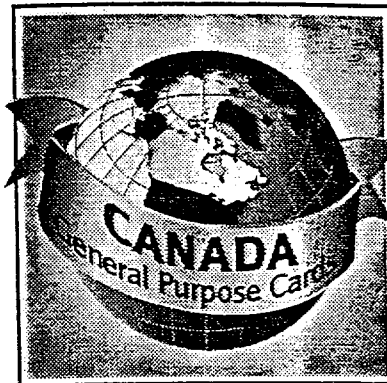


FOR 29 YEARS, THE LEADING PUBLICATION COVERING CONSUMER PAYMENT SYSTEMS WORLDWIDE

CANADA RESULTS — 1998 The number of global brand general purpose credit cards issued in Canada totalled 37.9 million at year-end, up 13% over 1997. (turn to page 8)

VIRTUAL CARDS Several dozen issuers in North America, Europe, and Australia have used the Internet as a distribution channel to open more than ... (turn to page 9)

U.S. BANCORP BUYS MELLON NETWORK SERVICES U.S. Bancorp, ranked 32nd in the United States among processors of transactions on credit and debit ... (turn to page 4)



POS TERMINALS WORLDWIDE

1. VeriFone.....	21%
2. Hypercom.....	16%
3. Ingenico.....	10%
4. IVI Checkmate.....	6%
5. Bull/Telesincro.....	6%
6. V-Star.....	5%
7. Dassault.....	4%
8. Schlumberger.....	4%
9. Lipman.....	4%
10. Racal-Transcom.....	2%
39 others.....	21%

by Manufacturer

Market Shares of Shipments 1998

by Region

United States.....	35%
Europe.....	34%
Asia/Pacific.....	15%
Latin America.....	9%
Canada.....	4%
Mideast/Africa.....	3%

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CARD REGISTRATION IN-HOUSE Card protection programs can be a profit center when operated in-house by issuers with at least three million accounts according to consultant ... (turn to page 9)

POS TERMINAL SHIPMENTS WORLDWIDE The 49 manufacturers of stand-alone credit/debit card-authorization terminals shipped nearly ... (turn to page 5)

BIOMETRIC PAYMENT TERMINAL Sagem's MorphoTouch payment terminal can read mag-stripe, chip-card, and biometric data for various ... (turn to page 5)

VOICE FX SERVICE BUREAU A completely automated remote service that takes credit card applications over the phone using interactive ... (turn to page 10)

DE LA RUE FORTAS CARD A more durable and versatile replacement for standard polyvinylchloride (PVC) plastic and associated composites ... (turn to page 4)

FOURTH 50 BANK CARDS Visa and MasterCard credit card issuers that ranked 151 through 200 largest based on year-end 1998 outstandings are listed on p. 10.

ALSO INSIDE: Smart Cards, What the Experts Say: Michael D.S. Harris — 4 Fast Facts & Job Mart — 2, 3

D-3335

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FAST FACTS ▾ **FAST FACTS** ▾ **FAST FACTS** ▾ **FAST FACTS** ▾ **FAST FACTS** ▾ **FAST FACTS**

DESTINY SOFTWARE has licensed software to Fleet Credit Card Services to manage credit card applications received over the Internet. Lucinda Duncalfe is CEO at Destiny, (610) 834-0308, fax (610) 834-0540. Tom Evich is VP at FCCS, (215) 444-2826, fax (215) 444-2566.

BANK ONE is the first purchasing-card issuer to use WebPurchasing, an alliance of Clarus Corp., Microsoft, and MasterCard. Steve Jeffery is CEO at Clarus, (770) 291-3900, fax (770) 291-8573. Anna Rumsey is First VP at Bank One, (312) 732-3368, fax (312) 732-1485. Michael Kim is Prod. Mgr. at Microsoft, (425) 703-0403, fax (425) 936-7329.

