

6σ

Six Sigma

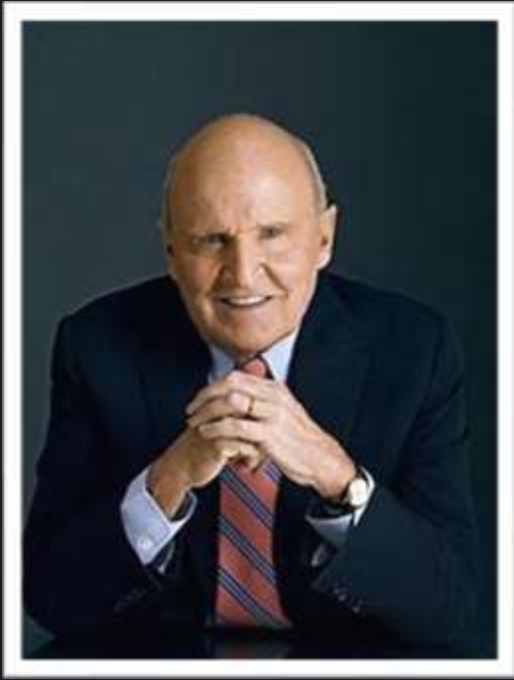
Problem Solving Methodology

INCREASE PROFIT

**IMPROVE BUSINESS
PROCESS**

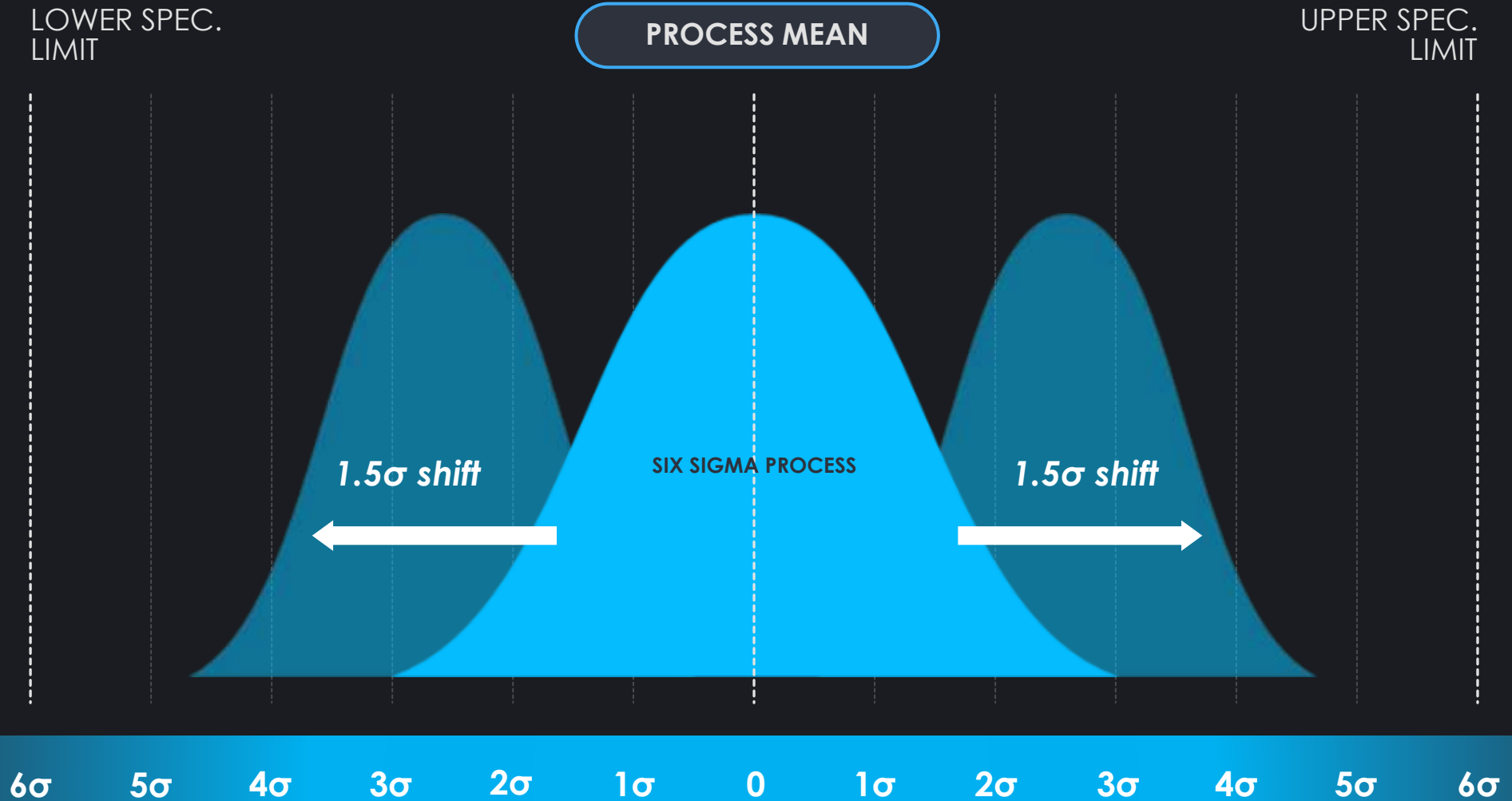
**ENHANCE
PERFORMANCE**

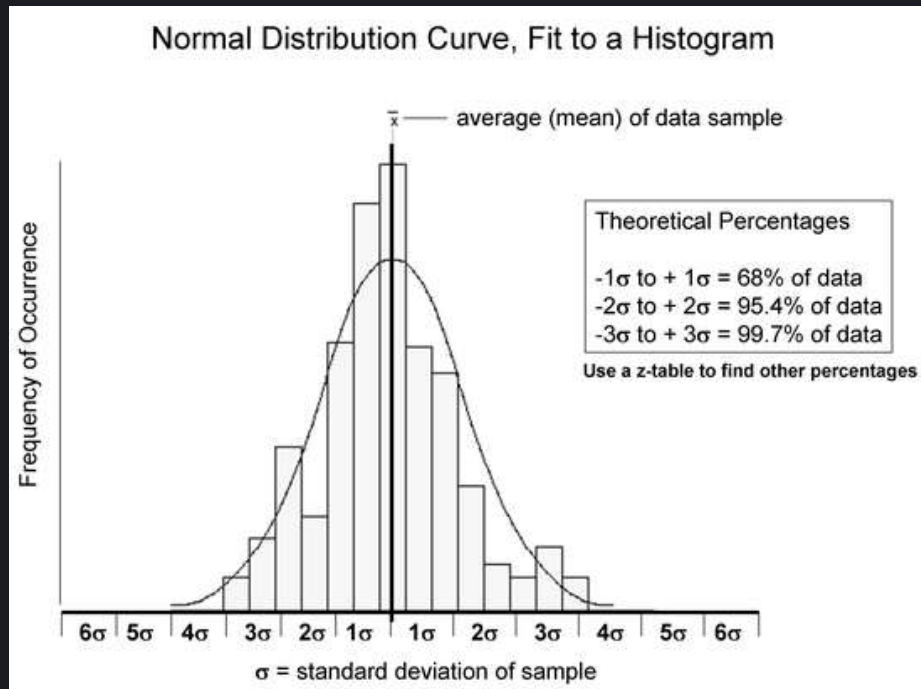




Jack Welch said emphatically that Six Sigma is a quality program that, when all is said and done, improve your customers' experience, lowers your cost and builds better leaders. Six Sigma is a rigorous data-driven approach to problem solving and business process improvement that drives focus on what is most critical to customers, resulting in increased performance and profitability.

Six Sigma: Statistically Visualized





The Greek letter 'sigma' is also a mathematical term that represents a measure of standard deviation, or variability, within a given population around the mean. Mathematically, 6 sigma refers to the population that falls within plus or minus six standard deviations. In developing the Six sigma program, Motorola engineers expanded on the term when they decided that traditional quality levels, which measured defects in thousands of opportunities, were inadequate. Instead, they began to measure defects per million opportunities.



Gained \$15 billion in a decade using Six Sigma

1980-86 Motorola - MAIC

1992 Allied Signal Process Map

1995 General Electric-Added D

2000 Business Planning

2004 Lean Integration

2020 Process Mining integration

Six Sigma Evolution

Company	Annual Savings
General Electric	\$2.0+ billion
JP Morgan Chase	*\$1.5 billion (*since inception in 1998)
Motorola	\$ 16 billion (*since inception in 1980s)
Johnson & Johnson	\$500 million
Honeywell	\$600 million

Motorola developed Six Sigma in the 1980s in response to a growing number of complaints from its sales force about warranty claims for defective products and increasing pressure from competitors. Six Sigma not only improved Motorola's products and processes, it also saved the company more than US \$15 billion in the 10 years after it began the program. This correlation between cost and quality – *that highest quality results in lowest cost* – surprised many Motorola executives.

