

Financial Technology Monitor

Fall 2004

Ready or Not, Here it Comes. Are you ready for Check 21?

Forget about microfilm and wandering through the storage room for cleared and canceled checks, enter Check 21. The U.S. Check Clearing for the 21st Century Act (Check 21) makes the substitute check, also known as an image replacement document (IRD), a thing of the near future, the very near future, like the end of October. We have been talking about Check 21 for over a year now, but does everyone, including banks and retailers, know how this new legislation will affect them? We will soon find out. The legislation simply says that banks must be able to receive substitute checks in place of paper checks. The "simplicity" of the law has caused complicated problems for some small to mid size banks and most retailers. The law says nothing about electronic imaging, making the images available on-line or any other specifics about how to accomplish the replacement. To comply with the legislation, a bank does not have to process check payments with images; however, the banks that choose not to refer to imaging, will receive substitute checks from the ones that do use imaging, and those banks may ultimately lose business as their ability to serve their customers is diminished without an effective imaging solution.

Check 21 applies to all checks, for any amount, including consumer and corporate business checks, traveler checks and money orders. Continued on Page 2

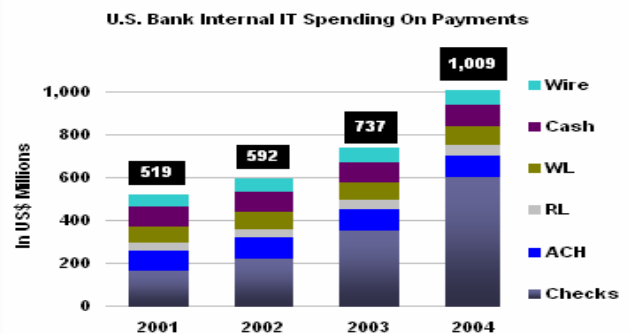
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Financial Technology Industry News Briefs

IT Spending

IT spending growth for banking and investment solutions will skyrocket through 2007. CEOs of financial service providers say that technology is the top business issue they face to satisfy customers and keep their market share. IT vendors that sell technology have the challenge of offering a specific industry the right technology.



Source: Celent

U.S. Bank internal IT spending on non-card payment systems will grow 34% between 2004 and 2003 compared to 24% between 2003 and 2002. This growth is good news for IT payment vendors even if the industry is moving toward utility computing and will force vendors to change their production, prices and delivery.

Touch Screen

When was the last time you went to the teller instead of the ATM to withdraw money from your checking account? Do you use the self checkout at the grocery store or the self check-in at the airport? You're not alone. A recent study conducted by Penn Schoen & Berland said that 97% of 800 people interviewed between the ages of 18 and 34 Find touch screen technology, used by everyone from banks to grocery stores, convenient and prefer using them over dealing with an actual person.

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Ready or Not, Here it Comes. Are you ready for Check 21? (Cont'd.)

Benefits of Check 21 to Banks

The primary benefit of substitute checks is the bank's ability to deliver checks for presentment without waiting for the original checks to be delivered to the bank's processing center. Other benefits include: reduced cost associated with moving the paper checks from point of deposit to processing center to clearinghouse; delays in processing are eliminated; banks are notified faster of insufficient funds and overdrafts, which in turn means faster collections processing; early detection of fraud and prevention of continued fraudulent acts against the same account; and saving money and space to store the paper checks in a central location.

Benefits of Check 21 to Retailers

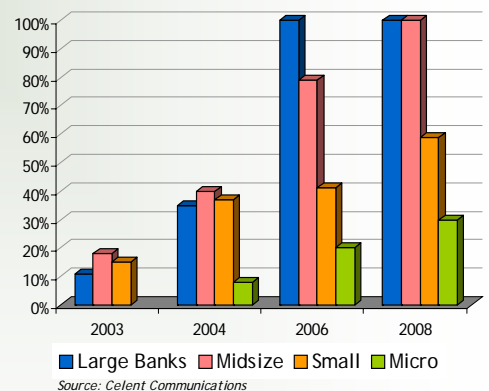
Some benefits to retailers will come because of new services from banks. For other benefits, retailers will require new processes and changes in the retail operation such as on-premises remote deposit of check images and an electronic deposit and transmission capability to the bank for processing and clearing. According to a Gartner study, 42% of retailers already use POS (point of sale) check conversion and 12% use POS check imaging to accept payments and convert paper check to ACH (automated clearinghouse) debits. These types of businesses will be more likely to easily upgrade to include check imaging.

