Amazon

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Introduction I

1. Amazon got its start selling books online.
2. The firms first office was in a modest space boasting a then appealing 400-square-foot basement warehouse in a low-rent area of Seattle.
3. Today the firm is decidedly larger. Its ninety-plus distribution centers worldwide boast well over 26 million square feet of warehouse space.
4. At the heart of Amazon's "Wheel of Growth" are 3 pillars of Amazon's business large selection, convenience, and lower prices.
5. Exceptional customer experience fuels a strong brand that makes Amazon the first place most consumers shop online.

Introduction II

6. Amazon has always sold direct to consumers, but it didnt always do this well.
7. The firm's early warehousing was a shambles of inefficient, money-burning processes.
8. To fix the problem, Amazon looked to others for talent, hiring away both the Chief Information Officer (CIO) and Chief Logistics Officer from the worlds largest retailer, Walmart.
9. But raiding Walmart's talent pool wasn't enough. Amazon's warehouse and technology infrastructure is radically different than any conventional retailer.
10. To build a system that worked, Amazon focused on costs, data, and processes so that it could figure out what was wrong and how it could improve.

Introduction III

11 In order to automate profit-pushing hyper-efficiency, Amazon warehouses are powered by at least as much code as the firms websitenearly all of it home-grown.

Optimization I

- Amazon's items that produce the most sales volume aren't even stocked on proper shelves, instead pallets of goods are dropped in an area called "mass land" for fast pick-up that doesn't require scurrying through a maze of shelves.
- Slower-moving items are racked up by "shelvers,' who place items in available spaces.
- Shelvers then scan a unique shelf code for that location so that Amazons systems know where an item has been stocked.
- Amazon has an additional rule when stacking shelves no two similar products can sit next to each other.

Optimization II

- While this makes Amazon's shelves look like an unorganized hodgepodge, when a product is the only one of its type in a given area, this actually reduces the chances that a picker will confuse a size or color or otherwise grab the wrong thing.
- Staff known as warehouse pickers are in charge of building peoples order from a warehouse's inventory.
- Wireless devices give pickers instructions on precisely where to navigate to and what items to grab within the maze of numbered isles and shelves.
- Pickers scan shelf codes after they get each item, and the device prompts them with their next marching orders.
- Warehouse software plots the picking path to minimize worker steps and maximize order fulfillment efficiency.

Optimization III

- Another group of "problem solvers" scuttle about the warehouse with wheel-mounted laptops, observing operations and offering coaching on how staff can do things better.
- Once all items for a given order are picked, they are placed in orange bins that travel along conveyor belts for packing.
- Software (algorithm) then tells "packing associates" the optimal size of smile-logoed Amazon cardboard box to use for a given order.
- Packed boxes are weighed and the software does an additional check to see if the weight is what's expected.
- If an order is too light, that's a sign that a box is missing an item.

Optimization IV

- Systems only stamp names and addresses on boxes after orders are complete and boxes are sealed. No floor workers know who the customers are or what they have ordered.
- Packed boxes are then loaded on to separate trays that ride into another conveyor belt system, where they are scanned and tipped down the correct chute among dozens of choices so that the box is routed on to the correct truck for that order's shipping provider and destination.
- To foster improvement, warehouse movements are continuously logged and productivity is tracked and plotted.

Optimization V

- Quickly moving products out of warehouses is good for customers, but Amazon's speed also offers another critical advantage over most brick and mortar retailersthe firm is astonishingly efficient at managing cash.
- The firm's period between shelling out cash, and collecting funds associated with a given operation, is referred to as the cash conversion cycle (CCC).
- The idea is to minimize CCC.
- Amazon has consistently reports a negative cash conversion cycle (it actually sells goods before it has to pay its suppliers).

From atoms to bits... I

While Amazon has built solid advantages by selling a broad array of products, media represents over one-third of the firms revenue, and nearly all of that business is going to shift from atoms to bits, shipped not in physical packaging, but through the Internet. This prompted the creation of Kindle.

- The Kindle arrives linked to the users Amazon account.
  - That means the device comes, out of the box, as a pre-configured cash register with a vacuum attached firmly to the credit card.
  - The first Kindle was optimized for book reading and featured a black-and-white display that used e-Ink.
- As device and storefront, Amazon has begun to vertically integrate, capturing several segments in the traditional book value chain.

Amazon's Web Services I

- Amazon Cloud Drive offers file storage similar to Dropbox and Google Drive.
- Amazon Cloud Player will stream music purchases through a web browser or smartphone app.
- Amazon Web Services, or AWS, allows firms, and really anyone with a credit card, to rent industrial strength computing capacity on an as-needed basis.
  - The best-known offerings are Amazon's Elastic Computing Cloud (EC2), which provides the virtual equivalent of physical computing hardware; and Simple Storage Service (S3) providing Web-based storage.
  - But AWS provides dozens of service offerings including various operating systems, database products, enterprise software, programming environments, networking services, etc.