A PROCESS APPROACH:

What Does It Mean?

Presented by
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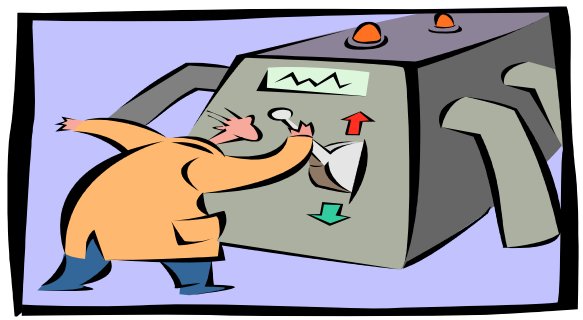
What is a Process?

ISO 9000: 2000, Paragraph 2.4

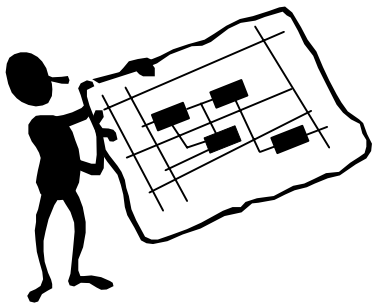
- Any activity, or set of activities, that uses resources to transform inputs to outputs can be considered as a process.



What is a Process Approach?

ISO 9000: 2000, Paragraph 2.4

- the systematic identification and management of these activities and the interactions between the activities



Points to Consider

- Organizations are comprised of numerous linked activities (processes) which must be managed, with the goal of meeting customer requirements
- Typically the output of one process directly forms the input of the next

A process approach emphasizes the importance of:

1. Understanding and meeting requirements
2. Determining if the processes add value
3. Determining process performance and effectiveness
4. Using objective measurement for continual improvement of the processes

ISO 9001:2000

4.1 General requirements

The organization shall:

a) identify the processes needed for the quality management system and their application throughout the organization (see 1.2),

b) determine the sequence and interaction of these processes,

c) determine criteria and methods needed to ensure that both the operation and control of these processes are effective,

d) ensure the availability of resources and information necessary to support the operation and monitoring of these processes,

e) monitor, measure and analyze these processes, and

f) implement actions necessary to achieve planned results and continual improvement of these processes.

THIS IS THE PROCESS APPROACH!

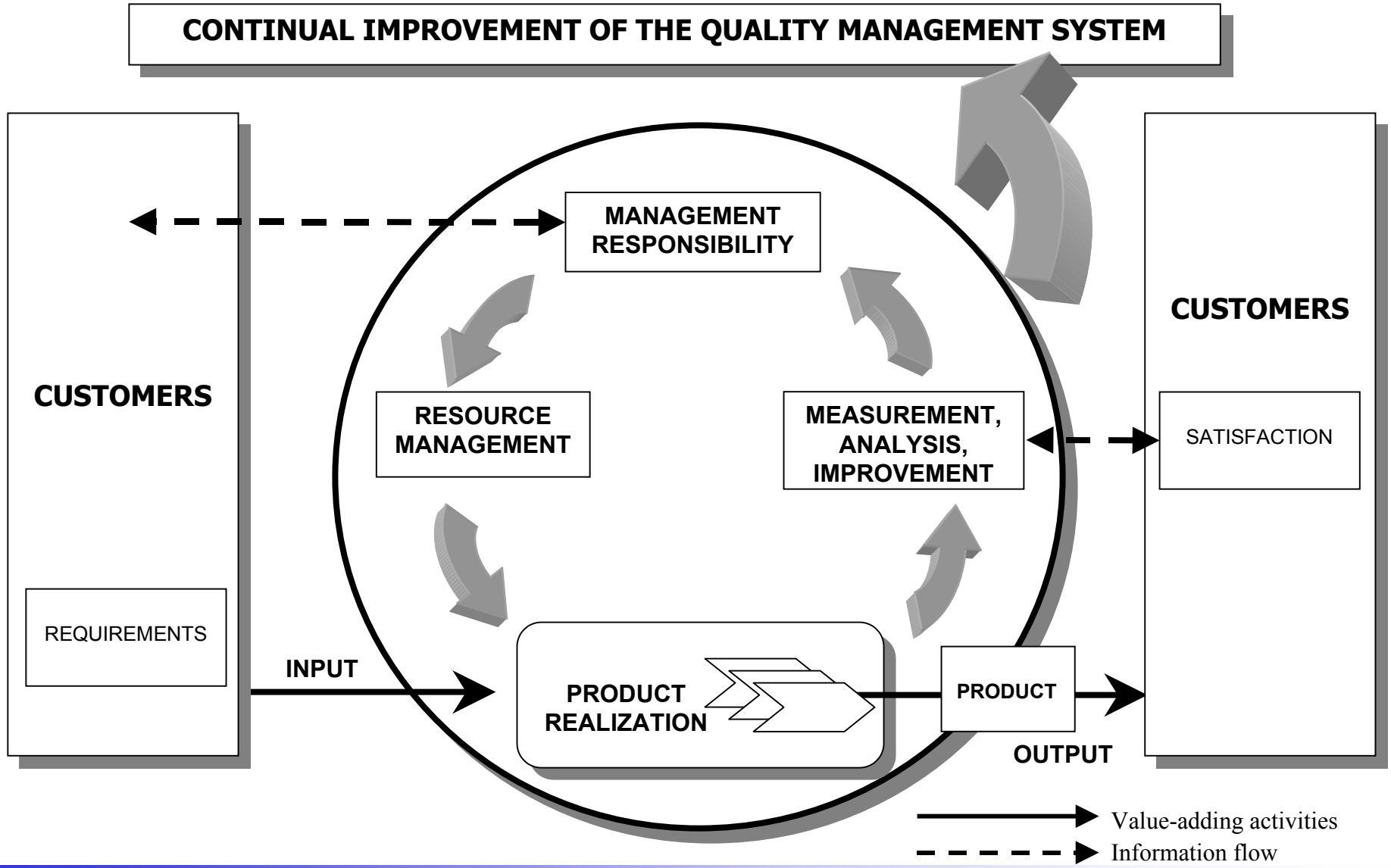
Process Approach

Management Principle 4

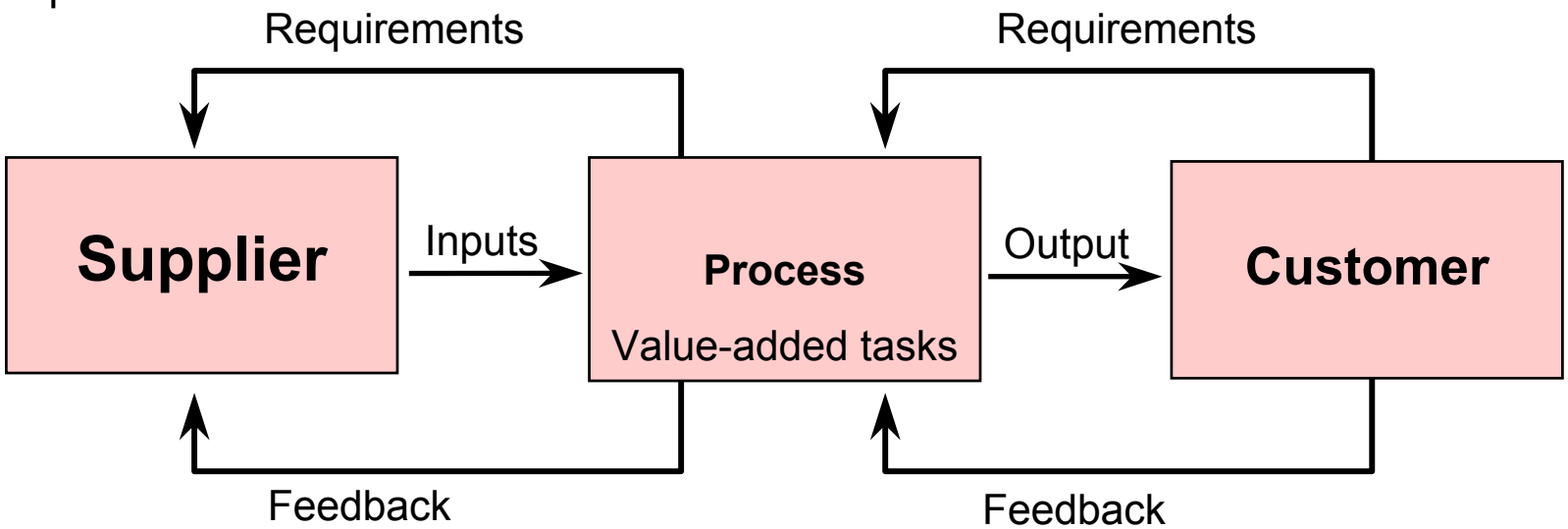
A desired results is achieved more efficiently when related resources and activities are managed as a process.

