

LEAN Ohio

Transforming the Public Sector

Green Belt

Critical to Quality

Quality

Quality

- qual·i·ty, ['kwälədē] noun
 - the standard of something as measured against other things of a similar kind; the degree of excellence of something
 - a distinctive attribute or characteristic possessed by someone or something
 - how good or bad something is; degree of excellence
 - Doing the right thing the right way the first time
 - Zero defects
 - Conformance to requirements

Quality

- Quality is the customers' perception of the value of the suppliers' work output
- *Error-free, value-added care and service that meets and/or exceeds both the needs and legitimate expectations of those served as well as those within the Medical Center*
- The degree to which something meets or exceeds the expectations of its consumers

Defects

A Defect is defined as anything that:

- Does not meet customer specifications or requirements
- Causes customer dissatisfaction
- Does not fulfill the requirements (re-work)

REWORK

Cost of Poor Quality

The Cost of Poor Quality consists costs generated as a result of producing defects:

Internal Failure and External Failure

Cost of Poor Quality

Direct COPQ

- Rework
- Sorting

Indirect: Difficult to Measure

- Inspections
- Documentation
- Delayed services
- Financial costs to customer
- Morale

Quality at the Source

Quality at the Source

- Quality at the Source places the responsibility for catching errors in the hands of the employee.
- Quality is not just the responsibility of the quality control department.
- Processes should be developed so employees recognize errors before they become defects.

Quality at the Source requires a Culture Shift

Assuring First-Time Quality Means...

- Building a system with appropriate information
- Poke Yoke (mistake-proofing) your process for common problems
- Establishing clear decision rules



*Poka Yoke
key points*



Assuring First-Time Quality Means...

