

## ***A Recent Innovation in Package Delivering: Drones***



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### **ABSTRACT**

The innovation that our group would suggest is called Drone Innovation. Drones will improve the mailroom service and meet the goals in a more efficient way. In this formal report we will go over in detail an overview about the benefits of adopting this innovation and state any challenges and solutions that can stop us from implanting this project.

## **SECTION I:**

### **INTRODUCTION**

#### ***Company Background***

Local Express Delivery Company is a large local courier company established in 2003. It is responsible for the safe handling and delivery of all incoming and outgoing personal and business packages, correspondence and inter-departmental documents. The company provides around the clock same day service.

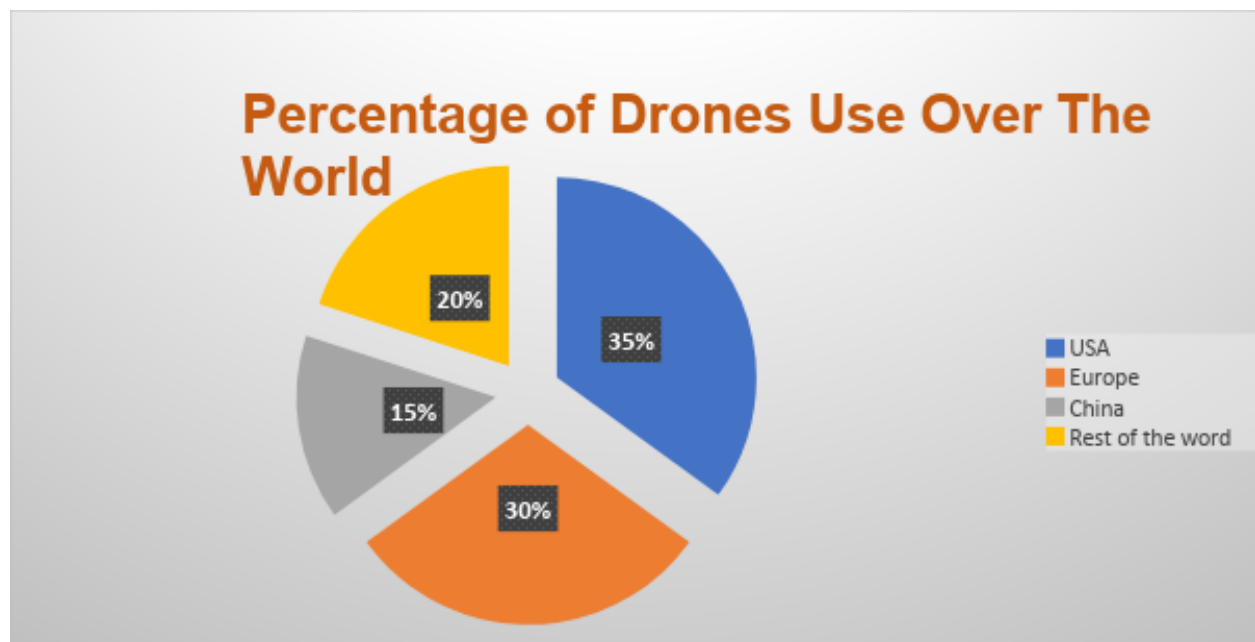
#### ***Drone History***

Drones are small flying devices most of them similar to a helicopter except in a much smaller scale. Drones have been around for a century first used in World War II. For most of its time drones have been used by the military and other government agencies such as the CIA and NASA. With technology improving rapidly, drone development grew with it, constantly improving over the last 70 years. Now drones have been a rising innovation in many kinds of fields such as military, agriculture, construction industry, entertainment and arts industry.

## OVERVIEW OF BENEFITS & CHALLENGES

Since 2016 there is a high turnout toward the use of drones, according to the FAA, “at least 122,000 people in the U.S. are now certified to fly drones professionally”. Drones are considered environmentally friendly because they create less carbon than trucks and they can be charged using green energy sources. Besides, drones can reach areas that would be either a health risk or difficult to get to with truck delivery.

The main reason to opt out to this innovation is because it is a cost saving and at the same time it will improve the service provided. However, some of the barriers that will need a profound study are high costs of drones, equipment, staff training and most importantly safety rules and regulations.



