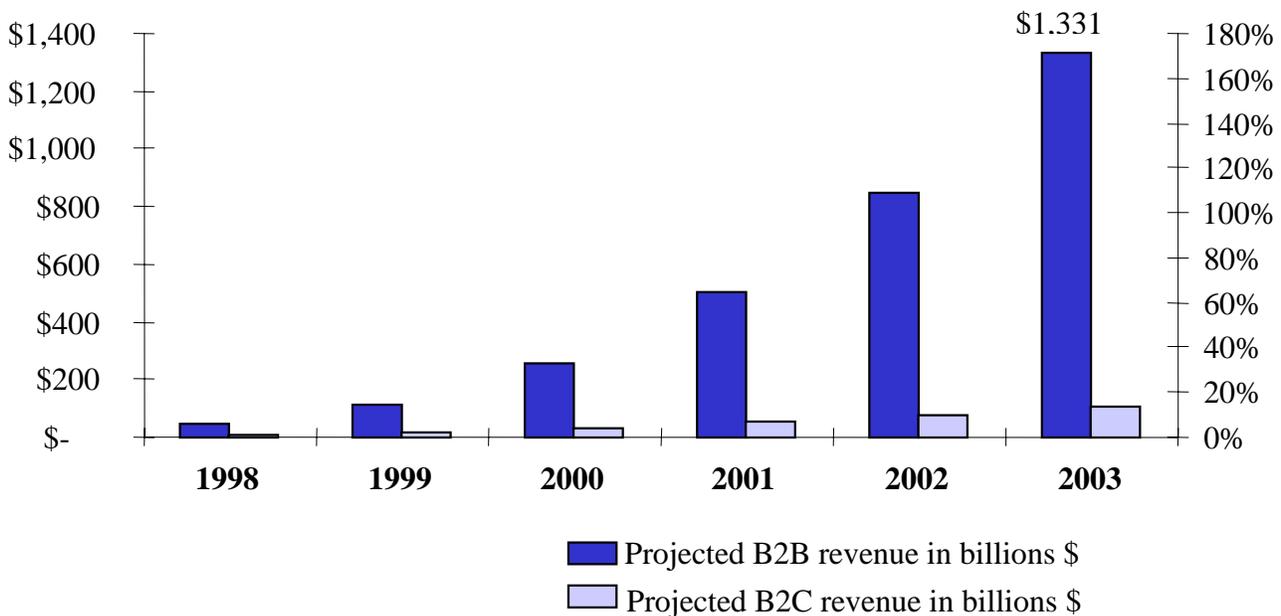


Ninety Days and Counting

The Internet has exceeded most forecasts growing at an astronomical speed. With 766 million world-wide Internet users, e-commerce revenues are expected to reach \$1.3 trillion by 2003. Revenue for B2C e-commerce in the US is expected to be \$75 billion in 2002, while B2B revenues will grow to \$634 billion. B2B transactions are projected to account for 75% of total e-commerce transactions this year. Over 300,000 retailers are expected to be selling on the Internet by 2002. The Internet has become a part of all of our lives. More than 90 million people worldwide, and 47 million people in the U.S. alone, log on to the Internet. Some 1 billion people will be on line in the next three years. Forecasters predict that by 2003 the e-fulfillment market will be 1.2 trillion dollars. That's not the startling fact- the startling fact is that to handle that volume will require some 1 million fulfillment workers. The staffing requirements, along with customer's expectations of 100% accuracy, and the challenges of getting every order to every customer correctly and on time, complicate the whole e-fulfillment challenge.



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

E-logistics is more than warehousing. It's more than cross-docking. It's that, plus packing and transportation. More importantly, it's the continual tracking and information on the package. It's not only logistics; it's also reverse logistics – the returns, the warranties, and the rejected shipments. It's the purchasing, the inventory control (it does little good to have inventory if you don't know where it is). It's order selection, gift-wrapping, monogramming, and a dozen other things. Fulfillment is not only labor intense, it's often capital intense.

While most e-tailers ship fewer than 400 orders a day, combined that will amount to some 2.1 billion deliveries in 2003, and some 5.8 billion in 2005.



Fulfillment is as old as the separation of work tasks. In early times some would hunt and some would gather; some selecting and satisfying others needs. Most people look at e-fulfillment very simplistically. It's only warehousing. Anyone can do it. Its' just lick a label and kick a box.

In reality fulfillment isn't just warehousing. Traditional warehousing tends to be pallet in, pallet out. Fulfillment is pallet in, or cases in, but almost always it's eaches out. Traditional warehousing ships truckloads or LTL. Fulfillment ships packages.

