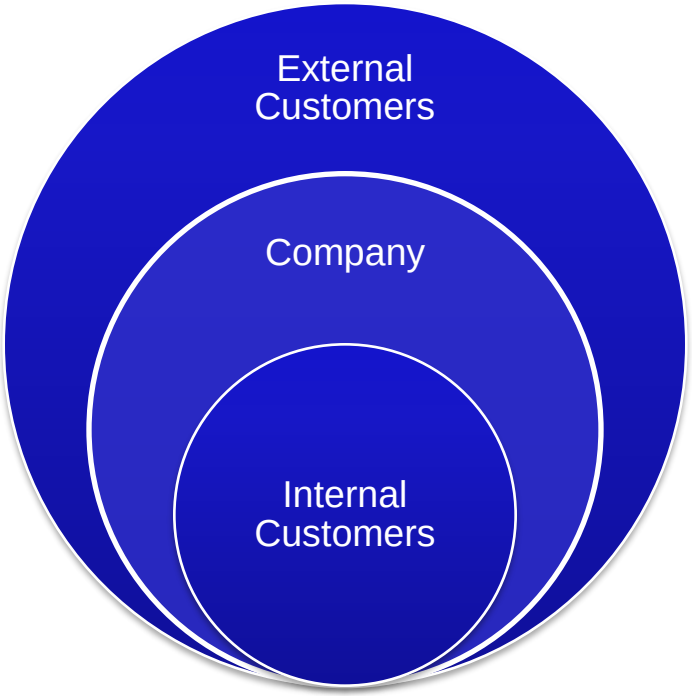
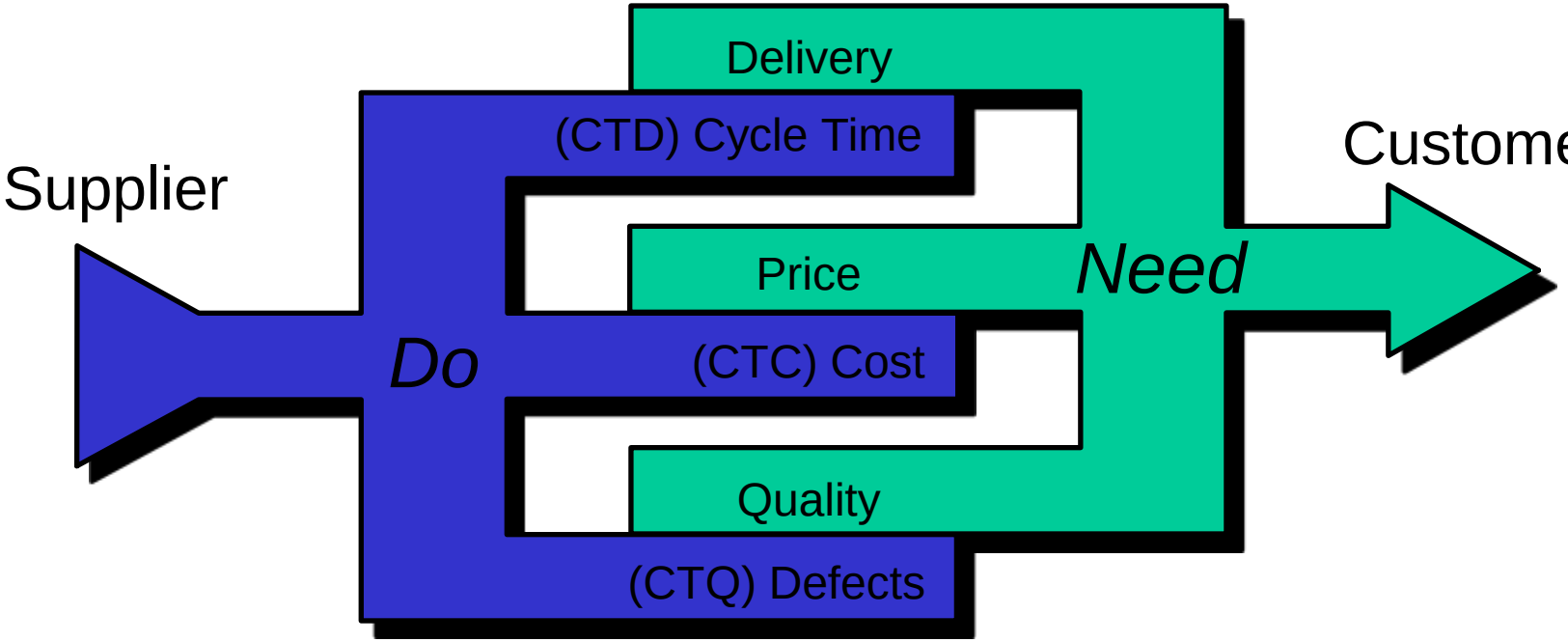
Who Is Your Customer?

- Define products or services provided to the customer
- Identify the related process



- External customers pay our bills
- Internal customers use our outputs as their inputs to achieve our business objectives and ultimately satisfy external customers

Maximizing Customer Value



Maximizing customer value = close the Need/Do gap

What Is “Voice of the Customer”?

- “Voice of the Customer” (VOC) is the expression of customer needs and desires
  - May be **specific** – “I need delivery within 3 days”
  - May be **ambiguous** – “Deliver faster”
- The VOC can be compared to internal data (“Voice of the Process”) to assess our current process performance or process capability.
- To be useful in a process improvement project we often need to work with the customer to understand the “Ambiguous” and make it “Specific”

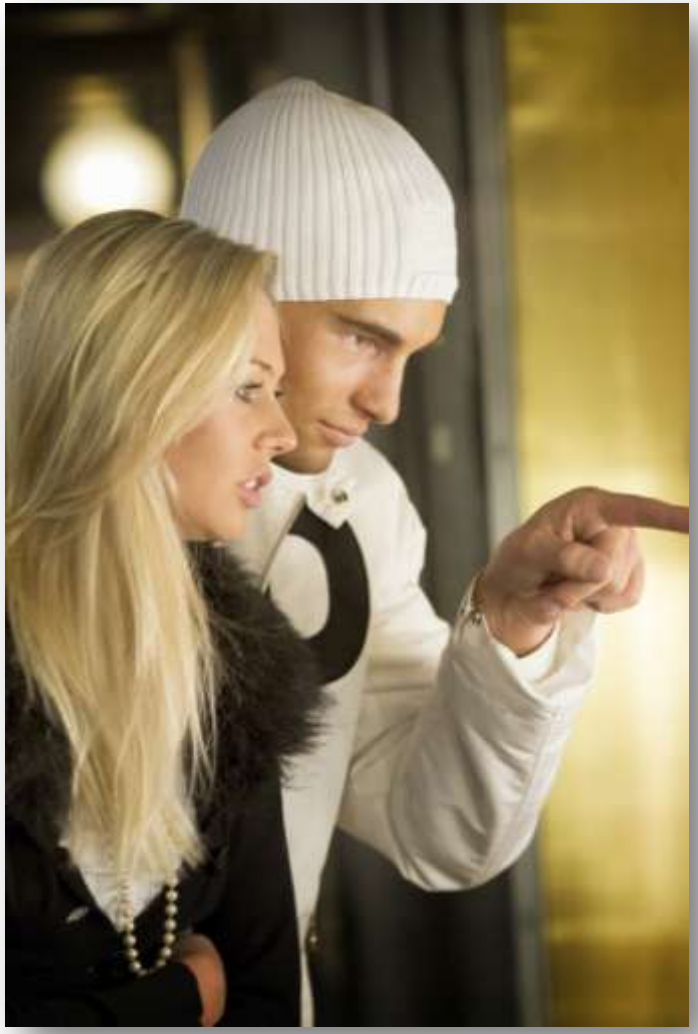
Who Are the Customers?

- Who are they?
  - Defined as: “Any person or organization that receives a product or service (Output) from the work activities (Process)”
  - Those whose needs must be met for this process to be successful.
- Types of “customers”:
  - **External:** Individuals or organizations outside of your business who are usually associated with paying money for your products and services
  - **Internal:** Colleagues who receive products, services, support or information from your process – i.e. Engineering, Manufacturing, Quality, Marketing,
  - **Regulatory:** Any government agency that has standards the process or product must conform to – i.e. ACCC, EPA, FDA,
- Which customer?
  - Customers can often be logically aggregated into groups or segments (not all customers should be treated equally)

Why Is VOC Important?

- They “pay the bills,” so it’s important to understand their needs:
  - Customer behavior is a key input to strategy and process design
  - Ultimately, all the value driver “levers” get pulled by an external customer
- They define the “playing field”
  - They serve as the referee for all competitors
  - They define what is a “value-added” activity or service
- They are always right…
  - Even if we cannot meet their needs, or do so profitably.
- To be more profitable, you have to convince your customers to…
  - Buy more of your product / service — ***Revenue Growth***
  - Pay more for your product / service — ***Economic Value Add***
  - Serve their needs more efficiently — ***Economic Value Add (cost reduction)***

Who are Your Customers? (project focus)

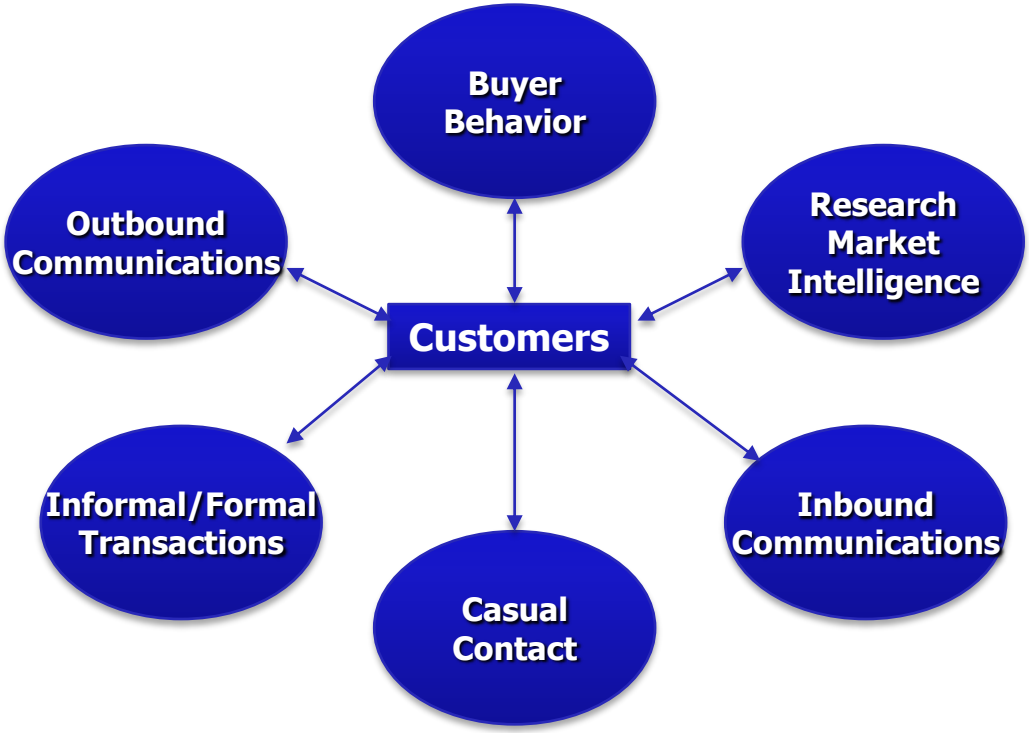


How Do Our Customers Communicate with Us?

