



Ventro: Builder of B-2-B Businesses

We're not constrained by technology. We're not even constrained by competition. Our key constraint is execution, and execution comes down to people. It is our ability to hire people, get them on board, keep them focused on the problem, and communicate with them so they quickly learn to be flexible and change as the needs of the organization change.

—David Perry, CEO and Co-Founder, May 2000¹

[Being first to scale is critical to success.] Bigger is fundamentally better. You will be able to deliver a better product and service than the second, third, or fourth market entrant. Part of that is that you will have gone through the learning curves faster and faster.

—Robin Abrams, COO, April 2000²

In August 2000, David Perry, co-founder and CEO of Ventro (formerly known as Chemdex) contemplated the challenges the company faced as it executed its strategy of building and operating B-2-B (business-to-business) marketplaces. Just three years earlier, in the summer of 1997, Perry and co-founder Jeff Leane³ had formed Chemdex—an online marketplace for specialty chemicals, biochemicals, and reagents in the life sciences industry.⁴ In November 1998, 19 months later, Chemdex opened its doors for business, and for the next year and a half, Perry and Leane focused on growing the business. Fresh on the heels of its successful IPO in July 1999, the company announced that it would enter additional vertical marketplace businesses. In September 1999, the company launched its second vertical marketplace for specialty medical supplies (Promedix), and by January

¹ D. Perry, Interview with authors, 8 May 2000. Throughout this report, quotes obtained by the authors from interviews with company executives will not be footnoted. These interviews were conducted through multiple interviews between May and September 2000.

² J. Chang, "Ventro COO Outlines Strategies for Success in B-2-B E-Commerce," *Chemical Market Reporter* (New York: Schnell Publishing Company, 3 April 2000).

³ Leane left the company in late 1999 to pursue other interests.

⁴ See L. Applegate, "Chemdex Business Plan," (HBS case No. 399-161) for the original business plan developed by Perry and Leane.

E-Business Fellow Meredith Collura and Professor Lynda M. Applegate prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

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2000 the company had launched its third and fourth marketplaces for general medical supplies (Broadlane) and energy and chemical plant equipment (Industria).

To keep pace with its evolving business model and strategy, the company announced on February 22, 2000 that it would become the separate parent company of its vertical marketplace businesses. Consequently, the company changed its name from Chemdex to Ventro to represent its new strategy as builder and operator of multiple online marketplace companies. On March 1, the company's NASDAQ stock symbol officially changed from CMDX to VNTR.⁵ An *Information Week* columnist commented on the significance of the company's new name and strategy:

What is in a name? Plenty, when it comes to Internet start-ups. Ventro is the new parent company of Chemdex...Martha Greer, VP of Marketing at Ventro, said that the name Ventro was selected because it represented several images, including a new venture, different verticals, and 'what we would call an empty vessel that you could do lots with and pour lots of equity into.' VNTR is also an abbreviation used in biomedicine that stands for Variable Number of Tandem Repeats, which means the replication of genetic code. 'I got goose bumps when I learned that,' Greer said. 'Because that is what we are doing—taking our assets and experience and replicating them into new companies and ventures. I think of the DNA of Chemdex as genetic code to be replicated in new marketplaces.'⁶

The capital markets responded favorably to Ventro's new strategy of operating multiple marketplace businesses. On February 25, 2000, just three days after the announcement, the company's stock closed at its high of \$239.81 per share, and market capitalization reached a high of \$7.86 billion. But investor confidence in Internet companies sagged significantly during the spring and summer of 2000, and most company's stocks, including Ventro's, lost significant value. By late August, the stock price hovered around \$16 per share and the company's market value had fallen as low as \$735 million. (See Exhibits 2, 3, 4, and 5 for the company's financial statements and stock graph.) Nevertheless, despite decreasing investor confidence, many analysts believed that Ventro was poised to succeed. For example, a *Morgan Stanley Dean Witter* analyst commented in late July 2000, "While the model is still evolving, we believe that Ventro's [Internet] market capabilities provide compelling value-add, its management is top-notch, it's got scalable, robust technology, and it has demonstrated that it can attract strong industry partners."⁷ A *Red Herring* columnist agreed:

Chemdex/Ventro, having gone from [single] vertical [marketplace] to [multiple vertical marketplaces], was valued at \$7.86 billion [on February 25, 2000], up more than \$41 a share after [a single day of trading], on Friday, February 25 alone.⁸ What the market seems to be telling us—and it is not often wrong—is that the concept of multiple-upon-multiple vertical exchanges is genius. It represents the possibility for Internet investors [to see] even higher valuations on these stocks.⁹

⁵ Visit www.ventro.com to learn more about the company.

⁶ J. Soat, "IT Confidential," *InformationWeek*, Manhasset, 28 February 2000.

⁷ M. Meeker and M. Rossi, "Ventro," *Morgan Stanley Dean Witter*, 21 July 2000.

⁸ The term vertical marketplace referred to marketplaces that sold products and services to a specific industry or customer group (such as life sciences, energy and chemical processing plants, etc.), while a horizontal marketplace sold products and services to a broader customer base (such as corporations). For additional information about e-business models, see L. M. Applegate and M. Collura, "Crafting E-Business Models," *Building E-Businesses Online*, HBS case No. 800-390 (Boston: Harvard Business School Publishing, 2000).

⁹ P. Henig, "Fish or Cut Bait: When Verticals Go Horizontal," *Red Herring*, available at www.redherring.com, 6 March 2000.

An analyst from *Chase, Hambricht and Quist* commented:

We believe that Ventro's upside is much greater than \$60, as it stands out as one of the high quality companies in the group. Longer term, we are bullish on Ventro's opportunity, its market position, and its management team. As such, we believe investors with more than a 12-month time horizon will be significantly rewarded regardless of momentum swings.¹⁰

By the end of summer 2000, Ventro had launched a total of seven marketplace businesses and had announced plans to open three additional marketplaces by year-end 2000.¹¹ Ventro's fifth and sixth marketplaces, Amphire Solutions—a marketplace for the food services industry—and Ventro Life Sciences Europe—a European marketplace for the life sciences industry—were formed in April 2000. While the first six Ventro marketplace businesses (including Chemdex) were vertical marketplaces, in August 2000, Ventro announced a joint venture with American Express to launch MarketMile, a horizontal marketplace.¹² MarketMile enabled businesses to purchase a wide variety of products (such as office supplies and computer hardware) and services (such as temporary labor) online. See **Exhibit 1** for a summary of Ventro's corporate structure and its marketplace businesses.

The ownership structure of Ventro's marketplace businesses had also evolved over time. Refer back to **Exhibit 1** for Ventro's corporate structure, which one analyst referred to as the Ventro "keiretsu" of companies, partnerships, and relationships.¹³ While Chemdex and Ventro Life Sciences Europe were business units within Ventro, Promedix was a separate, wholly-owned subsidiary and could sell its own stock. Amphire, Broadlane, Industria and MarketMile were joint ventures in which Ventro had a 49%, 24%, 40%, and 35% stake respectively.

Although Perry was pleased with the company's momentum in establishing new marketplaces, he was concerned that the strategy of building and operating multiple B-2-B companies was becoming increasingly complex. He also knew that, as a public company, investors expected profits and would not wait years for those profits to materialize. Perry commented on the company's timeframe for profitability:

When we went public as Chemdex, [Wall] Street had [projected] the end of 2003 as break-even. We have launched multiple verticals [since our IPO], and have been able to take some costs and leverage them across a bigger opportunity. The break-even has moved back a couple of quarters and now most people expect early 2003 or late 2002. We continue to be comfortable with [those estimates] and if the trend continues, [we think] we can [break-even earlier].¹⁴

August 2000 was a time for reflection on Ventro's strategy and the capabilities required to execute this strategy. Should Ventro remain a builder and operator of B-2-B businesses, or should the company once more evolve its strategy and business model to keep pace with the rapidly changing Internet economy?

¹⁰ S. Fitzgibbons, "Ventro Corp.," *Chase, Hambricht and Quist*, 4 May 2000.

¹¹ Chemdex went public on July 27, 1999, offering 7.5 million shares at \$15 per share. By September 1, 1999 the company was valued at \$839 million.

¹² M. Roberti, "Web Marketplaces Face Industry Goliaths," *The Industry Standard*, Available at www.theStandard.com, 18 May 2000.

¹³ I. Toll, "Ventro Corporation," *Credit Suisse First Boston*, 24 May 2000.

¹⁴ Anonymous, "CEO/Company Interview: David Perry, Ventro Corporation," *Wall Street Transcript*, available at www.investext.com, 26 June 2000.

Company and Industry Background

In September 1997, soon after graduating from Harvard Business School (HBS), Perry and Leane co-founded Chemdex, an online marketplace for the life sciences industry. (See **Exhibit 6** for a timeline of key events and the evolution of the company's strategy.) During the summer of 1997, Perry began to search for funding. He secured \$25,000 in personal loans and \$25,000 from an angel investor, and he began discussions with venture capitalists on both the west and east coasts. During August 1997, Perry and Leane decided to start the company in Silicon Valley, because it appeared that they would secure the company's first round of funding from a well-known Silicon Valley venture capital firm. Between September and December 1997, they secured \$2 million in seed funding from angel investors, CMGI, and Bay City Capital. (See **Exhibit 7** for a summary of the company's funding history.) In May 1998, they secured approximately \$13 million from Kleiner Perkins Caufield & Byers, Warburg, Pincus Ventures, CMGI, and Bay City Capital. In November of 1998, Chemdex completed its first sales transaction, and by April 1999 the company closed a \$30 million round of venture capital funding. On July 27, 1999, Chemdex had its initial public offering (IPO) at a market capitalization of \$112.5 million.

Industry Background

B-2-B e-commerce leveraged open standard Internet technologies to allow companies to buy and sell products and services with other companies faster, easier, and more cheaply. Prior to the commercialization of the Internet in the mid-1990s, most electronic commerce was limited to rudimentary electronic data interchange (EDI), which used proprietary software and networks to enable companies to exchange information electronically. Only the most sophisticated pre-Internet e-commerce systems enabled companies to integrate databases and transaction systems to achieve real-time interactions. In addition, the cost of integrating transactions and databases across proprietary networks, databases, and transaction systems limited participation in real-time e-commerce to only the largest, most important buyers and suppliers. The remainder used simple "batch-processing" systems to collect information and send data files back and forth according to a pre-determined schedule—often during the night when network capacity was greater and telecommunication costs were cheaper. During the mid-1990s, the commercialization of the Internet, including technologies such as browsers and Hyper Text Markup Language (HTML), provided a standard way for companies to present information and communicate interactively and in real-time. In the late 1990s, Extensible Markup Language (XML) enabled real-time online business transactions and value-added commerce features such as dynamic information updating, sophisticated order tracking and searching, and dynamic (e.g., auction) pricing.

By early 2000, the Gartner Group had forecasted that the overall B-2-B marketplace would reach over \$7 trillion globally by 2004.¹⁵ Forrester Research had predicted that B-2-B e-commerce in the United States alone would grow from \$109 billion in 1999 to over \$2.7 trillion in 2004.¹⁶ Furthermore, in 1999, Forrester Research had estimated that by 2002 there would be approximately 10,000 global market makers (organizations that created markets by joining buyers and sellers) that were projected to generate combined annual revenues of \$20 billion.¹⁷ An analyst at *Chase, Hambricht and Quist* commented on the large size of the market potential in B-2-B:

Whereas a successful B-2-C e-commerce player may gain 5% to 10% market share in a particular segment over time, we believe that successful online

¹⁵ Anonymous, "Chemdex Becomes Ventro, Will Leverage B-2-B Expertise in Emerging Industries," *Chemical Market Reporter*, 28 February 2000.

¹⁶ S. Fitzgibbons, "Ventro Corp.," *Chase, Hambricht and Quist*, 4 May 2000.

¹⁷ D. Perry, Presentation to Harvard Business School students and faculty, 20 September 1999.

marketplaces in the B-2-B segment could eventually process the majority of a particular industry's transactions.¹⁸

The economics of B-2-B e-commerce were very attractive—especially when compared with B-2-C (business-to-consumer) e-commerce. The average order size and annual customer spend was significantly higher for B-2-B e-commerce companies than for B-2-C companies. For example, Perry reported that the average annual spend and order size for the average Amazon and eBay customer were \$137 and \$92 in 1999; by comparison, the average annual spend and order size for Chemdex customers were \$10,000 and \$500 respectively.¹⁹ Not only were orders placed by business customers typically larger than those placed by consumers, they were also non-discretionary and recurring. Furthermore, switching costs were high because suppliers and buyers had to be connected to the purchasing and payment systems and databases within a given marketplace.

Nevertheless, B-2-B e-commerce was highly complex due to systems integration and other technology challenges, as well the need to attract a critical mass of buyers and suppliers. Perry described the challenge of building liquidity²⁰ in B-2-B marketplaces (see **Exhibit 8** on Market Maker Usefulness/Worthlessness):

If you have 10% of the suppliers, you've created no value whatsoever. The same is true at 20%, 30%, 40%, and so on. You have to have the vast majority of what buyers need before they are going to find you useful—80+% in most markets. There is an entire flat part of that curve where you have created nothing. That curve is often months or even years long, during which period you are burning hundreds of thousands, millions, or maybe even tens of millions of dollars a month. We call that the period of worthlessness and it's a very scary thing.

Competition

The clearest theme from the Ariba and Commerce One user conferences last week was the rapidly building momentum of electronic marketplaces (whether public or private) among Global 2000 companies. For example, Ariba is currently powering more than 150 e-marketplaces, with 70% already live to some degree. Yet, penetration of procurement application remains low—a mere 20% of the Global 200 and 8% of the Fortune 3000. This suggests enormous untapped opportunities, which we conservatively estimate at \$76 billion in annual fees to e-solutions providers in the U.S. and potentially triple that amount worldwide.²¹

The B-2-B e-commerce segment was highly competitive—there were roughly 600 to 800 B-2-B marketplaces in operation as of May 2000.²² (See **Exhibit 9** for greater detail on Ventro's competitive landscape.) E-commerce companies, such as FreeMarkets, VerticalNet, ProcureNet, and IndustryNet competed with Ventro across multiple vertical markets.

There also were focused competitors within each vertical. Traditional and emerging enterprise software companies, such as IBM, Oracle, Ariba, and Commerce One—who were also

¹⁸ S. Fitzgibbons, "Ventro Corp.," *Chase, Hambrecht and Quist*, 4 May 2000.

¹⁹ Ventro company documents, David Perry and Jeff Leane presentation to HBS students in the fall of 1999.

²⁰ For financial markets, "liquidity" refers to the ability of an asset to be converted into cash. For Internet markets, a high degree of "liquidity" is achieved when there are a large number of buyers and sellers bidding to exchange goods and/or services and completing transactions online.

