

E-Marketplace Regression of National Trucking Exchange

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BACKGROUND OF THE BUSINESS

This article discusses a business-to-business (B2B) electronic marketplace's (e-marketplace's) turnaround. National Trucking Exchange (NTX), a pseudonym, became one of the first true B2B e-marketplaces when it transferred its dial-up exchange to the Internet in 1996 (Patsuris, 2000). For 5 years, NTX struggled to conduct transactions. When the business environment changed and NTX incorporated powerful organization's preferences, its turnaround began. NTX's experience shows how using power and overcoming competition facilitates bringing a critical mass of competitive organizations together to form an information-technology initiative benefiting the entire industry. The article discusses NTX's background, describes its business, and offers lessons from NTX's turnaround.

These insights are based on a case study (Dube' & Pare', 2003; Eisenhardt, 1989) of NTX's B2B e-marketplace. The study spanned the dot-com boom, bust, and stabilization. The research included field visits with NTX, its organizational members, and a buyer and a seller that declined NTX's membership invitations. Data collection included participant observations, system demonstrations, interviews, surveys, and internal and external document reviews. We interviewed the people in each organization responsible for the organization's NTX participation.

NTX is a B2B e-marketplace for the United States transportation industry. B2B e-marketplaces bring together businesses wishing to sell and those wishing to buy goods and services. They promise trading communities increased business purchasing efficiency and economy by replacing traditional, limited seller-buyer networks with a B2B e-marketplace with many more sellers competing on cost, quality, and service. Sellers can contact more buyers more efficiently.

NTX's founder and a venture capitalist group formed NTX in 1994 to solve the transportation industry's unused-capacity problem. Unused capacity occurs when carriers deliver products along their routes and their remaining trailer capacity is empty (Patsuris, 2000). The American Trucking Association estimates that United

States carriers travel 12% of their miles without a payload (Patsuris).

DESCRIPTION OF THE BUSINESS

This section describes NTX's service offerings, management, and reasons for success.

Service Offerings

NTX developed technology bringing shippers and carriers together into an open B2B e-marketplace. NTX enables shippers to post their shipping needs on a Web site. Carriers view the Web site by geographic region and accept loads meeting their specifications. The Web site includes the load's location, pick-up time, delivery time, weight, size, refrigeration needs, and shipping price. The shipping price is the amount the shipper is willing to pay for the load's transport less NTX's fee. NTX assesses a transaction fee on loads tendered over the e-marketplace. Transaction fees vary. To increase transaction volume, NTX does not assess a transaction fee on some loads. NTX membership is free.

Shippers post loads to NTX's Web site. In most cases, a carrier's central dispatch locates loads. If an existing load does not fill a truck or if the carrier does not have a load to haul back to its origination, the central dispatch can find other loads on NTX to fill the truck. Carriers accept loads using NTX's Web site. NTX immediately notifies the shipper. The shipper then prepares the load for the carrier. NTX does not disclose shipper and carrier identities. Keeping shipper names anonymous prevents carrier salespeople from soliciting the business. Carrier anonymity prevents carriers from knowing they are participating in an e-marketplace with one another. The transportation industry is competitive and carriers do not like being compared in an open e-marketplace with one another.

NTX offers shippers and carriers value for less-than-truckload freight. Less-than-truckload freight occurs when shippers hire a carrier to transport a product that does not fill the truck. Carriers must charge for the entire truck to

cover the truck and the driver miles traveled. By bringing shippers and carriers together, NTX increases the chances of consolidating loads into one truck. This lowers shipping costs and increases carrier profits. Mileage and driver costs are spread over many shipments. For carriers, once loads cover costs, additional loads become profit. Shippers in our study developed spreadsheets calculating their savings from using NTX. The spreadsheets listed by load the usual shipping cost, cost using NTX, and savings. The shippers felt that NTX use had saved their company money substantially.

NTX reduces shipper and carrier search time. Over the years, large-volume shippers and carriers have developed long-term relationships facilitated by prenegotiated contracts and electronic data interchange (EDI; Premkumar, Ramamurthy, & Crum, 1997; Williams, 1994). These relationships reduce carrier and shipper search costs. However, nonroutine shipments, either occasional shipments or shipments falling outside a carrier's routine shipping area, require soliciting bids. This process involves calling carriers, providing load information, and requesting prices. Because of quote variations and carrier availability, shippers must solicit bids from several carriers. A sales representative comments, "Finding a carrier to transport a load could take all day."

Before NTX, carriers used regional brokers like dial-a-truck to fill unused truck capacity. Shippers telephone dial-a-truck with available loads. Carriers telephone dial-a-truck to find available loads. Since time passed between calling in or accepting a load, and updating dial-a-truck's load listing, errors occurred. NTX's Internet-based model is more efficient, dynamic, accurate, and timely.

By-products of NTX's core value proposition include accounting-practice simplification and report improvement. NTX simplifies shipper and carrier accounting practices. NTX reduces the number of vendors shippers have to pay. One monthly bill detailing all NTX-tendered loads replaces bills for each carrier and each load. NTX reduces the accounts carriers have to collect. Carriers receive bimonthly checks from NTX for all NTX-tendered shipments. NTX offers improved reporting. Shipper reports show the savings from NTX use. The report compares the shipper's expected price to NTX's transacted price. The tracking reports track loads to the stock-keeping-unit level.

NTX has standards. Carriers must achieve certification. Passing certification requires maintaining insurance and current inspections. Carriers and shippers must follow NTX's business rules. Carriers must pick up and deliver loads on time and in good condition. Shippers must have loads ready for pick up at the specified time. NTX imposes a \$200 fine for rule violation. If a party violates the business rules three times, NTX bans further participation.

NTX is a Web site on the Internet. Anyone with an Internet connection and computer or other Internet access device can use NTX. NTX's customer-support methods includes e-mail, Internet, fax, and telephone. NTX e-mails and faxes load confirmations. Customers frequently contact customer support using the telephone. Sales and initial training occur in person or over the Internet.

Management

While private investors and venture capitalists funded NTX, NTX struggled until the e-marketplace cultivated industry relationships. Today, NTX's management team and sales representatives are from the transportation industry. A president, chief executive officer, and board chairman; a chief financial officer and treasurer; and a technology vice president comprise NTX's management team. NTX's labor force includes sales representatives and customer-support analysts. Becoming a sales representative requires transportation-industry experience, expertise, and contacts. Sales representatives solicit shipper and carrier membership, train members, maintain customer relationships, and customize marketplace solutions to customer needs. Shippers and carriers comprise NTX's customer advisory board. The board ensures NTX's cognizance of customer needs.

Success Reasons

Innovation-diffusion theory links "an innovation being better than the ideas it supersedes to its adoption" (Rogers, 2003, p. 265). The American Trucking Association estimates that unused capacity costs the transportation industry \$22 billion dollars annually (Patsuris, 2000). Even though NTX could help solve this problem, it struggled achieving use. A business environment change and e-marketplace regression contributed to NTX's success.

Environment Change

The year 2000's (Y2K's) aftermath and September 11, 2001 facilitated NTX's success. In Y2K's aftermath, NTX's membership doubled. American information-technology departments had spent unprecedented amounts making systems Y2K ready. Countries that dedicated few resources to Y2K preparation experienced minimal problems. In the aftermath, many believed information-technology departments had wasted resources preparing for Y2K. Under pressure, many information-technology departments were exploring ways to deliver savings. Many organizations adopted NTX to do so.

NTX's membership further increased after September 11, 2001, when America's economy slowed. Carriers re-

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