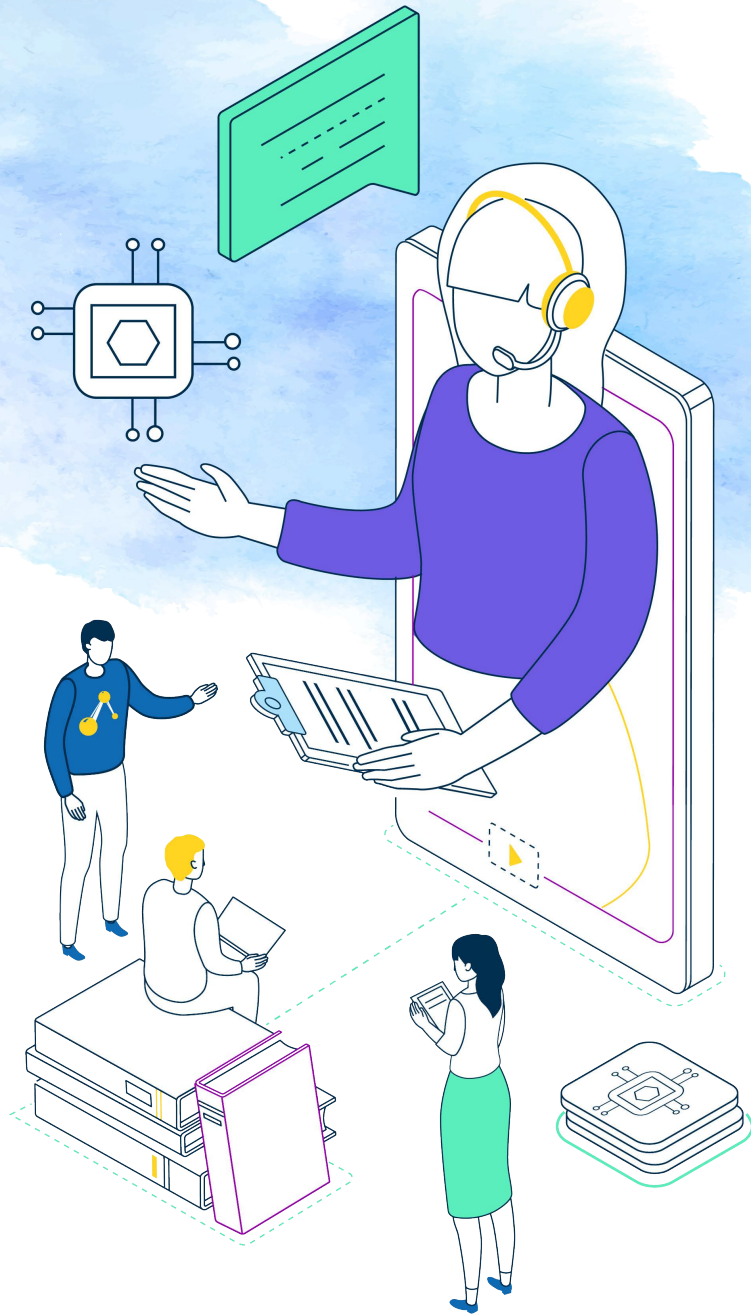




Case Study

Real-time and Reliable Order-promising at a global Semiconductor Company





The Company where Adexa supply chain planning solution was implemented is one of the largest semiconductor companies in the world with revenue in excess of \$10B. By deploying Adexa, the Company has developed a well-integrated supply chain planning and optimization solution, with daily re-optimization such that the system automatically schedules commit dates to end customer in real-time based on up to date Available-To-Promise (ATP) and Capable-To-Promise (CTP). All orders are planned without planner involvement. If it is not possible to meet the customer's initial request, it is re-planned, and the best commit date is offered automatically with no planner interception. Close to 3,500 new orders are processed per day both in real-time and batch. After a commitment is made to each product group, by Technology or by Product, then the actual sales orders (work orders) will follow. Work orders arrive a number of times each day with a customer requested due date. The requested quantity is checked against committed quantity and a promised shipping date is then generated based on material and capacity availability. Traditionally, this is done based on the number of wafers and/or units (in the back-end processes).



Pain Points Before Adexa Deployment

- **During demand explosion, the client was unable to control the planning process**
 - The Company's ERP-based planning system worked very well when supply > demand but failed in many respects when demand > supply.
 - Also, unable to adequately implement Company's rule sets / characteristics to implement desired allocation / planning rules.
 - Needed scheduling to support pre-allocation of supply to different customer/ tier groupings.
 - Needed to avoid pushing out commitments to orders (due to supply side variability and customer / channel reprioritization)
 - Their customers needed a date they could count on, even if they didn't like the date.
- **Needed to allocate supply to demand based on commit dates, not request dates.**
 - i.e. Improve request dates if supply picture improves, orders cancelled, etc.

Adexa Solution

- **Offered pools of availability - In constrained supply environments, pre-allocate supply by a set of business rules (customer tiers and/or groupings)**
- **Protect the Company from one customer or tier coming in and scooping all the available supply.**
- **Re-Planning**
 - Reschedule first to First Commit Date using all supply, then improve (if possible) to Customer Request Date within the allocated supply.
 - Improved On Time Delivery performance to First Commit Date
 - Reduced volatility in schedule dates
- **User-based rules for ATP/CTP 'easy' to deploy into Adexa and change as needed**



The Clients' system environment

Adexa was integrated to both the ERP system's Order Entry as well as the MES system to receive real-time status of WIP for more accurate order commitments. As orders come into Adexa from the ERP Order Entry, they are planned and commit dates are sent back to Order Entry and their customers.

- **Real-time integration to ERP via middleware was key to success for the project**
- **Data elements integrated between SAP and Adexa (all real-time)**
 - Materials
 - Sales Order
 - Includes characteristics that define allocation bucket.
 - Order placed in SAP looks for availability in Adexa, returns dates and quantities.
 - Inventory, Transfer plan
 - Transfer plan decremented in Adexa as inventory is received into FG.
 - Automatically initiates re-planning.
 - Shipments
 - Inventory reduced as shipment made.
 - Re-planning
 - Rescheduled dates from Adexa picked up and processed in SAP
 - Automatic replanning of materials based on data changes (new transfer plan, receipts to inventory, order priority change, etc.)

Additional Benefits for the Company

- **Significant improvement in the commit dates**
 - Highly accurate and reliable commits to their customers.
 - Use of capacity not Pseudo Package code forecasts.
 - Move from Forecast netting to true supply availability.
 - Recognize available WIP and Released Supply.
- **Gained the benefits of Adexa Attribute-Based Planning (ABP)**
 - More accurate ATP dates (Subcon, manufacture date)
 - Enable future ability to add additional rules as the conditions change using attributes as desired.
 - Remove the need for substitution matrices, unnecessary product proliferation.
 - Notable Reduction in SKU
- **Utilize the capability of batch re-planning.**
 - Improve Supply Demand alignment.
 - Eliminate the need for single order requests to improve.
 - Automate the process of selected improvement to Customer Requested Date (CRD) while preserving Current Schedule Dates (CSD)