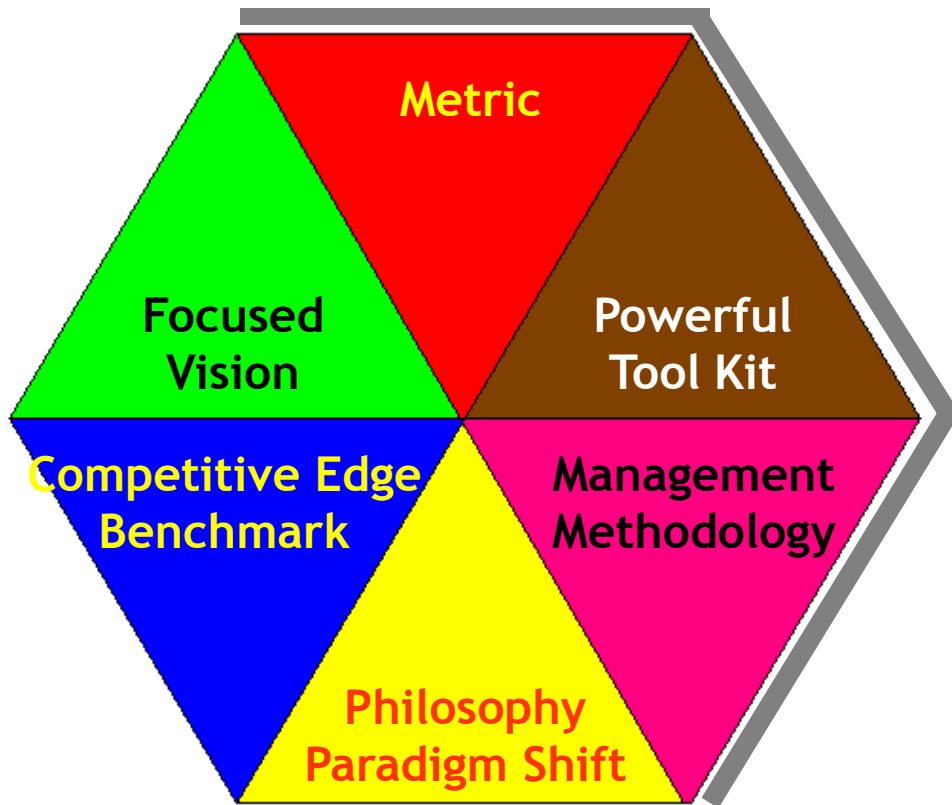


Six Sigma vs Lean

QAI

Six Sigma vs Lean



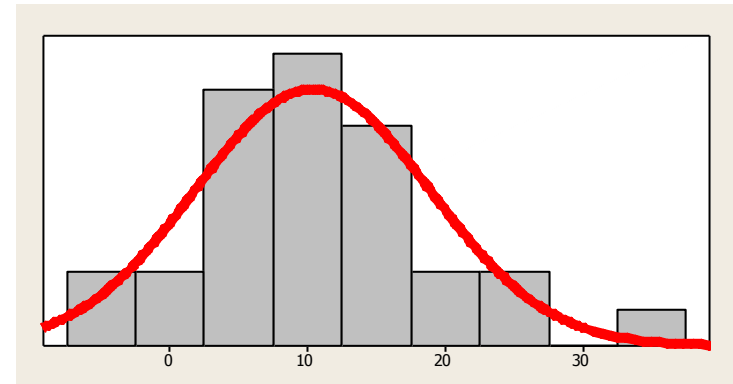
Lean & Six Sigma (What)