TOTAL SYSTEM SERVICES will process the private-label credit card portfolio of apparel chain Nordstrom. TSYS already handles Nordstrom's Visa card portfolio. Phil Tomlinson is Pres. at TSYS, (706) 649-4178, fax (706) 649-2456. Fern Swanson is IT Mgr. at Nordstrom, (303) 397-4777, fax (303) 397-4775.

HITACHI AMERICA will offer third-party service bureau processing to issuers of Mondex electronic-purse cards in the U.S. First client will be Comerica Bank. Sosei Katsumoto is Mktg. Mgr. at Hitachi, (650) 244-7565, fax (650) 244-7680. Michael Tempora is VP at MasterCard, (914) 249-5452, fax (914) 249-4212.

ORGA CARD SYSTEMS, smart card specialists, will jointly develop a smart card reader with Axiohm American Magnetics, mag-stripe card reader manufacturer. Keith Jentoft is VP at AAM, (612) 784-0222, fax (612) 784-0999. Sigi Eichinger is President at Orga USA, (610) 993-9810, fax (610) 993-8641.

MAG-TEK has manufactured a secure mag-stripe card reader to be used for Internet transactions. Data from the mag-stripe is captured, encrypted, and transmitted to the merchant. The new reader can support digital signatures, SSL, PKI, DUKPT, and Triple DES encryption. Tom McGeary is Pres., (310) 631-8602, fax (310) 631-3956.

FIRST DATA CORP. has received clearance from the Department of Justice for its proposed acquisition of the outstanding public shares of Paymentech, fourth largest bank card acquirer in the U.S.

NACHA (National Automated Clearing House Assoc.) reports 9.8 million electronic-data interchange transactions of the CTX-type worth more than \$451 billion in payments were settled through the ACH last year. Elliott McEntee is CEO, (703) 561-3955, fax (703) 787-0996.

AMERICAN EXPRESS has licensed to MasterCard, Orga, Discover, De La Rue, Proton, Microsoft, Europay, HTEC, IBM, Sun Microsystems, Continental Airlines, Cards Etc., and Tesa Entry Systems its smart card multiple application framework for travel & entertainment and other transactions. Visa expects to become a licensee. Glenn Weiner is VP at Amex, (212) 640-7919, fax (212) 619-8638.

M&I DATA SERVICES has signed a reseller agreement with cash-dispenser manufacturer Tidel. Michael Hudson is EVP at Tidel, (972) 484-3358, fax (972) 484-1014. Frank D'Angelo is SVP at M&I, (414) 357-2330, fax (414) 357-9259.

CREDITRUST, subprime marketing specialist, has signed a definitive agreement to acquire United Credit Card Bank for \$2.3 million in cash. The bank will be renamed Creditrust National Bank and moved to Delaware. Joseph Rensin is Pres. at Creditrust, (410) 594-7000, fax (410) 594-9616.

JCPENNEY will sell its store credit card program, a portfolio with 14 million active accounts and \$4.55 billion in outstandings. Charles Brown is Dir. Credit, (972) 960-4505, fax (972) 789-8246.

IDENTICATOR TECHNOLOGY and MasterCard's test of fingerprint scanning for access control at the association's corporate headquarters will be expanded to include purchases at the company's cafeteria. Joel Lisker is SVP at MasterCard, (914) 249-5188, fax (914) 249-4256. Oscar Pieper is Pres. at IDT, (650) 873-8650, fax (650) 873-8653.

JOB MART — POSITIONS AVAILABLE *Subscribers pay \$300 per 100 words (nonsubscribers \$500) for Job Mart positions.*

