

UPS is now leveraging its decades of expertise managing its own global delivery network to manage logistics and supply chain activities for other companies. It created a UPS Supply Chain Solutions division that provides a complete bundle of standardized services to subscribing companies at a fraction of what it would cost to build their own systems and infrastructure. These services include supply chain design and management, freight forwarding, customs brokerage, mail services, multimodal transportation, and financial services, in addition to logistics services.

In 2006, UPS started running the supply chains of medical device and pharmaceutical companies. For example, at UPS headquarters in Louisville, Kentucky, company pharmacists fill 4,000 orders a day for insulin pumps and other supplies from customers of Medtronic Inc., the Minneapolis-based medical-device company. UPS pharmacists in Louisville log into Medtronic's system, fill the orders with devices stocked on site, and arrange for UPS to ship them to patients. UPS's service has allowed Medtronic to close its own distribution warehouse and significantly reduce the costs of processing each order. UPS and other parcel delivery companies are investing in giant

warehouses that service multiple pharmaceutical companies at once, with freezers for medicines and high-security vaults for controlled substances.

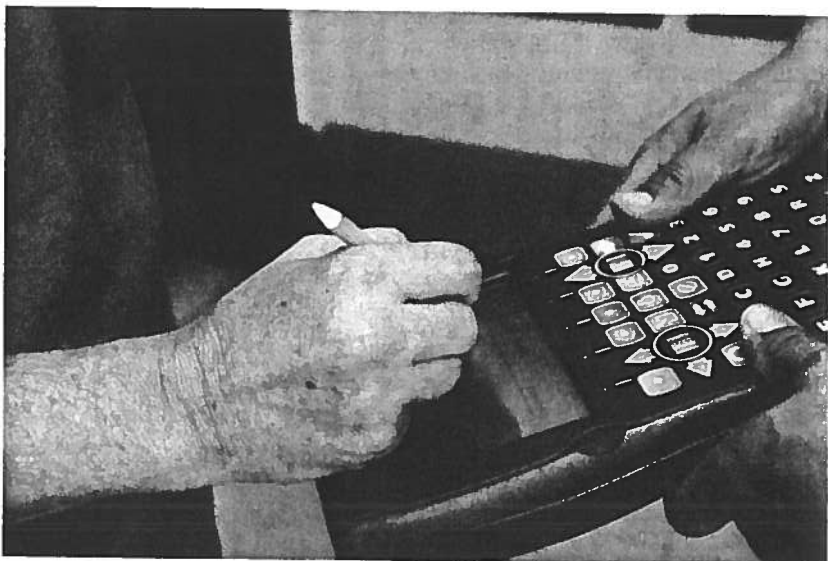
UPS has partnered with Pratt & Whitney, a world leader in the design, manufacture, and service of aircraft engines, space propulsion systems, and industrial gas turbines, to run its Georgia Distribution Center, which processes 98 percent of the parts used to overhaul Pratt & Whitney jet engines for shipment around the world. UPS and Pratt & Whitney employees together keep track of about 25,000 different kinds of parts and fulfill up to 1,400 complex orders each day—ranging from a few nuts and bolts to kits comprising all the parts needed to build an entire engine. On the receiving side of the 250,000-square-foot building, UPS quality inspectors check newly arrived parts against blueprints.

Sources: Jennifer Levitz and Timothy W. Martin, "UPS, Other Big Shippers, Carve Health Care Niches," *The Wall Street Journal*, June 27, 2012; "Logistics in action: At Pratt & Whitney Facility, Silence Is Golden," *UPS Compass*, August 2012; Bob DuBois, "UPS Mobile Goes Global," *UPS Compass*, January 27, 2011; Jennifer Levitz, "UPS Thinks Out of the Box on Driver Training," *The Wall Street Journal*, April 6, 2010; Agam Shah, "UPS Invests \$1 Billion in Technology to Cut Costs," *Bloomberg Businessweek*, March 25, 2010.

## CASE STUDY QUESTIONS

1. What are the inputs, processing, and outputs of UPS's package tracking system?
2. What technologies are used by UPS? How are these technologies related to UPS's business strategy?
3. What strategic business objectives do UPS's information systems address?
4. What would happen if UPS's information systems were not available?

Using a handheld computer called a Delivery Information Acquisition Device (DIAD), UPS drivers automatically capture customers' signatures along with pickup, delivery, and time card information. UPS information systems use these data to track packages while they are being transported.