- Never Accept a Defect
- Never Make a Defect
- Never Pass a Defect

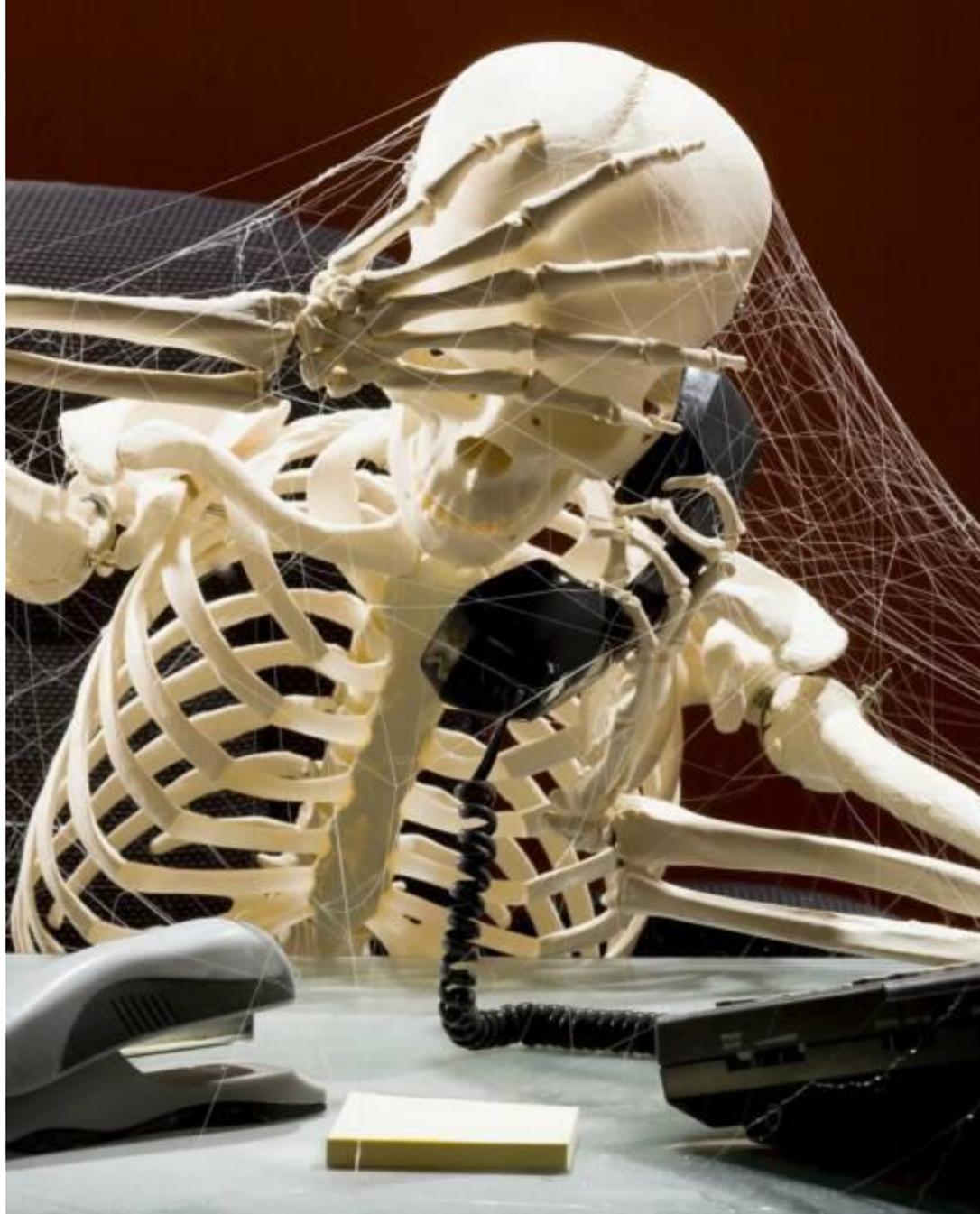


Fix defects immediately and find root causes

Voice of the Customer

Voice of the Customer (voc)

- “I’m always on hold or get transferred to the wrong person”
- “I need faster service”
- “We are getting too many customer returns”





On the Surface:

Customer complaints
Customer calls
Calls to legislators

Long waits
Errors
Returns

Beneath the surface:

Transportation
Inventory
Motion
Underutilization

Waiting
Overproduction
Overprocessing
Defects

Functional organization
Technology gaps
Excessive controls
Dated process design
No backup or cross-training
Unbalanced workload
Excessive paperwork

Batching of forms, applications
Data-entry batching
Changing policies
No decision-making rules
Poor visual controls
Disorganized workplace
Excessive storage

Lack of training
Misplace skills
Slow machines
Obsolete forms, poor form design
Poor layout
Ambiguous government regulations
Excessive approvals

Understanding the Customer

- Who is the customer?
 - Is the customer internal or external?
- What product, service or information does the customer receive?
- What are the customer requirements?
- Do the requirements represent the “Voice of the Customer”?
- Translate customer requirements into functional process requirements



Specifications

- Do you know your customer specifications?
- Do you know your process specifications?

