

# Electronics Components Manufacturing:

## The Path to Excellence

Successful electronics manufacturers design their supply chains around their key stakeholders—specifically, customers, suppliers and partners. To boost its supply chain responsiveness, a leading electronics components supplier, “Company E,” is deploying Adexa’s iCollaboration planning tools across its global network of production, distribution and subcontractor facilities. By partnering with Adexa, Company E has the optimization, collaboration and business process automation tools it needs to shrink costs, respond to market opportunities and increase their speed of doing business.

Company E’s master planning group is using Adexa’s Collaborative Demand Planner (CDP) and Supply Chain Planner (SCP) to quickly generate constrained forecasts and plan production around the world. In addition, Company E’s customer service representatives in business units throughout the U.S., Europe and Asia are using Adexa’s Available-to-Promise (ATP) to confirm product availability and quote accurate shipment dates.

As the iCollaboration implementation rolls out worldwide, Company E can more easily handle complex orders, instantly confirming product availability, making accurate delivery date commitments and improving on-time shipments. Besides improving Company E’s collaboration with customers, suppliers and subcontractors, Adexa’s software optimizes back-end operations, including inventory management, material allocation, production scheduling, procurement, and strategic outsourcing.



Case Study

*As a leading electronics components manufacturer, Company E operates in one of the world's most volatile and competitive markets. To win in this challenging environment, Company E needed a new category of supply chain and e-business technology.*

## Maximizing Service and Performance

Company E, a leading components manufacturer, recently selected Adexa's Internet-based supply chain and e-business management suite, iCollaboration, to:

- Improve customer service through improved order promising accuracy
- Reduce total pipeline inventory
- Provide total visibility of manufacturing and planning across the global supply chain
- Provide on-line problem notification and resolution tools
- Shrink cycle times for planning and re-planning
- Shorten calculation times for delivery date quotations to customers
- Strengthen collaborative demand planning to improve forecast accuracy

As a leading supplier of magnetic components for manufacturers in the data networking, broadband/internet access, telecommunications, computer and electrical equipment industries, Company E had complex, highly distributed supply chain operations that needed to be better managed to strengthen revenues and market share. Manual planning processes were ineffective, as were current planning tools.

Better supply chain management technology was needed. To eliminate the risk of selecting the wrong vendor and to quickly recoup their return-on-investment (ROI), Company E invited several supply chain management software companies to participate in a rigorous evaluation process. Benchmarked against rival systems, Adexa's iCollaboration suite was selected based on its, breadth and depth of functionality, speed of implementation and ease-of-use.

Collaborative Demand Planner (CDP) and Supply Chain Planner (SCP) are now used to forecast orders and plan production worldwide. Adexa's Available-to-Promise (ATP) and other iCollaboration tools are being rolled out across business units and facilities worldwide to improve online order promising to customers and to streamline back-end activities such as manufacturing, procurement, vendor managed inventory (VMI), and strategic outsourcing to subcontractors.

## Company E at a Glance

Headquartered in the U.S., Company E's chief manufacturing facilities are located in China, the Philippines and Malaysia. Facilities in China account for more than 80% of Company E's total production.

Company E's manufacturing process is quite labor intensive. Direct manufacturing labor capacity can vary from 25,000 to 30,000 employees. As a result, Company E can flexibly vary both the volume and deployment of its manufacturing capacity depending on swings in demand. Use of subcontractors provides additional manufacturing flexibility.

Typically a single plant is dedicated to manufacturing a single product. Like many firms, Company E rates each of its plant's performance based on factors such as the volume and complexity of manufacturing.

The distribution structure of Company E is organized to ship most orders directly to customers. Two distribution centers (DCs)—one in the US, the other in Europe—are strategically located near critical customers to satisfy their requirements. Every effort is made to minimize inventory at these DCs. A small portion of Company E's business, primarily service and maintenance, is supported by retail distributors.

To manage these global operations effectively, Company E recognized that it needed proven Internet-based supply chain management tools. The goals were to:

- Improve inventory management
- Automate manual planning processes to speed decision making
- Improve customer responsiveness
- Improve competitive advantage through ease of doing business

*Company E chose Adexa's iCollaboration suite based on its superior speed, breadth and depth of functionality, and ease-of-use.*

*Company E is implementing the following iCollaboration applications:*

- *Supply Chain Planner*
- *Available-to-Promise*
- *Collaborative Demand Planner*
- *Collaborative Procurement Planner*

## **Finding the Right System**

With these objectives in mind, Company E launched a comprehensive search to select the right supply chain management solution partner. Early in the evaluation process, Company E learned that not all supply chain management systems were alike.

