

Customer Fulfillment in the Digital Economy

CVS.com

Anytime, Anywhere E-pharmacy

“We are not really a technology company in the sense that we are marketing or retailing our technology. Technology is merely an enabler for our business philosophy, which is about great customer service and about the consultative value of pharmacists.”

—Tim Fletcher,
director of Internet Business
Strategy, CVS.com

“CVS.com will leverage the brand recognition, customer satisfaction, and reputation of CVS to take full advantage of the Internet’s potential. Through this integration, we are able to offer customers the convenience of shopping online for prescription and over-the-counter items while also driving traffic to the CVS retail locations and further establishing CVS as a national pharmacy brand.”

—Tom Pigott,
president and CEO,
CVS.com

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Scorecard

B-web type

- Clicks-and-mortar/
Aggregation/Distributive Network

KEY PARTICIPANTS

Customers

- Health insured patients & physicians

Context providers

- CVS.com pharmacies and CVS.com
- Physician networks such as AboutMyHealth.Net
- Yahoo, WebMD
- Insurance companies, Health Maintenance Organizations (HMOs), and Pharmacy Benefit Managers (PBMs) such as Merck-Medco Managed Care

Content providers

- CVS.com, CVS.com pharmacies and WebMD
- Distributors (McKesson)
- Pharmaceutical companies, health and beauty product manufacturers

Commerce services

- CVS.com
- McKesson
- Pharmaceutical companies

Infrastructure providers

- CVS.com
- McKesson
- Pharmaceutical companies
- Software and hardware vendors

Offering

- Medical information, fulfillment of prescription, over-the-counter (OTC), and healthcare items from ‘point-of-care’ (physician) to the store, or to the customer’s doorstep, within 24 hours

CFN value proposition

- Lower search costs and higher convenience for customers (complete e-pharmacy solution)

URL

- <http://www.cvs.com>

CVS.com

CVS.com fills more prescriptions, has more stores than any other drugstore chain in the US, and is second only to Walgreen in terms of total revenues. The company, which fills 12% of all US prescriptions (250 million prescriptions for 55 million customers in 1998³), operates 4,100 stores in the Northeast, Mid-Atlantic, Southeast, and Midwest. In 1998, CVS.com achieved \$15.3 billion in revenues and \$396.4 million in net earnings. The company's market capitalization in November 1999 was \$21.46 billion.⁴

In May 1999, the company acquired Soma.com, the first born-on-the-Web drug company (launched in January 1999) for \$30 million and renamed it CVS.com. The acquisition benefited both companies. Soma.com, besides being the first online drugstore, had also built its own state-of-the-art fulfillment center in Westchester, Ohio for one-to-one order fulfillment—a capability that CVS.com wanted. In return, Soma gained access to CVS.com's 4,100 brick-and-mortar stores, plus its marketing strength, brand equity, product selection, and health insurer and customer relationships.⁵

CVS.com, the nation's first full-service clicks-and-mortar⁶ pharmacy, provides 24/7 access to registered pharmacists via the Internet or toll-free telephone. CVS.com sells some 2,000 prescription drugs, 3,500 over-the-counter (OTC) health and personal care products, and more than 1,400 private label products. CVS.com offers standard or next-day delivery of quality prescriptions, OTC

medications, and health and beauty products.⁶ It also e-mails refill reminders and provides instructions on medication usage, as well as commentary on health conditions and issues from leading medical authorities. CVS.com accepts over 9,000 insurance plans covering most insured Americans, which enables direct billing to the insurer or health maintenance organization (HMO). A January 10, 2000 strategic alliance makes CVS.com the exclusive pharmacy (prescriptions and OTC items fulfillment provider) for Healthon/WebMD⁷ and its online partners—Excite at Home, Lycos, and the Microsoft network.⁸ Healthon/WebMD, in turn, will be the exclusive provider of distribution, content, community, and connectivity for CVS.com and its affiliates.

