

The Challenge of A Fulfillment Start-Up In Less Than Ninety Days

The new fulfillment scenario may be pallets in and cases in, but almost always it is "eaches" out. The first step to success is understanding how fulfillment in e-Commerce is different from the traditional processes of the brick-and-mortar world.

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Internet facts.

Internet usage has exceeded most forecasts by growing at an astronomical speed. With 766 million world-wide Internet users, e-commerce revenues are expected to reach \$1.3 trillion by 2003, Figure 1. Revenue for B2C e-commerce in the US is expected to be \$75 billion in 2002, while B2 B revenues will grow to \$634 billion. B2B transac-

tions 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 fulfill-

ment workers. The staffing requirements, along with customer expectations of 100% accuracy, and the challenges of getting every order to every customer correctly and on time, complicate the whole e-fulfillment challenge.

E-Fulfillment Facts

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 of 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 and 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 intensive, it's often capital intensive as well.

While most e-tailers ship fewer than 400 orders a day, the combined total 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. Professor Tom Speh, of Miami of Ohio University, has said that you can solve some

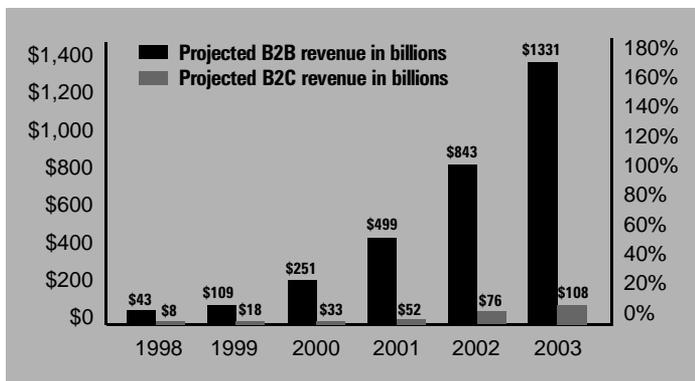


Figure 1. E-Commerce revenue projections. (Forrester Research, 12/99 (IDC 2/2000))

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. With catalog fulfillment, you can forecast. You know who you sent the catalogs to. You know how many you sent. You



Figure 2. E-fulfillment is not just a simplified view of warehousing—"just lick a label and kick a box."

know what geographic areas they went to. You also 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 on the Internet. When you make that same offering on the Internet, it's suddenly available to thousands, even millions, of potential buyers. That's the key difference between e-fulfillment and catalog fulfillment. 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 days a week, 24 hours a day, and 365 days a year (7/24/365), even if you're not geared up for it. Why is e-fulfillment such a challenge? Because the performance we're trying to achieve in this new supply chain often exceeds existing system capabilities. E-fulfillment operations must have scalability to accommodate the uncertainty. One

day you may come in and have 5,000 orders to fill, but the next day you have 20,000 orders, because the marketing people decided, "let's give people \$10 off every order they place."

A Fulfillment Case Study

The uncertainty from day to day described above was very similar to the situation one e-tailer's people found themselves in. They had a website. They were getting orders, but decided to be more aggressive with their marketing. They made an offer on the Internet that gave everybody \$10 off every order they placed. It worked. They got orders. However, 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

The company operated out of a 10,000 sq ft facility with no truck highdock and a capacity of 150 orders per day. It carried 2,500 active SKUs and faced a 10-day order backlog. There were significant back orders, and a minimal confidence in inventory accuracy. Scenes from this "before" scenario are shown in Figure 3.

The company's request to its consultant was simple: "Move us into a new facility to address our current

business and up-coming holiday season business, 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 often no 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 the equipment needed for the longer-term design could be acquired. Local personnel agencies were used to provide temporary staffing.

New Operation

The company now functions out of a 125,000 sq ft facility in a paperless warehouse environment, Figure 4. It has three loading islands with 12 docks. The capacity is now 10,000 orders per day. There are over 10,000 SKU primary pick locations; a 25,000 sq ft mezzanine kitting area; a 25,000 sq ft, 12-station, packing area; and a 50-station call center operating on a (7/24/365) basis.

What you don't want to hear once you're up and running. The following challenges were faced and resolved during the course of the implementation:

1. "My label won't scan." In a



Figure 3. The case study "before" scenario: a) multiple SKUs per pick face, b) open back orders, and c) outdoor warehousing.



Figure 4. The case study “after” scenario: A paperless warehouse environment within a 125,000 sq ft facility; a 10,000 order per day capacity, over 10,000 SKU primary pick locations, and a 50-station call center providing 7/24/365 operation.

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 may even tell you to put an item in a location that doesn’t exist. That can be a disaster. In this case, there was a pole where the location should have been. Somebody decided to eliminate the location without telling the system.

3. “UPS already picked up.” When your manifested shipment is picked up and you find a number of unshipped packages that were on the manifest, you have a problem. You have to examine your operational procedures, or 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 and in a short

period of time, with various people managing various aspects, it’s quite common for someone to conduct a test and forget to tell everyone else.

5. “The system won’t support that.” What do you do when you learn, after the fact, that the software system won’t support a particular operation? You determine how to support it anyway.

6. “We don’t have the SKU in the system.” E-fulfillment in e-commerce is different from the traditional bricks and mortar environment. 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 but the manufacturer has a 20 oz bonus pack, the latter is a different SKU, and your system should not accept it. So your item masters must be accurate. When your receiving system is based on scanning, then 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. A temp may often 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 and e-fulfillment provide 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. That is the nature of doing business on the Internet. Therefore, you have to have contingency plans.

Returns are one of those things that are often forgotten in the e-fulfillment area. The reality is that in many fulfillment situations, both catalog and e-fulfillment, it is not uncommon to get from 20% to 40% of the goods shipped 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 other publications 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 eashes 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 an 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. That involves the ability to mass customize on demand, and the ability to pick small order quantities. What is needed is a scalable process that will permit growth. You must streamline pick, pack, and ship capabilities without incurring bottlenecks, and provide adequate staging areas for both inbound and outbound flows. A significant problem area in e-fulfillment is the bottleneck 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 providing 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 eases of different sizes and with 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 characteristics. E-commerce startups often lack realistic SKU forecasts. They lack procedures and practices, and they often lack experienced managers. More importantly they don't generally allow sufficient time, resources, or attention to the fulfillment end of their business. It is a good idea for them to pay attention to the lessons learned by those who have already made the journey.

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