Case 1-4

Global Healthcare Exchange

We have continued to stay consistent with our goals. We must (1) hit our financial targets; (2) build the offerings and capabilities required to deliver value to all of our members; and (3) gain critical mass. We've been consistent in our message and strategy about our priorities, and we've executed to achieve these three goals. What separated us from many other dot-com start-ups was that we had very experienced leaders and employees who understood how to build a company that could achieve these three goals. We were able to hit our financial and strategic targets, which enabled us to build credibility with our investors and our members. We also stuck by our Guiding Principles, which enabled us to build and maintain the trust of everyone involved.

Mike Mahoney, CEO of Global Healthcare Exchange, L.L.C., 2003

In May 2003, Mike Mahoney, CEO of Global Healthcare Exchange, L.L.C. (GHX), put the finishing touches on a presentation he was scheduled to make to the 18 members of the company's board of directors. GHX was at an inflection point in its development. Established in early 2000, the company was designed to provide a "worldwide online, open, and independent electronic trading exchange to facilitate the real-time transfer of information, money, goods, and/or services in the worldwide medical equipment, products, and services industry."[1] Its founders included the biggest names in health care, including Johnson & Johnson (J&J), GE Medical Systems, Baxter Healthcare, Abbott Laboratories, and Medtronic. James T. Lenehan, vice chairman and president of J&J, explained the motivation for these fierce competitors to come together to form GHX. "Every health care system around the world is under enormous pressure to create efficiency and take out costs. This exchange is a big part of the solution, providing access to state-of-the-art supply chain management and clinical content [while dramatically lowering the cost of doing business]."[2] Miles White, CEO and chairman, Abbott Laboratories Inc., continued: "For more than 40 years, Abbott has invested in and maintained a world-class distribution infrastructure designed to provide high-quality, low-cost, flexible distribution options to our customers. Today, as a founding member of the Global Healthcare Exchange (GHX), Abbott is enhancing our customers' options once again, this time utilizing the power of the Internet to move information, drive down supply chain costs, and deliver the highest level of customer service."[3] Jeff Immelt, president and CEO, GE Medical Systems at the time that GHX was formed,[4] stressed that: "Health care requires the speed of the Internet and the staying power of trusted, experienced industry leaders. This venture combines both and is a perfect extension to our long-standing customer relationships."[5] Curt Selquist, company group chairman, J&J Medical Devices and Diagnostics, and chairman of GHX, emphasized the importance of maintaining direct relationships with customers: "During 1999 and early 2000, there was a flood of new entrants that launched business-to-business (B2B) health care supply chain marketplaces. We viewed this with concern. We didn't want anyone to come between us and our customers."

[1] Global Healthcare Exchange Limited Liability Company Agreement, August 25, 2000.

[2] Global Healthcare Exchange, News Desk, March 29, 2000.

[3] Abbott Laboratories Web site (www.abbott.com), accessed June 27, 2003.

[4] Immelt assumed the position of CEO and chairman of General Electric upon the retirement of former CEO and chairman, Jack Welch, in September 2001.

[5] Medtronic press release, April 18, 2000.

Indeed, by early 2000, over 90 Internet health care marketplaces had been formed. But, decreased investor confidence in unprofitable Internet businesses followed by worldwide economic declines caused many of the new entrants to fail. Founded on the principle of providing a trusted, fair, and transparent marketplace, GHX was "committed to creating customer value, not market value." In fact, the Limited Liability Company Agreement that its founders signed emphasized that the company did not plan to register an initial public offering (IPO) with the Securities and Exchange Commission.[6]

Not long after the announcement of GHX's formation, more than half of the emerging independent health care Internet marketplaces disappeared as venture capital investors recognized that the chances for success were slim given the commitment of the established suppliers to fund a neutral, third-party exchange. In an open letter to customers, Harry Kraemer, CEO and chairman of Baxter, stressed: "With more than 400 years of combined experience in the health care industry, this new company combines our proven record of quality and trust with the agility of an Internet technology company."[7] Consolidation continued during 2001 and 2002 as GHX convinced many of the remaining health care marketplace competitors to join forces. GHX's November 2001 acquisition of HealthNexis and its December 2002 acquisition of Medibuy, coupled with alliances with Neoforma, AmeriNet, and Broadlane, united the leading participants of the health care supply chain (see Exhibit 1).

At the time of the Medibuy merger in late 2002, GHX connected over 80 health care suppliers and 739 buyers while Medibuy connected 39 suppliers and 561 buyers. Once the two companies' infrastructures and operations were connected, the merged company, which would continue under the GHX name, would enable over 1,400 buyers to transact business with over 100 suppliers. Annual transaction volume for the merged company was $1 billion in 2002. By July 2003, the company had achieved $1 billion in transaction volume, and it was expected that the annual volume for 2003 would be $2 billion and by the end of 2004 $4 billion.[8]

EXHIBIT 1 **Key GHX Acquisitions, Mergers, and Alliances**

Source: GHX Web site and company press releases.

Date	Company	Event
September 27, 2000	CentriMed	Acquisition
August 28, 2001	Neoforma	Alliance
November 11, 2001	AmeriNet	Alliance
November 26, 2001	HealthNexis	Merger
June 26, 2002	Broadlane	Alliance
December 30, 2002	Medibuy	Merger

But, even as he celebrated the company's success, Mahoney recognized that 2003 presented new challenges. Not the least of these was the need to quickly integrate GHX's and Medibuy's operations and cultures. The merger came at a time when GHX was already reorganizing to achieve greater discipline and customer focus in the face of the company's rapid growth.

As he pondered the company's organizational challenges, Mahoney also recognized that the new organization would need to align with the evolution of the company's strategy (see Exhibit 2). Prior to the Medibuy merger, GHX was primarily focused on achieving a critical mass of buyers and suppliers and providing them with connections and the basic content and transaction support to allow them to do business online. As GHX entered 2003, however, its members were pressing for new value-added services. To meet these needs, the company needed to shift from a "product-centric" to a "customer-centric" organization. Given this, new capabilities and skills would be required. Finally, GHX's investors were concerned that these strategic and organizational goals would not deter the company from achieving cash flow break even by year-end 2003.

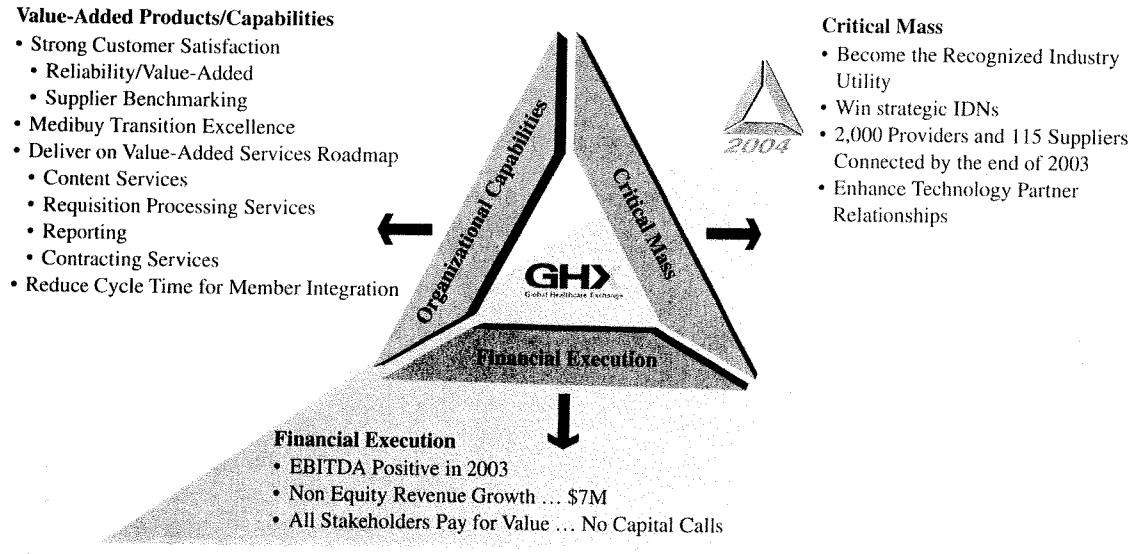
[6] Global Healthcare Exchange Limited Liability Company Agreement, August 25, 2000.

[7] Open Letter to Customers, March 29, 2000, Baxter Corporation Web site (downloaded on June 27, 2003).

[8] Company documents.

EXHIBIT 2 GHX Strategy: 2003

Source: Company documents.



GHX has built critical mass and a winning business model
Key focus for 2003 is to implement value-added products and capabilities that drive greater ROI for members

Industry Overview

As information and biotechnology converge to provide enhanced medical technology, and as that medical technology is moved from product development to standard of care, it is clear that one company may not possess all the requisite skills to ensure success. As a result, the most successful growth companies will increasingly pursue enhanced partnering. In fact, this trend will result in some very interesting alliances, and perhaps some very strange bedfellows."[9]

Art Collins, CEO and Chairman, Medtronic, 2002

In 2002, U.S. health care expenditures contributed over 13 percent, or approximately $1.3 trillion, to the U.S. gross domestic product (GDP), up 8.9 percent in 1980 and 12.2 percent in 1990. The industry's major leading sectors included health care equipment manufacturers and suppliers, pharmaceuticals, biotechnology, health care providers, health care distributors, and managed care. As of February 2003, sales for the health care industry represented approximately 15 percent of the Standard & Poor's (S&P) 500, with pharmaceuticals making up nearly 9 percent[10] (refer to Exhibit 3a for leading companies within each sector).

Key Participants in the Health Care Industry

The increased complexity and cost of medical care coupled with increased consumer demands and regulatory constraints contributed to increasing inefficiencies in the health care supply chain. The first of these factors, the rise in U.S. health care costs, was due largely to the greater availability of medical products and services. Sales of prescription drug pharmaceuticals played a major role, rising from $12 billion in 1980 to

[9] Art Collins, Keynote Address: Georgia Tech-Parker H. Petit Institute Distinguished Lecture Series, November 14, 2002.