²¹ "The Weekly Link Newsletter," *Credit Suisse First Boston*, 25 September 2000.

²² Ventro 1999 Annual Report, Available on www.edgar.gov, 29 June 2000.

Ventro partners—were also developing competitive technology services and platforms. In addition, powerful, established suppliers and distributors were forming B-2-B marketplaces within their industry. In fact, as of May 2000, roughly 60 coalitions, led by billion-dollar companies, had formed with plans to launch their own B-2-B marketplaces. Analysts estimated that together these coalitions represented 278 companies and assumed responsibility for \$3 trillion in annual purchasing.²³ This was most significant to Ventro in the healthcare and food services segments. Two healthcare industry consortia were announced in early 2000. The first was a manufacturer-led site owned by Baxter International, Johnson & Johnson, Medtronic, Abbott Labs, and GE Medical Systems.²⁴ The second was a distributor-led marketplace formed by McKesson HBOC, AmeriSource, Cardinal Health, Fisher Scientific, and Owens & Minor.²⁵

In June 2000, McDonald's Corporation—a cultural icon of efficiency and speed—and Accel-KKR, a leading venture capital company and Internet business incubator, announced plans to jointly form EMac Digital—an incubator and holding company for B-2-B marketplaces in the restaurant and food service industry.²⁶ In July 2000, Cargill, SYSCO Corporation, Tyson Foods, and McDonald's formed electronic Food Service (eFS) Network through EMac Digital. eFS Network was described as an “independent B-2-B marketplace to facilitate sales and purchases to the food service industry.”²⁷ “Having McDonald's as an Accel-KKR partner,” columnist Larry Park stated, “further validates Accel-KKR's focus on helping large brick-and-mortar companies get online.”²⁸

Many analysts believed that consortia of large, established firms would face significant challenges. In the past, established Industrial Age firms faced difficulty moving quickly to gain the necessary market share to succeed in rapidly growing Internet markets. It was anticipated that consortia of established firms would have even greater difficulty moving quickly. Kevin Jones, CEO of Net Market Makers and a vocal critic of industry consortia,²⁹ referred to them as “the Phantom Menace,” and explained that, “Right now [the coalitions] need to work at Internet speed, [yet] they're working at committee quagmire speed. I think a lot of them will break down and turn out to be nothing more than announcement-ware.”³⁰ Another criticism leveled at consortia was that they lacked the neutrality needed to ensure full participation.³¹ Nevertheless, the fact that most consortia were being set up as separate companies—often with the aid of venture capital firms—caused some to disagree with Jones.

²³ *Credit Suisse First Boston*, as quoted in M. Roberti, “Web Marketplaces Face Industry Goliaths,” *The Industry Standard*, Available at www.theStandard.com, 18 May 2000.

²⁴ “Major Medical Products and Services Companies Establish Global Healthcare Exchange,” available at www.medtronic.com/news/articles/20000329071125.html, 29 March 2000.

²⁵ “Leading Healthcare Suppliers Sign Definitive Agreement Creating Internet-based Health Exchange,” Available at www.mckesson.com/news/pressreleases, 3 August 2000.

²⁶ L. Park, “Did an Incubator Say McDonald's?” *The Industry Standard*, available at www.thestandard.com, 23 June 2000.

²⁷ “Cargill, McDonald's, SYSCO and Tyson Form electronic Food Service Network (eFS Network),” Available at www.mcdonalds.com/corporate/press/corporate/2000/07252000/index.html, 25 July 2000.

²⁸ L. Park, “Did an Incubator Say McDonald's?” *The Industry Standard*, Available at www.thestandard.com, 23 June 2000.

²⁹ Net Market Makers, or NMM (www.netmarketmakers.com), was a one-stop shop for information, analysis, resources and connections for the B-2-B community. NMM produced several major events each year, including B-2-B Net Market Makers Conference, to bring Internet entrepreneurs together across industry verticals. NMM was involved with early successes such as Ventro, Altra Energy, VerticalNet, and National Transportation Exchange (NTE). In April 2000, Jupiter Communications acquired Net Market Makers.

³⁰ M. Roberti, “Web Marketplaces Face Industry Goliaths,” *The Industry Standard*, available at www.theStandard.com, 18 May 2000.

³¹ S. Fitzgibbons, “Ventro Corp.,” *Chase, Hambricht and Quist*, 4 May 2000.

Ventro 2000

Ventro's strategy going forward is to leverage its operational expertise, technology resources, strategic partnerships, and capital across new vertical market opportunities that demand a comprehensive solution to correct traditional supply chain inefficiencies...Ventro's transition to a multiple-vertical operator is clearly a positive development in that the new company's addressable market is 25 times larger than Chemdex alone.³²

In August 2000, the company's press releases described Ventro in the following way: "Ventro Corporation is pioneering the new B-2-B e-commerce economy by building and operating companies that transform the supply chain in businesses around the world. Ventro operating companies allow suppliers, buyers, and enterprises to streamline business processes, enhance productivity, and reduce costs. (See **Exhibit 10** for a description of its overall business model using Chemdex, its first vertical marketplace, as an example). Ventro companies offer complete e-commerce solutions consisting of extensive online catalogs, electronic procurement, systems integration to interface with third-party and back-office systems, and comprehensive services and support."³³

As a builder and operator of vertical and horizontal B-2-B marketplaces, Ventro targeted large, fragmented, and inefficient markets with specialized products. Ventro also searched for markets in which the company could partner with leading industry players to gain instant access to domain expertise. (See **Exhibit 11** to review the specific criteria that management considered when deciding to launch a new marketplace).³⁴

Ventro initially sought to become the first-mover, largest to scale, and lowest cost market maker in the life sciences industry through Chemdex. However, over time, the company realized that its assets and capabilities could be leveraged to enter new segments and develop other B-2-B markets. While the company focused exclusively on life sciences for the first year and a half, by early- to mid-1999, Ventro began entering new vertical markets to capitalize on its capabilities and expertise.

The transition to builder and operator of multiple B-2-B companies seemed to be a natural extension of its strategy and business model. Everything already learned and everything already built for Chemdex would be leveraged to enter other markets. But to properly develop new businesses, the company needed more resources. To raise the necessary capital, the company issued its initial public offering (IPO) in July 1999. Perry described the IPO as "giving ourselves both the public currency and the financial resources necessary to do multiple verticals. Immediately after our IPO, we started looking at other vertical markets and entered our first in September [1999]."³⁵

While Ventro's first six marketplace businesses targeted vertical markets, its MarketMile joint venture with American Express targeted the horizontal marketplace serving "corporate America." An analyst commented that this move signaled that "Ventro was stepping into new territory."³⁶ According to Ventro, MarketMile would initially target mid-sized companies, beginning with business customers that already used American Express' Commerce Network. In 1999, American Express, which had invested \$17 million (for 65% ownership) to launch MarketMile, had begun

³² I. Toll, "Ventro Corporation," *Credit Suisse First Boston*, 24 May 2000.

³³ "Becton, Dickinson and Company Latest Supplier to Join Chemdex Marketplace," available at www.ventro.com/pressreleases, 10 August 2000.

³⁴ S. Fitzgibbons, "Ventro Corp.," *Chase, Hambrecht and Quist*, 4 May 2000.

³⁵ D. Perry, Presentation to Harvard Business School students and faculty, 20 September 1999.

³⁶ R. Snel, "Ventro Up 27% After News of American Express B-2-B Venture," *Dow Jones Newswire*, available at www.wsj.com, 3 August 2000.

building its B-2-B Commerce Network within an internal business unit called American Express Interactive.³⁷ The joint venture, MarketMile, was led by Gayle Sheppard, formerly of J.D. Edwards & Company, one of the leading suppliers of business software solutions.³⁸ Ventro expected MarketMile to be operational by the first quarter of 2001 and to offer products such as computer equipment and office supplies and business services such as temporary labor, expense reporting, and travel services. Ventro and American Express planned to raise an additional \$15 to \$30 million by the end of 2000 to further expand MarketMile.³⁹

Business Model

Despite the widespread weakening of Internet stocks, analysts' comments about Ventro's business model were quite positive and continued to be favorable throughout the summer of 2000. In April 2000, a *Deutsche Bank Alex Brown* analyst stated:

We believe that Ventro's business model is highly scalable, with extremely compelling underlying economics. The fixed costs to build and scale the Chemdex marketplace were relatively high, so the revenue threshold to achieve EBITDA [Earnings Before Interest, Taxes, Depreciation and Amortization] profitability was similarly high. However, more significant is that the fixed costs associated with building and scaling the next marketplace [e.g., Promedix] should be significantly lower because of shared technology and operational resources. And, the time to market is much quicker. The transaction volume threshold required to reach EBITDA profitability should be significantly lower and achieved significantly sooner. Accordingly, the model should continue to scale at an increasing rate as these and other marketplaces achieve critical transaction volumes.⁴⁰

Revenue and Pricing Model

As of the summer of 2000, the company recognized revenues through three sources: (1) gross product sales and shipping charges to customers; (2) transaction fees; and (3) professional services fees for value-added services such as systems integration, advertising, and data analysis. (See **Exhibit 12** for a summary of Ventro's revenue and cost and pricing models.)

In most cases, Ventro primarily acted as a "principal" in the transaction, purchasing products from its suppliers and reselling them at a margin of approximately 3-7%.⁴¹ The company's revenues represented the amount paid by customers, and the costs of these revenues represented the amount

³⁷ C. Raube, K. Goldman, and L. Applegate, *AXI Travel Services: American Express Interactive* (Boston: HBS Publishing Division, No. 399-014)

³⁸ In her most recent role as Vice President of JD e.sourcing, she launched an independent business unit focused on developing J. D. Edwards' application service provider (ASP) offering. For greater details, see "MarketMile Appoints Gayle Sheppard as President and CEO," Available at www.ventro.com/pressreleases, 14 September 2000.

³⁹ M. Roberti, "Ventro Takes Charge of Amex Marketplace," *The Industry Standard*, available at www.theStandard.com, 18 May 2000.

⁴⁰ C. Laughlin, "Ventro Corp." *Deutsche Bank Alex Brown*, 28 April 2000.

⁴¹ Principal-based revenues referred to revenues earned as a principal (e.g., the company held title to goods, bore risks associated with accounts payable, customer service and accounts receivable, etc.) and typically represented revenues based on what customers paid for the products. Agent-based revenues on the other hand referred to revenues earned as an agent (e.g., a company that typically did not hold title to inventory or have responsibility for accounts payable, customer service and accounts receivable) and typically represented fees based on a percentage of goods sold.

paid to suppliers for these products. As “principal,” Ventro was responsible for selling the products, collecting payment from customers, making certain that products reached customers, and processing returns. Ventro received orders from customers and then electronically transmitted orders to the appropriate suppliers, who then packaged, labeled, and shipped products directly to customers based on their delivery specifications. Ventro assumed title to products “at the time of shipment”⁴², and bore the risk of potential losses on collection, delivery, and returns from customers. However, Ventro did not take physical possession of products during any part of the transaction.

In addition, Ventro played an increasingly significant role as “agent” in its marketplace transactions. As an “agent” the company received a commission or transaction fee (on products to which it did not hold title); these fees ranged from 1-4% of net sales after excluding product costs. Ventro and its partners did not assume responsibility for collecting payments or handling returns as an “agent,” but they did provide the platform upon which buyers and sellers completed the sales transaction. Analysts predicted that while the majority of Ventro’s revenues by early 2000 were from principal-based sales, agency transaction fees would increase during the latter part of 2000.⁴³

A third component of Ventro’s revenue model involved fees collected for provision of value-added services, such as systems integration, consulting services, software licensing, hosting, data analysis and reporting, direct advertising, and promotions. During the second quarter of 2000, Ventro reported \$972,000 in service revenues (which represented nearly 4% of total revenues of \$25.2 million). Management expected these value-added service revenues to increase as a percentage of total revenues, and margins to be significantly higher than revenues from principal-based or agency-based revenues. For example, e-services margins were 50% on average, as reported in an Internet services update published by *WR Hambrecht & Company* in August 2000 (see **Exhibit 13**).⁴⁴ In July 2000, a *Morgan Stanley Dean Witter* analyst commented on Ventro’s value-added service offerings:

Ventro is beginning to tap into the value-added services that were expected to be the outgrowths of its transaction business. Management expects that these value-added services will enhance gross profits beyond our current expectations...As the only enabler of B-2-B exchanges and one of the few companies with significant experience running Net markets, we expect Ventro will be able to “monetize” its operating and technology expertise by selling high-margin software licenses, consulting projects, and consortium partnerships. We expect this strong management team to capitalize on at least one of these opportunities by year-end.⁴⁵

As of August 2000, all of Ventro’s marketplace transactions were conducted using set prices.⁴⁶ As of September 2000, however, the company was implementing new functionality to enable dynamic pricing, including auctions and reverse auctions.⁴⁷

Cost Model

Ventro’s key operating expenses included research and development, sales and marketing, and general and administrative costs. Research and development included personnel and other costs to develop, maintain and enhance the company’s technology platform. These costs totaled

⁴² Company reports, 10-Q, 31 March 2000, San Jose, California.

⁴³ S. Fitzgibbons, “Ventro Corp.,” *Chase, Hambrecht and Quist*, 4 May 2000.

⁴⁴ G. Gore and Y. Ho, “Internet Services June Quarter Review and Outlook: Don’t Miss The Forest Through the Trees,” *WR Hambrecht & Company E-Services Update*, 25 August 2000.

⁴⁵ M. Meeker and M. Rossi, “Ventro Corporation: Outlook Remains Bright as Strategy Evolves,” *Morgan Stanley Dean Witter*, 26 July 2000.

⁴⁶ For more information on e-business pricing models, see “Overview of E-Business Pricing Models,” K. Kohler, L. M. Applegate, and E. Sasser (Boston: HBS Publishing (HBS No. 9-801-182), 2000.

⁴⁷ W. Nelson, Interview with authors, 6 September 2000.

approximately \$17 million for 1999 (33% of total operating expenses), up from \$3.4 million in 1998. During the first two quarters of 2000, Ventro's R&D expenses continued to increase for several reasons: (1) ongoing enhancements of its e-commerce solutions, (2) greater amounts of supplier data included in the company's databases, (3) additional services and solutions that the company expected to launch, and (4) significant costs associated with integrating customers' and suppliers' systems with Ventro's purchasing systems.⁴⁸ The majority of these costs were allocated to Ventro corporate.