How to prepare, what needs to be done

Back office operations of banks are currently most affected by Check 21. Both new hardware and software need to be implemented to prepare for Check 21. Check image hardware such as a scanner/reader device will capture the images of a check at POS, retail outlet back office or corporate back office. To use the hardware, obviously you need software. Check capture and processing will read the check in the scanner to validate images, legal amount, payee and everything else on the check. Some of the leading software vendors in the space include the following: **Advanced Financial Solutions' (AFS) ImageVision** is an image-based check-processing NT/2000 solutions that supports automated image and MICR repair and remote capture and integrated with the AFS imageDepot Archive. AFS sells imageVision and ImageDepot solutions to both large and community banks and to customers worldwide. **Alogent's Sierra Clearing** is a solutions suite that provides image and data capture and transaction processing that leverages component technologies for processing automation. Sierra Clearing is used by third-party outsourcing vendors Intelligent Processing Systems Limited in the U.K. and by Fiserv in the U.S. **Carreker's** image exchange solutions include ExchgLink™, an end-to-end image exchange send and receive software, as well as a host of other products for image-enabled back office automation. **NCR's Payment Solutions** business offers a full range of conventional and image transports that allow paper based item transactions to be captured and imaged for subsequent processing purposes. These transports are available in a full range of speeds and prices depending upon the customers' specific requirements. **Unisys** has introduced the NDP Quantum Series -- a new check processing hardware system with related software and services that validates check image quality and accelerates financial services firms' overall check processing operations. **Wausau's Optima³ NT/2000-based** check processing solution is designed for the image-based environment. It supports remote capture at the branch, focuses on operational efficiencies and supplies image delivery tools. Wausau has installed check processing application in over 850 financial institutions.

How Fully Check Image-Enabled Banks Stack Up

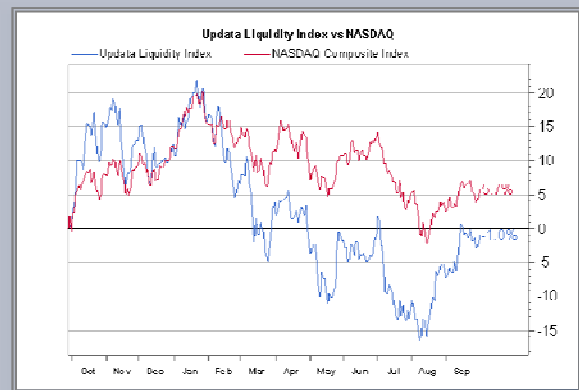
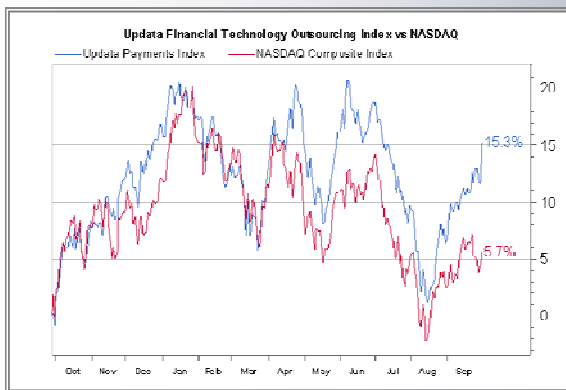
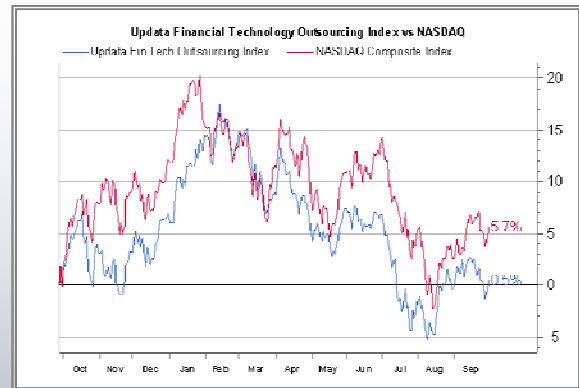
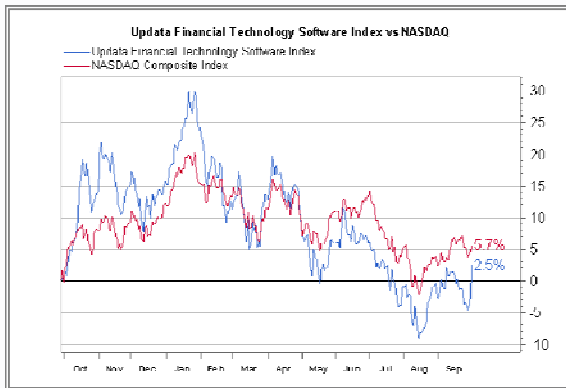
Full Check 21 readiness requires that a significant investment of resources is made into not only image hardware and software, but also staff training, consumer education and change in processes. It comes as no surprise that 40% of respondents in a recent Bank Administration Institute (BAI) survey indicated that their banks had no detailed implementation plan for Check 21 changes. However, the industry is making progress and by 2006, all of the largest 25 banks in the U.S. are expected to be fully image-enabled, along with 80% of mid-size banks. More than half of all small banks will be image-enabled by 2008.