[10] Phillip M. Seligman, S&P Industry Survey: "Healthcare: Facilities," December 19, 2002.

EXHIBIT 3a Leading U.S. Health Care Companies by Sector ($ in billions)

Source: Company annual reports and Web sites; Hoovers.com N/A = Not available.

Company	2002 Revenues	2002 Net Income	No. of Employees	Ownership Status
Sector: Health Care Facility Providers: Market Size (U.S. $ Revenue) = $342 billion				
HCA, Inc.	19.7	.83	178,000	Public
Tenet Healthcare	13.9	.78	113,877	Public
Ascension Health	7.6	.11	83,412	Private
Triad Hospitals	3.5	.14	33,000	Public
Sector: Pharmaceuticals: Market Size (U.S. $ Revenue) = $179 billion (Note: Also participate in the Equipment & Supplies sector.)				
Merck & Co.	51.8	7.1	N/A	Public
Johnson & Johnson	36.3	6.6	108,000	Public
Pfizer, Inc.	32.3	9.1	90,000	Public
Abbott Laboratories	17.7	3.2	70,000	Public
Bristol Myers Squibb	18.1	1.9	46,000	Public
Sector: Equipment & Supplies: Market Size (U.S. $ Revenue) = $175 billion				
GE Medical Systems	9.0	N/A	27,500	Subsidiary
Baxter International	8.1	.78	55,000	Public
Tyco Healthcare Group	7.9	N/A	40,000	Subsidiary
Siemens Medical	7.5	N/A	31,000	Subsidiary
Medtronic	6.4	.98	28,000	Public
Becton Dickson & Co.	4	.48	25,200	Public
Guidant Corp.	3.2	.68	10,000	Public
Fisher Scientific	3.2	.51	9,100	Public
C. R. Bard	1.3	.15	7,700	Public
Boston Scientific Corp.	.8	.13	14,000	Public
B. Braun	N/A	N/A	N/A	Private
Sector: Managed Care/Payors: Market Size (U.S. $ Revenue) = $20 billion				
Blue Cross/Blue Shield	N/A	N/A	N/A	Private
Aetna, Inc.	19.9	−.25	28,371	Public
Cigna Corp.	19.3	−.39	44,600	Public
United Health Group	25	1.3	30,000	Public
WellPoint Health Networks	17.3	N/A	16,500	Public
Sector: Biotechnology: Market Size (U.S. $ Revenue) = $26 billion				
Amgen, Inc.	5.5	1.39	7,700	Public
Genetech, Inc.	2.25	.06	5,252	Public
Biogen, Inc.	1.15	.24	1,992	Public
Chiron Corp.	.97	.18	4,044	Public
Other Relevant Industry Players				
Distributors				
Cardinal Health	51.1	1.0	50,000	Public
McKesson	50	.42	24,000	Public
AmeriSource-Bergen	45	.34	13,700	Public
Retailers				
Wal-Mart	244	8.0	1,383,000	Public
Walgreen	28.7	1.02	141,000	Public
CVS	24.1	.72	105,000	Public
Online Marketplaces				
Neoforma	.073	−.082	196	Public
GHX	.039	−.035	210	Private
Broadlane	N/A	N/A	180	Private

over $122 billion in 2000. By 2011, prescription drug costs were expected to rise to $414 billion. An additional strain was the growing number of older individuals eligible for Medicare (approximately 12 percent of the population). According to a 2002 S&P report, "In 2030, when the last of the 'baby boomer' cohort attained age 65, an estimated 77 million Americans, or 18 percent of the projected population, would be beneficiaries." Total U.S. health care expenditures were expected to grow to $2.8 trillion by 2011.

As costs rose, the demands for quality care and customer service also increased. Both providers and patients expected the right products be available to them at the right time and at an affordable price. Given that health care was considered a "public good" and that errors could cost people their lives, government regulation added significant cost and time to the development of new drugs, devices, and care routines. The regulatory cost and complexity increased for companies that did business globally, as each country had different requirements.

To offset the growing costs in health care and increased competitive pressure, the industry had consolidated. Mergers and acquisitions led to mega-health care manufacturers, wholesalers, and providers[11] (refer to Exhibit 3b for key terms).

In November 1996, an independent study commissioned by CSC Consulting titled "Efficient Health care Consumer Response" (EHCR) identified some $11 billion in potential improvements in health care supply chain processes throughout the industry. The medical device sector was targeted as a key area of inefficiency. The study went on to state that information technology (IT) enabled supply chain redesign could reduce costs from $23 billion to $12 billion.[12]

[11] Phillip M. Seligman, S&P Industry Survey: "Health care: Facilities," December 19, 2002.

[12] Computer Science Corp. press release, "Health care Industry Study Reveals $1 Billion in Potential Supply Chain Savings: Study Also Shows How EHCR Can Help Improve Quality of Care," December 18, 1996 (downloaded July 2003).

The EHCR study proved a rallying cry for the industry. It also motivated dot-com entrepreneurs who were searching for opportunities to apply emerging Internet technologies to improve supply chain efficiencies and create value. But, by early 2003, only a few health care marketplaces had survived the inevitable consolidation; the key competitors included Broadlane, Neoforma, and GHX. Brief descriptions of Neoforma and Broadlane are provided below. GHX is discussed in more detail in the next section of the case.

Neoforma, based in Santa Clara, California, was launched in 1996 and, in late 2002, was the only health care marketplace that operated as a publicly traded company. Neoforma offered supply chain solutions for hospitals, group purchasing organizations (GPOs), and distributors. In March 2000, Neoforma entered into a strategic alliance with Novation, formed through the merger of Voluntary Hospitals of America (VHA) and University Healthsystem Consortium (UHC)—two of the largest integrated delivery networks (IDNs). Neoforma's relationship with Novation enabled the company to rapidly expand its installed base of customers and transaction volume. In 2001, $24.6 million of the firm's reported $27.8 million in transaction revenue was contributed by Novation.[13] It was estimated that, in 2002, over 95 percent of the company's $73.7 million in revenues came from Novation, with VHA contributing $55 million.[14] "Not only does Novation own approximately 60 percent of Neoforma's stock," a Bear Stearns analyst reported, "but VHA, the hospital network that founded and runs Novation (along with UHC), is also Neoforma's largest lender."[15] Curt Nonomaque, an executive vice president at VHA, was reported to have said that he considered the payments to Novation for Neoforma to be an outsourcing fee rather than a subsidy. "We're comfortable paying outsourcing fees to Neoforma

[13] C. Becker, "Baby Steps Toward Profitability: Neoforma," *Modern Healthcare*, April 29, 2002 (downloaded from OneSource Business Browser, June 2003).

[14] R. Falci, J. Gurda, and A. Weinberger, "Neoforma," *Bear Stearns Equity Research*, January 8, 2003.

[15] Op. Cit, Falci, "Neoforma."

EXHIBIT 3b Health Care Industry Key Terms

Source: Author.

<table>
<tr><th>Key Terms</th><th>Definitions</th></tr>
<tr><td>Group Purchasing Organizations (GPOs)</td><td>A GPO is an organization that enables health care providers to realize savings and efficiencies by aggregating purchasing volume and using leverage to negotiate discounts with manufacturers, distributors, and other vendors. The largest GPOs in Jan. 2002 are listed below. ["U.S. top 11 hospital group purchasing organizations and their e-commerce/Internet partners ranked by number of member hospitals," Nelson Publishing, January 1, 2002 (available on OneSource Business Browser)].
<table>
<tr><th>GPO (No. of Member Hospitals)</th><th>GPO (No. of Member Hospitals) cont.</th></tr>
<tr><td>Novation (2,300)
AmeriNet (1,900)
Premier Inc. (1,600)
MAGNET (775)
HSCA (700)
Managed Healthcare (632)</td><td>Joint Purchasing Group (611)
Shared Services Healthcare (570)
InSource (500)
Consorta (400)
Health Trust Purchasing Group (345)
MedAssets (N/A)</td></tr>
</table></td></tr>
<tr><td>Integrated Delivery Networks (IDNs)</td><td>IDNs aggregate health care providers (e.g., hospitals, clinics, medical groups) and provide integrated management systems and operations to enable increased efficiency and expanded access to specialized patient care services across previously independent institutions.
<table>
<tr><th>IDN (No. of Member Hospitals)</th><th>IDN (No. of Member Hospitals) cont.</th></tr>
<tr><td>HCA (179 hospitals in U.S., London, and Sweden)</td><td>Community Health Systems (63 hospitals)</td></tr>
<tr><td>Tenet (116 hospitals in the U.S. and 1 in Spain)</td><td>Health Management Association (41 hospitals)</td></tr>
<tr><td>Triad (49 hospitals, 14 surgery centers)</td><td>LifePoint Hospitals (28 hospitals)</td></tr>
<tr><td>Universal Health Service (34 hospitals, 38 behavioral health centers)</td><td>Province Healthcare (56 hospitals; 20 owned by Province)</td></tr>
<tr><td>Kindred Healthcare (65 hospitals, 285 nursing centers, rehab, and pharmacy)</td><td>Veterans Health Services (2,200 community health care hospitals and other providers)</td></tr>
<tr><td>Ascension Health (67 hospitals)</td><td>University Healthsystem Consortium (87 academic health centers)</td></tr>
</table></td></tr>
<tr><td>Managed Care Organizations (MCOs)</td><td>Managed Care is a method of delivering and paying for health care through a system of provider networks. MCOs are organizations and affiliated networks that are accountable for providing and financing health care services. Managed Care plans include Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs), Point of Service Plans (POS), and similar coordinated plan networks.</td></tr>
</table>

because it's core to our business."[16] In late 2002, Neoforma reported a net loss of $82.2 million.[17] The company stated that it had 196 employees and more than 1,200 customers, including 287 suppliers and 929 hospitals. With over 4,000 connections between hospitals and suppliers, the company reported 300,000 transactions per month and $5 billion in transaction dollars annually.