Types of Voices

- Complaints
- Compliments
- Product returns
- Product/service sales preferences
- Contract cancellations
- Market share changes
- Customer defections/acquisitions
- Customer referrals
- Closure rates of sales calls
- What other customer voices could you or do you use in your business?

Sources of Customer Voices



Customers Define “Quality”

You must understand what the customers of your process **care** about!

Performance Need Categories

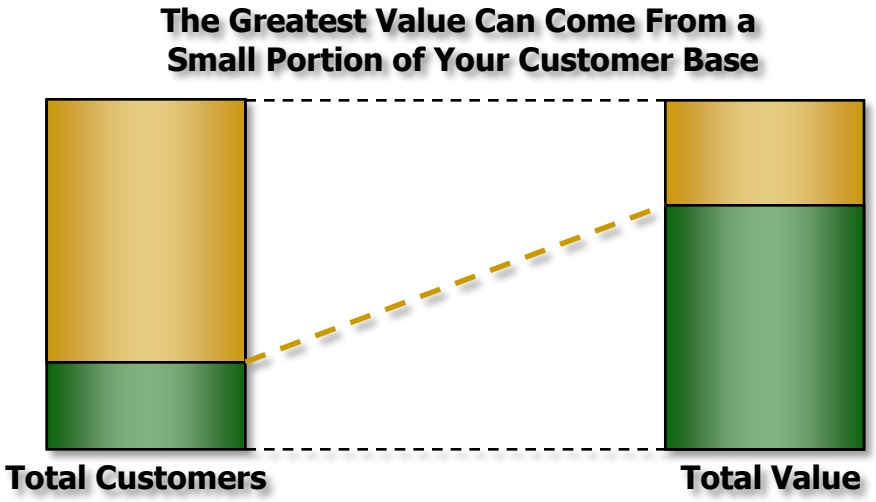
- The challenge is to understand how your customers, stakeholders, process owner, etc. define and prioritize the various needs and expectations they have of your products and services, or constraints they may inject.

Quality	Product or Service Features, Attributes, Dimensions, Characteristics Relating to the Function of the Product or Service, Reliability, Availability, Effectiveness, Recovery, Customer Returns, Defects, Rework or Scrap **(Derived Primarily from the Customer - VOC)**
Cost	Process Cost Efficiency, Prices to Consumer (Initial Plus Life Cycle), Repair Costs, Purchase Price, Financing Terms, Depreciation, Residual Value, Raw Material, Energy Efficiency **(Derived Primarily from the Business - VOB)**
Speed	Lead Times, Delivery Times, Turnaround Times, Setup Times, Delays, Up Time, Equipment Availability, Rolling Speed, Flexibility **(Derived from the Customer or the Business – VOC/VOB)**
Service and Safety	Health, Safety and Environment Policy, Service Requirements, After-Purchase Reliability, Parts Availability, Service, Warranties, Maintainability, Customer-Required Maintenance, Product Liability, Product/Service Safety, Recordable Injuries, Lost Time, Environmental Incidents
Corporate Responsibility	Ethical Business Conduct, Business Risk Management, Health Safety and Environment Policy, Code of Conduct

1. Gather the Voice of the Customer (VOC):

Customer Segmentation

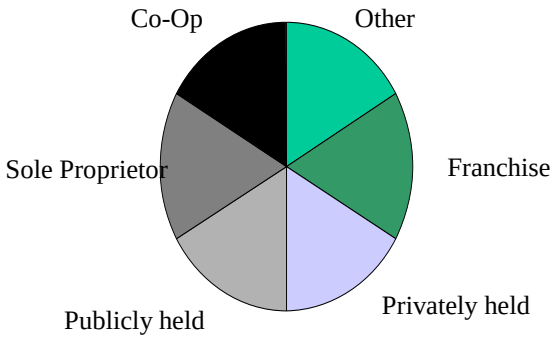
- The first step in gathering the VOC, is customer segmentation.
  - **All customers are not created equal, and do not create equal value**
  - **Avoid "squeaky wheel" syndrome**
- If customers aren't segmented, it may prove impossible to get a single "voice," and the multiple voices may lead in opposite directions.



1. Gather the Voice of the Customer (VOC):

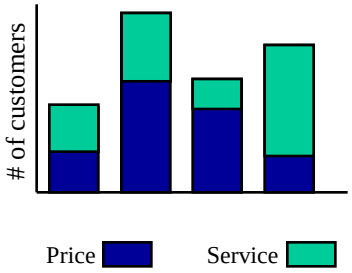
Identify Your Customer Segments

- **Economic**
  - Revenue
  - Frequency
  - Size of Customer
  - Cost
  - Strategic goals
- **Descriptive**
  - Geographic
  - Demographic
  - Product feature
  - Industry
- **Attitudinal**
  - Price
  - Value
  - Service



Revenue

Geographic



Price & Service

1. Gather the Voice of the Customer (VOC):

Customer Segment Matrix

Objective

- Identifying customer segments.

Instructions

1. Select a specific process output (product or service).
2. List customers of the product or service.
3. Identify ways to segment each customer.

Product/Service	Customers	Potential Segments

1. Gather the Voice of the Customer (VOC):

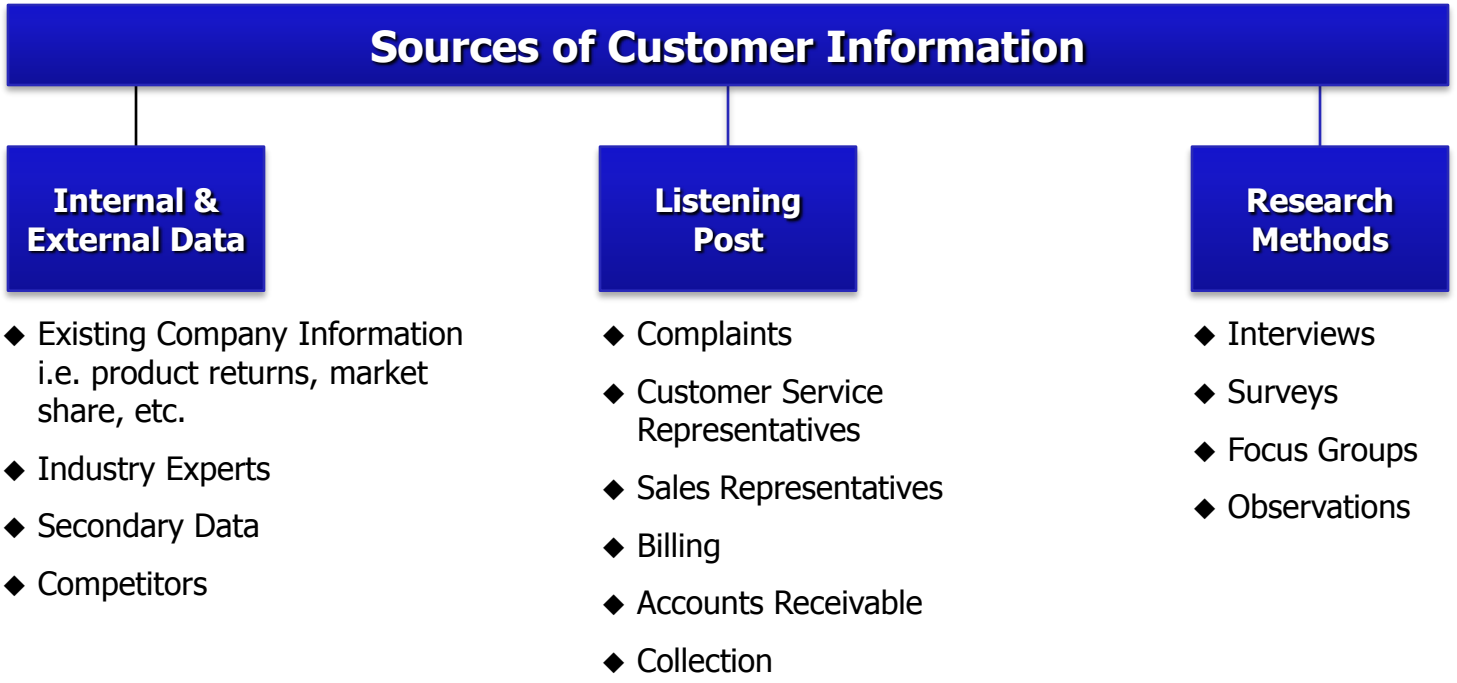
Customer Segmentation Worksheet

Customer	Internal or External?	Segments/Description	Priority

1. Gather the Voice of the Customer (VOC):

Listening to the VOC

Select Sources of Customer Information



1. Gather the Voice of the Customer (VOC):

Communicating with Customers

- **No matter what source of customer information is used, customer communication has three basic parts:**
- 1. Asking the right questions
- 2. Asking questions in the right way
- 3. Understanding the answers

Communicating with Customers:
Interviews

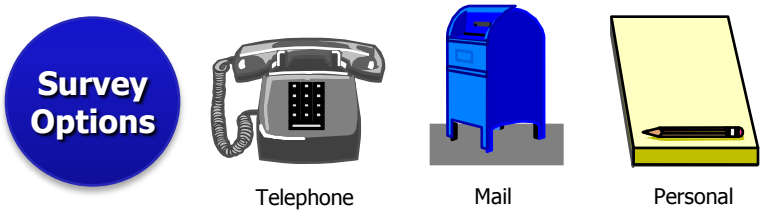
- **Purpose:** To learn about a specific customer's point of view on service issues, product/service attributes, and performance indicators/measures.

