Benchmarking Time and Cost of Semiconductor Fabrication Facilities

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Abstract

The semiconductor industry is a high capital investment industry with the cost of a single, completely equipped semiconductor manufacturing facility reaching $2.0 billion. A delay in the operation of the facility can cause the manufacturer a loss of millions of dollars worth of opportunity cost and a share of the market. Thus, semiconductor facility owners want their facilities built quicker, at lower cost, and with higher quality standards. However, the exchangeable knowledge of the project cost and project delivery time associated with the construction of semiconductor facilities nationwide is still in the preliminary stage. One major hindrance to the exchangeable knowledge of the project cost and delivery time is the lack of standard definitions to serve as a base for an industry wide comparison that will allow owners, designers, engineers, and constructors to make decisions at the very early stage of the projects. The purpose of this research is to overcome the segregation of the existing knowledge in semiconductor facilities construction and to generate benchmarks that can gauge the performance level.