Broadlane was formed in 1999 as a joint venture between Tenet HealthSystems and Nexprise Corporation. Tenet, one of the largest health care systems in the United States, operated 114 acute care hospitals and related businesses in 16 states. Nexprise, (formerly Ventro), was a holding company that operated Internet marketplaces such as Chemdex (a marketplace for specialty chemicals, biochemicals, and reagents), ProMedix (a marketplace for specialty medical supplies), Industria (a marketplace for energy and chemical plant supplies), Amphire (a marketplace for the food industry), and MarketMile (a marketplace selling supplies and services to small to midsize companies).[18]

Broadlane, which evolved from Tenet HealthSystems' corporate purchasing department, operated as a GPO. Its customers included leading hospital groups such as its founder, Tenet, Kaiser Permanente, and Universal Health Services. By 2002, Broadlane had 180 employees with offices in San Francisco, Oakland, Dallas, and New York. The company had 290 health care providers linked to its systems and handled an estimated $1.2 billion in transaction dollars annually.[19]

Two other electronic marketplaces—HealthNexis and Medibuy—had also played a significant role in shaping the health care industry supply chain. By late 2002, both had merged with GHX.

HealthNexis was founded in April 2000 by four of the largest U.S. health care distributors: AmerisourceBergen Corporation, Cardinal Health Inc., Fisher Scientific International Inc., and McKesson Corporation. HealthNexis provided information and technology solutions to health care suppliers, providers, distributors, and GPOs. The company's core offering consisted of a transaction clearinghouse, product data manager, contract manager, and associated data services. HealthNexis was acquired by GHX in November 2001.

Medibuy, which was also formed in 2000, was an independent venture-backed health care marketplace that, by the time of its merger with GHX, had received over $120 million in funding from several large venture capital firms. Its key customers included IDNs/managed care organizations (MCOs) and GPOs, such as Premier Inc., HealthTrust Purchasing Group (HPG), and Hospital Corporation of America (HCA). The decision was made to merge (rather than simply form an alliance) to enable both companies to rapidly achieve scale across the health care industry value chain, to leverage operating synergies, and to broaden product scope. "Over the past several years, both GHX and Medibuy have been working on parallel tracks to deliver on the same market promise: a more efficient health care supply chain," said Selquist. "GHX and Medibuy each provide valuable technology solutions. Together, they have an opportunity to eliminate redundancy and improve business processes for all participants."[20] One of Medibuy's key customers, HCA, agreed. "Medibuy's products and services played a significant role in the achievement of HCA's supply chain efficiency objectives over the past few years, and we anticipate that the combined resources of the new company will deliver even greater value," said Jim Fitzgerald, senior vice president, contracts and operations support for HCA. "HCA hospitals have

[16] C. Becker, "Baby Steps Toward Profitability: Neoforma," *Modern Healthcare*, April 29, 2002 (downloaded from OneSource Business Browser, June 2003).

[17] Sales are based on pro forma figures, net income is based on GAAP. Adapted from Neoforma, Inc., News and Events "Neoforma Reports Fourth Quarter and Full Year 2002 Results; Begins 2003 with Strong Momentum," February 13, 2003.

[18] See L. M. Applegate and M. Collura, "Ventro: Builder of B2B Businesses" (HBS Publishing No. 801-042) for more information on the Ventro business model at the time that Broadlane was formed.

[19] Broadlane, Inc, "About Us," and "Broadlane Finds Connection to Suppliers," Broadlane Web site, http://www.broadlane.com, accessed February 2003.

[20] GHX Press Release, December 11, 2002.

utilized the Medibuy's Reqs™ software to streamline the requisitioning process. Now, as a result of the merger, HCA will be able to improve the accuracy of their purchase orders by using product data, maintained and verified by suppliers, in the GHX AllSource™ catalog [and Content Intelligence™]."[21] (See Exhibit 4 for a summary of GHX and Medibuy products before the merger.)

[21] Op. Cit., GHX Press Release.

EXHIBIT 4 GHX Software Offerings (Before Medibuy Merger)

Source: Company records.

Product Category	Description
Transaction Engine	
GHX MemberSource™ Exchange Platform	The MemberSource exchange platform can fully manage the flow of information and transactions among a large and broad range of members and was built upon high standards for reliability, security, and scalability.
Connectivity Options	
GHX Connect™	GHX Connect enables providers to use their existing ERP systems to place orders, which are then routed through GHX's exchange platform to GHX's broad supplier membership.
GHX Advantage™	Through a "channel partner" relationship, GHX links with independent ERP and MMIS (materials management information system) vendors (including Lawson, Omnicell, and Ormed) to create integrated connectivity for hospitals, IDNs, and MCOs. GHX automatically passes updates and enhancements directly through the channel partner to the end user.
GHX Axiom™	Health care providers with little or no ERP or MMIS functionality can connect to GHX using GHX's stand-alone browser interface. GHX Axiom provides searching capabilities, generation and electronic submission of purchase requisitions and orders, order status, and other features.
Value-added Products and Services	
GHX AllSource™ Catalog	Online standards-based product catalog containing normalized data owned, verified, and maintained on an ongoing basis by suppliers. GHX AllSource catalog facilitates electronic communication between buyers and sellers, thereby reducing errors that can cost both time and money for all involved.
Report Source	GHX members have access to real-time data related to their specific health care purchases. Report Source is designed to, among other things, identify pricing, product item number, and unit of measure inaccuracies; alert participants to actions that need to be taken to expedite transactions; and summarize transactions for planning purposes.
GHX Content Intelligence™	This product functionality automatically reviews purchase orders for incorrect product data, electronically notifies buyers of any such errors, inserts a correction using the most up-to-date product data from suppliers, and makes a record of the change for future purchases.
Capital Equipment and Contract Management	GHX is currently developing products that improve efficiencies associated with the purchase of capital equipment and consignment products, as well as the management of health care purchasing contracts.

(*continued*)

EXHIBIT 4 Medibuy Product Offerings (Before Medibuy Merger) (Continued)

Source: Company records.

Medibuy Access

Access Integration Platform and Tools enabled members to search catalogs and complete transactions. Features included:

- Enhanced order cycle management replaced phone and fax ordering
- Integrated new XML technology with current EDI technology
- Expanded networks of health care providers and suppliers
- Single point of contact for procurement
- Seamless business process automation
- Simplified maintenance and support via online technology upgrades

Reqs™: Requisition to Purchase Order Workflow Application

Reqs™ integrated directly with a hospital's medical management information systems (MMIS) and enterprise resource planning (ERP) systems to create a requisition and manage all aspects of the requisition to purchase order process. Features included:

- Requisition creation
- Automated approval routing
- Requisition process monitoring and management with real-time status reporting and information
- Automatic acknowledgment and order tracking
- Full requisition reporting

In addition to the online marketplace competitors, many GPOs and distributors were also providing supply chain software and services. For example, **McKesson Information Solutions** provided enterprisewide patient care; clinical, financial, supply chain, managed care; and strategic management software solutions, as well as outsourcing and other services to health care organizations throughout the United States and selected other countries. (McKesson was an equity owner of HealthNexis and thus became an equity owner of GHX at the time of the HealthNexis acquisition.)

AmeriNet was founded in 1986 as a GPO. By 2002, it served a network of over 14,000 acute and nonacute health care service providers and offered a catalog for obtaining a group purchasing discount on supplies and capital equipment. The catalog was available online and on CD-ROM. GHX formed a strategic alliance with AmeriNet in November 2001. Finally, **MedAssets HSCA,** headquartered in St. Louis, Missouri, was one of the largest GPOs in the country, serving more than 16,000 health care providers nationwide (with purchasing power approaching $7 billion in gross throughput). By early 2003, 2,200 of its hospital members were connected to MedAssets' online marketplace platform. In April 2003, GHX strengthened its position with providers yet again by forming an alliance with MedAssets.[22]

Finally, several software vendors and service providers sold supply chain solutions to health care industry participants. In late 2002, the key players included (1) enterprise resource planning (ERP) software firms such as SAP, J.D. Edwards, Oracle, and PeopleSoft; (2) procurement software firms such as i2 and Manugistics; and (3) supply chain and ERP vendors offering customized vertical industry solutions within the health care industry such as Lawson, Cerner, Eclipsys, IDX, and Siemens Medical Solutions. (Siemens was an equity investor in GHX.) A 2002 Forrester report predicted that, on average, U.S. firms would spend

[22] GHX Press Release, April 10, 2003.

$4.8 billion per year through 2008 on supply chain management initiatives.[23]

GHX

> GHX was started for four very important strategic reasons. First, we wanted to avoid third parties getting in between existing supplier and provider relationships. The second reason was to have input on the fees being charged to suppliers, which represented 3% to 5% of sales. Third, we wanted to play a role in standardizing data in the industry. Lastly, we wanted to build a utility model that would improve the efficiency and effectiveness of the supply chain for both providers and suppliers.
>
> *Curt Selquist*[24]

The vision for GHX originated during discussions between senior executives at J&J and GE Medical Systems that took place between 1999 and early 2000. Shortly after talks began, J&J and GE Medical decided to approach other suppliers with the goal of forming a consortium of founding investors. By the time the company was formally announced on March 29, 2000, J&J, GE, Baxter, Abbott, and Medtronic had joined together as founders. C. R. Bard, Becton Dickinson, Boston Scientific, Guidant, and Tyco joined two weeks later. Siemens joined as an equity investor in spring 2001. B. Braun Medical Inc. joined in June 2002.

Initially GHX was considered the "supplier exchange." However by 2003, after several mergers and acquisitions, GHX had become one of the leading Internet-based health care marketplaces—and the only one with equity ownership by key participants representing health care providers, manufacturers, distributors, and GPOs. By year-end 2002, GHX managed 800,000 transactions and had revenues of $120 million (including revenues from Medibuy). In addition to its Westminster, Colorado headquarters, GHX had offices in Europe and Canada. With the Medibuy merger, the company added offices in Nashville, Tennessee.

