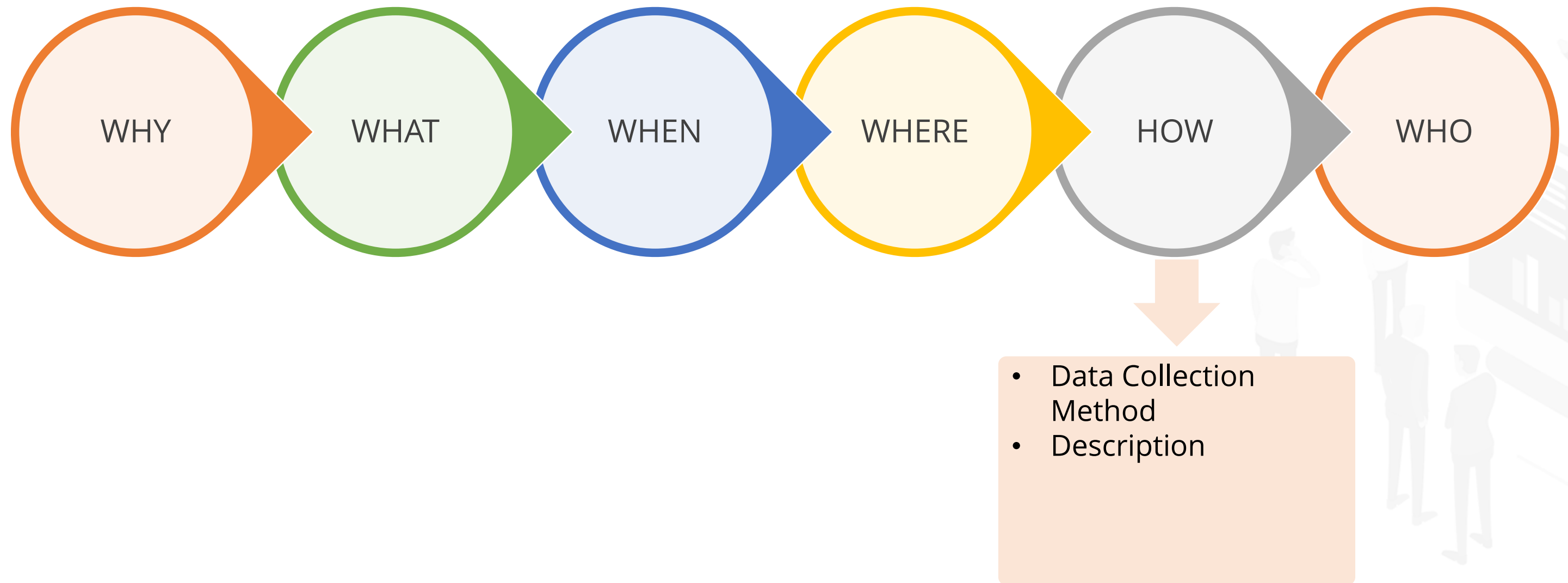


VOC Data Collection Process: Steps

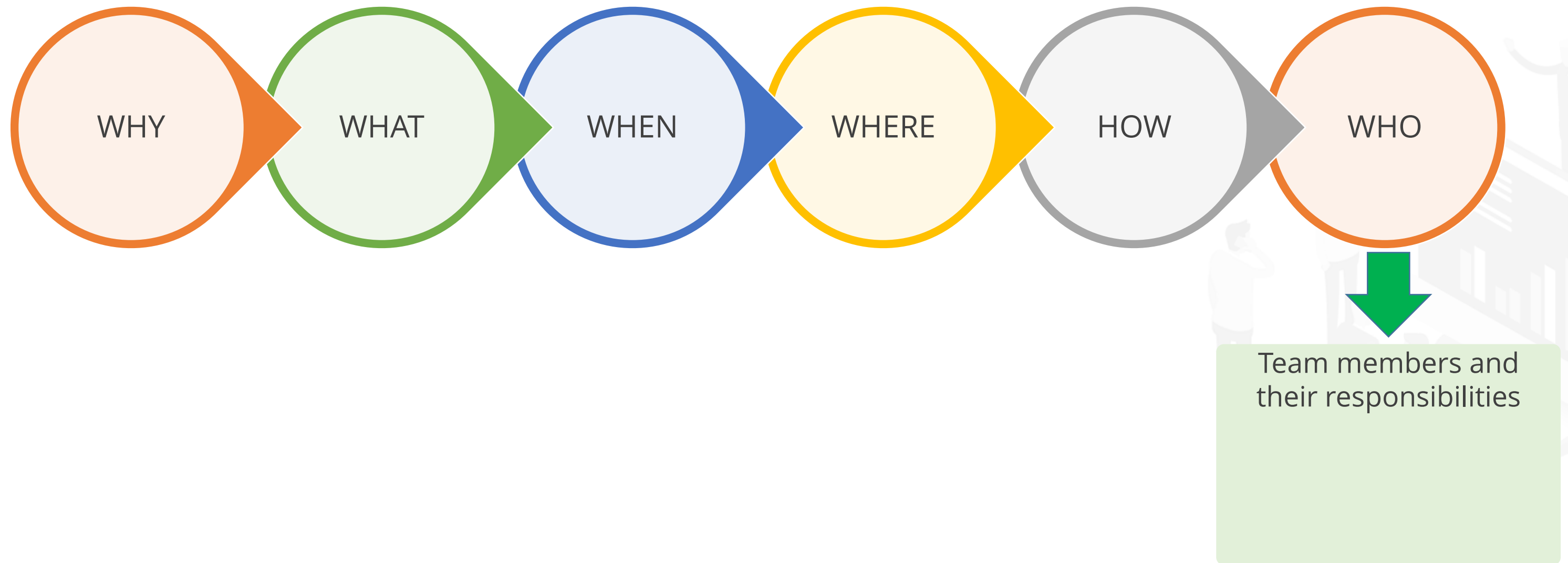


- Which customers
- Location

VOC Data Collection Process: Steps



VOC Data Collection Process: Steps



Reactive vs. Proactive Data Sources

Reactive Data Sources

Warranty claims, product returns, customer complaints

Information comes whether action is taken or not

Used to address immediate needs of customers

Proactive Data Sources

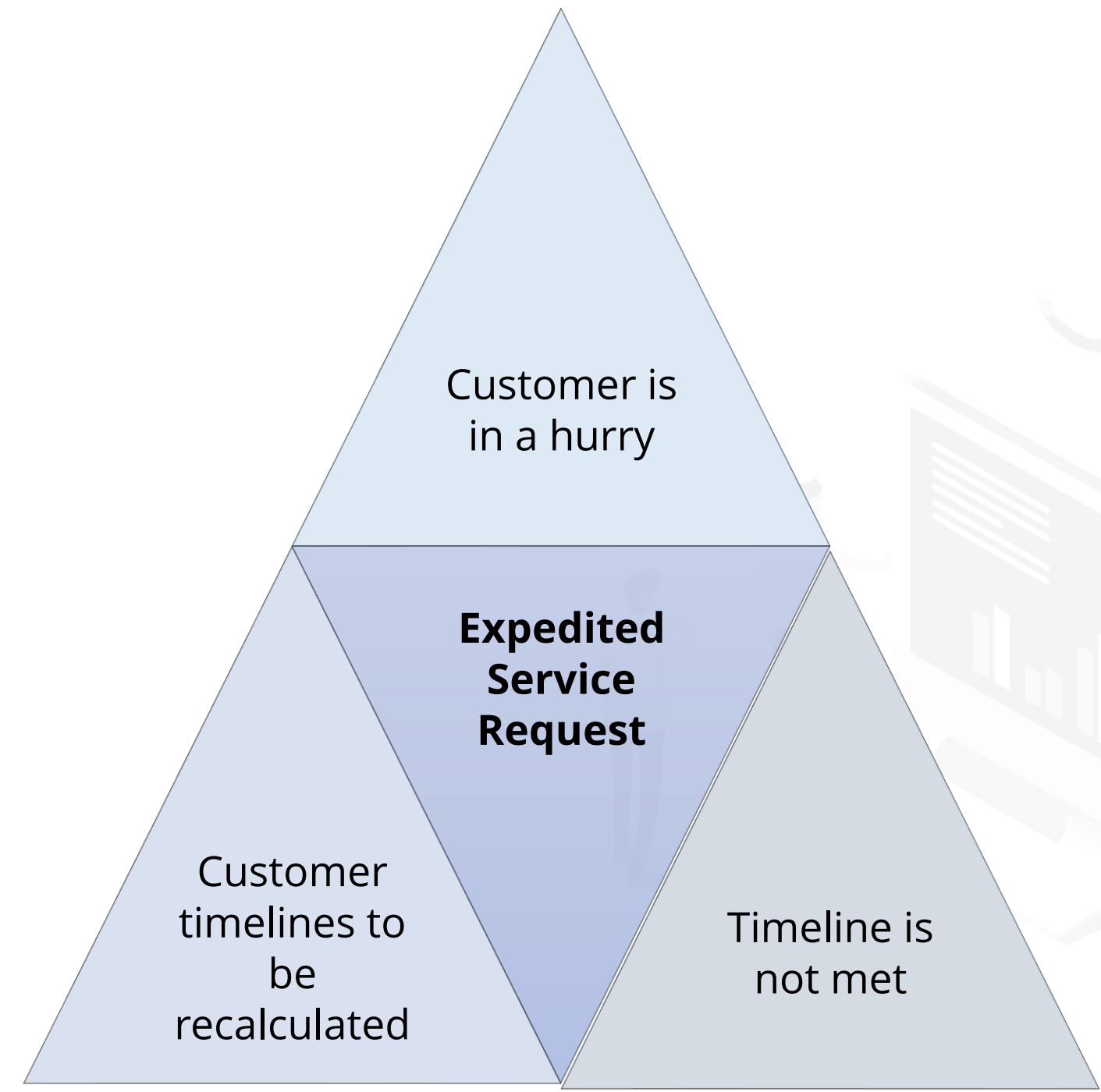
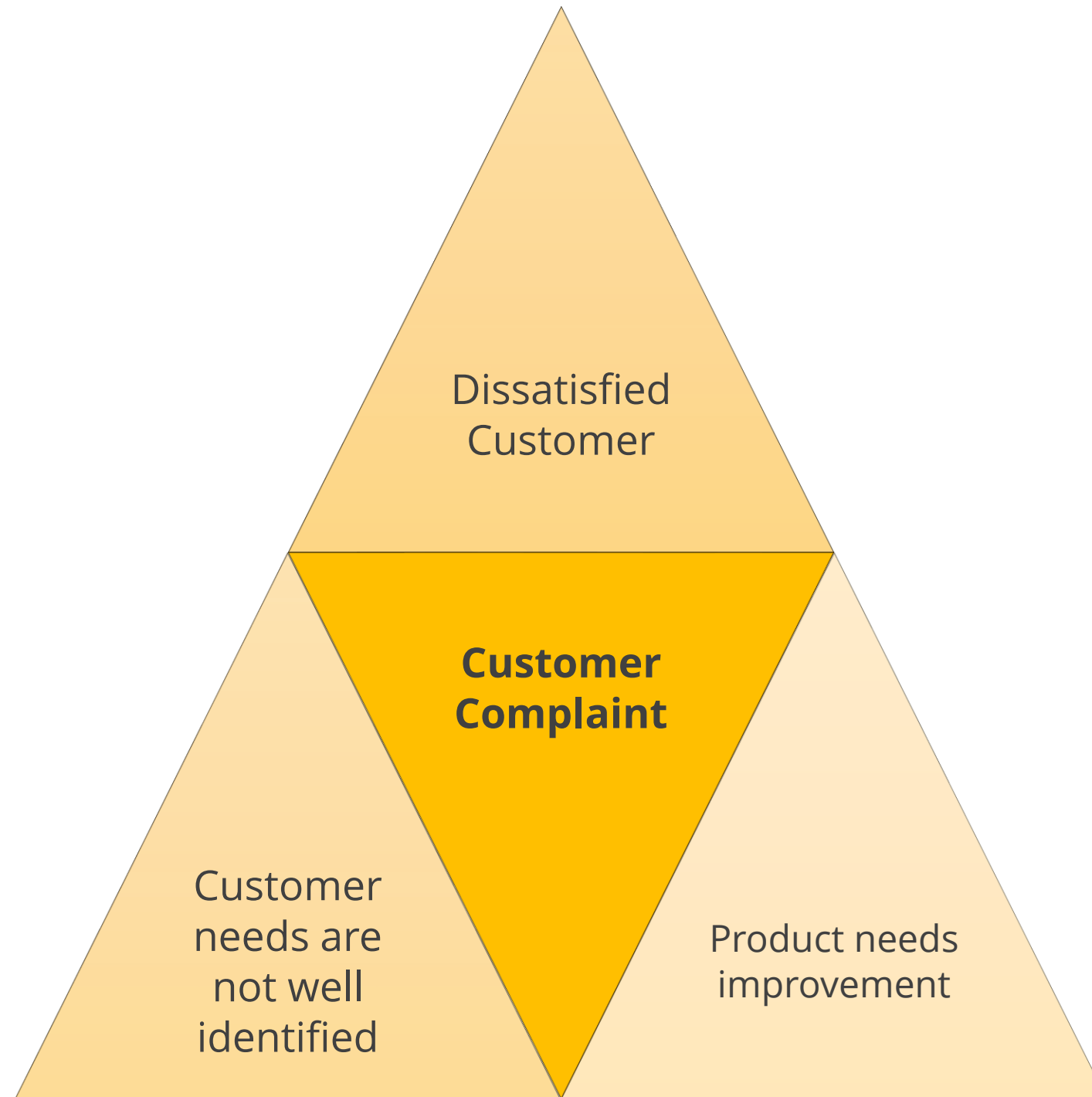
Questionnaires, focus groups, and interviews