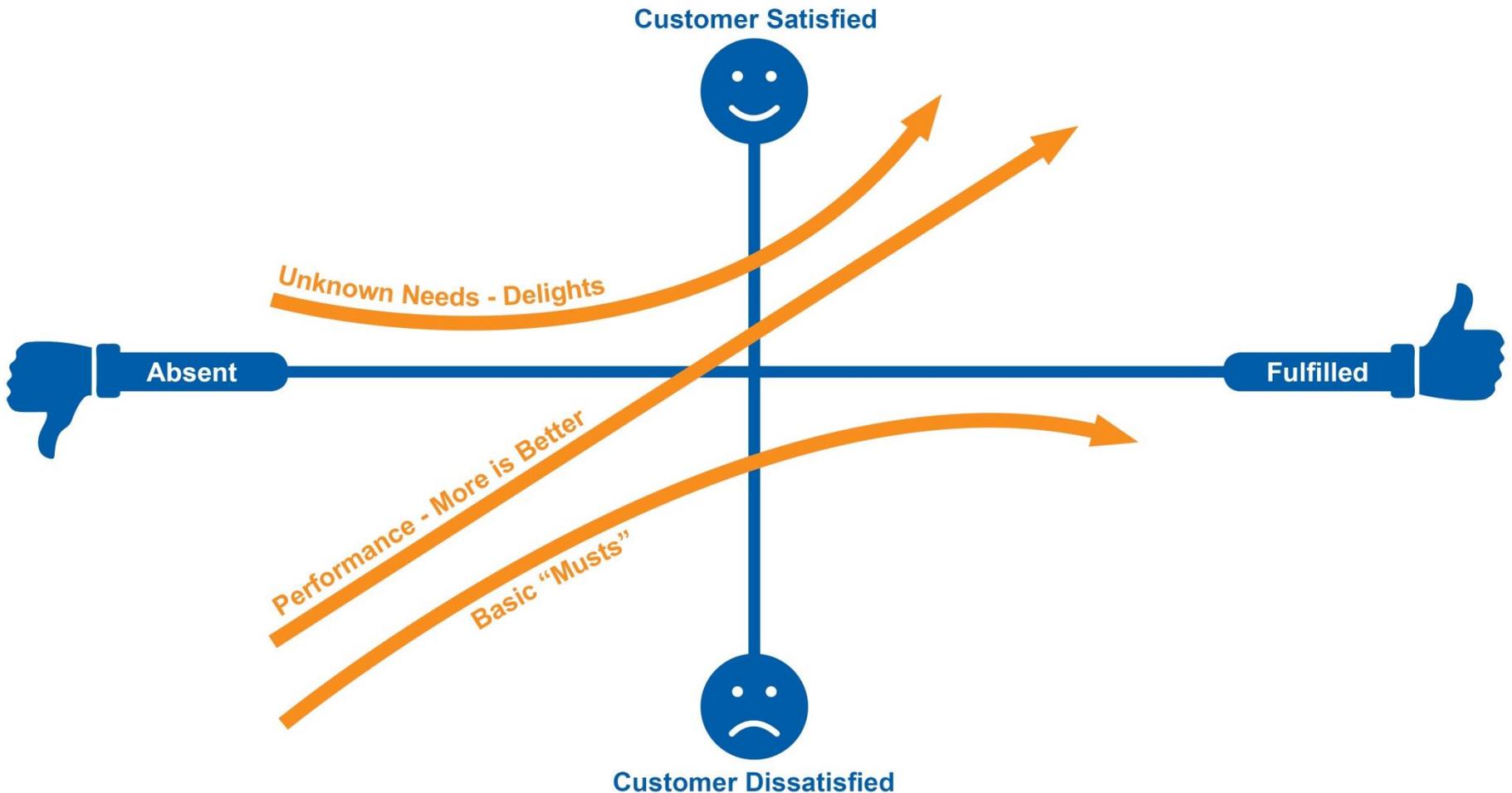
**What are
your customers
telling you?**

Kano Model

Kano classified Customer requirements into three categories

- Basic (customer expects to get these features)
- Performance (more is better)
- Excitement (wow factor)

Kano Model



Customer Requirements

	Automobile	Restaurant
Basic	Brakes function	No Food Poisoning
Performance	Acceleration	Fast Service
Excitement	“Look & Feel”	Ambiance

Exercise

Complete a Kano model for:

- Buying a house
- Planning a wedding
- Attending a conference
- Other....