Defining the Concept and Launching the Company

The initial concept for GHX was defined through discussions among the senior executives of the five founding investors. One of the initial challenges that the founders faced was to prove that it was possible for competing organizations to work together collaboratively. Initial discussions helped clarify a common vision, mission, and goals. The vision, which remained as a guiding force in 2003, was "To grow as the global leader in business-to-business supply chain management solutions and services for the health care industry, providing superior member satisfaction, delivered by energized employees who are driven to meet commitments."[25] The company's mission clarified its long-term goals and provided the foundation for its business model. These goals included "To transform health care by dramatically improving the efficiency of health care delivery through information exchange and by maximizing efficiencies in the supply chain; and to facilitate continuous improvement in the relationship between all stakeholders in the health care supply chain resulting in collaborative communication, reduced costs, and better patient care."

To formalize the nature of the relationship, wording was added to the Global Healthcare Exchange Limited Liability Corporation (L.L.C.) Agreement that specified the motivation for and purpose of the partnership and the intent of the founders. In addition, specific clauses were inserted to cover key negotiated agreements. For example, the L.L.C. Agreement explicitly stated that the company did not plan to pursue an IPO. Instead, the firm would seek to generate revenue and distribute excess profits back to its investing members and its customers through fee reductions. Given that the company did not plan an IPO, the L.L.C. Agreement also specified that each

[23] Navi, Radjou, Forrester Research, "SCM Processes Replace Apps: 2003 to 2008—Analysis," December 2002.

[24] Company group chairman, Johnson & Johnson, and member of the Global Healthcare Exchange board of directors.

[25] Global Healthcare Exchange, "Company Vision," www.ghx.com, accessed March 15, 2003.

founder would be issued "Membership Units," with each unit equivalent to $1 of capital contributed by a founding member during the Initial Capital Call. Subsequent equity investors were issued Membership Units at a price per unit that was determined by the board based on the value of the company. The Membership Units were used to determine voting rights, decision authority, and distribution of profits and loss. Finally, the L.L.C. Agreement also specified other governance issues, for example, the composition of the board of directors, change of control, and so on. (See Exhibit 5 for a summary of key areas covered in the L.L.C. Agreement and Exhibit 6 for the composition of the board of directors.) John Gaither, GHX general counsel, explained:

> The initial L.L.C. Agreement formalized many hours of discussion among the founders. We tried to provide a legal framework for corporate governance and for the partnership that would protect all members yet be flexible enough to deal with uncertainty. A key area of uncertainty in the beginning involved the eventual equity ownership structure. For example, the initial L.L.C. Agreement only considered the interests of suppliers since, at the time, we

EXHIBIT 5 **Summary of GHX (Third Amended and Restated) Limited Liability Agreement: Table of Contents (November 19, 2001)**

Source: Company records.

EXHIBIT 6 Composition of the Board of Directors (January 2003)

Source: Company records.

Composition of the Board

7 GHX Investors (Closely mirrored equity ownership)
- 5 of the 6 Majority Owners: J&J, Abbott, GE, Medtronic, Siemens (Baxter was scheduled to rotate onto the board and one of the members would rotate off in 2004)
- 1 of the HealthNexis Distributors: Fisher Scientific (AmeriSourceBergen, Cardinal, and McKesson were scheduled to rotate onto the board over the next few years).
- 1 of the 5 Minority Owners: B. Braun (Becton Dickinson, Boston Scientific, C. R. Bard, Guidant, and Tyco were scheduled to rotate onto the board over the next few years)

3 Medibuy
- 1 HCA
- 1 Premier Executive
- 1 Premier Hospital Executive

GHX Executives
- CEO

Four additional *independent* directors were added to the board in early 2003. Independent directors were selected based on consensus between GHX and Medibuy to provide "strategic value and industry expertise."

Member	Ownership (%)
Premier, Inc	16.83%
HealthNexis, LLC	12.85
Baxter Healthcare Corporation	9.90
Johnson and Johnson Health Care Systems	9.90
Abbott Exchange Inc.	9.73
GE Medical Systems	9.23
Medtronic USA, Inc.	9.23
Siemens	9.23
HCA (BNA Holdings, Inc)	7.21
Becton, Dickinson and Company	1.41
Guidant Corporation	1.39
C. R. Bard, Inc.	1.36
Tyco Healthcare Group LP	1.36
B. Braun	0.21
Boston Scientific Corporation	0.15
Total	**100%**

did not anticipate that we would have nonsupplier equity owners. We soon realized, however, that it would be more difficult than we expected to gain the trust of distributors, GPOs, and health care providers. This was essential to gaining the critical mass needed to become the industrywide exchange we envisioned. This led us to become more open to broader equity ownership from the key industry participants. In February 2001, we finalized a deal to acquire HealthNexis—an exchange owned by the leading distributors in the industry. During the discussions leading

> up to the acquisition, HealthNexis owners stated three basic strategic risks that they wanted us to address. First, they wanted us to agree that GHX would not become a distributor or a GPO. They also wanted us to state that we wouldn't aggregate demand and that we wouldn't try to influence pricing. These concepts were very consistent with our intent, and we thought that it was a great idea to formalize our Guiding Principles and to include statements covering these areas as an Exhibit in the L.L.C. Agreement.[26]

Bruce Johnson, VP of sales and marketing continued:

> The Guiding Principles also evolved over time as we learned more about the needs and expectations of our expanding membership base and ownership structure. They provided a tangible statement of these shared expectations and became a powerful tool for marketing and selling the exchange to new members.

(Exhibit 7 contains the Guiding Principles and the Data Ownership Statement—both of which were included as exhibits in the L.L.C. Agreement.)

Early in the formation of the company the founders also needed to avoid challenge by antitrust regulators.[27] To ensure compliance with antitrust regulations, a lawyer experienced with antitrust rules was hired and all board meetings started with a reading of the guidelines that specified what could be discussed and what could not. Antitrust lawyers attended key meetings and Congressional hearings during the formation of the company. While discussions of each firm's strategy, products, cost structure, and pricing was prohibited, the investors were able to discuss issues related to developing and delivering GHX strategy and offerings.

The L.L.C. Agreement provided a strong statement to investors, members, and potential members that GHX was committed to creating and governing the organization as a trusted, neutral platform upon which all members of the industry could conduct business. By December 2000, GHX had signed on 35 nonequity owner members. While the majority were health care suppliers, one was a large health care provider (Long Island Jewish Health System) and another was a distributor (The Burrows Company). In addition, an alliance with Neoforma in August 2000 enabled access to a larger pool of health care providers, GPOs, and distributors.

With the vision and mission in place, the investor team set out to elect a board chairman and recruit a senior management team. Curt Selquist, company group chairman of J&J's Medical Devices and Diagnostics Group, was elected as chairman of the board of GHX. He and other members of the board then set out to recruit key executives. Michael Mahoney, a long-term executive at GE Medical Systems, was selected as CEO in spring 2000. (See Exhibit 8 for profiles of the senior management team in early 2003).

While he was involved with the development of the vision and concept from the beginning, Mahoney officially joined GHX as president and CEO in May 2000. Other senior officers were Kevin Ruffe, formerly of J&J, who joined GHX as vice president of operations; Patrick Egan, former director of human resources at Medtronic, who joined GHX as vice president of human resources; Richard Hunt, former vice president of corporate audit at Baxter, who joined GHX as chief financial officer; Bruce Johnson, former general manager of sales and marketing at GE Medical Systems, who joined GHX as vice president of sales and marketing; and John Gaither, former vice president corporate development and deputy general counsel at Baxter, who joined GHX as general counsel.

Building and Launching the Initial Product/Service Offering

The senior team quickly turned their attention to getting the talent needed to build and launch the first product offerings. To ramp up quickly, they "borrowed" employees from the five founding member firms, with about equal representation from each. These employees stayed on with their

[26] Global Healthcare Exchange, L.L.C., Amended and Restated Limited Liability Company Agreement, February 22, 2001.

[27] In the U.S. and across the world, antitrust rules prohibited collusion among competitors.

EXHIBIT 7 GHX Guiding Principles in 2003

Source: Company records.

1. The strategic mission of GHX is to create an open and neutral supply chain utility for the health care marketplace. GHX will be open to membership from all participants and will treat its members with neutrality. The objective of the Exchange is to reduce supply chain costs and to improve efficiencies for all its members.
2. The Exchange will focus on health care supply chain customers, especially on purchases in the following areas: medical/surgical supplies and equipment, pharmaceuticals, dietary needs, and other services. A Product Council composed of an equal number of supplier and purchaser representatives will determine specific functionality that is consistent with the approved budget.
3. The Exchange financial model is designed to reduce supply chain costs to its members. The Exchange will implement pricing and business models that will generate revenues sufficient to cover its operating and capital needs. Excess revenues beyond the anticipated operating and capital cash needs will be used to reduce the future pricing structure to all participants.
4. As a supply chain utility for the health care industry, the Exchange will seek to charge all participants fair value for the benefits received. The Exchange will not charge members who are distributors duplicate fees for products manufactured by members who are suppliers.
5. The Exchange will not manufacture, package, or distribute health care products.
6. The Exchange will not intentionally influence the terms of any contracts (e.g., pricing incentives, auctions, and promotions between users). The Exchange will use commercially reasonable efforts to present competing products in a neutral manner, except as otherwise requested by a purchaser. The Exchange will not intentionally influence the distribution channel of any product.
7. The Exchange will implement appropriate security to ensure the confidentiality of pricing, product availability, and purchase information between buyer and seller.
8. The Exchange will not aggregate demand or otherwise become a Group Purchasing Organization.
9. The Exchange will follow data ownership guidelines as detailed in the "Data Ownership Statement."
10. The Exchange will work to promote the adoption of industry standards (e.g., UPN, HIN, UNSPSC, ECRI).