Sales and marketing expenses, Ventro's most significant cost category, included the costs of advertising and promotional programs, as well as personnel for supplier relations, enterprise sales, and enterprise account management groups. These costs totaled \$23 million in 1999, or 43% of operating costs, which represented an increase of \$14.3 million from 1998 (when sales and marketing only represented \$3.4 million). Ventro stated that "sales and marketing expenses have increased since inception as we have continued to expand our sales and marketing efforts primarily relating to our corporate marketing and branding strategy associated with our name change."⁴⁹ As of April 2000, the company reported that these costs would continue to increase due to the increased number of vertical marketplaces and the associated branding campaigns to support them. Except for general Ventro marketing and branding, most of these costs were allocated to specific marketplaces.

General and administrative costs increased to \$10.4 million in 1999, up from \$1.8 million in 1998. During 1999, general and administrative costs represented roughly 20% of operating costs. These expenses included administrative personnel salaries, fees paid to consultants and integration partners for professional services and systems integration services, travel-related expenses, and corporate facility management costs. As with the other two cost components, these costs were projected to increase due to the company's planned expansion into new marketplaces. The majority of these fees were allocated to Ventro Corporation.

Gross margins varied by vertical marketplace and Ventro's timing of market entry. Gross margins for Chemdex had reached 5.6% as of the first quarter of 2000, up from 5.0% as of the fourth quarter of 1999. Analysts predicted that Chemdex gross margins would increase to 6.1% and 7.1% for 2000 overall and 2001 respectively.⁵⁰ As of April 2000, Amphire's gross margins were projected to be significantly lower, at roughly 1% to 2% after launch and 3% to 5% over time.⁵¹ Overall operating margins were projected to be negative until 2002 or 2003.

While Ventro's first-quarter 2000 performance met analyst expectations, Ventro's second-quarter revenues of \$25.2 million fell short of Wall Street's \$30.5 million estimates. As a result, the company's stock fell to \$14.86 per share on July 21, 2000, and several analysts subsequently downgraded the company's stock.⁵²

Building Digital Business Capabilities

As mentioned earlier, by August 2000, Ventro operated seven marketplace businesses. The foundation of each marketplace was a digital infrastructure that enabled seamless operations as well

⁴⁸ Ventro 1999 Annual Report, Available on www.edgar.gov, 29 June 2000. Ventro First Quarter 2000 10-Q, Available on www.edgar.gov, 15 July 2000.

⁴⁹ Ventro 1999 Annual Report, Available on www.edgar.gov, 29 June 2000.

⁵⁰ C. Laughlin, "Ventro Corp.," *Deutsche Bank Alex Brown*. 28 April 2000.

⁵¹ C. Laughlin, "Ventro Corp.," *Deutsche Bank Alex Brown*. 28 April 2000.

⁵² M. Roberti, "Ventro Takes Charge of Amex Marketplace," *The Industry Standard*, Available at www.theStandard.com, 18 May 2000.

as customization and innovation. Ventro considered its key assets and capabilities to be its technical architecture, technical expertise, market know-how, operating expertise, and its partnerships. Indeed, the company had garnered praise for the capabilities it had built. In June 2000, Ventro was named a 2000 Web Business Award winner by CIO Magazine for its strong web site design and technology and, that same month, Perry was named California Entrepreneur of the Year.

Operating and Innovating

Although domain expertise can be bought through partnerships and technology can be licensed, operating experience as a service provider to thousands of buyers and sellers in a B-2-B vertical marketplace cannot easily be replicated by standalone incubators such as Internet Capital Group, by application developers such as SAP, or diversified content hosts such as VerticalNet.⁵³

The operating expertise that Ventro had developed through Chemdex was cited by analysts as one of the core capabilities enabling the company to enter additional vertical and horizontal marketplaces more efficiently, quickly, and cheaply than later entrants.⁵⁴ An analyst from *Raymond James* commented that, “much like Amazon or Yahoo!, Chemdex’s innovations in functionality and service enabled the company to build operating expertise while learning from mistakes.”⁵⁵

As Perry commented, Ventro became very good at “creating, growing, and running new businesses.” The organizational capabilities that Ventro developed while it successfully built Chemdex helped it to quickly build new businesses; these areas of expertise included financing, corporate governance, facilities, recruiting, training, organizational design, and restructuring.

Three primary operating processes enabled Ventro to launch and run multiple marketplaces: new business/product development, marketplace integration, and marketplace operations (see **Exhibit 14**). New business/product development consisted of activities related to identifying attractive new markets to enter, developing the products and service offerings for those markets, obtaining alliances with “best-of-breed” partners to allow Ventro to provide complete solutions for customers and suppliers, and finally, building the business community—including buyers and suppliers—required to provide liquidity in each market. (See **Exhibits 15** and **16** for Ventro’s partnerships and business community.) Marketplace integration consisted of activities required to integrate the people, processes, and technology systems to operate a marketplace. Marketplace operations referred to running marketplaces and serving the community and included day-to-day functions such as customer relations, supplier relations, and IT operations.

Ventro’s technology infrastructure was closely linked to its operations. Its philosophy was to “integrate flexible, best-of-breed technology components to deliver complete marketplace solutions.” Ventro integrated over 40 best-in-class software applications, including Ariba, Commerce One, Oracle, and others, to provide a highly advanced technology solution. The platform was modular and built on open standards which allowed Ventro to swap out, enhance, and upgrade features and technology components.

⁵³ J. Kumpel, “Ventro Corporation,” *Raymond James*, 1 March 2000.

⁵⁴ D. O’Neill, “Ventro Corp.” *William Blair*, 20 January 2000.

⁵⁵ D. O’Neill, “Ventro Corp.” *William Blair*, 20 January 2000.

Ventro described its technical architecture as, “a B-2-B e-commerce solution that is reliable, scalable and secure.”⁵⁶ (See **Exhibit 17** for a summary of Ventro’s technical architecture.) Perry commented on the components of the technical architecture:

The architecture refers to all of our technical assets, except for the people (which we refer to as our technical capabilities). Our technical architecture [combines] many different software packages [that have been integrated into] an end-to-end B-2-B e-commerce solution. [Some mistakenly] confuse us with a software developer. We do not develop software—we build and operate companies. We develop software only when we cannot buy it commercially and we actively look to replace the code we have written ourselves with commercially available software.

The foundation of Ventro’s technology architecture was its transaction systems and databases that enabled suppliers and buyers within each Ventro marketplace to conduct business. Ventro provided three methods for buyers to connect to its online marketplace. First, any buyer could connect to the marketplace using a standard web browser to view catalogs and purchase products very similar to the way consumers would buy books from Amazon.com. Second, buyers that wanted a more secure, full-featured, seamless connection could integrate their in-house procurement systems (e.g., Ariba, Commerce One, or Concur, etc.), Enterprise Resource Planning (ERP) systems (e.g., SAP, Baan, Oracle), and databases with Ventro’s transaction systems and databases via Ventro’s MarketLink software interface. MarketLink, which was launched in November 1999, enabled Ventro to tap into the vast number of marketplaces that Ariba, Commerce One, and other software vendors had previously developed.⁵⁷ Third, buyers that required a higher level of procurement support and customization accessed the marketplace through a custom-built link that connected their systems and databases with Ventro’s.

Once connected, buyers could directly access Ventro’s scalable, robust electronic catalogs using sophisticated search technologies. “When we launched Chemdex,” Walter Nelson, Ventro’s Chief Information Officer, explained: “we found we needed search capabilities that were not available in the packages on the market. Standard products, such as staplers, are easy to describe and explain. But life sciences reagents and chemicals (for example, monoclonal antibodies) must be described in more detail. We developed significant new functionality for our catalog management and search system to handle these ‘thick’ SKUs.”⁵⁸

Product catalogs were stored and maintained in an Oracle relational database. Ventro called this component its Product Information Management System (PIMS). PIMS allowed buyers to quickly find products by category, supplier, feature, cost, etc. Customers could create customized purchasing templates and suppliers could quickly and easily update their catalogs. Sales transactions were processed by Ventro’s internal ERP system, which also was based on Oracle technology. Data on every transaction was stored in a relational database that served as a data warehouse for collecting management and reporting information. The data warehouse also provided specialized value-added reports for buyers and suppliers. A set of software programs, called Ventro Connect, served as an information pipeline that coordinated and managed information requests and flows between buyers, the PIMS, Ventro’s ERP, and the Ventro data warehouse.

An analyst at *Raymond James* summarized the value created by Ventro’s technology:

Ventro has standardized its front-end interfaces and has avoided the NIH (Not Invented Here) syndrome by adapting the best features of [over 40] different

⁵⁶ Company web site, www.ventro.com/about/technology.html, 29 June 2000.

⁵⁷ J. Kumpel, “Ventro Corporation,” *Raymond James*, 1 March 2000.

⁵⁸ A SKU is a retail term that stands for stock-keeping unit.

software packages while implementing necessary modifications to address specific search, compile, and cataloging challenges in information-intensive industries. Partnering with recognized industry leaders, such as Ariba, Commerce One, SAP, IBM, Oracle, and Sun, reduces customer concerns about standardizing on the wrong platform. Ventro's flexibility ensures integration with existing software applications and environments, reducing the risks and costs of adoption. Given that most of the company's heavy lifting was done in developing the application, we believe that the company is well suited to build out into under-served verticals."⁵⁹

Dave Perry agreed:

We spent roughly \$45 million [and 19 months] to build Chemdex to Version 1.0. We spent roughly \$7 million [and 4 1/2 months] to build the same level platform for Promedix [our second marketplace]. Because we do not have to duplicate a lot of the what we did the first time, we have a real cost advantage, and that gives us a big leg up over somebody starting from scratch.

The ability to knit together multiple software packages and link to a wide variety of networks and hardware platforms was considered a core capability of the firm. Perry explained:

Our technical capabilities refer to the people who build and maintain our core architecture: they keep it up-to-date, ensure that we are using best-in-class software, incorporate changes and new content if necessary, operate the marketplaces, and finally, and most importantly, customize the core architecture according to the needs of each vertical.

Ventro's highly skilled engineers represented one of the company's most critical areas of expertise. Attracting and retaining these highly skilled professionals was a key challenge—especially in the highly competitive Silicon Valley labor market. To broaden his base of talent, Perry set up a satellite engineering organization in Salt Lake City, Utah. Perry commented on the company's unique hiring strategy:

We have grown [our employee base] by probably 30% over the last three or four months. We have taken some other steps in diversifying geographically. We have over 100 people in Salt Lake City, which is a much more stable labor market. We will continue to do that to make sure we meet our hiring goals.⁶⁰

While all agreed that technical architecture and capabilities were important, Robin Abrams, Chief Operating Officer, noted that:

People will tell you that operations is all about integration. It's simply not true. Ventro is in the business of incubating, building, and running marketplace businesses. We need to have a new marketplace up and running within 4 to 6 weeks after we announce it. We determined that there were four key positions that needed to be filled immediately: Marketing, Facilities Planning, Engineering and HR.

Perry believed that the market know-how that the company had developed was key to enabling fast-cycled business innovation. He described this capability as, "everything that we have learned along the way":

⁵⁹ J. Kumpel, "Ventro Corporation," *Raymond James*, 1 March 2000.

⁶⁰ Anonymous, "CEO/Company Interview: David Perry, Ventro Corporation," *Wall Street Transcript*, available at www.investext.com, 26 June 2000.

Most of our [competitor marketplaces] today have no idea what it takes to develop and operate a successful e-marketplace. The fact that we have done one well [Chemdex], and that we are in the process of building [Amphire, Broadlane, Industria, Promedix and Ventro Life Sciences Europe] gives us a huge advantage as we think about new markets and what is required to be successful there...We leverage everything that we have learned along the way, such as how to build a set of customers, how to get critical mass, and how to load a database appropriately so users can find what they are looking for.⁶¹

Managing and Organizing

When Chemdex officially opened its doors to customers, its organization shifted from a *team* to a simple *functional* organization structure. With the evolution from Chemdex to Ventro, the company was reorganized as a matrixed structure (see **Exhibit 18** for the company's organizational chart and description of its key functional groups). Abrams explained the philosophy behind Ventro's current organization design:

We designed the organization to ensure that there was only one point of tension between product management and engineering. Everything but finance and engineering report to me. You don't want a lot of tension because it slows the organization down, it inhibits your ability to reach scale, and it makes the organization too political. Even though the other two functions don't report to me, I am in charge of all operating expenses. It requires a little flexibility on the part of the management team, since they need to come to me to discuss their quarterly budgets. Some might say that this influences how we engineer products. They're absolutely right. In a company with strong technological roots like we have, you need to ensure that corporate marketing and product management have strong ties to engineering. We need to build products that sell. It's all a question of whether you want to be techno-centric or customer-centric. We need to be customer-centric.

The link between product management, which reported to Abrams, and engineering, which reported to Pierre Samec, Chief Technology Strategist, was seen to be a key point for coordination and control. A product planning process had been developed to ensure coordination of work during the development of the requirements definition for a new marketplace. "Anyone who has ever worked in a technology company," Abrams stated, "would recognize our methodology. But our product development process is anything but traditional." Each Ventro marketplace was built on a core digital operating platform that was then customized for each marketplace. "While each vertical has roughly 80+% of what it needs from the common platform," Perry explained, "the other 20% is critically important. If you don't do the [customization] right, you've done nothing. Doing that additional 20% is the job of our 250 engineers—they guarantee that the core system works for each vertical." Further customization was then done for each customer and supplier by the professional services organization (PSO) and/or systems integration partners, including IBM, PricewaterhouseCoopers, and webMethods. "While PSO [and our partners are] implementing the marketplace, they are also continuing the product development process," Abrams explained. "[The PSO] needs to communicate what's in the final product to the product management team so that [product managers], in turn, can communicate with engineering, so [the product] is complete for the next release. When do we have a finished product? Maybe after two or three years."

Another key area of coordination was between customer service, product management, engineering, and PSO. At times, customers had a technical question or problem that could be

⁶¹ Op. cit.

referred directly to PSO or engineering. At other times, common problems needed to be addressed through revisions to the operating infrastructure itself. A third category of problem involved order management. For example, a customer might want to check on the status, expedite or cancel delivery of an order, or return a product. "We are installing an integrated Customer Relationship Management (CRM) system to help coordinate these critical interactions," Abrams explained.

Acquiring, coordinating and managing partner relationships (including technology partners, system integration partners, and marketplace partners) consumed significant management attention. Josh Olshansky, Vice President of Business Development, explained:

If you look at most traditional companies, you don't find too many business development executives. But in technology businesses, everyone says they are doing business development. There are two reasons for this. In some cases, the traditional sales role is referred to as business development, but the people in that group are generally selling a fairly standardized product or service. In other cases, such as at Ventro, business development is tightly linked to the strategic planning process. If you look at the steel industry, companies might do strategic planning once a year, and the strategy generally revolves around raising prices and lowering costs. Do they need partners to do it? No. In our world, however, things are changing so fast and so dramatically that every month we need to reassess where we're going. In addition, our strategies are so complicated that we depend on lots of other people to be successful. We need other people's technology and we need to go to market through other people's channels. Roughly 80% of our partnership deals are directly linked to our strategy [while the remaining 20% are more opportunistic]. We start at the top and ask a series of questions. What do our customers need? What is our strategy? What should we do ourselves and with whom do we need to partner?

