



SCE *Exposition & Conference*

Supply Chain Expo 2000

E-commerce/E-fulfillment Start-ups

“The truth about what to do and what not to”

Thomas L. Freese,
Principal/Freese & Associates, Inc.

Tuesday, June 13, 2000





Session Objectives

- Identify the numerous tasks which must be done
- Discuss the reality of time lines
- Point out the potential pitfalls
- Identify the necessary interfaces
- Discuss the desirability of checks and balances
- Point out the need for flexibility, scalability and contingency plans
- Discuss the pros and cons of “hired guns”
- Discuss what to look for in potential consultants
- Point out potential priorities

5 Fundamental E-Commerce Factors

- Development of an attractive and functional web site
- Solving the each pick pack fulfillment issue
- Tracking forecast and replenish inventories
- Managing the reverse logistics function
- Cash management

There are basically 3 alternative approaches



Integrate With Existing Operations



Separate Dedicated Operation



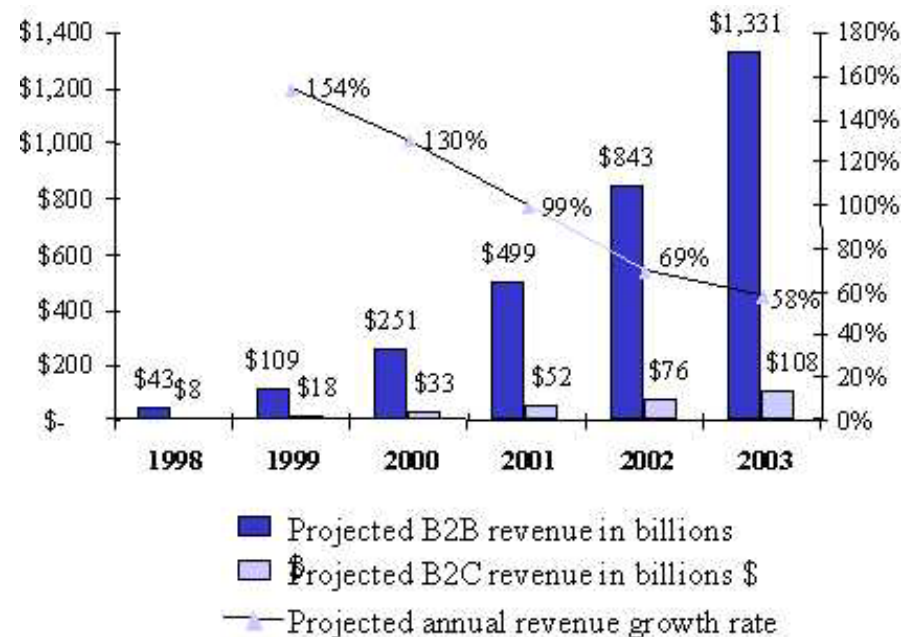
Outsource To 3rd Party Provider

Catalog Vs. E-Commerce Fulfillment



The Internet wave continues to exceed even the most aggressive forecasts!

- **766 million worldwide Internet users by 2005, with eCommerce revenues reaching \$ 1.3 trillion by 2003**
- **B2C eCommerce U.S. revenues will grow from \$24b in 1999 to \$75b in 2003**
- **B2B eCommerce U.S. revenues will grow from \$50b in 1999 to \$634b in 2003**
- **In 2000, B2B transactions will account for 77% of worldwide eCommerce**