Information is gathered from the customer after contact is initiated

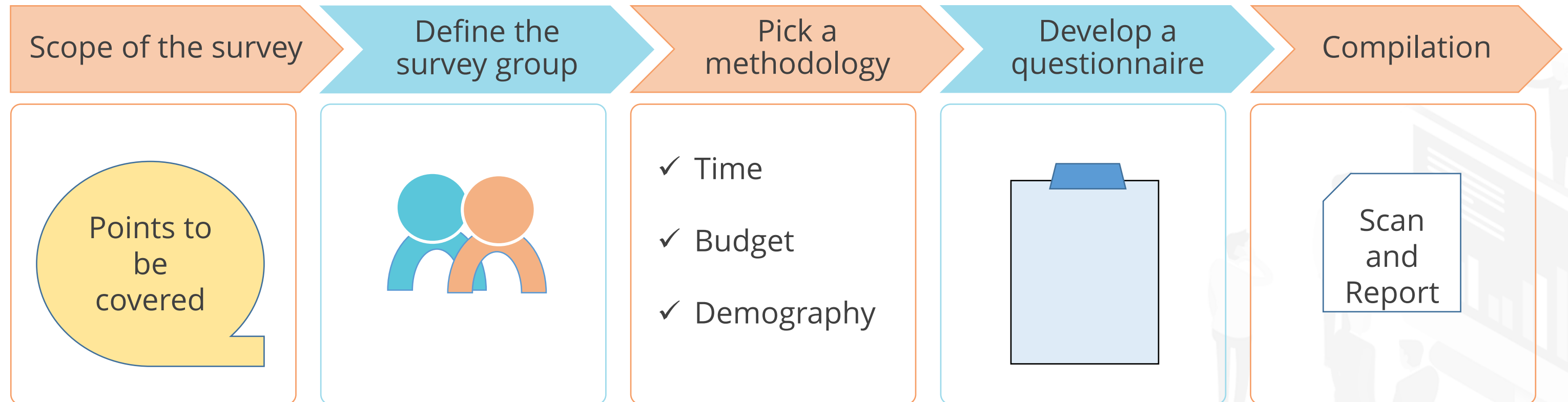
Requires targeted customer contact to obtain information related to the project



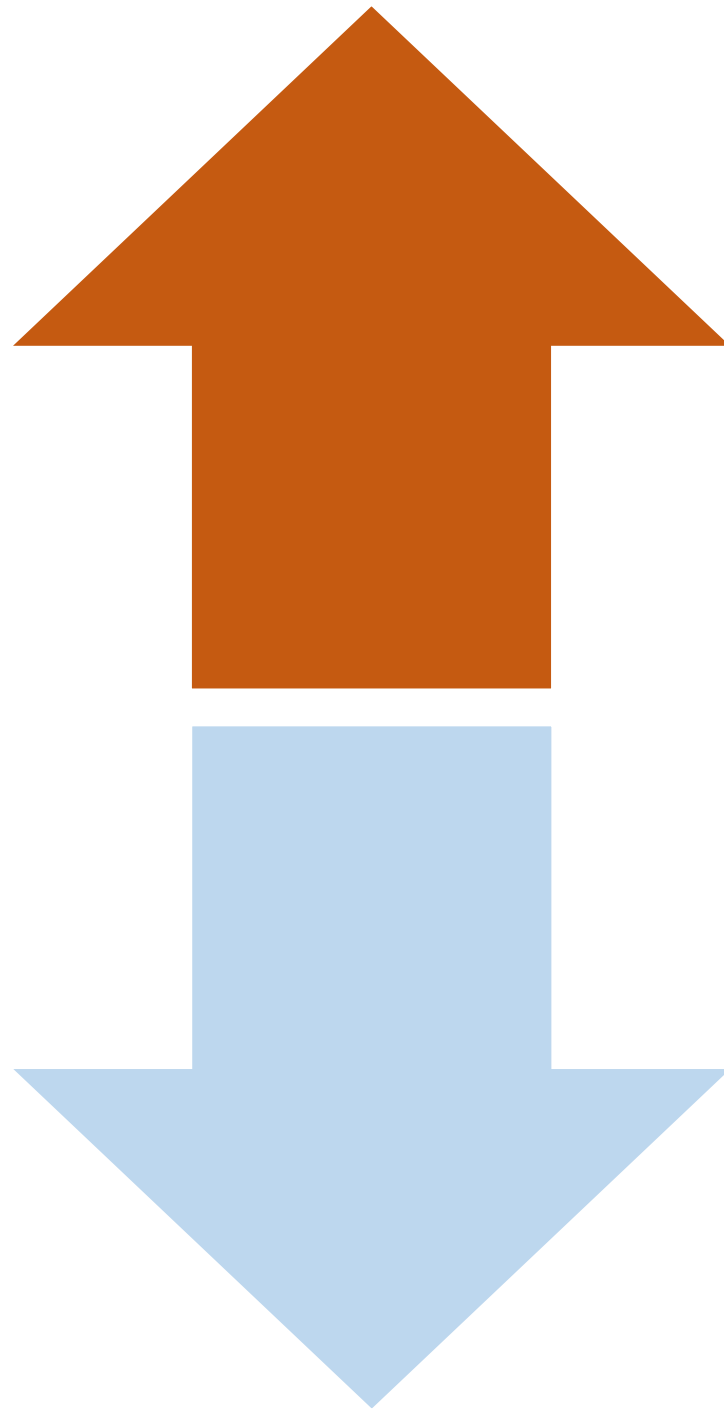
Customer Complaint vs. Expected Service Request



Proactive Data Source: Steps In The Process



Proactive Data Source



Advantages

- Low cost
- 70% – 90% high phone response rate
- Faster results
- Analysis of mail questionnaires requires few trained resources