CTQ

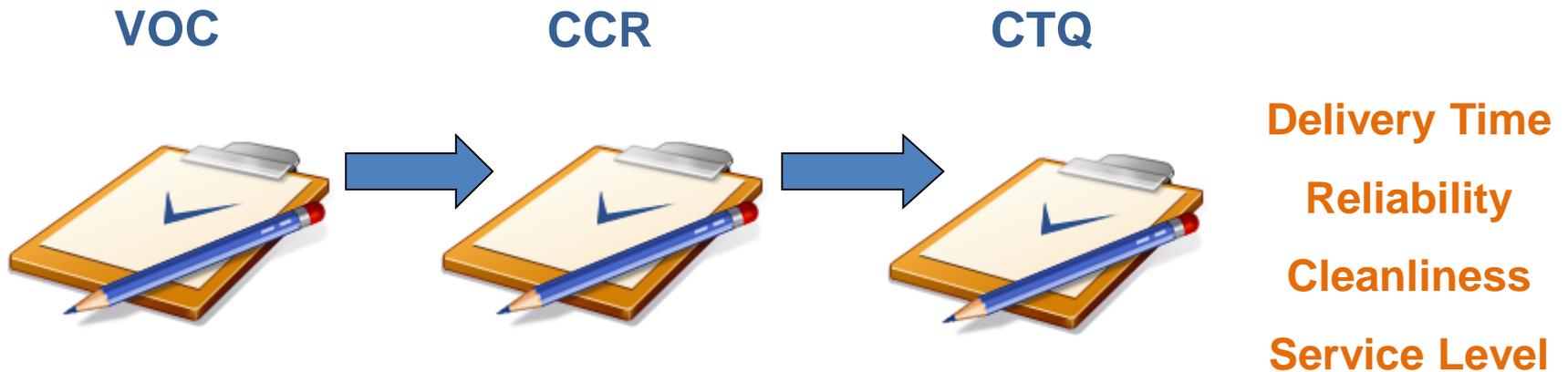
Critical to Quality

Terms

Terms to be familiar with

- VOC: Voice of the Customer
- CCR: Critical Customer Requirements
- CTQ: Critical to Quality

Process Output Indicators: CTQ's



VOC - Voice of the Customer

CCR - Critical Customer Requirements

CTQ - Critical to Quality

Translating VOC's to CCR's

- Often the Voices of Customers (VOC) are not specific and not in technical language.
- Sometimes the Voices of Customers are stated solutions
- Therefore VOC needs to be translated to the Critical Customer Requirements (CCR)

Translating VOC's to CCR's

- A Critical Customer Requirement (CCR) is a requirement that is important to the customer
- VOC may not be measurable; CCR can be measured
- Establishes a target
 - Customer specifications
 - Acceptable range of performance

Translating VOC's to CCR's

VOC	CCR
I'm always on hold or get transferred to the wrong person	Customer reaches correct person the first time within 30 seconds
I need faster service	I need my deliveries in 3 days or less
My form keeps getting sent back	All needed information will be collected the on the first entry

Translating CCR's to CTQ's

- Often the Critical Customer Requirements are not stated in a way that can be measured internally
- Therefore CCR needs to be translated to the Critical to Quality (CTQ), which can be measured in the agency

Note: for some projects, CCR may be the same as CTQ

What Makes a Good Coffee Service?

Supplier Perspective (Hotel)

- Good Hot coffee
- Clean Dishware
- Clean Linen
- Attractive Display
- Extra-snacks



Customer perspective (conference attendees)

- Good Hot coffee
- Fast line, especially for refills
- Close to high capacity restrooms
- Close to telephones
- Room to chat

Identify What Matters to the Customer



150 °F
(ideal temperature)



149.9 - 150.1 °F
(ridiculously tight)

150 °F
(ideal temperature)



120 - 180 °F
(dangerously loose)

Defining What Matters to the Customer



150 °F
(ideal temperature)



145 - 155 °F
(the limits of customer
indifference; the customer
cannot tell OR does not care
about variation within this range)

TARGET

VOC

I want help now!
(get my iPod)

How long are you willing to wait?

CCR

TARGET found people will wait 60 seconds

What time do we train the employees?