Acquisition of the first online pharmacy by the nation's largest drugstore chain and its alliance with the first Internet healthcare company (Healthon/WebMD) results in a clicks-and-mortar leader in drug retail which has brand equity, business web and customer relationships, and first mover advantage online. The current challenge confronting CVS.com is integrating the online CFN with the brick-and-mortar one, and its b-web. If successfully integrated, the CFN would be a key differentiator for the company and augment its revenue streams, profitability, and competitive advantage—all in all, bitter medicine for the competition.

Business context

80% of the \$1 trillion in US healthcare spending is on medical and healthcare services, leaving some \$200

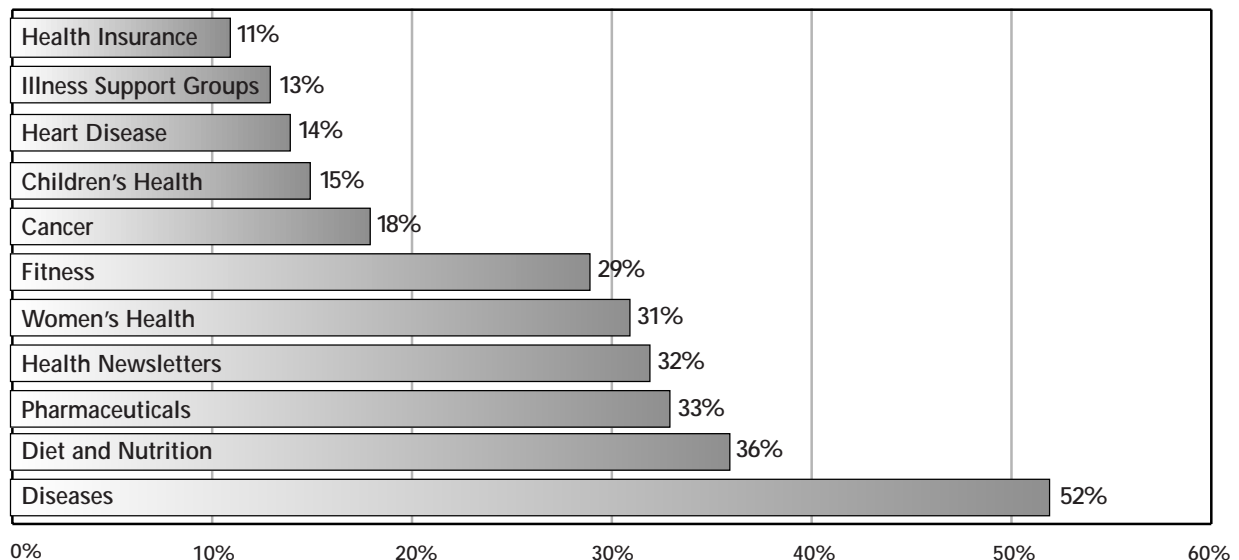


Figure 1. Usage of health content by online users of health/medical information.¹⁰