Lean



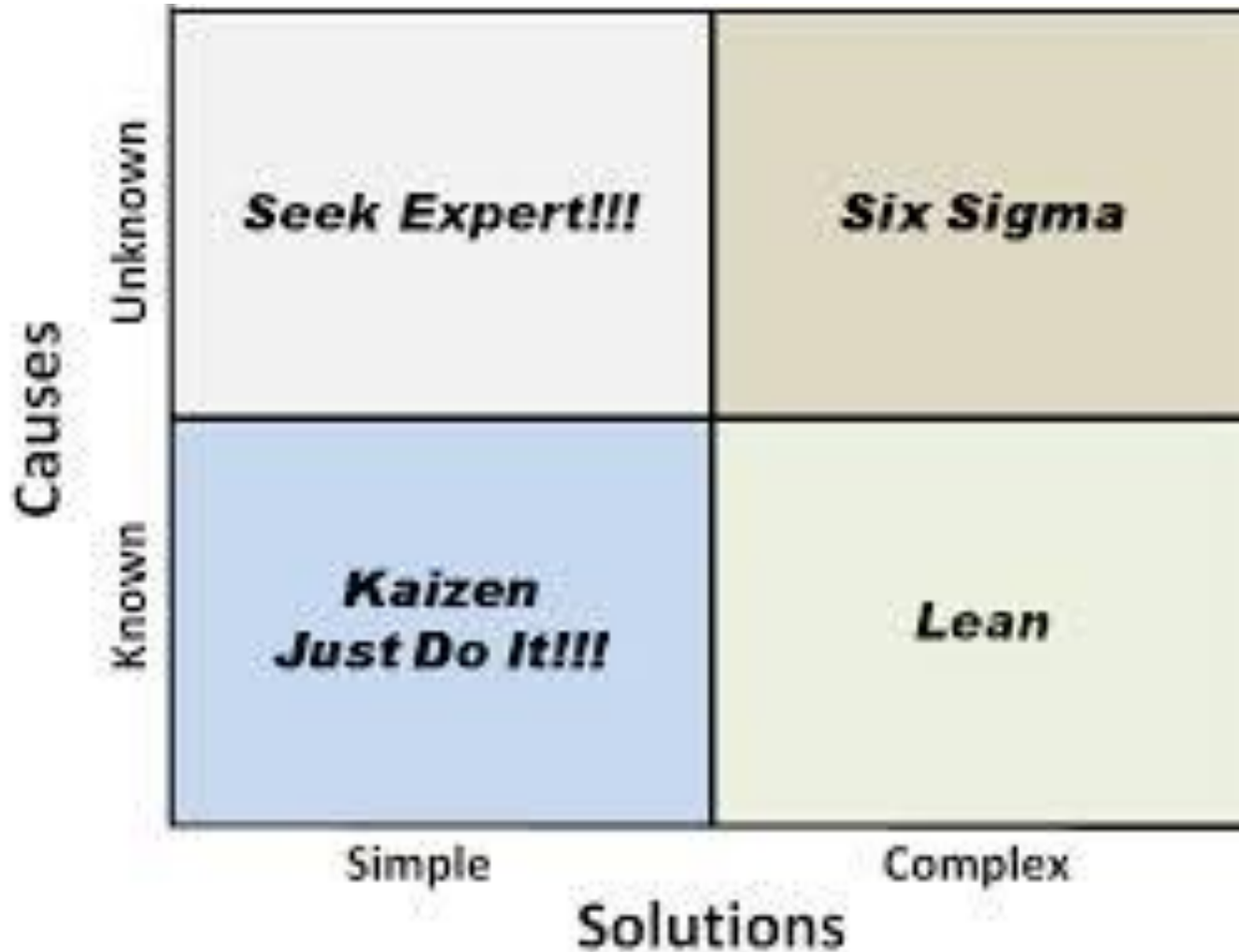
- Drives Cycle Time reduction leveraging proven solutions
 - **VSM**
 - **Waste Elimination**
 - **5S**
 - **Kaizen**
- Maximizes customer responsiveness with minimal resources