Olshansky went on to explain how B-2-B commerce took the notion of doing business through partnerships to new heights. He explained:

B-2-B commerce requires that you create an "ecosystem" of capabilities. One company can't bring together everything it needs [to succeed]. Customers want to go to one place to interact with lots of people. It is like a supermarket. You could call Procter & Gamble to buy toothpaste and Kellogg's to buy cereal, but it would be an inefficient way to do your grocery shopping. [In our case], unlike selling toothpaste, which is straightforward, our partnerships involve selling very complex products that require high levels of customization and integration. We have to ensure close collaboration and ongoing interaction with our buyers, suppliers, and partners to make our partnerships work. Given that we established these relationships through Chemdex [our first marketplace], we can leverage these partnerships in our other marketplaces. It is not just striking the deal in the first place; the real leverage comes from the ongoing relationships we have built.

The up-front work that was done to integrate transaction systems and databases within the network of partnerships became a critical component to coordinating and managing relationships over time. With each multiparty transaction, data were stored and delivered that helped employees and executives inside Ventro and in partner firms coordinate work and develop a deeper understanding of the dynamics and economics of the business. Perry remarked that Ventro and its partners were only beginning to learn how to use the information to drive strategy and operations. "The metrics used by senior management to monitor performance fall under two categories," Perry explained:

First, we like to know how are we doing at defining new markets and getting new businesses up and running. Second, we want to know how are we doing at running the businesses that we have already established.

[In the case of established businesses], the monitoring of routine operations is driven by the transaction nature of the business. We watch three things: (1) the number of new customer accounts; (2) the time it takes us to sign up new customers and to get [them] from contract through implementation; and (3) the adoption rate for users within each customer organization once they are up and running. If you can fill in those three blanks, you know exactly what our business looks like.

The ability to organize, manage, and operate through a series of strategic partners enabled Ventro to leverage the assets and expertise of its partners. For example, Ventro's joint venture with American Express leveraged the relationships that American Express had established with its corporate customers and suppliers. A *Deutsche Bank Alex Brown* analyst commented: "If Ventro had done [MarketMile] without American Express, it would not have had nearly the cachet or appeal to the marketplace. American Express adds the critical link to the success of the venture."⁶² In fact, Ventro's stock soared 27% upon news of the deal, which was a win-win for both parties. Ed Gilligan, Group President for American Express' Global Corporate Services, commented: "[Our] business customers wanted a place to buy goods and services online. We needed to bring in a company with experience running a marketplace [to meet this customer demand]. Ventro seemed like a good fit."⁶³

Leading and Engaging

Especially when one considers that the company was little more than a business plan being pitched by two bright and committed founders less than three years ago, there was consistent and glowing praise for Ventro's success at attracting and retaining an impressive list of employees, advisors, and partners. As of February 15, 2000, Ventro had 354 full-time employees, including 134 in research and development, 123 in supplier relations, sales, and marketing, 25 in professional services and customer support, and 72 in general and administrative functions.⁶⁴ The company also hired independent contractors to support its engineering, marketing, sales and support, and administrative organizations and, as mentioned earlier, partnered with a wide range of technology, systems integration, and marketplace companies. (Refer back to **Exhibits 15** and **16** for Ventro's partnerships and business community, and see **Exhibit 19** for the background and experience of key employees and directors.) All agreed that Perry and Abrams brought complementary expertise and perspectives that enabled them to translate visionary leadership into pragmatic, tactical strategy and then successfully execute that vision. In early 2000, a *Raymond James* analyst commented:

The vision displayed by David Perry in 1997 to found Chemdex has been recounted in too many articles to repeat in this report. However, in addition to a visionary CEO, Ventro has the distinction of sporting a COO [Robin Abrams] who led the e-commerce efforts of VeriFone and the explosive growth of Palm Computing. In addition, we are impressed by the background of the CFO [James Stewart] and the extensive [industry] backgrounds of the leaders of the Chemdex [Neil de Crescenzo] and Promedix [J. Barrie Keiser] subsidiaries.⁶⁵

⁶² R. Snel, "Ventro Up 27% After News of American Express B-To-B Venture," *Dow Jones Newswire*, Available at www.wsj.com, 3 August 2000.

⁶³ M. Roberti, "Ventro Takes Charge of Amex Marketplace," *The Industry Standard*, Available at www.theStandard.com, 18 May 2000.

⁶⁴ Ventro 1999 Annual Report, available on www.edgar.gov, 29 June 2000.

⁶⁵ J. Kumpel, "Ventro Corporation," *Raymond James*, 1 March 2000.

But despite the capabilities of its people and organization, the challenges of managing such a rapidly growing and increasingly complex organization could not be ignored. Perry explained that “it’s like the company has gone through a massive reorganization every few months.” As roles changed, it became increasingly difficult to keep everyone motivated and focused on what they were supposed to do. This became even more challenging when Internet stock prices fell during the spring and summer of 2000. To manage the complexity, Ventro shifted its strategy in early 2000 and began launching marketplaces as joint ventures rather than as internal business units or as wholly-owned subsidiaries. This enabled new marketplace businesses to retain their entrepreneurial culture, organization, and incentive structure, while “outsourcing” capabilities and resources from the parents (Ventro and its partners).

Nevertheless, the stock market decline during the summer of 2000 presented a significant employee morale challenge. Justine Fenwick, Director of Human Resources, explained:

Up until six months ago, we didn’t need to worry about our market valuation and we didn’t need to worry about operating expenses. We could use our stock as currency in forming partnerships and attracting employees and we could spend what we needed to grow quickly and take care of problems immediately. Now we have to operate within tight financial constraints. We need to find ways to motivate our employees and we need to find ways to provide them with management skills that they did not necessarily need before. We are in the process of developing more formal career development and management training programs and we are conducting a compensation review as a first step to developing new compensation and performance management systems.

Perry agreed that the focus in the future had to be on hiring and retaining smart people and providing them with resources, accountability, and incentives to drive the business forward. He commented:

There are two things that we do. We hire very smart, capable people. The difference between a “C” player and “A” player at Ventro might be hundreds of millions or billions of dollars in market capitalization. If Robin Abrams (our COO) allows us to launch two additional vertical [or horizontal] markets this year, then she could contribute \$1 billion to our market capitalization. Each individual has an enormous amount of leverage. [The second thing we do to manage organizational complexity] is to push decision-making down to the lowest level possible. That means allowing each marketplace to make its own decisions and giving [marketplaces] the incentives to be successful. That is why we set up many of our markets as separate entities with their own stock; employees in the marketplaces have stock options and an ability to affect the value of those stock options.

In addition to hiring smart people and pushing decision-making down, in early 2000 Perry and the senior team instituted a series of changes in organization structure and management process to improve flexibility and manage increasing complexity. The most important of these was a shift from owning each vertical marketplace launched by the company to creating separate joint ventures to run and operate each marketplace. To ensure coordination of each marketplace joint venture at the strategy level, Ventro and its partners each had positions on the board of directors. For example, for the MarketMile horizontal marketplace, the board consisted of Perry and Abrams, who joined Ed Gilligan, Group President of Global Corporate Services of American Express and Pierric Beckett, Senior Vice President of Interactive Investments at American Express. MarketMile was

headquartered in Mountain View, California, close to Ventro's corporate headquarters.⁶⁶ Coordination at the operating level was supported through the use of separate product management and engineering groups that reported directly to Abrams and Samec.

Perry instituted a more formal process for meeting face-to-face with Ventro's senior management team. The executive team met for several hours every two weeks. In addition, Perry met at least weekly with each member between these more formal full staff meetings. The company also attempted to establish clear roles and job responsibilities for employees. "As we get bigger," Perry explained, "it is much more important for people to have a clear understanding of what they should focus on." An example of this separation of roles and responsibility was in the engineering function. In 1999, the company created distinct units within engineering—one maintained the "core" technology infrastructure, and others customized the platform for each marketplace business.

Where To From Here?

By September 2000, there was no end to the speculation about how Ventro should respond to the continuing lack of confidence that investors felt toward the future of online B-2-B marketplaces. The following analyst quotes summarized two conflicting points of view:

We believe that Ventro is currently at a crossroads in defining its ongoing strategy. We think that the correct end game for Ventro's vertical [and horizontal] marketplaces should be the eventual "monetization" [of its infrastructure] through a spin-off or other transaction. Acting as an incubator would allow Ventro to develop and grow marketplaces to a critical mass and spin [them] off to grow on their own.

—UBS Warburg, September 28, 2000⁶⁷

Ventro's [and other B-2-B stock's] share price depression have heated up speculation about strategic alternatives...We do not believe a reactionary move based on the stock's torpor is appropriate. Short-term benefits of an ill-advised move could well fall short of the long-term value of executing on its business model.

—Raymond James, September 27, 2000⁶⁸

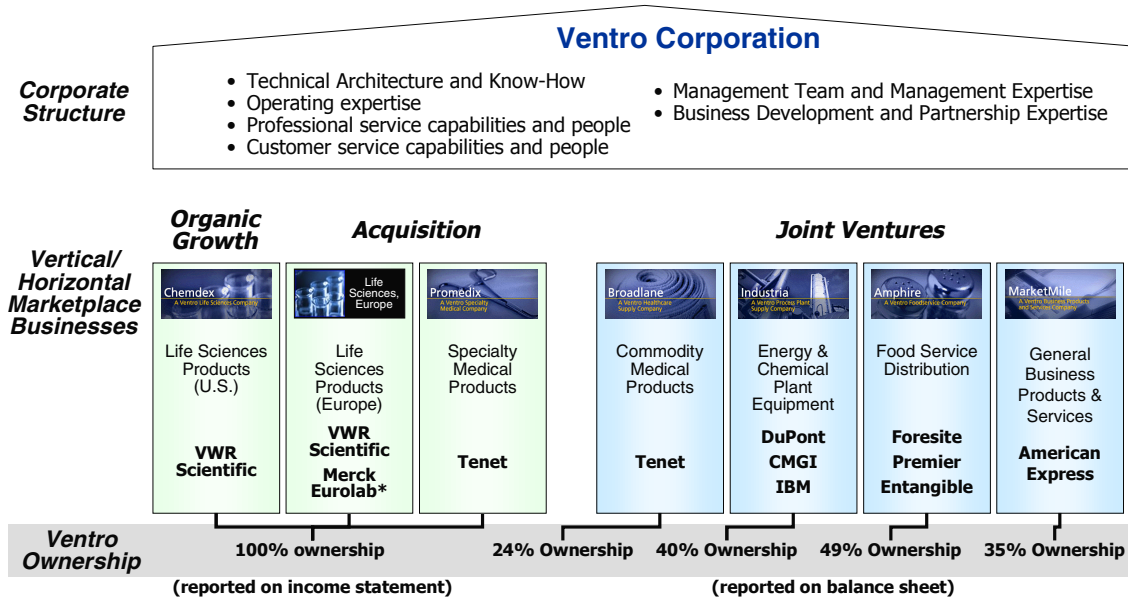
Indeed, September and October had been a time of strategic introspection for Ventro's senior management team. Should the company continue to pursue its strategy as a builder and operator of B-2-B businesses? Or, alternatively, should the company once more evolve its business model? Finally, if Ventro were to change its strategy, what capabilities would the company need to build moving forward?

⁶⁶ "American Express and Ventro in Agreement to Form New Company, MarketMile," available at www.ventro.com/pressreleases, 3 August 2000.

⁶⁷ "VNTR: Initiating Coverage," *UBS Warburg*, 28 September 2000.

⁶⁸ "First Call," *Raymond James Associates*, 26 September 2000.

Exhibit 1 Ventro's Corporate Structure



* Note that Merck Eurolab was a German distribution company distinct from U.S.-based pharmaceutical company Merck.

Source: Casewriters' interpretation based on company documents.

Exhibit 1 (continued) Ventro's Marketplace Businesses

	Chemdex/ Ventro Life Sciences, Europe	Promedix	Broadlane	Industria	Amphire	MarketMile
Vertical/ Horizontal Marketplace	Life Sciences	Specialty Medical Supplies	General Medical Supplies	Energy & Chemical Plant Equipment	Food Service	General business products/services
Formed	Sept-97/April-00	Sept-99	Dec-99	Jan-00	Apr-00	Aug-00
Products	<ul style="list-style-type: none"> Chemical compounds Laboratory equipment and supplies Scientific instruments 1.3 MM SKUs 	<ul style="list-style-type: none"> Catheters Surgical instruments Prosthetics 300,000 SKUs 	<ul style="list-style-type: none"> Syringes Bedpans Gloves 	<ul style="list-style-type: none"> Hoses Pipes Motors 	<ul style="list-style-type: none"> Food Kitchen and bar equipment Tableware, linens 	<ul style="list-style-type: none"> Office and industrial supplies Computer equipment Temporary labor services
Competition	<ul style="list-style-type: none"> SciQuest 	<ul style="list-style-type: none"> No direct competition Johnson & Johnson, Baxter, Medtronic, GE Medical, Abbot McKesson, AmeriSource, Cardinal Health, Fisher Scientific, Owens & Minor 	<ul style="list-style-type: none"> MediBuy Neoforma MedAssets MRN.com 	<ul style="list-style-type: none"> Chevron/Ariba partnership Shell/CommerceOne partnership 	<ul style="list-style-type: none"> Instill Tibersoft Net World Exchange eFS (McDonald's, Sysco and Tyson Foods consortium) 	<ul style="list-style-type: none"> Onvia Bank of America, Chase, Ariba, CommerceOne partnership
Market Size	\$20 billion	\$75 billion	\$250 billion	\$75 billion	\$150 billion	\$1.4 trillion total (\$400 billion for only mid-sized companies)
Web Site Target Launch	Active (since 1998/2000)	Active (since 1st Qtr 2000)	Estimated for 3rd Qtr 2000	Active (since 2nd Qtr 2000)	4th Qtr 2000	4th Qtr 2000
Key Partners	VWR Scientific, Merck Eurolab*	Tenet Healthcare	Tenet Healthcare	DuPont, CMGI, IBM	Entangible.com Foresight Partners, Premier Foodservice Distributors of America, Golbon	American Express
Key Customers	DuPont, Genentech, SmithKline Beecham, Bristol-Myers-Squib, Roche Molecular Systems, Schering- Plough	Tenet Healthcare	AmeriNet, Tenet Healthcare BuyPower (Tenet's GPO), Universal Health Systems, Community Health Systems	DuPont	N.A.	Mid-size businesses (initially) Small and large businesses (long term)
Number of Buyers/ Suppliers	127/2200+	500/571	2400 member hospitals	N.A.	Partners represent 535 distributors	30,000 potential buyers, 50,000 suppliers
Ventro Ownership	100%	100%	24%	40%	49%	35%

Source: Ventro Corporation and adapted from I. Toll, "Ventro Corporation," *Credit Suisse First Boston*, 24 May 2000.

