CHAPTER 1   INFORMATION SYSTEMS IN GLOBAL BUSINESS TODAY

CASE 1   **UPS Global Operations with the DIAD**

(a) Global Operations with the DIAD IV

VIDEO CASE
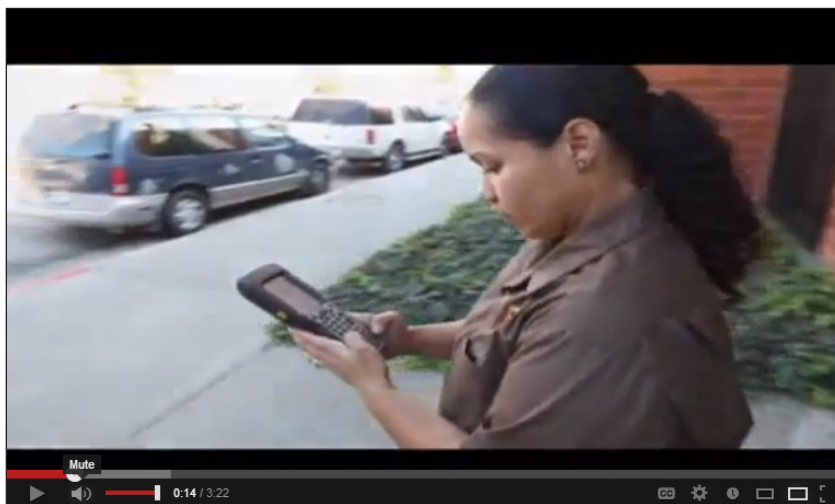

URL   http://careertv.com/video.php?mediaid=5Kb0tr9e-mNWk3iIvp3GZQ; L=3:07

(b) UPS's Next-Generation Mobile Devices Are Here

VIDEO CASE

URL   http://www.youtube.com/watch?v=_0B2-o6BKMM; L=3:22

SUMMARY   Using smart people and smart technology, UPS delivers over 16 million packages daily to 220 countries and territories, requiring the talents of 70,000 drivers who are wirelessly connected to UPS main databases. This case describes the evolution of the UPS DIAD technology platform, the transition to the new DIAD V in 2013, and the role of information systems in achieving UPS' strategic business objectives. Two videos.

CASE   United Parcel Service's global operations are driven by its information systems technology. What UPS can do is largely a function of its information technology investments. Beginning as a local delivery service in 1907, UPS expanded on the West coast initially, reached New York in the 1930s, and went international in the 1970s. Today, UPS delivers over 16 million packages daily to 220 countries and territories, requiring the talents of 70,000 drivers who are wirelessly connected to UPS databases located in seventeen major data centers throughout the world. UPS maintains a fleet of 95,000 delivery vehicles, and 230 aircraft worldwide.

A multiyear, multi-billion-dollar investment in technology drove the growth of UPS over the last twenty-five years, beginning in 1990. This investment enabled the development of the DIAD, the Delivery Information Acquisition Device. The DIAD is a key element in UPS's business technology platform because it connects the drivers to UPS central systems for tracking and delivering packages. UPS was the first firm to use mobile wireless technology for day-to-day operations, and it achieved this distinction twenty years before the iPhone and other smartphones. Currently, UPS is in a transition from its DIAD IV to a new DIAD V. In 2013, it expects to have deployed over 100,000 new DIAD V units. The new DIAD V performs all the functions of the existing model, but adds additional functionality, better hardware and software, resulting in an ergonomically superior fit for drivers, as well as advances in productivity.

The DIAD IV was deployed in 2005 and included multiple wireless connectivity options. Each DIAD IV has a built-in GPRS and CDMA cell phone, an acoustical modem to facilitate dial-up access if necessary, and 802.11b wireless local area network connectivity to enable transmission of real-time data using any available wireless technology to a UPS center. The DIAD IV also uses Bluetooth wireless personal area network and an infrared (IrDA) port to communicate with peripheral devices such as customer PCs/printers. Most importantly, the DIAD IV has GPS connectivity that for the first time allowed drivers with detailed directions for pick ups of packages, and for central UPS systems to identify precisely where the trucks and their packages were located. The DIAD IV has limited memory (128 megabytes) and a slow but reliable processor.

