

**A Framework for Semiconductor Industry Supply
Chain Planning: The Procurement Perspective**

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Supply chain collaboration is the prerequisite for successful procurement and operational business practices for short life cycled products, especially due to competitive marketplace, and globalization, which necessitates the requirement of most appropriate planning frameworks. Supply chain planning in the semiconductor industry integrates the complex network of wafer foundries, probe and assembly manufacturing sites together to enhance operational effectiveness. So, the supply chain planning system should aggregate data from multiple sources to provide visibility and interoperable collaboration to an extended network of stakeholders. While exploring buyer-supplier collaborative relationships and new procurement opportunities, the present work proposes a framework for depicting an appropriate policy. The following aspects of the supply chain are explored while developing such a framework: (1) business planning, (2) supply management, (3) demand management, (4) multi-echelon inventory optimization, (5) customer order fulfillment, and (6) transportation and logistics management. The novelty of this work lies in the simultaneous consideration of six interrelated perspectives of supply chain planning along with the perspective of collaboration among supply chain members on the basis of information sharing. The proposed framework captures the technological and business basis for integration of various elements for supply chain planning with expected outcomes.

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