TRITON SYSTEMS The leading provider of off-premises ATMs is seeking candidates for the following positions: **International Business Development Director** will be responsible for the development and execution of Triton's global business plan. A track record in developing new, worldwide distribution channels. Location in Atlanta is preferred. **European Sales Director** to focus on the emerging U.K. marketplace while establishing distribution throughout Europe. Experience selling payment solutions to retail, financial and distributor channels. Location in London preferred. **Director of Marketing** will be a key position in driving Triton's strategic initiatives and overall business plan. Experience in building both a marketing plan and the

organization to support it. Location in Atlanta. **Marketing Communications Specialist/Manager** will handle the company's marcomm activities. Experience in directing trade show, public relations, advertising, and other sales support activities. Location in Atlanta or Long Beach, Miss. **Product Manager** will have both hands-on and management responsibility for Triton's product lines. Experience in product marketing and coordination of projects with engineering and other departments is essential. Triton Systems has been named one of the fastest growing, privately held companies for the past two years by Inc. Magazine. Please fax resumes to: Triton Jobs at (770) 428-7806. Corrected fax number from prior issue #688 (please resend resume if necessary).

FAST FACTS ▾ **FAST FACTS** ▾ **FAST FACTS** ▾ **FAST FACTS** ▾ **FAST FACTS** ▾ **FAST FACTS**

METRIS COMPANIES, parent of Direct Merchants Credit Card Bank, has announced a 2-for-1 stock split to be distributed June 15. Shares trade on the NYSE:MXT. David Wesselink is CFO, (612) 525-5094, fax (612) 593-4733.

FIRST USA, second largest bank credit card issuer in the U.S., has purchased \$112 million in outstandings (130,000 Visa credit card accounts) from Carolina First. Joe Venuti is SVP at First USA, (302) 282-6308, fax (302) 884-8310.

E-COMMERCE EXCHANGE, an Internet payment gateway service, will offer its merchant clients financing from LeasecommDirect to create Web storefronts. Leasecomm specializes in financing products (including POS terminals) in the \$500 to \$10,000 range. Darrin Ginsberg is CEO at ECX, (949) 367-1554, fax (949) 367-9745. Stephen Obana is VP at Leasecomm, (510) 490-8883, fax (510) 490-0907.

ELECTRONIC MERCHANT SYSTEMS, an ISO operating in 100 U.S. cities, will use Skipjack Merchant Services as its Internet payment-gateway technology provider for secure payment-card processing. John Rahilly is Pres. at EMS, (216) 524-0900, fax (216) 524-9582. Brian Griffin is VP at SMS, (513) 563-2907, fax (513) 563-9790.

STATE FARM FINANCIAL SERVICES, a federal savings bank, has opened for business offering checking accounts and ATM cards to employees, agents, and staff. Credit cards will be offered nationwide beginning next year. Stan Ommen is CEO, (309) 766-4698, fax (309) 763-7011.

HEARTLAND PAYMENT SYSTEMS, 27th largest acquirer of payment-card transactions in the U.S., will offer its merchants the Internet payment-gateway services of CyberSource. John Waldron is VP at HPS, (614) 527-0655, fax (614) 527-0664. Tom Clements is Dir. Channel Sales at CyberSource, (408) 260-6020, fax (408) 241-8270.

FIRST FINANCIAL NETWORK It was incorrectly stated in issue 691 of The Nilson Report that First Financial Network, Inc. of Oklahoma city was an affiliate of RLG Holdings, LLC. FFN is wholly owned by Bliss Morris, President & CEO. FFN recently performed the sale of the first charge-off credit card portfolio for a major Canadian financial institution valued at \$34 million (Can). (405) 748-4100, fax (405) 748-4111.

CONCORD EFS, an acquirer of bank card transactions and the owner of the Mac EFT system along with other payment industry transaction-processing businesses, reports first quarter revenue of \$170.2 million, up 26%. Ed Labry is Pres., (901) 371-8011, fax (901) 371-8157.

STAR SYSTEM will be the brand used by H&S Holdings, the new company formed by the merger of the Star and Honor shared regional EFT systems. Ronald Congemi is CEO at H&S, (407) 659-6689, fax (407) 659-6681.

INTELL-A-CHECK offers a Windows-based electronic check writing application to let companies accept check payments over the Internet, phone, fax, and voice response unit. Louis Obsuth is Pres., (973) 844-9100, fax (973) 844-1281.