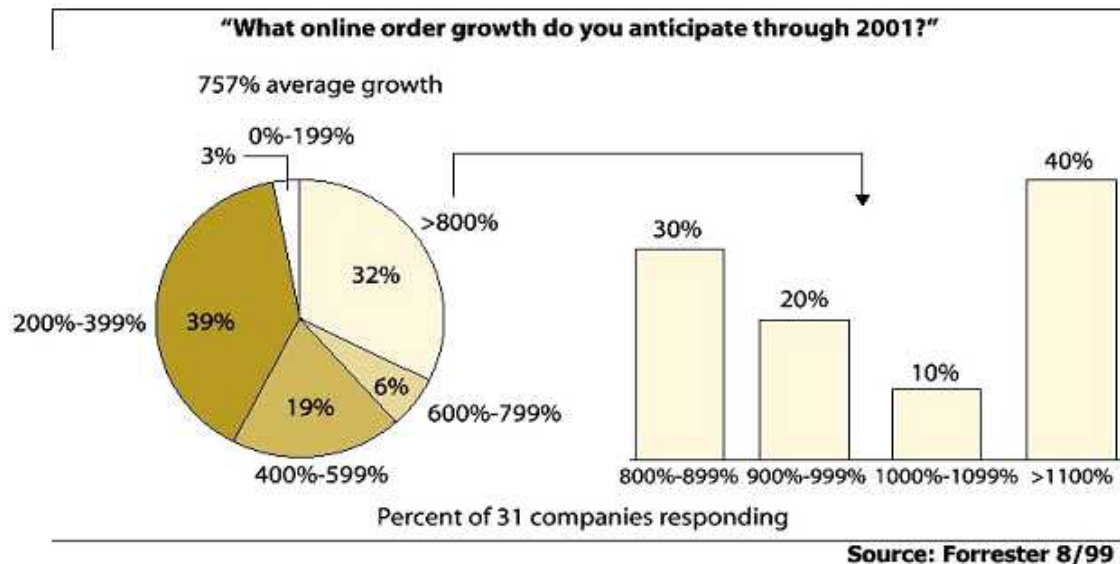


Forrester Research -- 11/98

Forrester Research, 12/99 (IDC 2/2000)

On-line order growth is also staggering

- Over 300,000 retailers selling on the Internet by 2002 ¹
- Over 70% of bricks and mortar retailers expect to be selling online by 2000
- While different today, B2B and B2C appear to be merging in many respects
- Currently, 57% of online retailers outsource some part of their fulfillment capabilities ²

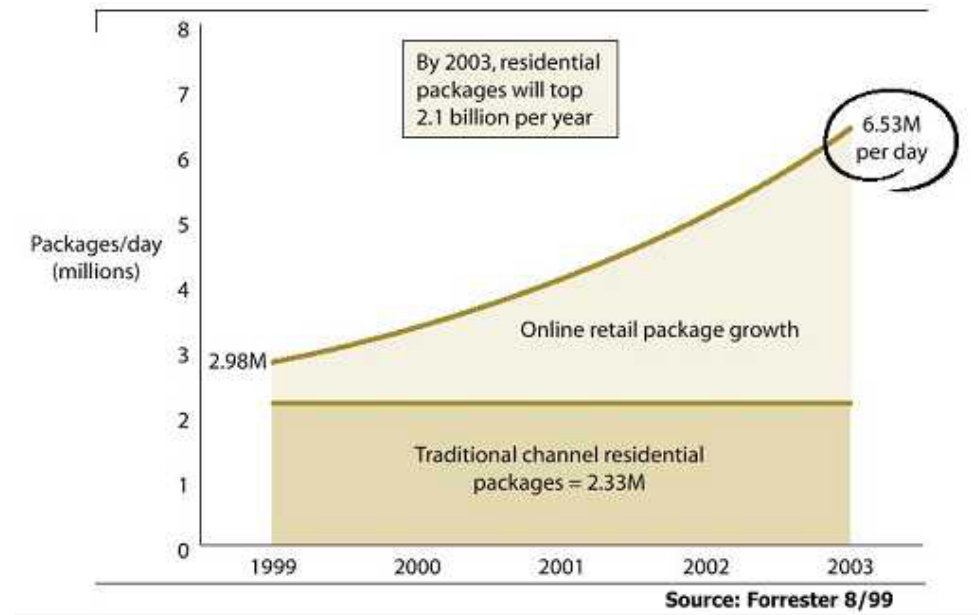


¹ Investext, 12/98

² Shop.org, 9/99

However, there is one barrier to all this growth - Fulfillment!

- Recent wave of sensationalistic articles on eFulfillment failures
- Hot stock market issue
- Most eetailers ship fewer than 400 orders per day
- 2.1 billion deliveries forecasted by 2003
- Massive seasonal fluctuations
- Proliferation of SKU's
- Little or no "best practices"