Types of Interviews	Characteristics of Information Needed
Individual	• Unique perspectives • Senior-level participation • Input from large-volume customer
Group	• Information from customers with similar product and service needs • mid- to lower-level participation • Information from many people for a single segment
Telephone/Mail	• Input from customers who are widely dispersed geographically • Information on basic or simple issues • Quick turn-around of information collection

Communicating with Customers :

Surveys

- **Purpose**
  - To measure the needs – or the importance and performance of – a product, service, or attribute across an entire segment or group of segments; furnishes quantitative data.
- **Uses**
  - To efficiently gather a considerable amount of information from a large population
  - To conduct analysis that will result in data with statistical validity and integrity
  - To measure as-is conditions and drivers
  - To measure change and causality



- **The Survey Process**
  - Review the survey objectives.
  - Determine the appropriate sample of the population.
  - Identify the specific areas of desired information.
  - Write draft questions and determine measurement scales.
  - Design the survey.
  - Test the individual questions and the total survey against the objectives.
  - Validate the questions and the survey (pilot).
  - Finalize the survey.

Communicating with Customers :

Focus Groups

- Purpose
  - Organize information from the collective point of view of a group of customers that represent a segment
- Uses
  - To clarify and define customer needs
  - To gain insights into the prioritization of needs
  - To test concepts and get feedback
  - Sometimes as a next step after customer interviews or a preliminary step in a survey process
- Typically composed of 7 to 13 participants who share characteristics that relate to the focus group topic
- Participants will be asked to thoroughly discuss very few topics

2. Translate the VOC into
Critical to Quality requirements (CTQs)

- Once the Voice of the Customer has been gathered,

Voice of the Customer	After Clarifying, the Key Issue(s) Is...	Critical To Quality Requirements
"I hate dealing with this company!"	Products are not delivered on time	10 day lead time ±1 day

- **Good CTQ requirements:**
  - Are specific & measurable (and the method of measurement is specific)
  - Are related directly to an attribute of the product or service
  - Don't have alternatives and don't bias the design toward a particular approach or technology
  - Are complete and unambiguous
  - Describe what, not how

2. Translating VOC into CTQs:

Customer Input to Key Issues to CTQs

Voice of Customer Input	Key Customer Issue	Critical To Quality Requirement
Actual Customer Statements and Comments	**The Real Customer Concerns, Values or Expectations**	**The Specific, Precise and Measurable Characteristic**
• "This mower should be easy to start" • "The cord shouldn't be too hard to pull"	• Wants the mower to start quickly and painlessly	• Mower starts within two pulls on the cord • Mower starts with a 5kg pull on the cord
• "I want to talk to the right person and don't want to wait on hold too long"	• Wants to talk to the right person quickly	• No additional menu items on voice system • Customer reaches correct person the first time within 30 seconds
• "The vehicles are always breaking down"	• Low availability	Vehicle Availability > 95% during 7am - 7pm

Activity: Defining Customer Requirements

OBJECTIVE: **Practice Defining Customer Requirements**

AGENDA:

1. Assign team roles
2. Facilitator introduces tool and leads team through next steps.
3. Have 2-3 members share customer comments they've heard.
4. Translate comments into
   - Key Issue
   - Requirements
5. Discuss next steps to validate customer requirements.
6. Prepare to report.

7. **TIME:** 15 minutes

2. Translating VOC into CTQs:

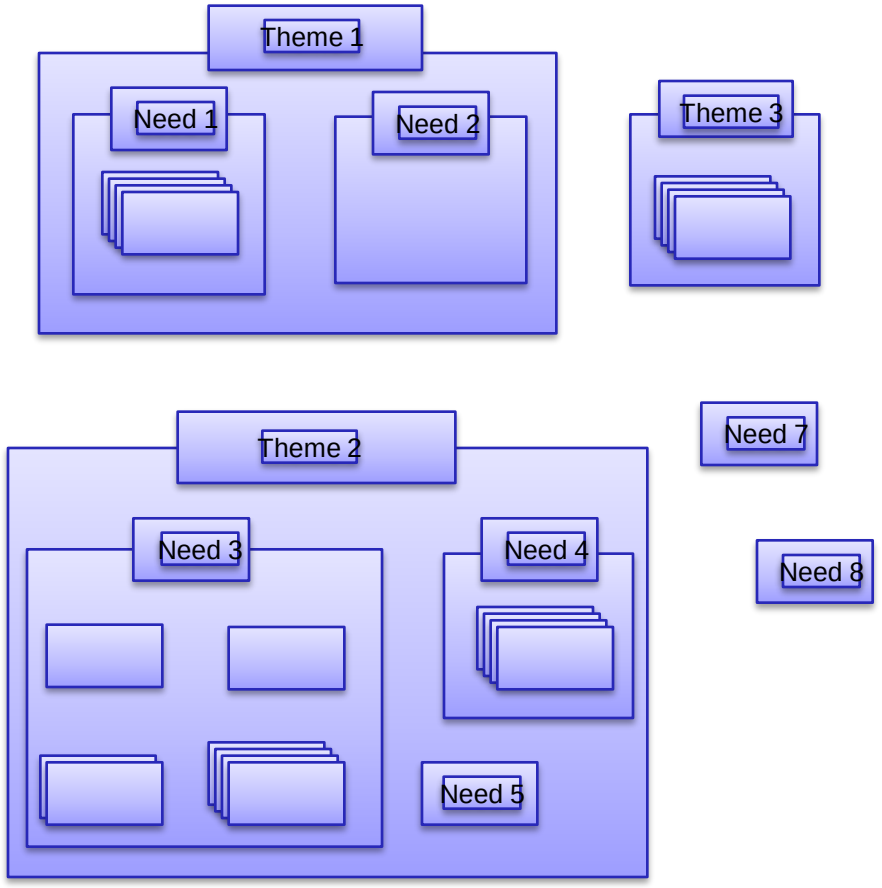
Getting Value from VOC Data

- Making sense of qualitative data is an iterative process
- It involves interpretation and prioritization
- Often requires follow-up with additional research
- Useful tools:
  - Affinity Analysis
  - Tree Diagrams

2. Translating VOC into CTQs:

Affinity Diagrams

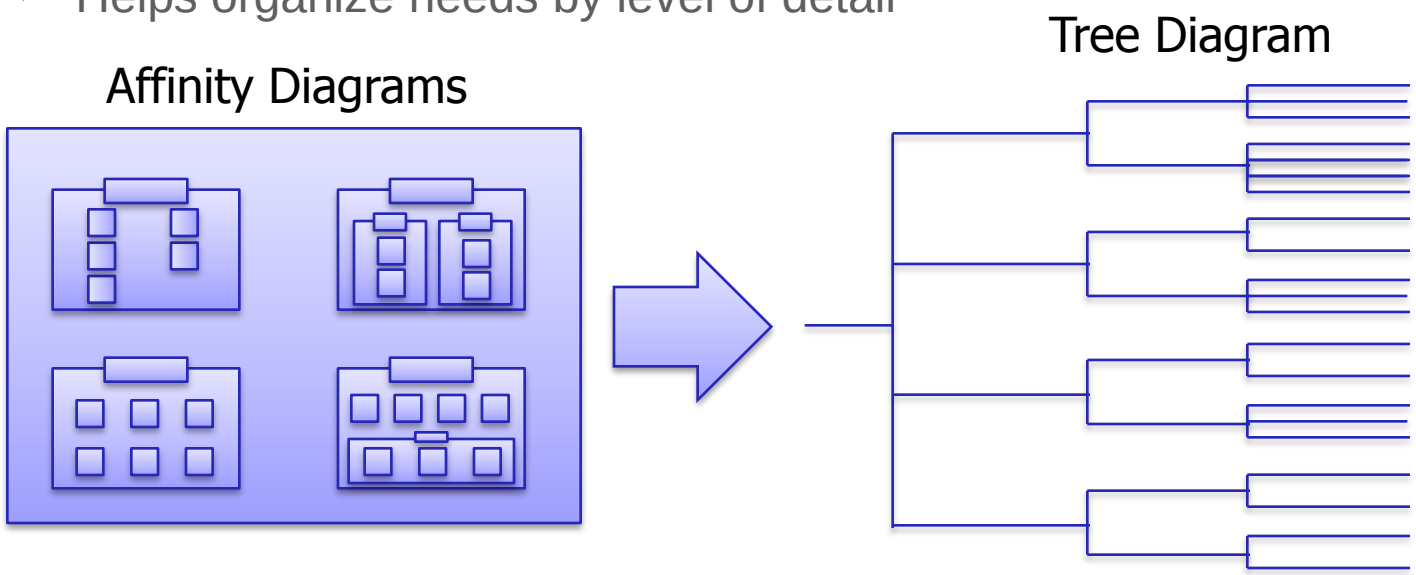
- The first step in getting value from customer data is organizing it in a way that will reveal themes
- An affinity diagram is a good tool for this purpose since it organizes language data into related groups
  - Gather ideas from interview transcripts, surveys, etc.
  - Generate customer need statements on cards or sticky notes
  - Group the cards to find the “affinity”
  - Label the groups of cards