TELECASH KOMMUNIKATIONS-SERVICE, card payment transaction processor in Germany, will license software from Xcert International in the U.S., provider of applications for business-to-business commerce over the Internet. Thomas Nolan is CEO at Xcert, (925) 274-9300, fax (925) 974-0657. Rudolf Klos is Group Manager at TeleCash, 49 (711) 162-64851, fax 49 (711) 221-958.

MCI WORLDCOM has acquired Equifax's 34% equity position in Brazil's Proceda Tecnologia e Informatica, a data processing firm doing business for Unnisa, an Equifax-owned cardholder processor. Marietta Edmunds Zakas is Corp. VP at Equifax, (404) 885-8304, fax (404) 885-8682.

CORPGROUP, a financial-services company with interests in Venezuela, Argentina, and Chile, has installed Fair Isaac's Strategyware decision-support system to improve credit card and installment-loan account origination. Carlos Auszenker heads risk management at Corpgroup, 56 (2) 364-4600, fax 56 (2) 362-1720. Scott Barrett is New Bus. Dev. Mgr. at FI, (415) 491-5149, fax (415) 492-5690.

FINANCIAL INFORMATION SERVICE CO. of Taiwan will convert one million proprietary chip cards to Visa's open platform beginning in the fourth quarter of 1999. Lin Chen Chen is Pres. at FISC, 886 (2) 263-37888, fax 886 (2) 263-25424. Rodolphe Chabanel is Dir. Open Platform at Visa, (65) 437-5704, fax (65) 437-5567.

CEPS MANAGEMENT CONSORTIUM will oversee development and administration of the Common Electronic Purse Specifications to insure global interoperability. Europay, Visa, ZKA (German banking industry association), and CEPS España are founding members. Enrique Rodriguez Bonachera is Deputy General Manager at CEPS España, 34 (91) 346-5379, fax 34 (91) 346-5350.

MANAGEMENT CHANGES

Jerry Johnson, formerly at Cummins Engine, has been appointed CEO at DataCard Group replacing Glenn Highland, (612) 933-1223, fax (612) 988-2895. **Roger Van Scoy** has been appointed Mng. Dir. at First Data Resources Ltd., 44 (1268) 296-965, fax 44 (1268) 296-967. **John Klein**, formerly head of the U.K. credit card subsidiary at People's Bank, has been appointed Pres. of the parent company, (203) 338-7090, fax (203) 338-4110. **Serge Barthelemy**, formerly Development Dir., has been appointed CEO Greater China at Gemplus, 86 (10) 641-08001, fax 86 (10) 641-08011. **Albert Shiung**, formerly Country Mgr. Visa Taiwan, has been appointed Country Mgr. Visa China, 86 (10) 659-06370, fax 86 (10) 659-00989. **Randy Christoferson** has resigned as President at the First USA subsidiary of Bank One. **Nelson Hanks**, formerly at Micron Electronics, has been appointed VP Operations at Triton Systems, (228) 868-1317, fax (228) 868-0437. **Eric Walby**, formerly at PerformanceData and Database America, has been appointed VP Sales at Retail Resources, (201) 460-1300, fax (201) 460-0144.

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A key component in our smart card strategy is the MULTOS platform — the first open, high-security, multi-application operating system for smart cards. Because it has no restrictions on its use, it has become the de facto standard for the payment systems industry. American Express, Europay International, and Discover have all joined MasterCard and Mondex as members of MAOSCO, the consortium driving MULTOS forward.

SMART CARDS

What the Experts Say

Michael D.S. Harris

MULTOS allows financial institutions to offer an array of financial and nonfinancial services on their cards. Moreover, MULTOS uses a unique approach to allow these applications to be dynamically added or deleted from cards after they have been issued, in a manner that maximizes export control acceptability.

