

Lean Process And Six Sigma

What Six Sigma is and is not

- Six Sigma is not an add-on to normal business activities.
- It is an integrated part of the improvement process.
- Six Sigma is management methodology driven by data.
- Six Sigma focuses on projects that will produce measurable business results.
- Six Sigma is not a standard, a certification or a metric like percentage
- The central idea behind Six Sigma is that if you can measure how many "defects" you have in a process, you can systematically determine how to eliminate those and approach "zero defects".
- Sigma is a value from 1 to 6 that signifies the maximum number of defects per million:
 - 1 Sigma = 690,000 defects/million = 31% accurate
 - 2 Sigma = 308,537 defects/million = 69.1463% accurate
 - 3 Sigma = 66,807 defects/million = 93.3193% accurate
 - 4 Sigma = 6,210 defects/million = 99.3790% accurate
 - 5 Sigma = 233 defects/million = 99.9767% accurate
 - 6 Sigma = 3.4 defects/million = 99.99997% accurate
- Six Sigma is about reducing variation
- Six Sigma find out the facts before acting

Liker's Toyota Way

Principle 1: Base your management decisions on a long-term philosophy, even at the expense of short-term financial goals.

Principle 2: Most Business Processes are 90% Waste and 10% Value-Added Work.

Principle 3: Use "pull" systems to avoid overproduction.

Principle 4: Level out the workload (Heijunka).

Principle 5: Build a culture of stopping to fix problems, to get quality right the first time.

Principle 6: Standardized tasks and processes are the foundation for continuous improvement and employee empowerment.

Principle 7: Use visual control so no problems are hidden.

Principle 8: Use only reliable, thoroughly tested technology that serves your people and processes.

Principle 9: Grow leaders who thoroughly understand the work, live the philosophy, and teach it to others.

Principle 10: Develop exceptional people and teams who follow your company's philosophy.

Principle 11: Respect your extended network of partners and suppliers by challenging them and helping them improve.

Principle 12: Go and see for yourself to thoroughly understand the situation (Genchi Genbutsu).

Principle 13: Make decisions slowly by consensus, thoroughly considering all options; implement decisions rapidly (Nemawashi).

Principle 14: Become a learning organization through relentless reflection (Hansei) and continuous improvement (Kaizen).

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The Toyota Precepts

1. CHALLENGE

Form a long-term vision, meeting challenge with courage and creativity to realize your dreams.

- Create Value through Manufacturing and Delivery of Products and Services
- Nurture a spirit of Challenge
- Always have a Long Range Perspective
- Thorough Consideration in Decision Making

2. KAIZEN

Improve your business operations continuously, always driving for innovation and evolution.

- Have a Kaizen Mind and Innovative Thinking (See later this module)
- Build Lean Systems and Structure
- Promote Organizational Thinking

3. GENCHI GENBUTSU (Go and see)

Go to the source to find the facts to make correct decisions, build consensus, and achieve goals at our best speed.

- Genchi Genbutsu (Go and See)
- Lead with Consensus Building
- Create Commitment to Achievement

4. RESPECT

Respect others, make every effort to understand each other, take responsibility, and do your best to build mutual trust.

- Respect for Stakeholders and community
- Develop Mutual Trust and Mutual Responsibility
- Be Sincere, transparent and open in all Communication

5. TEAMWORK

Stimulate personal and professional growth, share the opportunities of development, and maximize individual and team performance.

- Have Commitment to Education and Development
- Have Respect for the Individual; Realizing Consolidated Power as a Team

The Goals of TPS

The Main goals of the Toyota Production System are to eliminate three types of waste:

- 1) Overburden or stress in the system (**Muri**), 2) Inconsistency (**Mura**), 3) Waste (**Muda**)