2. Translating VOC into CTQs:

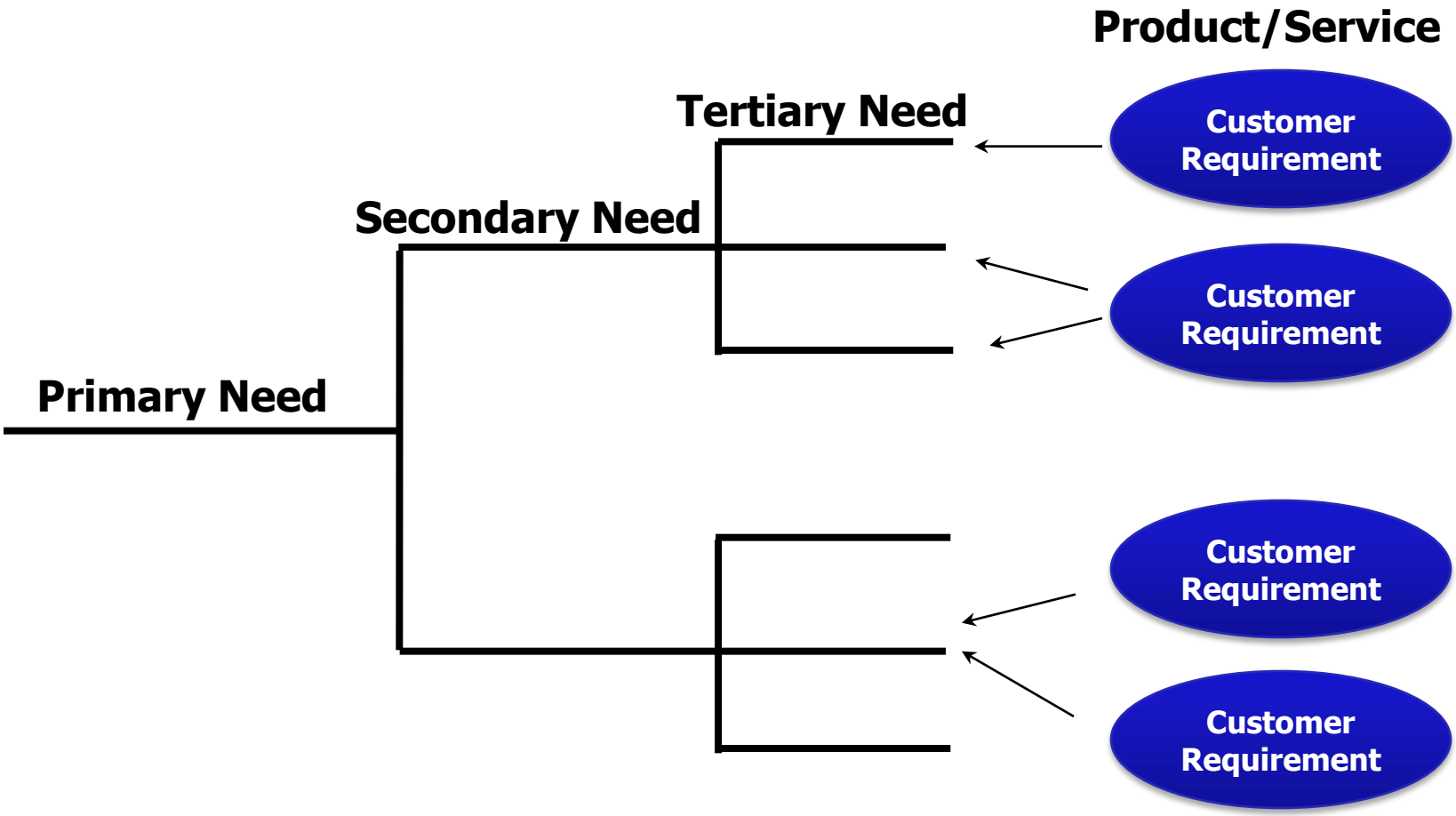
Tree Diagrams

- Moves team from high-level customer needs to greater detail in order to define requirements
- A tool for breaking broad process steps or product features into greater detail
- Helps organize needs by level of detail



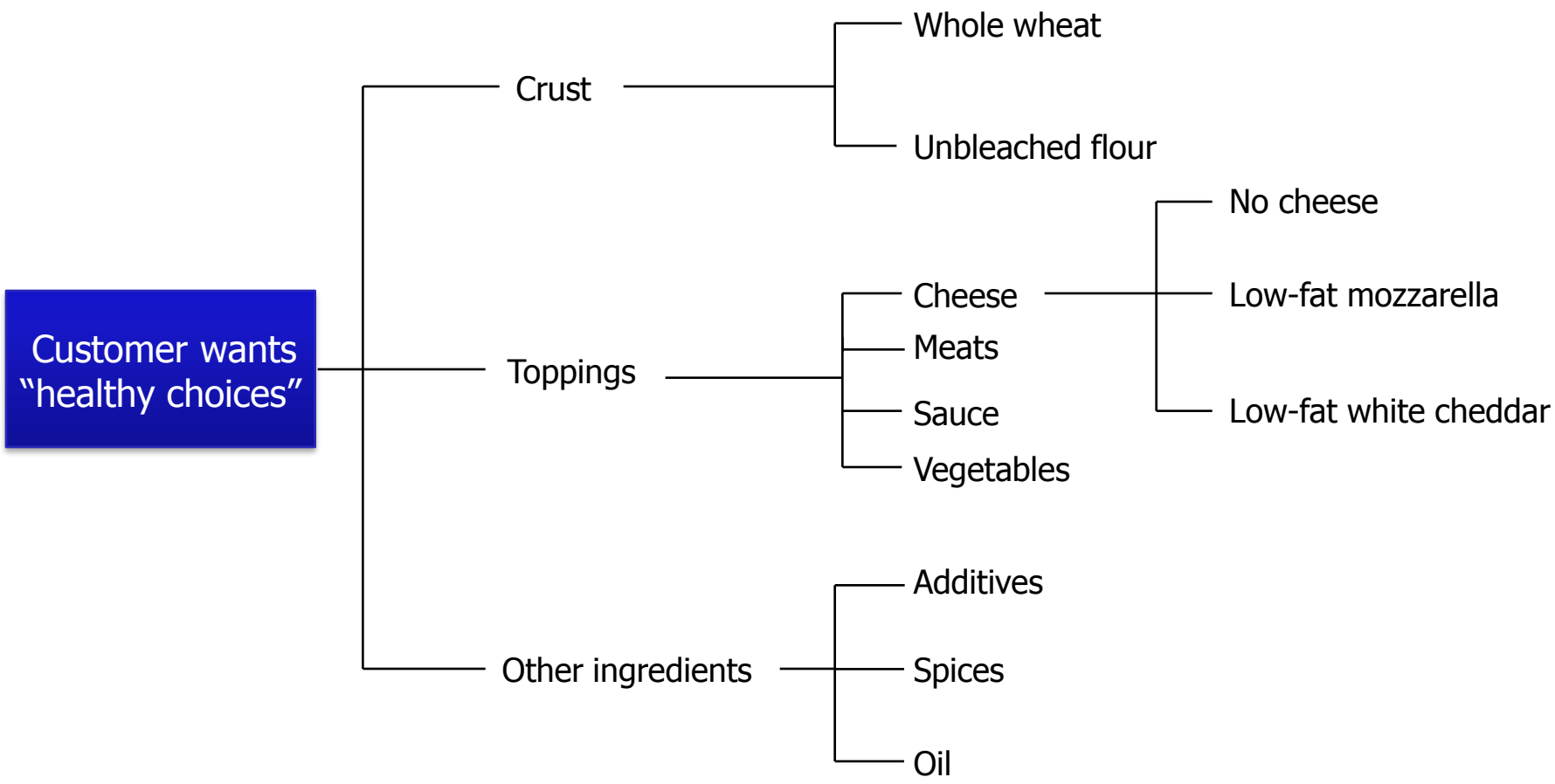
2. Translating VOC into CTQs:

Tree Diagrams



2. Translating VOC into CTQs:

Tree Diagram Example: *Pizza*



2. Translating VOC into CTQs:

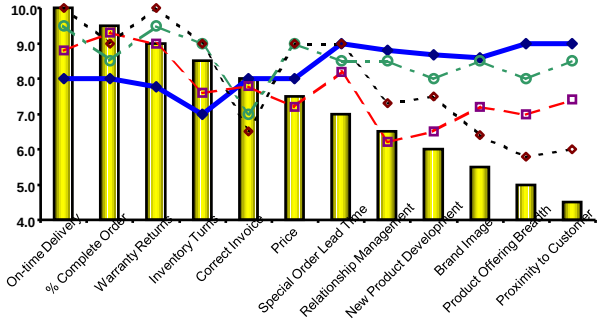
Determining "Critical Customer Requirements"

- From Requirements to "Quality"
  - A customer's perception of value & performance represents their view of the "quality" of a product or service
  - Their basis for evaluation is how well their requirements have been met
  - Evaluations are also influenced by their "expectations"
  - **Quality = Actual Performance - Expectations**
- All requirements are not created equal …
  - Customers weight their requirements differently
  - The most important customer requirements become those CTQs.
- Critical To Quality Requirements
  - Represent a customer desire that must be met
  - Have a strong correlation to the "buying decision"
  - Often form the basis for competitor comparison

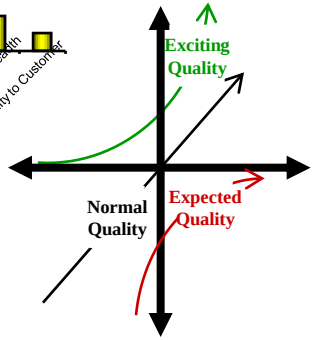
2. Translating VOC into CTQs:

CCR Selection Methods

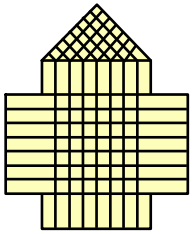
- **Ask Customers**
  - Fast and specific feedback
  - However, they may not be completely honest with you
- **Key Buying Factor Analysis**
  - Formal customer survey
  - Force ranks the requirements



- **Kano Analysis**
  - Good “first cut” technique to evaluate relative importance of customer requirements
  - Segments by “type of quality”/customer expectation