Six Sigma



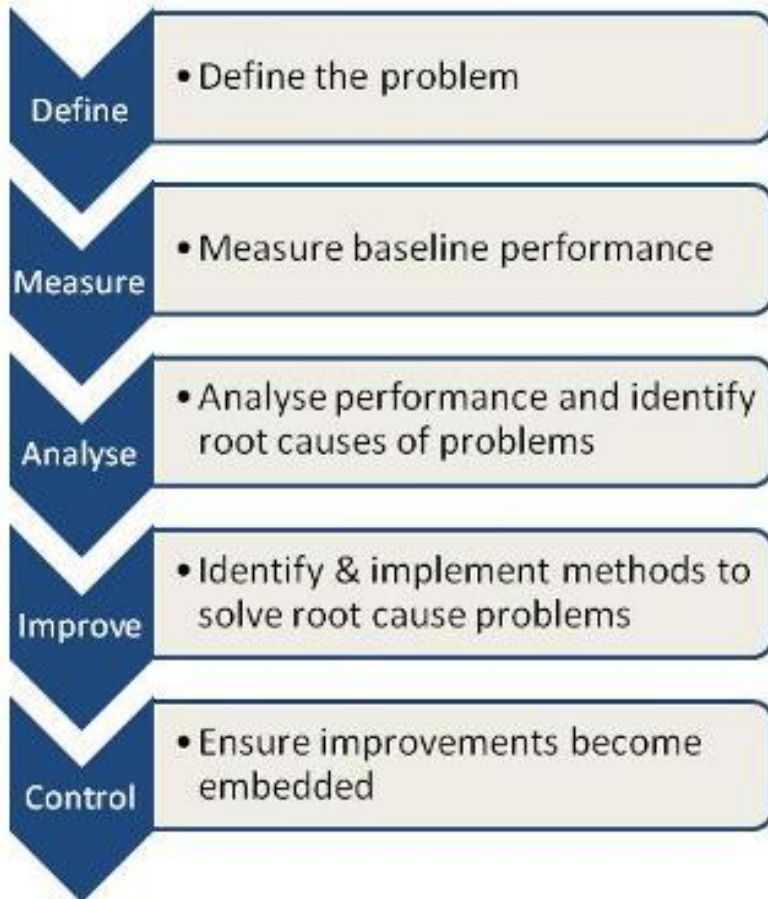
- Drives Lower Process variation and thereby Defect reduction leveraging analytical techniques
 - **DMAIC/ISTRIVE**
 - **DFSS/DMADV**
- For complex problems with unclear root causes or design solutions

Lean & Six Sigma (When)



Lean & Six Sigma (Approach)