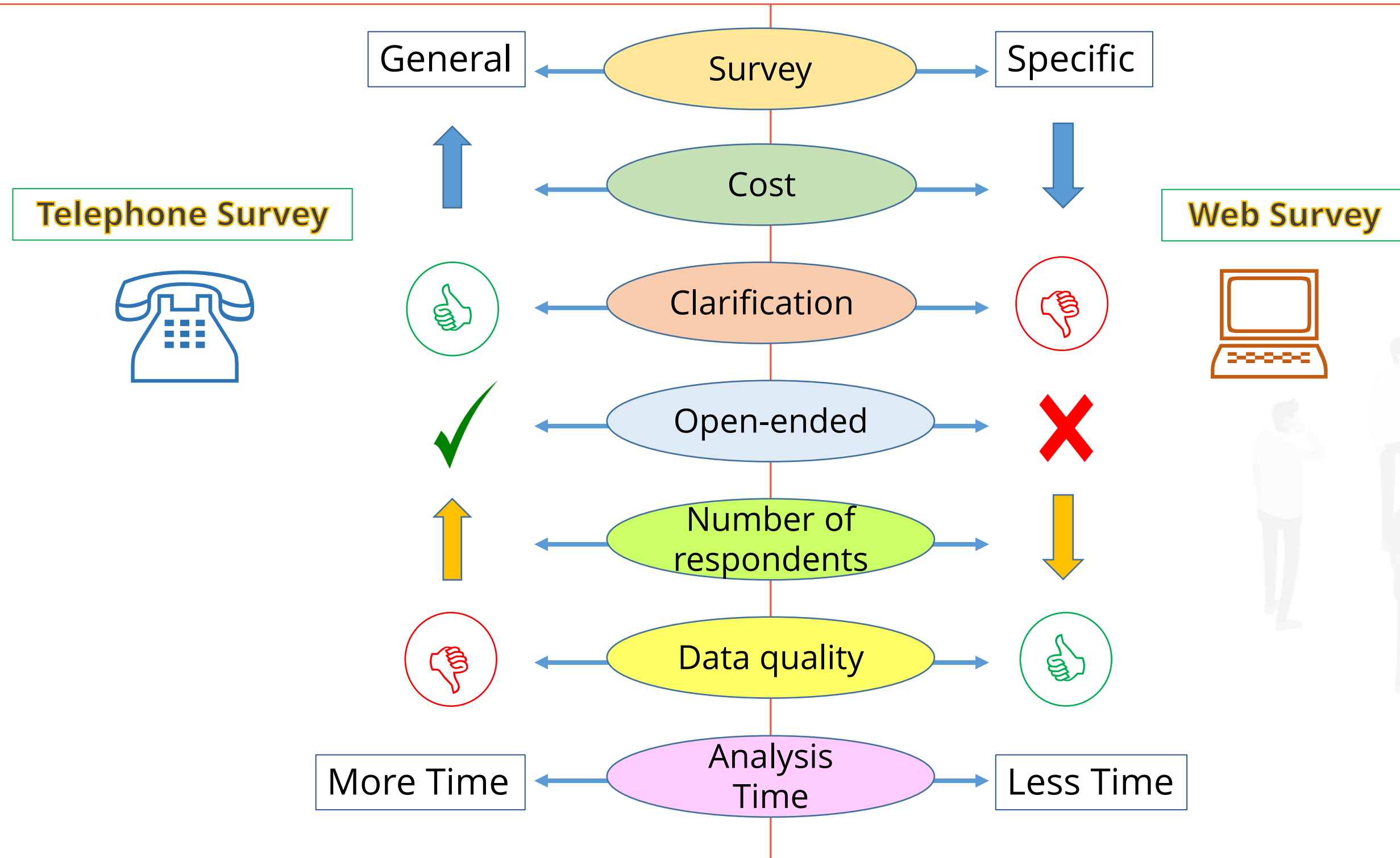


Disadvantages

- 20% – 30% mail response
- Phone surveys: interviewer may influence the interviewee
- Lack of clarity



Proactive Data Source: Telephone Vs. Web Survey



Proactive Data Source: Sample Survey

| | | | | | | |
|---|----------------------------------|-------------------------------------|---|-----------------------|-----------------------|-----------------------|
| How satisfied were you with [BRAND]? | | | | | | |
| Very Dissatisfied | Somewhat Dissatisfied | Slightly Dissatisfied | Neither | Slightly Satisfied | Somewhat Satisfied | Very Satisfied |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | | | | | | |
| I am always or almost always satisfied with... | I am sometimes satisfied with... | I am sometimes dissatisfied with... | I am always or almost always dissatisfied with... | | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | | |
| | | | | | | |
| Now that you've actually used the product, how satisfied with it are you? | | | | | | |
| Dissatisfied | | | | | | Satisfied |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | | | | | | |
| Behavioral Measures of Consumer Satisfaction | | | | | | |
| Strongly Disagree | Sometimes Disagree | Neither | Sometimes Agree | Strongly Agree | | |
| | | | | | | |
| If I had it to do over again, I would purchase [BRAND] Behavioral Measure | | | | | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | |
| My choice to buy [BRAND] was a good one. Behavioral Measure | | | | | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | |
| I feel bad about my decision concerning [BRAND] Behavioral Measure | | | | | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | |
| I think that I did the right thing when I decided to buy [BRAND] Behavioral Measure | | | | | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | |
| I am not happy that I purchased [BRAND] Behavioral Measure | | | | | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | |



Steps to Conduct a Focus Group

Preparatory stage

- Identify scope of focus group
- Analyze the problem that needs to be addressed

Planning stage

- Finalize session, venue, and time
- Arrange a means for transcription
- Advertise session details
- Arrange for refreshments

Conducting Session

- Facilitate introductions
- State the agenda and transcription factor
- Record the session
- Retreat to an observatory

Compilation

- Study transcription material
- Make notes about key customer needs and requirements

Focus Group: Advantages

Advantages of a Focus Group



✓ Interaction generates information

✓ Provides in-depth responses

✓ Addresses more complex questions or qualitative data

✓ Gets critical-to-quality definitions

Focus Group: Disadvantages

Disadvantages of a Focus Group



- ✓ Learning is subjective
- ✓ Data is qualitative
- ✓ Generates anecdotes and incidents by individuals in the group

Proactive Data Source: Interview



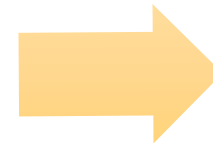
- ✓ Interview is a technique of questioning and probing an individual to gather information.
- ✓ It is informal.
- ✓ It encourages the interviewees to voice their opinion.
- ✓ Individual interviews can be time consuming.

Proactive Data Source: Process of an Interview



Introduction and Greetings

- Greet in a friendly manner
- Understand interviewee's background



Gather Feedback

- Avoid taking notes
- Give complete attention
- Gather information



Compilation

- After session, make a list of points



Proactive Data Source: Interview

Advantages

Tackles complex questions

Wide range of information

Allows visual aids

Disadvantages

Time Consuming

Requires a trained and experienced interviewer

VOC Proactive Data Collection Methods

| Criteria / Factors | Weightage | Telephone Survey | Web Survey | Interview |
|---|------------|------------------|------------|------------|
| Respondents' availability | 12 | 8 | 8 | 6 |
| Lead data | 6 | 8 | 8 | 9 |
| Cost involved | 20 | 3 | 9 | 1 |
| Time consumption (organization perspective) | 5 | 5 | 10 | 1 |
| Availability of time from customer (for the survey) | 5 | 3 | 10 | 4 |
| Response rate of the customer | 15 | 7 | 5 | 8 |
| Judging the quality of data | 10 | 1 | 6 | 10 |
| Clarification | 3 | 7 | 0 | 10 |
| Visualizing feature | 2 | 0 | 10 | 10 |
| Compiling and analyzing data | 2 | 3 | 10 | 3 |
| Resource requirement | 10 | 1 | 10 | 1 |
| Preparation time | 5 | 7 | 1 | 9 |
| Accessibility to customer | 5 | 8 | 8 | 4 |
| TOTAL | 100 | 471 | 744 | 522 |

Write Effective VOC Questions: Tips

Do not use leading questions or words

Ask specific and direct questions

Give Mutually Exclusive Choices

Ask one question at a time

Write Effective VOC Questions: Tips

Do not use leading questions or words

Ask specific and direct questions

Give Mutually Exclusive Choices

Ask one question at a time

Should the government force you to pay higher taxes?
vs.
Should the government increase taxes?

Write Effective VOC Questions: Tips

Do not use leading questions or words

Ask specific and direct questions

Give Mutually Exclusive Choices

Ask one question at a time

What is your age?
0-10, 10-20, 20+

Write Effective VOC Questions: Tips

Do not use leading questions or words

Ask specific and direct questions

Give Mutually Exclusive Choices

Ask one question at a time

What do you like to do for fun?
The respondent can take this question in too many different directions.

Write Effective VOC Questions: Tips

Do not use leading questions or words

Ask specific and direct questions

Give Mutually Exclusive Choices

Ask one question at a time

How likely are you to come back and tell a friend?
These are really two questions in one.

Sample Review of Data Collection Questions

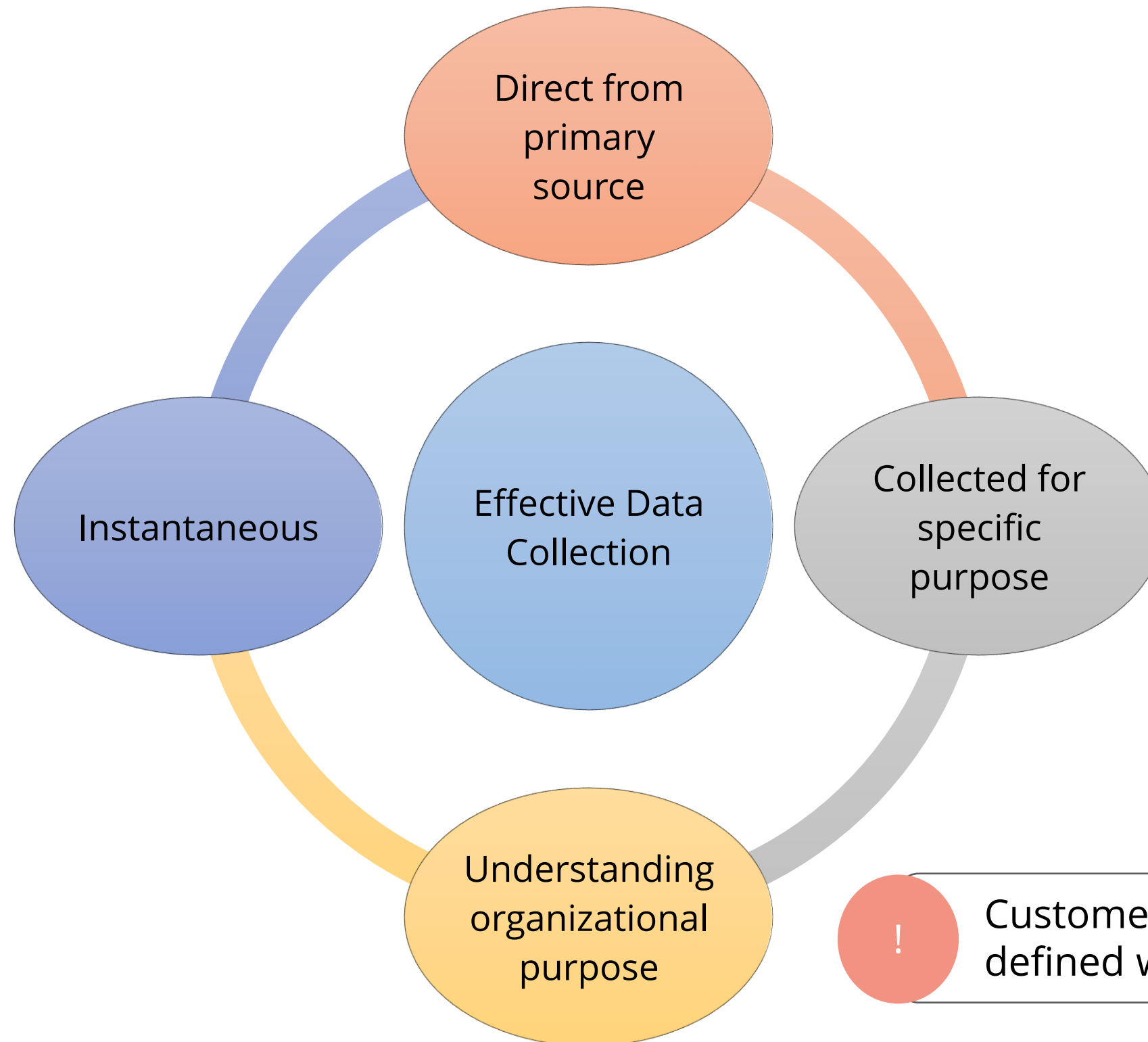
Customer feedback sheet before review

- Name:
- Gender: Male/Female
- Occupation: Student/Professional
- Were sales executive supportive? Yes/No
- Was the product delivered on assured time? Yes/No
- Please rate overall experience between 1 and 10 (1 lowest and 10 highest)