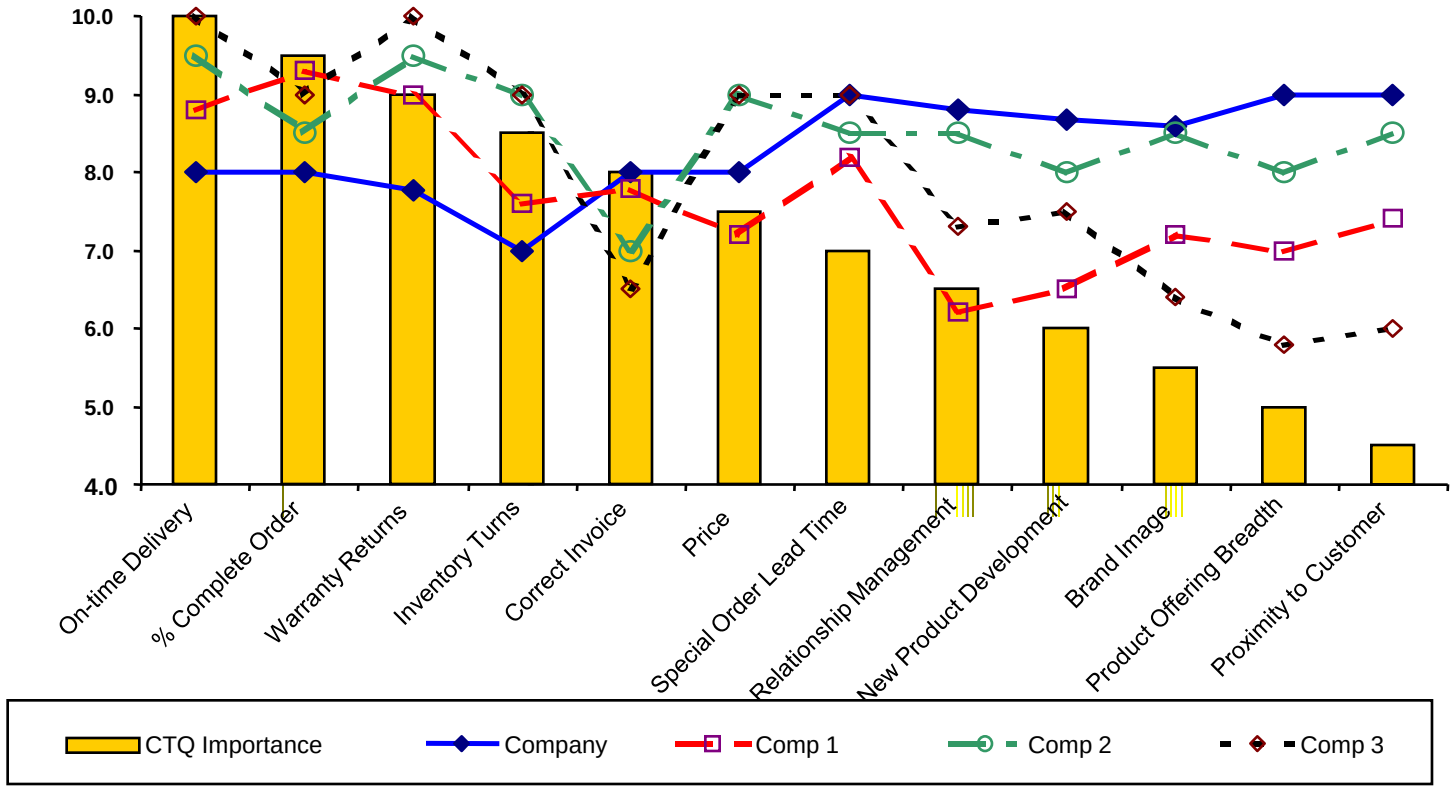


- **House of Quality (Quality Function Deployment)**



2. Translating VOC into CTQs:

CTQ Key Buying Factor Analysis

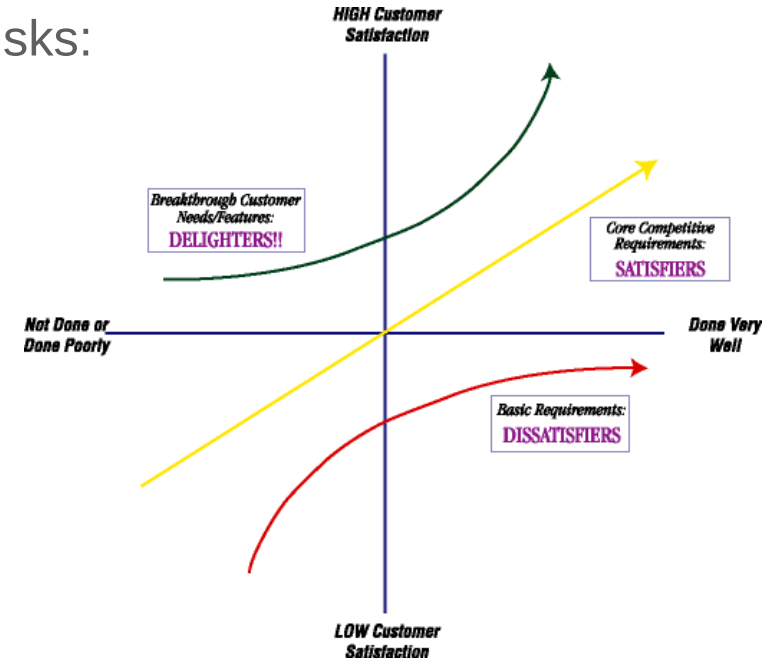


Explanation: Yellow bars show relative importance of key buying factors to customers; Red line rates company performance against key buying factors; Other lines rate competitors' performance against key buying factors

2. Translating VOC into CTQs:

Kano Model

- The **Kano Model** is helpful in understanding different types of customer needs.
- There is much risk in blindly fulfilling customer needs without a good understanding of the types of requirements.
- Without this understanding, a team risks:
  - Providing superfluous quality
  - Wowing the customer in one area, and driving them to competitors in another
  - Focusing only on what customers say, and not what they think or believe



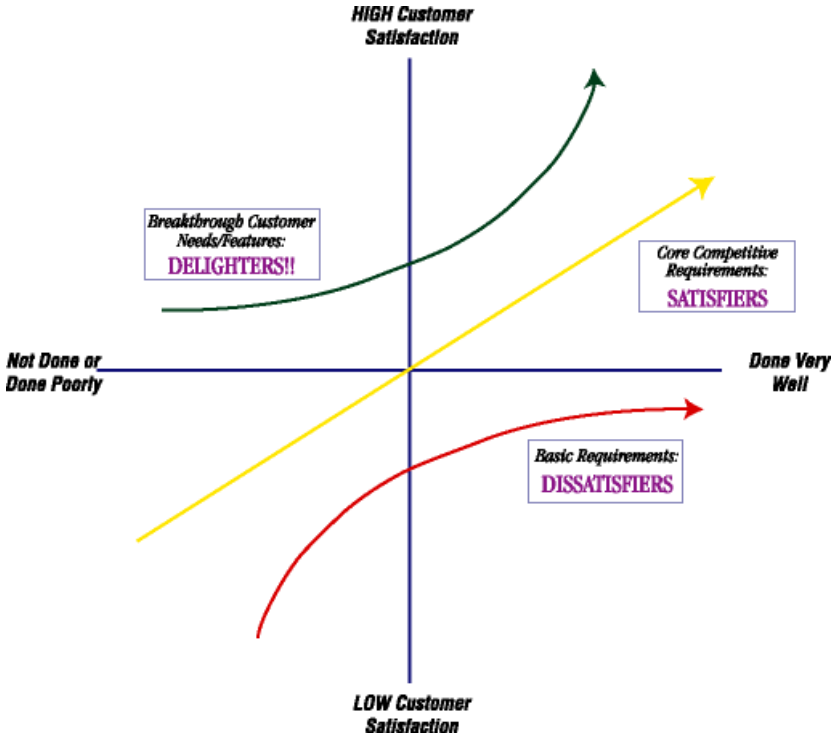
2. Translating VOC into CTQs:

The Kano Model Classifies Customer Needs

- **Dissatisfiers** – Basic requirements. Expected features or characteristics of a product or service. These needs are typically "unspoken". If these needs are not fulfilled, the customer will be extremely dissatisfied.

- **Satisfiers** – Performance requirements. Standard characteristics that increase or decrease satisfaction by their degree (cost/price, ease of use, speed). These needs are typically "spoken".

- **Delighters** – Unexpected features or characteristics that impress customers and earn you "extra credit". These needs are also typically "unspoken".



2. Translating VOC into CTQs:

Collecting the VOC based on Kano analysis

- **Dissatisfiers** (Typically Unspoken) – Gather them using 1-on-1 interviews and focus groups
  - The discussion points are not well established – often not discussed at all unless there's a reason to – but there is often consensus after the fact
    - For example, in a hotel bathroom, it's the provision of soap, towels, toilet paper, hot water – none of which are ordinarily worthy of comment unless they are missing!
- **Satisfiers** (Typically Spoken) – Gather them using surveys (phone, email, etc.)
  - The discussion points are well established – it's the issues that advertisements address, it's the basis of discussions with our neighbors
    - For example, in a hotel, it's how long the wait is to check-in, availability of a coffee maker in the room, Internet access, size of the TV, etc.

2. Translating VOC into CTQs:

Collecting the VOC (cont.)

- **Delighters** (Typically Unspoken) – Gather them using carefully orchestrated focus groups preceded by 1-on-1 and small group interviews to establish several bases for further expansion
  - The specific points of discussion are not known (except in the most general sense in some cases)
    - For example, being able to check into a hotel by swiping the credit card you used for guaranteeing the reservation – one swipe of the card, one signature on the surface of the computer monitor and your room key is issued.

2. Translating VOC into CTQs:

The Difficulty in Collecting Delighters

- Very often, Delighters are a unique combination that is really the intersection of:
  - Demand on the part of the customer for products that s/he is unaware could be made available, and
  - Supply technologists are unaware of possibilities for product innovations
- So, the customer doesn't know it is possible, and the business doesn't know there is a demand
- Note: Delighters are not just added features that the customer did not expect. They must truly be of value to the customer.

2. Translating VOC into CTQs:

Getting to Delighters

- In spite of the difficulties, there are ways to spur creative thinking – sometimes it is as simple as well-planned focus groups that have a balance of:
  - Early adopters: progressive individuals who are able to appreciate the impact on their lives of alternative services, or combinations of services/products not offered now, and
  - Open minded technologists with an understanding of the possibilities, both of specific concepts as well as combinations
- Work with customers and suppliers to explore where there might be matches of the customers' needs to the suppliers' potential range of product offerings

2. Translating VOC into CTQs:

Uses of The Kano Model

- Validate that some of the needs spoken by the customer during the interviews and focus groups are truly Critical To Quality requirements that will have an impact on customer satisfaction or a purchase decision
- Determine if there were some potential requirements that were not explicitly stated by customers
- Test out some of the team's ideas for differentiation
- Determine whether some of the features that existed in previous offerings were and still are valued by the customer

2. Translating VOC into CTQs:

Applying the Kano Table to Develop CTQs

- For each **potential need**, ask the customer to assess:
  - How would they feel if the need WAS addressed? (Positive)
  - How would they feel if the need WAS NOT addressed? (Negative)
- The customer has four choices in response to each question:
  1. I'd like it
  2. It is normally that way (that feature is expected)
  3. I don't care
  4. I wouldn't like it
- Based on the answers to the "positive" and "negative" questions, use the table to determine the type of need

		Negative Question Answers			
		Like	Normal	Don't Care	Don't Like
Positive Question Answers	Like	–	Delighter	Delighter	Satisfier
	Normal	–	–	–	Dissatisfier
	Don't Care	–	–	–	Dissatisfier
	Don't Like	–	–	–	–

2. Translating VOC into CTQs:

Determining Performance Targets – Example

- Let's say one of your needs is related to cycle time (hotel check-in time).
- Guests have stated they want to be able to quickly check-in. How quickly?
- Ask your customers:
  - How would you feel if check-in time took less than 5 minutes? (Positive)
    - Answer: "That's Normal"
  - How would you feel if check-in took more than 5 minutes? (Negative)
    - Answer: "Don't Like"
- Check-in time more than 5 minutes is a **Dissatisfier** – it must be met. 5 minutes is the absolute maximum check-in time.