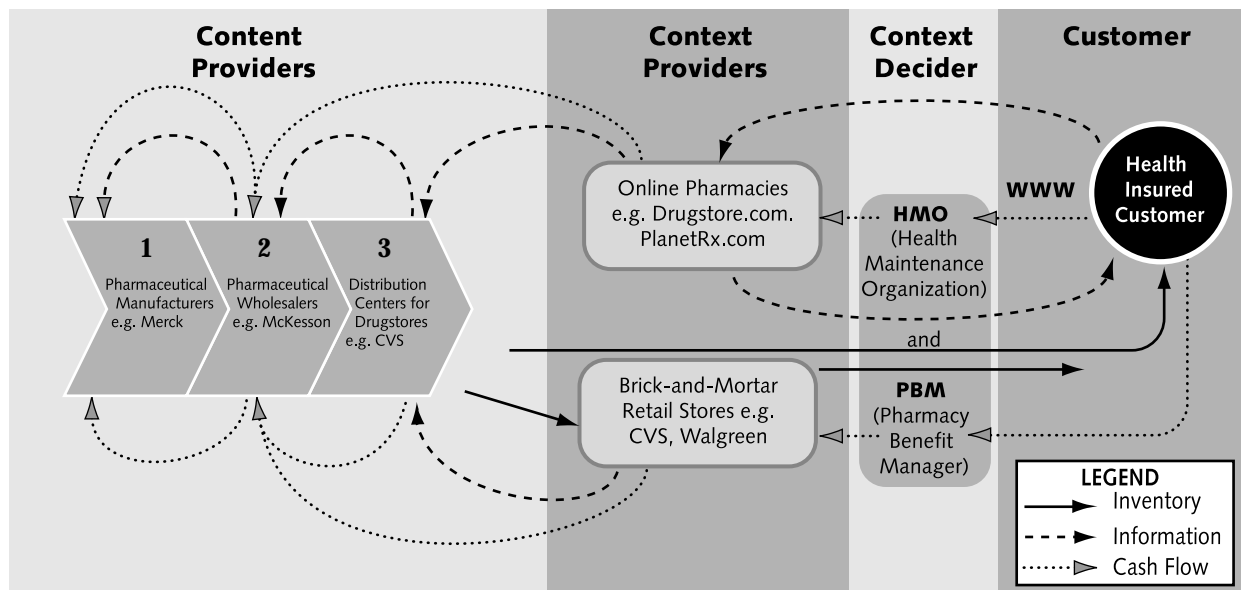


Figure 2. The Pharmaceutical (Products) Value Chain.¹⁴

billion for prescription drugs, prosthetics, and other goods. In 1998, customers spent \$102 billion on prescription drugs at drugstore chains, supermarkets, mass retailers, corner drugstores, and mail-order firms, and another \$104 billion on non-prescription medicines, vitamins, health aids, and beauty products from independent and chain drugstores.⁹ In comparison, the \$13 billion spent in bricks-and-mortar bookstores in 1998 seems paltry—but Amazon.com has nonetheless turned the book industry on its head. Clearly, CVS.com could do the same in its market.

According to Cyber Dialogue, 36% of the 70 million people with Internet access in the US used the Internet to search for health and medical content in 1998 (figure 1). Although customers 50 years and older (for whom health is the second most important topic of interest)¹¹ made up only 7% (5 million) of the US online population in 1998, Jupiter Communications expects that number to grow to 11% (about 8 million) by 2002.

Doctors are also embracing the Internet. According to a Healthcon study, 70% of doctors were online in 1998, up from 15% in 1996.¹²

Of the products online drugstores plan to offer, prescriptions are the most lucrative. US pharmacies dispense close to 2.5 billion prescriptions a year, many of them regular refills of essential medications like blood thinners and insulin. According to the National Association of Chain Drug Stores, an industry trade group, prescriptions account for 90% of annual sales at

a typical independent drugstore, and close to half of annual sales at chain drugstore outlets.¹³ In 1998, prescriptions accounted for approximately 58% (almost \$9 billion) of CVS.com's \$15.3 billion in revenues.

The prescription drug market is an attractive industry but is rife with inefficiencies. The online player who best addresses these inefficiencies will lock in customer loyalty and a steady stream of profits.¹⁵ E-pharmacies and nutrition stores are counting on customers to turn to Web-based sources for ongoing-health prescriptions and for staples like vitamins, toothpaste, cotton balls, and deodorant, as well as products that are embarrassing to buy in public places (such as birth control items).¹⁶ The logic goes like this: customers dislike going to the drugstore to buy toothpaste, razor blades, birth control, women's sanitary products, and prescription refills. They will prefer to do it online and find the products in their mailbox the next day—much the same way they enjoy the convenience of buying books or CDs on the Internet.¹⁷

Analysts predict that the online share of the total drugstore market will grow from \$1.4 billion in 1999 to \$44 billion in 2003.¹⁸ There is, however, a limit to the cyber market for drugstores. The mail-order pharmaceutical market has leveled off at 13% market share, mostly due to the HMOs, which require members to obtain certain drugs through mail-order pharmacies.¹⁹

Legacy rules and regulations render the pharmaceutical value chain (figure 2) complex and difficult to navigate.