- Focus on the use of resources in processes activities, leading to effective use of people, equipment, methods and materials

Model of a Process-Based QMS

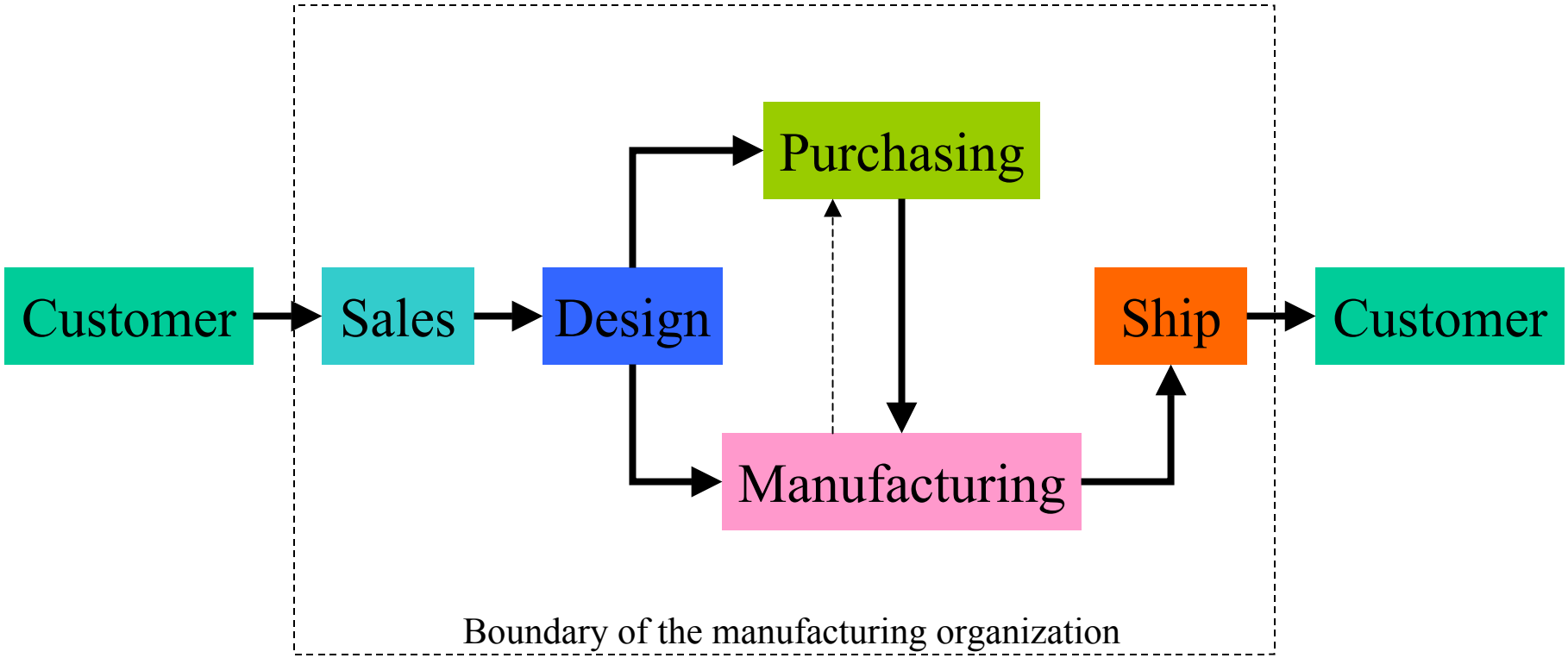


All Work is a Process!