Customer feedback sheet after review

- Name:
- Gender: Male/Female
- Occupation: Student/Professional/others (Please specify)
- Rate sales executives on the below areas: (10 high–1 low)
 - Politeness
 - Ability to understand and identify problem
 - Quick reply to queries
 - Overall
- Was the product delivered on assured time? Yes/No
- Please rate overall experience between 1 and 10 (1 lowest and 10 highest)

VOC Data Collection Methods: Key Methods



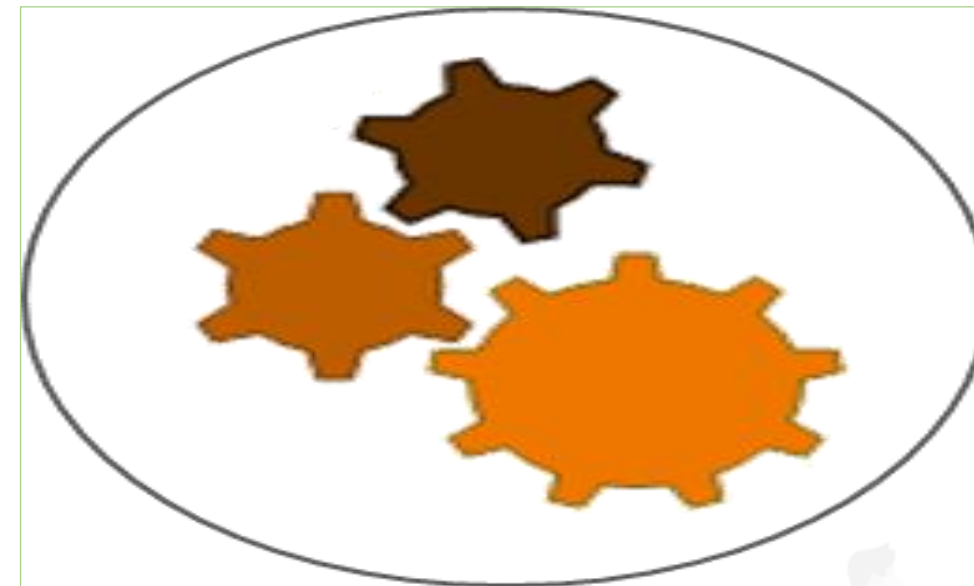
! Customer requirement is accurately defined with the collected data.



Additional Voice Considerations



Voice of the Business



Voice of the Process

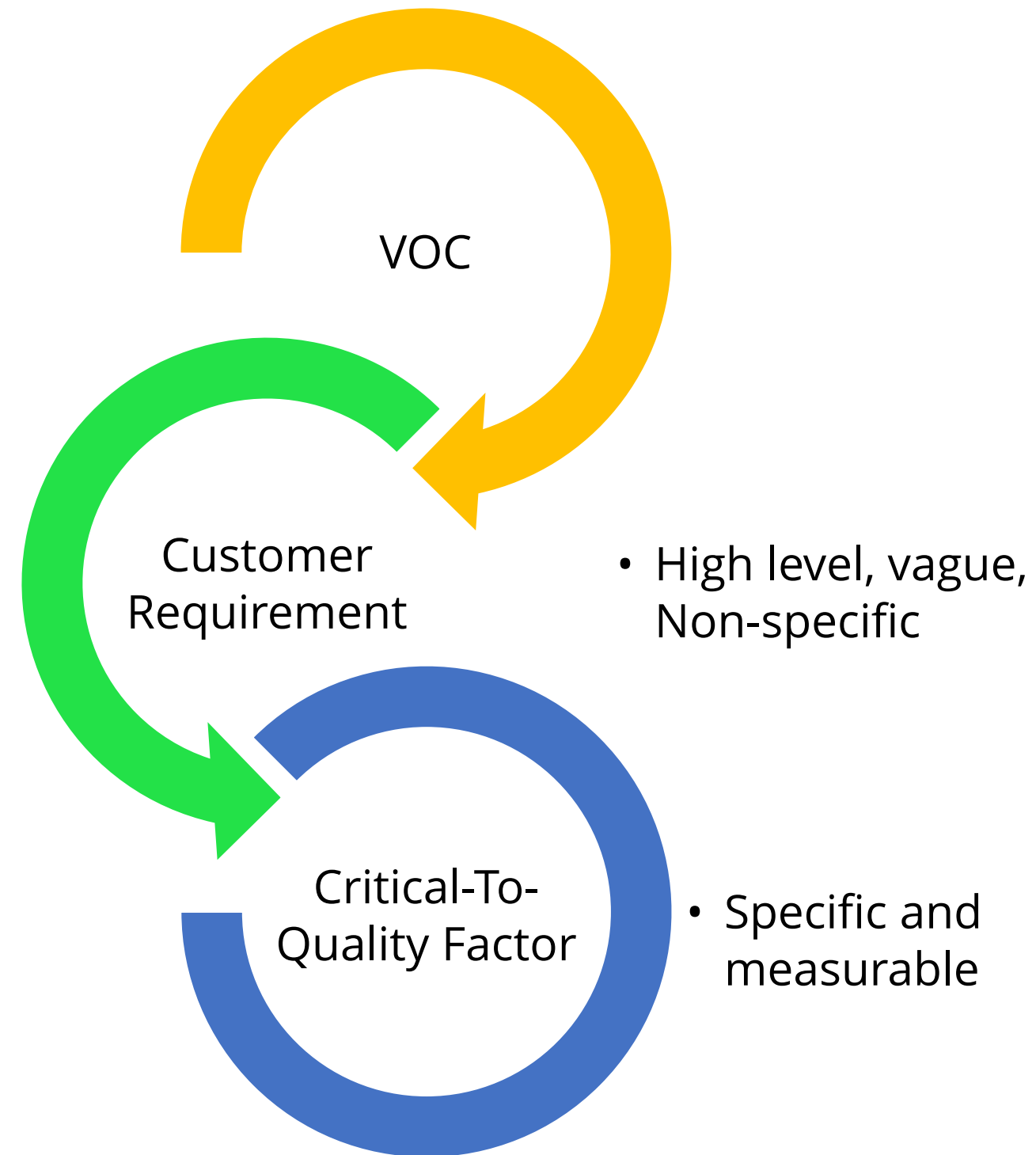
Customer Requirements

VoC Table

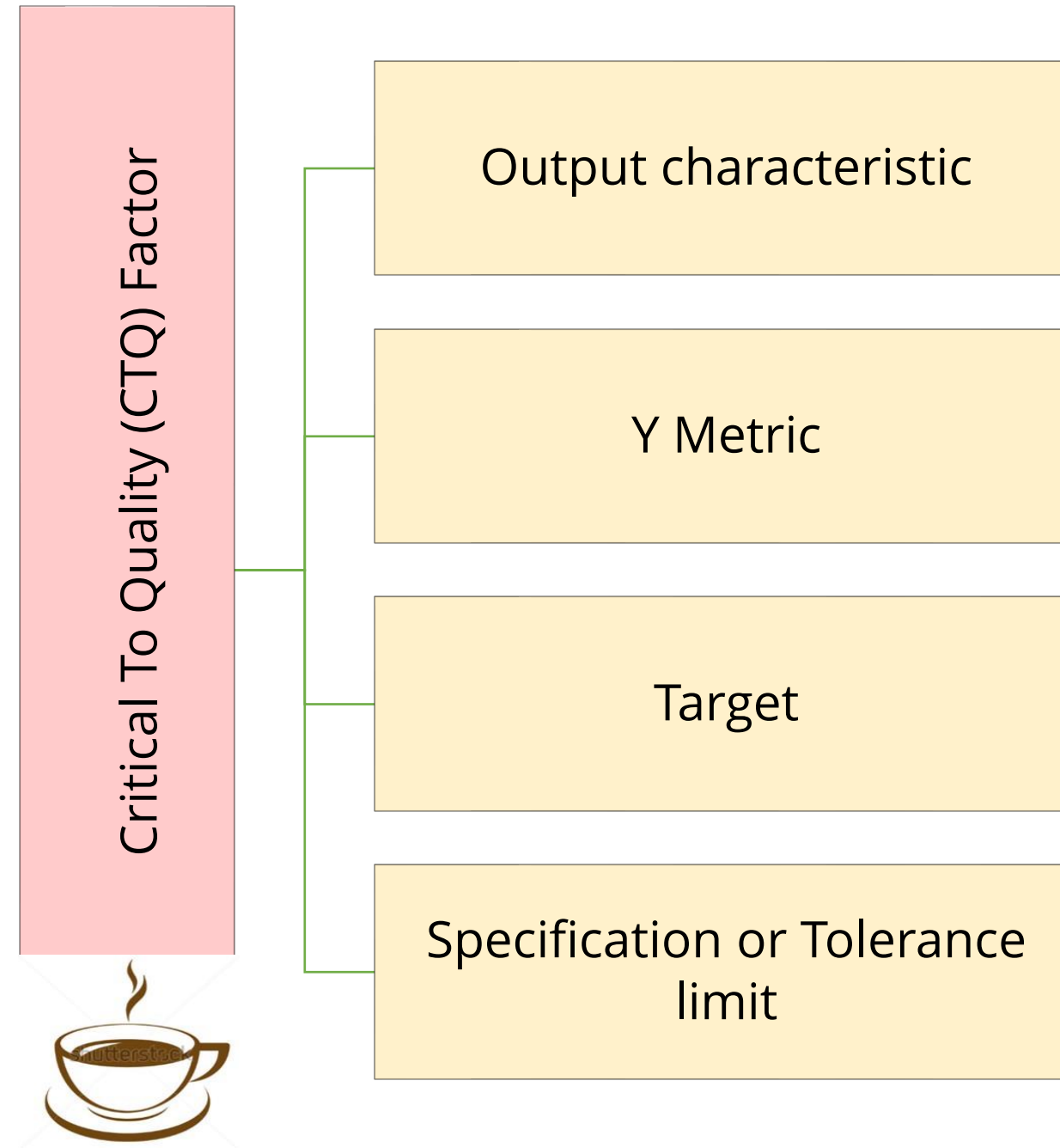
| Who is the customer | What the customer said (VOC) | What the customer meant | | | | |
|---------------------|------------------------------|-------------------------|------------------------|-------------------------|-------------------------------------|---|
| | | What is the need? | When is the need felt? | Where is the need felt? | Why is the need felt? | How is the situation handled now? |
| Office Rep | AC should be silent | Quiet work environment | During the work day | In the office | To focus on work | Uses a ceiling fan that makes a lot of noise |
| | AC should be efficient | Good cooling | During the work day | In the office | Weather is very hot in May and June | Uses a ceiling fan that is not so effective in summer |
| | AC should be economic | Affordability | N/A | N/A | Limited finances | N/A |