To succeed, online drugstores require not only a critical mass of customers, but also a b-web of drug companies (suppliers), and, especially, insurance or pharmacy benefit management companies (payers).

Pharmacy benefit management (PBM) companies are the stealth giants of the health insurance industry. They act as the middlemen between payers for health insurance or HMOs, and the pharmacies where patients buy their drugs. They decide on the physical pharmacy networks (i.e. the context) that will serve patients, and are responsible for reimbursing drugstores for prescription costs. They are, in short, the gatekeepers to insured patients (the end customers), and exercise tremendous influence on context providers such as brick-and-mortar drugstores and online pharmacies. When customers fill prescriptions at pharmacies covered by their PBM, they typically cough up a \$5 or

\$10 co-payment. But if they go outside the PBM/HMO network, they pay much more. So if a context provider (physical or online) loses PBM approval, it instantly loses millions of customers.²⁰ PBMs, which often run their own mail-order drug fulfillment businesses, can shut off the customer life-streams of more efficient and cost-effective online pharmacies to prevent cannibalization of their mail-order businesses. Clearly, this conflict of interest inhibits competition.

The power of the PBMs is highly concentrated: the five leaders—Merck-Medco, PCS, Express Scripts, Caremark, and Advance Paradigm—represent more than 175 million Americans or some 80% of the insured US population. Because of the enormous power of the PBMs, the three leading online pharmacies have scrambled to align themselves with brick-and-mortar chains and leverage the PBM partnerships of the chains (figure 3). One of the primary reasons that Soma.com was acquired by CVS.com was access to the critical mass of 51 million 'lives served' by CVS.com for Merck-Medco Managed Care. Similarly, to ensure a critical mass of insured consumers, Drugstore.com allied itself with Rite-Aid's PCS Health PBM and Planet Rx.com allied itself with Express Scripts PBM.

A 1999 agreement enables CVS.com to sell OTC products on a site operated by Merck-Medco Managed Care. Merck-Medco's site will contain a CVS.com site selling the same 7,000 over-the-counter products that CVS.com sells through its Internet drugstore. Merck-Medco's members can either pick up the prescriptions at a CVS.com store, or have the order mailed to them by Merck-Medco. In addition, the strategic alliance formalizes an arrangement that will make CVS.com the first and only online retail pharmacy to accept prescription orders from Merck-Medco members over the Internet for delivery either by Merck-Medco's nationwide network of 13 mail service pharmacies, or for pick-up at CVS.com stores. The agreement also makes Procure,²² CVS.com's specialty pharmacy company, the exclusive service provider of specialty pharmacy mail-order services for Merck-Medco plan members.

The recent alliance with Healtheon/WebMD (and its online partners Excite, Lycos, and the Microsoft Network-MSN) and a previous agreement with Yahoo (to be a merchant on Yahoo Health) enables CVS.com to harness the critical mass of WebMD, Yahoo, Excite, Lycos, and MSN users. This will ensure stickiness, revenue streams, and competitive advantage for CVS.com for the foreseeable future, and is an inflection point that could potentially transform the healthcare industry into a giant CFN-enabled distributive network.