Data Ownership Statement

- The parties to each transaction own the data relating to that transaction.
  - The parties are the buyer (e.g., hospital) and seller (e.g., manufacturer).
  - If a distributor is legally an agent, then its rights to data are governed by its agreement with the seller.
  - If a distributor is legally the seller, then the manufacturer's rights to data are governed by its agreement with the distributor.
- The Exchange will not disclose transaction-specific data to anyone without the consent of the buyer or seller.
- The Exchange may sell aggregated data.
  - Aggregate data may not disclose participants.
  - Aggregate data will only include data from buyers and sellers who consent.

EXHIBIT 8 Profiles of Senior Management Team

Source: Company records.

Executive	Background
Michael F. Mahoney, CEO	Before joining GHX, Mahoney held positions of increasing responsibility at GE Medical Systems, most recently as general manager of sales and marketing, integrated imaging solutions. During his tenure at GE Medical Systems, he gained expertise in leading start-up, growth-oriented IT businesses, sales management and training, and nuclear/CT medical products.
Roger Morgan, GM, Europe	Prior to joining GHX, Morgan served 21 years with Becton, Dickinson and Company, most recently as vice president for its global SAP implementation.
Richard W. Hunt, CFO	Before joining GHX, Hunt served as a vice president of corporate audits for Baxter Inc. During his 19 years with Baxter/American Hospital Supply, Hunt held leadership positions in corporate finance, business development, manufacturing, and distribution.
John F. Gaither, Jr., VP, General Counsel	Before joining GHX, Gaither was vice president for corporate development for Baxter International Inc. and was also responsible for Baxter's international strategy. Prior to that, he held a variety of positions at Baxter including senior attorney, corporate secretary, and deputy general counsel, as well as vice president, law/strategic planning, for Baxter Diagnostics, Inc. and Baxter's medical technology businesses.
Bruce Johnson, VP, Sales & Marketing	Before joining GHX, Johnson served as America's marketing manager, integrated imaging solutions, for GE Medical Systems. He had nine years of previous experience with the company, including tenure as magnetic resonance imaging product marketing manager and product line sales representative.
Kevin Ruffe, VP, Operations	Before joining GHX, Ruffe spent nine years in the information management division of Johnson & Johnson Health Care Systems, most recently as director of account and contract management. Before his work with Johnson & Johnson, Ruffe served for four years as the manager of applications development for McNeil Specialty Products, New Brunswick, NJ.
Jeff Cunningham, VP, Professional Services	Before joining GHX, Cunningham served in key leadership positions with Medibuy, primarily focused on product strategy, development, and operations. Cunningham came to Medibuy through the merger with Premier Health Exchange, where he was a founding member of the senior management team. In previous roles, Cunningham was a partner in Computer Science Corporation's National eBusiness Consulting Practice.
Patrick Egan, VP, Human Resources	Prior to joining GHX, Egan was director of human resources at Medtronic, Inc. Egan worked at Medtronic for 11 years, holding a variety of human resource positions. Most recently, he was responsible for the domestic sales organization, implementing performance management systems, succession planning, and creating compensation and organization design strategies.

respective companies but were expected to spend the majority of their time building GHX. Mahoney commented:

> It was a great show of commitment on behalf of the founding companies that they would give up a significant number of their best employees to get this initiative off the ground. However, it was difficult to form a cohesive culture because the employees were all from aggressive competitors. In addition, these employees were considered to be "on loan" to GHX and continued to hold their original positions. So while it was a great idea and got us

started, those early years were a bit chaotic. By December 2000, it was clear that we really needed to get our own team in place, and we went through our list of "employees" and determined which were really needed and, more importantly, which were committed to the GHX vision, mission, and Guiding Principles. The remaining employees went back to the founder companies.

Egan continued:

When the company was first announced in March 2000, we thought of it more as a project than an actual company. Each of the original founding firms loaned people to work on building GHX and continued to pay their salaries. The arrangement we had with the board was that we could work on the project on loan from the parent for about 6 months and then we could renew once for another 6 months. After 12 months we needed to make a decision whether to return to the parent firm or quit and work for GHX. The purchase of CentriMed and the decision to move corporate headquarters to Colorado were defining moments. We all knew that it was time to make a decision. By that time I had developed compensation, benefit, and payroll systems so we had the infrastructure in place. Once we had a corporate headquarters with offices, HR systems in place, and the beginnings of a business model, people began to think of GHX as a company and it was much easier to sign on officially. After the move to Colorado, we hired over 70 people in less than 6 months.

As they shifted from a "borrowed" workforce to a permanent one, GHX established a compensation and rewards structure suitable for a privately held company. In addition to a base salary, employees were given a yearly performance bonus plus they were promised an additional bonus if they stayed with the company for three years. While the base pay and bonuses were consistent with "market rates," the long-term incentives were very different from those offered by other technology firms at the time. According to Ruffe:

We had developers who wanted to make $120,000 plus stock options. But this wasn't appropriate for a company that did not plan to go public. Instead, we offered a base salary and a bonus. After the dot-com meltdown, many of the prospective employees to whom we had made offers but who had declined came back to GHX and said, "Well, the options didn't work out for us so now we want that base salary." Instead of trying to follow what everyone else was doing in the market, we did what made sense for our business. I think this helped us build an organization that was aligned with the vision, mission, and strategy.

To quickly get to market, GHX didn't have time to build its own technologies, so it sought the expertise of third-party supply chain solution vendors. Originally, GHX negotiated with i2, IBM, and Ariba, who had been working together to build B2B exchange software for use across multiple global industries. But the partnership among the software vendors was strained, and GHX was forced to find a new solution. In September 2000, GHX acquired CentriMed, a Colorado-based company with a software product that could run online global supply chain markets.[28] Initially, the founder and several of the executives of CentriMed took over senior positions at GHX, including the role of chief technology officer. But most left within the next year to pursue other interests. According to Ruffe:

CentriMed gave us an immediate presence in the marketplace. They had an Internet browser-based online catalog that could be used to load each supplier's product catalog. Given that most of the major suppliers in the industry were GHX investors, we got the buy-in up front to transfer their catalogs to the CentriMed engine. The more difficult piece was to integrate the CentriMed system with the IT systems used by suppliers, health care providers, and distributors. While CentriMed's solution enabled customers to browse an integrated supplier catalog and obtain product descriptions, pricing, and order details, without connections to suppliers' and customers' internal systems transactions could not be fully automated.

During late 2000, GHX developed the functionality and features required for members to connect their internal systems to the GHX online transaction engine. In December 2000, GHX announced that it had successfully completed online transactions with its first pilot hospital. By February 2001, 26 IDNs representing 207 hospitals had joined GHX and were in the process of integrating internal supply chain systems and procedures to enable them to do business on the GHX platform. To encourage buyers

[28] Global Healthcare Exchange, News Desk, "Global Health Care Exchange, L.L.C. to Acquire CentriMed," August 14, 2000, accessed February 2003.

to sign on, GHX did not charge them for joining its marketplace, neither did it charge for each transaction.

Growing and Evolving the Business

Initially, it was planned that the GHX marketplace would be funded entirely by suppliers. However, it soon became clear that expanded ownership would be needed to get the full buy-in and participation of other value chain participants. In August 2001, GHX entered into an alliance agreement with Neoforma, which at the time had 514 hospitals signed up to its health care marketplace. The partnership enabled each member to tap into the other's platform. According to Hunt:

> Neoforma's biggest owner was Novation, a large GPO. As a result, the deal with Neoforma gave us direct access to healthcare providers that purchased through Novation. A hospital could connect to Neoforma, which then passed the request for information to GHX. The GHX marketplace enabled the hospital to access the supplier catalogs and place an order and then passed the information back to Neoforma, which delivered it to the hospital. In essence, we established a connection between the Neoforma and GHX marketplaces which ran in the background.

The merger between GHX and HealthNexis in November 2001 expanded not just participation but also equity ownership. In addition, it added several large distributors to its member base, including AmeriSourceBergen, Cardinal Health Inc., Fisher Scientific International Inc., and McKesson Corporation. Initially, distributors were concerned that the suppliers were attempting to bypass them and link directly to customers. Mahoney explained:

> The partnership deals we did early on with AmeriNet, Neoforma, and large health care providers and GPOs provided us with the credibility we needed to bring HealthNexis to the table. However, we still had to deal with the issue of trust. We needed to prove to the distributors that our goal was to work with them, not against

EXHIBIT 9 **Summary of the GHX/Medibuy Merger**

Source: Adapted from company records.

Strategy/Mission

- Merged entity retains the GHX name and brand.
- All 18 strategic investors in Medibuy (e.g., Premier, HCA) and GHX retain ownership in the merged entity.
- Purpose of the merger is to create critical mass within all categories of the value chain and to improve the value proposition for all.
- The Guiding Principles provide the strategic framework.
- Sufficient checks and balances in place to ensure neutrality, openness, and fairness.

Financial

- Significant cost-reduction benefits for all stakeholders as a result of the merger.
  - 50% reduction in fees for Premier members to utilize GHX.
  - 30% to 50% reduction in 3-year fees paid by all the other owners.
- Future revenues will be generated at levels to cover GHX operating expenses and those investments approved by equity members.
  - All supply chain participants pay fair prices.

Operational

- Headquarters remain in Colorado.
- Single technology platform and service offerings combine the best from GHX and Medibuy.
- Transition will not impact functionality of existing Medibuy and GHX customers.

them. Developing mutual understanding and trust was a long process, but eventually we were able to strike a deal that was beneficial to the industry.

The merger with HealthNexis led to several key wins in member recruitment. For example, in April 2002, GHX signed an agreement with Allegiance, a large distributor and a subsidiary of Cardinal Health.[29] In June 2002, GHX entered into a multiyear agreement with Broadlane that enabled GHX to connect to 292 participating health care providers that were enrolled in Broadlane's BroadLink marketplace. The relationship with Broadlane, when combined with its alliance with Neoforma, helped GHX to make substantial progress in penetrating the buy side.