		Negative Question Answers			
		Like	Normal	Don't Care	Don't Like
Positive Question Answers	Like	–	Delighter	Delighter	Satisfier
	Normal	–	–	–	Dissatisfier
	Don't Care	–	–	–	Dissatisfier
	Don't Like	–	–	–	–

2. Translating VOC into CTQs:

Determining Performance Targets – Example

- Then ask your customers:
  - How would you feel if check-in time took less than 2 minutes? (Positive)
    - Answer: "I'd Like It"
  - How would you feel if check-in took more than 2 minutes? (Negative)
    - Answer: "That's Normal"
- Check-in time less than 2 minutes is a **Delighter.** If the check-in process could be designed to check-in customers in less than 2 minutes, we could definitely differentiate our offering in the marketplace
- Remember –What is the cost impact versus the customer value for including the feature in the final design? Is there a business case for including the feature?

		Negative Question Answers			
		Like	Normal	Don't Care	Don't Like
Positive Question Answers	Like	–	Delighter	Delighter	Satisfier
	Normal	–	–	–	Dissatisfier
	Don't Care	–	–	–	Dissatisfier
	Don't Like	–	–	–	–

2. Translating VOC into CTQs:

Using the Kano Model to Validate Features

- You're uncertain of value of a particular characteristic of a previous version of your product
- Let's say you design and manufacture bicycles. Since none of your customers mentioned a kickstand, you're wondering whether your customers still value kickstands. If not, the team could eliminate the feature and save on product cost.
- You ask your customers:
  - How would you feel if the bicycle had a kickstand? (Positive)
    - Answer: "That's Normal"
  - How would you feel if the bicycle didn't have a kickstand? (Negative)
    - Answer: "Don't Like"

Positive Question Answers	Negative Question Answers: Like	Normal	Don't Care	Don't Like
Like	–	Delighter	Delighter	Satisfier
Normal	–	–	–	Dissatisfier
Don't Care	–	–	–	Dissatisfier
Don't Like	–	–	–	–

- Customers considered the kickstand a **Dissatisfier**, meaning that even though they didn't mention it as a Need, it had better be included in the design or they'll be dissatisfied with the product.

2. Translating VOC into CTQs:

Advantages of Classifying Critical Needs

- Identify the Critical To Quality requirements which have the greatest influence on customer satisfaction.
- Prioritizing requirements for future development. It is not very useful to invest in improving Dissatisfier requirements that are already at a satisfactory level.
- Performing trade-offs. If two customer needs cannot be met simultaneously due to technical or financial reasons, knowing the type of customer need can help make compromises that minimize the impact on customer satisfaction.

3. Convert CTQs into KPOVs

- Once the Critical To Quality requirements of the product have been defined, they must be converted into Key Process Output Variables for the process
- The process is a function of converting inputs (Xs) into outputs (KPOVs or Ys)

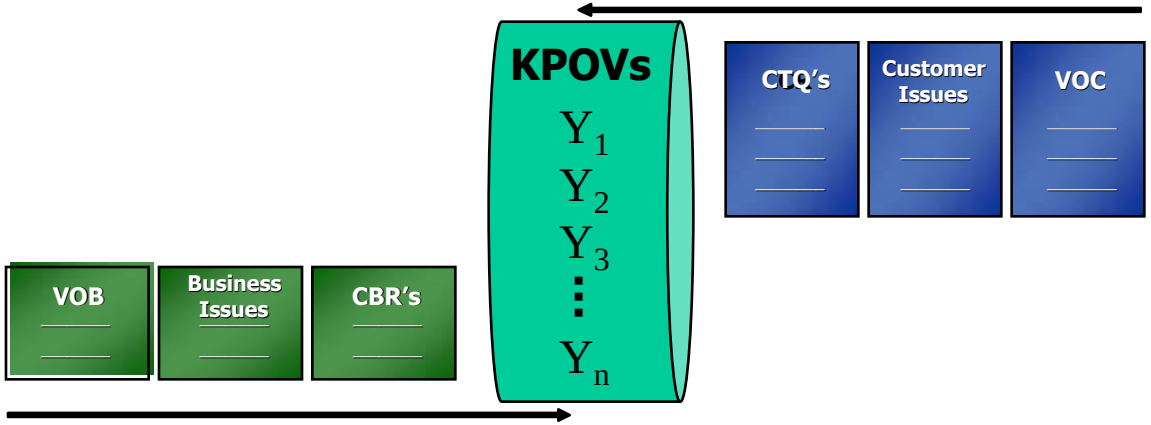
$$Y = f(X_1, X_2, X_3, \ldots X_n)$$

- We must first define all of the Ys that our process must satisfy, in order to use the DMAIC philosophy to focus on the correct Xs to improve the process

3. Convert CTQs into KPOVs:

Getting to KPOVs (Big "Y"s)

- Key Process Output Variables come from two sources:
  - The Critical to Customer Requirements (Voice of the Customer - VOC)
  - The Critical to Business Requirements (Voice of the Business – VOB)
- These two sources come together to develop the Big "Y" outputs that the process must meet

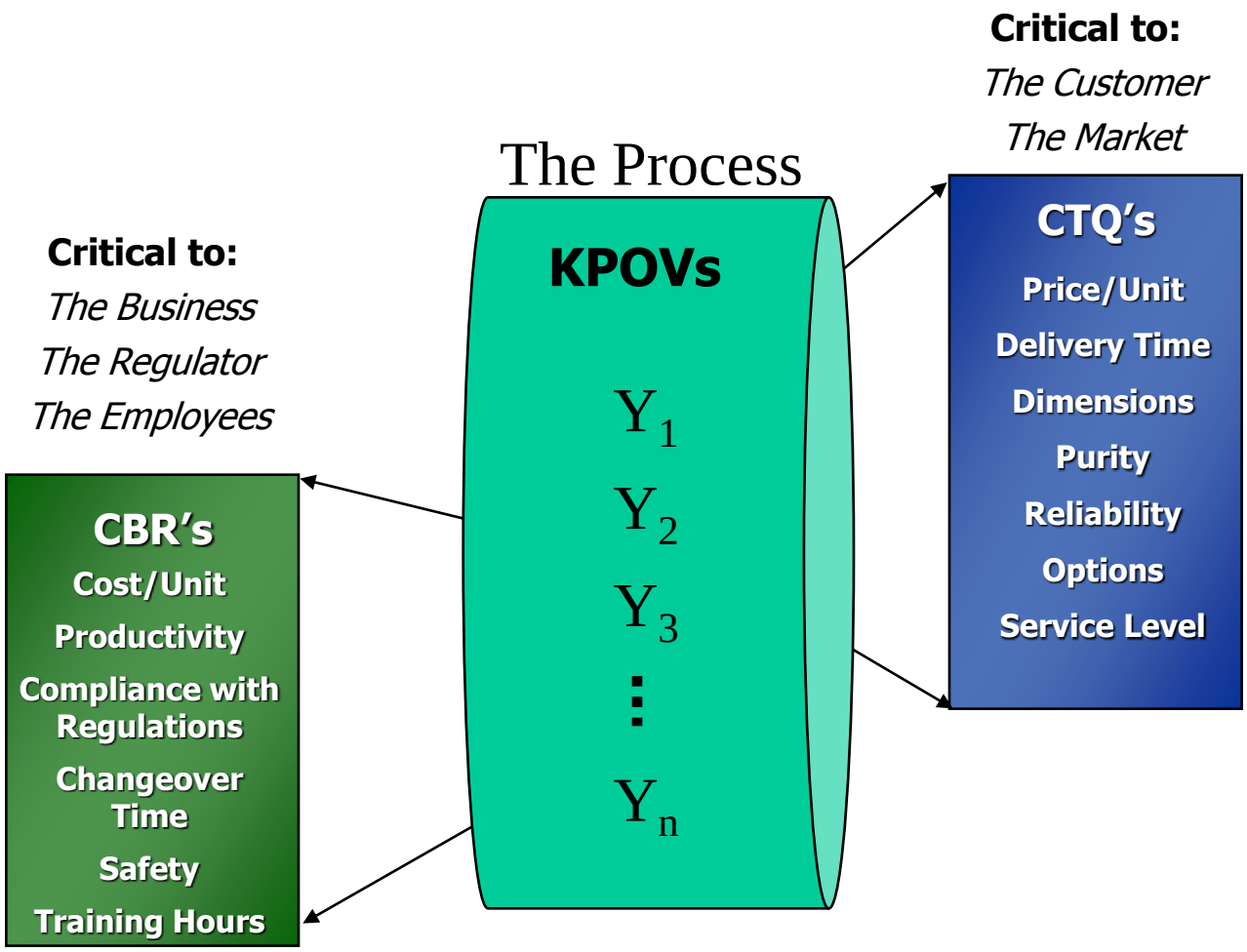


VOB - Voice of the Business
CBR - Critical Business Requirements

VOC - Voice of the Customer
CTQ - Critical To Quality Requirements

3. Convert CTQs into KPOVs:

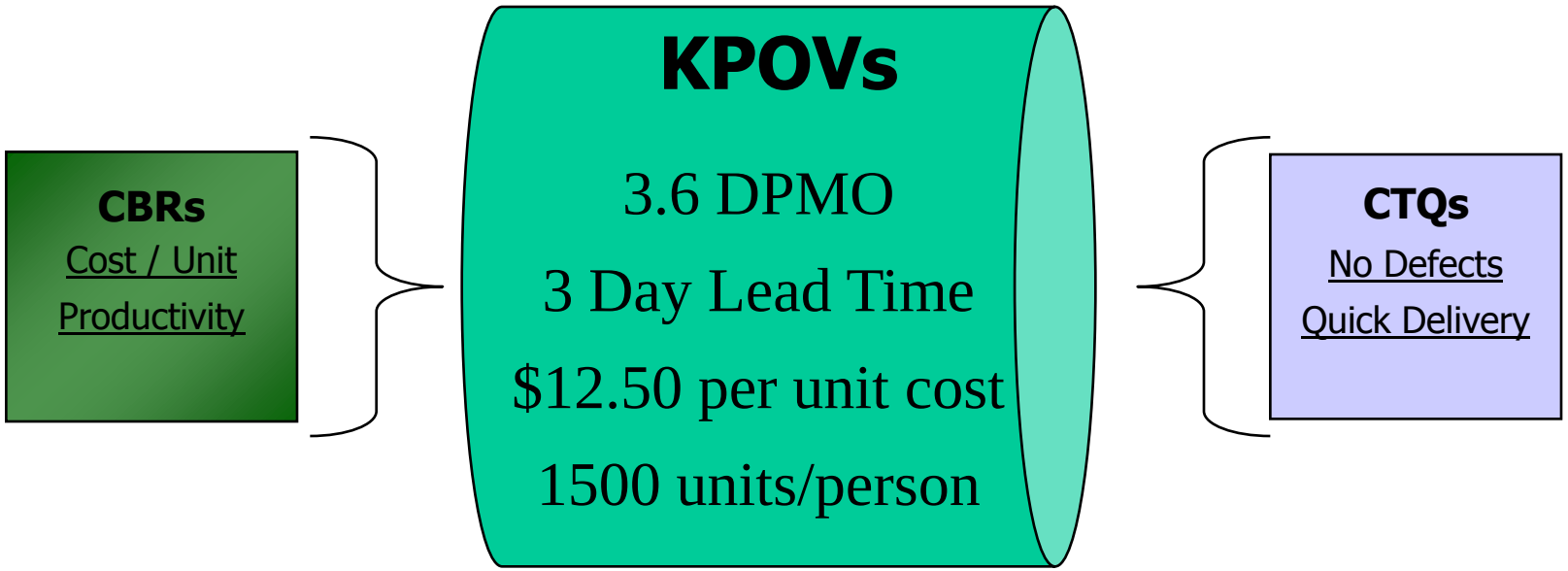
CTQ and CBR Examples



3. Convert CTQs into KPOVs:

Finalizing the Big "Y"s

- In finalizing the Big "Y"s for the process, they must be:
  - Tangible
  - Meaningful
  - Measurable