Bottom Line

We expect to see continued spend on Check 21 technology solutions for the next several years. We believe 2005 and 2006 will incorporate most of the initial spend for the large and mid-sized banks. However, in 2007 and beyond, we believe the spend by financial institutions on Check 21 will continue at a healthy pace as smaller banks and outsourcers become equipped to have a complete solution and larger banks begin a cycle of enhancing their solutions with teller stations and POS equipment for their commercial customers. In summary, while we expect consolidation to occur amongst the current field of Check 21 vendors, we also believe that there will be a robust business environment for the leaders in the space for the next several years.

Update Various Financial Technology Composites: LTM Price Performance



Technology Outsourcing index includes BSG, DGIN, DST, FISV, SEIC, STT, SDS, ADP, FIC, JH, ORCC
 Technology Software License index includes SVNX, ADVS, CORI, JKHY, INTD, INTU, JH, SONE
 Liquidity index includes ESPD, ITG, INET, NITE, NYFX, TRAD, CME
 Payments index includes ADS, EPAY, CEY, CKFR, EFD, FDC, GPN, NAP, TSS, TSAI, TIPA, FNDT, ORCC, INTD

Financial Technology Company News Briefs

DENVER, CO – September 28, 2004 - BidPay.com, Inc., a subsidiary of **First Data Corp.** is making it easy for online auction site sellers in the U.S. to receive their payments, using its new direct-to-bank payment option. BidPay recently launched direct-to-bank to offer a fast, convenient and reliable online auction payment method. Sellers in the U.S. can register for the new option and have auction payments sent to their U.S. checking account in approximately three banking business days. Buyers can use their credit or debit card to pay for their online auctions.

SCOTTSDALE, AZ - September 8, 2004 - **eFunds Corporation**, a leading provider of risk management, electronic payments, ATM, and global outsourcing solutions, today announced that it has expanded its strategic alliance with **BISYS**, a leading provider of business process outsourcing solutions for the financial services sector, to make available selected ACH processing services to the suite of electronic banking services it now offers to its bank clients across the nation. The new services are an addition to a June 2003 agreement for ATM and debit card processing solutions. While terms of the ACH processing agreement were not disclosed, system integration is already underway. BISYS will augment its existing ACH services with eFunds' ACH processing system to enhance functionality and provide system expansion capabilities.

MINNEAPOLIS, MN - September 2, 2004 - **Fair Isaac Corporation** (NYSE:FIC), the leading provider of analytics and decision technology, announced the first product integration initiative resulting from its recent acquisition of London Bridge Group. By combining its industry-leading analytics with the former London Bridge's collections and recovery software expertise, Fair Isaac

will create a cross-industry, end-to-end collections and recovery solution that delivers a new level of power and flexibility to debt management operations.

STAMFORD, Conn., Sept. 1, 2004 - **NYFIX, Inc.** (Nasdaq: NYFX), a leader in technology solutions for the financial marketplace, today announced the successful launch of new automated trading facilities designed to maximize execution quality. NYFIX recently launched Silent Partner, a suite of algorithmic trading programs, to its customer base during the month of August.

BROOKFIELD, Wis -Sept. 1, 2004 -**Fiserv, Inc.** (Nasdaq:FISV) acquired Results International Systems, Inc., a provider of outsourced solutions for the property-and-casualty insurance industry. The acquisition will contribute approximately \$7 million in annualized revenues. The purchase price was not disclosed.