In 2001, GHX began talking with Medibuy about a possible merger to strengthen its access to buy-side members. After nearly 18 months of discussion, the two came to a mutual agreement and closed the deal in December 2002 (see Exhibit 9). According to Mahoney:

> This was a watershed event for GHX that led to three significant milestones. First, it allowed hospitals and GPOs to become owners of GHX, making us the first utility owned by hospitals, suppliers, distributors, and GPOs. Second, it enabled us to secure three-year revenue commitments from our 18 equity owners. This was quite a big deal for GHX because, in the past, suppliers had paid us annually based on equity capital calls. Now they would provide up-front revenue commitments, which gave us demand visibility. Third, because it was no longer necessary to pay for two online marketplace infrastructures, the Medibuy merger immediately lowered the overall cost for all of our members by 30% to 40%, while also increasing the functionality provided by our combined marketplace. Thus, the Medibuy deal enabled us to shift the economic curve, which reduced the on-going funding requirements for all of the equity owners, decreased the costs for all members and, at the same time, it made it much easier for us to penetrate the buy side.

Evolving the Product Offering

> While most companies in the dot-com era were trying to extend their influence and dominate all positions in the value chain, we chose a very different approach. We knew we would never try to take over the system operations *within* our customers, manufacturers, or distributors—nor did we want to. What we could offer was a complementary set of offerings that would serve as a nerve center, connecting all parties but stopping at the doors to their organization. This was consistent with our Guiding Principles that stated that the members would own their own information.
>
> *Kevin Ruffe*

When it was first launched, GHX simply provided a secure online catalog for each supplier's products. Using a standard Web browser and a secure Internet-based virtual private network (VPN),[30] buyers could access those catalogs, store their order preferences, and communicate with suppliers. Consistent with its vision and mission, each supplier "owned" its product data and the buyer and supplier jointly "owned" data on their respective transactions. GHX did not provide search aggregation services that enabled comparison of product features and pricing on the same page, neither did it support auctions.

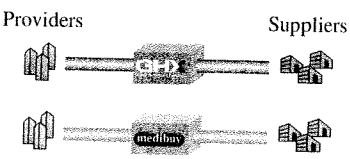
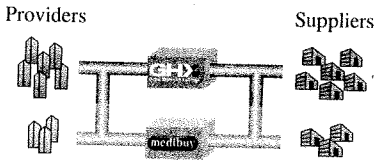
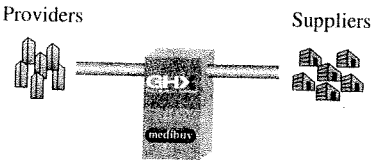
During 2001, GHX developed the online applications that allowed buyers to connect their internal purchasing and billing systems with each supplier's internal order fulfillment and billing systems. They also provided system integration

[29] Allegiance was originally named American Hospital Supply. It was acquired by Baxter in the mid-1980s, spun out as a separate company, and subsequently acquired by Cardinal Health. The history of American Hospital Supply as one of the early pioneers in electronic commerce is discussed in L. M. Applegate, "Creating Business Advantage with IT," *Corporate Information Strategy and Management* eds. L. M. Applegate, R. D. Austin, and F. W. McFarlan (New York: McGraw-Hill, 2002).

[30] A virtual private network (VPN) provides the additional security and network performance required for companies to do business electronically. A VPN network can use the Internet protocol or it can use another network protocol (e.g., ATM) to enable communications, transactions, and information sharing. By creating its marketplace on an Internet protocol VPN, GHX was able to provide standardized network access to all participants and to enable browser-based or computer-to-computer communications.

EXHIBIT 10 GHX/Medibuy Integration Plan (as of May 2003)

Source: Company documents.

Transition Phases and Deliverables	
Current State: Separate GHX and Mediby Marketplaces	
Phase 1: Common Connection for Customers **Projected Completion Date: *June '03*** Deliverables: • Link GHX and Medibuy marketplaces • Start migration to common connection • Adopt standardized integration technology for providers	
Phase 2: Combine Components into New Exchange **Projected Timing: *July–Aug. '03*** Deliverables: • Medibuy & GHX critical components move to GHX data center in Plano • Medibuy customers gain access to GHX services and suppliers	
Phase 3: Migrate Customers to New Exchange **Projected Timing: *July–Sept. '03*** Deliverables: • Incorporate best products from both exchanges into a common exchange • All transactions available in ReportSource • All providers can access all suppliers	

consulting services to help implement the online connections.

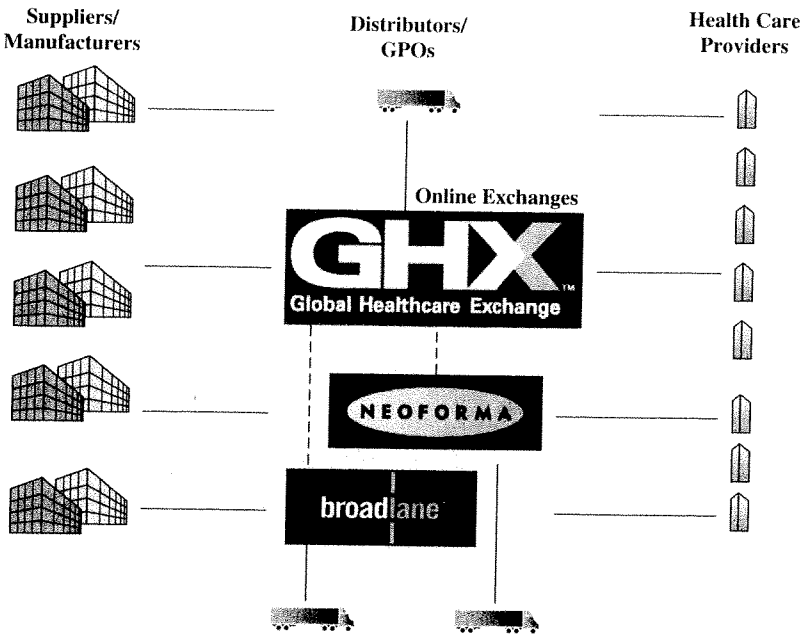
During 2001 and 2002, GHX also developed the applications needed to connect alliance partner marketplaces and integrated the GHX and HealthNexis marketplaces. In 2003, GHX planned to integrate the GHX and Medibuy technology infrastructure and product offerings (see Exhibit 10). It would also begin developing and delivering new value-added offerings. (Exhibit 11 provides an overview of the GHX online marketplace in 2003.)

Developing industry standards was an immediate priority that needed to be addressed to enable GHX to move beyond simply providing connectivity to become a flexible "engine" for delivering value-added industry solutions. To push this agenda forward, a number of industry players had formed the Coalition of Healthcare Standards (CHeS). Prior to the merger, GHX and Medibuy had joined the coalition along with several large GPOs and technology vendors. Based in Ann Arbor, Michigan, CHeS's purpose was to adopt and promote uniform health care industry data standards for supply chain transactions over the Internet. Ruffe commented:

> Today, not everyone agrees on the same product identifiers. Distributors, manufacturers, and providers still

EXHIBIT 11
GHX Online Marketplace

Source: Company records.



GHX Product/Service Offerings

Source: Company Web site (downloaded July 8, 2003).

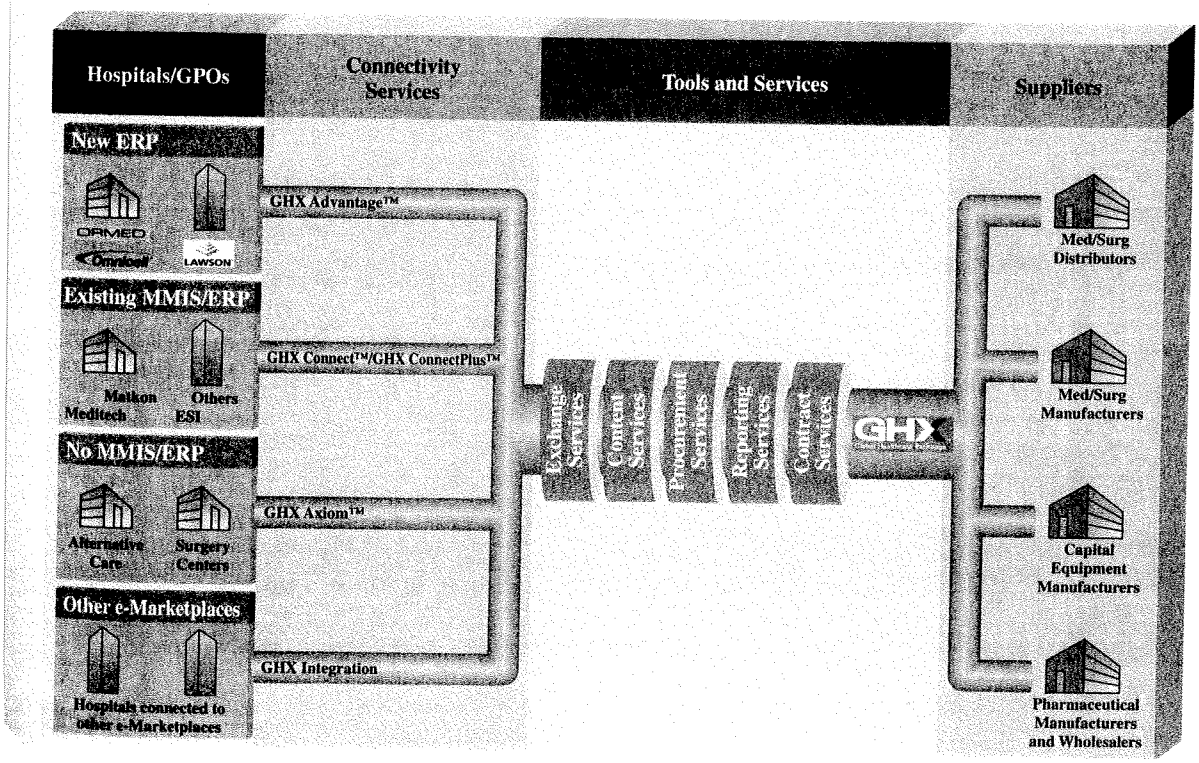


EXHIBIT 12 User-Defined Benefits (as reported in company records)

Source: Company documents.