N.A. = Not Available

Note: Merck Eurolab was the European arm of Merck KgaA's laboratory distribution business. This German-based company was distinct from U.S.-based pharmaceutical company, Merck.

Exhibit 2 Ventro Corporation Balance Sheet (in thousands, except per share data; unaudited)

	June 30, 2000	December 31, 1999
ASSETS		
Current assets:		
Cash and cash equivalents	\$245,358	\$21,934
Short-term investments	50,975	81,161
Accounts receivable, net ^a	11,364	12,414
Other current assets	14,552	5,041
Total current assets	322,249	120,550
Property and equipment, net	22,921	10,264
Ownership interest in vertical marketplace companies, net	31,695	--
Intangible assets, net	388,704	13,107
Other long-term assets	14,410	20,012
Total assets	<u>\$779,979</u>	<u>\$163,933</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$12,443	\$8,373
Accrued compensation	7,140	3,958
Accrued expenses	20,668	25,720
Current portion of long-term liabilities	12,904	369
Total current liabilities	53,155	38,420
Other long-term liabilities	250,590	494
Commitments and contingencies		
Stockholders' equity:		
Common stock	9	7
Additional paid-in capital	629,650	189,842
Deferred stock-based compensation	(5,287)	(6,380)
Notes receivable from stockholders'	--	(985)
Accumulated deficit	(147,674)	(57,465)
Accumulated other comprehensive income (loss)	(464)	--
Total stockholders' equity	476,234	125,019
Total liabilities and stockholders' equity	<u>\$779,979</u>	<u>\$163,933</u>

Source: Company press release.

^aNet of allowances for doubtful accounts of \$6764 and \$2 (both in 000s) in 1999 and 1998, respectively.

Exhibit 3 Ventro Corporation Condensed Statement of Operations (in thousands, except per-share data; unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2000	1999	2000	1999
Transaction volume	\$29,075	\$3,044	\$55,829	\$3,309
Transaction revenue	\$24,290	\$2,906	\$47,578	\$3,071
Other revenue	942	--	942	--
Total revenue	25,232	2,906	48,520	3,071
Cost of transaction revenue	23,116	2,753	45,106	2,908
Cost of other revenue	296	--	296	--
Total cost of revenue	23,412	2,753	45,402	2,908
Gross profit	1,820	153	3,118	163
Operating expenses:				
Research and development	11,260	3,462	20,374	5,755
Sales and marketing	16,364	5,224	29,554	8,413
General and administrative	7,658	3,611	12,423	4,626
Total operating expenses	35,282	12,297	62,351	18,794
Loss before amortization and other income and expense	(33,462)	(12,144)	(59,233)	(18,631)
Amortization of deferred stock-based compensation	(547)	(547)	(1,093)	(899)
Amortization of intangible assets	(36,655)	-	(55,469)	-
Interest expense	(4,307)	(23)	(4,355)	(48)
Interest income and other, net	4,689	209	6,451	264
Accounting gain/(loss) on investment	(45,292)	-	29,240	-
Equity loss	(4,048)	-	(5,750)	-
Net loss	\$(119,622)	\$(12,505)	\$(90,209)	\$(19,314)
Basic and diluted net loss per share	\$(2.69)	\$(2.86)	\$(2.18)	\$(6.05)
Weighted average shares of common stock used in computing basic and diluted net loss per share	44,499	4,366	41,329	3,191

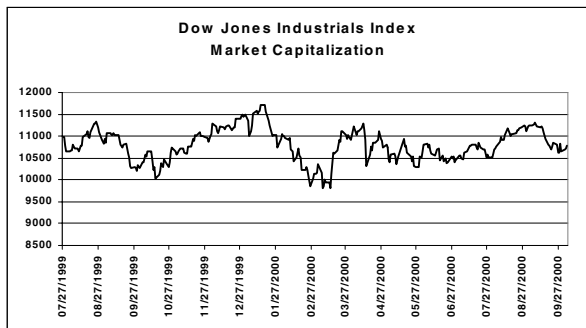
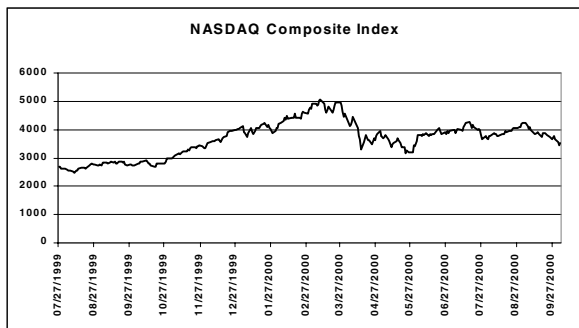
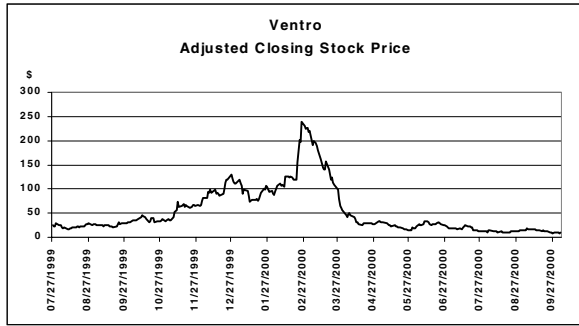
Source: Company press release.

Exhibit 4 Ventro Corporation Consolidated Statements of Cash Flows (in thousands)

	Year Ended		(Inception 9/97-12/97)
	1999	1998	1997
OPERATING ACTIVITIES:			
Net loss	\$(48,573)	\$(8,488)	\$(404)
Adjustments to reconcile net loss to net cash provided (used) in operating activities:			
Depreciation and amortization	1,749	301	7
Amortization of deferred stock-based compensation and fair value of warrants	4,884	372	--
Loss on disposition of property and equipment	--	8	--
Issuance of common stock for services	637	--	--
Changes in operating assets and liabilities:			
Accounts receivable	(12,382)	(32)	--
Other current assets	(4,124)	(244)	(43)
Other assets	(19,712)	(240)	(67)
Accounts payable	7,830	361	182
Accrued compensation	3,446	480	32
Accrued expenses	24,960	706	54
Net cash used in operating activities	<u>(41,285)</u>	<u>(6,776)</u>	<u>(239)</u>
INVESTING ACTIVITIES:			
Sales of short-term investments	20,410	6,593	--
Purchases of short term investments	(101,571)	(6,593)	--
Purchases of property and equipment	(9,323)	(1,614)	(256)
Proceeds on sale of property and equipment	--	25	--
Purchase of other assets	--	--	(10)
Net cash used in investing activities	<u>(90,484)</u>	<u>(1,589)</u>	<u>(266)</u>
FINANCING ACTIVITIES:			
Principal payments on capital lease obligations	(5)	(7)	(1)
Principal payments on notes payable	(269)	--	--
Net proceeds from issuance of preferred stock	30,198	12,975	1,851
Issuance of common stock	117,405	41	1
Payment of stockholders' notes receivable	9	--	--
Proceeds from exercise of options	375	--	--
Net cash provided by financing activities	<u>147,713</u>	<u>13,009</u>	<u>1,851</u>
Net increase in cash and cash equivalents	15,944	4,644	1,346
Cash and cash equivalents at beginning of period	5,990	1,346	--
Cash and cash equivalents at end of period	<u>\$21,934</u>	<u>\$5,990</u>	<u>\$1,346</u>
Supplemental disclosure of non-cash activities:			
Issuance of shares in exchange for stockholders' notes receivable, net	\$844	\$150	--
Equipment purchased under capital lease or note payable	\$1,132	--	\$13
Issuance of common stock for intangible assets	\$15,692	--	--
Issuance of warrants	\$936	--	--
Supplemental disclosures of cash flow information:			
Cash paid for interest	\$117	\$3	\$--
Cash paid for taxes	\$--	\$2	\$--

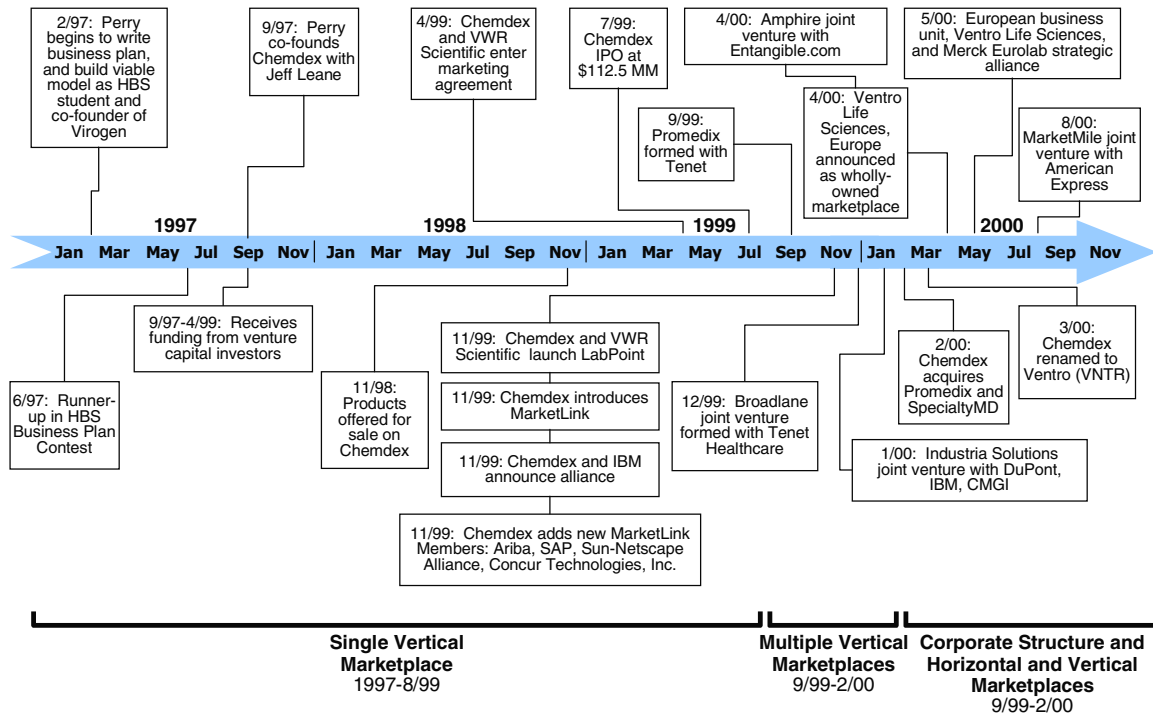
Source: SEC.

Exhibit 5 Ventro's Stock Price and Market Capitalization



Source: Datastream International.

Exhibit 6 Ventro Corporation's History and Strategy Evolution



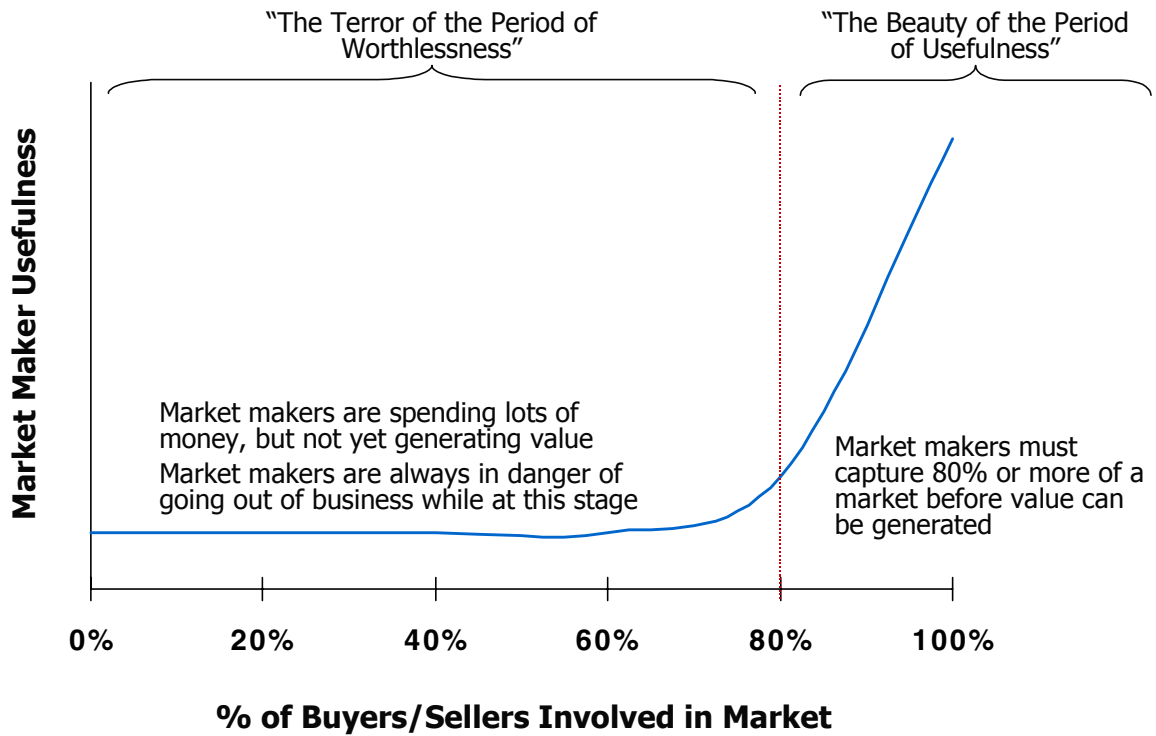
Source: Company documents and adapted from D. O'Neill, "Ventro Corp.," *William Blair*, 20 January 2000.