Value proposition

The CVS.com value proposition is anytime, anywhere

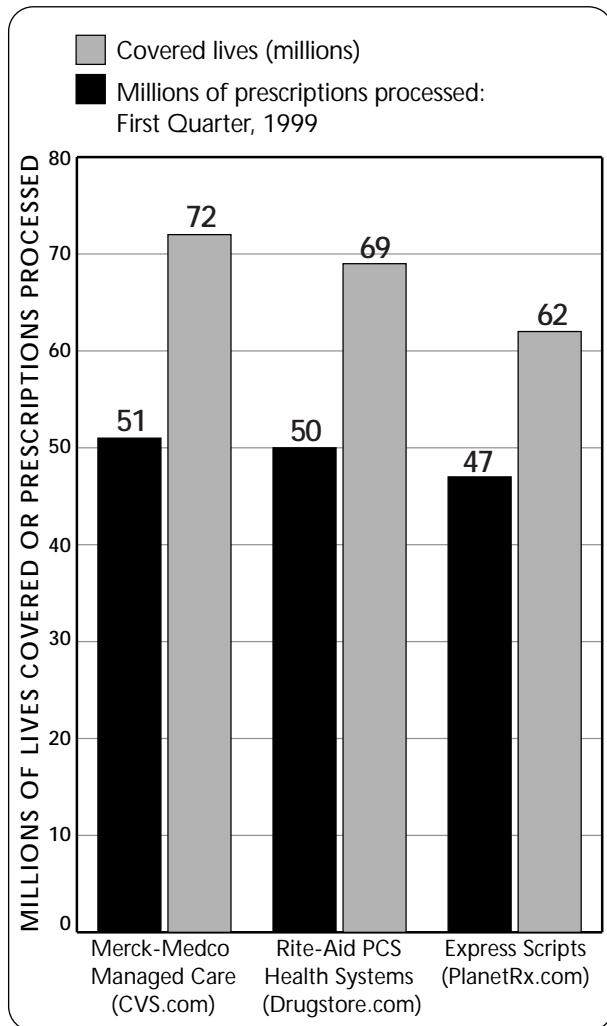


Figure 3. Number of lives covered and prescriptions filled by 'the big three' alliances.²¹

access to reliable healthcare information, medication, health and beauty products, and secure and accurate prescriptions from physicians, with store pick-up (4,100 stores of the CVS.com chain) or doorstep delivery. The Healthon/WebMD alliance further enhances the value proposition to an end-to-end e-pharmacy solution for both CVS.com and WebMD users. The alliance will also provide customers with a personalized information option via Healthon/WebMD's "myhealthrecord" service.

In September 1999, CVS.com reached an agreement (the first by an online pharmacy) with MedicaLogic, Inc. (a leading provider of electronic medical records [EMR] and developer of the Web-enabled physician network AboutMyHealth.net) to facilitate instantaneous, secure, and error-free prescriptions from physicians with a click of the mouse.²³ According to Tom Piggott, CEO of CVS.com, "Utilizing MedicaLogic's Internet technology, CVS.com brings the doctor, the patient, and the pharmacist closer together than ever before. Utilizing this new electronic prescription system to connect patients to doctors and doctors to pharmacists will cut healthcare costs for both doctors and patients, and help patient safety at the same time."²⁴

Patient privacy is of utmost importance to CVS.com. All medical/patient history data resides in a secured LAN Web server which uses the highest level of encryption currently available. Only authorized CVS.com pharmacists (who log on using multi-layered password protection) have access to patient information.²⁵

To further foster customer trust, CVS.com helped the National Association of Boards of Pharmacy develop criteria for a "seal of approval": the Verified Internet Pharmacy Practice Seal (VIPPS) assures customers of the online pharmacy's legitimacy and its compliance with state and federal laws.

Successful b-web integration through CFN is the key to delivering CVS.com's value proposition—consistent, accurate, and reliable information availability and fulfillment from point-of-care to the customer's doorstep within 24 hours.

CFN strategy

CFN is the cornerstone of CVS.com's b-web strategy. Internetworking the brick-and-mortar drugstores with the online infrastructure and b-web through an end-to-end CFN facilitates superior demand integration with CVS.com's fulfillment systems. Several CFN value drivers are critical to the success of the clicks-and-mortar CVS.com:

- **VALUE PROPOSITION:** a move from a static "we give the customer what we want" approach to a dynamic "how can we deploy technology to create

continuously improving new value for the customer?" approach

- **REVENUE AND PROFIT MODELS:** a shift from a "market share is everything" mindset to a "we need to embrace the Web to create value and retain customers even if it means cannibalizing our stores in the short run" attitude
- **PROCESS ORIENTATION:** a transition from a "mass transactions with faceless customers" approach to "how can we customize our offering for our online customers by bundling knowledge, information, and accurate pharmaceutical advice with our prescriptions" approach
- **ORGANIZATIONAL PRIORITY:** a shift from efficiency and rigidity ("customers buy from our stores") to flexibility and responsiveness ("we let customers decide when, where, and how they want to interact with us")

Business processes, applications and b-web organization

The CVS.com customer fulfillment network (CFN) integrates business processes end-to-end, from customer relationship management (CRM) at the front end (customization of the buying experience—database management, data mining, suggested selling, and demand creation), to order, inventory, and warehouse management at the fulfillment end.