Providers/Hospitals

GHX enabled hospitals to do business electronically with health care manufacturers and distributors via a single, easy-to-use Internet network. Traditionally, smaller providers used fax and telephone and large providers had to maintain separate EDI connections for each key supplier and distributor. In addition to enhanced access, GHX simplified and streamlined the supply chain process.

Manufacturers/Suppliers

GHX enabled suppliers to develop and maintain an online catalog of updated product information that could be easily customized to meet customer needs. The catalog could be delivered via a single Internet connection thus avoiding the cost and effort of having to develop and maintain multiple online links. Buyers and sellers could communicate via e-mail, share information, and complete transactions, which could be confirmed immediately and tracked online. GHX identified and corrected errors early in the purchasing process, ensuring improved quality and decreasing the time required to fill orders and receive payments.

Distributors

Using the GHX catalog, distributors were able to lower catalog maintenance costs and improve accuracy of product information. In addition, they could conduct business electronically with multiple trading partners, including suppliers, hospitals, and group purchasing organizations, via a single Internet connection. The benefits continued to increase with use of GHX's contract management functionality that helped reduce errors, which lead to delays in payment of customer invoices and supplier rebates. Further, with more up-to-date purchasing information, distributors were able to better help hospital customers manage inventories.

Group Purchasing Organizations

GPOs that had formed their own online marketplaces could link to GHX and provide hospital customers and members with the ability to conduct business electronically with significantly more suppliers through a single Internet connection. Those GPOs without their own trading exchange could provide the benefits of e-commerce to affiliated hospitals without having to make an investment in developing a proprietary service.

Benefits for All User Groups

Purchasing Process

50% reduction in order lead time
60% to 90% reduction in unit cost for processing a purchase order
Free up 0.25 to 0.65 FTE—allocate to more strategic activities

Receiving Process

90% reduction in errors
Reduce headcount by 1 purchasing FTE—allocate to more strategic activities
Reduce investigation and analysis of disputed invoices

IT Resources

Same IT resources that were maintaining 2 to 5 electronic relations are able to maintain 20 to 50+
Eliminate existing VAN charges (typically $1,000 to $10,000 annually)
Extend useful life of current MMIS/ERP systems

Payment Process

Reduce FTEs in accounts payable and invoice disputes
90% reduction in errors

refer to identical products by different numbers. There is also no agreement on how customers should be identified since every supplier, GPO, and distributor has their own unique customer identifiers. Agreement on these two standard identifiers alone would have a major impact on our ability to deliver value-added industry solutions. Agreement on transaction standards for common processes such as placing purchase orders, sending invoices, and electronically transferring funds would further simplify our ability to develop value-added industry solutions—lowering the cost for the entire industry. The delay in reaching agreement on standards to date is that everyone is waiting for someone else to go first. Hospitals won't push the issue because manufacturers aren't, and manufacturers won't push the issue because their customers aren't. Until now, no one has had the critical mass to break through the obstacles. However, with the Medibuy acquisition, we're in a great position to accelerate the adoption of standards. We recently formed a Product Council, composed of representatives from the supplier, distributor, GPO, and provider communities. The Council will meet regularly to provide input on the design of GHX product offerings. This will be a great forum to help us discuss standards that can be embedded in our product offerings.[31]

In 2002, health care providers reported that using GHX reduced the cost and improved the quality of supply chain processes for all members of the health care value chain. To date, members reported returns on investment (ROI) benefits of up to 30 percent. (Exhibit 12 summarizes how GHX has helped to drive ROI improvements for its value chain members to date.) According to Hunt:

> The benefits delivered to an individual member depend on the company, the state of its internal technology and processes, and the degree of penetration and use of GHX. Our members have reported anywhere from 0% ROI for those with limited penetration and use of GHX to 30% ROI for those with heavy penetration and use. One of our strategic goals for 2003 is to increase the value delivered to all members. As a first step in achieving this goal, we plan to administer a survey to all members during 2003 so that we can gain a deeper understanding of the value we are delivering today. We will then develop a set of best practices that we can use to show all of our members how they can achieve 30% ROI or greater.

[31] "GHX is on a Roll," *Repertoire Magazine,* February 2003.

Evolving the Organization

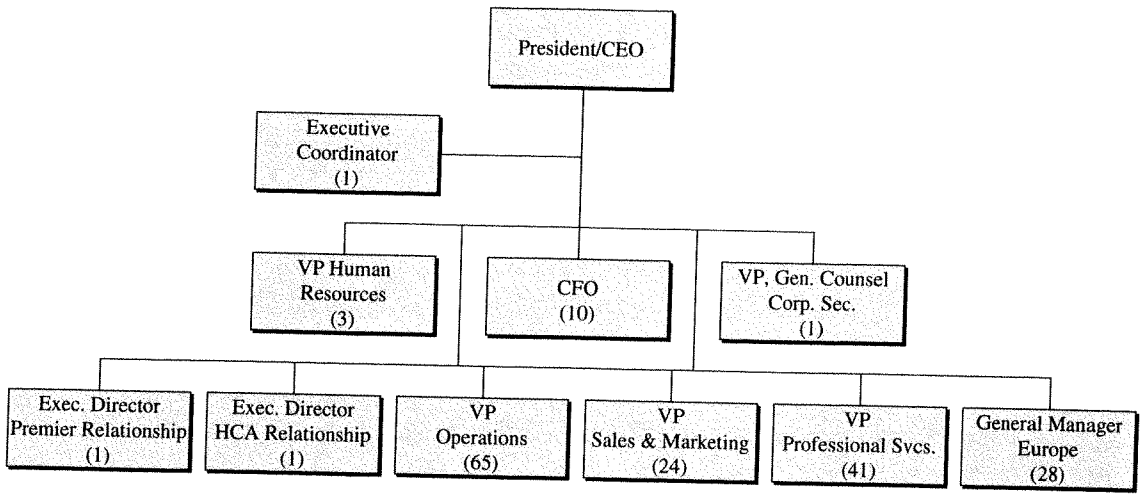
In September 2000, GHX opened its U.S. headquarters in Westminster, Colorado, and later that year opened European headquarters in Brussels and Canadian headquarters in Toronto. By early 2003, the company had approximately 180 full-time equivalent (FTE) employees worldwide (148 in the United States, 28 in Europe, and 4 in Canada) and had undergone significant organization changes. (See Exhibit 13 for an organization chart.) By May 2003, less than 3 percent of the company's transaction volume was generated outside the United States (1.3 percent from Canada and 1.4 percent from Europe). As mentioned in Exhibit 3, while international sales were an important source of growth for health care industry suppliers, it was unclear how fast European markets would evolve to critical mass.

GHX was a company that blended multiple business models and cultures: It was a technology company, a service company, and a health care supply chain and logistics company; it was an entrepreneurial start-up, yet was owned by the largest established firms in the health care industry. One of the key challenges that GHX faced was in developing its own unique business model and culture that would unite these various perspectives while preserving the advantages. According to Ruffe:

> I think we faced many of the same challenges that all new companies face, but the complexity was much greater. We needed to figure out our business concept and business model, develop a unique set of product offerings, and get customers and suppliers engaged and connected as we brought together all of the different cultures and organizations of our founders. So it wasn't only that the marketplace was moving fast, but the individuals inside the company were also in a constant state of flux as we tried to build a shared culture and organization. Tensions were high because we were trying to achieve all of this while

EXHIBIT 13 GHX Organization Chart (as of 3/30/03)

Source: Author interpretation based on GHX documents.



Roles

Content manager	Content manager	Product dev.	Strategic alliances	Integration	Supplier recruitment
Data analysts	Data analysts	Business dev.	Medibuy	Suppliers	UK
System consultants	System consultants	Customer relations	Sales	Providers	Germany
		Training	Western region	Integration svcs.	Provider sales
		Technology	Eastern region	Medibuy transition	UK
		Quality assurance	Country manager		Germany
		Program managers	Canada		Professional svcs.
			Supplier members		Customer relations
			Marketing		Marketing
					Technology
					Human resources
					Controller

Notes: The numbers in parentheses represent headcount. Four employees (not included in the above headcount) supported GHX Canada. Executives in shaded boxes comprise the Leadership Team.

> the dot-com world was falling apart. The good news is—we survived. We have people in place now that are comfortable with operating in the midst of chaos and know how to put structure in place that provides stability and control yet is able to adapt quickly. This past year, we finally hit our stride. We've proved ourselves in the marketplace *and inside our organization.*

Early on, GHX senior executives made a decision that they would not be pressured to become a dot-com and adopt the approach being advocated to build and grow an Internet company. Instead, the company focused on achieving solid financial discipline and on building an organization that aligned with its strategy, vision, and mission. On one hand, the executives maintained the business practices and approaches that had enabled them to run large, established firms. At the same time, they developed new capabilities that would enable the company to innovate and adapt as quickly and flexibly as an entrepreneurial organization.

The small size of the company—when combined with the large size of its network of partners (many of whom were owners)—fostered a

EXHIBIT 14 **Levels of Board Approval for Key Decisions**

Source: Company records.

1. *The Guiding Principles* set the strategic direction and parameters to guide key decisions. Any changes in the Guiding Principles required Super Majority shareholder approval (see below).
2. *Ultra/Super Majority Shareholder Approval* decisions required greater than 95% approval of all shareholders with equity interests greater than 5%. The decision to become a public company (IPO) was an example of a decision that required this level of approval.
3. *Super Majority Shareholder Approval* decisions required greater than 85% approval of equity shareholders. Examples of decisions that required this level of approval included changes to Guiding Principles, liquidation, mergers, and alliances.
4. *Majority Shareholder Approval* decisions required greater than 50% approval of equity shareholders. Examples of decisions that required this level of approval included capital calls and issuance or redemption of stock.
5. *Majority Board Approval* decisions required greater than 50% approval of the board of directors. Board members approved budgets, contracts, expenditures over a specified amount, executive compensation, auditor selection, and the launch of new lines of business that fell within the Guiding Principles.