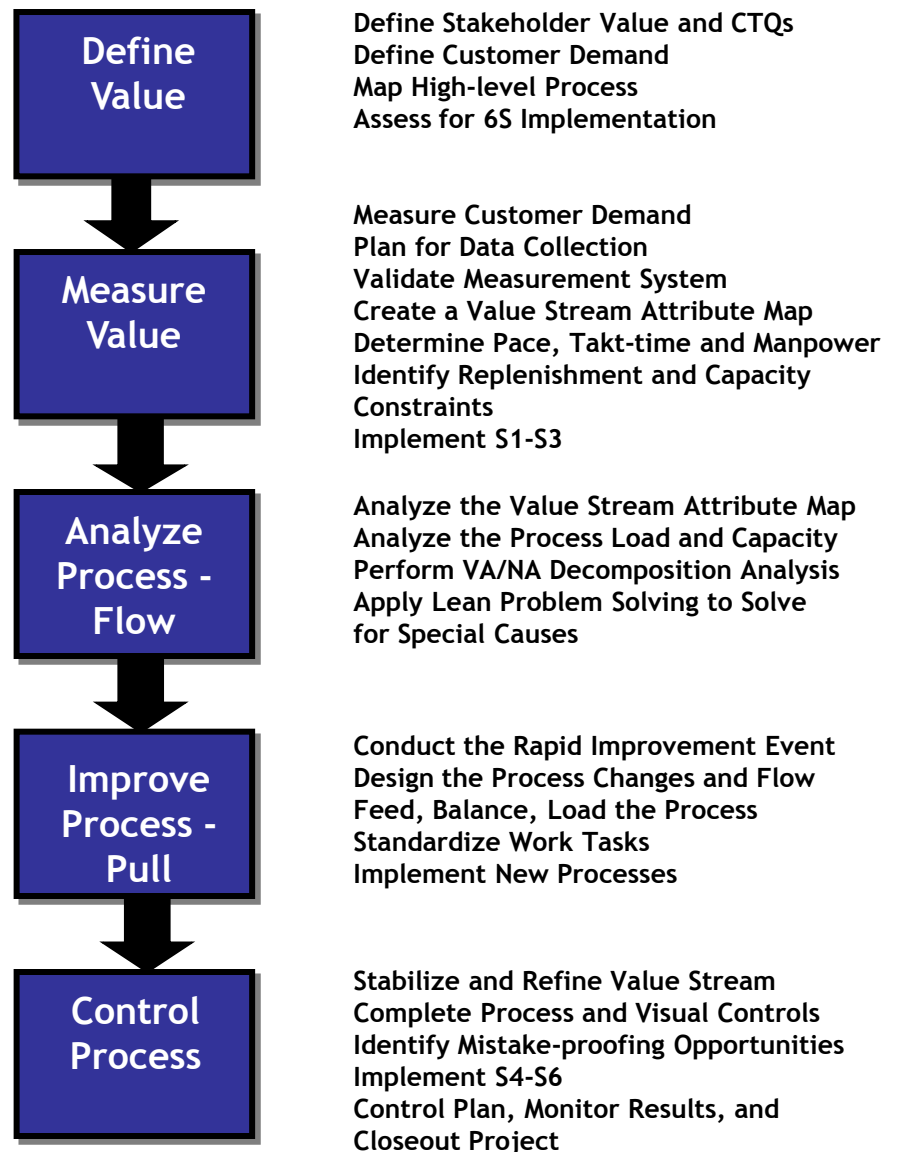
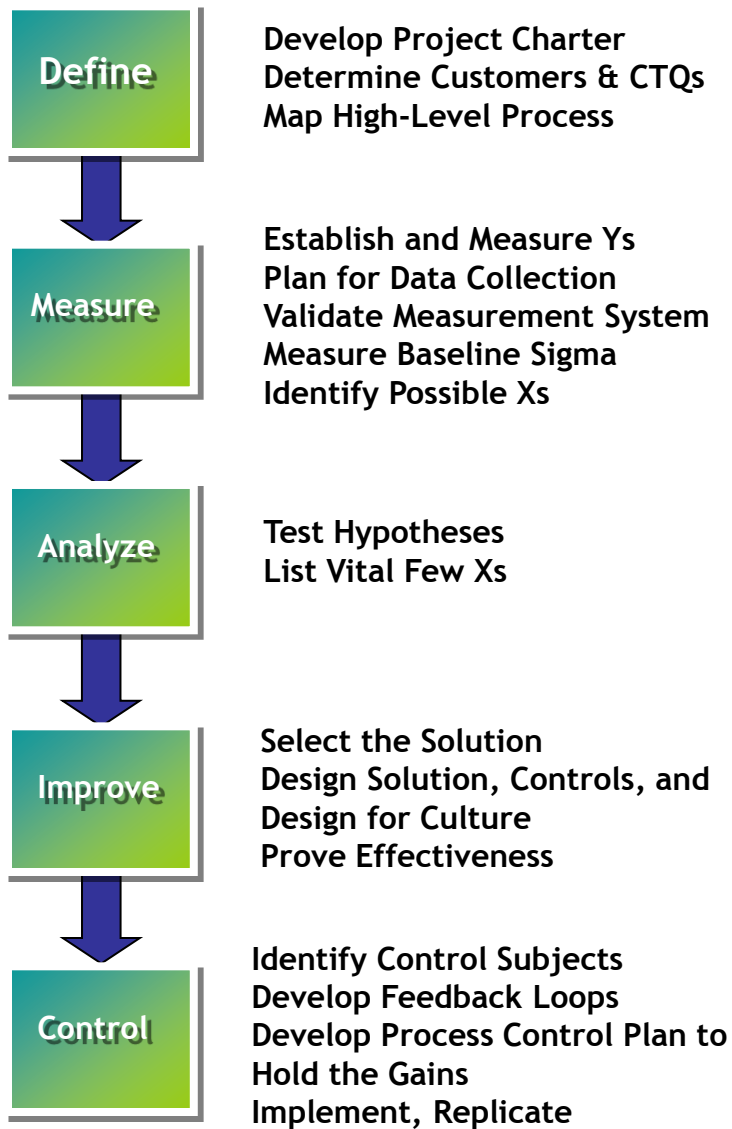
Six Sigma