Sample analysis of VOC – AC purchase

Translating VOC to Critical-to-Value (CTQ)



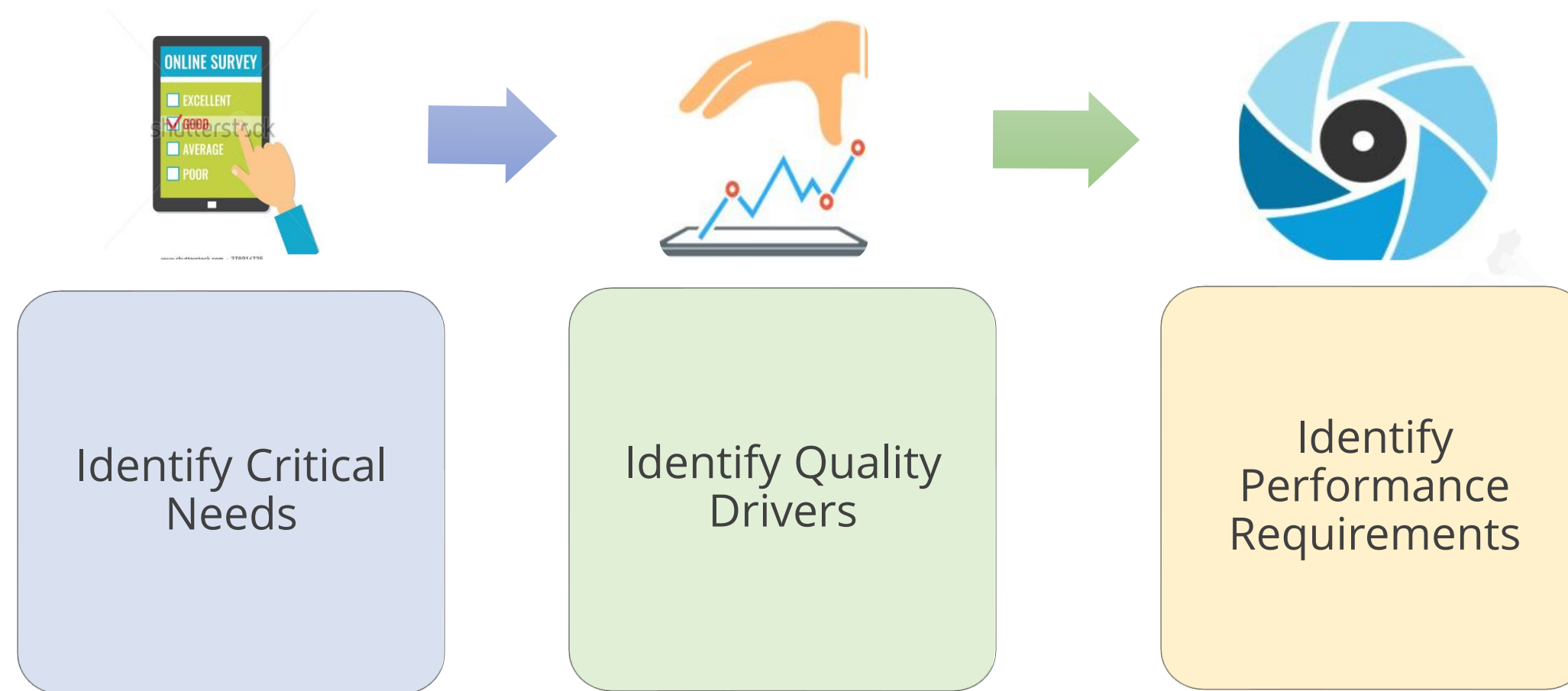
CTQ Factor: Major Elements



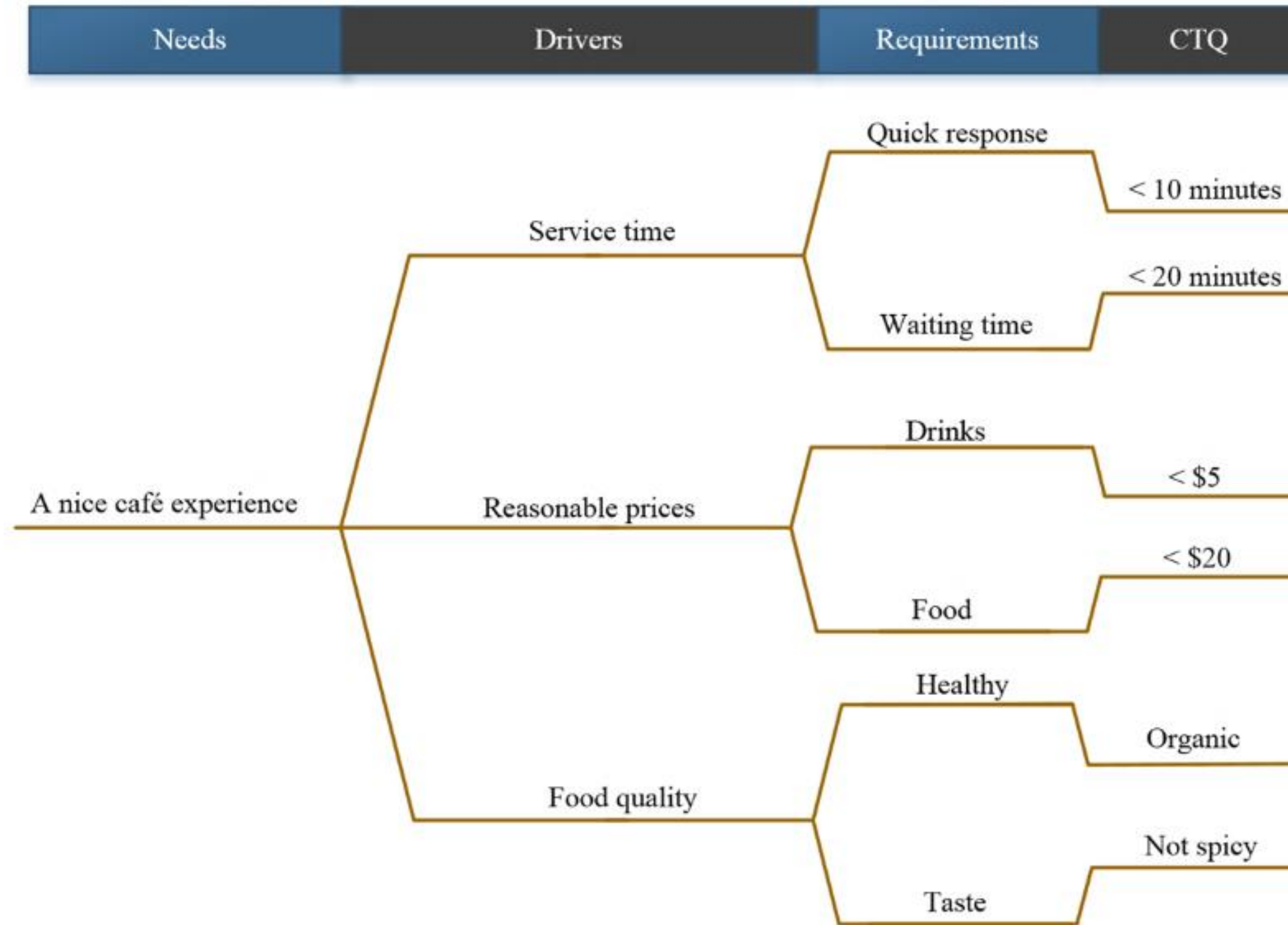
Steps to Develop CTQ Tree

Critical-to-Quality factors – Quality parameters set by the organization relating to the customers' needs