CTQ

TARGET trains for 30 seconds to meet CCR



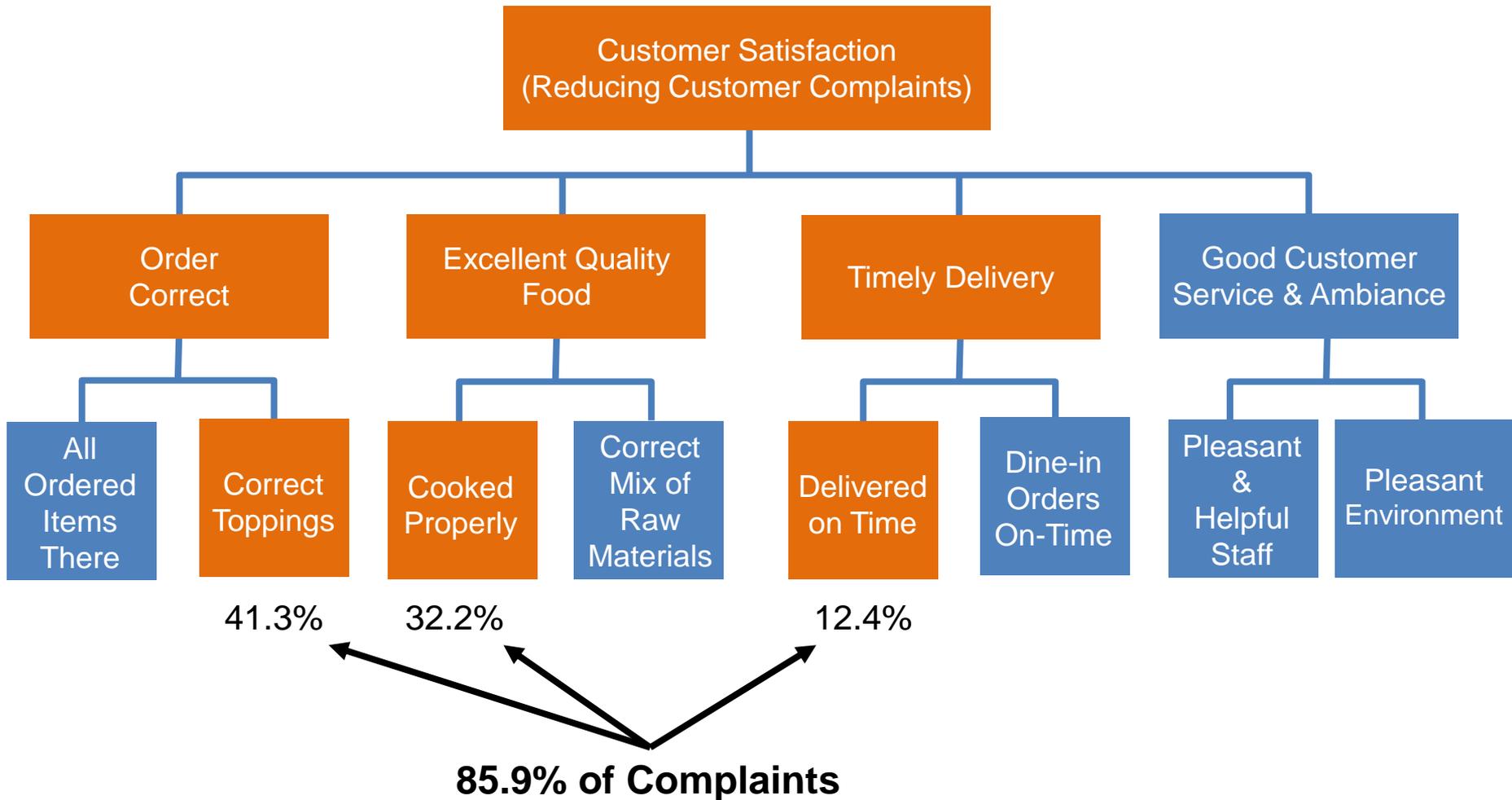
Comparison of VOC, CCR and CTQ

	VOC	CCR	CTQ
Language	Customer language	Technical/ specific language	Technical/ specific language
Metric	May not measurable	Can measure in final product	Can measure in business or factory