Exhibit 7 Ventro's Funding History

Date	Amount	Investors
September 1997	\$560,079	<ul style="list-style-type: none"> • CMGI@Ventures • Bob Swanson
December 1997	\$1,395,198	<ul style="list-style-type: none"> • Bay City Capital Fund • CMGI@Ventures
May 1998	\$12,974,988	<ul style="list-style-type: none"> • Kleiner Perkins Caufield & Byers • Warburg, Pincus Ventures • CMGI@Ventures • Bay City Capital Fund
March & April 1999	\$30,294,519	<ul style="list-style-type: none"> • Galen Associates • Kleiner Perkins Caufield & Byers • Warburg, Pincus Ventures • CMGI@Ventures • Bay City Capital Fund

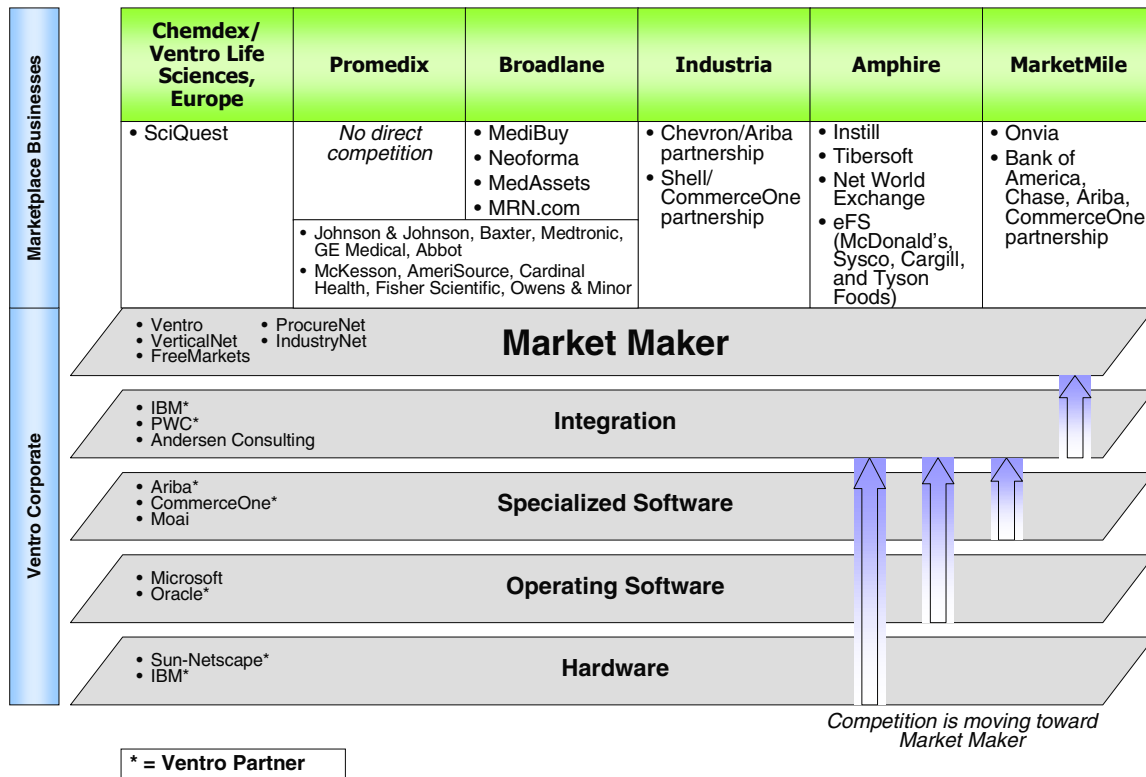
Source: Ventro.

Exhibit 8 Market Makers' Usefulness/Worthlessness



Source: Ventro.

Exhibit 9 Ventro’s Competitive Landscape (as of September 2000)

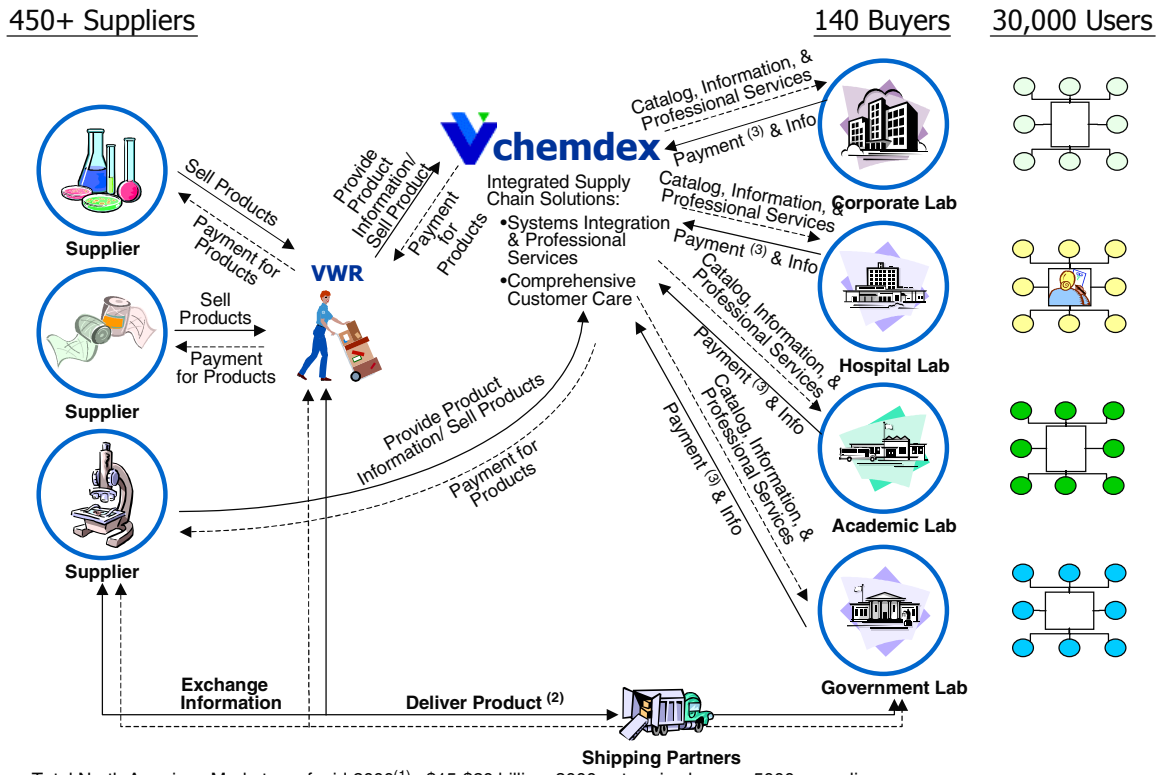


Source: Ventro

To learn more about Ventro’s competition, visit the following web sites:

- www.ariba.com www.commerceone.com www.freemarkets.com
- www.ibm.com www.instill.com www.medassets.com
- www.medibuy.com www.mrn.com www.neoforma.com
- www.onvia.com www.sciquest.com www.tibersoft.com
- www.verticalnet.com

Exhibit 10 Chemdex Business Model (Summer 2000)



Total North American Market as of mid-2000⁽¹⁾: \$15-\$20 billion, 3000 enterprise buyers, 5000+ suppliers
 Source: Casewriters' interpretation based on company documents.

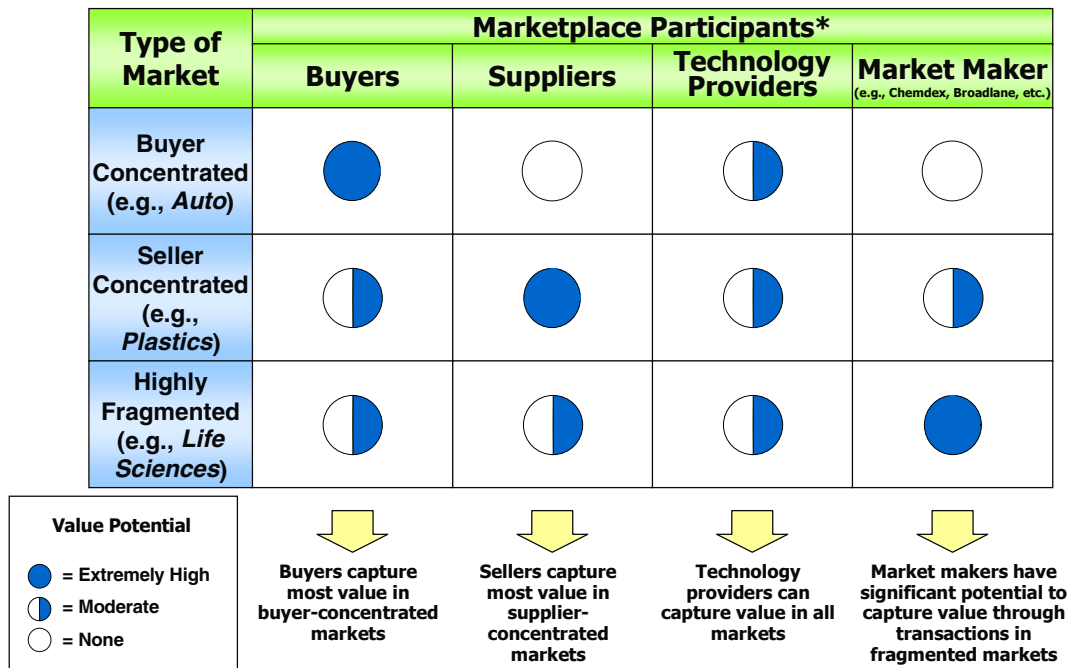
Source: Casewriters' interpretation based on company documents.

Note (1): A separate business unit, Ventro Life Sciences Europe, provided supply chain solutions in Europe.

Note (2): Chemdex took control of products at the time of shipment, but never "touched" products.

Note (3): Chemdex collected revenues from two primary sources: (1) Product sales and shipping charges (either as "principal" or "agent," which is covered in greater detail in the business/revenue model section), and (2) value-added services (such as hosting, data analysis, and integration) fees.

Exhibit 11 B-2-B Market Attractiveness



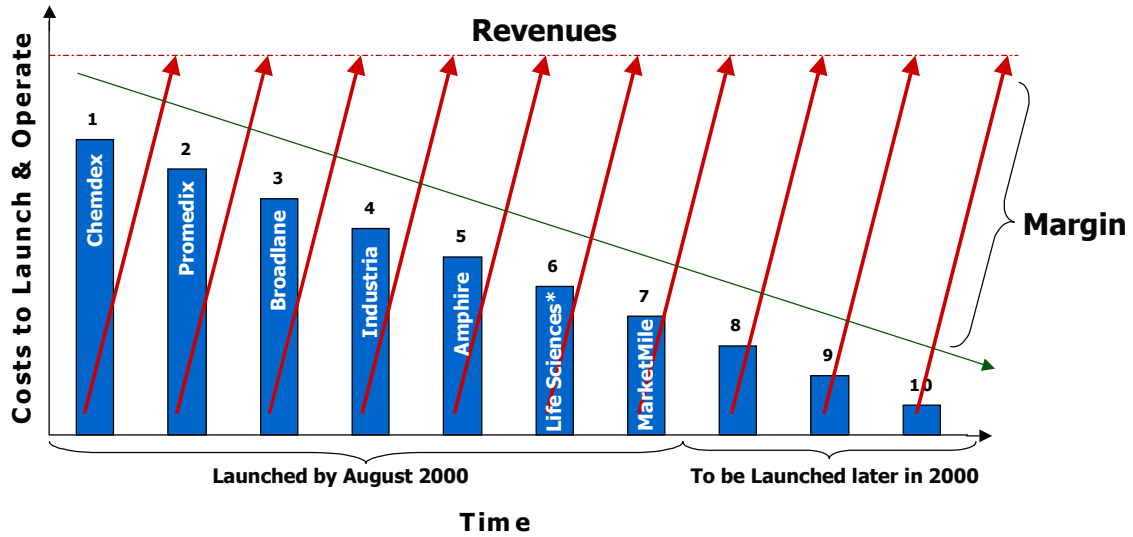
* Marketplace participants refers to those players that are most likely to have an opportunity to extract value in an online marketplace.

Criteria Used To Launch New Marketplaces:

<i>Large Market</i>	Ventro targeted markets with greater than \$10 billion in annual gross product sales and \$1 billion in gross margins (net revenues minus product costs). Its six vertical marketplaces had annual global sales higher than \$20 billion; and MarketMile annual global sales exceeded \$1 trillion.
<i>Fragmentation</i>	Ventro developed marketplaces for highly fragmented markets, in which no one buyer or supplier (or a small group of buyers or suppliers) dominated. In contrast, highly concentrated markets, such as the automobile manufacturing industry, offered little to no opportunity for Ventro.
<i>Inefficiency</i>	Ventro targeted industries in which procurement processes were highly inefficient due to slow information flow, high distribution costs, and limited customer reach.
<i>Specialized Products</i>	Ventro targeted markets that sold specialized and information-intensive products, which were most in need of the technology and information solutions that Ventro provided.
<i>Availability of Key Strategic Partners</i>	Ventro targeted industries in which it could establish partnerships with domain experts, such as VWR Scientific, a leading distributor of life sciences supplies, Tenet Healthcare in medical products, DuPont in energy and chemical plant equipment, and Entangible.com in the food services distribution segment.
<i>Potential for First-Mover Advantage</i>	Ventro targeted industries in which it could become the #1 or #2 market maker. For example, the company did not consider the steel industry an attractive market for the company to enter due to the established presence of an Internet marketplace, eSteel.com.

Source: Ventro.

Exhibit 12 Ventro's Revenue, Cost, and Pricing Models (as of Summer 2000)



*Ventro Life Sciences, Europe

Source: Adapted from C. Laughlin, "Ventro Corp.," *Deutsche Bank Alex Brown*, 28 April 2000.