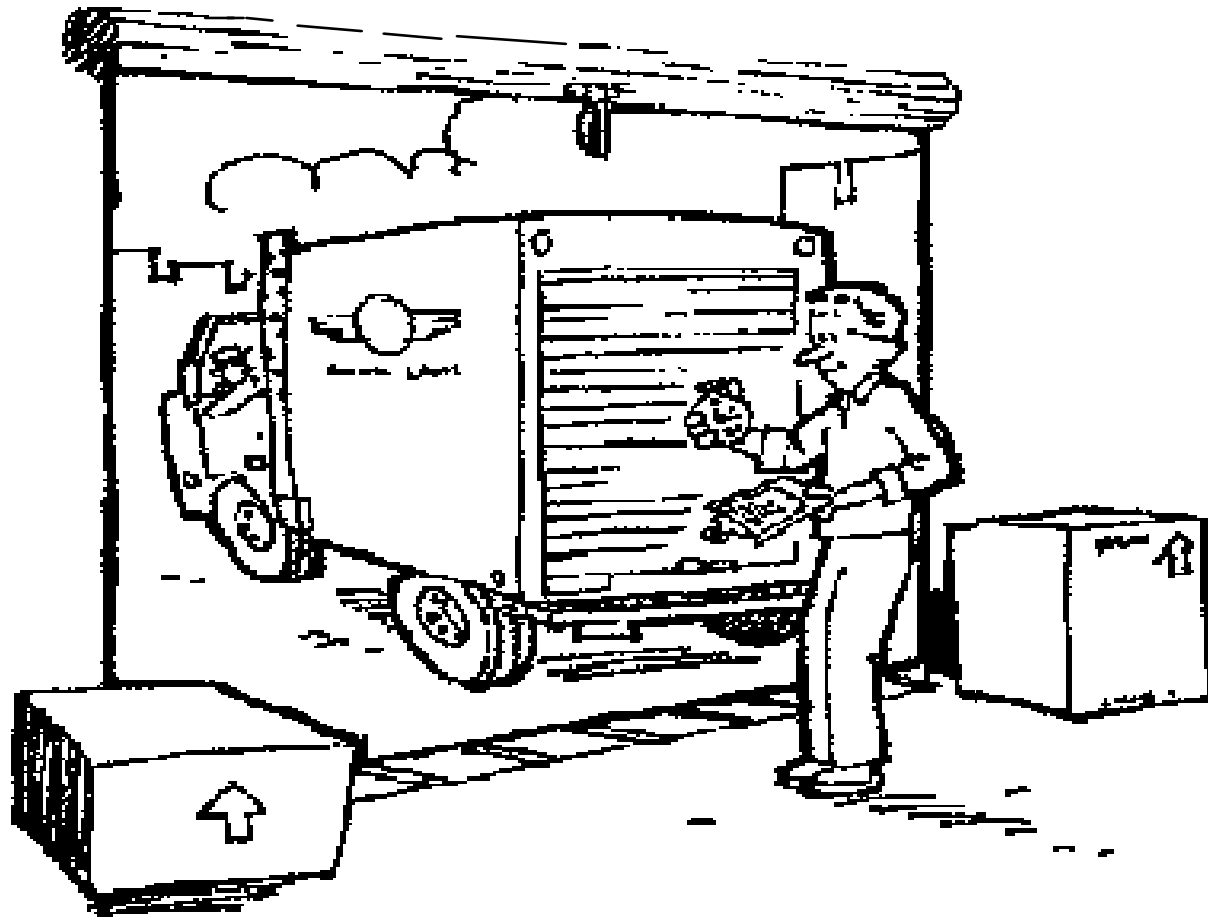




Internet Growth

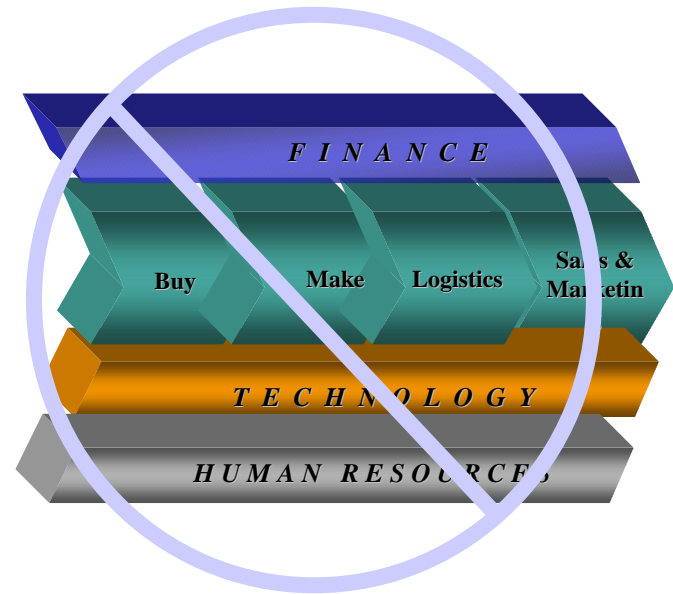
1. The Internet has become an integral part in the lives of millions of people and has generated billions of dollars in electronic commerce.
2. More than 90 million people worldwide and some 47 million people in the U.S. alone now log on to the Internet.
3. Intel predicts over 1 billion people will be on line in the next three years.
4. Internet forecasters predict that by 2003 the e-fulfillment market (assuming 25% of the consumer goods market) will be \$1.2 trillion and require some one million fulfillment workers picking packing and shipping orders.
5. The sheer size of this fulfillment challenge linked with the customer's expectations of order cycle speed and 100% accuracy only magnifies the reality that the real e-commerce challenge is not getting the order, but the logistics of satisfying the customer's fulfillment expectations.

