

Harnessing the Web for e-Fulfillment

Good morning. I'm Steve Smith, president of TranScape, the software division of Pitney Bowes. As you've probably guessed from the title of this session, I'd like to talk to you this morning about how the World Wide Web can be used for far more than *selling* things. Or, put another way, how it can do more than just place demands on folks like most of you in this room, who are responsible for moving things *after* they're sold, whether that sale happens online or in "the real world." . For shipping and logistics pros, after all, the real world is all that matters. Still, by the time I've wrapped up here, I hope you'll see that the Web has created some exciting new opportunities for all of us.

But before we consider the future, kindly join me in a little reminiscing. Think back with me to the old days of the e-commerce revolution.

Recall a distant time, when Bill Gates was still CEO of Microsoft.

When we still thought of Time-Warner as an *analog* media conglomerate.

When Regis Philbin was just an irritating daytime TV host—and Kathie Lee Gifford was *still* an irritating daytime host.

The Y2K Bug was still something people hoped to avoid, and “getting voted off the island” *wasn’t--yet*.

They were good times, weren’t they – 12 *long* months ago? It was early Holiday Season, 1999, and the e-commerce revolution was ripe with promise.

Markets were soaring. Consumers, panting for Pokemon and pashmina, were turning in droves to the convenience of online shopping. This was the year that e-commerce would make its mark.

And so it did. But not quite the mark everyone hoped. You remember the tragic tales: Kids wept with

disappointment because gifts their folks ordered online didn't arrive on time. Adults wept in frustration over "guaranteed" deliveries that never happened – or online orders that couldn't be tracked. And e-commerce executives wept as they lined birdcages with stock options.

Kidding aside, of course, the situation was grim: Retail Web sites couldn't keep popular items in stock. Or they accepted orders – and payments -- for items they had no hope of delivering for the holidays. Too often, customers weren't warned when items were back-ordered. In many cases, retail employees were unable to keep customers informed because *they* had no idea of order status, either.

The exception that proves the rule was Amazon.com, one of the few heroes among the goats of last year's e-commerce holiday season, the most obvious of which was. And its no accident that Amazon made fulfillment a priority in the year leading up to the 1999 holidays.

Most vendors weren't that wise, and focused all their efforts on marketing at the expense of follow-through. The situation soured many online shoppers and caused widespread damage to budding e-commerce companies. Many still haven't recovered from the damage they incurred during the 1999 holiday season. Some, such as high flier boo.com, disappeared altogether – though it recently resurfaced under new ownership.

It's worth reviewing what failed a year ago – and not just in order to avoid others' mistakes. Understanding what went wrong before provides an appreciation of the new tools developed since then. And recognizing how last year's mistakes could have prevented or minimized also may suggest ways your operation can be improved, even if it isn't broken.

So let's consider some examples of companies that are putting those new tools to good use. We'll see that, fittingly

enough, the Web has provided a means for addressing many of the problems it helped create a year ago.

The e-fulfillment quagmire

When you look at industry thinkers' analyses of 1999's disastrous e-commerce holiday season, the word "fulfillment" comes up as often as it might in a New Age self-help book. By fulfillment, the pundits mean something that's extremely familiar to everyone in the room this morning: Moving goods from one location to another, quickly, cost-effectively, and reliably.

It turns out, that many of the e-companies that suffered most in 1999 had sunk tremendous resources into flashy Web sites and lavish marketing campaigns, but they neglected to ensure that they could follow through on the orders they were trying so hard to generate. For these

companies, the pundits said, moving photons was easy, but moving molecules proved far more difficult.

Moving molecules is what those of us in this room, including me, know best. For more than 20 years, my company, TranScape, has been creating software that helps people manage the movement of *stuff* from place to place. We're part of Pitney Bowes, a company that's synonymous with shipping. And today, we help more than 20,000 customers move their goods around, using their choice of hundreds of carriers worldwide.

While we're naturally partial to TranScape software, what's really exciting—and what I'd like to share with you today—are the creative ways companies are using the common language of the Web to do new things. The work they're doing holds the key to avoiding the fulfillment woes of a year ago. Better still, it also suggests tremendous new opportunities for every person in this room.