4. Create a SIPOC map

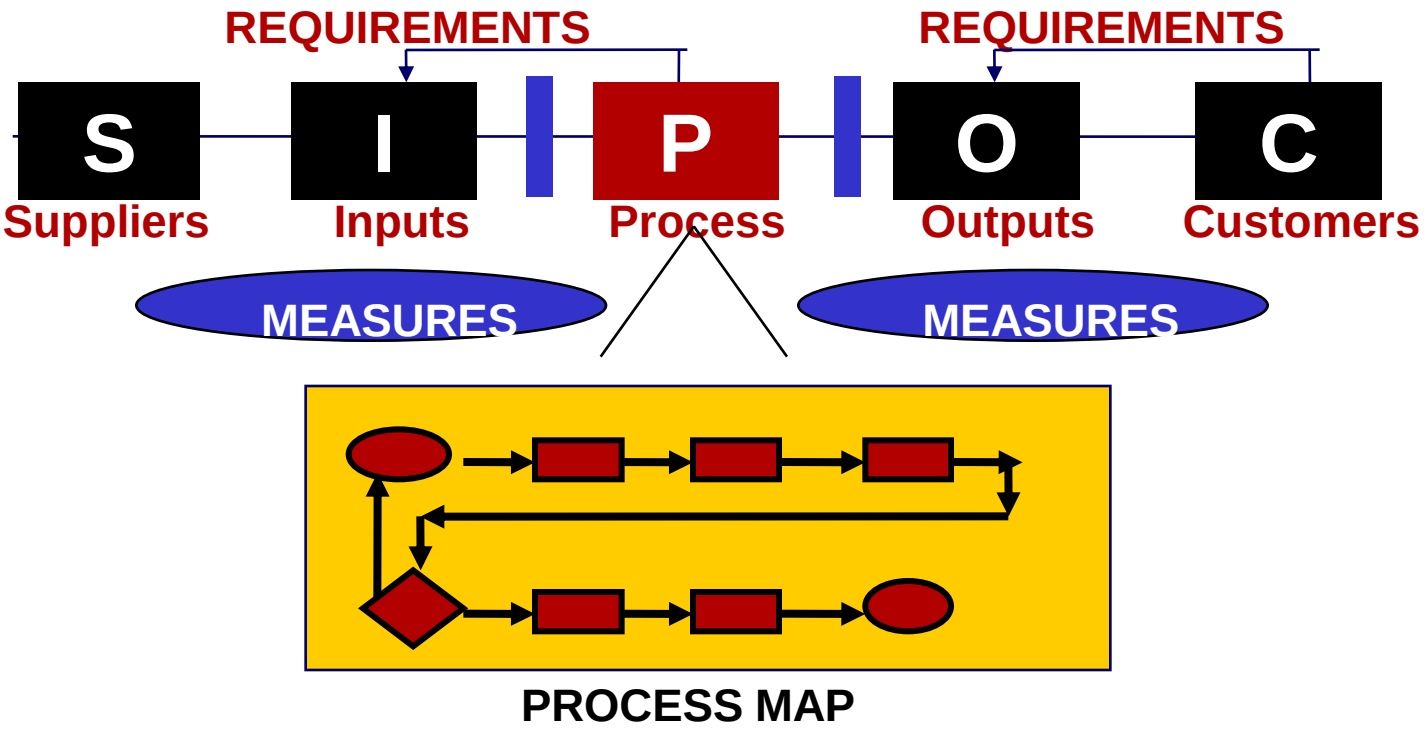
- Once the KPOVs have been identified, a SIPOC map can be created
- Supplier Input Process Output Customer (SIPOC) map
  - **Suppliers** – All internal and external suppliers to the process
  - **Inputs** – All inputs to the process i.e. material, forms, information, etc.
  - **Process** – One block representing the entire process
  - **Outputs** – All outputs for both internal and external customers
  - **Customers** – All internal and external customers to the process

A high-level SIPOC map helps to visualize the Voice of the Customer and begin to see the relationships between the Outputs and the Inputs of the process

4. Create a SIPOC map:

The SIPOC map

- Go upstream to the process steps which most impact the Output and determine the Key Process Input Variables (KPIVs) which affect the KPOV's.
- Try to use leading measures instead of lagging measures – if lagging, then close/reduce amount of lag.



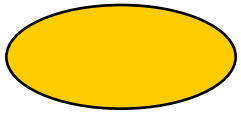
4. Create a SIPOC map:

Leading and Lagging Measures

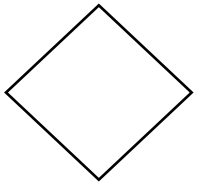
- Leading Measures tell the need to adjust process before the fact.
  - Evaluate inputs and adjust downstream process to reflect results of evaluation.
- Lagging Measures inform about process performance and the need for adjustment after the fact.
  - Some close lagging measures are able to give immediate feedback to the process – small likelihood of providing inconsistent service.
    - Evaluate results of process step and feed information upstream.
  - Some long lagging measures take so long to give feedback that decision-making is not timely and not well defined – greater likelihood of providing inconsistent service.
    - Evaluate results of process output and feed information upstream.

Process Mapping Symbols

Start/Stop



Decision

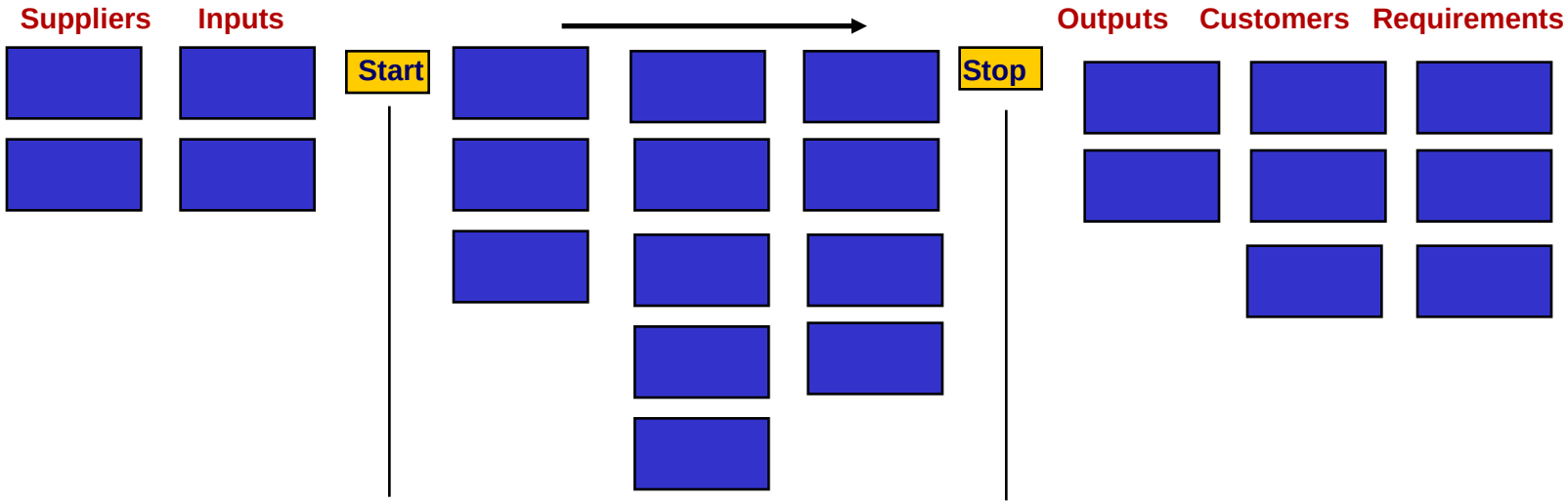


Process Step

Direction

Basic Steps of SIPOC Process Mapping

1. Define process to be reviewed - name it.
   - Agree on beginning and end of process - bind it.

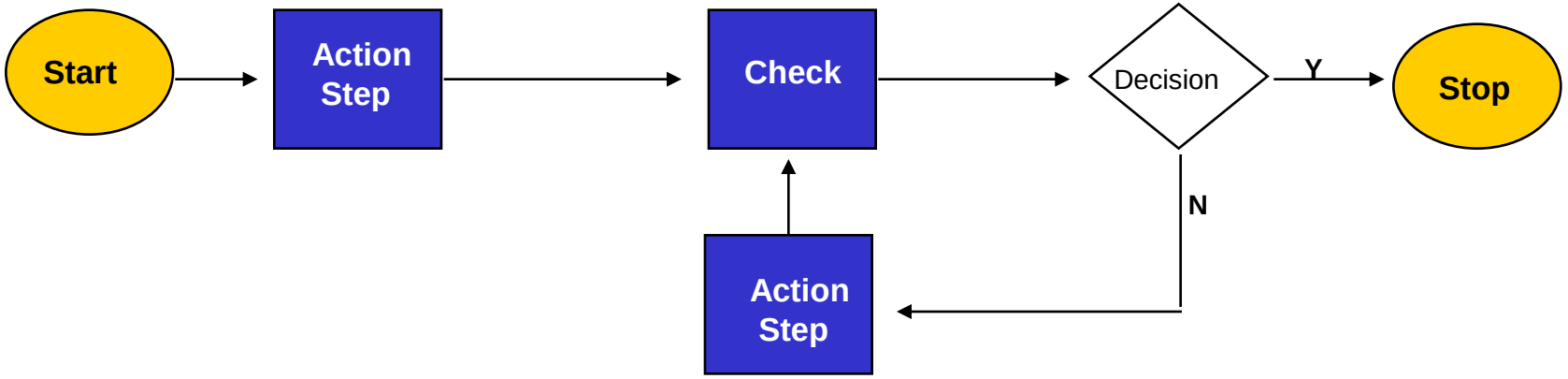


2. Brainstorm the outputs and customers who receive them.
3. Identify the customers' requirements for each output.
4. Brainstorm the inputs and the suppliers who provide them.