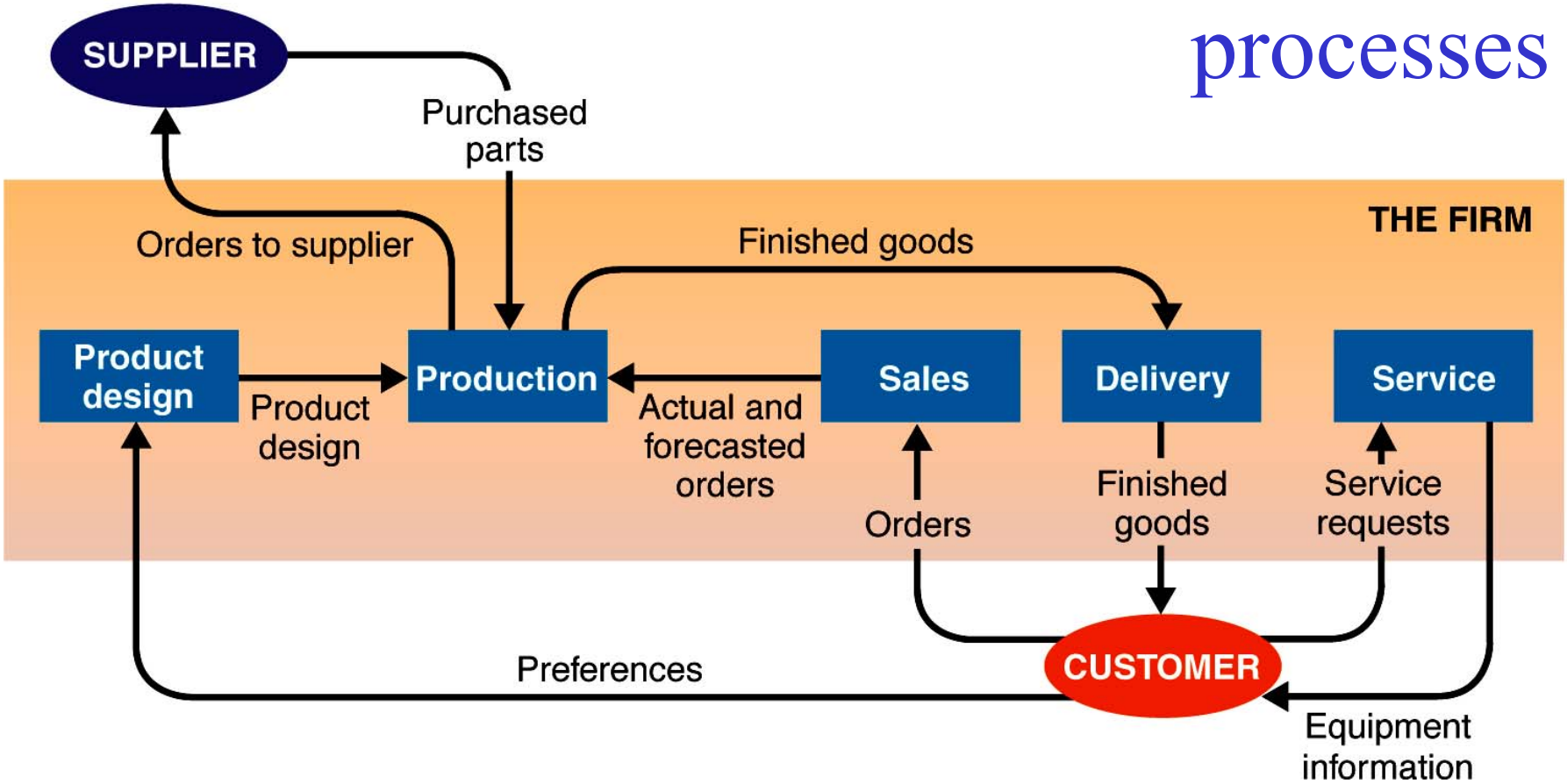


S. I. P. O. C.

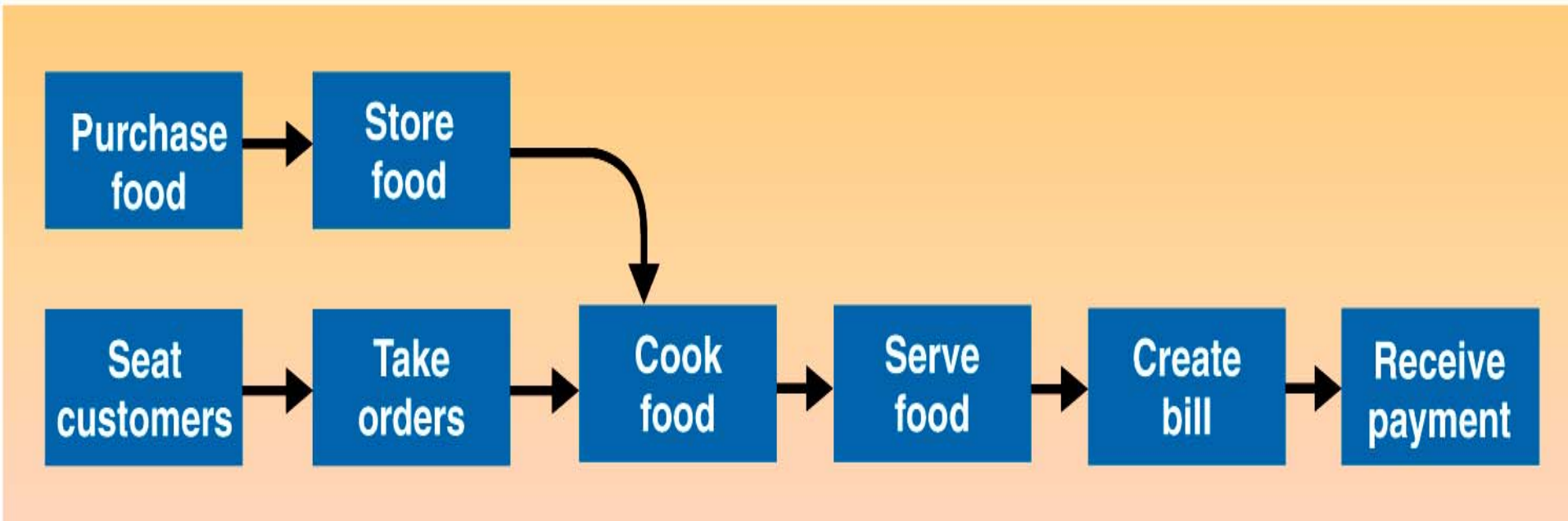
Basic Process Model for a Business



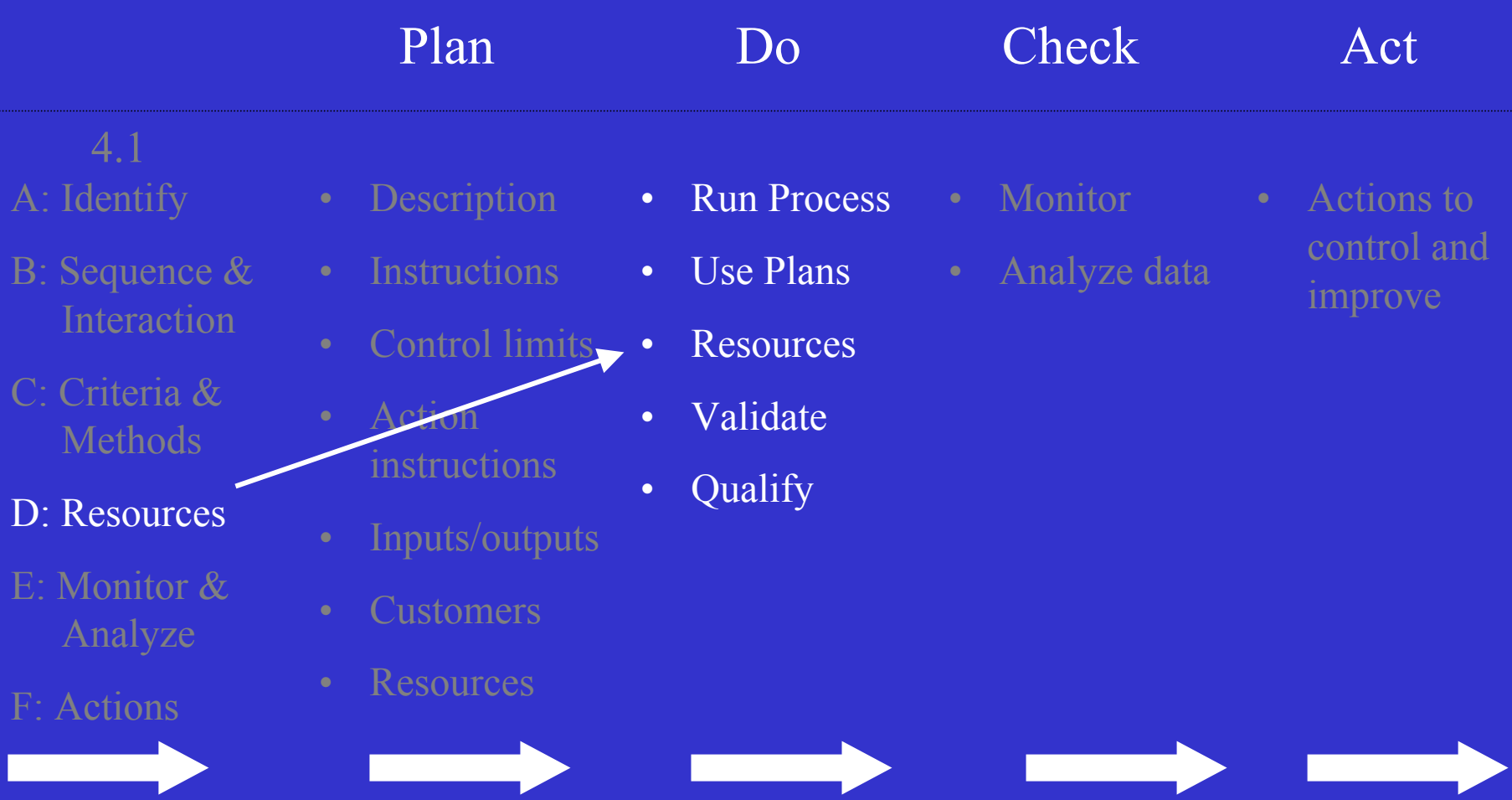
Viewing a firm as a system of interlinked and interdependent processes



Business Processes for a Typical Restaurant



Managing a Process (Application of PDCA)



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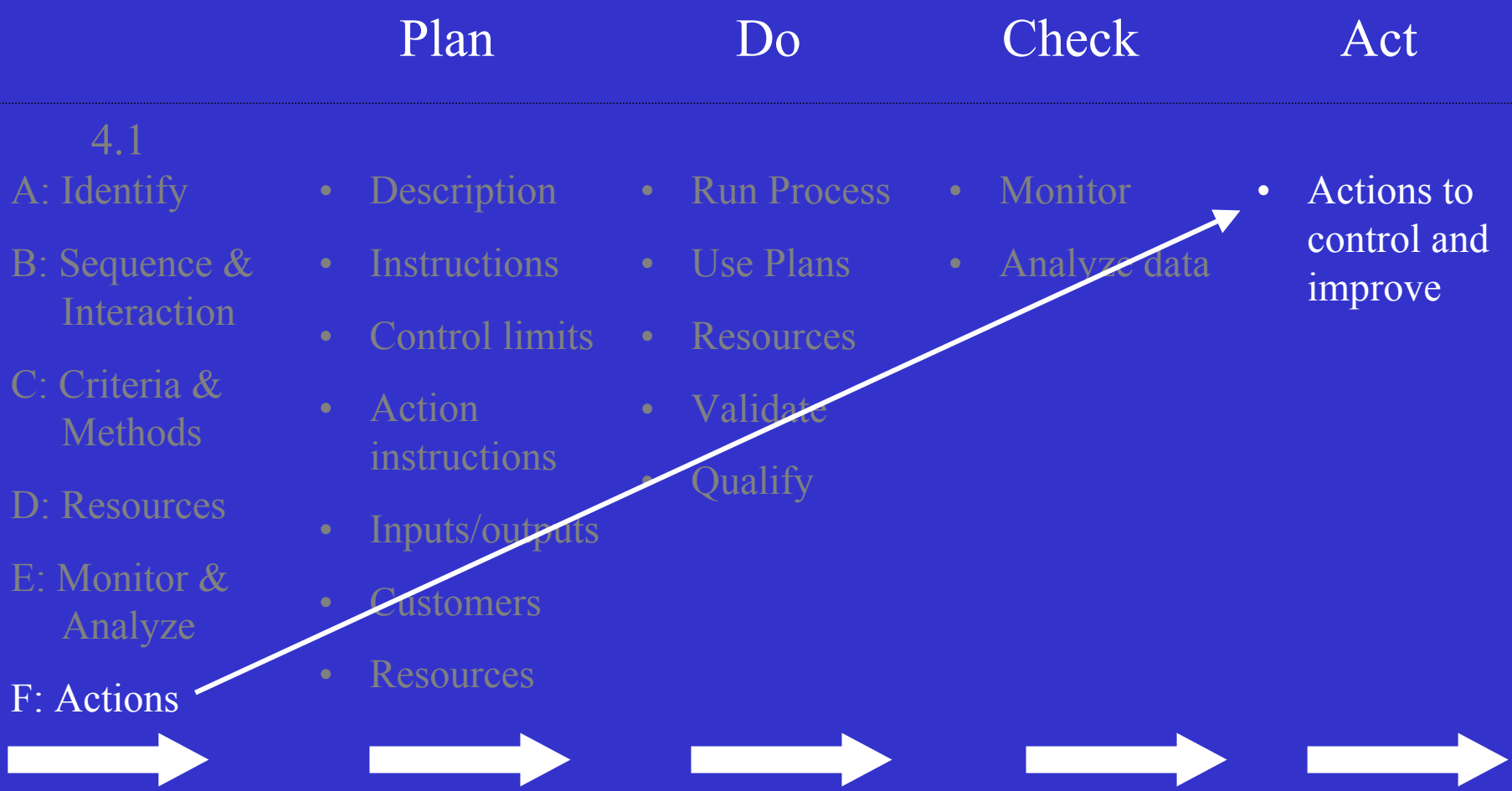


Managing a Process (Application of PDCA)

PLAN

- Are the inputs and outputs defined?
- Are there appropriate procedure and/or work instructions?
- Have the control actions been defined?
- Are the responsibilities for the process defined?

DO

- Are the process instructions being followed?
- Does the process need to be validated or qualified?
- Does the validation indicate that the process is capable?

CHECK

- Is the process being monitored?
- Does the data get to the person responsible for control of the process?
- Does the data indicate that the process is achieving planned results (outputs)?

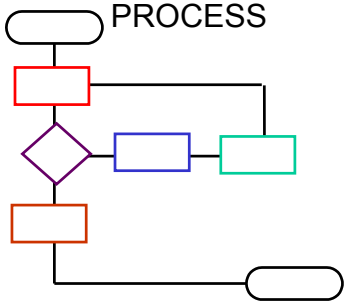
ACT

- Are the actions taken if the process goes out of control?
- Are actions taken if the results (output) do not meet the plan?
- Is the process data analyzed for possible preventive action or improvement?