Revenue Category	Description	Margin	Pricing Model
Product Sales and Shipping (Ventro acts as "Principal")	Buy product from supplier. Take ownership at the time of shipment. Product shipped from supplier inventory directly to customer. Ventro assumes risk of shipment and returns.	3-7%	Set Price
Transaction Fee (Ventro acts as "Agent")	Ventro receives a commission or transaction fee on sale of services or supplies to which it does not hold title. Supplier ships product from inventory and assumes risk of shipment and return.	1-4%	Contracted Price (often related to order size and volume)
Marketplace Development and Services Fee (Ventro acts as Consultant)	Ventro receives a fee for custom marketplace development, system integration, and hosting services.	NA ^a	Contracted Price (often determined through an RFP process)

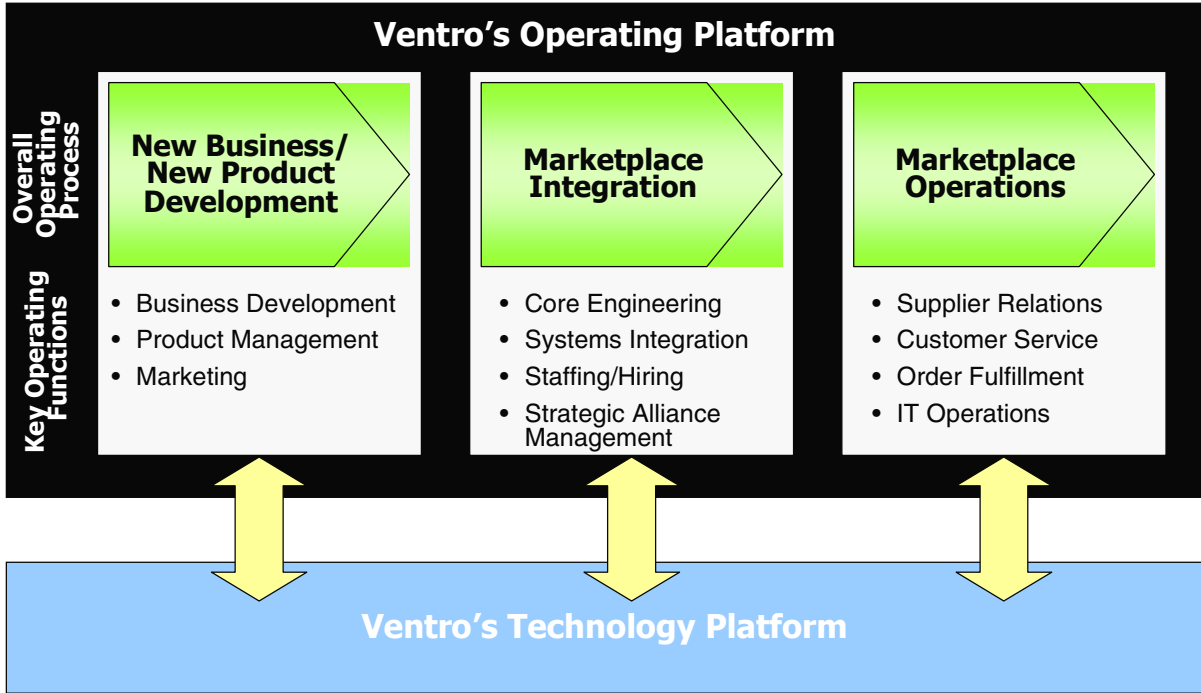
^aNot available. In an August 2000 report, W.R. Hambrecht & Company analysts reported that e-services margins averaged roughly 50%. (Source: G. Gore and Y. Ho, "Internet Services June Quarter Review and Outlook: Don't Miss The Forest Through the Trees," *WR Hambrecht & Company E-Services Update*, 25 August 2000.) Ventro collected \$972,000 in services fees (4% of revenues) during the 2nd quarter of 2000. (Source: M. Meeker and M. Rossi, "Ventro," *Morgan Stanley Dean Witter*, 21 July 2000.) Revenues from services were expected to increase in terms of gross revenues and as a % of total revenues.

Exhibit 13 Reported E-Services Gross Margins, June 2000

Ticker	Company Name	Rate
CYSV	Cysive	63.7%
VIAN	Viant	61.3%
SCNT	Scient	58.3%
TANN	Tanning Technology	57.6%
INFT	Infote	56.5%
BWAY	Breakaway Solutions	54.8%
IIXL	IXL Enterprises	53.4%
PXCM	Proxicom	52.9%
RAZF	Razorfish	52.5%
SAPE	Sapient	52.0%
USIT	US Interactive	51.9%
OGNC	Organic	51.1%
CBIS	C-bridge Internet Solutions	51.0%
ACOM	Agency.com	50.9%
LNTE	Lante	49.1%
XPDR	Xpedior	48.1%
BRNC	Braun Consulting	47.2%
DTPI	Diamond Technology Partners	46.9%
APNT	AppNet Systems	46.9%
LUMT	Luminant Worldwide	46.7%
DTAS	Digitas	46.4%
MMPT	Modern Media	45.7%
RRRR	Rare Medium Group	39.9%
Average:		51.5%

Source: G. Gore and Y. Ho, "Internet Services June Quarter Review and Outlook: Don't Miss the Forrest Through the Trees," *W.R. Hambrecht & Company E-Services Update*, 25 August 2000.

Exhibit 14 Ventro's Operating Platform



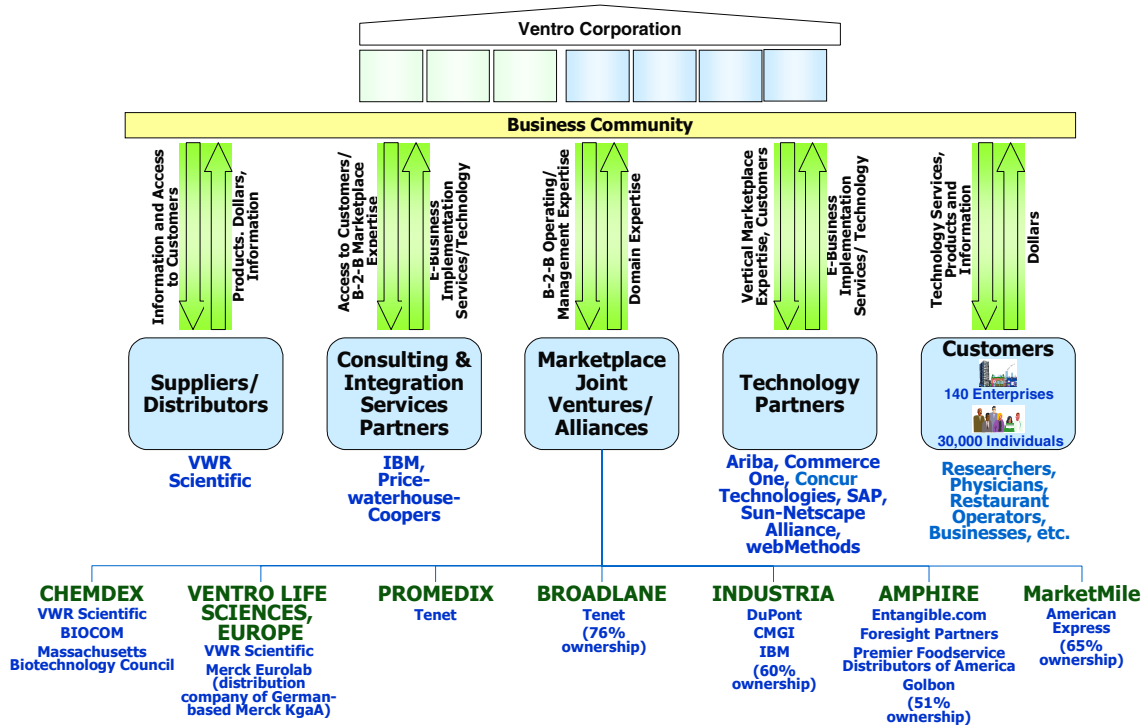
Source: Casewriters' interpretation based on company documents.

Exhibit 15 Ventro's Key Partnerships

Type of Partner	Specific Partners	Nature of Partnership	Benefits to Ventro	
Technology (All Marketplaces)	<ul style="list-style-type: none"> IBM 	<ul style="list-style-type: none"> Systems integration partner 	<ul style="list-style-type: none"> IBM's expertise in systems integration and e-commerce solutions 	
	<ul style="list-style-type: none"> Ariba, CommerceOne, Concur, SAP, Sun-Netscape 	<ul style="list-style-type: none"> MarketLink Program, (solution offering an interface between Ventro's marketplace and buyers' B-2-B and ERP systems) 	<ul style="list-style-type: none"> Third-party enterprise procurement and ERP solutions 	
Vertical Market	Life Sciences (Chemdex)	<ul style="list-style-type: none"> VWR, major distributor of life sciences supplies 	<ul style="list-style-type: none"> Co-marketing relationship called LabPoint, co-branded e-commerce solution for VWR's customers 	<ul style="list-style-type: none"> VWR's product base, which significantly expanded Chemdex's product offering selection Access to, and credibility with, VWR's existing and future customer base
		<ul style="list-style-type: none"> Genentech, leading biotech research institution/customer 	<ul style="list-style-type: none"> Marketing/testing agreement 	<ul style="list-style-type: none"> Genentech allowed Chemdex to "live test" its software components and provided information on other patterns (in exchange, Chemdex didn't generate gross margins)
		<ul style="list-style-type: none"> Merck Eurolab, the distribution company of German-based Merck KgaA 	<ul style="list-style-type: none"> European business unit, Ventro Life Sciences and Merck Eurolab, formed a strategic alliance 	<ul style="list-style-type: none"> Merck Eurolab's distribution network, product offerings and geographic expertise
	Commodity & Specialty Medical Supplies (Broadlane & Promedix)	<ul style="list-style-type: none"> Tenet Healthcare, 2nd largest U.S. hospital company 	<ul style="list-style-type: none"> Tenet formed Broadlane as joint venture with Ventro 	<ul style="list-style-type: none"> Access to Tenet's Group Purchasing Organization (GPO), BuyPower, which managed 400 vendor relationships and generated more than \$3 billion in purchases annually Broadlane's eight-year e-commerce agreement with Tenet is expected to provide steady business flow
		<ul style="list-style-type: none"> Amerinet (leading GPO), Universal Health Systems, Cleveland Clinic 	<ul style="list-style-type: none"> Created exclusive e-commerce relationship with Broadlane and Ventro 	<ul style="list-style-type: none"> Partners represented over \$15 billion in annual expenditures
		<ul style="list-style-type: none"> SpecialtyMD.com, 25-person company 	<ul style="list-style-type: none"> Ventro acquired company in December 1999 	<ul style="list-style-type: none"> SpecialtyMD.com owned proprietary search and content technologies, which were added to Ventro's sites and provided high-margin revenue potential for Ventro
	Energy & Chemical Plant (Industria)	<ul style="list-style-type: none"> DuPont, one of largest buyers of fluid processing equipment CMGI@Ventures 	<ul style="list-style-type: none"> CMGI and DuPont formed Industria as joint venture with Ventro 	<ul style="list-style-type: none"> DuPont provided domain expertise and allowed Ventro to "test" its technology components CMGI provided access to capital as well as technology and management expertise
	Food Distribution Services (Amphire)	<ul style="list-style-type: none"> Entangible.com, leading provider of procurement solutions for food distributors 	<ul style="list-style-type: none"> Entangible.com formed Amphire as joint venture with Ventro 	<ul style="list-style-type: none"> Entangible had 20 employees focused on food service and had developed web-based order entry engine for food service distribution industry
		<ul style="list-style-type: none"> Foresight Partners, Premier Food Services of America, Golbon, three leading food distribution buying groups 	<ul style="list-style-type: none"> Strategic marketing alliances 	<ul style="list-style-type: none"> Three distributors represented over 535 distributors and \$25 billion in food service purchases annually
	Horizontal Market	General Business Products & Services (MarketMile)	<ul style="list-style-type: none"> American Express 	<ul style="list-style-type: none"> Formed MarketMile as joint venture with Ventro

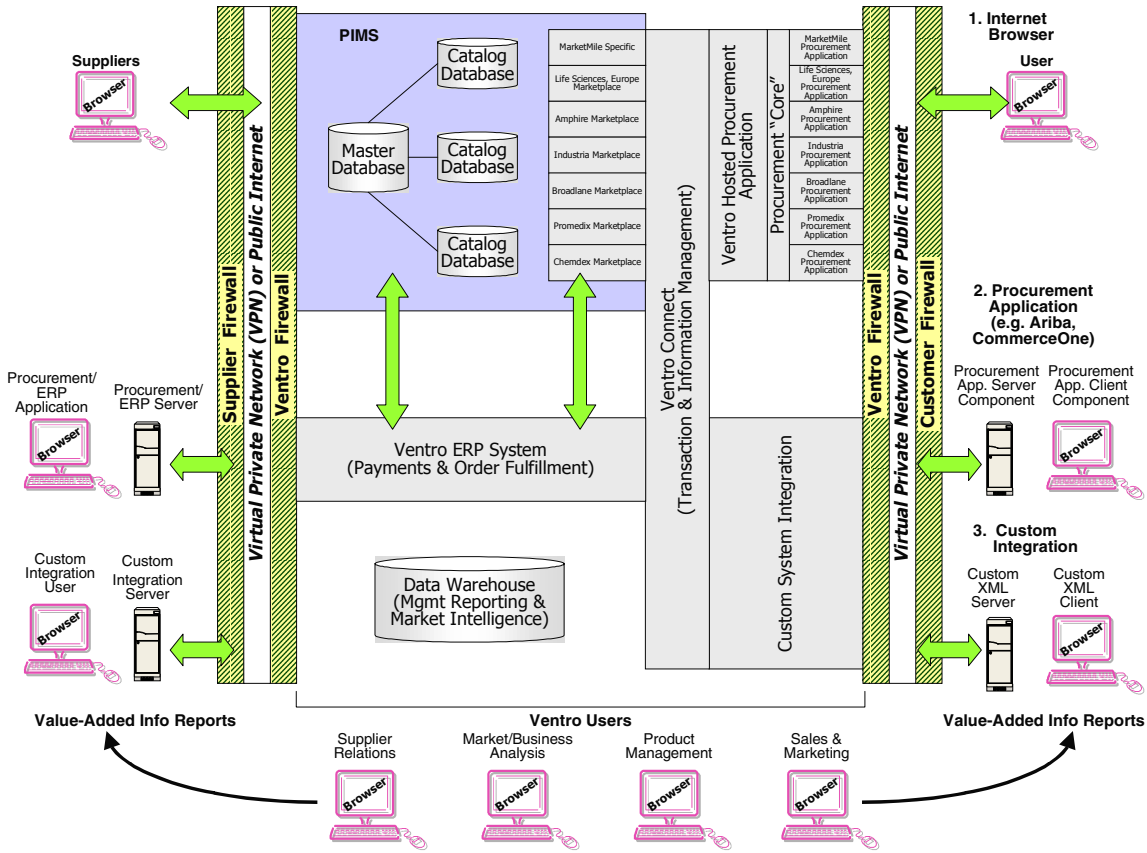
Source: Ventro and S. Fitzgibbons, "Ventro Corp.," *Chase, Hambrecht and Quist*, 4 May 2000.