Older MRP and ERP systems were deemed too slow and cumbersome. First-generation Advanced Planning and Scheduling (APS) systems showed a lack of Internet readiness and functional fitness for Company E's unique supply chain management challenges.

After rigorous benchmarking, three supply chain management vendors made it to the second cut in the evaluation process. Tested against rival systems, Adexa's iCollaboration planning system proved to be demonstrably superior in modeling complex supply chain environments and providing user-friendly but powerful planning capabilities to Company E's users.

Above all, Adexa demonstrated a more practical and fully realized vision of collaborative commerce, and, more importantly, the ability to execute on this vision.

## The Adexa Solution

Given the sprawling complexity of its supply chain, comprised of multiple business units and facilities spanning several continents, Company E faced a host of planning challenges. For each challenge, Adexa provided the right solution.

Challenge	Solution
<b>No centralized planning function</b> <ul style="list-style-type: none"> <li>- No macro visibility</li> <li>- Planning localized only at the factory level—no planning aggregation</li> <li>- Manual, time-intensive planning capabilities</li> </ul>	<b>Supply Chain Planner (SCP)</b> <ul style="list-style-type: none"> <li>- Global modeling of manufacturing capabilities across facilities</li> <li>- Centralizes planning processes</li> <li>- Provides global visibility, allowing global inventory management</li> </ul>
<b>Delayed confirmation of customer orders</b>	<b>Available-to-Promise (ATP)</b> <ul style="list-style-type: none"> <li>- Online confirmation of product availability</li> <li>- Online delivery date quotations</li> <li>- Use of sophisticated business rules for pre-emption and substitution to optimize the trade-offs between customer service and revenues</li> </ul>
<b>Inability to model and automate the global forecasting process</b>	<b>Collaborative Demand Planner (CDP)</b> <ul style="list-style-type: none"> <li>- Facilitates consensus-based forecasting</li> <li>- Generates an unconstrained statistical forecast, then constrains it through SCP</li> <li>- Enables analysis with the SCP-generated constrained forecast</li> <li>- Facilitates revenue forecasting based on constrained and unconstrained forecasts</li> </ul>
<b>Time-intensive management of constrained materials</b>	<b>Collaborative Procurement Manager (CPM)</b> <ul style="list-style-type: none"> <li>- Enables collaborative material management with vendors</li> <li>- Eliminates manual steps</li> </ul>
<b>Lack of an integrated solution</b>	<b>Unified Data Server (UDS)</b> combines a single point of integration with data integrity and persistence

*Each module in Adexa's iCollaboration suite shares the same common data model, which ensures speed, scalability, consistent honoring of constraints, and data integrity and persistence at every level of planning.*

*Adexa's Collaborative Procurement Manager (CPM) allows Company E to exploit electronic linkages with suppliers by automating the negotiation process, accurately communicating forecast-derived supplier requirements, and speeding convergence to agreements on price, quantities and delivery dates*

## Tighter Customer and Supplier Collaboration

With Adexa's iCollaboration suite, Company E is well positioned to strengthen its already strong relationships with customers and suppliers. Operationally, these relationships are reflected in 830 and 850 EDI linkages with customers, participation in vendor managed inventory (VMI) and consigned inventory programs and dedicated, customer-specific safety stock at strategic locations. Company E receives between 140 and 160 EDI feeds a week through a secure virtual network.

On the supply side, Company E is moving forward in requiring its strategic vendors to participate in the VMI program. Presently there is only one vendor managing the VMI in Asia. The highly capital-intensive and inflexible manufacturing capacity associated with magnetic core means that Company E must carefully plan and monitor the usage of the capacity allocated to it by its vendor.

Recently Company E has re-engineered its forecasting processes in preparation for the deployment of Adexa's iCollaboration software. The current forecasting process starts with the generation of a customer-specific statistical forecast that is reviewed and modified by sales and marketing. The forecast submitted by sales and marketing is analyzed by a Global Forecast Analyst against the statistical forecast generated at the part level. The resulting forecast is used to drive production.

Company E's existing forecasting process requires many manual steps and is difficult to co-ordinate at the global level. Prior to the deployment of Adexa's tools, it was not possible for Company E to realistically project revenue based on forecast and production constraints. Thanks to iCollaboration, this process and others are quickly becoming more automated.

## **Better Visibility, Better Execution**

Company E intends to enhance its competitive position in the marketplace by implementing significant improvements to its supply chain management capability. The successful implementation of SCP, ATP and CDP components of iCollaboration suite will provide the key elements to maximize the performance of its supply chain.