Process Management Overview

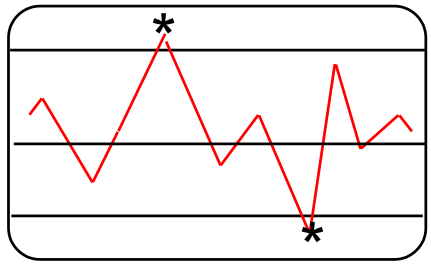
PROCESS DISCOVERY

UNDERSTAND THE CUSTOMER AND THE PROCESS



PROCESS CONTROL

ASSESSING PROCESS PERFORMANCE



REACTIVE IMPROVEMENT

7 STEPS / Q.I.T.

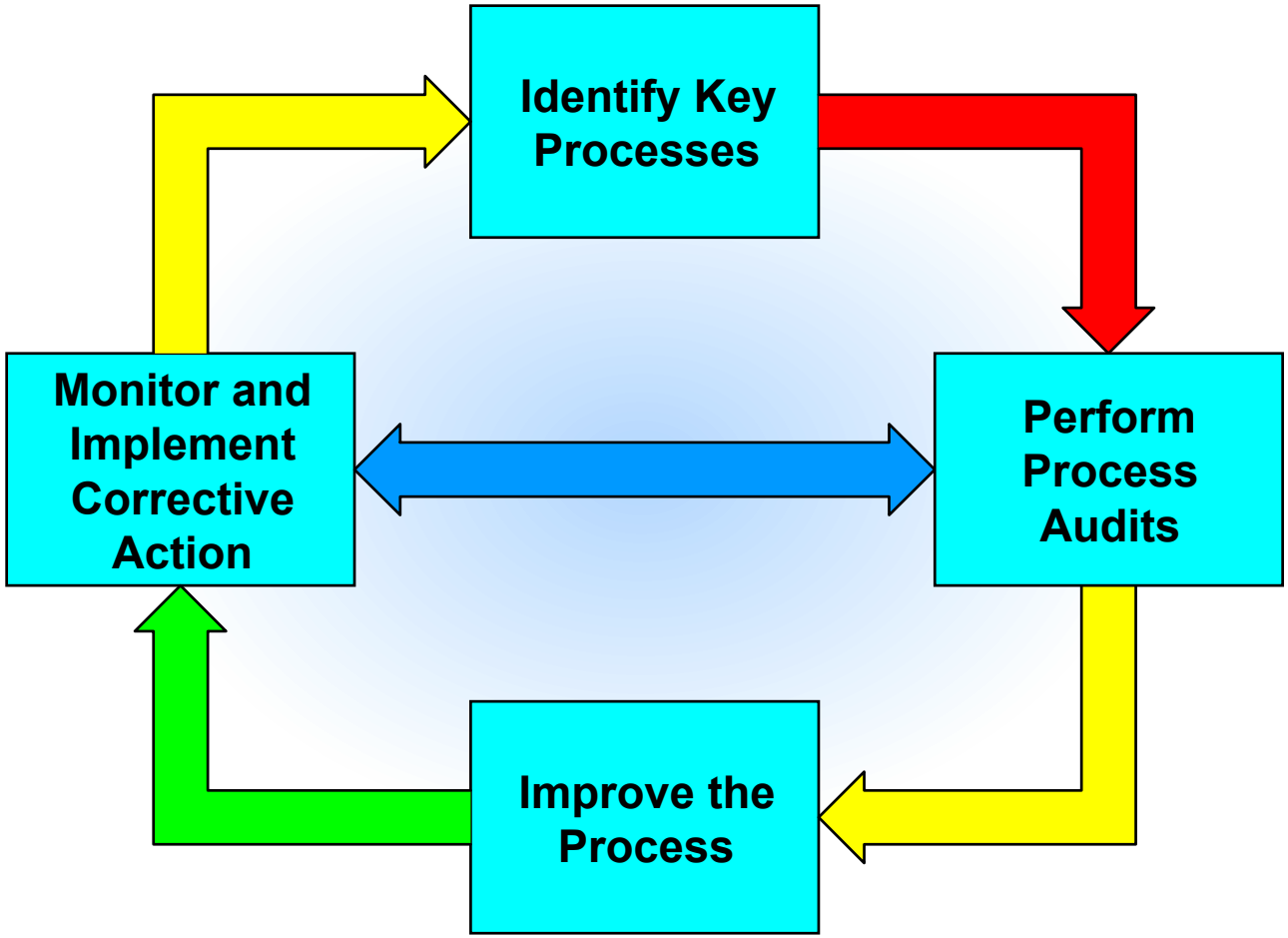
1. Theme selection
2. Data collection & analysis
3. Causal analysis
4. Solution planning & implementation
5. Evaluation of effects
6. Standardization
7. Reflection and next problem

- Who are the customers?
- What are our products and services?
- What are the requirements?
- What is the process map?
- How is our process performing?

- Does the standardized process continuously perform as expected?
- What action is warranted by careful checking of process data?
  - Continue with the next SDCA
  - Initiate PDCA to find and remove root cause of special variability

- What actions are needed to improve my process?
- Identify the largest source of variation in standard process.
- Find and eliminate a root cause of variation.
- Define new standard process.

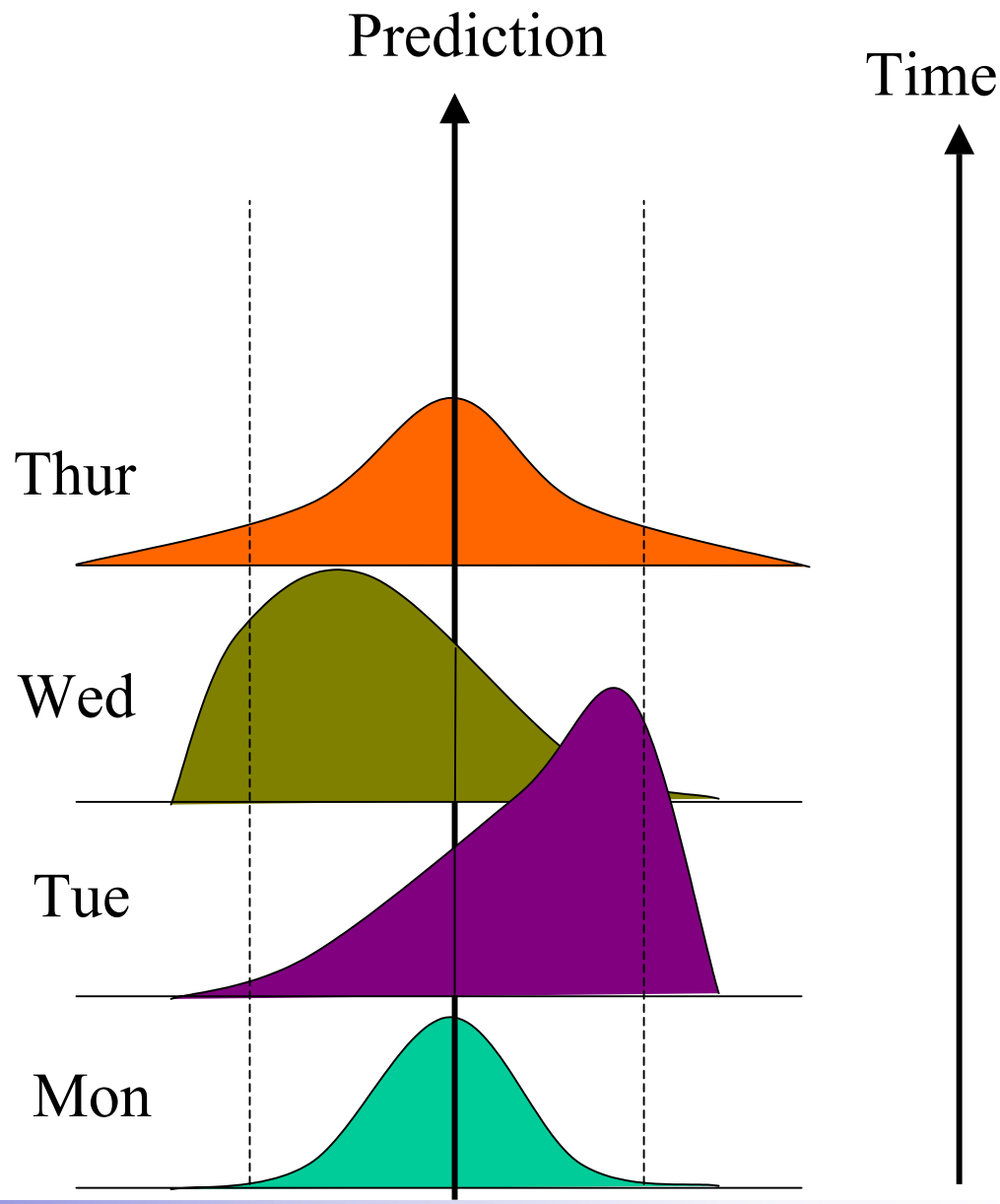
Process Management Activities



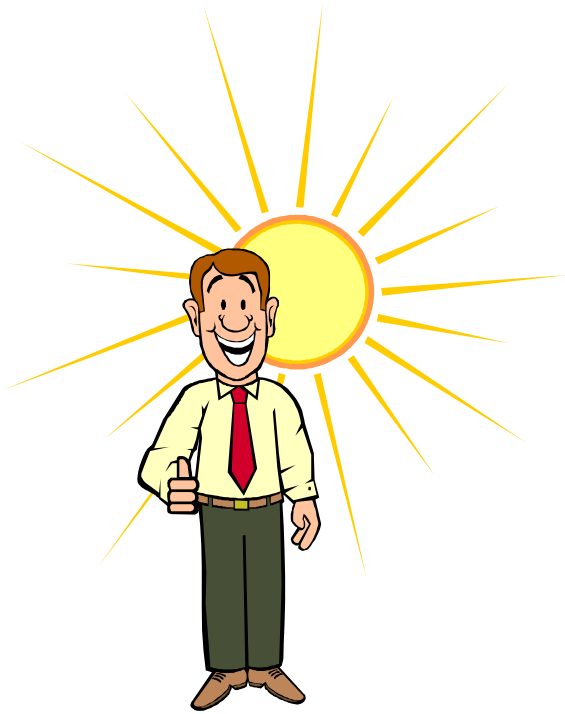
Why Process Management?

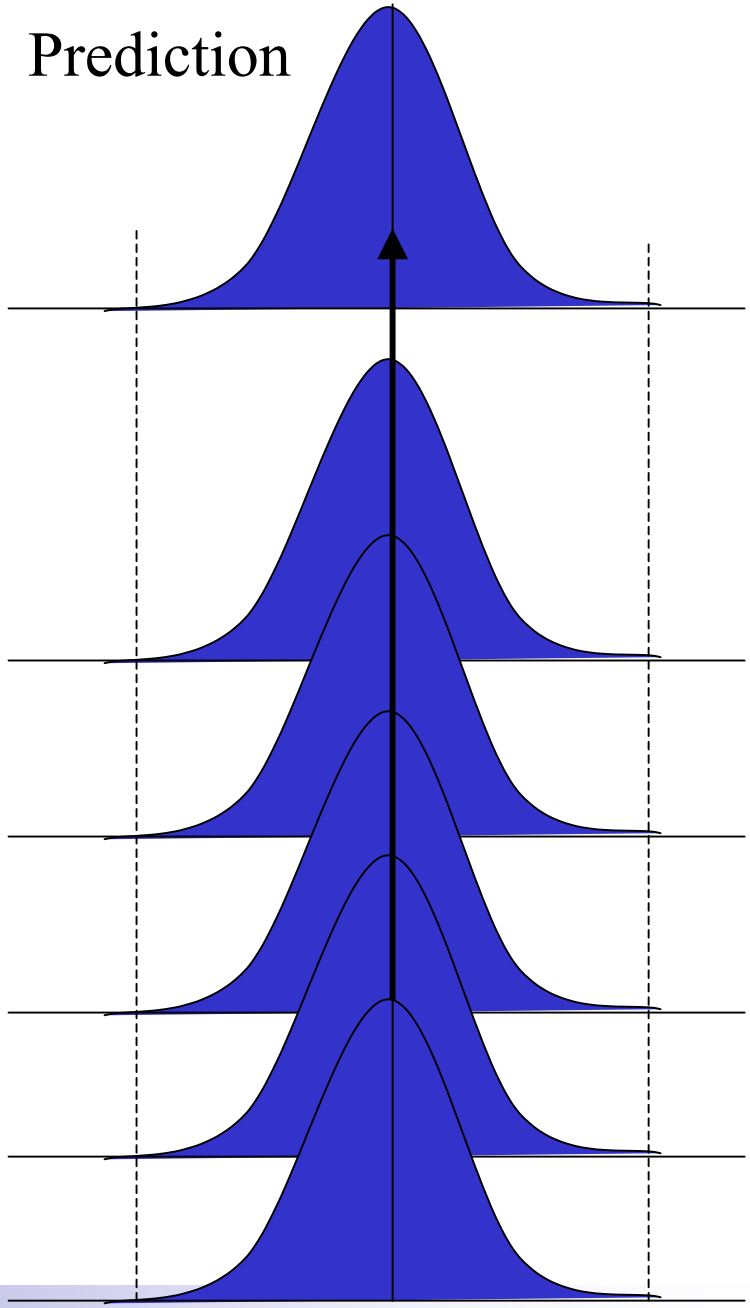
- Poor performance and unnecessary costs result from:
  - Outputs that do not meet customer requirements
  - Activities within processes that do not directly support or add value to customers
  - Inefficient process flows
- Processes determine how value is added, (i.e. customers are satisfied) and costs are incurred.
- Hence, designing, managing and continuously improving processes is the key to success.

