



The Future of Semiconductor Test Capacity Management

Optimized Test Capacity Management Enables Profitability

Whether you're a fabless company or an IDM business unit *specifying test*, a test subcontractor or IDM manufacturing organization *providing test*, an ATE company or third-party reseller *supplying test equipment*, you know the semiconductor test business model is changing. There is an industry-wide effort to bring profitability back to this component of the semiconductor value chain.

You know, too, that the fundamental value proposition of any test business relies on the efficient aggregation of test capacity requirements across many specifiers to achieve economies of scale. All firms in the semiconductor test community must therefore return to a focus on *optimized test capacity planning and utilization - test capacity management - as the key to enabling a value-adding, efficient, and profitable semiconductor test business model.*

COSTS OF INEFFICIENT TEST CAPACITY MANAGEMENT

How is that sudden increase in demand coming from your sales team handled? Is buffer capacity added to capacity projections to cover this uncertainty? When the demand suddenly decreases, does the test specifier have to "take or pay" for unused capacity, or must the test provider simply accept suboptimal utilization levels? Can test capacity and equipment be bought and sold efficiently or does it entail time-consuming negotiations through traditional direct sales channels?

These and other related questions highlight the costly alternatives that are available today for addressing test capacity management challenges. Artificial buffers cause the provider to buy more than is needed, with the excess being manifested in higher overall rates or lower margins. Depending on the capacity use contract, the specifier may even be paying for unused capacity or forcing the provider to idle systems - the latter eventually leading to further rate increases or margin reductions. Finally, the inefficiencies in the test capacity market severely limit the opportunities to sell or find capacity and equipment outside of direct sales channels.

TEST CAPACITY MANAGEMENT TOOLSET NEEDED

To break through these barriers to a profitable and efficient semiconductor test business model, a certain set of tools is needed. Off-the-shelf asset management programs or in-house spreadsheets, even when developed and used by experienced managers, are not sufficient. An intelligent and comprehensive solution that accounts for the unique requirements of semiconductor test capacity is required. Specifically, this solution must have the following key attributes:

Test capacity SPECIFICATION data model and interface for storage, communication, and analysis

- Establishes common model for industry – improving accuracy, efficiency of information sharing, analysis
- Manages complexity of test capacity specification components and their relationships
- Enables intuitive and efficient management of test capacity

Test capacity PLANNING capability for requirements and resource aggregation, optimization, and execution

- Aggregates multiple requirements into test capacity plans
- Optimizes key business metrics – e.g. test asset utilization, demand serviceability, CAPEX minimization
- Models test system capabilities and configuration rules at their lowest levels
- Reveals test equipment gaps and surplus

Test capacity MATCHING and TRADING capability for collaboration and market efficiency

- Performs complex task of precisely matching test capacity requirements and capabilities
- Provides secure, efficient transactions for key alliances
- Provides access to broad community of test capacity specifiers, providers, and equipment suppliers