President and CEO of CVS.com Tom Piggott founded Soma.com, the first online drugstore, in Seattle, Washington. He picked two innovative Web development firms, Girvin Design Inc. and Accelerated Inc., to design and implement the site.

The Web site ran on Microsoft's Windows NT Site Server Commerce edition, used an SQL server database, and was hosted on the server farms of computer-services provider (CSP) Exodus Inc.²⁶ Secure firewalls separated the front end Web farm from the data stores, the operations server, and the warehouse management systems (WMS). The online storefront database included all the label information from every product, making it possible to search for a product by keyword.

A September 1999 agreement with MedicaLogic Inc., which connects patients to physicians and physicians to CVS.com, will facilitate seamless and error-free electronic transmission of prescriptions from point-of-care (physician) to pharmacy.²⁷

CVS.com uses a Siemens Pyramid RM 600E database with a 3 terabyte data capacity to store profiles on 50 million patients and 75,000 doctors.²⁸ This valuable information is useful for demand forecasting and inventory planning for the integrated clicks-and-mortar

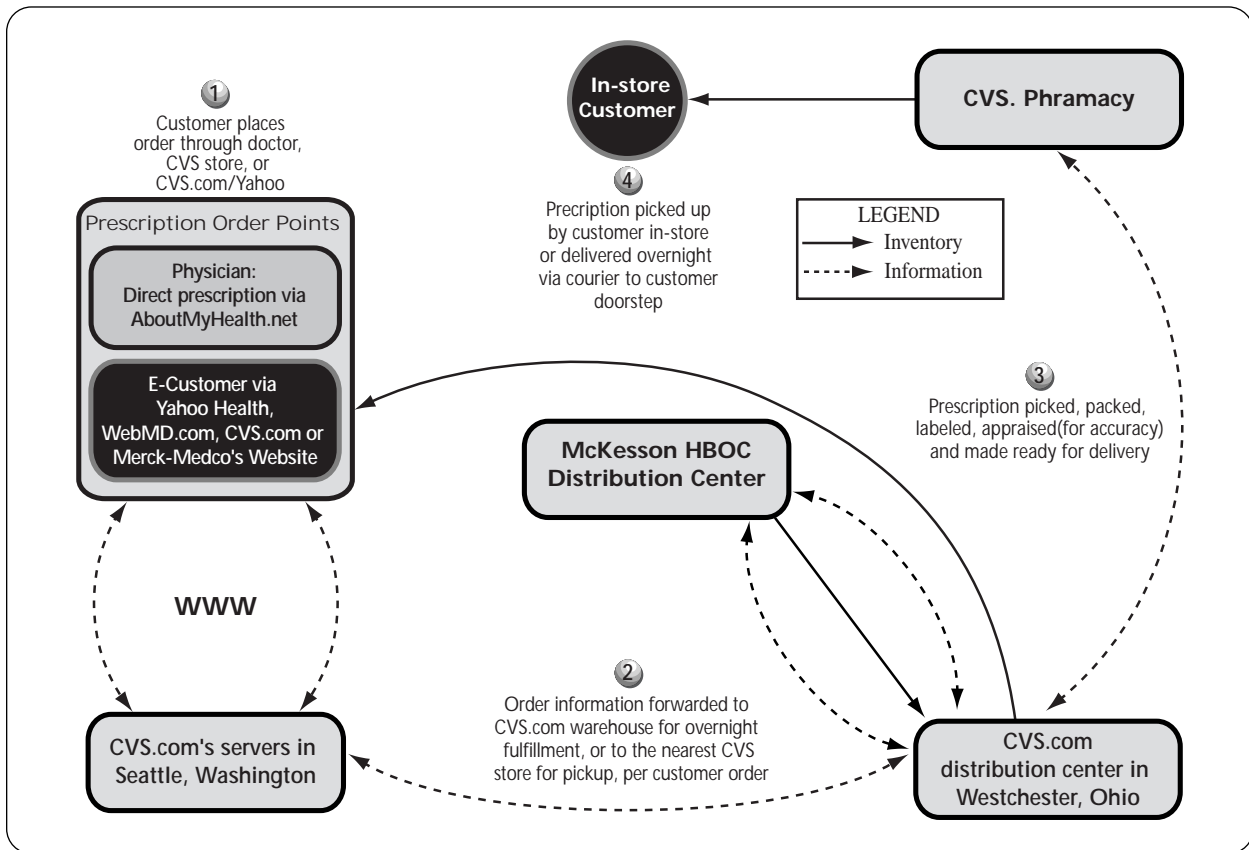


Figure 4. CVS Customer Fulfillment Network (CFN).³⁴

pharmacy, and, if integrated with collaborative filtering software, for cross-selling and upselling related health and beauty products to online customers.

Soma.com built a state-of-the-art one-to-one fulfillment center in Westchester, Ohio near three overnight air hubs. The front end order management systems (OMS) were integrated with the back end warehouse management systems (WMS) to facilitate efficient inventory management. This fulfillment center is, incidentally, close to CVS.com's Procure Mail Order Distribution Center. Online fulfillment can easily be scaled up in future by integrating the two distribution centers.

The most daunting CFN challenge is to integrate Soma.com's online fulfillment systems and operations with those of CVS' brick-and-mortar stores and Procure's mail order operations. However, since both use a standard pharmaceutical distribution software package from SI/Baker that is scalable,²⁹ linking the two systems will enable CVS.com to fulfill Web orders with ease, through both conventional stores or mail order, and empower customers to check the status of both in-store and online orders on the Web.

