



# PROCUREMENT BULLETIN

November 2016 Issue

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## [Case Study] FedEx Launches Air Cargo Services to Cuba

The United States recently lifted decades-long restrictions on trade with Cuba. FedEx now plans to open air cargo services to and from the country to expand its global distribution reach. FedEx is the first American air cargo company to submit such an application to the United States Department of Transportation (DOT). Take a look at how FedEx plans to establish a competitive advantage over UPS and other air cargo carriers that could also provide services to Cuba in the future.

### Situation: FedEx Plans Daily Air Cargo Route to Matanzas



Image via [Flickr](#) by byeangel

Immediately after the U.S. reestablished trade with Cuba, several airlines raced to get permission for passenger routes to and from the country. Twenty slots were approved, but [FedEx was the only airline to secure air cargo space](#). FedEx's jumpstart puts the company in a good position to pick up market share for air cargo needs.

After getting approval from the DOT, FedEx announced a plan to operate small cargo planes five days per week from Miami, Florida, to Matanzas, Cuba. FedEx also plans to provide trucking



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services from the Matanzas airport to Havana and to the areas in between. The air cargo service is scheduled to begin on January 15, 2017, which gives FedEx time to analyze possible setbacks.

## **Approach: FedEx Chooses a Small Air Cargo Plane**



Image via [Flickr](#) by patrickhashley

FedEx originally planned to use large Boeing 757 aircraft and fly into larger airports in Cuba. However, [the company has since decided to downsize its endeavor](#), at least in the beginning. FedEx has chosen to use a fleet of Cessna 208 aircraft. This plane has a single turbo engine and is much smaller than the Boeing 757 that FedEx typically uses for air cargo.

The company will fly in and out of an airport in Veradero, which is a resort town in the Matanzas. The Matanzas airport doesn't currently receive much air cargo traffic and isn't equipped to handle large Boeing 757 aircraft. In addition, the Matanzas airport is closer to Miami than the Havana airport is.



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## Impact and Advantage



Image via [Flickr](#) by Iker Merodio | Photography

Since FedEx was the first air cargo carrier to establish freight service to Cuba, the company has a competitive advantage. FedEx plans to establish relationships with companies in Cuba that need freight services before competitors have a chance. FedEx aims to provide all air cargo services in and out of Cuba.

The [Wall Street Journal](#) reported, "UPS continues to assess the opportunity to provide services to and from Cuba. As trade lanes open and demand for delivery services increases, UPS will take appropriate action to meet the needs of our global customers."

Only time will tell if FedEx's strategy to enter Cuba early is a smart move. It makes sense from an investment standpoint because companies in the United States will need a way to transport goods to Cuba, and companies in Cuba have the same needs. This should prove to be a win for FedEx.

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## Robots Now Run Dairy Farms

Farmers have been implementing new technology for decades. Today, some dairy farms can practically run themselves thanks to technological advances. Thanks to robotic milking machines, cows can roam freely and then go to a milking station when they need to be milked. This automated process saves farmers a lot of time and allows them to focus on improving other aspects of their business, such as supply chain efficiency.

### A Closer Look at Robotic Milking Systems



Image via [Flickr](#) by John Kelehan

Robotic milking systems require all cows to have an ID tag that tracks the number of times they enter a milking station and how long they stay. If a cow enters one of these stations before it needs milking, the exit gate opens and the station encourages the cow to leave.

The robots brush and clean each cow's udders before attaching the milking pumps. A laser pointer precisely pinpoints where to place the clamps to make milking more comfortable for the cows. When done manually, this can take an extraordinary amount of time.

[Bloomberg Technology highlighted Sunny Glade Farm](#), which has been in operation for four generations and has about 250 cows that require daily milking. The farm uses an automated machine to feed its cows, and the farm's milking system collects 128 pieces of data about each cow. The system uses the information to adjust nutrients in the feed in order to increase milk production.

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## The Benefits of Robotic Milking



Image via [Flickr](#) by USDAgov

Robotic milking systems tend to result in happier cows, higher milk yields, and a cost-effective workforce. That's why more and more farmers are choosing to adopt robotic milking systems.

Traditional dairy farms milk cows twice a day by manually hooking them up to an automatic pump, which can be a time-consuming process. In contrast, robotic systems sometimes milk cows four to five times a day. This reduces pressure on the cows' udders and promotes higher milk production. It's also healthier for the cows because this process mimics how often a calf would nurse. There are rarely long queues for milking stations, and cows even learn to get in the shortest lines.

## Robotic Milking Is Growing Slowly but Steadily



Image via [Flickr](#) by historic.bremen



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As [the BBC explains](#), 5 percent of farms in the United Kingdom are already using robotic milking. That's slightly higher than the percentage of American farms that have adopted this technology.

In general, the high investment cost is the reason that more dairy farmers haven't already implemented robotic milking. These machines can cost upwards of \$100,000, which doesn't include the annual cost of operating the machines. It's hard for farmers to justify the investment since the price of milk hasn't gone up in recent years.

Farmers that do make the switch to robotic milking systems are seeing the benefits. With automated systems in place, dairy farmers no longer have to spend most of their time hooking up cows to milk pumps. Instead, [dairy farmers have more time](#) to focus on other business operations, such as looking for ways to lower supply chain costs and negotiating better supplier and distribution deals.