The DIAD IV sends delivery information to the UPS data repository as soon as the delivery information is entered. Drivers simply scan the package bar code, collect the receiver's signature electronically, type in the last name of the receiver and push a single key to

complete the transaction and send the data. There is no need to activate a cell phone or return to the vehicle. DIAD software apps include ODS (On-Demand Services)—that enables communication with the driver throughout the day. UPS drivers log into the ODS system in the morning to obtain a listing of the day's deliveries. During the day new pickups and drops can be communicated to the drivers on the fly.

DIAD V

In 2012 UPS started the global rollout of the fifth-generation DIAD. While not exactly an iPhone or Android, it's obvious the new DIAD takes full advantage of newer consumer technologies with this version's touchscreen, camera, speedy processor, and 1 GB of memory, at half the size of its predecessor.

DIAD V was developed with Honeywell International Inc. and it is the first in the industry to leverage Gobi radio technology that allows instant switching of cellular carriers if one carrier's signal is lost, ensuring the device stays connected to the UPS network throughout the day. The new DIAD V also has a color camera that could be used to enhance proof-of-delivery information. It also has a color display and microprocessor with expanded memory to support driver training and future applications including navigation. For example, the DIAD V could be used to enable maps to help a driver avoid a traffic jam.

Here's a look at the new features of the latest mobile device:

Roaming: The DIAD V monitors wireless performance and can switch automatically to the strongest carrier signal. The cell connection is vital to the system because it enables continuous reporting to the data center on the progress of packages through the system, and provides customers with instant online access to their package location. The new roaming software also means that UPS can choose to use the least expensive cell service for any given service area assuming signal strength is the same for each carrier.

Touchscreen: The new DIAD has a touchscreen that will likely boost driver productivity. In this version, the touchscreen does not have any of the touch gestures of consumer smart phones like pinching on text, and using fingers to flip through screens. Yet the UPS touchscreen is much tougher than even iPhone screens. UPS puts the devices through a gauntlet of tests like drops from six feet, heat, cold, and torrential rain that would kill most smartphones.

New Hardware: The DIAD V weighs in at about half the size and weight of the DIAD IV (about 1.5 lbs). It has 1 GB of flash memory, with a micro-SD slot that lets it expand to 32 GB (compared to the older DIAD 4 with 128 megabytes of storage). Its 1 GHz processor means it can run much more powerful apps than the previous version, apps that integrate via the wireless connection with server-side systems. That computer power will let UPS offer more personalized services, building on the My Choice service it launched last year, which lets customers create personalized delivery options, such as leaving packages with a particular neighbor if they're not home.

Camera: A small camera of 3 megapixels has been added to the DIAD V although it has not yet been enabled. In the future UPS plans to use the camera to document proof of delivery and the extent of damage to packages. The images will not be sent over cellular networks but uploaded over the company Wi-Fi networks when the trucks are parked for the night.

Navigation: The new device lets UPS upload the route information a driver needs to go from site to site throughout the day. Like the DIAD IV, the new devices have GPS, so UPS knows where the driver is at any time. The next leap for UPS will be providing real-time navigation, telling drivers the best way to get to their next delivery, perhaps even considering factors such as traffic congestion. Drivers will always know where to go next and how to get there in the least time

UPS faces a number of challenges keeping up with mobile technology. The pace of technological change is arguably faster now than in the past. It took UPS seven years after deployment of DIAD IV to deploy the DIAD V. If UPS waits this long again, it's possible another competitor will be faster to market with a superior technology platform.

VIDEO CASE QUESTIONS

1. List the various ways that DIAD improves customer service.

2. Write out the steps a package takes from pick-up by a UPS driver to delivery including the role of DIAD, the UPS Data Center, and the UPS Package Center.

3. What role does wireless communication play in the UPS systems? List the different types of wireless connectivity and describe their function.

4. Why doesn't UPS use much more powerful and smaller smartphones like the iPhone or Android?

5. Why is the DIAD V better than the DIAD IV?

6. How does UPS's investment in IT help it achieve the strategic business objectives described in Chapter 1?