Catalog Versus E-Fulfillment

Catalog fulfillment has been around for years. The catalog business is very similar to the e-fulfillment business. Tom Speh of Miami University in Oxford Ohio has said that you can solve some 70% of e-commerce logistics problems with catalog company techniques. The basic principles in e-fulfillment are very similar to those in catalog fulfillment, but there is one gigantic difference. And that is that with catalog fulfillment you can forecast. You know who you sent the catalogs to. You know how many you sent. You know what geographic areas they went to. You know the demographics of the people you sent them to. You know what the secondary readership is. This information is all available and from it you can project what you are going to sell. You can project the size, the color, and the material.



It's different when you go to the Internet. When you make that same offering on the Internet it's suddenly available to thousand, even millions of potential buyers. That's the key difference between e-fulfillment and catalog. Not only do you not know or control who you make the offer to, you have little or no history. E-fulfillment operates at "internet speed." Like it or not, it's always 7/24/365, even if you're not geared up for it. Why is e-fulfillment such a challenge? The capabilities that we're trying to accomplish in this new supply chain often exceed existing system capabilities. E-fulfillment operations must have scalability to accommodate such uncertainty. One day you may come in and have 5,000 orders and then the next you have 20,000 orders because the marketing people decided "let's give people \$10 off every order they place.

Case Study

That's very similar to the situation one client found themselves in when they called us. They had a website. They were getting orders and decided to be more aggressive about their marketing. They dropped an offer on the Internet giving everybody \$10 off every order they placed. It worked. They got orders. They had more orders than they could handle and everything ground to a halt. They had multiple SKUs in the same pick face. They had open backorders sitting around in various rooms; orders that they thought they could fill, but when they went to the location the inventory wasn't there, half picked orders just sitting and awaiting more inventory to arrive. Their inventory had flooded out of the warehouse and was sitting in their parking lot.

Initial Operation

- 10,000 Sq. Ft. Facility
- No Truck High Dock
- 150 Order per Day Capacity
- 2,500 Active SKU's
- 10 days order backlog
- Significant back orders
- Minimal confidence in inventory accuracy
- Dynamic environment



The client's request was simple. Move us into a new facility to address our current and upcoming holiday season that will accommodate 500% growth in less than 90 days without interrupting anything we're doing.

The implementation team was made up primarily of "hired guns". It was made up of "hired guns" because in an e-commerce start up organization there is no often depth of management or experience.

Freese & Associates, Inc. was brought in for the distribution operations, site selection, and facility set-up. AnswerThink was brought in as the systems implementation group. Sprint Paranet was brought in for the communication requirements. Yantra was the e-commerce solution package. Local material handling companies were used to rent equipment until we could get the equipment we needed for the longer-term design. Local labor agencies were used to supply temporary staffing

New Operation

- 125,000 Sq. Ft. Facility
- Three loading Islands with 12+ docks
- 10,000 Order per Day Capacity
- 10,000+ SKU primary pick Locations
- 25,000 Sq. Ft. mezzanine Kitting Area
- 25,000 Sq. Ft. 12 station Packing Area
- 50 Station Call Center (7/24/365)
- Paperless Warehouse Environment



What You Don't Want To Hear Once You're Up And Running.

1. "My label won't scan." In a paperless environment that means you can't do anything. We experienced that. Everybody experiences that. The first time our label wouldn't scan we found that the printer used to print some of the location labels had not printed them so that they were scannable. So overnight we printed new labels. Got them up and got them scanning
2. "There isn't such a location." If you have putaway logic in your system, the system tells you where to put things. It tells you to put an item in a location and when there isn't any such location. It can be a disaster. In this case there was a pole where that location should have been and somebody decided to eliminate that location without telling the system.
3. "UPS already picked up." When your manifested shipment is picked up and you find a number of packages that were on the manifest, you have a problem. You have to examine your operational procedures, otherwise your tracing and tracking of packages becomes very suspect.
4. "The system is down for testing." Anytime you do an implementation in real time in a short period of time, with various people managing various aspects it's quite common that people are going to do a test and forget to tell everyone else.
5. "The system won't support that." We've all dealt with software providers who indicate their system will support almost anything. What do you do when the system won't support it? You determine how to support it anyhow.
6. "We don't have the SKU in the system." E-fulfillment, e-commerce is different from bricks and mortar. When a customer orders a product they are ordering that specific item. They see it on their screen. They've read the description and they expect that exact item, not a

substitute. If they ordered a 16oz. container and that manufacturer had a bonus pack 20oz that's a different SKU and your system should not accept it. So your item masters must be accurate. When you receive based on scanning, if you don't recognize the SKU you can't receive it. If you can't receive you have a bottleneck at your receiving dock.