What's needed

The tools that have evolved in the last twelve months address three critical elements of successful e-commerce fulfillment. While they all take advantage of Web-based technology to some extent, they can all make traditional fulfillment more flexible as well.

We call the first critical component universal access. Essentially, this means giving critical logistics control and information to anyone and everyone in the company who needs it, no matter where they may be. Secure access for all, through a Web browser, allows every employee to better respond to customer needs.

The second element of success is supply chain integration – the direct linking of shipping and order-processing functions with warehouse-management systems, accounting packages, enterprise resource planning, and even electronic trading with key suppliers and customers.

The third critical element is centralized, Web-based software delivery that can relieve users of the responsibility for maintaining server hardware and software, while retaining the universal access and full integration I've just mentioned. This promises terrific flexibility for smaller companies that lack IT departments, for larger companies with widespread field sales and support teams, and for any company facing the challenges of rapid expansion and the need for a fulfillment software that scales with them as they grow.

So, to recap, Web-based technology has brought three huge benefits to the shipping and logistics industry over the last twelve months: Universal access. Extension and Integration of shipping and logistics across the supply chain. And Web-based delivery of software and services.

Universal Access

Let's take a closer look at them, starting with "universal access" to logistics and shipping information. This benefit is pretty easy to sum up, but its implications are huge.

Consider what it meant for Edison Schools. This company, based in New York City, is the nation's leading private manager of public schools. More than 100 U.S. schools, responsible for 57,000 kids, have hired Edison Schools to help them be better at helping our kids. The company assists with everything from enhancing student achievement to teacher training, using an array of printed materials it has developed. The company also assists with, human resources issues, financial management, and even supplies procurement. All of this means that anywhere from 20 to 80 parcels are shipped from Edison Schools to its clients every day. Parcels may contain anything from workbooks and other training literature, to office supplies. Because the clients are public schools, the shipments must

be reliable, cost-effective, and above all, scrupulously documented to ensure accountability.

A year ago, all those packages – and a steady stream of parcels returning to the company – were threatening to overwhelm Wes Davis, Edison Schools’ mail services manager, and his team. And as the company’s client roster grew, they also found themselves besieged down by requests to check on the status of clients’ orders. Those calls were always answered, but in the push to get materials out the door, they couldn’t always be given top priority. Edison Schools recognizes the importance of being responsive to clients, so the company set up a TranScape DeskTop Express system. It extends shipping-management capabilities beyond the mailroom.

Now, Wes and his staff can focus on moving mail and packages to where they need to be, and virtually anyone at Edison Schools can check customers’ order status with a Web browser. Everyone from an administrative assistant to a

salesperson can also initiate or amend orders by filling out a simple Web form. Existing customers' addresses, carrier preferences, billing instructions, and other vital information are preloaded into the DeskTop Express system, so accuracy and accountability aren't a problem. Shipping instructions are relayed electronically to any of four carriers – the U.S. Postal Service, Federal Express, UPS, Airborne and DHL, so there is no fussing with airbills. And once a carrier assigns a tracking number to a parcel – typically a few minutes after a ship order is issued -- order status becomes accessible in real time to any DeskTop Express user.

The Edison Schools sales and support staffs love the new Desktop Express system because it lets them address requests instantly, without having to bug the mailroom folks or play phone tag with the clients. Wes loves it because it frees him and his team to do the work they have been trained to do. Edison Schools clients love it, too, even if they

have no idea why their orders are getting filled so quickly. And Wes's boss loves that, because it all nets out to better customer satisfaction.

Another example of the benefits of universal access comes from ADC Telecommunications, a neighbor of TranScape's in Minnesota's Twin Cities. ADC is one of the Cinderella stories of the online boom. It manufactures behind-the-scenes hardware that powers broadband cable-TV and Internet access worldwide. As worldwide demand for high-speed Internet services has skyrocketed, so has demand for ADC hardware. Lee Tomten and his team at ADC's shipping department have been busy lately. *Really* busy.

Lee and his team turned for help to a TranScape product called Conquest to provide universal access to logistics information. Conquest takes the same browser-based approach as Desktop Express, and offers many of the same benefits. But beyond allowing non-mailroom staff to

track and manage orders, Conquest has some additional features that make it ideally suited to ADC's global customer base.