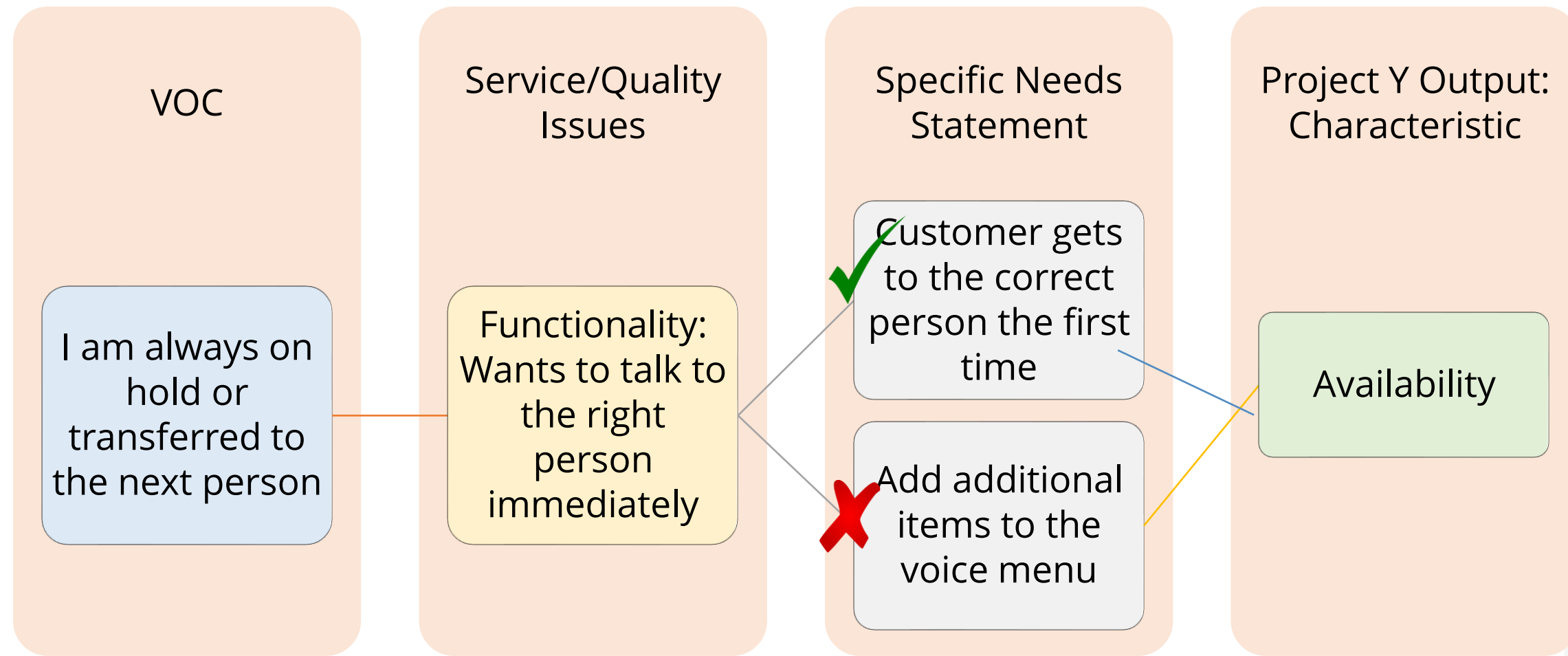
CTQ tree – A diagram-based tool that helps develop and deliver quality products and services



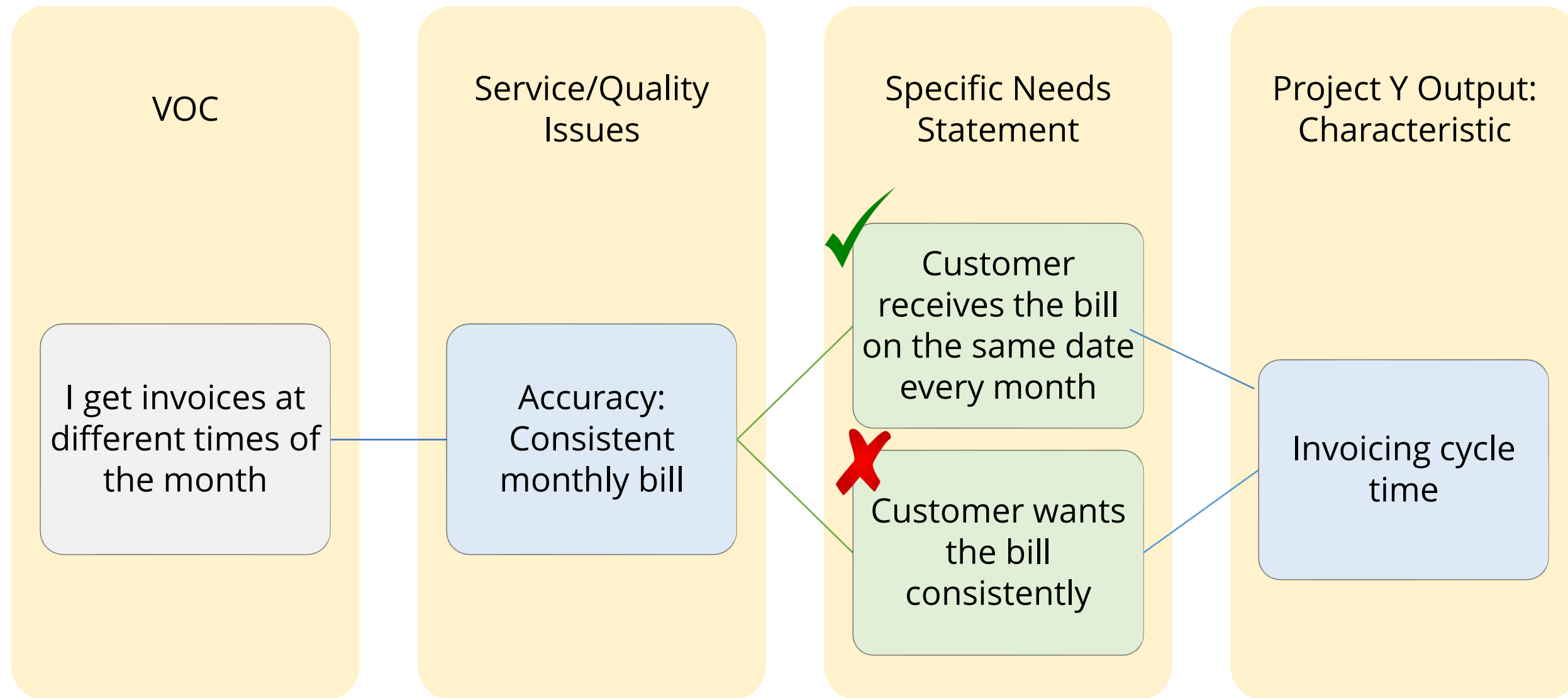
CTQ Tree: Example



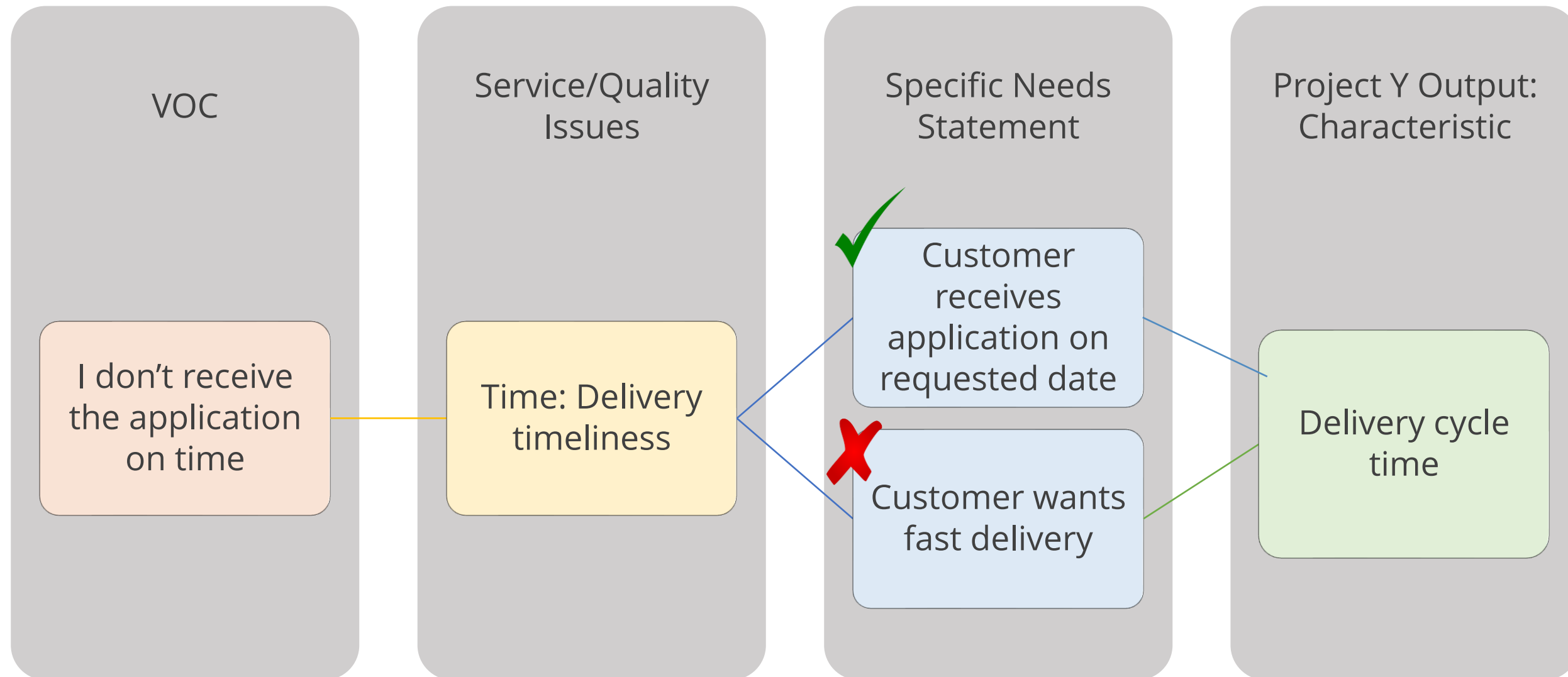
CTQ: Translation Worksheet Example 1



CTQ: Translation Worksheet Example 2



CTQ: Translation Worksheet Example 3



Quality Function Deployment (QFD): Definition

It is a process to understand the customers' needs and translate them into a set of design and manufacturing requirements while motivating businesses to focus on its customers