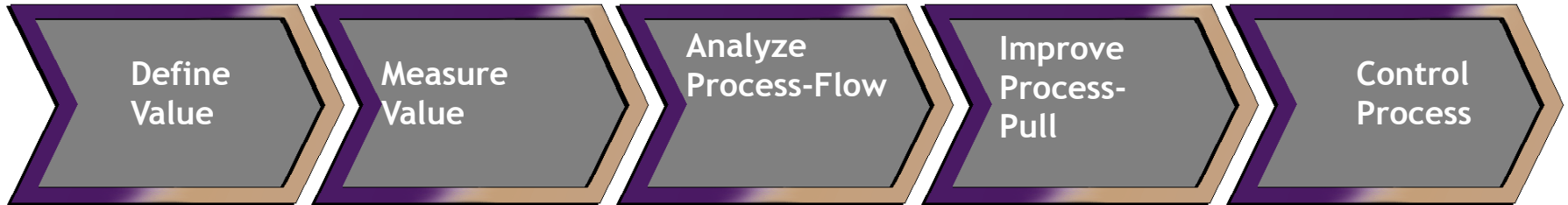
Lean



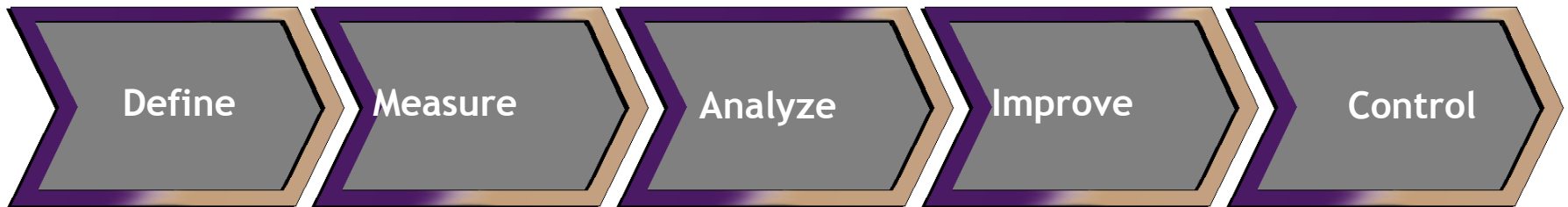
Lean & Six Sigma (Approach)



Lean & Six Sigma



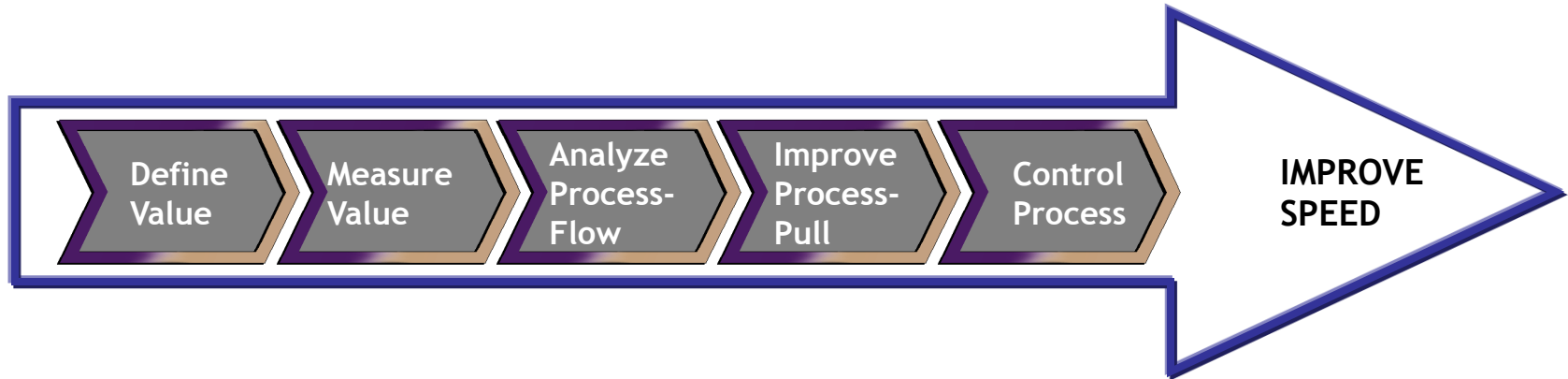
LEAN = Improvement principles focused on dramatically improving process speed and eliminating the eight deadly wastes.