Roughly 20 percent of ADC's orders require international shipping. Those typically require generation of a variety of customs forms and other compliance documents that are specific to the destination country. And whether orders are domestic or international, still more paperwork is required because ADC's products are sold into the heavily regulated and closely scrutinized telecommunications industry.

Conquest's modular design enabled ADC to install compliance packages for each of the countries to which it ships. That means anyone within ADC can place, trace, or modify an order, and Conquest, working in concert with ADC's SAP enterprise-resource planning system, generates all needed documentation automatically.

All of these universal-access features help Lee Tomten and his team at ADC deal with rapid growth in demand for product, but they're not even the main reason ADC was drawn to Conquest in the first place. The main attraction brings us to the second major benefit Web technology has brought to logistics and transportation this year: Full integration of the supply chain.

Full Integration

Most manufacturers today, have altered the view of logistics and fulfillment they held only a few years ago: Those functions are no longer an afterthought to the "real work" of producing and selling products. That's truer than ever at ADC, whose customers don't just operate at Internet speed, they *define* it. And they demand fast, flawless fulfillment from strategic suppliers like ADC.

That means ADC is constantly monitoring and shifting resources to ensure that it has adequate supplies of all 20,000 items in its inventory. And to make sure that the right

part is in the right box every time a shipment leaves the warehouse. ADC uses several software packages to manage its inventory and resource-planning processes, and Conquest shares data with all of them.

This ability to share relevant information allows a lot of very useful things to happen: Conquest “talks” to ADC’s inventory management software, for example, so as ship orders are generated for items in the ADC warehouse, the inventory management program can generate supply orders as needed. Conquest carrier-performance data is fed to ADC’s accounting package and to its SAP enterprise resource planning system, so ADC can measure efficiency and cost-effectiveness in its fulfillment processes.

Before you start to think that Web-based integration is only for high-tech fulfillment, consider one of our favorite customers, Hillerich & Bradsby. That name may not be familiar to you, but chances are good you’ve held their trademark product in your hands at least once: They make a

variety of sports equipment, but they're best known for Louisville Slugger baseball bats. Even discounting custom bats they produce for Major League Baseball, Hillerich & Bradsby's inventory is huge and complex. The company warehouses its vast stock of different models of wooden and aluminum bats, golf clubs, and other sports accessories such as batting gloves and golf tees at four locations, including one in Canada. From these four sites, they distribute products to merchants all over the world.

As you might expect from a company whose core product has endured practically unchanged for almost a century, Hillerich & Bradsby doesn't jump into new technology for its own sake. But a few years ago, they began facing an issue many of you may be confronting as well: Their largest customers began converting to electronic commerce. Hillerich & Bradsby had little choice but to update their order management and fulfillment systems to enable

electronic trades with these national department stores and sporting-goods retailers.

Conquest's modular design allows Hillerich & Bradsby to create custom integration modules for each of its e-business trading partners. That allows Conquest's order-processing tools to communicate directly with customers' purchasing systems, over secure Web connections. So when stock levels at Oshman's Sporting Goods or [Wal-Mart] start to run low, they automatically issue a purchase order to Hillerich & Bradsby, and fulfillment orders are sent to the appropriate warehouse, without anyone having to pick up a phone or send a fax.

A Brief Idea of Exchanges

Let me make a brief detour here. The automatic order-generation processes at ADC and Hillerich & Bradsby are set up directly with their customers, but they employ the very same methods required to participate in the new wave of online trading exchanges. These exchanges, which enable

customers to post orders for items, then select among a number of bids from suppliers, are gaining popularity with many large corporate buyers. Companies that produce commodity items such as cleaning supplies, paper goods, and other consumables are already under heavy pressure to join these exchanges. A growing number of suppliers to major industries such as agriculture and chemical processing are also feeling the heat. TranScape is helping a number of companies participate in these exchanges. Here again, transportation software uses tailored plug-in modules to meet each exchange's specific data requirements.