Translating VOC to CCR to CTQ

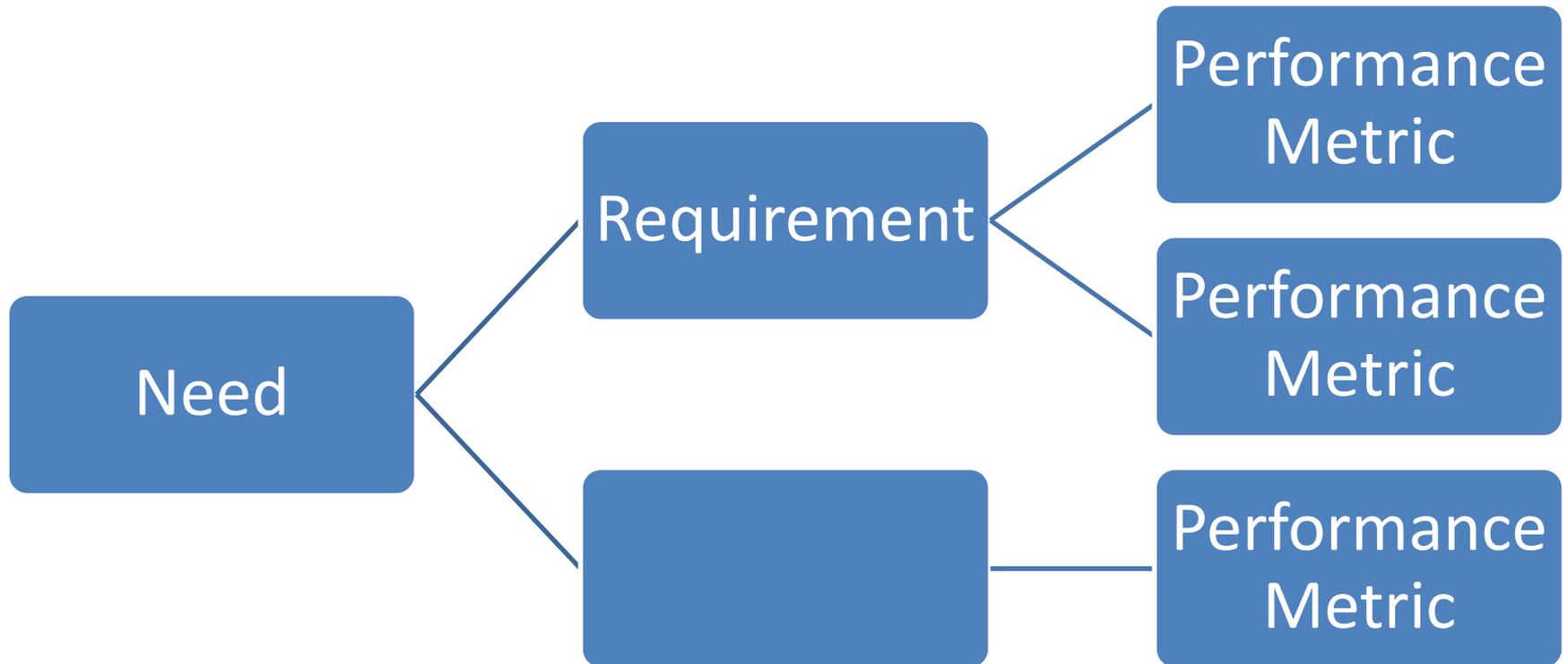
VOC	CCR	CTQ
I'm always on hold or get transferred to the wrong person	Customer reaches correct person the first time within 30 seconds	Customer reaches correct person the first time within 30 seconds
I need faster service	I need my deliveries in 3 days or less	Our process lead time for this product needs to be 2 days or less
It takes too long to get my application processed	Need decision to customer in 5 days	Need application reviewed and decision in 3 days