Service Expectations



Why is eFulfillment such a challenge?

- Old world view of supply chain has crumbled
- Challenge existing systems capability to:
 - capture all electronic orders
 - manage trading partners and vendors
 - provide real time order status & tracking
 - capable of handling significant increase in orders
- Challenge existing logistics capability to:
 - pick & pack “eaches”
 - ship by small parcel and multi-carrier
 - handle large number of returns



Traditional Brick & Mortar View



E-Logistics Is More Than Just Warehousing

Packaging

Transportation

Package tracking

Reverse logistics

Purchasing

Inventory control

Order selection

Gift-wrapping

Credit card authorization

Order processing

Customer service

Call center operation

Credit card charge back follow-up

Order status notification

Receiving inspection


Monogramming

Fulfillment History



“Lick a Label, Kick a Box
It’s Just Warehousing





Skyrocketing customer expectations and fierce global competition have created a business environment that's unforgiving. Today's online customers demand nothing less than perfection. Orders must be filled with lightening speed and absolute precision – or else.



Good News

Having an interesting Web site that boasts user-friendly and helpful product locating and ordering can attract new customers and substantially increase product orders.

Bad News

The more successful the Web site is at taking orders, the more a disconnected back-end system will be overwhelmed. The result is that promised orders are often shipped late, incomplete, or not at all



Bottom Line


Volume and complexity are increasing and you know the processes that got you this far won't scale forever. For now, you can throw a few more bodies at the back-office tasks, but that solution is temporary. You risk losing everything you've gained – including your brand leadership – if your business can't deliver on its promises.

Having Outgrown Its Current Facility



Up & Running In It's New Facility




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- The warehouse and distribution center are where the new economy meets the old economy.
 - *Fortune* and other magazines are rating e-commerce companies based on their order fulfillment proficiency.
 - In e-business, it's pallets in and individual items out.



Four Principles That Drive E-Commerce Success Are:

- High velocity
- Flexible systems and procedures
- Extremely high service levels
- Full electronic connections to the trading community

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- “We can solve some 70% of e-commerce logistics problems with catalog company techniques. These techniques have been used for over 30 years.”

Professor Thomas W. Speh, James Evans Rees Distinguished Professor of Distribution, Miami University of Ohio



Planning For Spikes

- E-fulfillment operations differ from catalog companies in that there is a much larger difference in variability of customer demand.
- E-fulfillment operations must have scalability to accommodate this uncertainty.




Easing The Returns Nightmare

- Setting up an infrastructure for return items is one of the big headaches for dot com distribution companies.

Typical E-Commerce Fulfillment Start Up Plan

- **Phase I – Pre-engineering**
 - Familiarization
 - Pre-engineering
 - Concept Design
 - Preliminary Site Selection
- **Phase II – Equipment and System Design**
 - Final Site Selection
 - WMS Selection Recommendation
 - Detailed Design
- **Phase III – Detailed Engineering**
 - Detailed Layout
 - Operational Outline
 - Equipment Specifications
 - WMS Specifications
- **Phase IV – Implementation Support**
 - Implementation Plan
 - Set Up
 - Training
 - Implementation Co-ordination



Companies are figuring out how to sell over the internet, but getting the goods to the consumer is another story. As firms get their feet wet with online sales, they will find out that logistics is a huge barrier to gaining and keeping online customers




Smart companies will soon be meeting customers on terms that the customers find more convenient — Red Herring, 9/99.

If you make a promise, they want to know the promise will be kept.

“Please allow 4-6 weeks for delivery” is giving way to 48-hour shipment, or even overnight shipment.