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## [Case Study] Daimler Trucks Introduces First Electric Truck

Electric vehicles aren't new to the market, but electric trucks are. Most electric vehicles are small and don't have much horsepower. Trucks need to be able to pull thousands of pounds in freight, so they need significant horsepower. That's one reason the debut of electric trucks is so exciting. Take a look at how electric trucks could change the shipping industry.

### **Situation: Introducing the Mercedes-Benz Urban eTruck**



Image via [Flickr](#) by Andrei!

In late July 2016, Daimler Trucks introduced its first electric heavy-duty truck. It's a [Mercedes-Benz Urban eTruck](#) that weighs 28 tons and runs on a Fuso Center E-Cell battery. Daimler Trucks aims to make the eTruck a reality in the next few years. The truck would be suitable for light distribution.

The design of the Mercedes-Benz Urban eTruck is based on the automaker's three-axle short-radius distribution truck. The frame is very similar, but engineers revised the drive concept for the alternate fuel type. The back axle directly connects to electric motors on the wheel hubs, a design that appeared on the Mercedes-Benz Ciatro hybrid bus.

Three lithium-ion battery modules power the Urban eTruck, and the truck can travel up to 125 miles on a single charge. This is the typical distance for a daily delivery route. The batteries are tucked away inside the frame of the eTruck for protection from minor crashes.



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## Approach: Daimler Trucks Takes Advantage of Decreasing Battery Costs



Image via [Flickr](#) by Rob124

Electric cars have been around for over a decade, but manufacturers haven't touched electric trucks until recently because the costs were too prohibitive. Daimler Trucks predicts that the cost of lithium-ion batteries will decrease steadily over the next few years. In fact, the cost of lithium-ion batteries could decrease from \$550 per kilowatt hour (kWh) to \$220 per kWh by 2025. The batteries' performance will also most likely improve. [Overdrive Online](#) explains that batteries could increase from 80 watt-hour per kilogram (Wh/kg) to 200 Wh/kg in the coming years.

[Wolfgang Bernhard](#), a board member at Daimler, stated, "Electric drive systems previously only saw extremely limited use in trucks ... Nowadays costs, performance, and charging times develop further so rapidly that now there is a trend reversal in the distribution sector: the time is ripe for the electric truck."



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## Impact and Advantage



Image via [Flickr](#) by pnh

Other companies have been working to develop electric trucks, but Daimler was the first to introduce a viable model. Both Tesla and upstart Nikola Motor Company are working on their own heavy-duty electric trucks. Tesla already has a history of success developing electric vehicles, and many other car manufactures could eventually enter the race.

It's safe to assume that as electric vehicle technology improves, more and more electric trucks will find their way onto highways and their size and towing capacity will grow exponentially. The Mercedes-Benz Urban eTruck and other electric trucks are exciting news for the shipping industry because supply chains will be able to reduce their fuel costs and decrease their impact on the environment, both of which represent critical developments.

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## How the Panama Canal Expansion Affects American Ports

The Panama Canal recently expanded its locks to accommodate larger cargo ships. This has had a major impact on ports in the United States because they'll need to unload cargo ships more quickly and to accommodate larger ships. To prepare, American ports are spending money on upgrades.

### The Panama Canal Expansion Project



Image via [Flickr](#) by Keith Yahl

The Panama Canal opened in 1914, but the 2016 expansion was the first major change to the canal over its 102-year life. The expansion cost approximately \$5.4 billion and took 10 years to complete. The canal now has new locks that allow ships carrying up to 14,000 containers to pass between the Atlantic and Pacific oceans.

The expansion project nearly triples the ship capacity of the canal. This means increased revenue for Panama and faster shipping for companies around the world. The expanded Panama Canal is particularly useful for East Coast ports.

The United States Ambassador to Panama, [John Feeley](#), said, "This is a grand accomplishment for the people of Panama... This expansion will reconfigure, permanently, the map of the global shipping industry." Panama oversaw the expansion project, as the United States hasn't controlled the waterway since 1999, when it ceded the canal to Panama.

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## East Coast Ports Anticipate an Increase in Freight Traffic



Image via [Flickr](#) by sergejf

In a race to accommodate larger cargo ships, the United States has been investing billions to expand shipping facilities. However, [many East Coast ports aren't ready](#) for larger ships, which hurts their ability to compete. East Coast ports originally aimed to accept mass cargo levels from Asia, such as televisions and tennis shoes, but that may not happen for some time. For instance, large cargo ships won't fit beneath the Bayonne Bridge outside New Jersey and New York, and the harbor in Charleston, South Carolina, is too shallow. That means many American ports won't yet see the benefits of the expanded Panama Canal.

West Coast ports have experienced significant trouble in recent years due to unresolved labor disputes, so freight traffic had already begun to shift to East Coast ports. [Drewry Maritime Research](#) showed that containers from Asia to East Coast ports increased significantly from 2012 to 2015 because of the difficulty resulting from disputes on the West Coast. Experts predict the Panama Canal expansion will continue to push cargo to the East Coast.



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## **American Ports Need to Invest in More Infrastructure Expansion**



Image via [Flickr](#) by VSmithUK

The Panama Canal Expansion Project has exposed several American infrastructure problems. Some ports have delayed their expansions because of the uncertain global economy, and others anticipate that increased profits won't justify the cost of expansion. Transportation infrastructure throughout the United States is in serious need of expansion, and the ports are a good place to start.

Companies around the world are looking at the Panama Canal as a new route for shipping goods. However, many companies will choose not to alter their current distribution routes because of poor infrastructure in the United States. As American ports expand to accommodate larger cargo ships, companies will need to reassess their supply chain costs.



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