MasterCard's electronic cash product, Mondex, a global product currently licensed in 56 countries, is the most "cash-like" of all electronic purse products in the world — an efficient alternative to physical cash with the capability of making micropayments of a few cents. In addition, the chip implementation of our credit and debit products, known as the MasterCard Chip Payment Application (MCPA), is fully compliant with the EMV standard and has been adopted by members in Japan, the U.K., and South Africa. We recently announced that Mycal Card Company of Japan will convert its entire portfolio from magnetic stripe to multi-application smart cards over the next three years. By the third quarter of this year, Mycal expects to have issued more than a half million MasterCard cards powered by MULTOS. The migration will then proceed at a rate of over 200,000 cards per month, reaching 5.4 million cards by 2002.

MasterCard's chip strategy is focused on global interoperability and adherence to industry standards. All of our chip offerings — MULTOS, Mondex, and MCPA — are integrated, enabling our members to make only one strategic investment and implementation over the long term.

With MasterCard's Complete Chip Solution available today, we are providing our members with the products and services they need to take a leadership position in an expanding market for payments both in the physical and virtual worlds. In this way, chip enhances and expands their existing customer franchise.

MasterCard International has the most comprehensive portfolio of payment brands in the world. With 23,000 member financial institutions serving consumers in 220 countries and territories, MasterCard is an industry leader in quality and innovation. Nearly 700 million MasterCard, Maestro, Cirrus, and Mondex cards are in circulation today. With more than 16.2 locations, no card is accepted in more places and by more merchants than the MasterCard card. In 1998, gross dollar volume exceeded \$650 billion.

Michael Harris is Head of the Chip Business Group at MasterCard International. Mr. Harris joined MasterCard from Orga Card Systems in 1997. He is a Chartered Engineer with First and Masters degrees in Electronic Engineering. Phone (914) 249-5604, fax (914) 249-4312.

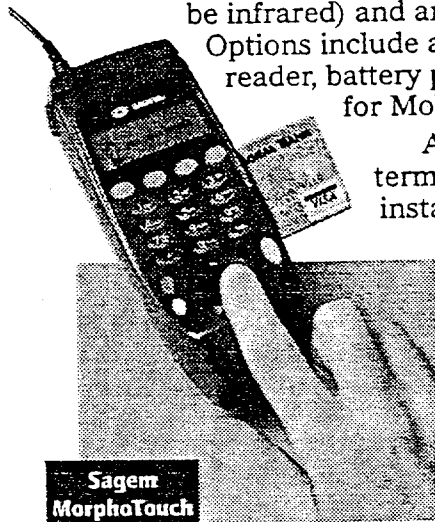
Fortas (from page 1) ... from which most cards are made, called Fortas, has been developed by De La Rue primarily for identification cards and drivers licenses that require a 10-year life span. De La Rue claims cards made of Fortas will last that long. Printing and personalization is absorbed into the card to a depth of 50 microns, making it impossible to alter the card without destroying it. Ultraviolet light detects any attempt at alteration. Security features include embedded banknote-style threads and customized holographic images. De La Rue, with plants in the U.K., U.S., France, and Italy is one of the world's largest producer of bank cards and banknotes. Humphrey Miller is Managing Director in Basingstoke, United Kingdom, 44 (1256) 605-035, fax 44 (1256) 842-509. Prior issues: 688, 675, 668, 651, 639 □

U.S. Bancorp/Mellon (from page 1) ... cards, will expand its transaction processing business by buying Mellon Network Services, ranked 19th. U.S. Bancorp gets Mellon's ATM terminal management and debit cardholder processing contracts with 1,900 financial institution clients, a card service bureau, gateway links to regional and national card authorization networks, Tandem computers, and software to drive ATMs. The sale, expected to be completed in June, will nearly triple the number of transactions U.S. Bancorp acquires annually from 300 million to 800 million. U.S. Bancorp will build a telecom network to link clients it acquires from Mellon, and will install software to drive ATMs at one of its data centers in Minneapolis with a backup site in Portland.