Six Sigma Roadmap

SIX SIGMA IMPROVEMENT

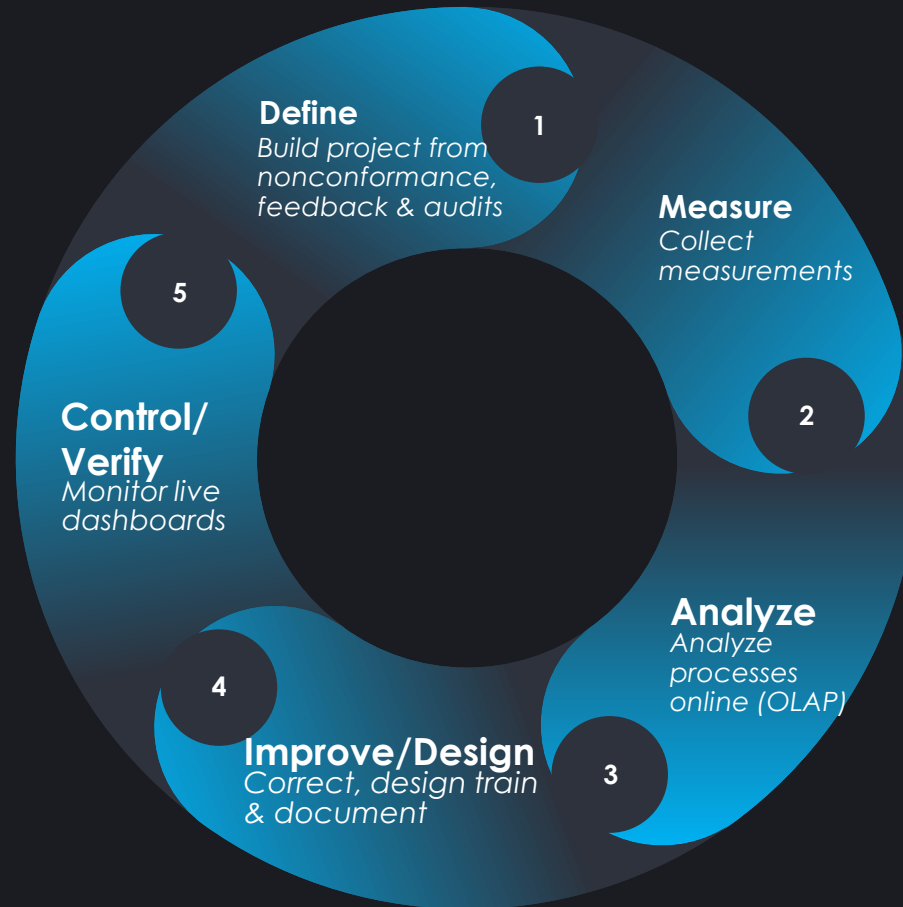
Define

Measure

Analyze

Improve

Control



SIX SIGMA DESIGN (DFSS)