If special or "assignable causes of variation are present, the process output is not stable over time and is not predictable



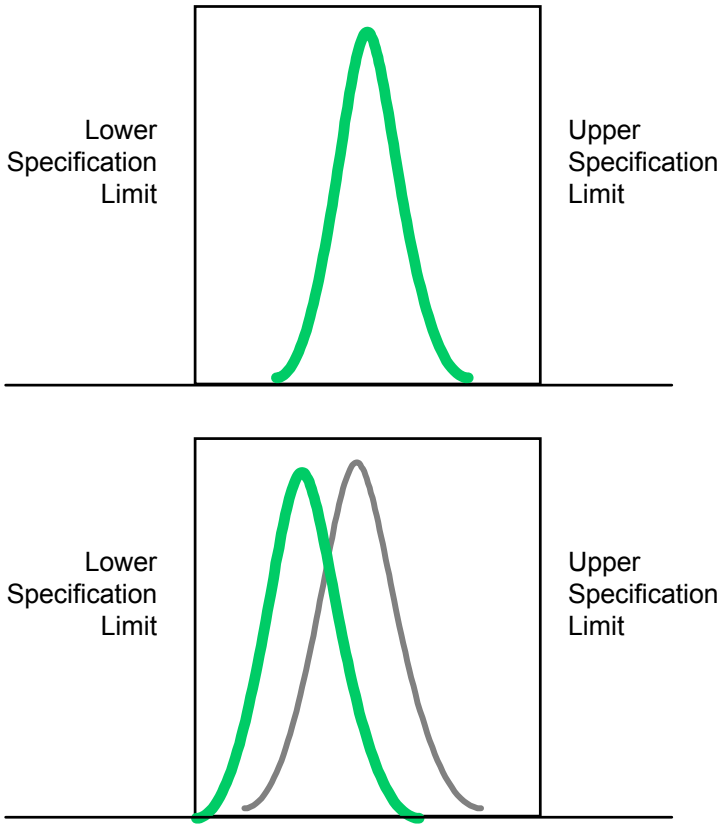
If only common causes of variation are present, the output of a process forms a distribution that is stable over time, and most important, it is predictable





