УДК 658.7=811.111

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Cross-docking

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The effectiveness of logistics operations, the processing speed of goods depends largely on how all the logistics chains interact with each other, including how optimized are the business processes at the warehouse links. In an effort to reduce logistics costs and increase the amount of free capital for investments in their own development, the world's leading manufacturers and trading companies have long been using cross-docking technology - a mobile, technologically advanced, and therefore very progressive method of processing goods.

Cross-docking involves delivering products from a manufacturing plant directly to customers with little or no material handling in between. Cross-docking not only reduces material handling but it reduces the need to store the products in the warehouse. In most cases, the products sent from the manufacturing area to the loading dock have been allocated for outbound deliveries.

Cross-docking solutions allow companies to expedite shipments to customers, which means that customers often get what they want when they want it — the goal of an optimized supply chain. But cross-docking solutions also come with risks that companies should consider before implementing them into standard operating procedures [1].

Types of Cross-docking

There are a number of cross-docking scenarios that are available to the warehouse management. Companies will use

the type of cross-docking that is applicable to the type of products that they are shipping:
- manufacturing Cross-docking;
- distributor Cross-docking;
- transportation Cross-docking. This operation combines shipments from a number of different carriers in the less-than-truckload (LTL) and small-package industries to gain economies of scale;
- retail Cross-docking [2].

Products Suitable for Cross-docking

There are materials that are better suited to cross-docking than others. The list below shows a number of types of material that are more suited to cross-docking:
- perishable items that require immediate shipment;
- high-quality items that do not require quality inspections during goods receipt;
- products that are pre-tagged (barcodes, RFID), pre-ticketed, and ready for sale;
- promotional items and items that are being launched;
- pre-picked, pre-packaged customer orders from another production plant or warehouse.

Advantages of Cross docking Include:

1. *Material Handling*

At the cross-docking terminal, material handling will be streamlined and therefore efficiency will be greatly improved (i.e. in-motion labeling, in-motion weighing, label verification, destination scan, etc.).

2. *No Need for Warehouse*

In many cases, the traditional warehouses will be replaced by the cross-dock facility, which is easier to construct and requires less square footage, and, hence, provides both variable and fixed asset cost savings for a company. When using a 3PL for cross-docking, in a case like Kickstarter or Indiegogo fulfillment, most cross docking companies maintain a dedicated cross dock warehouse.

3. *Packaging and Storing Cost*

The storing cost will be reduced because, well with this method inventory's time in a warehouse should be minimal, and the extra packaging cost will also decrease due to automation practice in the cross-docking terminal.

4. *Transportation and Distribution Cost*

Since products destined for a similar end point can be transported together, there will be full loads for each transportation trip and thus drive down the transportation costs in scale. Additionally, as the routing is now optimized; with the elimination of unnecessary processes like "pick-location" or "order picking", less miles will be wasted and therefore fuel and associated vehicle service costs will be driven down.

5. *Products Screened More Quickly*

Products will be screened more efficiently with the application of streamline and automation at the terminals, this can greatly reduce the time parcel spend in shipment.

6. *Products Reach Customers Faster*

As a positive sequel to the accelerated screening process, there will be a high turnover of products which means that products can now be delivered sooner to the customers.

7. *Less Risks for Inventory Handling*

Since a warehouse is no longer needed, concerns of inventory management risks are no longer necessary.

However, besides the upsides of cross-docking, one should also consider the relative risks and even prerequisites before steering your cross-docking strategy. Below are a couple of risks that we have identified [3].

Disadvantages of Cross-docking to Consider:

1. *Partners May not Have Storage Capacities*

Cross-docking helps cut cost with the elimination of warehouse, yet if the company's potential partners do not have the necessary storage space, the inventory problem will be a burden for effectively implementing cross dock.

2. *Freight Handling May Cause Product Damage*

As the cross dock is well calculated in order to implement, any additional freight handling may jam the system and cause damage amongst products.

3. *Management and Attention Required*

Efforts to set up a cross-docking system cannot be overlooked. It takes time, planning and money to design for it to work effectively. In addition, labour costs are also inevitable for the moving and shipping of stocks at the terminal.

4. *May not Deliver Right Product on Time*

Outbound users have to bear the risk that a supplier might not be able to deliver the right product in its right amount on time due to a systematic error [1].

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