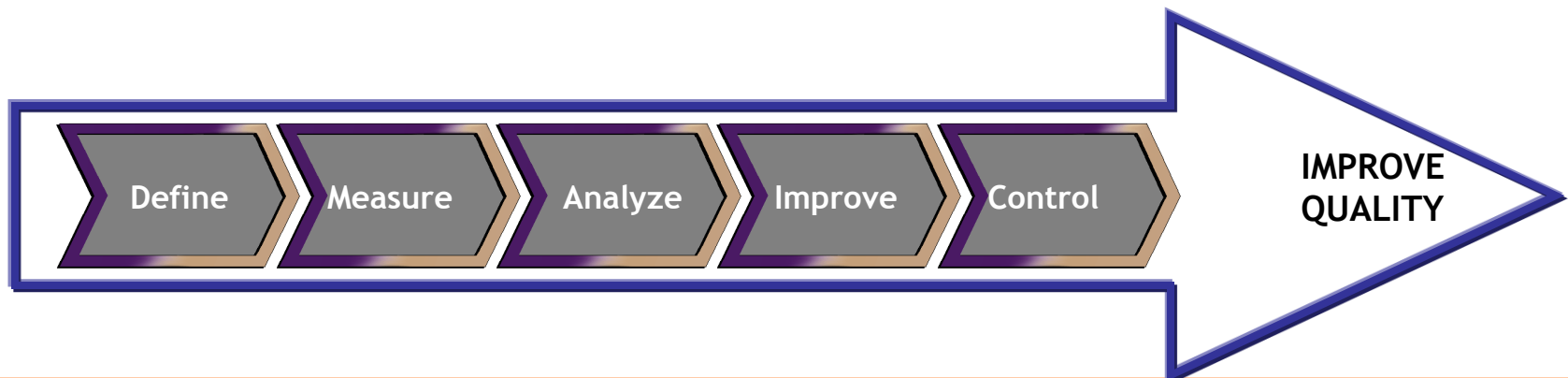
SIX SIGMA = Breakthrough Process, Design, or Improvement Teams focused on eliminating chronic problems and reducing variation in processes.

Lean & Six Sigma

Lean = Rapid Improvement Teams focused on dramatically improving process speed, and the elimination of the eight deadly wastes.