E-Commerce Infrastructure


Front-end; eyeballs to orders	Back-end: Orders to Satisfaction
Marketing	Real-time order management
Web content, community	Supply chain & inventory management
Buy-sell transactions	Order information services
Creation of an electronic order	Delivery of product to the customer's door



“Instead of Rushing Headlong into Web Commerce, Enterprises that plan to sell products over the internet should first develop a strategy for efficient back-end fulfillment. Enterprises that fail to do that will have lower profitability and may permanently damage customer relationships.”

“The Fallacies of Web-Commerce Fulfillments,” Gartner Group March 1999




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- Maximum flexibility for product personalization, packaging, and delivery
 - Order updates when necessary and order status on demand
 - Ability to modify orders on demand
 - A satisfying delivery experience
 - Easy returns

Required capabilities - Shipping & Returns



Required capabilities - Warehousing



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- Scalable processes that enable growth
 - Solid, current, inventory information, so that you can make and keep delivery promises
 - Timely, accurate information for customers at minimum service cost
 - Real-time operations management
 - Streamlined pick, pack, and ship for distribution centers



Typical E-Commerce Start Ups:

- Lack operations experience
- Lack product demand history
- Lack good item masters
- Lack realistic by SKU forecasts
- Lack procedures and practices



Most E-Commerce Start Ups:

- Do not allow sufficient time, resources, or attention to the fulfillment end of their start up efforts



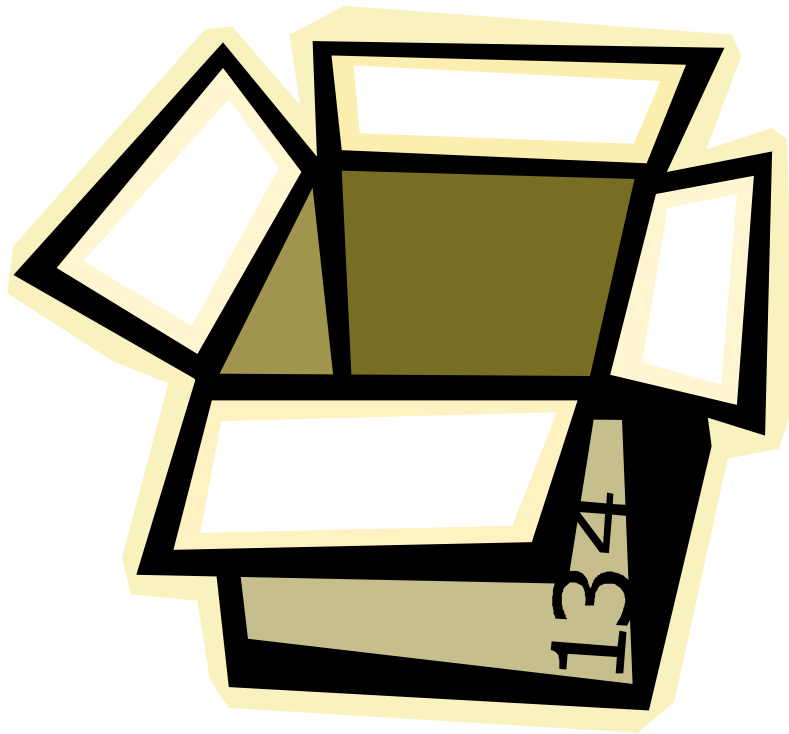
Need to Know or Estimate

- Number of SKUs
- Design Specifications of SKUs
- Throughput Annually, Monthly, Seasonally
- Growth Projections
- Receiving Characteristics
- Order Characteristics
- Shipping Characteristics
- Storage Characteristics

Trade-Off Principles

<u>Principle</u>	<u>Rationale</u>
Largest units	The larger the handling unit, the fewer the moves/turnover
Shortest path	Shortest travel distance lowest labor and equipment content
Smallest space	Smaller space, shorter travel
Shortest time	Less time, lower labor content
Least handling	Less handling, less labor
Batch/groupings	Larger units
Balance activities	Reduce ideal time maximizes capacity
Longest run times	Reduce change-over cost