Customer requirements



Organization's strengths and weaknesses



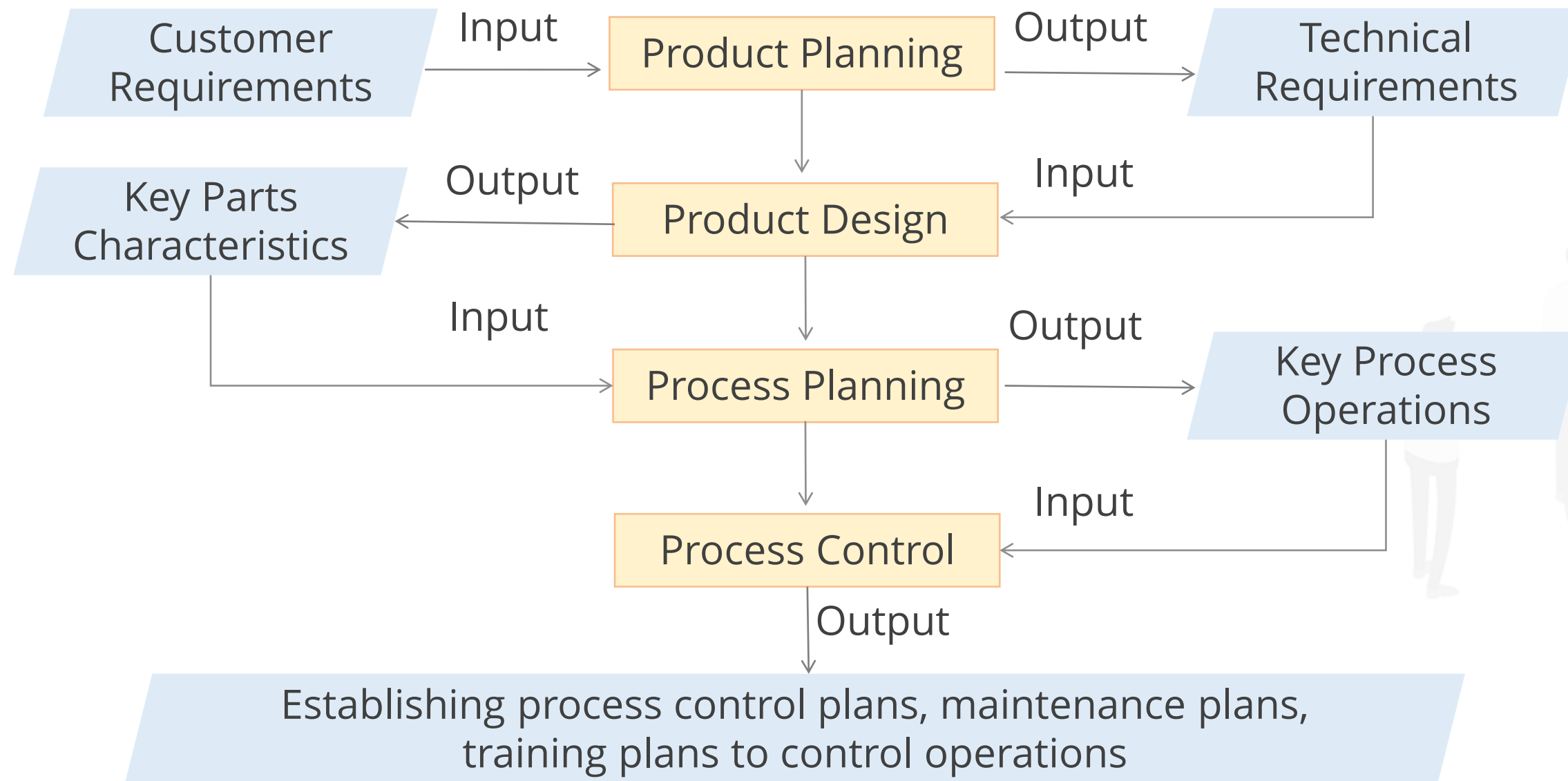
Areas where most of the work is to be done



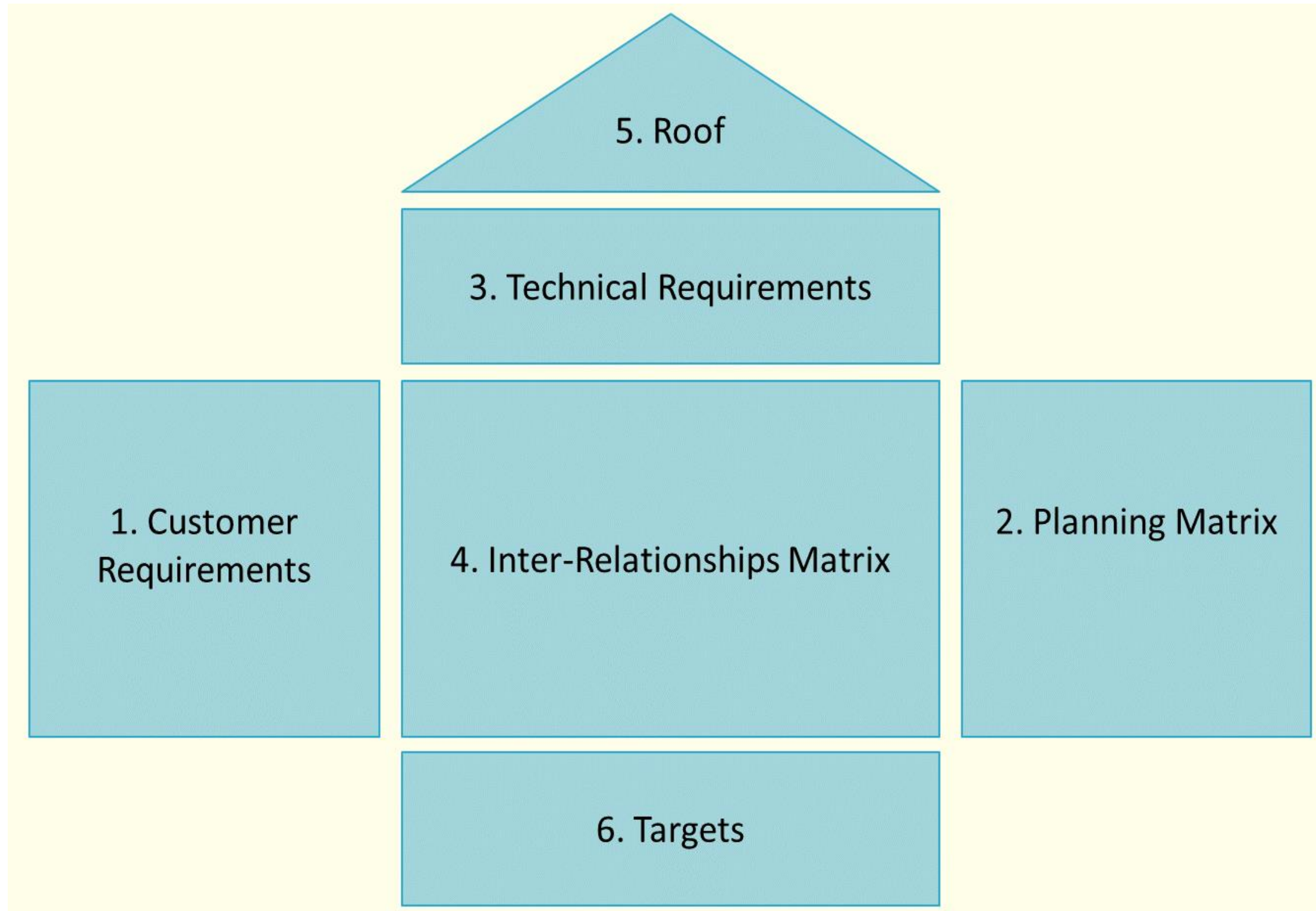
Areas where the focus should be

QFD: Deployment

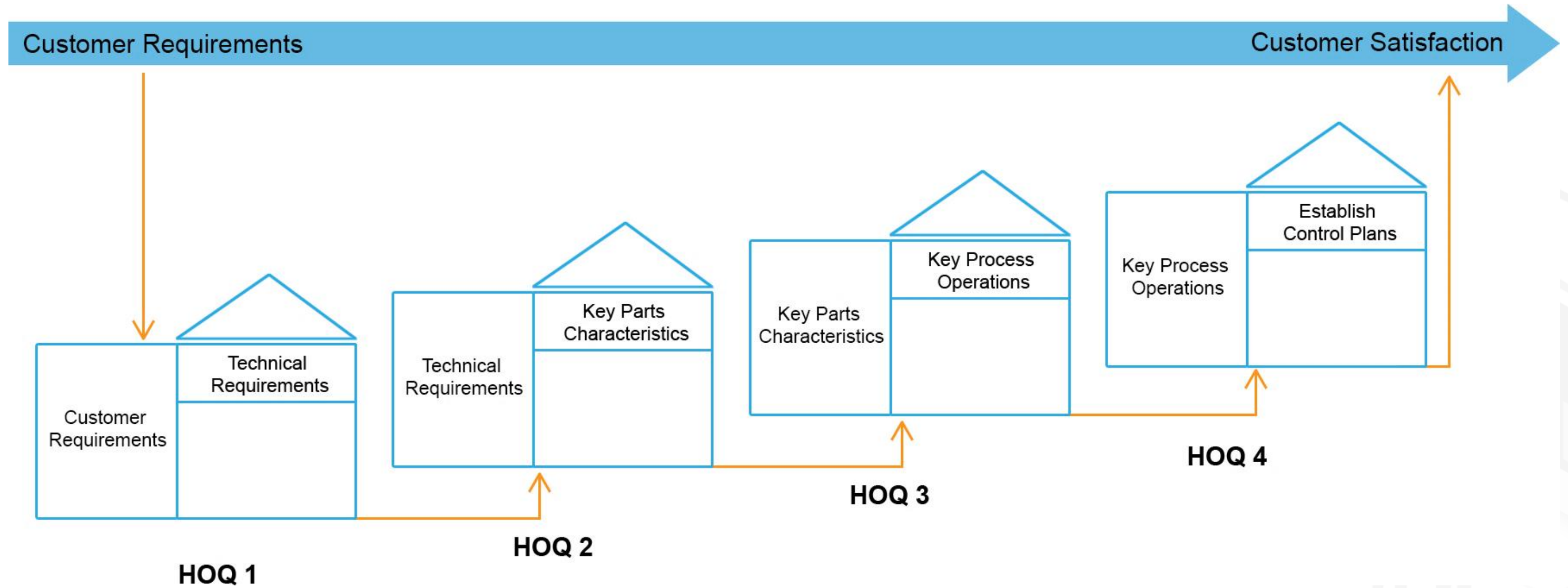
Quality function deployment involves four phases. The output of a phase is the input of the next phase.