## SECTION II:

### ***BENEFITS OF ADOPTING DRONES***

## 3 Ways

drones have helped the delivery service industry

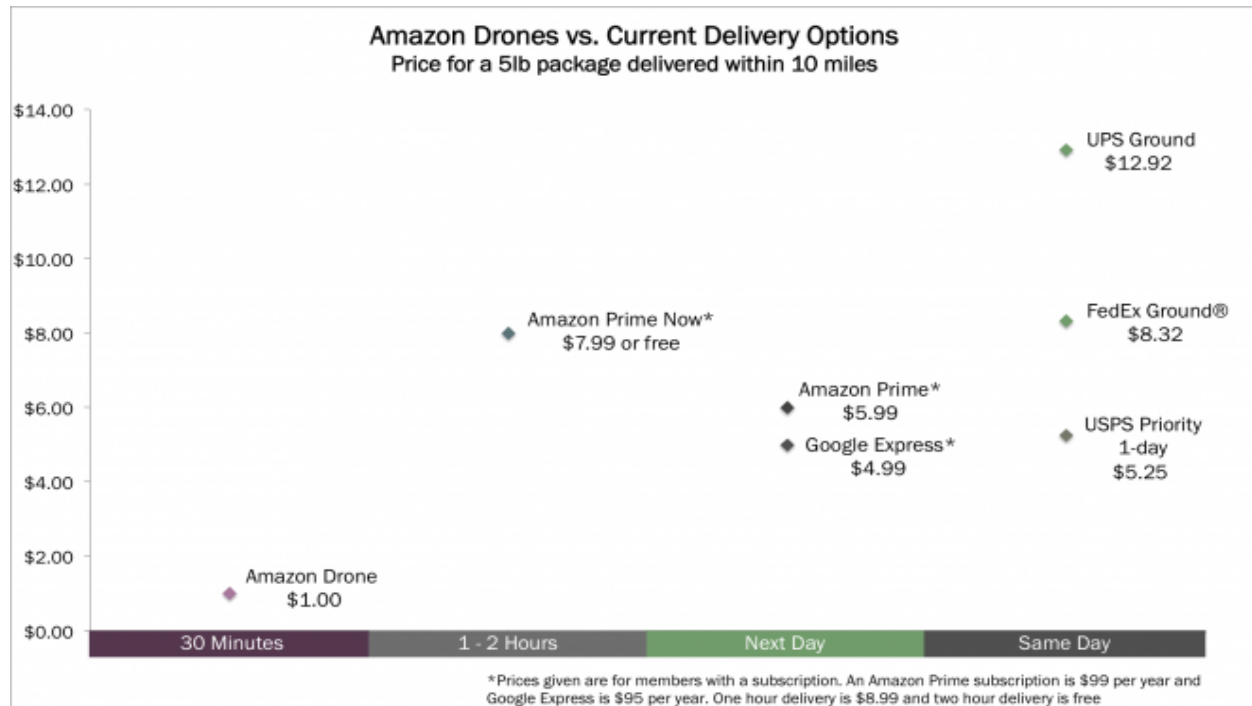


It is natural to have skepticism about implementation of a new system that will impact the lives of millions- but before analyzing the cons, it is important to thoroughly analyze the pros. Drones will be able to travel to areas that are difficult to access via traditional delivery trucks, deliver items to buyers in a shorter period of time and save millions when compared to the traditional delivery method.

Have you ever noticed that delivery varies depending upon where you are located? Those who live in an underpopulated community or “off the grid” location experience longer expected delivery times compared to residents located in densely populated areas (i.e. city). Amazon is currently trialing drones for delivery and on December 7<sup>th</sup> commenced a successful delivery; the delivery occurred in England (delivered in Cambridgeshire, England) covering approximately 2 miles in 13 minutes. The first trials have been commenced in England due to regulators being more cooperative than America’s regulators- allowing drones to be tested in suburban and rural areas. If the success rate continues to improve, Amazon will eventually expand the use of drones in certain areas- once regulations have been passed and adhered to. Even if drones do not take over 100% of delivery service, their assistance is still beneficial and they will be able to access difficult/further areas easily, providing rural community citizens the same feasible fast delivery service.

It is projected that money will also be banked BACK into the company- seriously, who can say no to saving money? Amazon's founder & CEO Jeff Bezos estimates to save 50 million with drone implantation. There would be a cut on truck drivers and other logistic operations such as truck companies required for delivery, less logistic operation managers & freight brokers. Drones can be implemented with truck drivers to deliver items to the harder accessible or further located areas, while helping to save money. This could mean that shipping cost may decrease as well- due to the decline of traditional truck delivery and the money saved could be allocated back into the company. Whether drones take over a small percentage or 100% of delivery operations, money saved is always a plus.





There is also a positive environmental impact that can ensue if drones are implemented.