Now, to get back to Hillerich & Bradsby. The company's adoption of electronic commerce obviously made it more responsive to its largest customers. A growing number of mid-sized customers are also signing on as e-business partners. And, of course, Hillerich & Bradsby also reaps the advantages of universal access that I described earlier. But the most welcome results of switching to a more advanced

fulfillment system came as something of a surprise:

Replacement of handwritten order forms and shipping labels with computer-generated ones brought immediate time savings and an instant reduction in packing and shipping errors. An upgrade last year to our Conquest system reduced errors even more, thanks to integrated pick/pack warehouse management features and a bar-coding module. It verifies shipment content at each step of order fulfillment, from warehouse, to loading dock, to delivery at the customer site. And the ability of Conquest's order-taking module to generate advance shipping notices and individual shipping labels at the same time saves Hillerich & Bradsby as much as 24 hours per shipment compared to its old system, which could only generate ASNs once a day, in a batch-reporting process.

Modules to Suites

These examples of integration, using modular software tools that communicate using Web technology, let logistics

and fulfillment take their rightful place in the intelligent supply chains that are increasingly central to modern manufacturing and distribution. This integration lets companies analyze their shipping and fulfillment processes with the same degree of sophistication they apply to their accounting and human resources departments. It allows managers responsible for fulfillment processes – order tracking, warehouse management, shipping, and so on – to look at their operations more analytically and strategically. It empowers managers to identify opportunities for cost reductions and more efficient use of staff. It keeps every employee involved in every order more productive and more accountable. And it makes fulfillment managers more valuable to their companies and their customers, by providing insights that can streamline processes in-house and on the customer end.

We at TranScape believe this integration points to the future of fulfillment and logistics software, and a new

generation of supply-chain management suites. Modular supply-chain management packages, made up of inter-connecting modules, will automatically manage supply orders; track quality assurance; manage inventory-levels at multiple warehouses; and optimize materials allocation and shipping orders. All this would be handled intelligently, using real-time Web communications, in response to orders received from phone centers, via online trading exchanges, or over public Web sites.

Many of these capabilities are available today, and TranScape has helped build systems that contain them. But the need to assemble them from multiple software packages, from numerous vendors, makes the process too expensive and time-consuming for all but the biggest, wealthiest companies. To say nothing of the cost of IT staff to handle the “care and feeding” involved in maintaining and updating such a system.

Supply chain management suites that employ modules designed from scratch to hook together seamlessly will greatly reduce the time and cost of deployment. They'll lower the cost of upkeep, too. All of which will make them affordable to the mid-sized companies that make up the vast majority of the world's business.

Just as importantly, new supply-chain management suites will make sure there's nothing mixed about the blessings they bestow: As improved fulfillment leads to more orders, they'll make it easy to add new features or increase system capacity as companies add warehouses, manufacturing sites, and distributors.

I'm not at liberty to say exactly why I'm so certain integrated supply-chain management suites are looming on the horizon. Trust me. I *know*. So remember, you heard it here first. But you didn't hear it from me.

Centralized Web delivery

Okay, so we've covered two of the three main benefits Web-based technology has brought to the fulfillment process in the last year. The third one—centralized, Web-based software delivery, is both the simplest and the most conceptually challenging for many users to grasp.

Essentially, this approach shifts the location of transportation management software from the user's computer center to a remote location, where it's managed by the software vendor or another third party. Instead of buying the software outright, along with the hardware required to run it and the humans needed to tweak it and keep it running, the customer pays a monthly fee for the use of the software. This "rental" arrangement includes automatic updating of software and a service agreement that guarantees the system will be up and running around the clock.

Access to the software is provided through a secure Web connection that provides the same universal access

benefits as a Web-enabled system installed in-house. Every employee can gain secure access to information and management features through a simple Web browser. Administrators at the customer company can also gain browser access to high-level software functions, so they can reset prices, add new customer information, and perform other advanced tasks.

We believe this affordable approach will have great appeal for many mid-sized companies, for reasons I'll get to in a minute. But first I want to tell you about our very first roll-out, which is something more than a mid-sized production.

TranScape is in the process of setting up our new PBShip system at nearly 1,000 Staples Office Superstore locations across North America. Ship Centers in these stores will let Staples customers perform a variety of parcel- and expedited mail shipping operations. They'll be able to compare rates and delivery-speed options for multiple carriers, then choose the one that best meets their needs.