BOSTON, MA - August 27, 2004 - BlackRock Inc. agrees to acquire **State Street Research & Management Co.**, an 80-year-old money manager with Brahmin roots, for \$375 million.

PORTSMOUTH, N.H.- August 25, 2004 - **Bottomline Technologies** (NASDAQ: EPAY), a leading global technology provider of Financial Resource Management (FRM) software and managed services, today announced the latest release of its online litigation management and legal e-billing solution. The new platform, Legal eXchange® v4.5, lets corporations and their outside counsel set budgets for individual matters; review, adjust, escalate and approve invoices against those budgets online; and view comprehensive reports.

DALLAS, TX August 24, 2004 - **Alliance Data Systems Corp.** (NYSE: ADS), a leading provider of transaction services, credit services and marketing services, today announced that it has signed a five-year agreement with American TV and Appliance of Madison, Inc. to provide a comprehensive business credit card program for American TV's commercial customers.

ATLANTA, GA August 12, 2004 - **Global Payments Inc.** (NYSE: GPN), a worldwide provider of electronic transaction processing solutions, announced the introduction of new wireless and dial-up products for U.S. retail and restaurant industries. Retail @dvantage(R) NURIT Wireless and Retail @dvantage(R) NURIT Dial products provide processing for credit, debit and electronic benefits transfer (EBT) cards. The new Dial product also provides optional electronic check, as well as gift and loyalty card processing.

MOUNTAIN VIEW, CA - August 11, 2004 - **Intuit Inc.** (Nasdaq:INTU) today launched Quicken® 2005 for Windows. With more than 100 customer-recommended improvements, the latest version of the nation's best-selling personal finance software addresses users' most requested suggestions. Quicken 2005 also solves many customers' biggest financial hassle: tracking and paying bills.

NORTH CANTON, OH, August 10, 2004 - **Diebold, Incorporated** (NYSE: DBD) and **First Data Corp.** (NYSE: FDC) today announced they are certifying their new Interactive Financial eXchange (IFX) applications for automated teller machines (ATMs). By certifying new functionality, such as IFX-based transactions, Diebold and First Data Debit Services continue to lead the industry in support of emerging technologies by providing customers with a smooth migration to future technologies and a continued level of exceptional value.

NEW YORK, NY August 2, 2004 - ADP Brokerage Services Group (ADP), a division of **Automatic Data Processing, Inc.** (NYSE: ADP), announced today the launch of its Fee Management System (FMS), a new tool designed to handle the most complex fee arrangements and increase operational efficiency.

SANTA BARBARA, CA - July 20, 2004 - **724 Solutions** (NASDAQ:SVNX)(TSX:SVN), a leading provider of next-generation IP-based network and data services, announced the signing of an agreement with a leading mobile network operator to provide the X-treme MMS Accelerator (XMA) solution.

PORTLAND, Ore. - July 14, 2004 - **Corillian Corp.** (Nasdaq:CORI), the number one provider of online banking solutions to leading financial institutions, announced the availability of the Corillian Fraud Detection System, a patent-pending web log analysis solution and methodology providing financial institutions with an innovative way to proactively address the current phishing threat coursing through the online banking sector.

OAKS, PA - July 14, 2004 - **SEI Investments** (Nasdaq: SEIC), the global provider of asset management and investment technology solutions for investment management organizations, including strategic operating partnerships, has launched ComplianceAdvantage(SM), a program providing comprehensive compliance services, advice, and one-on-one support to its money manager clients.

ATLANTA, GA July 7, 2004 - **CheckFree Corporation** (Nasdaq: CKFR) today announced that it has signed a five-year contract extension with **Wachovia Corporation** (NYSE: WB) to provide fully outsourced electronic billing and payment services to Wachovia's entire online banking customer base. With this agreement, Wachovia will leverage CheckFree's high-quality electronic billing and payment processing capabilities and CheckFree Web, its consumer-centric user interface, to deliver industry-leading capabilities to Wachovia's online customers.

PLANTATION, FL, June 28, 2004 - TradeStation Securities, Inc., the principal operating subsidiary of **TradeStation Group, Inc.** (Nasdaq: TRAD), today announced that it has received clearing firm membership with National Securities Clearing Corporation (NSCC) and has been approved as a Participant in The Depository Trust Company. Both NSCC and DTC are part of The Depository Trust & Clearing Corporation (DTCC). These are the final approvals required for TradeStation to commence equities self-clearing operations for its active trader client base.