Currently, there are companies that manufacture and repair trucks which emit volatile organic compounds, nitrogen oxides, carbon monoxide, sulfur dioxide and greenhouse gasses. All of these have a negative impact on the environment and contribute to ozone layer depletion; while manufacturers of drones may emit some (if not all) of the same harmful chemicals- there will be a decline in the amount released. Drones themselves will also not emit as much (if any) of these same gasses such as volatile organic compounds. They will have an impact on the oil and gas companies (which many will see as a negative impact) but environmentally this will prove beneficial because of the declined use of oil & gas. Trucks, cars and buses account for over 1/5<sup>th</sup> of the global warming pollution- the decreased use of trucks would mean a decline in the greenhouse gasses emitted. According to Satterlee, “Using gas to generate electricity is a cleaner-burning alternative to coal and can be used in conjunction with renewable sources such

as wind”. Better gas along with wind, to reduce gas usage? Sounds like a plan that will benefit the environment in the long run. There will be controversy around this, but we cannot place a price on the health of the world we live in.

In order to implement drones, there will be many regulations that will need to be agreed upon and adhered to; especially with airline companies (regulators)- big and small. The main component of flying is regulations- where drones will be accepted, how high and how far. There are drone laws (as drones are not new but the idea of using them for delivery is) and there may need to be new laws implemented specifically for delivery. Pilots licenses, registration, and insurance are other aspects that need to be adhered to and maintained- as these things will require check-ups to ensure that they are being followed and renewed (if laws change or the license expires). With the cut back of truck drivers, there can be creation of jobs such as drone regulators (people who check the drones are up to date and follow policy) and an increased number of people who regulate the skies. Similar to how hospitals have HIPPA and the Joint Commission to keep them in check, there are regulations to ensure that standards are met.

### **SECTION III:**

#### **CHALLENGES & SOLUTIONS OF ADOPTING THE DRONE**

While the implementation of drones can make a positive impact on the company in reducing delivery times, we face three challenges ahead:

First challenge is Costs of drones and Drone equipment: One of the biggest issues to face are the costs of the drones and their complimented equipment. Typically a durable high quality drone that can withstand regular daily usage and carry 2 lbs or less of documents start at 1,000 dollars including the charging stations and extra batteries & charging stations could cost another 200 dollars each. With a sample size of about ten messengers for the innovation to kick off, each flying a drone that would be a total cost of about 15,00 for the initial set up.

In addition, drone flying training & training costs: Training from a professional could also cost upwards of a couple of grand for a few training sessions. Luckily, we can have all ten messengers certified and train others if people want to leave the job and new people come in.

Drone training can cost up to 600 dollars a person from professional drone pilot training schools such as “DartDrones”.

Finally, safety rules and regulations: A big concern with our implementation of drones is that we can face many rules and regulations against our usage. An article made on the website that focuses on drones called “drone girl”, Sally French states the following: “Drone delivery companies in the U.S. face tricky government regulations, including rules that require drones to remain within a pilot’s line of sight and not fly over people who are not involved in the commercial flight. There is also the issue of air-traffic control for drones. NASA will not present

its research on drone traffic management to the FAA until 2019.” (French, 2017).

### **SOLUTIONS TO THE CHALLENGES**

Upfront costs to implement drones in our company will be a staggering figure around 15,000-18,000 dollars for all drones, drone equipment, extra back equipment, and proper training and licensing of each individual. Unfortunately, one way of funding this innovation could be to let an employee go as drones will be able to deliver packages at a much faster rate, bringing down the need for more workers. A full-time employee at 15 dollars minimum wage will have a salary of 31,200. Which will be more than enough to cover the costs upfront, extra equipment, and leftover budget for future repairs. While it may be an unfortunate decision to let an employee go, the implementation of drones could save the company in the long run by offering much quicker delivery times and less employees working full time that would otherwise need all that time to deliver by foot which also save the company more money. However, being that the interdepartmental buildings are within a mile distance locally, we do not need to fly that high. We will be flying just below the 400 ft above ground restriction. As well as adhere to the United States Department of Transportation federal laws and regulation of flying unmanned Aircraft Systems (faa.gov, 2018).

#### **SECTION IV**

#### **CONCLUSION**

Drones are a fast and cheap way to deliver packages in an amazing new way. Drone delivery is the future and there are no indications they are going anywhere. Amazon, UPS and DHL have already undergone planning plans to implement drones in their companies, and the benefits are promising. If we are able to obtain the funds with enough budget for the drones, drone stations, chargers, and training, the efficiency of our service can improve by providing faster and more reliable service. Our foot messengers will be able to deliver in less than half the time by reducing the amount of walking needed. This will reduce the amount of physical stress on our employees and increase customer satisfaction through speedier service. We will be helping the environment in reducing the emission of harmful gasses into the air and reducing the carbon footprint. We will be able to use them across our far and remote locations that would otherwise be too hazardous to get through with ground transportation. The department team leads will give the local messengers/couriers the go ahead to use the drones at the scheduled times. The company can provide rules and regulations and safety training, as well as make reports on package dispatching and delivery times compared to foot travel to provide statistics to measure the success of the innovation.

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