Customers demand quick, accurate delivery commitments and exceptional on-time performance. Company E must be able to track customer orders throughout their supply chain and dynamically respond to demand fluctuations. The Adexa iCollaboration suite, will allow for dynamic web based links to its manufacturing locations and customers to provide real time visibility into the supply chain. Company E builds products in manufacturing locations in Asia. This could present a major opportunity to perform collaborative planning between the organizations to allow for better synergy and a response to the growing needs of Company E.

Implementation of SCP will enable Company E to plan its entire supply chain in a single feasible planning framework, thus integrating the distribution, production, capacity and material plans. The Company E supply chain plan will include Customer consignment location, Distribution centers, Plants, Vendor VMI location and Vendor Capacity considerations.

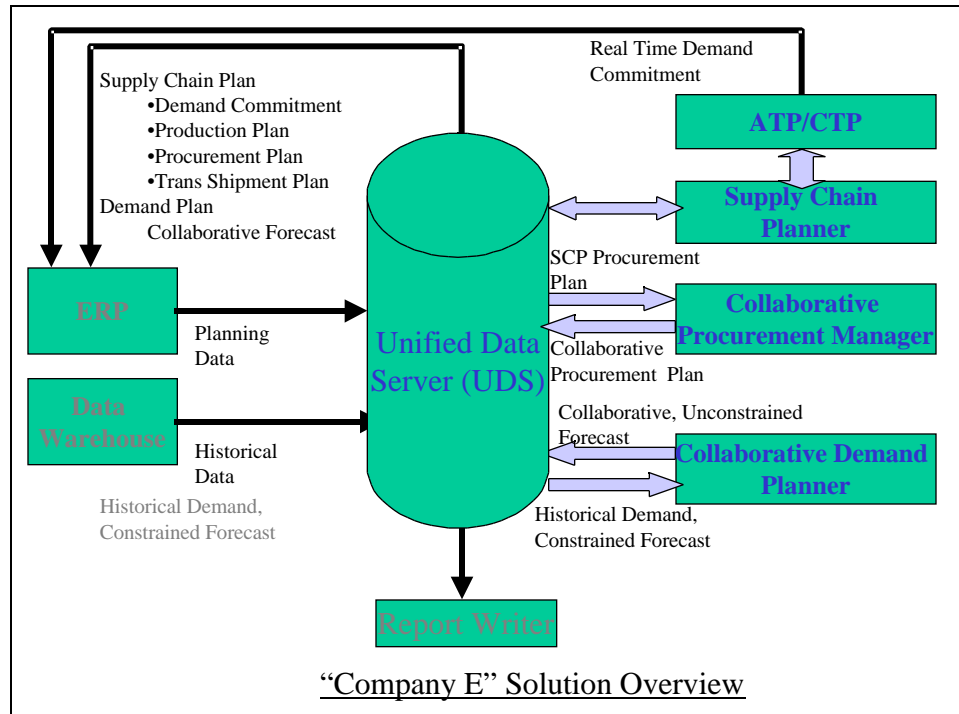
The resulting visibility across complete supply chain will lead to better utilization of resources. Efficient use of enterprise wide resources will enable Company E to consistently meet market demand and customer service objectives. It is expected from the project that Company E will be able to provide sales order delivery commitment in real time and significantly improve on-time performance. By implementing CDP, Company E seeks to improve the forecast accuracy through collaborative process across the organization and to be able to accurately generate revenue forecast.

*Adexa's supply chain model for Company E provides an accurate and highly efficient constraint-based representation of the firm's customer consigned locations, distribution centers, manufacturing plants, and VMI location. The model also gives Company E accurate visibility into the capacity of vendors.*

*Company E's users are provided with revenue projections across timelines based on unconstrained as well as constrained forecasts. The revenue view is updated every four hours to reflect the latest projected revenue based on the latest forecast and average selling price information.*

## Solution Footprint

The CDP, SCP and ATP components of Adexa's iCollaboration suite are enabling Company E to integrate forecasting, supply chain planning, sales order commitments and other functions while considering the constraints of entire supply chain.