7. "But they said I could skip that step." With a number of temporary employees in the training process things sometimes get hectic and it's very common that they turn to someone and say "what do I do about this" and they are told to just skip that step and go on to the next. You have to be careful that you don't allow that. You have to have a controlled plan in your training process. Otherwise, particularly in a paperless environment, you can lose control.

Lessons Learned

You need flexibility within your plan. E-commerce, e-fulfillment is a dynamic environment. You have to be flexible. You have to anticipate peaks other than just seasonal peaks. You have to anticipate peaks within the day, within the week, within the month. The Internet is that way. You have to have contingency plans.

Return are one of those things that often get forgotten in the e-fulfillment area. The reality is in many of the fulfillment areas, catalog, and e-fulfillment, it is not uncommon to get 20% and upwards of 40% of goods sent out returned. Your customer expects you to handle the return with the same Internet speed that you handled their shipment

E-fulfillment is where today's new economy meets the old. High tech, nice websites, warehouse operations, fulfillment, the delivery of the promise, that's where the old economy meets the new. Fortune and others are beginning to rate e-commerce companies based on their fulfillment proficiency, not on their website or business plan. In e-business it's pallets in and eaches out.

Selling is only the start of the e-fulfillment cycle, getting the goods to the customer is really another story. People are finding that logistics is probably the restrictive limiting factor that they have for Internet growth today. In e-commerce infrastructure you have a front end and a back end. The front end is marketing, web content, buy-sell transactions, and the creation of that electronic order. The back end is the whole fulfillment piece, the real time order management, the track and trace information, the supply chain and inventory management, the order information services, and the delivery of product to the customer's door. Instead of rushing head long into e-commerce enterprises that plan to sell products over the Internet you must first develop a strategy of an efficient backend fulfillment operation. Ability to mass customize on demand and ability to pick small order quantities. A scalable process that will enable growth. You must streamlined pick pack and ship capabilities without bottlenecks, adequate staging areas both for the inbound and the outbound, expandable packing stations – another one of the problem areas in e-fulfillment is the bottlenecks often created by packing stations. In most cases you're able to put away and pick at a rapid pace, but when you start doing mass customization and special packaging and package shipments that's where things slow down. That's where the real labor intensity comes in. It's very

difficult to automate a process when you have different eaches of different sizes and different shipping characteristics.

Typical e-fulfillment startups lack experience. They often lack product demand history and good item masters. They don't know cube requirements, item weights, or flammability. E-commerce startups often lack realistic SKU forecasts. They lack procedures and practices, and they often lack experienced managers. More importantly they don't general allow sufficient time, resources or attention to the fulfillment end of their business.

About the Author



Thomas L. Freese is principal of Freese & Associates, Inc. a management and logistics consulting firm in Chagrin Falls, Ohio. Mr. Freese received his B.S. in business administration and marketing, and an M.B.A. with a concentration in business logistics, from The Ohio State University. His experience spans the product line spectrum from bulk chemicals to consumer goods and from frozen fruit to fresh poultry and encompasses work with manufacturers, wholesalers, retailers, and e-tailers. He has conducted logistics projects Worldwide. These engagements have identified short-term operating improvements, evaluated global supply chains, information systems, distribution networks, e-commerce strategies, distribution & fulfillment operations, and logistics organizations. He has conducted site selections, designed warehouses, specified material handling equipment, selected 3PL operators, and developed numerous inventory, purchasing, supply chain, transportation, warehousing, and integrated logistics strategies.

Tom is an active member in the Association of Transportation Law, Logistics and Policy (ATLLP), Council of Logistics Management (CLM), International Customer Service Association (ICSA), and Warehousing Education and Research Council (WERC). He is a member of the CLM Educational Strategies Committee and chair of the research project sub committee. He is a member of the Editorial Advisory Board of the International Journal of

Physical Distribution & Logistics Management. Mr. Freese is a frequent University guest lecturer, a former faculty member for the American Warehouseman's Association (AWA) Basic Supervision Course, a former member of the University of Wisconsin's Advisory Committee on Warehousing and The Greater Cleveland Hospital Association's Ad Hoc Committee on Warehousing. Tom is a frequent contributor to the Journal of Business Logistics, American Shipper, Distribution Center Management, Food Business, Inbound Logistics, Logistics Management, Outsourced Logistics Report, Plant Services, and Warehousing Management. His chapter on "Warehousing Site Selection" is a part of The Logistics Handbook published by The Free Press; his chapter on "Third Party Warehousing" is a part of The Warehouse Management Handbook published by McGraw-Hill.

For additional information on Mr. Freese and/or Freese & Associates, Inc. check: <http://www.freeseinc.com/>