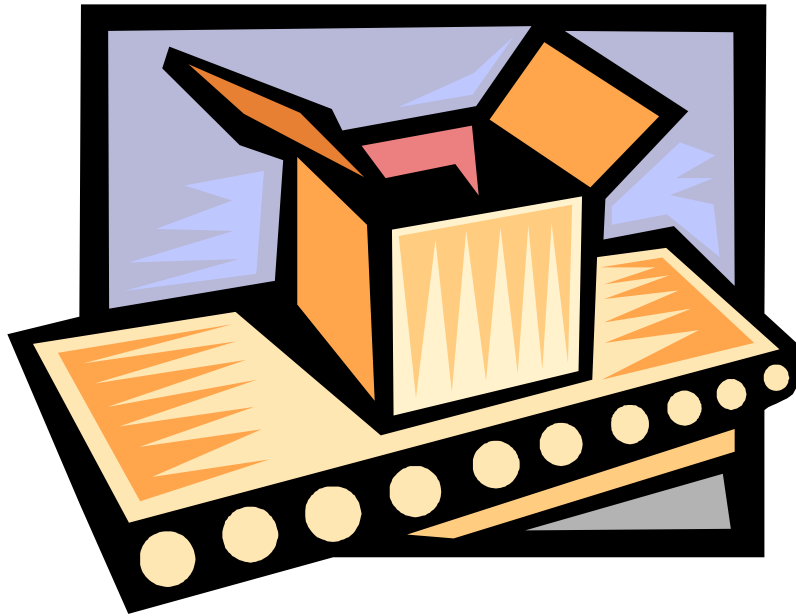
Storage



Storage of smaller items and cases in static shelving and carton flow rack are necessary.

Slotting goods properly needs to be done so fast movers can be picked quickly.

Picking



A good warehouse management system and paperless picking will lower the rate of mistakes

Proper slotting of SKUs is very important

Lift Trucks



One or more 3 or 4-wheel, counter-balanced lift trucks will be necessary. Electric or internal combustion – each type has its pluses and minuses.

High order volumes order pickers allow the operator to move up to a rack face for picking.

Totes



Totes can hold open stock in flow racks and shelving in pick faces.

Pick and pass operations also use totes for picking duties.

Conveyors



Orders must be processed quickly to meet the same day turnarounds that consumers demand. Conveyors function in putaway and order fulfillment, and batch picking, single order picks into totes.

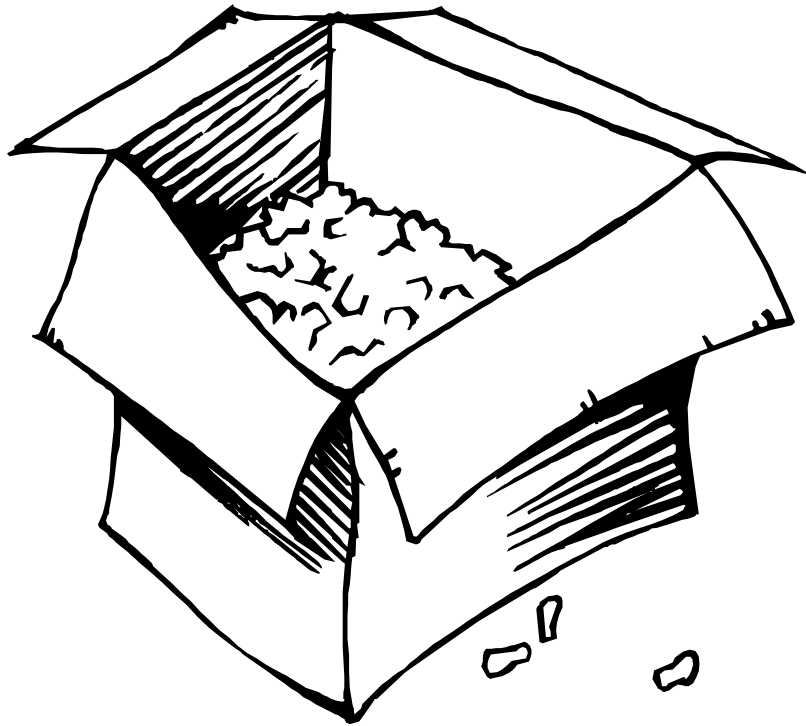
Conveyor flexibility is a must in e-commerce operations.

Sortation



Sorting of outbound parcels is a must. Sliding shoe and push diverters are most commonly used in shipping areas, while tilt trays are sometimes used for high-volume shipping docks.