Define

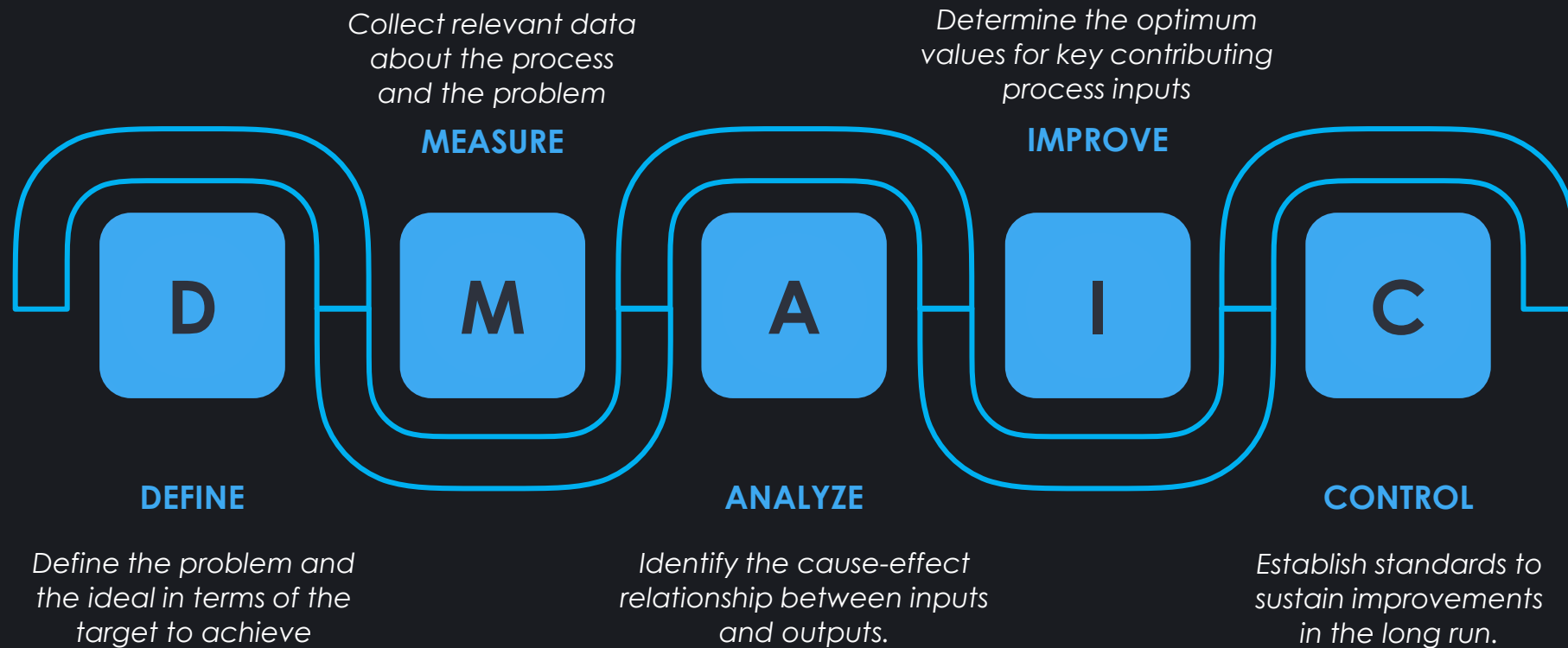
Measure

Analyze

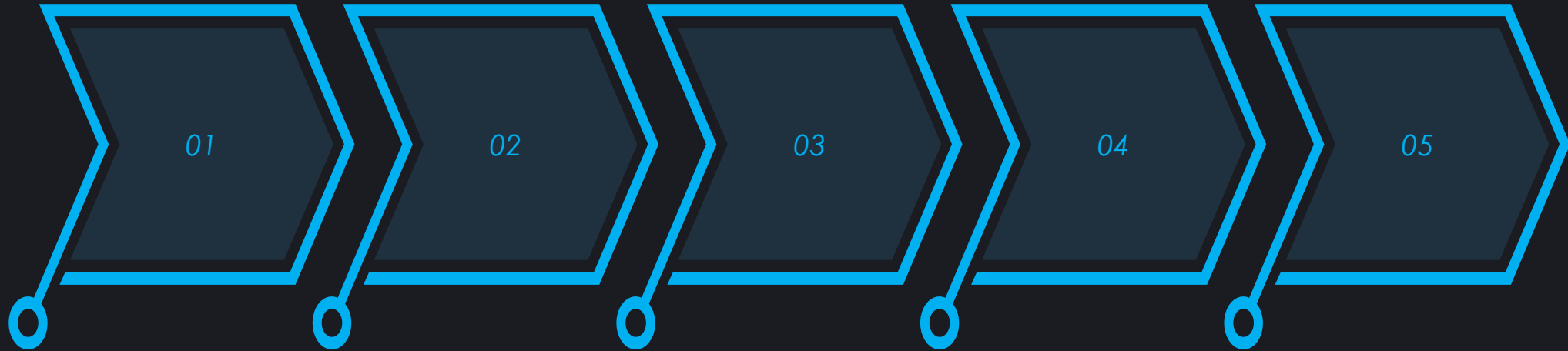
Design

Verify

Six Sigma Methodology – DMAIC – 5 PHASES



The 5 Phases of DMADV



DEFINE

- Project team / project charter
- Determine objective & scope of project
- Interface to other processes/define sector & provide resource

MEASURE

- Identify & segment customers
- Identify & analyze customer req.
- Compare product with internal/external benchmarking
- QFD for CTQ's

ANALYZE

- Implement design concept
- Rate design concept (QFD, TRIZ...)
- Evaluation under application of FMEA (target costing...)

DESIGN

- Create detailed design
- Develop robust design with optimal target value/cost benefit ratio
- Apply DOE

VERIFY

- Review performance of the new product
- Implementation of work preparation & production
- Continuously monitor results of new process

Project Benefits

Cycle Time Optimization

Downtime Reduction

Energy Cost Reduction

Increased Production Efficiency

Inventory Turn Reduction

Performance Improvement

Reduced Scrap

Quality Improvement

Source: OPEX Institute report, 2021

For project guidance and
handholding support

Mail @

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Projects are a valuable component of any organization's Six Sigma journey. Maybe your organization has invested in training or you simply have several opportunities for improvement that need to be addressed. Either way, our Six Sigma program's project support initiatives can help you obtain a significant return on investment for your time spent on problem solving efforts.

For more details and to have one on one discussion with our expert team send an e-mail

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