Applying Lean Methodology in Determining Efficient Batch Size for Semiconductor Backend Operations

Reimon Doblon
School of Graduate Studies
Mapua Institute of Technology
Manila, Philippines
Reimon.doblon@qorvo.com

Abstract

As the final gate of a long manufacturing process, it is critical for Semiconductor Backend Operations to maintain smooth flow of material to avoid further delays in the supply chain. Little's Law tells us that one important component of flow rate is batch size, however, the Semiconductor industry still lacks a holistic approach in evaluating and defining an efficient batch size for Backend Operations. This study was able to document a step-by-step methodology on how to apply Lean in determining an efficient batch size. From a general approach presented by Womack and Jones (1996), more specific actions were outlined on how to address problems in batch sizing. To determine the most efficient batch size, company goals and current process flow were described using value stream mapping. Second, the operational performance metrics affecting the batch size were determined and reviewed and served as an input in improving the flow. Lastly, the future state was established by recommending an efficient batch size derived using the Analytic Hierarchy Process.

Keywords
batch size, Lean, Semiconductor Backend Operations, Analytic Hierarchy Process

Biography

Reimon Doblon is an Industrial Engineer with extensive experience in Lean/Six Sigma Manufacturing, Operations Management, Production Scheduling and Capacity Analysis. He graduated his Bachelor's Degree at De La Salle University – Dasmarinas, and completed Master of Science in Engineering Management at Mapua Institute of Technology. His past experience includes: Industrial Engineering at Philips Semiconductors, Final Test Scheduling at Maxim Integrated Products, and Production and Capacity Planning at TriQuint Semiconductors. He is currently the Production Test Manager of Qorvo Philippines.