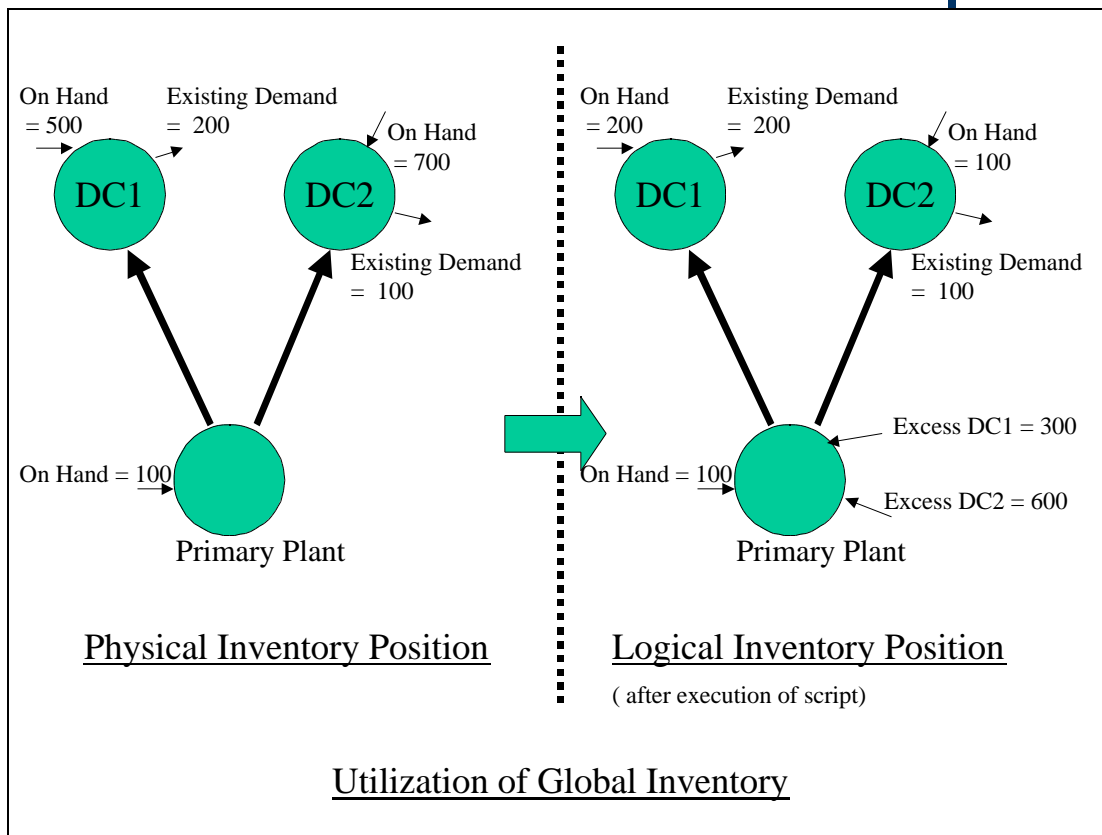


## More Efficient Inventory Management

The iCollaboration solution is customized to maximize inventory efficiency. Company E's global inventory is utilized before suggesting new work orders or supplies. Adexa's software looks for excess inventory of finished goods and moves the excess inventory to the primary plant represented in the supply chain model. This results in consumption of global excess stock before new supplies are generated.

In Company E's ERP system, all the new demands initially placed against the primary plant are re-directed to the location having inventory with the aid of connections report. This leads to increased visibility and utilization of inventory across the entire supply chain.

*The excess inventory for each Company E location is determined by reducing total demand from total on-hand stock for that location.*



supply chain.

*Adexa's electronics customers—Xerox, Viasystems, Com2B, and "Company E," among others—manage their supply chains using Internet-based planning tools designed specifically for their requirements.*

## Ongoing Performance Improvements

In the electronics industry, responsiveness is the key. Components manufacturers operate in one of the most volatile and competitive markets in the world. A product's lifecycle can be shorter than its development cycle. New features mean more to consumers than brand loyalty, which makes it crucial to be first-to-market. And given the rapid pace of innovation, inventory can become obsolete before products are even built. To compete, companies must plan, perform and execute at Internet speed.

But with the right changes in business processes and the deployment of new tools, Company E is achieving breakthrough levels of supply chain responsiveness, with incremental improvements in the following areas:

1. More accurate capacity requirements planning
2. Increased customer service through improved Available to Promise and Capacity to Promise (ATP/CTP) accuracy
3. Reduced work-in-progress (WIP) and finished goods (FG) inventory
4. Total visibility of manufacturing and planning issues across the entire supply chain
5. Reductions in production planning and re-planning cycle times
6. Faster ATP/CTP date quoting calculation times
7. Rapid and far-reaching "what if" analysis to ensure faster, more informed decisions.

Today, a new breed of electronics components manufacturer is taking the lead in the areas that matter most to their customers: fast, responsive and reliable handling of orders combined with near-perfect delivery performance. Company E is a prime example. To find out more about how your business can do the same, call us at 888-300-7692, or log on to [adexa.com](http://adexa.com).