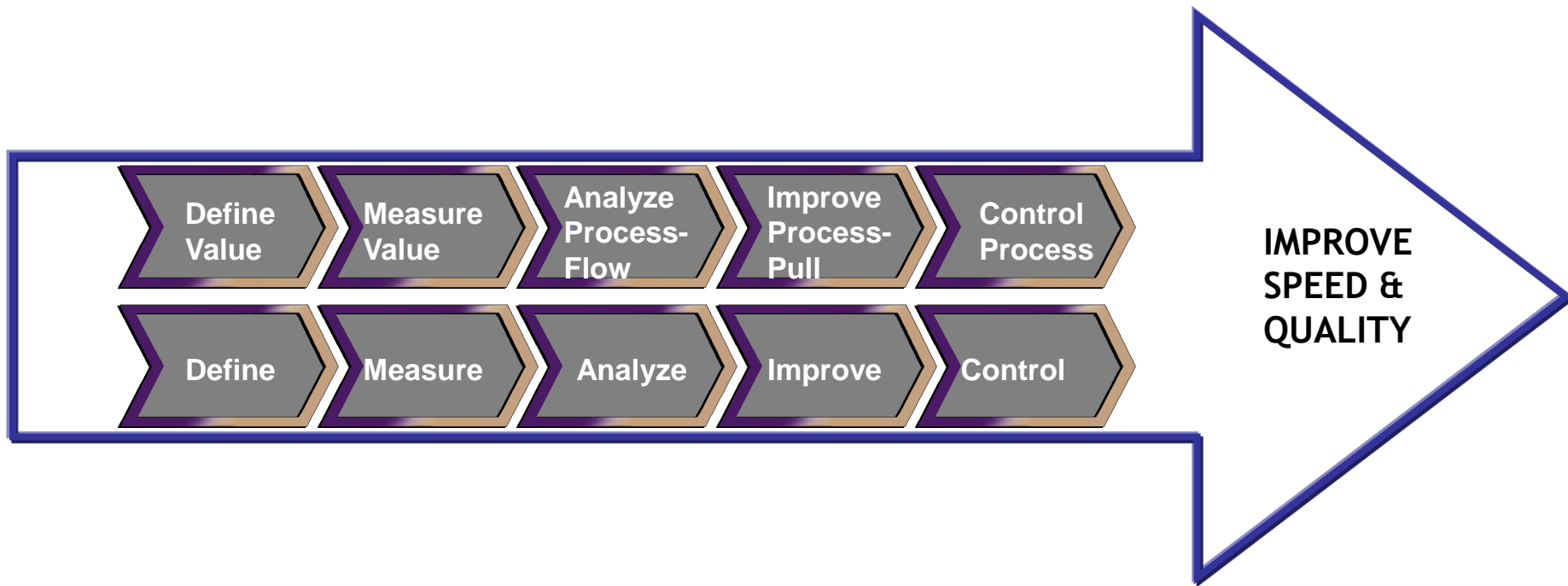


Six Sigma = Breakthrough Process Improvement Teams focused on eliminating chronic problems and reducing variation in processes.



Lean & Six Sigma

- Lean Six Sigma is an approach to integrating the power of Six Sigma Tools and Lean Enterprise Tools which can be applied within an organization to create the fastest rate of improvement, maximize shareholder value, and increase customer delight.



Lean & Six Sigma



Key Aspects of Lean

- Lean is Not New
 - Popularized by Toyota more than 30 years ago.
 - Many of its tools and concepts have been around for decades.
- Lean is Both Methodology and Philosophy
 - Lean aims to eliminate 'waste' (in Japanese, “*muda*”) in every area of a business, including production, customer relations, product design, supplier networks, and factory and business administration.
 - Its goal is to incorporate less effort, less inventory, less time to develop products, and less space in order to become highly responsive to actual customer demand and to produce top-quality product in the most timely, efficient and economical manner possible.
- Lean Focuses on Customer-Defined Value
 - A process step 'adds value' if the activity adds form, fit or function to the product that is desired by the customer, and the customer is willing to pay you to conduct that activity.

Key Aspects of Lean, con't

- Toyota Defines Seven Key Types of *Muda* (Waste)
 - **Overproduction**: Producing more than demanded or before it is needed, e.g., stored materials or inventories.
 - **Inventory or Work-in-Process (WIP)**: Material between operations due to large lot sizes or long process cycle times.
 - **Transportation**: Material movements, by definition, add no value to products, as they do not affect form, fit or function.
 - **Processing Waste**: Unnecessary or inefficient process steps simply add cost and time.
 - **Motion**: Effort to move workers and machinery or to transport materials adds cost and delay.
 - **Waiting**: Long changeover times, slow processing times, and materials handling tasks limit opportunities to make on-time deliveries.
 - **Defective Products**: Items that fail to meet customer specifications are pure waste, e.g., returns, rework, scrap, and warranty costs.

Key Aspects of Six Sigma

- Six Sigma is Not New
 - In existence for more than 20 years; at HBD since 2002.
 - Many of its tools and concepts have been around for decades.
 - Six Sigma packages the tools and concepts into a clear and systematic [roadmap for process improvement](#).
- Six Sigma is a Methodology
 - The ‘DMAIC’ problem-solving methodology is a [disciplined thought process](#) and tool guide used to solve business issues.
 - Define / Measure / Analyze / Improve / Control / (and Verify).
- Variation is Bad (‘Evil’)
 - For most processes, a [repeatable](#) and [predictable](#) result is crucial.
 - Six Sigma is designed to identify the key [sources of variation](#) and drive them out of the process, by understanding the key [inputs](#), [processes](#) and [outputs](#) of business activities. **“Fix the process to get good results.”**

