

# **Resource Model for Construction of a Semiconductor Manufacturing Facility**

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## **Abstract**

The construction of semiconductor fabrication facilities (fab) is characterized by their aggressive schedule, fast-track nature, strict budget limits, and high degree of uncertainty. The current trend in the market is towards constructing new fabs and expanding the older facilities to meet capacity needs which requires construction labor resources with unique skill sets. The combination of low unemployment, attrition, and lack of new workforce entrants has resulted in a dearth of qualified designers, construction personnel, and skilled craft workers. To address this problem, a resource model for construction of a semiconductor manufacturing facility is being developed, that will provide insight into the number and skills of workers required for a Greenfield project. The model will determine the resources required during the initial planning stages of a project and help determine realistic and economically viable project durations and will also address the skill sets required for the various design disciplines and the construction crafts. The model will then analyze the affect of reducing project duration on the resource requirements. This information can be used to develop a competent skill pool within a company and to organize training programs to increase the workforce with the required

skill sets. The resource model will be a very useful tool in the hand of programmers/  
planners for effective resource management and planning.