

Chapter 69

Manufacturing Production Companies Can Gain Strategic Global Advantage Using Lean Six Sigma

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ABSTRACT

How the implementation of Lean Six Sigma in manufacturing production companies in the global environment can positively affect innovation, quality, education, productivity, standard of living, and ethics is discussed in this chapter. Examples by notables like Dr. W. Edwards Deming and the Chegg Study point out a serious misalignment between what is actually needed in manufacturing production worker skill sets and what is available. The chapter demonstrates the interconnectivity of, and responsibility for, the welfare of citizens of the world. It shows how Lean Six Sigma implementation can influence Gross National Product and Gross Domestic Product, which in turn determine quality of life for a nation's citizens. The chapter offers solutions like fostering industry, academics, and government relationships for the abatement of problems such as less government funding for public education and equipping college students with the right skill sets for more complex jobs in manufacturing production industries.

ATTAIN GLOBAL MANUFACTURING SUCCESS: MAXIMIZE LEAN SIX SIGMA

Manufacturing production companies are concerned about maximizing productivity. Because a nation's standard of living and its quality of life are driven by its productivity, Shaw (2009). According to Economic Snapshot (2000) labor productivity is a measure of the amount of goods and services that the average worker produces in an hour of work. According to Shaw, of the many factors that influence a country's standard of living, by far the most important is productivity (2009). The Bureau of Labor Statistics (BLS) (n.d.) says that productivity equals output which is measured in units of whatever a company is

DOI: 10.4018/978-1-5225-9615-8.ch069

producing, divided by input, which is measured in man hours (mh). The resulting output, or productivity, is units/mh. Implementing Lean Six Sigma has the potential to greatly increase a nation's productivity.

This chapter will focus on innovative solutions for productivity issues and challenges facing manufacturing production companies globally. Its theme will be Lean Six Sigma and how these principles and practices can provide solutions to the aforementioned problems. The purpose of these solutions is to make manufacturing production companies able to effectively meet and exceed the competition's productivity anywhere in the world.

This chapter will explain ways that manufacturing organizations may learn to strategically use and implement Lean Six Sigma principles and practices to ethically increase productivity, exceed customer and provider expectations, and cut production costs. The result of these innovative changes should increase productivity and bottom-line company profits. The experience of learning and successfully implementing Lean Six Sigma should prove to be enjoyable, rewarding and exciting for people in manufacturing organizations as well as for those in educational institutions who wish to partner with manufacturing organizations.

WHAT IS LEAN SIX SIGMA? AND WHAT BENEFITS CAN ORGANIZATIONS EXPECT FROM IMPLEMENTING LEAN SIX SIGMA?

There appear to be varying descriptions and much discussion among manufacturing industry leaders as to what exactly Lean Six Sigma is. Also, as to what is the difference between "Lean" and "Six Sigma" (Strupe (2009)? According to Strupe (2009) the term Lean Six Sigma is a methodology that combines process speed with quality. However, the term Lean Six Sigma can be reduced to its individual parts, which are Lean and Six Sigma, and each separate part has its own definition. Lean Six Sigma is about continuous improvement to drive up quality and drive cost down. It's about the relentless pursuit of perfection. Conventional wisdom seems to state that the organization that comes closest to perfection in product or service, at the lowest cost, will dominate the industry. Over the last few centuries manufacturing production innovations have made tremendous progressive contributions to the industry.

Historical Innovative Milestones in Manufacturing

During the course of history people have strived and changed manufacturing dramatically. From the water wheel to the spinning wheel, and into the First Industrial Revolution, it was people who made dramatic changes along the way. A customer focus for quality in products seems to have always driven productivity through innovations.

The Industrial Revolution, covering the period from 1760 to 1830, is usually credited with the most significant increase in productivity up until the time of its introduction (Industrial Revolution, 2014). This initiative is believed to have started in Great Britain. Its main innovative feature of productivity improvement was the process of change from an agrarian, handicraft economy to one dominated by industry and machine manufacture (2014). The invention of the cotton gin and the steam engine characterized innovations of the Industrial Revolution.

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