Basic Steps of SIPOC Process Mapping (cont.)

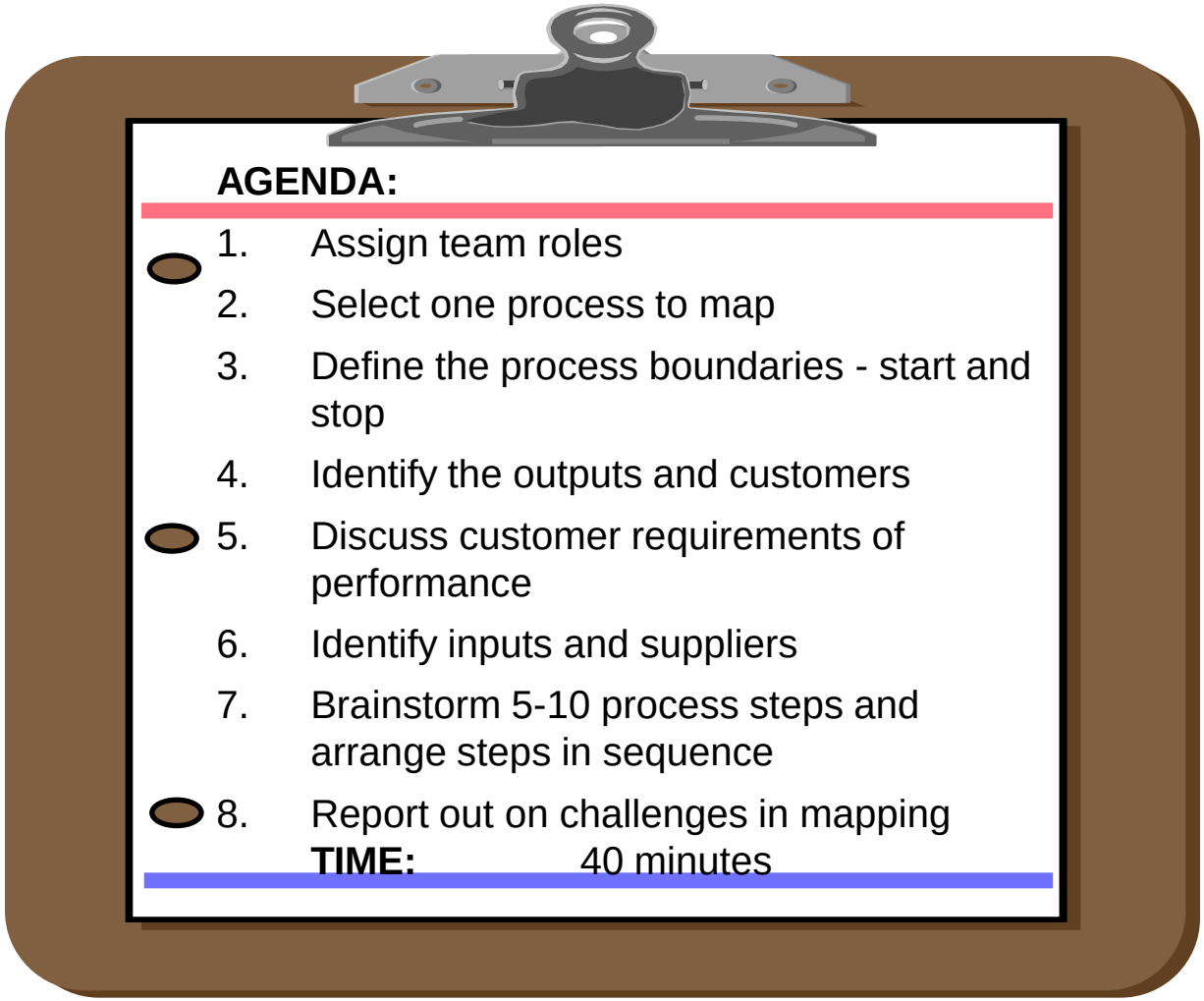
5. **Brainstorm 5-10 process steps.**
   Hints:
   - **Write one step per post-it/card**
   - **All steps should begin with a verb**
   - **Don't discuss process steps in detail**
   - **Don't try to establish the order of the steps (yet)**

6. **Arrange the process steps in sequence, discuss steps in detail to clarify the order and what the step output is. Draw lines and arrows indicating flow. Indicate key decision points with a ◇ and label the paths for each.**



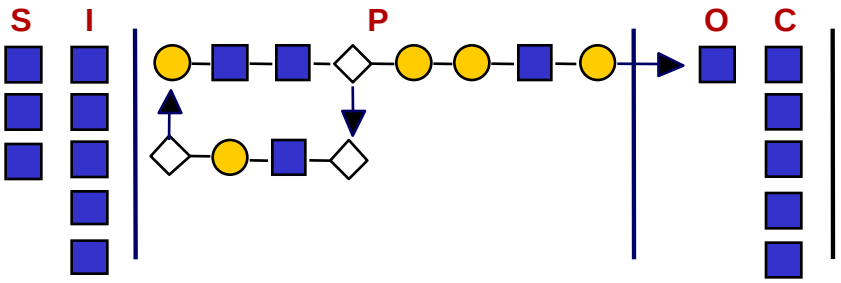
7. **Validate the process with a "walk through" of the actual process. Add any missed steps, decision points or rework loops.**

Activity: Mapping

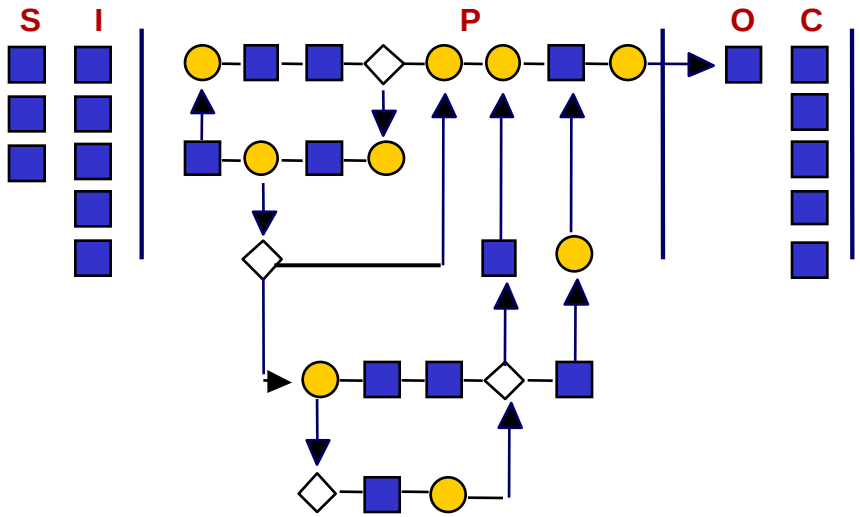


Versions of a Process

What You Think It Is...



What It Really Is...



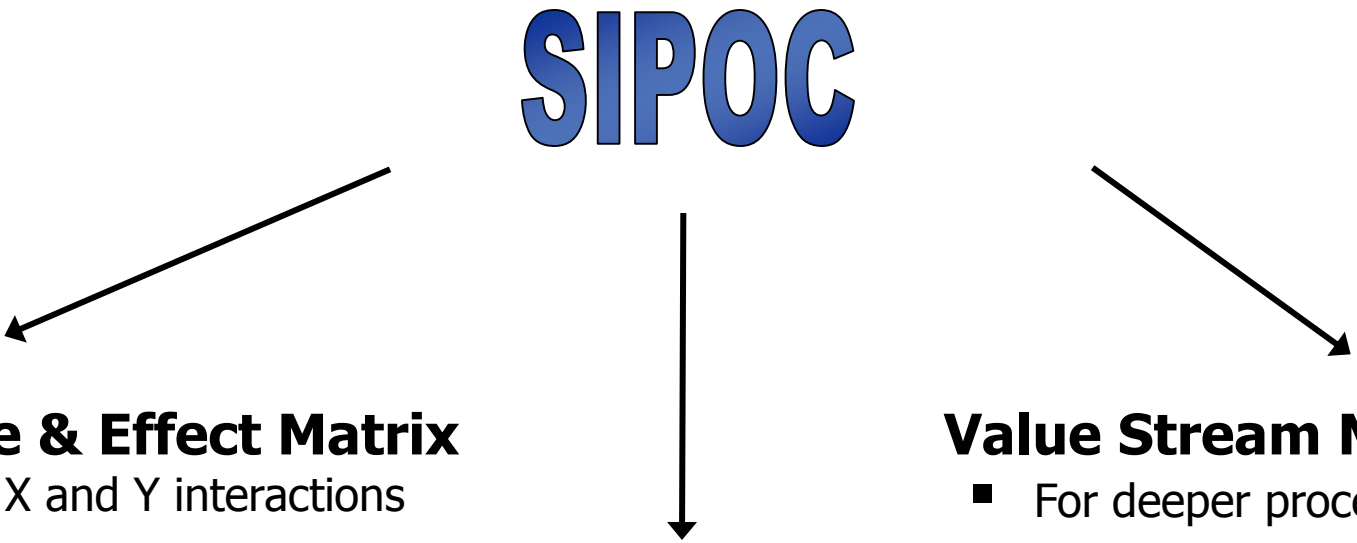
Stakeholder Check-In

Validate your preliminary process map with key process stakeholders such as current process participants, customers, and suppliers.

- Check: To ensure the map reflects the way it really works
- Identify: Exception cases
- Ask: About typical problems and their impact
- Assess: Current performance and check for data

4. Create a SIPOC map:

SIPOC Uses



Cause & Effect Matrix

- For X and Y interactions

Value Stream Mapping

- For deeper process analysis

- Identify Key Output (Y's)
  Process & Input (X's)
  Variables, and Metrics

$$Y = f(X)$$

Congratulations, you've made it to the end!