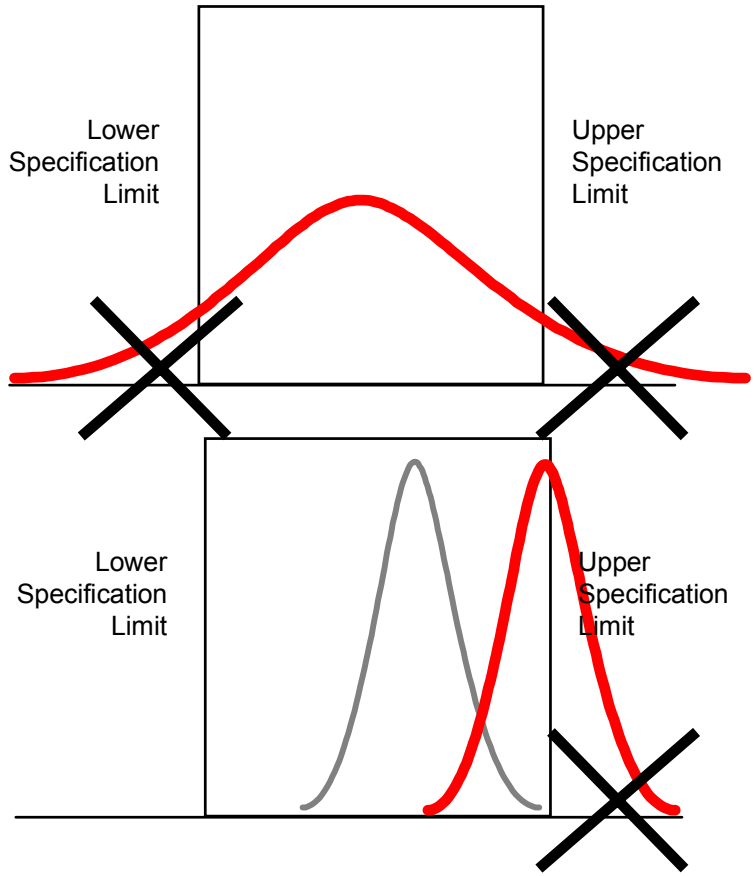
Measure Spread & Variability

GOOD: High Capability



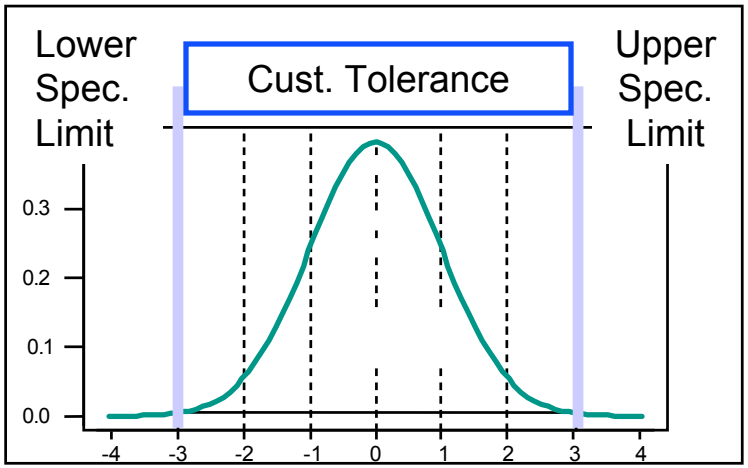
This process is capable

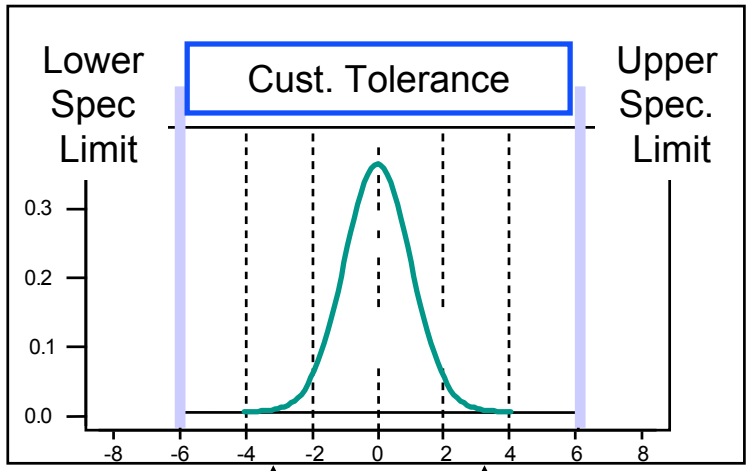
BAD: Low Capability

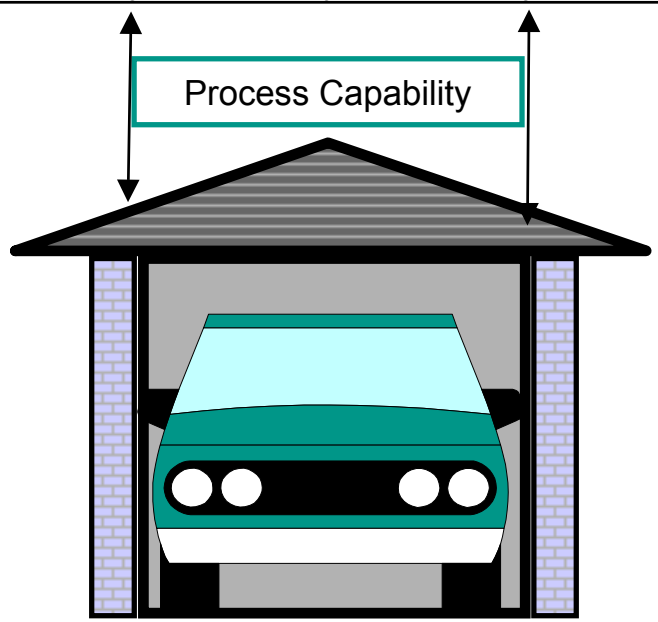


This process is not capable

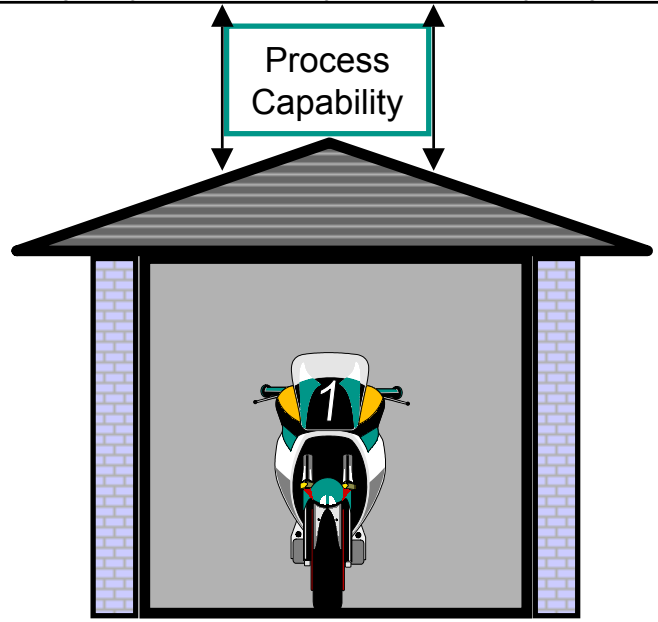
Visualizing Process Capability





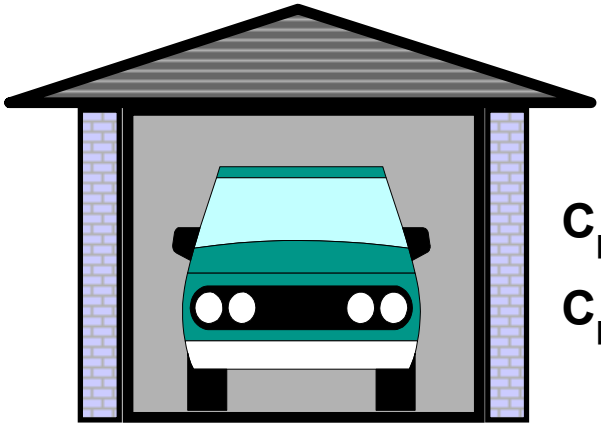


C_p=1



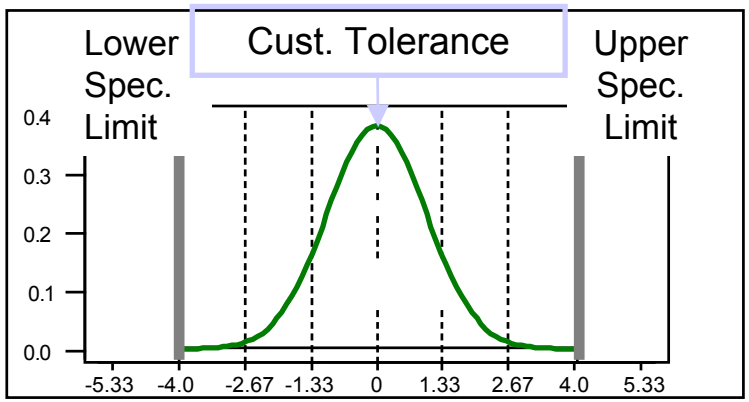
C_p=2

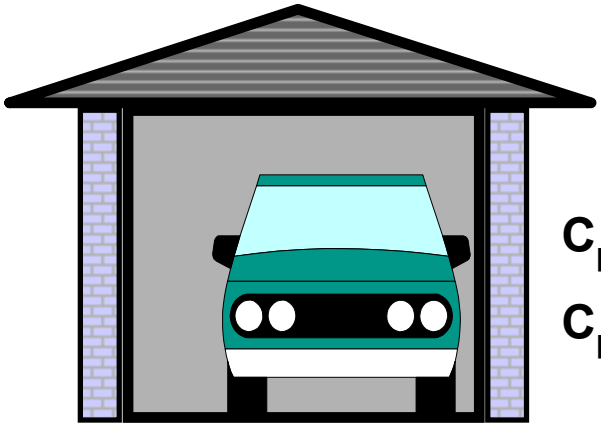
Process is Off Target



$C_p = 1.33$

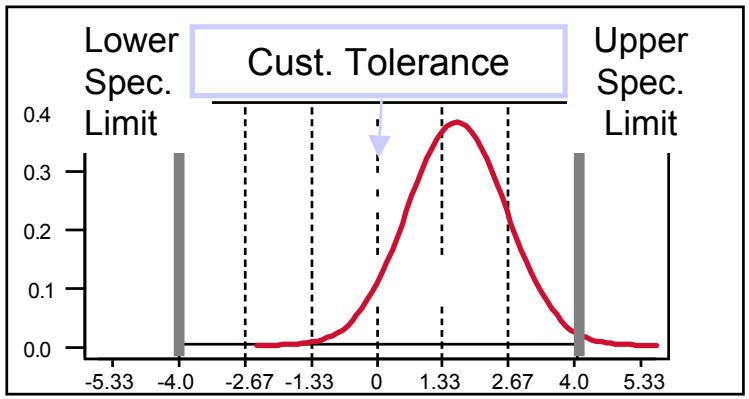
$C_{pk} = 1.33$





$C_p = 1.33$

$C_{pk} = 0.83$

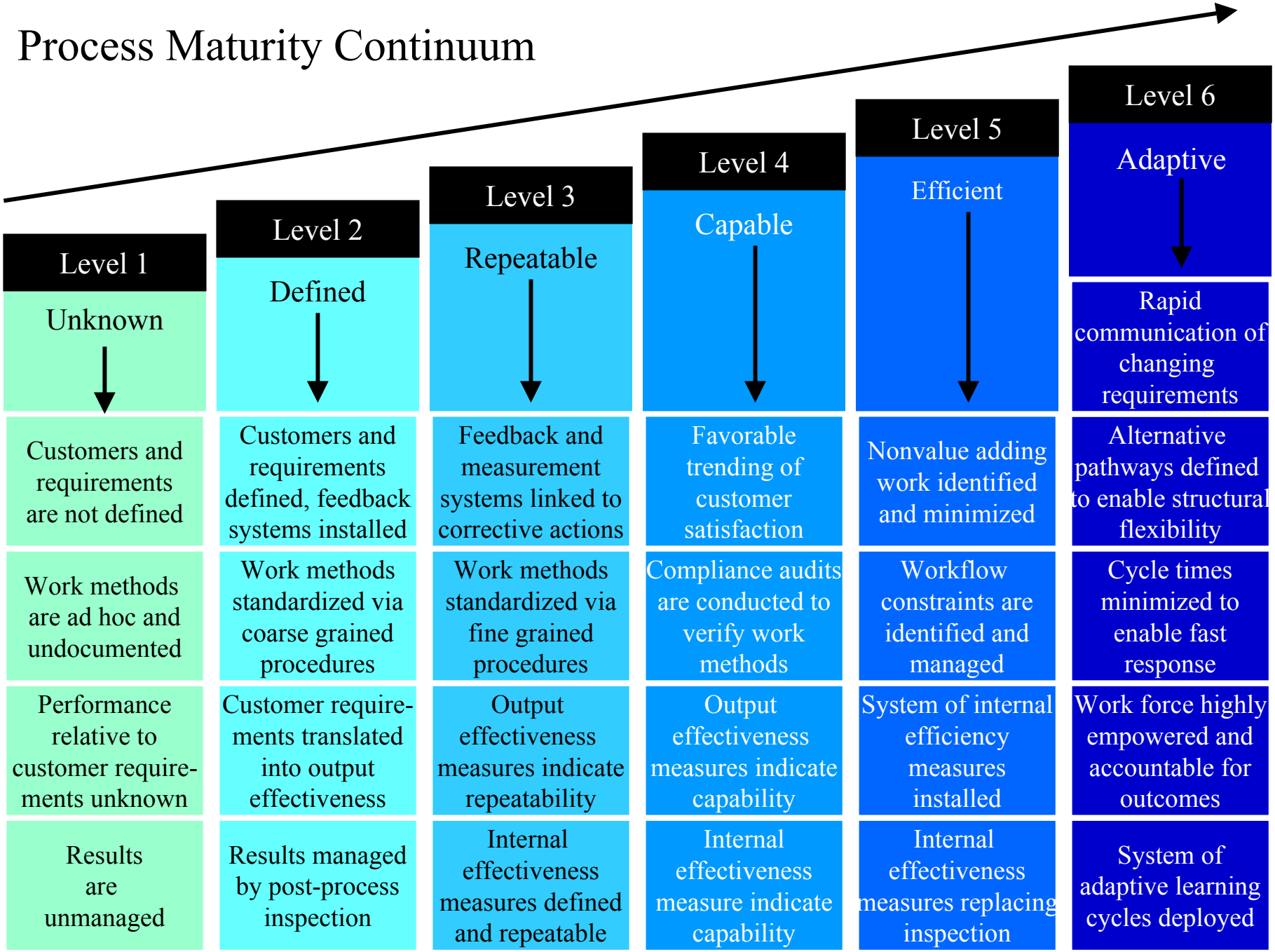


Variables of Process Control

Higher(more desirable) state

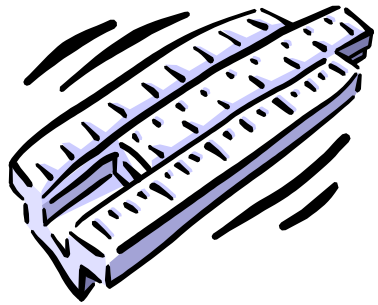
What's Inspected?	Type of Data	Timing of Inspection	Who Inspects?	Type of Record	Corrective Action	By Whom?
Process variable: continuous	Variable	During run: on-line	Device	Electronic control chart	Process improved	Automated equipment
Process variable: sample		During run: off-line	Process operator	Paper control chart	Process adjusted	Operator
Product sample	Attribute			Electronic trend chart		
100% of product		After lot is complete	Inspector	Paper trend chart	Lot Sorted	
				Electronic list		Inspector or mechanic
				Paper list	Sample repaired or discarded	
				None		