Integrating the two systems upstream is the other significant challenge. The fact that both Soma.com and CVS.com have McKesson HBOC as their supplier/wholesaler alleviates this challenge. Founded in 1833, McKesson (a Fortune 100 company with revenues of over \$20 billion/year) is the largest US distributor of pharmaceuticals, health care products, and medical/surgical supplies, as well as a provider of healthcare/pharmaceutical/IT systems expertise and pharmaceutical inventory management services. McKesson's pharmaceutical group provides inventory management, proprietary order entry, and account management to independent, large-chain, and hospital pharmacies. Through its retail customer operations, the pharmaceutical group operates 33 distribution centers and a central distribution facility in Memphis, Tennessee that uses state-of-the-art Acumax WMS.³⁰

McKesson, which has a SAP ERP system that is integrated with its customers via EDI, is making the transition to a Web-based b-web internetworked architecture with its recently launched electronic automated solution environment (EASE).³¹

McKesson, already integrated with CVS.com's IT systems via EDI, provides continuous replenishment/vendor managed inventory services to CVS.com.³² As well, McKesson provides value-added services and technologies like Infolink.³³ Infolink provides drugstores real-time access to analyses of detailed product usage and inventory at the store level, and acts as a de facto decision support system (DSS) for demand forecasting and inventory management. McKesson has the IT core competency to integrate its front end with the back ends of both CVS.com's chain of stores as well as CVS.com's distribution center over the Internet (as part of the EASE initiative) to ensure adequate buffer inventories through continuous replenishment.

As part of its end-to-end b-web integration initiative, the company has recently awarded a \$125 million contract to AT&T for voice, data, and dedicated IP services. CVS.com will integrate point-of-sale (POS), inventory control, prescription information from its 4,100 stores with CVS.com, and will extend the CFN backwards to suppliers and b-web partners like McKesson over the Web.