QFD: Six Sections



QFD: Post-HOQ Matrix



QFD: Example

Title: Chocolate Chip Cookies - Customer Req's vs Functional Req's

Author: John Doe

Date: 5/15/2008

Notes: The quality characteristic "Weight" in column #4 may not be a valuable requirement. Its "Max Relationship Value in Column" is only a 1.

| Legend | | |
|--------|-----------------------------|---|
| ⊗ | Strong Relationship | 9 |
| ○ | Moderate Relationship | 3 |
| ▲ | Weak Relationship | 1 |
| ++ | Strong Positive Correlation | |
| + | Positive Correlation | |
| - | Negative Correlation | |
| ▼ | Strong Negative Correlation | |
| ▼ | Objective Is To Minimize | |
| ▲ | Objective Is To Maximize | |
| X | Objective Is To Hit Target | |

| Row# | Max Relationship Value in Row | Relative Weight | Weight / Importance | Quality Characteristics (a.k.a. "Functional Requirements" or "Hows") | Column # | | | | | | | | | | | | | | | Competitive Analysis (0=Worst, 5=Best) | | | | | | | | | | | | | |
|--|-------------------------------|-----------------|---------------------|---|---|------------------------|---------------------------|--------|-----------------|-----------|---------------------------|-----------------|----------------------------|--|--|--|--|--|--|---|-------------|-------------|-------------|------------|----------|--------|--|--|--|--|--|--|--|
| | | | | | Direction of Improvement Minimize (▼), Maximize (▲), or Target (⊙) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Demanded Quality (a.k.a. "Customer Requirements" or "Whats") | Color | Tensile Yield Strength | Tensile Ultimate Strength | Weight | Size (diameter) | Thickness | Avg. Hedonic Scale Rating | Cost per Cookie | Density of Chocolate Chips | | | | | | | | Our Company | Mrs. Fields | Girl Scouts | Starbuck's | Cinnabon | Kebler | | | | | | | |
| 1 | 9 | 6.7 | 5.0 | Good Texture | | ⊙ | ⊙ | | | | | | | | | | | | | | 2 | 5 | 2 | 3 | 5 | 0 | | | | | | | |
| 2 | 9 | 13.3 | 10.0 | Generous Portions | | | | ▲ | ⊙ | ⊙ | | | | | | | | | | 5 | 4 | 3 | 4 | 4 | 1 | | | | | | | | |
| 3 | 9 | 33.3 | 25.0 | Tastes Good | | | | | | | ⊙ | | | | | | | | | 3 | 5 | 4 | 3 | 4 | 2 | | | | | | | | |
| 4 | 9 | 26.7 | 20.0 | Low Price | | | | | | | | ⊙ | | | | | | | | 5 | 1 | 1 | 0 | 2 | 5 | | | | | | | | |
| 5 | 9 | 20.0 | 15.0 | Appetizing Appearance | ⊙ | | | | | | | | ⊙ | | | | | | | 2 | 5 | 2 | 4 | 3 | 2 | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target or Limit Value | | | | | #FFC125 (Hexadecimal RGB) | .01 MPa | .02 MPa | 2 oz. | 5" | 0.3" | 7 (100+ Sample Size) | \$1 | 5 psi | | | | | | | | | | | | | | | | | | | | |
| Difficulty (0=Easy to Accomplish, 10=Extremely Difficult) | | | | | 5 | 7 | 5 | 2 | 3 | 5 | 8 | 6 | 3 | | | | | | | | | | | | | | | | | | | | |
| Max Relationship Value in Column | | | | | 9 | 9 | 9 | 1 | 9 | 3 | 9 | 9 | 3 | | | | | | | | | | | | | | | | | | | | |
| Weight / Importance | | | | | 180.0 | 60.0 | 60.0 | 13.3 | 120.0 | 40.0 | 300.0 | 240.0 | 60.0 | | | | | | | | | | | | | | | | | | | | |
| Relative Weight | | | | | 16.8 | 5.6 | 5.6 | 1.2 | 11.2 | 3.7 | 28.0 | 22.4 | 5.6 | | | | | | | | | | | | | | | | | | | | |

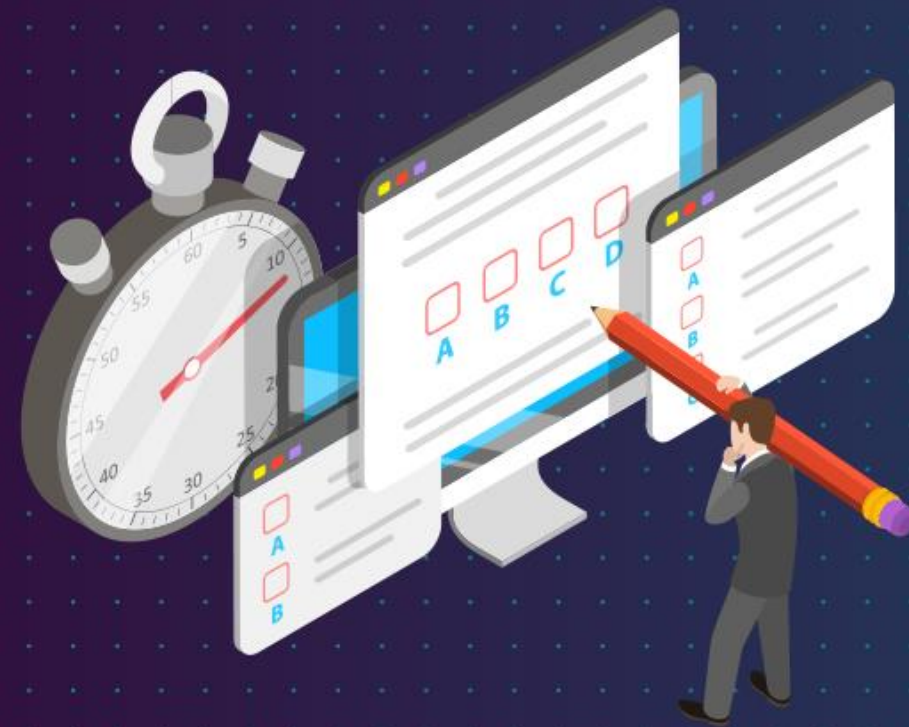
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Powered by QFD Online (<http://www.QFDOnline.com>)

Key Takeaways

- There are two types of customers: internal and external.
- Customer feedback is important for the success of any project.
- Data collection methods can be reactive or proactive.
- The VOC is a technique to organize, analyze, and profile the customer's requirements.
- A CTQ tree is used to visually show the relationship between the VOC needs, Drivers, Requirements, and CTQ.
- The QFD method is a 4-phase iterative process.





Knowledge Check

Knowledge Check

1

There are several methods and considerations to collect VOC data, but what is the primary purpose of VOC data collection?

- A. To satisfy the internal customer's expectations of the product
- B. Find out what the customer likes and does not like about the products
- C. Identify the customers needs so we can translate them to CTQs
- D. To satisfy the external customer's expectations of the service

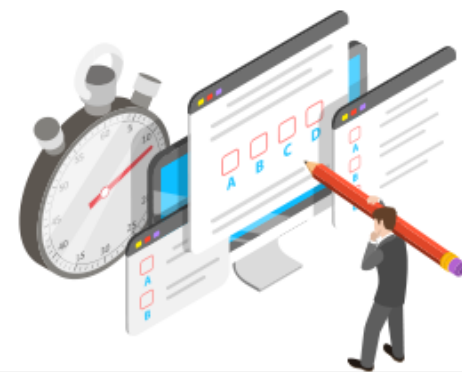


Knowledge Check

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- C. Identify the customers needs so we can translate them to CTQs
- D. To satisfy the external customer's expectations of the service



The correct answer is **C**

The primary purpose of VOC data collection is to obtain as much information as necessary from the customer to define Critical to Quality (CTQ) requirements.

Knowledge Check

2

When should a team use a telephone survey over a web survey?

- A. Anytime
- B. Target customer group is easily accessible over the Internet
- C. A high response rate is needed
- D. Time availability of customer is a concern

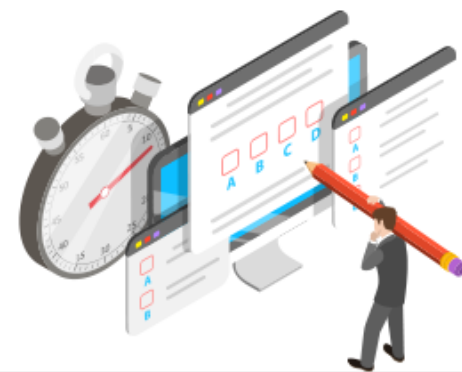


Knowledge Check

2

When should a team use a telephone survey over a web survey?

- A. Anytime
- B. Target customer group is easily accessible over the Internet
- C. A high response rate is needed
- D. Time availability of customer is a concern



The correct answer is **C**

A telephone survey has a higher response rate than web surveys so if that is only requirement by the organization, the telephone survey method should be used.

Knowledge Check

3

Which VOC data collection method is the least costly?

- A. Survey
- B. Interview
- C. Focus Group
- D. VOC Table

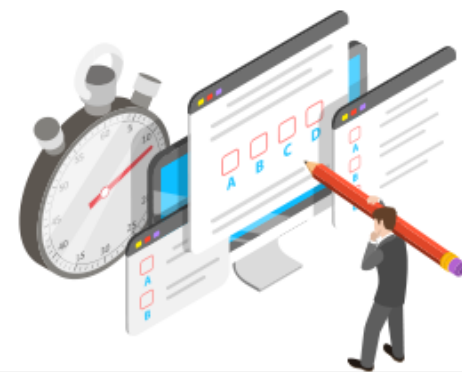


Knowledge Check

3

Which VOC data collection method is the least costly?

- A. Survey
- B. Interview
- C. Focus Group
- D. VOC Table



The correct answer is **A**

Implementing a web survey does not cost as much as an interview or focus group.

Knowledge Check

4

Which of the following is NOT an element of a developed CTQ?

- A. Metric
- B. Target
- C. Supplier characteristic
- D. Specification limit

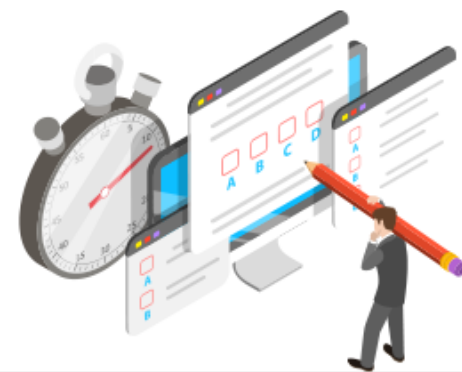


Knowledge Check

4

Which of the following is NOT an element of a developed CTQ?

- A. Metric
- B. Target
- C. Supplier characteristic
- D. Specification limit



The correct answer is **C**

An output characteristic is needed and not a supplier characteristic.

Knowledge Check

5

How many phases are there in QFD?

- A. 2
- B. 3
- C. 4
- D. 5



Knowledge Check

5

How many phases are there in QFD?

- A. 2
- B. 3
- C. 4
- D. 5



The correct answer is **C**

There are four phases in the QFD. The four phases are product planning, product design, process planning, and process control.