Process Maturity Continuum



Measurement & The Closed Loop

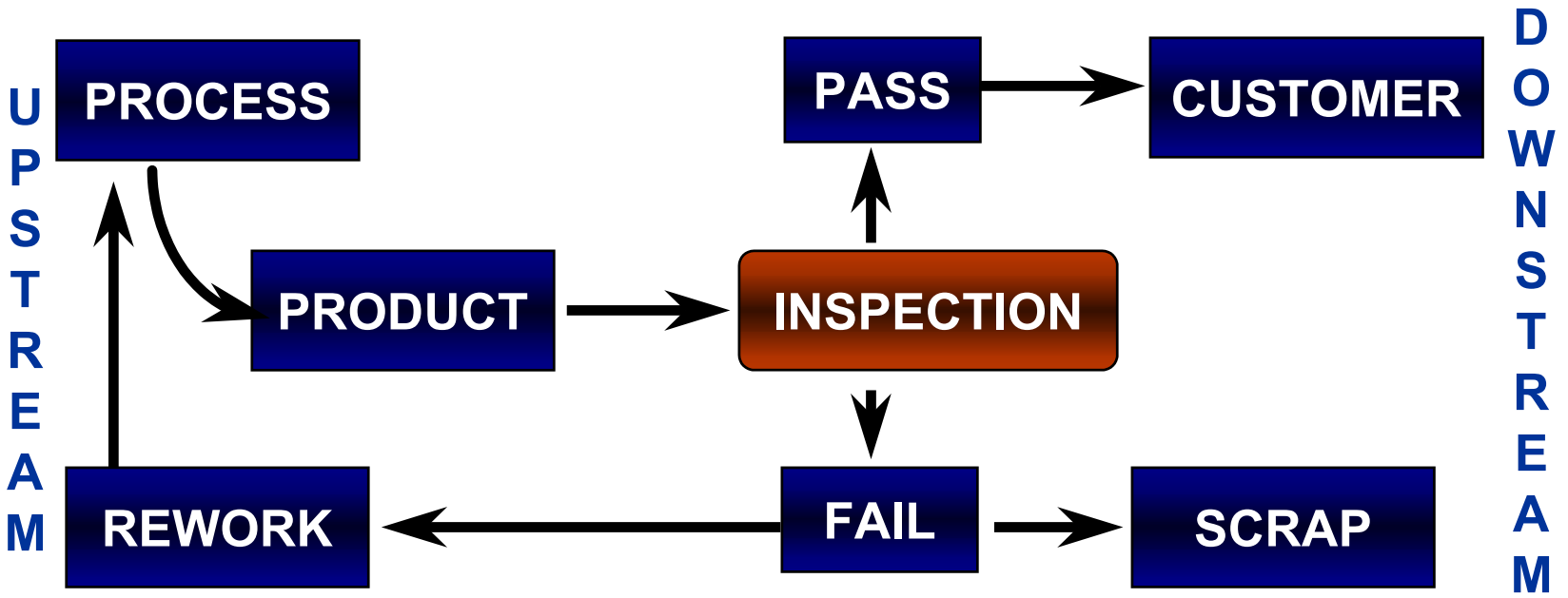
- Feedback is essential to determine the effectiveness of the process.
- Measurement must be meaningful.
- Measurements must be analyzed and acted on.
- Measurement & analysis must also be defined and controlled



*"There is nothing more inefficient than doing **efficiently** that which should not be done at all."*

Peter Drucker

The Current Process

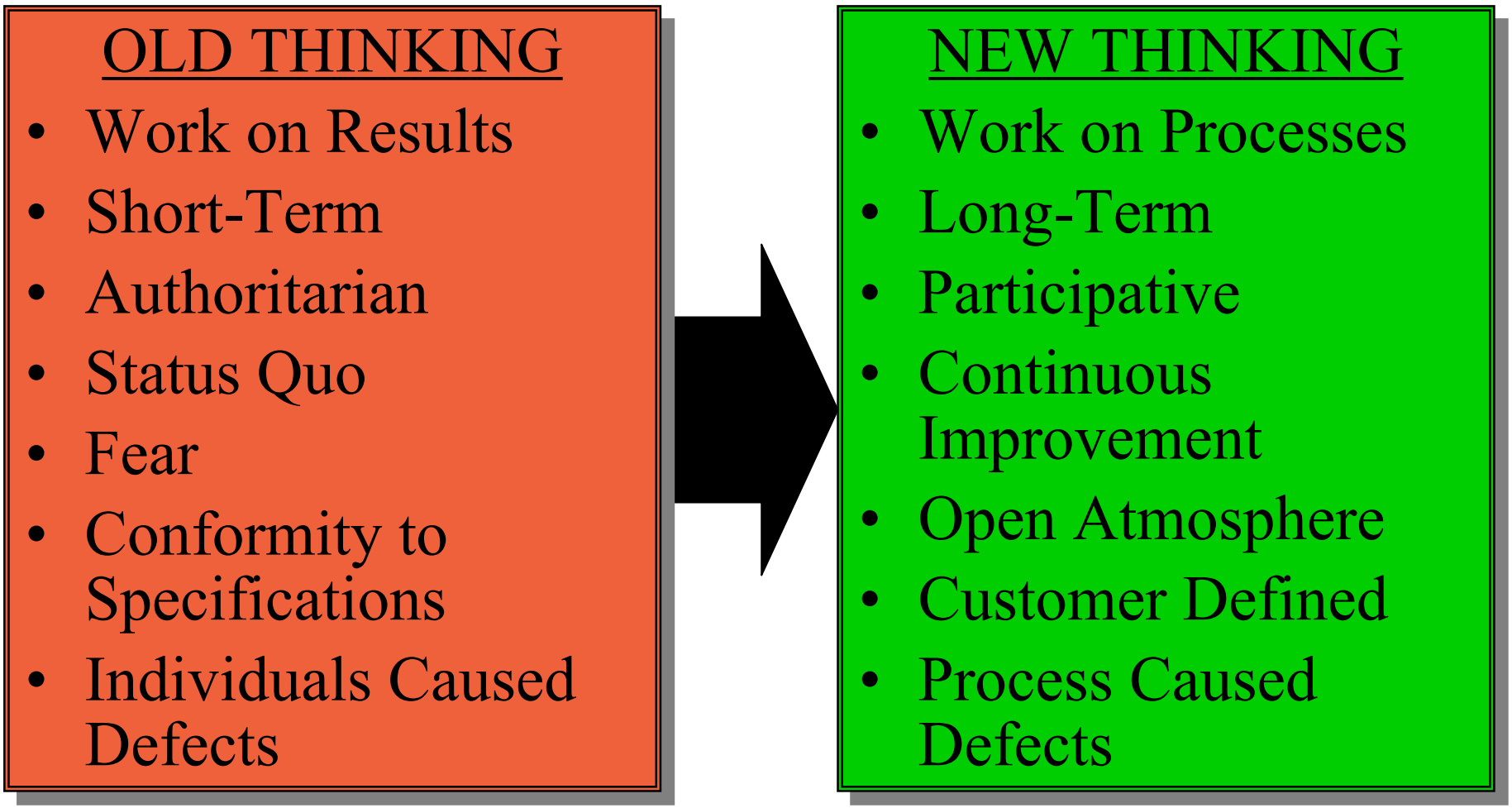


- INCREASED COST - LACK OF PRIDE - BURNOUT - DELAY

94% of defects are caused by a common cause (the system)
6% of defects are caused by special causes (people or events)

From "*Out Of The Crisis*" by W.E. Deming

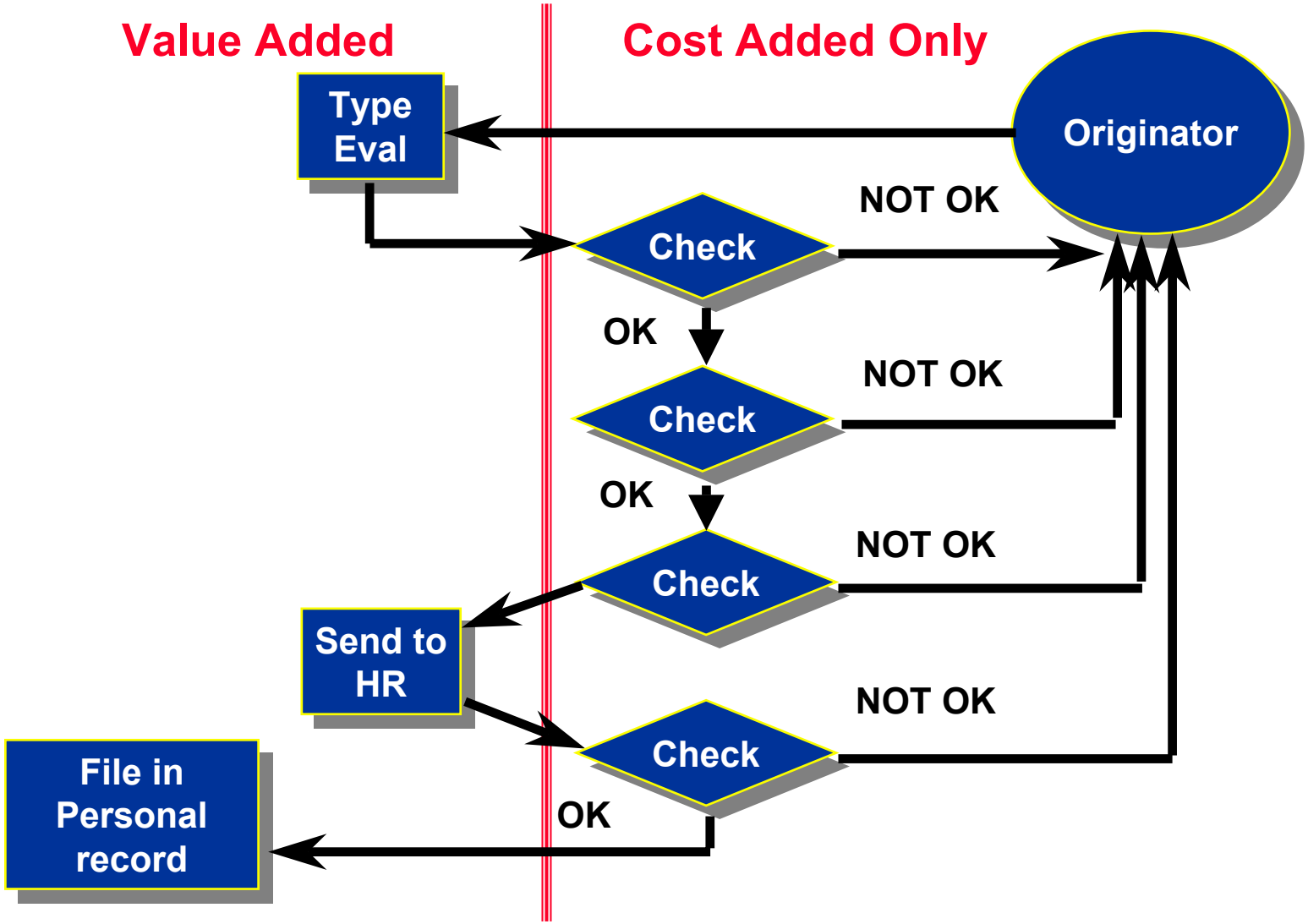
“We need to Change our Thinking”



Process flow charts are used to ...