Pizza Example

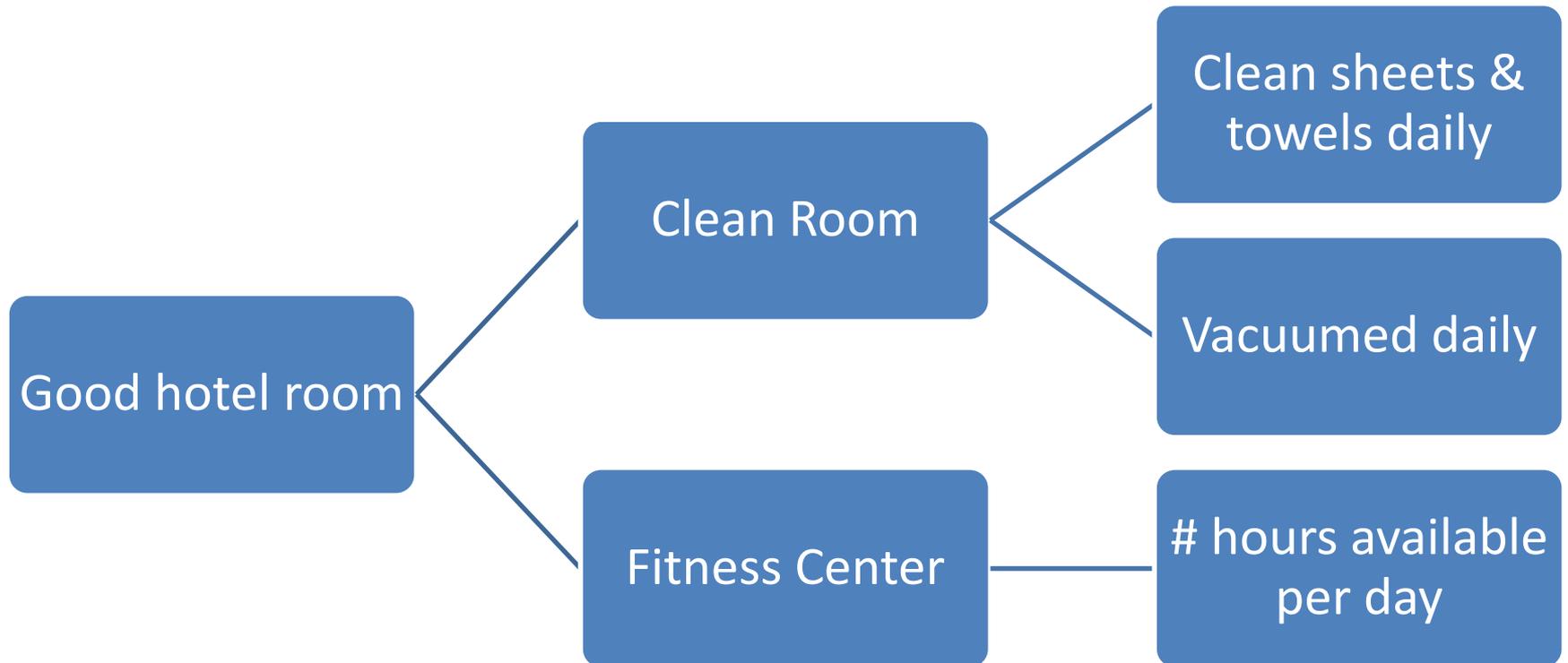


CTQ Tree

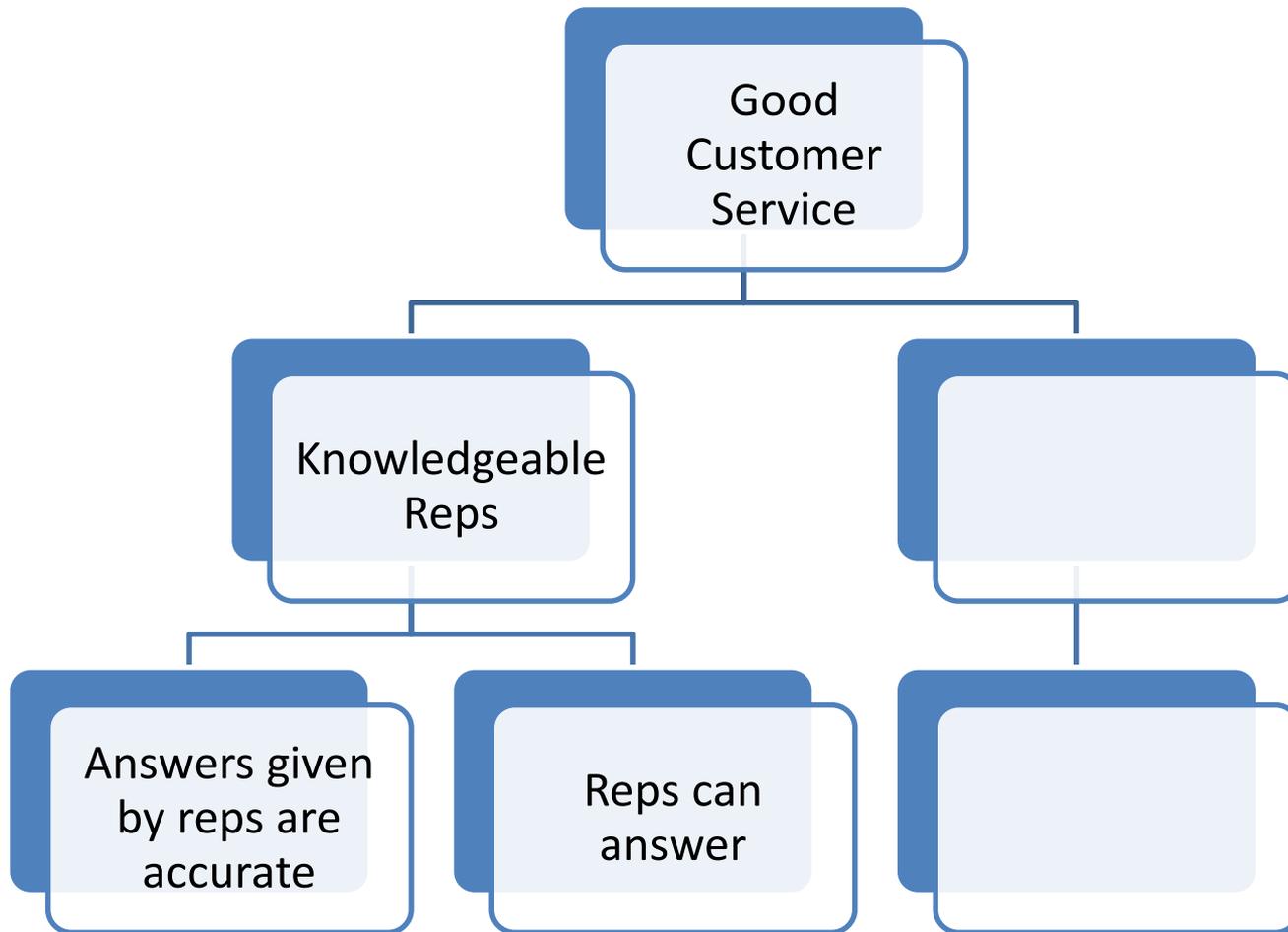
Critical to Quality Tree



Example



Example



Exercise

- For your selected GB project, identify
 - Customer needs
 - Customer requirements (CCR)
 - Critical To Quality specifications

Questions?

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