So how do the pieces work together to deliver seamless customer fulfillment?

A registered and insured customer can now place an order for a prescription (figure 4) either online (CVS.com, Yahoo Health, WebMD, or the Merck-Medco Web site), in-store, or directly through a physician connected to CVS.com via AboutMyHealth.net. The customer can choose to pick up the order at the nearest store, or have it couriered overnight.

The prescription is then picked and packed using the automated pharmacy software, either at the CVS.com distribution center (for overnight delivery) or at the specified store. CVS.com's pharmacists screen all customer medication profiles for possible drug interactions, allergies, and proper dosage regimes. CVS.com sends prescriptions in tamper-proof packages with written patient information that verifies proper dosage and explains procedures for taking the medication correctly. Once labeled and packed, the prescriptions go to one of the three overnight hubs for delivery to the customer's doorstep within 24 hours.

Key Lessons

CVS.com is consolidating its preeminent position in bricks-and-mortar drug retail with a well-crafted clicks-and-mortar strategy that takes advantage of the Web's value creation opportunities:

- CVS.com was the first drugstore chain to recognize

the imperative to go online. Acquiring Soma.com with its one-to-one fulfillment facility for a bargain \$30 million, and integrating it with its bricks-and-mortar infrastructure and IT, has given CVS.com first mover advantage. Although CVS.com could potentially cannibalize store sales, CVS.com (like Charles Schwab and Sears) has chosen to risk "survival by suicide"³⁵—to cannibalize itself rather than be cannibalized.

- CVS.com's Web site gives the customer access to reliable, accurate, and current medical content anytime, anywhere, with the option of picking up prescriptions from the nearest CVS.com store or having them delivered to the doorstep within 24 hours. The alliances with WebMD, Merck-Medco managed care, 9000 health insurance plans, and Yahoo Health ensure that most Americans with health insurance can procure reliable and accurate medication and OTC items from CVS.com at their convenience, with little or no search costs, and without embarrassment.
- The company is the first to integrate AboutMyHealth.net and other physician networks into its b-web to enable patients to interact with their physicians online, and to send prescriptions seamlessly to CVS.com for in-store or at-door fulfillment. In addition to saving patients time and hassle, e-prescriptions have the potential to enhance the accuracy of the system (by eliminating the dangers from physicians' illegible handwriting) and the quality of patient lives and treatments. CVS.com has also differentiated itself from spurious and fraudulent online drug vendors in the customer 'mindspace' by driving and acquiring the Verified Internet Pharmacy Practice Seal (VIPPS) which signals legitimacy and reliability and has "network effect potential."
- A deep, integrated b-web partnership with McKesson leverages CVS' pharmaceutical supply management competency (vendor-managed inventory) and enables it to concentrate on customer relationship management (CRM) at the front end (e.g. McKesson is CVS.com's de facto supply chain manager accountable for stock-outs).

Although CVS.com has ensured first mover advantage in the arena of drugs retail, its success is anything but assured. The advent of retail behemoths like Walmart.com and K-Mart.com, which also sell drugs, OTC, and related healthcare items, is an imminent threat. CVS.com also has a powerful online adversary in Drugstore.com, which is partially owned by Amazon.com (46% stake) and Rite-Aid (which ensures access to Rite Aid's PCS Pharmacy Benefits Management customers). Drugstore.com enjoys significant advantage: it has access to Amazon.com's

e-tailing know-how and innovations in suggested selling and customer fulfillment, and Rite-Aid's bricks-and-mortar store chain for fulfillment and recourse. The \$206 billion pharmacy industry may be large enough to accommodate multiple e-tailers, and CVS.com, with its acquisition and integration of Soma.com (currently underway) and its brick-and-mortar store chain, is well-positioned in this space.

However, failure to execute its online strategy—deliver consistently on customer fulfillment for critical life saving medication and prescriptions—could severely tarnish its hard-earned brick-and-mortar reputation and brand equity. That would be a bitter pill for CVS.com to swallow.

—Arindam (Andy) Dé

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