Upcoming Financial Technology Events

Sept. 29-Oct. 1, 2004:	BAI/ECCHO National Electronic Check & Image Exchange Conference, Baltimore, MD
Oct. 3-5, 2004:	ATM & Debit Forum 2004, Baltimore, MD
Oct. 3-5, 2004:	10th Annual Financial Services Technology Forum, Phoenix, AZ
Oct. 6-8, 2004	5th Annual Wealth Management Forum, Chicago, IL
Nov. 7-10, 2004:	Insurance & Technology Executive Summit 2004, Palm Springs, CA
Nov. 7-10, 2004:	Association for Financial Professionals 25 th Annual Conference, San Diego, CA
Nov. 8-9, 2004:	Financial Services Outsourcing, McLean, VA
Nov. 16-19, 2004:	BAI's Retail Delivery Conference & Expo 2004, Las Vegas, NV
Dec. 6-7, 2004:	6 th Annual Mortgage EC Conference, Las Vegas, NV

2004 Financial Technology Public Offerings

(\$ and Shares in Millions)

Date	Company	Filing	Shares Sold	Offering Price	Amount Raised
9/28/2004	TNS	Follow-on	5.25	\$20.00	\$105.00
8/12/2004	Archipelago Holdings, L.L.C.	IPO	11	\$11.50	\$126.50
7/6/2004	Kanbay International Inc.,	IPO	7.15	\$13.00	\$92.95
6/22/2004	Jackson Hewitt	IPO	37.5	\$17.0	\$637.50
6/1/2004	EDGAR Online	Follow-on			\$5.00
5/19/2004	Wincor Nixdorf	IPO	8	\$49.00	\$392.00
5/18/2004	Open Solutions	Follow-on	5.1	\$21.50	\$109.65
05/11/2004	Global Payments	Follow-on	6.9	\$44.3	\$305.33
4/30/2004	Intersections	IPO	6.3	\$17.0	\$107.10
3/16/2004	TNS	IPO	4.4	\$18.0	\$79.20
Filed	Cardtronics	IPO	NA	NA	\$115.00
Filed	Market Axxess Holding	IPO	NA	NA	NA
Filed	Morningstar	IPO	NA	NA	NA
Filed	GFI Group	IPO	NA	NA	\$100.0
Filed	Fidelity National Info Services	IPO	NA	NA	\$250.0
Filed	Heartland Payment Systems	IPO	NA	NA	\$75.0
Filed	International Securities Exchange	IPO	NA	NA	\$100.0

Recent Financial Technology Private/Venture Capital Financing

Date	Company	Description	Amount Raised (Mil.)	Investors
Sep-04	SeaPass Solutions	Leading developer of connectivity solutions for the insurance industry	\$3.7	Led by Platinum Neurone Ventures (PNV), and included Hyperion Venture Partners and Plenus Venture Lending
Sep-04	FNX Limited (FNX)	Leader in the delivery of technology solutions to the global financial markets	\$10.0	Conning Capital Partners and Lazard Technology Partners
Sep-04	Penson Worldwide	Provider of execution, clearing, custody and settlement services for the global securities markets	\$25.0	Technology Crossover Ventures (TCV)
Sep-04	ExpertPlan Inc.	Offers Web-based administration services for retirement plans	\$8.3	NA
Sep-04	Searchspace	Developer of financial risk management software	\$5.5	NA
Sep-04	BitPass Inc.	Developer a micropayment system for online content	\$11.8	NA
Aug-04	Brickstream	Provider of customer analytics software for retail businesses	\$9.0	Led by RBC Technology Ventures
Aug-04	Xign Corp.	Provider of Enterprise Order to Pay software and services	NA	MasterCard International
Aug-04	CardSystems	Electronic payment processor for financial institutions	\$9.3	Led by Camden Partners
Jul-04	Tradeware Systems Corp.	Provides electronic order management systems and direct market access trading connectivity for broker dealers	\$6.0	Summit Partners
Jul-04	Full Capture Solutions, Inc.	Provider of predictive analytics for the insurance industry	\$5.0	Ignition Partners
Jun-04	EPIQ Systems	Case management solutions	\$50.0	Undisclosed Institutional Investors
Jun-04	RiskMetrics Group	Provider of risk analytics to blue-chip financial institutions, and more recently has established itself as the market leader for hedge fund and other alternative investment managers	\$122.0	Spectrum Equity Investors and General Atlantic Partners along with Technology Crossover Ventures
Jun-04	ION Trading Group	Provider of high-performance trading solutions for electronic fixed income markets	\$44.0	TA Associates
Jun-04	NorthStar	Wealth management software provider. NorthStar's product helps financial services firms with investor profiling, wealth planning, investment selection and implementation, client monitoring, portfolio reporting and client review.	\$11.5	Benchmark Capital, Chess Ventures, HIG Ventures, and Pinnacle Ventures
Jun-04	eCredit	Provider of credit risk management and collections software and services.	\$8.0	North Hill Ventures (Lead), Apex Venture Partners, Internet Capital Group, Sterling Venture Partners
Jun-04	Pay By Touch	Provider of biometric payment processing technology and services.	\$25.0	Mobius Venture Capital