- Understand a system or process
- Verify or clarify work processes
- Identify customers/supplier relationships
- Identify value-added work
- Identify potential problems or opportunities for improvement
- Eliminate redundant steps

Value / Cost Added



"The Questioning Technique"

Analyze the process in its entirety, then ask the following questions about each task or step:

WHAT:

Why is it done at all? / Why is it necessary? / Why not eliminate it?

WHERE:

Why is it done there? / Why not change the place? / Why not change the sequence? / Why not combine?

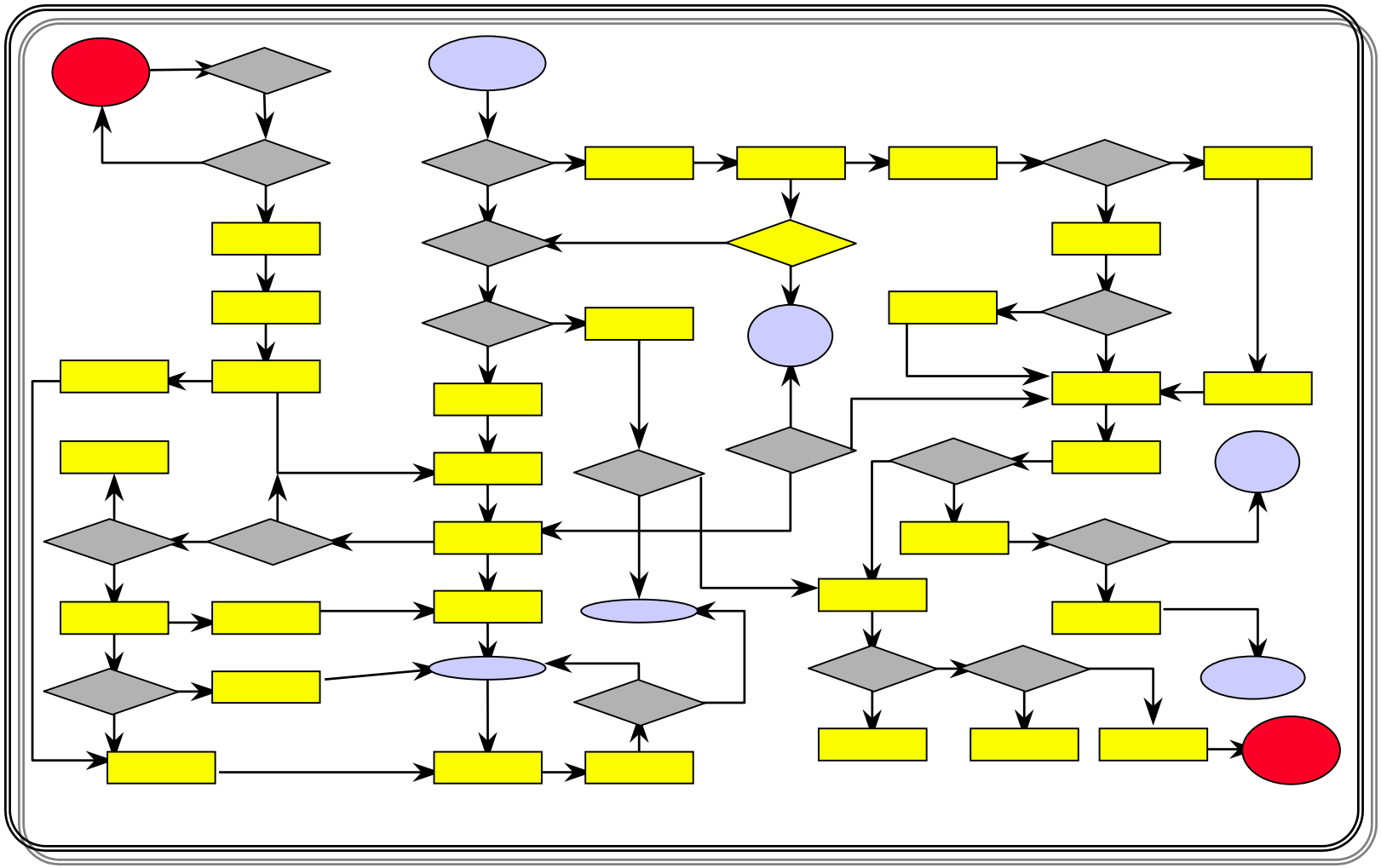
WHO:

Why does the person do it? / Why not change the person? / Why not change the sequence? / Why not combine?

HOW:

Why is it done this way? / Why not do it a different way? / Why not improve it? / Why not make it easier?

“Ordering Office Supplies” Flowchart



W. Edwards Deming

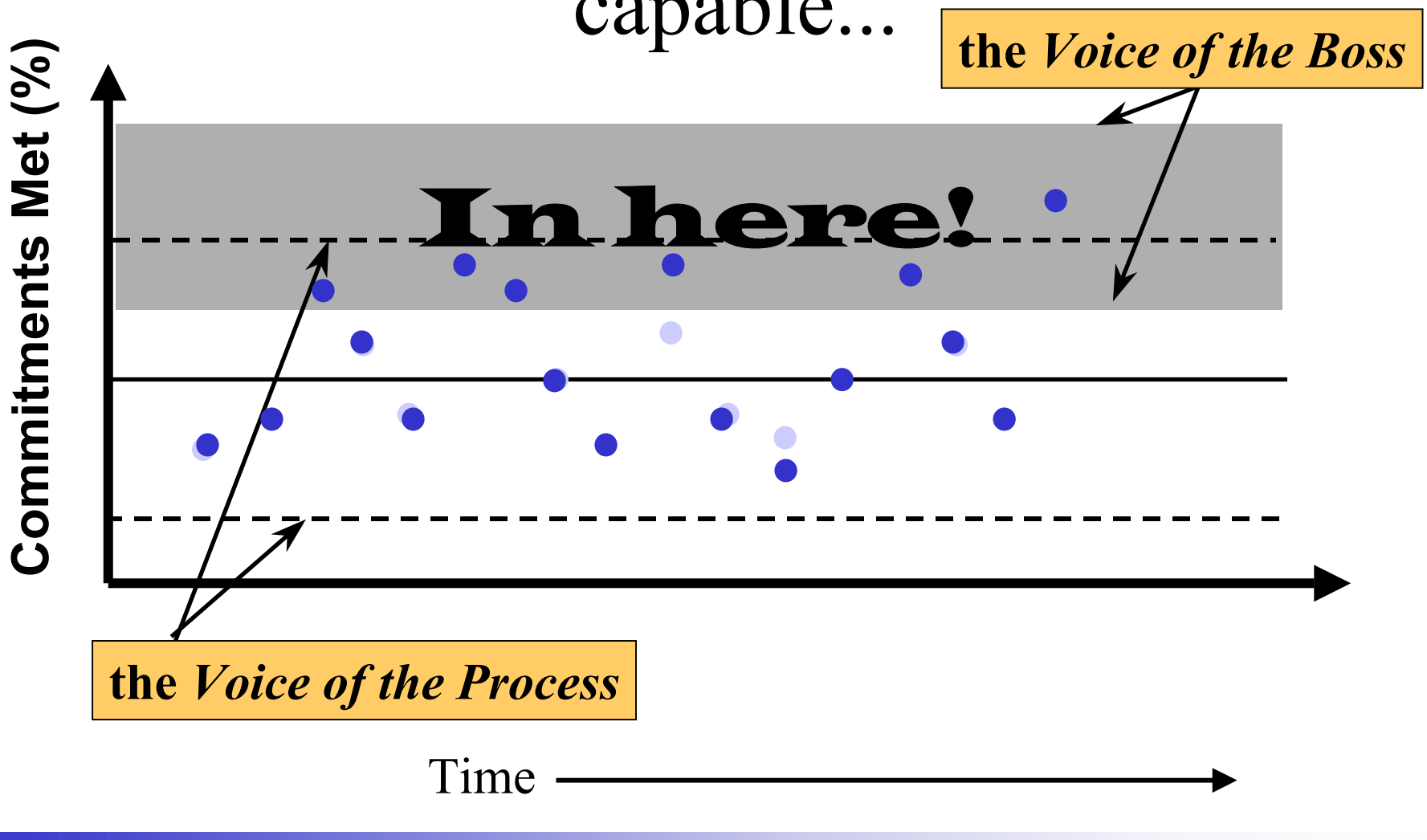
"If I had to reduce my message to management to just a few words, I'd say it all had to do with understanding and reducing variation."

Variation: Basic Concepts

- Variation is inherent in all processes
- Individual fluctuations are random in nature
- Stable processes fluctuate within predictable boundaries
- Unstable processes do not fluctuate randomly
- There are two kinds of variation:
  - common causes
  - special causes

What a Traditional Manager might do...

A process approach will recognize that the present process may not be capable...



"Unless you change the process, why would you expect the results to change?"

QUESTIONS

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Presentation by Roger Olson

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Project Management Six Sigma

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