This system will allow for one-off shipments from each store, but even more exciting, for Staples and TranScape, is the ability it will give Staples Customers to set up custom shipping accounts they can access over the Web.

This highlights a huge advantage of Web-based software that's only just beginning to be explored. You might think of it as *beyond-universal* access: The ability to let your customers – including the general public—become active participants in your supply chain. Giving customers choice and control over the way their orders are fulfilled makes them happy, and it also adds an additional level of responsiveness to your inventory management system.

At Staples, the roll-out of 960 systems is expected to take about nine months. That's remarkably fast in comparison to what it would take to install traditional store-based systems at that many sites. But it's not an overnight job.

That points out an important fact about Web-based rental software -- a fact rental-software companies don't always describe with absolute clarity. Many of those companies, which are also known by the buzzword designation "application service provider," or ASP, would have you believe that rental software is like cable TV, and new programs can just be added with the flip of a switch.

Today, at least, it's not quite that simple.

Web-delivered software *does* spare your company the hassle of maintaining software and the servers that run it.. And for some very simple applications, such as email, accounts can be set up instantly. But for programs that need to be truly integrated with the rest of your business, setup work is needed at both the remote-hosting site *and* at your base location.

That means your software provider needs to be able to do two things well in order to deliver thorough integration. It needs to understand not only the applications you're renting

from them, but *a/so* those you need to plug into. And, unless your software provider has a nationwide support staff like Pitney Bowes, you'll need to assign the in-house integration duties to your own team. Or hire a local consultant – whose calendar is probably booked up well into next summer by now.

At TranScape, we're gearing up our field team to provide just that kind of support for another Web-based product that we think will have tremendous appeal for small and mid-sized companies. It's called ValuShip, and we believe it's going to change the way small companies manage their transportation needs.

In essence, ValuShip is a version of the PBShip system Staples is using, designed for companies that don't have the complex-integration needs of a national retailer. ValuShip will allow rental users to use their Web browsers to set up and store shipping accounts for all their customers – including information on their preferred carriers, special

delivery instructions, and other custom information. Direct access to most major carriers will be available, eliminating the need for many airbills. And ValuShip will be easily integrated into e-commerce Web sites, to give users' customers the power to choose their own preferred fulfillment methods. This takes much of the burden of fulfillment away from budding e-commerce entrepreneurs, while giving their e-commerce customers world-class freedom of choice.

As excited as we are about ValuShip in itself, as a great Web-delivered product, we're already looking ahead to the next generation of Web-deployed software. It's not exactly around the corner, but it won't be that long before universal access and total supply-chain integration take a quantum leap, using Web-delivery. It's not too difficult to imagine a centralized, Web-based supply-chain management system that lets your management team – or new customers themselves – plug into your ordering system with a few

clicks of the mouse and an automated password setup. Or to imagine fully modular supply-chain suites greatly reducing the need for integration at your base operation – so that the addition of, say, support for wireless data access for your field staff *could* as simple as flipping a switch. The possibilities are staggering, and the pace of development the Web enables is blinding.

So, as we've seen, Web technology has introduced three powerful new weapons to the logistics-management arsenal: Universal access to data, using a simple Web browser, lets every employee with a PC become a de facto customer service rep. Full integration of the supply chain helps companies analyze and improve their fulfillment processes, and lets companies give customers the power to choose fulfillment options. And Web-based rental software lets small and mid-sized companies play on the same field as larger competitors, without assuming the high cost of IT management.

We're at a very exciting moment in the history of supply-chain execution and transportation management. We can still learn a few things from mistakes of the past, but the opportunities of the future are tremendous. And in just a few short years, we'll probably be reminiscing about the year 2000: The year reality-TV got truly surreal. The year Eminem melted down. The year *your* candidate staged a stunning comeback victory in the presidential race. And let's also remember 2000 as the year Web-based e-fulfillment really caught on.

That concludes my "canned" remarks, and in a few minutes I'll be glad to take your questions. But before I do, I'd like to add a few comments on some late-breaking news that's happened too recently for me to include in the speech.

Empowering the consignees

FedEx-U.S.P.S. partnership

UPS purchase-return program for e-tailers