Financial Technology M&A Activity

Date Closed	Seller	Buyer	Deal Value	Revenue	Mult of Revenue
Pending	eFunds Corporation (ATM Portfolio)	TRM Corporation	\$150.0	ND	ND
Pending	InterCept, Inc	Fidelity National Financial	\$420.2	\$272.1	1.5x
Pending	Select Payment Processing	Jack Henry & Associates	ND	ND	NA
Pending	Datawest Solutions	Open Solutions Inc	\$39.3	\$32.6	1.2x
Pending	Kordoba GmbH & Co	Fidelity National Financial	ND	ND	ND
Sep-04	Lynk Systems	Royal Bank of Scotland Group	\$525.0	ND	ND
Sep-04	JCP Group	FactSet	ND	ND	ND
Sep-04	Kiodex	SunGard	ND	ND	ND
Sep-04	Property Management Software of GVA Grimley	Wealth Management Software	\$1,613.0	ND	ND
Sep-04	Brut LLC (SunGard)	NASDAQ®	\$190.0	\$190.0	1.0x
Sep-04	Banc Insurance Service	Jack Henry & Associates	ND	ND	ND
Sep-04	GTS Prepaid	PRE Solutions	ND	ND	ND
Sep-04	Results International Systems	Fiserv, Inc	ND	ND	ND
Aug-04	Itsmobile	Alphya	ND	ND	ND
Aug-04	onExchange Inc	Clearing Corporation	ND	ND	ND
Aug-04	Cash & Win	Global Payments	ND	ND	ND
Aug-04	Global Payment Services	Payment Services	Emida Technologies	ND	ND
Aug-04	Everything Prepaid LLC	PRE Solutions	ND	ND	ND
Aug-04	Clarity Payment Solutions Inc.	TSYS Prepaid	\$53.0	ND	ND
Jul-04	Independent equity research firm	international publisher	\$11.0	\$7.5	1.5x
Jul-04	NYCE	Metavante	\$610.0	\$143.0	4.3x
Jul-04	Delta Singular Outsourcing Services	First Data Corp.	\$250.0	ND	ND
Jul-04	The Loan Page	Battery Ventures	\$10.0	ND	ND
Jul-04	re:Member Data Services	Open Solutions Inc	\$20.0	\$13.0	1.5x
Jul-04	Meta-4 Business Networking Solutions	Ezee ATM LP	\$4.3	ND	ND
Jul-04	Mitek Systems sub Checkquest	Harland Financial Solutions	ND	ND	ND
Jul-04	E*Trade Access Inc	Cardtronics Inc	\$106.0	ND	ND
Jun-04	Advanced Financial Solutions Software	Metavante	ND	ND	ND
Jun-04	Beacon Credit Services	NetBank	ND	ND	ND
Jun-04	REFCO	Thomas H. Lee Partners	ND	ND	ND
Jun-04	JB Oxford	Ameritrade	\$26.0	ND	ND
Jun-04	Instinet's ProTrader Assets	Zone Trading Partners	\$8.0	ND	ND
Jun-04	Barra Inc.	Morgan Stanley Capital	ND	ND	ND
Jun-04	Brightware	eDocs, Inc.	ND	ND	ND
Jun-04	EPOS Corporation	Tier Technologies	\$19.0	\$1.6	12.0x

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