© Bill Aron/PhotoEdit

## UPS COMPETES GLOBALLY WITH INFORMATION TECHNOLOGY

### INTERACTIVE SESSION: TECHNOLOGY

United Parcel Service (UPS) started out in 1907 in a closet-sized basement office. Jim Casey and Claude Ryan—two teenagers from Seattle with two bicycles and one phone—promised the “best service and lowest rates.” UPS has used this formula successfully for more than a century to become the world’s largest ground and air package-delivery company. It’s a global enterprise with over 400,000 employees, 93,000 vehicles, and the world’s ninth largest airline. UPS delivers 15.6 million packages and documents each day in the United States and more than 220 other countries and territories. The firm has been able to maintain leadership in small-package delivery services despite stiff competition from FedEx and Airborne Express by investing heavily in advanced information technology. UPS spends more than \$1 billion each year to maintain a high level of customer service while keeping costs low and streamlining its overall operations.

It all starts with the scannable bar-coded label attached to a package, which contains detailed information about the sender, the destination, and when the package should arrive. Customers can download and print their own labels using special software provided by UPS or by accessing the UPS Web site. Before the package is even picked up, information from the “smart” label is transmitted to one of UPS’s computer centers in Mahwah, New Jersey, or Alpharetta, Georgia, and sent to the distribution center nearest its final destination.

Dispatchers at this center download the label data and use special software to create the most efficient delivery route for each driver that considers traffic, weather conditions, and the location of each stop. UPS estimates its delivery trucks save 28 million miles and burn 3 million fewer gallons of fuel each year as a result of using this technology. To further increase cost savings and safety, drivers are trained to use “340 Methods” developed by industrial engineers to optimize the performance of every task from lifting and loading boxes to selecting a package from a shelf in the truck.

The first thing a UPS driver picks up each day is a handheld computer called a Delivery Information Acquisition Device (DIAD), which can access a wireless cell phone network. As soon as the driver logs on, his or her day’s route is downloaded onto the handheld. The DIAD also automatically captures customers’ signatures along with pickup and delivery information. Package tracking information is then transmitted to UPS’s computer network for storage and processing. From there, the information can be accessed worldwide to provide proof of delivery to customers or to respond to customer queries. It usually takes less than 60 seconds from the time a driver presses “complete” on the DIAD for the new information to be available on the Web.

Through its automated package tracking system, UPS can monitor and even re-route packages throughout the delivery process. At various points along the route from sender to receiver, bar code devices scan shipping information on the package label and feed data about the progress of the package into the central computer. Customer service representatives are able to check the status of any package from desktop computers linked to the central computers and respond immediately to inquiries from customers. UPS customers can also access this information from the company’s Web site using their own computers or mobile phones. UPS now has mobile apps and a mobile Web site for iPhone, BlackBerry, and Android smartphone users. Anyone with a package to ship can access the UPS Web site to track packages, check delivery routes, calculate shipping rates, determine time in transit, print labels, and schedule a pickup. The data collected at the UPS Web site are transmitted to the UPS central computer and then back to the customer after processing. UPS also provides tools that enable customers, such as Cisco Systems, to embed UPS functions, such as tracking and cost calculations, into their own Web sites so that they can track shipments without visiting the UPS site.

A Web-based Post Sales Order Management System (OMS) manages global service orders and inventory for critical parts fulfillment. The system enables high-tech electronics, aerospace, medical equipment, and other companies anywhere in the world that ship critical parts to quickly assess their critical parts inventory, determine the most optimal routing strategy to meet customer needs, place orders online, and track parts from the warehouse to the end user. An automated e-mail or fax feature keeps customers informed of each shipping milestone and can provide notification of any changes to flight schedules for commercial airlines carrying their parts.

UPS estimates its delivery trucks save 28 million miles and burn 3 million fewer gallons of fuel each year as a result of using this technology. To further increase cost savings and safety, drivers are trained to use “340 Methods” developed by industrial engineers to optimize the performance of every task from lifting and loading boxes to selecting a package from a shelf in the truck.

The first thing a UPS driver picks up each day is a handheld computer called a Delivery Information Acquisition Device (DIAD), which can access a wireless cell phone network. As soon as the driver logs on, his or her day’s route is downloaded onto the handheld. The DIAD also automatically captures