

Six Sigma/Lean: An Introduction

Rajat S Basu
Retired Scientist, Honeywell International
Volunteer Six Sigma Trainer at United Way
of Buffalo & Erie County

What is Six Sigma/Lean

- **Six Sigma**
 - The Greek letter, σ (sigma), known as standard deviation, is a measure of variation in Statistics
 - A six-sigma quality means 3.4 defects/million
 - Six-sigma methodology is used to lower variation thereby lower defects in products or services
 - **Lean Enterprise**
 - Lean enterprise does not mean to reduce people
 - it is a methodology to streamline processes to focus on customers, reduce waste, involve and empower employees
-

History of Six Sigma/Lean

- Methods for process and quality improvement using statistical methods were developed and popularized in the U.S., Japan and other countries over the past 90 years
 - Methodology development leaders included Walter Shewhart, W. Edwards Deming, and George E. P. Box
 - In the 1980's, Motorola combined their developments into an overall strategy called Six Sigma
 - Later Lean Enterprise methods were merged with Six Sigma in late 1990s
 - The strategy was embraced globally in mid 1990's by Honeywell and GE plus many other corporations
 - These methods have evolved in many different ways and are widely adopted by US and Global industries
-

Six Sigma Methodology

- Basic Six Sigma methodology includes 5 steps, defined by the letters **DMAIC**
 - **D**efine
 - **M**easure
 - **A**nalyze
 - **I**mprove
 - **C**ontrol
 - All these steps use a number of tools to analyze and optimize processes
-

Benefits of Six Sigma/Lean to Industry

- Streamline processes to improve quality of products/services to lower defects
- Resulted in cost reduction, higher sales and revenue, cycle time reduction and waste reduction by leveraging quality
- Six Sigma/Lean has saved companies billions of dollars by optimizing processes
- It has become a way of life in many industries to keep global competitiveness

Six Sigma/Lean Introduction to Non-profits by United Way of Buffalo & Erie County

- Introduced in 2007 by United Way of Buffalo & Erie County led by Joe Roccisano, Gail Calisto and William Hill (Volunteer, Honeywell retiree)
- It is a free service to the non-profits
- 68 non-profits have worked on 97 improvement projects so far
- Diverse service areas such as developmental disabilities, educational administration, financial counseling, home health care, mental health, refugees.

Benefits for Non-profits in WNY

- **Typical Projects**
 - Reduce waiting lists, length of time to start service
 - Improve regulatory compliance – reduce errors
 - Increase recruitment and retention of volunteers
 - **Benefits Achieved**
 - No-shows down 20%, with productivity up 30%
 - Defects reduced by 95%, with costs reduced \$19,000
 - Compliance rate and number of people served doubled
 - Number qualifying for assistance up 64%
 - Cycle time reduction leading to revenue increase of \$125,000
-

Summary

- Six Sigma/Lean methodology has been used by industries to reduce defects resulting in cost reduction and increased profitability
 - It is introduced to non-profits in the Buffalo area by United Way of Buffalo & Erie County and these organizations are reaping benefits by using these methods
 - These methodologies have a lot of potential to be used in technology implementation to improve efficiency of the processes
 - Next step will be to assess how these methods can be used in the implementation of legal services technology
-