"big-small" organizational model. In essence, GHX was a network of networks uniting stakeholder networks across the industry and eventually across the world. Only a small number of GHX employees were needed to build and provide services to this network as the company was able to leverage the infrastructure, capabilities, and customer base of its members. Open and frequent communication among the board of directors, the executive team, and the employees on the front line enabled everyone to understand the link between strategy, operations, and performance in real time. For example, in the beginning, the board met monthly, and senior executives were in constant touch with frontline employees and the marketplace. Throughout, the vision, mission, and Guiding Principles provided the framework for making tough decisions.

Given the network structure, the board of directors served a key "boundary spanning" role. Each member of the board represented the interests of a key constituency, and the L.L.C. Agreement specified the formal structure of network roles, authority, and governance. The L.L.C. Agreement also specified a formal process for decision making (see Exhibit 14).

Going Forward

When the GHX-Medibuy integration was complete and all members had been connected to the new platform, the company would connect over 1,400 providers (750 from GHX and 550 from the Medibuy merger) to over 100 of the largest suppliers and distributors. This reach would enable GHX to leap ahead of Neoforma in terms of members connected (see Exhibit 15). During 2002, average monthly transaction volume had grown at a rate of 30 percent to reach a $1 billion postmerger annualized run rate. By July 2003, transaction volume had already reached the $1 billion mark and the annual transaction volume was expected to reach $2 billion for 2003 and $4 billion for 2004. Since its inception, the company had made significant, yet necessary, shifts in its strategic vision (see Exhibit 16) and was now focused on two key core capabilities:

connectivity and value-added services. Mahoney commented:

> In addition to the immediate need to integrate Medibuy and GHX, we also need to think more strategically about how to offer more value to all members of the health care supply chain. To date, we've focused on achieving connectivity. Now it's time to focus on our customers and to determine how we can significantly increase the value we provide them. But, we must do this without compromising the financial discipline we have established. We have committed to becoming cash flow break even in 2003 and to achieving $7 million in "non-equity-owner" revenues in 2003. Total 2003 revenue is forecasted at $46 million compared to $39 million in 2002.

Johnson continued:

> You can't have a viable marketplace with only one side participating and you can't have a viable business with only investors paying. One of our key challenges in 2003 is to create a viable business model with a pricing model that is fair to everyone. This is complicated by the fact that people have come to expect that online marketplaces won't charge them. Initially, GHX needed to attract buyers so we didn't charge the buyers and Medibuy needed to attract suppliers so they didn't charge the suppliers. Now we are positioned to complete the business model. In 2003, we need to have a pricing structure where all members share in the benefits and pay a fair price for those benefits. We have a number of provider and supplier members who are coming up for renewal, converting them to this new pricing model will be the test that determines if we have been successful in creating a fair pricing model.

Analysts were optimistic about the company's ability to achieve its goals. "GHX is on a roll," a *Repertoire* reporter wrote in early 2003. "The acquisition of Medibuy makes GHX the clear leader in the e-commerce sweepstakes." The article quoted Gartner Inc. vice president, Michael Davis:

> We see [the GHX-Medibuy merger] as a very good event . . . that will move health care forward. You can't have all these different marketplaces . . . [Now], instead of different companies writing different interfaces, we have one company writing all of them. The acquisition of Medibuy will eliminate some competition, but that might be a good thing for the industry. We always said that GHX was a model that could work. It's nonprofit[32] and totally controlled by its members—manufacturers, suppliers, and many providers. So you have a board of people who will make sure that all the issues, all the business problems, will be looked at from several different perspectives.[33]

As Mahoney packed up for the evening to go home, he reviewed the presentation he had created. One slide in his presentation showed GHX's key milestones (see Exhibit 17). In 2000, GHX had started as a team of "on-loan" employees with a vision and Guiding Principles. By early 2003, the company was well positioned to become the leading online marketplace for the health care industry. The next phase of the company's evolution would be challenging, but Mahoney believed that GHX had the capabilities and drive to move to the next level. But, he still admitted to some sleepless nights. "What keeps me up at night?" he said:

> Successful integration of Medibuy is central to our ability to stabilize our operations and achieve critical mass. It is also necessary to achieve our customer satisfaction goals. Finally, we can't move forward with our value-added offerings until we have the platform in place. We've committed to an aggressive 90-day transition schedule and to ensuring that the transition will not impact our customers. The technical challenge is huge, but the organizational and cultural challenges are even bigger. We have a dedicated team in place that can "cross train" each other on all aspects of the technology. The team is experienced with the technology and with projects of this size. We have developed a clear and detailed project plan with measurable goals, and the senior executives and team review progress daily. Clearly this is our most strategic and highly visible project. If it takes

[32] As mentioned earlier, technically, GHX was structured as a Limited Liability Corporation that had a clause in its L.L.C. Agreement that stated it did not intend to register for an IPO. Its Guiding Principles provided that it would only implement pricing and business models designed to generate revenues sufficient to cover its operating and capital needs.

[33] "GHX Is on a Roll," *Repertoire Magazine*, February 2003.

longer or costs more, we won't be able to meet our financial commitments for the year and will slow down our momentum at gaining critical mass and delivering value-added offerings.

But, even while I devote tremendous energy and focus to the merger integration, I also find myself worrying about how long it will take and the level of resources that will be needed to build critical mass in Europe. Europe is key to the growth strategy for some of our large investor suppliers. They would like us to move faster to connect to European health care providers. Other investors want us to concentrate on dominating U.S. markets for now. Our budget is tight and we don't have the money to pour into Europe right now. We've been successful to date because we were able to combine strong financial discipline and controls with the creativity and flexibility of a start-up.

Clearly, 2003 should be another exciting year!

EXHIBIT 15 GHX (post Medibuy acquisition) and Neoforma Comparison

Source: GHX Company Records, Neoforma, 10K, 2002.

	Neoforma		GHX	
	2002A	**2003E**	**2002A**	**2003E**
Investor-related revenues	69.5	70.0	37.7	39.0
Third-party revenues	4.3	30.0	1.8	7.0
Total revenue* ($M)	73.9	100.0	39.5	46.0
Operating expenses ($M)	73.7	65.0	53.5	42.0
GHX/Medibuy integration ($M)				3.5
No. of hospitals integrated to marketplace (U.S.)	639	N/A	1200	1700
No. of suppliers integrated to marketplace (U.S.)	167	N/A	45	65
No. of employees (U.S.)	225	N/A	193	193

*In its 2002 Annual Report, Neoforma stated that $69.5 million of what it had previously considered as revenues were paid by VHA and UHC through the purchase of stock. As a result, the company restated its revenue to reflect third-party revenues of $4.3 million.

EXHIBIT 16 GHX Evolution

Source: Company records.

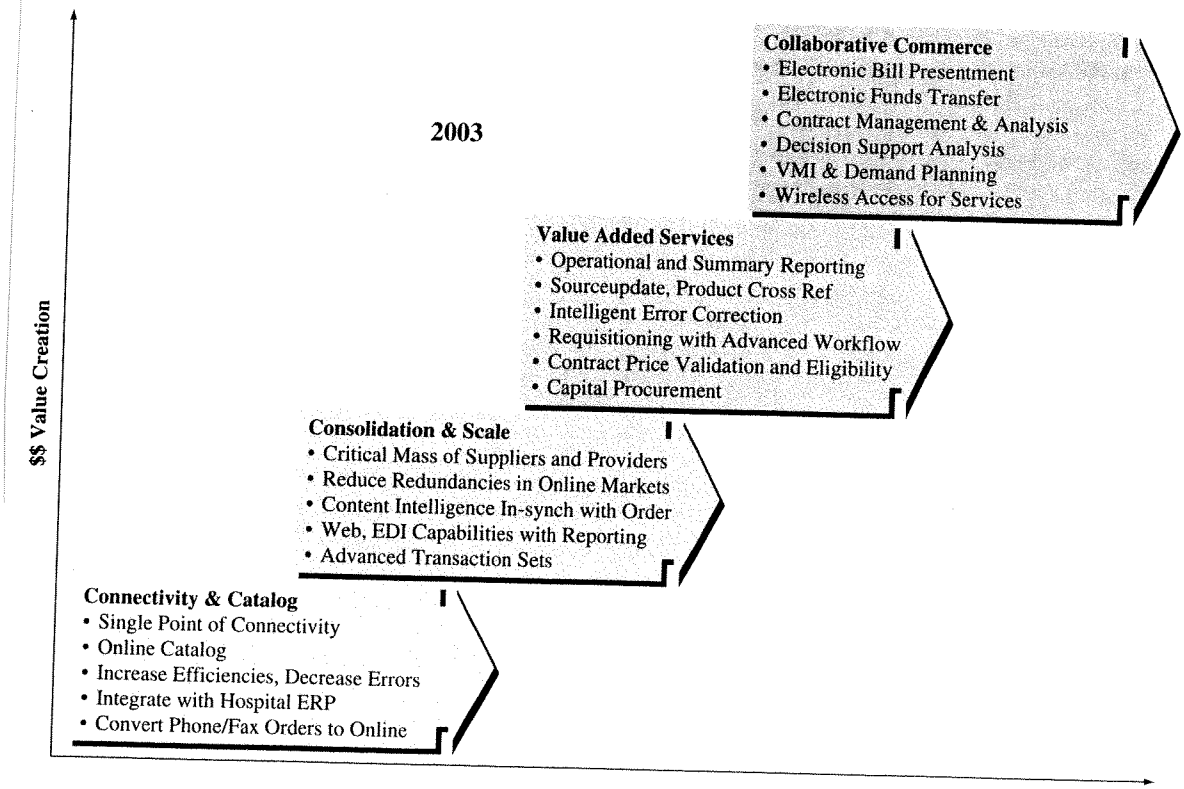


EXHIBIT 17 Key Milestones in the Company's History

Source: Company records.