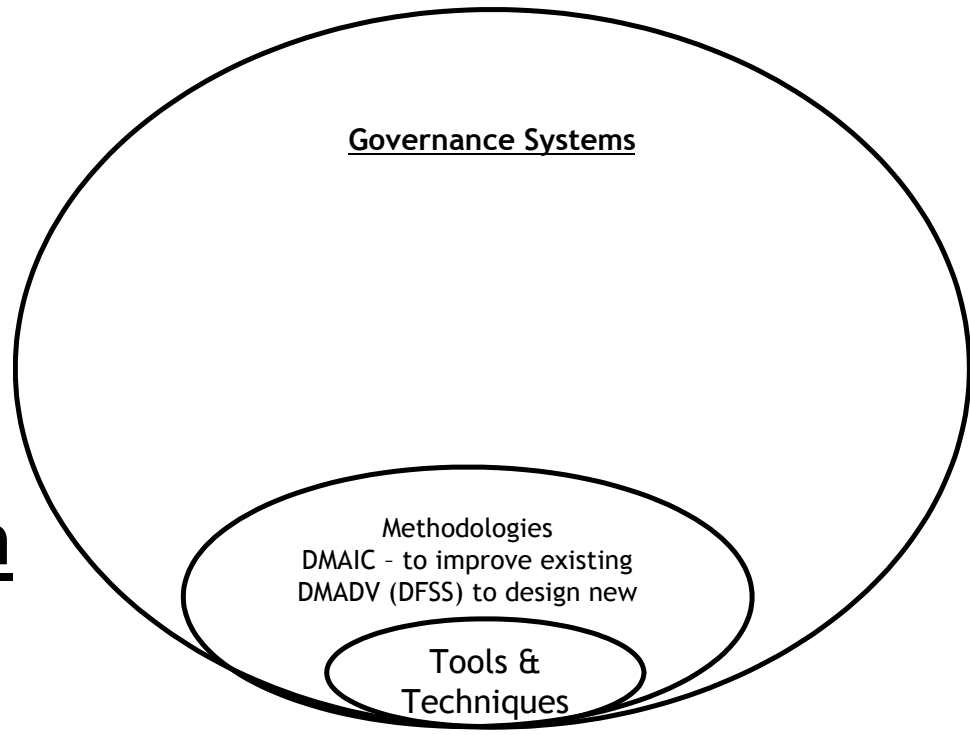
Key Aspects of Six Sigma, con't

- Six Sigma has a Customer Focus
 - Processes and problems must be viewed from the customer's perspective.
 - Internal customers (i.e., downstream departments) can be just as important as external customers (i.e., those who pay the bills)
- Six Sigma is Not Just for Manufacturing or Large Businesses
 - Success can be found in all types of companies and all kinds of processes .
- AND...Six Sigma and Lean are Not Mutually Exclusive
 - Without a basic understanding of both methodologies, you risk trying to 'use a screwdriver to drive a nail.'
 - Ask, 'What tool or technique is most useful to help solve my problem?'

What Six Sigma IS ?

(The method)

**Collection of
Tools & Techniques,**
*Encapsulated within a Methodology
Driven by a Rigorous Framework
with
Organization Structure/Support
&
Governance Mechanisms
to*
**Improve Existing or Design
New
Products or Processes**



What Six Sigma IS NOT ?

- Six Sigma Is Not:
 - NOT A Quality Standard
 - Unlike ISO or COPC or CMMI or..
- Hence:
 - No Rule Books
 - No Global Bodies to Govern it
 - No Audits or Assessments
 - No Particular Target Performance levels
- Which Means: Organization decides
 - When to Use Six Sigma (vis-à-vis other methods & models)
 - Where to Deploy Six Sigma (Which Division, Location.. Etc.)
 - What Six Sigma must focus (Process or Product)
 - What Sigma Level to Target
 - What Pace Should Six Sigma Be Deployed

Lean Projects

- Use Lean when you are trying to streamline any process and reduce process waste.
 - Improve employee productivity
 - Reduction in pending items
 - Reduce the time to process new proposals
 - Reduce resolution time
 - Reduce order processing time

Six Sigma Projects

- Use Six Sigma where process metrics are more difficult to collect or understand, and project success requires analysis of multiple input factors (Xs). These are often chronic problems.
 - Improve Quality of Claims / Transactions/Invoices
 - Improve Customer / End User Satisfaction
 - Reduce Schedule / Effort Variance in projects
 - Improve Throughput Yield of new hires