Definition of Value

Activity physically changes the product (or adds information)

Must be done right the first time (i.e., it should not be rework)

Customer must be willing to pay for it

DOWNTIME

Defects

Efforts caused by rework, scrap, and incorrect information

Overproduction

Production that is more than needed or before it is needed

Waiting

Wasted time waiting fot the next step in a process

Non-Utilized Talent

Underutilizing people's talents, skills, & knowledge

Transportation

Unnecessary movements of products & materials

Inventory

Excess products and materials not being processed

Motion

Unnecessary movements by people (e.g. walking)

Extra-Processing

More work or higher quality than is required by the customer

LEAN: improve speed + SIX SIGMA: improve accuracy = LEAN SIX SIGMA

D M A I C O V E R V I E W

	DEFINE	MEASURE	ANALYZE	IMPROVE	CONTROL
STEPS	Define the problem, goal, process, customer, and inform others of project progress	Determine current process, create a plan for data, then update project charter	Examine the process, display the data, identify issues, then update the project charter.	Brainstorm solutions to problems, select and implement solutions, and measure to ensure improvement.	Ensure process is managed and documented properly, apply improvements, and share success!
TOOLS	Project Charter SIPOC Value Stream Map Swimlane Map Voice of the Customer (VOC) Tree Diagram A3 Relationship Map Stakeholder Analysis	Data Collection Plan Operational Definition Check Sheet Project Charter	Value Stream Map Value Added Flow Analysis Run Charts Histograms Pareto Charts Box Plots Fishbone Diagram 5 Whys Root Cause Hypothesis Project Charter	Brainstorming Benchmarking Future State Map Weighted Criteria Matrix Impact Effort Matrix Value Stream Map Swimlane Map PDCA/PDSA Pilot Checklist Implementation Plan	Control Plan Control Chart Monitoring & Response Plan Documentation Innovation Transfer Opportunities Gallery Walks

5S steps

Sort (Seiri) → Straighten (Seiton) → Shine (Seiso) → Standardize (Seiketsu) → Sustain (Shitsuke)