Six sigma is a business improvement strategy that aims to improve process performance by following a structured methodology that identifies and removes the causes of defects in manufacturing and business processes. Combined with lean concepts, the philosophy of lean six sigma reduces process variability and waste and thus improves the bottom line. It is found that most of the traditional waste categories stem from high process variation. This thesis studies the concept of lean six sigma and summarizes the critical success factors for implementing Lean Six Sigma within a service organization. It is found that this taxonomy makes a major contribution to the overall Lean Six Sigma and quality efforts.

The financial and time investment into the Lean Six Sigma efforts is the most important factor influencing the level of success of the program. It is shown that with the correct investment and right attitude to change, the success of any Lean Six Sigma is better than anticipated. The other factor with the biggest impact on Lean Six Sigma efforts is the understanding of what Lean Six Sigma is and what it accomplishes. This fundamental understanding cannot be realized overnight. The proper understanding of Lean and Six Sigma tools is achievable only through proper training. This thesis also shows that training is an important factor in the outcome of any Lean Six Sigma effort, and the most popular form of training is the belt system. The belt system allows everyone inclusive to the efforts to speak a uniform language and ensures there are no misunderstandings when applying these quality improvement mechanisms.

Major: MSIE

Educational Career:
Bachelor’s of Industrial Engineering, BS, 2007, University of Florida
Master’s of Quality Engineering, MS, 2010, University of Central Florida

Committee in Charge:
Ahmad Elshennawy, Chair, Industrial Engineering
Christopher Geiger, Co-Chair,
Dima Nazzal,

Approved for distribution by Ahmad Elshennawy, Committee Chair, on June 25, 2010.

The public is welcome to attend.