

INVENTORY MANAGEMENT ALONG IBM'S SUPPLY CHAIN

IBM is the largest producer of computer software, hardware, and services in the world. Its supply chain encompasses manufacturing sites linked with tens of thousands of suppliers and distribution channels around the world. A single product line may involve thousands of parts, with varied lead times and costs and dozens to hundreds of manufacturing and distribution sites connected by different modes of transportation. In 1994, faced with increasing competition and rapid technological advances, IBM began a reengineering effort to streamline its global supply chain in order to improve the flow of material and information. The reengineering effort focused on improving customer satisfaction and IBM's competitiveness by increasing the speed, reliability, and efficiency with which it delivers its products to the marketplace. Key objectives related to inventory management were to set strategic inventory and customer-service targets, to optimize inventory allocation and placement, and to reduce inventory while meeting customer service targets.

The IBM Personal Systems Group (PSG) is responsible for the development, manufacture, sale, and service of personal computers. It employs 18,500 workers, with manufacturing plants in the United States, Latin America, Europe, and Asia. Faced with increased competition from PC manufacturers like Dell and Gateway, which sells computers to customers direct and built-to-order, PSG felt it needed to redesign its supply chain. An objective was to determine the inventory safety stock for each product at each location in the supply chain in order to minimize the investment in total inventory. PSG was able to reduce its overall inventory by 50% from 1998 to 1999 without affecting customer service, with savings of over \$100 million. IBM was able to reduce the time between parts procurement and actual sales by four to six weeks, which resulted in additional annual cost savings of \$650 million. IBM also found that demand forecast accuracy greatly affected inventory and customer services, and, as a result of the system implementation it was able to determine the level of service it should promise customers based on the accuracy of its forecasts.