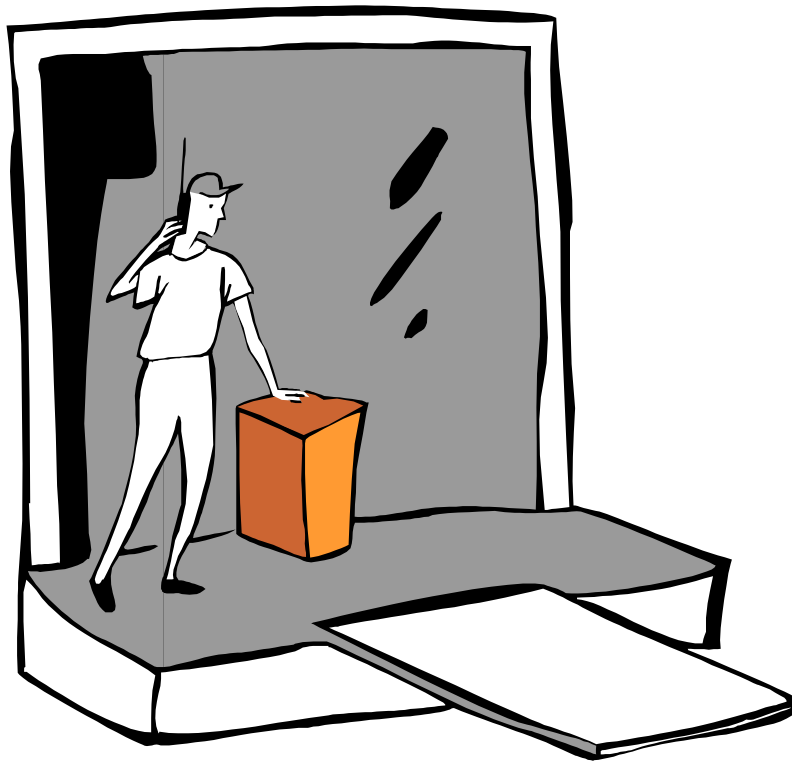
Packaging



Packing stations are ideally positioned at a spot that requires the least amount of handling once an order has been accumulated.

The WMS either determines which cartons to use, or experienced packers may choose the proper carton themselves.

Docks



E-firms should consider installing one of the mechanized or semi-automatic wheel chocking systems.

The truck-to-building gap at each dock will need to be bridge by some sort of lifting or leveling device.

Mechanical levelers will be the cheapest solution.

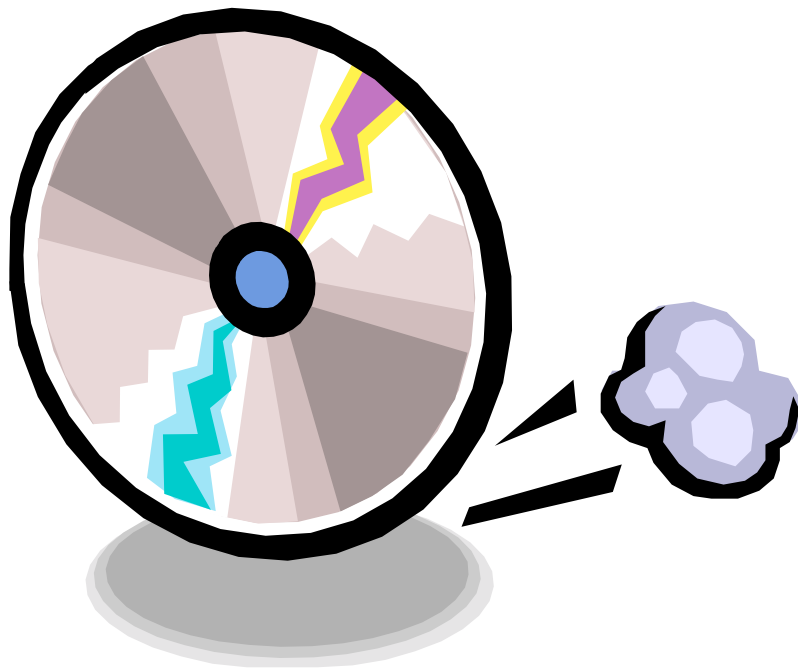
Automatic Data Capture



Bar codes, radio frequency based technologies and other forms of ADC are used to collect data that is used both within the facility and by customers and suppliers.

The more data available to the customer the better the e-commerce experience.

Supply Chain Software



- Planning
 - Enterprise Resource Planning (ERP)
 - Supply Chain Planning (SCP)
 - Order Management Systems (OMS)
- Execution
 - Warehouse Management Systems (WMS)
 - Transportation Management Systems (TMS)

Questions