Exhibit 16 Ventro's Business Community



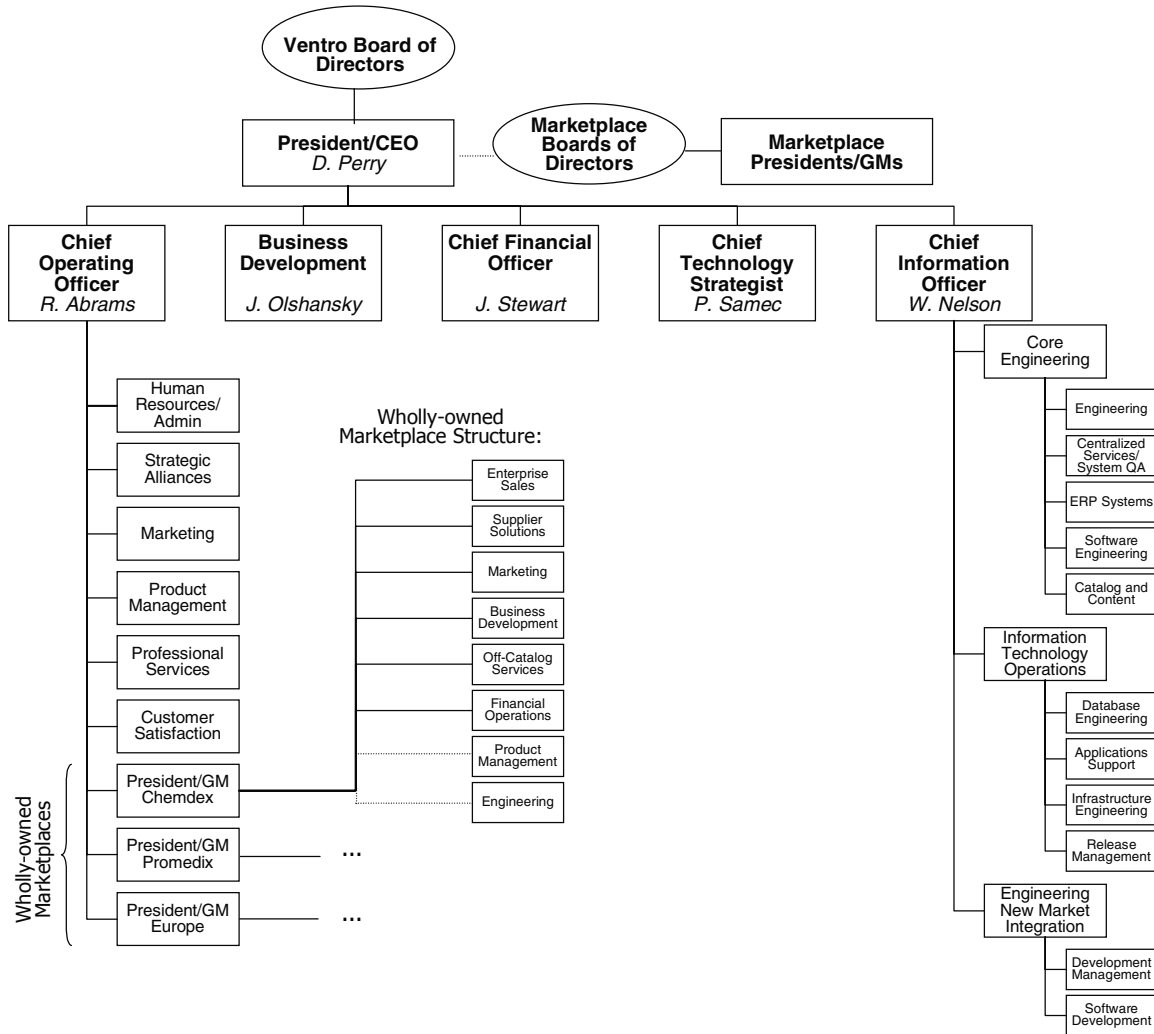
Source: Casewriters' interpretation based on company documents provided by Ventro.

Exhibit 17 Ventro's Technology Platform (as of Fall 2000)



Source: Ventro.

Exhibit 18 Ventro's Organizational Chart (as of Summer 2000)



Source: Ventro.

Exhibit 18 (continued) Ventro's Key Functional Groups**Operations:**

Human Resources/Administration. Handled all human resources and administrative processes, including hiring, training, staffing and retention, as well as facilities management. In addition to performing these activities for Ventro corporate, this group was responsible for getting new marketplaces up and running in terms of people, facilities and HR functions.

Strategic Alliances. This group managed relationships with strategic and technology partners such as IBM, PricewaterhouseCoopers, webMethods, VWR Scientific, DuPont, CMGI, etc.

Marketing. Marketing developed and implemented the company's marketing programs, including corporate branding and marketing communications, as well as determining the high-level strategy for marketplace businesses' marketing programs (which were executed by the marketplace marketing units).

Product Management. "The buck stops here." This group developed and released new products through coordination of marketing, professional services, customer service, engineering and sales.

Professional Services. Also referred to as PSO (Professional Services Organization), this group worked with buyers and suppliers to revise operations and integrate and customize the information systems and databases to enable these groups to do business using Ventro's online marketplaces.

Customer Satisfaction. This group handled three types of inquiries from users/buyers: 1) technical questions/problems, 2) shopping and order management (questions related to ordering and follow-up on orders that had already been placed), and 3) emergency services if the system went down.

Marketplace Operations (Chemdex, Promedix, etc.). These groups, led by marketplace Presidents/General Managers, were largely comprised of large *enterprise sales* and *supplier solutions* groups. Enterprise sales teams served potential enterprise buyers, such as research labs, corporations, etc., and supplier solutions groups targeted potential suppliers.

Business Development. This function was charged with the task of identifying and securing partnerships with best-of-breed strategy and technology partners. This group worked closely with senior management to ensure that partnerships were tightly linked to the company's strategy.

Finance. Finance managed investor relations and corporate financial operations.

Technology Strategy. This group determined the strategy and development of Ventro's technology.

Information Systems/Engineering:

Core Engineering. This group built and updated Ventro's hosted procurement system, database and search engine (the core of the Ventro technology platform).

Information Technology Operations. This group managed the day-to-day operations of the Ventro technology system, including operating and maintaining the system and its databases, supporting applications, and managing releases of new products/programs.

Engineering of New Marketplace Integration. This group customized the core technology according to the needs of the vertical or horizontal marketplace, including populating marketplace databases for new marketplace businesses.

Source: Casewriters' interpretation based on Ventro documents and interviews.

Exhibit 19 Ventro Corporation's Key Personnel**Executive Officers**

David P. Perry is President and Chief Executive Officer of Ventro and is responsible for the management and strategic direction of the company. Perry co-founded Chemdex in September of 1997 to address the inefficiencies in the buying and selling of scientific supplies. He soon recognized that the assets contained in Chemdex could be leveraged across multiple marketplaces to take advantage of the enormous opportunity in business-to-business (B-2-B) e-commerce, which ultimately led to the formation of Ventro Corporation in February 2000. Perry has since led the company through the successful launch of four Ventro operating companies and numerous strategic partnerships, anchoring Ventro's position as the leading builder and operator of B-2-B e-commerce companies. Prior to Ventro, Perry was co-founder and CEO of Virogen, a Boston biotechnology company, while a student at Harvard Business School. Previously, he held a variety of management positions at Exxon and was responsible for the performance and maintenance of a \$200 million division of the company's oil refinery business. A pioneer in the e-commerce space, Perry was recently named Entrepreneur of the Year by Ernst & Young. Ventro was also named one of Upside Magazine's Top 100 Companies in 1999 and Red Herring's "100 Most Important Companies" in the world for 2000. Perry holds a B.S. in chemical engineering from the University of Tulsa and an M.B.A. from Harvard Business School.

Robin A. Abrams is Chief Operating Officer of Ventro and directs all day-to-day operations of the business including corporate marketing and public relations, product management, customer service, professional services and human relations. Abrams also oversees the sales, supplier relations and marketing operations of Chemdex and Promedix. Prior to joining Ventro, Abrams was most recently the President of Palm Computing, Inc. and Senior Vice President of 3Com Corporation. While there, she helped extend Palm Computing's leadership in the worldwide handheld computing market. Prior to 3Com, Abrams served as President and CEO of VeriFone, Inc., a subsidiary of Hewlett-Packard. At VeriFone she led the traditional point-of-sale business and the growth of electronic commerce markets for smart cards and Internet solutions. Abrams has also held senior management positions with Apple Computer, including President of the Americas and Vice President and General Manager of Apple Asia. Before joining Apple, she spent eight years with Unisys in several senior-level positions where she managed the delivery of business solutions focused on banking, airlines, government and networking. Abrams holds both a B.S. and a J.D. from the University of Nebraska.

Pierre V. Samec is Chief Technology Strategist of Ventro and oversees all aspects of the strategy and development of Ventro's technology. He brings experience in managerial leadership and technology advancement to the company. Previously, Samec served as Senior Vice President of retail technology at Charles Schwab and Company, the largest enterprise at Schwab, where he was responsible for building customer service, advice and financial product software components. In addition, Samec previously served as Vice President of software engineering for Schwab Institutional, a major enterprise responsible for 30% of Schwab's assets. Prior to Schwab, Samec has served as Vice President of software engineering at Quintus Corporation, a provider of customer service and support applications. He received an engineering degree from the Ecole des Mines de Paris and a Ph.D. in geophysics from Stanford University.

James G. Stewart is Chief Financial Officer of Ventro and is responsible for investor relations and corporate financial operations for the company. Previously, Stewart served as Chief Financial Officer of CN Biosciences, Inc., a life sciences manufacturing and distribution company, and as President of the company's principal operating division, CN Corporation. While at CN Biosciences, he spearheaded the company's successful IPO and assisted with acquisitions, as well as the sale of the business to Merck KgaA. Additionally, he managed U.S. sales operations of the Novabiochem brand, focusing primarily on products for combinatorial chemistry. Previously, Stewart was involved in the

entertainment and semiconductor equipment industries, and was a partner with Ernst & Young. Stewart holds a B.S. from the University of Southern California.

J. Barrie Keiser is President and Chief Operating Officer of Promedix, a Ventro specialty medical products company and is responsible for the day-to-day operations and strategic direction of Promedix. Prior to Promedix, Keiser served as President and Vice President of the Southwest Region for Allegiance Healthcare, where he was responsible for sales and distribution in the south central United States. Previously, Keiser held positions as Vice President of integrated distribution services, where he developed and marketed distribution services and electronic commerce capabilities, and General Manager of ValueLink, Allegiance's stockless inventory management service, which provided logistics services to hospitals and other healthcare providers. He also spent three years in sales with American Hospital Supply. Keiser holds a B.S. in marketing from Indiana University.

John Thorpe is President of Ventro Life Sciences and is responsible for all Ventro operating companies in Europe. Prior to joining Ventro, Thorpe was based in Paris as President of GE Information Services Europe, Middle East & Africa and Vice President of GE Information Services Inc. During this time he grew GE's supply chain e-commerce business in Western Europe and expanded the business into Eastern Europe and the Middle East by establishing a network of joint venture companies with strong national partners. As a member of GE's chief executives' council in Europe, he was responsible for chairing the council of European CIOs during the period of preparation for the Euro and Year 2000 compliance. Prior to this, Thorpe was Managing Director of GE Information Services Limited, a company that builds and hosts extranets, and Managing Director of International Network Services Limited, a company he helped establish as the leading EDI service provider for the retail supply chain in the UK.

Derek McCall is Vice President of Ventro Life Sciences and oversees the day-to-day strategic operations of Ventro Life Sciences. Prior to joining Ventro, McCall held a number of senior management positions in a variety of chemical and life sciences businesses. As President of Alfa Aesar, a research chemicals company, his vision and international experience transformed the company into a global player. Previously, McCall held senior sales and marketing positions in Johnson Matthey's chemicals and catalysts businesses. McCall holds a BsC Joint Honours degree in zoology and oceanography from the University of Swansea.

Board of Directors

Name	Position
Charles Burke	President, Monument Partners, Inc.
Brook Byers	Managing Director, Kleiner Perkins Caufield and Byers
Jon Callaghan	General Partner, CMGI @Ventures, LLC
Jan Leschly	Former Chief Executive, SmithKline Beecham
Paul J. Nowak	President and Chief Executive Officer, VWR Scientific Products Corporation
David P. Perry	President and Chief Executive Officer, Ventro Corporation
John Pritzker	President, Hyatt Ventures
Naomi O. Seligman	Director, The Dun and Bradstreet Corporation
L. John Wilkerson	Managing Director, Galen Partners

Source: Adapted from Ventro's web pages at <http://www.ventro.com/about/management.html> and <http://www.ventro.com/about/directors.html>.

Exhibit 19 (continued) Key Personnel by Marketplace Business

Vertical/ Horizontal Marketplace	Management Team Bios
Chemdex	Neil de Crescenzo, President and General Manager (IBM, Blue Cross Blue Shields) James S. Wambach, Vice President, Worldwide Sales Operations (Sybase, Oracle) Bob White, Vice President, Supplier Solutions (IBM, IBM Europe)
Broadlane	Jeffery C. Barnekow, Director (Geac Enterprise Solutions, Just-Food, Just-Drinks) Trevor Fetter, Director (Tenet Healthcare) David C. Ricker, Chief Operating Officer (Tenet Healthcare, BuyPower)
Amphire	Mark Barnekow, President and CEO (Geac Enterprise Solutions, Just-Food, Just-Drinks) Deanna Fenton, Vice President, Marketing (IBM Wholesale Distribution, Instill, Birite Foodservice) Jerry Wilhite, Vice President, Sales (U.S. Foodservice, Foodservice of America) John Albrecht, Vice President, Product Management Tom Hammer, Vice President, Engineering John Weaver, Vice President, Professional Services
Industria	Tom Nardi, CEO (Bechtel) Alan Rodrigues, Vice President, Business Development (Chevron, Chevron Chemical, Chevron Oil) Patrick Holcomb, Founder and Director (Anderson Consulting Strategic Services, Exxon) Shawn Weidmann, Director (McKinsey, M.W. Kellogg) Heather Jeanblanc, Controller, Financial Operations (Intel, Weyerhaeuser, NEC) Mark Menke, Director, Marketing (Chevron, Saudi Chevron Petrochemical) Ben Eazzetta, Founder and Vice President, Product Management (Exxon, Georgia Power) John Eichstaedt, Director (Exxon) Doug Kelly, Director Professional Services (DuPont) James Baker, Director Sales (Baker Communications) Sean Schantz, Director (Annams Systems Consulting, Nako; Exxon Energy Chemicals) Steve Newland, Vice President, Supplier Relations (Grainger, Honeywell-MicroSwitch) Bob Lewis, Director (Goddard Industries, Asahi America) Robert Vrugink, Director (DuPont, Conoco) Tom Hammer, Vice President of Engineering - New Verticals, Ventro Corporation (Apple, 3DO)
Promedix	J. Barrie Keiser, President and General Manager (Allegiance Healthcare, Baxter International, American Hospital Supply) Thomas J. Sherry, Senior Vice President, Sales and Services (Owens & Miner, Stuart Medical, Dow Corning) John Kirby, Senior Vice President, Supplier Relations (SulzerMedica USA, Kimberly-Clark, Sherwood Medical, Johnson & Johnson, Ciba-Geigy) John Brewer, Vice President, Customer Operations (Safeskin, Nestle, Kimberly-Clark, Ernst & Young) James Chad Locke, Vice President, Technology (iDEAL International, IBM Global Services, MCI) Rashelle Perry, Corporate Counsel (UniShippers Association, Novele)
MarketMile	Gayle Sheppard, President and CEO (J.D. Edwards & Company)
Ventro Life Sciences (Europe)	John Thorpe, President of Ventro Life Sciences, Europe Ltd. (GE Information Services) Derek McCall, Vice President of Ventro Life Sciences, Europe (Ventro/Chemdex, Alfa Aesar)

Source: Company web site.