An Overview of Amazon and its Fulfillment Centers

Amazon, an ecommerce company, has grown to become the largest online retailer in the U.S. and is currently the fastest growing. The items Amazon sells directly to customers are stored in massive buildings called fulfillment centers. The largest, in Phoenix Arizona, is roughly the size of 128 football fields (1.2 million square feet). Organizing the hundreds of thousands of items stored in these fulfillment centers in a traditional way, such as alphabetically, would simply be impractical. Instead Amazon implements a simple scanning system. All incoming items are placed at random wherever there is room. The items are scanned as well as their location. This location and item information are linked and stored digitally. When an order is placed for a particular item, the exact location of the item is relayed to an Amazon employee who can then quickly find the item. The areas where the items are stored are organized into long library style aisles with banners identifying the beginning of barcodes. Amazon relies on computer algorithms, scanners, and people to locate and ship every order placed online.

How the items are picked in the fulfillment center

Amazon has created an efficient way to retrieve packages quickly after orders are placed online. Currently, most fulfillment centers utilize people to retrieve these items. After an order is placed on Amazon.com, an employee receives a notification on a handheld scanner. By creating the fastest route, the scanner allows the Amazon Picker to retrieve the items quickly.

IMPORTANT TERMS

Fulfilment Center:
Where Amazon stores items it sells directly to customers.

Algorithm:
An algorithm is a step-by-step set of directions for a computer to follow based on a specific set of input variables.

Scanner:
A device used to read and relay Amazon specific barcode information to a centralized computer system.

Amazon Picker:
Pickers are employees who gather (pick) items by hand from an individual order. These employees walk on average 10 miles per day.
Relocation via the conveyer system

After the items are picked and individually scanned, they are placed into a large yellow bin which is also scanned. This scanning effectively links the bin and the items from the customer’s order. This information is sent to a computer which creates a route for the bin to take on a miles long conveyor system.

Processing at the packaging stations

Following the yellow bin’s journey from one end of the fulfillment center to the other, it arrives at a pre-packaging station. From here a worker removes the items and sorts them into small slots on tall, wheeled shelves. These shelves are rolled to a packing station where another worker packages the order into an Amazon.com box. A computer algorithm determines the best size box to use as well as the required amount of air sealed bags. The precise amount of tape is cut, the box is sealed, and placed onto a final conveyor system which leads to the outgoing delivery area.

How the orders leave the fulfilment center

After a package has traversed through the fulfillment center it is processed to leave Amazon. An Amazon employee loads thousands of boxes onto a truck that will travel to many different shipment companies. From here the packages are delivered to the customer by 3rd party delivery companies such as Fed Ex and UPS. Amazon has recently been seeking to expand their own delivery systems by investing in new delivery methods. Their most recent endeavor is 30 minute delivery via aerial drones called “Prime Air” set to launch after FAA clearance.

Summary of How an Order placed on Amazon.com Traverses through a fulfilment center

Immediately after a customer places an order on Amazon.com a Picker walks around the library style aisles collecting the items. From start to finish the items in an individual order remain together. After the items traverse the vast conveyor system they are transferred to a pre-packaging station and then to a packing station for better efficiency. After the items are packaged together into one or more boxes they are loaded onto a truck that will travel to many different shipment companies who handle the physical delivery to the customer.