Many large commercial banks such as Citigroup, Bank One, and Chase Manhattan outsource their POS terminal management and

merchant back-office accounting to third party specialists. Others, such as Bank of America, Fifth Third Bancorp, and U.S. Bancorp plan to grow these businesses in-house for their revenue and profit potential. The merchant business is what U.S. Bancorp wants from Mellon. While credit and debit transactions at ATMs are expected to increase by only 2% annually, debit card transactions at merchants are expected to grow more than 30% annually for several years and eventually overtake ATM transactions. Dan Frate is President Payment Services at U.S. Bancorp in Minneapolis, Minnesota, (612) 973-4235, fax (612) 973-1622. Prior issues: 688, 685, 674 □

Biometric Terminal (from page 1) ... applications including point of sale, banking, access control, loyalty programs, and time and attendance. The 32-bit central processing unit can handle fingerprint enrollment, authentication, and identification for 50,000 people. Two serial ports (one can be infrared) and an Ethernet port are available. Options include a thermal printer, 2D bar-code reader, battery pack, and GSM (Global System for Mobile communications).

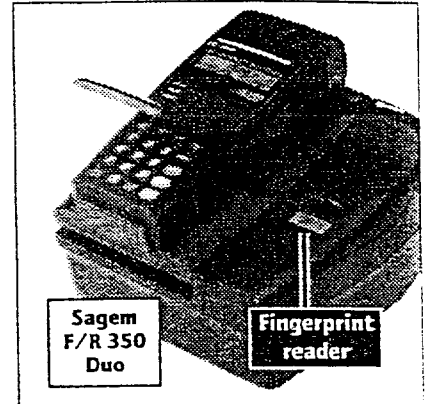


Sagem MorphoTouch

As a manufacturer of POS terminals, Sagem supports an installed base of 151,500 units — 96% of them in Europe.

The company has been in the U.S. since 1985 where it has created systems to manage fingerprint records for the Federal Bureau of Investigation and for government-benefits programs run by the states of Texas, Arizona, and New York. A Kroger supermarket in Houston has installed a Sagem fingerprint-based fraud-prevention system for check payments that has participation from 99.9% of the store's 3,600 customers who write checks. Groupe Sagem had revenues of \$3.06 billion last year from its five

operating divisions: terminals and telecom, networks and telecom, electronics, defense and security, and cable. Tim Nitzsche-Ruggles is Senior VP at Sagem Morpho in Tacoma, Washington, (253) 383-3617, fax (253) 591-8856. Prior issues: 681, 677 □



Sagem F/R 350 Duo

Fingerprint reader

POS Shipments (from page 1) ... 4.1 million units worldwide in 1998, up 6%. Electronic cash registers or PC-based POS systems are not included in that figure. Card-authorization terminals that integrate into those ECRs and PC systems are counted.

VeriFone, Hypercom, and Ingenico, continued to rank first, second, and third based on shipments. However, VeriFone lost share, falling to 20.7% from 25.0% the year before while Hypercom grew to 15.9% from 13.1% and Ingenico grew to 9.7% from 6.1%. Ingenico's acquisition of Bull/Telesincro, set to close in June, will give Ingenico about an equal share position with Hypercom.

New to the top 10 are Lipman and Racal-Transcom, edging out Giesecke & Devrient and Intellect. Lipman posted the best growth among vendors in the top 10 by more than doubling its shipments versus the prior year. Racal-Transcom nearly doubled shipments. Ingenico's strong growth was due in part to the acquisition of De La Rue's terminal business and of controlling interest in Veron's business. (turn to page 6)

Last year, shipments in each region grew at the following rates:

Mideast/Africa	+25%
Latin America	+15%
U.S.	+6%
Europe	+5%
Asia/Pacific	+2%
Canada	-4%
TOTAL	+6%

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WORLDWIDE SHIPMENTS BY MANUFACTURER 1998

Rank	Manufacturer	Units	Chg.
1	VeriFone*	840,592	-13%
2	Hypercom	646,149	+29%
3	Ingenico (1)	394,850	+68%
4	IVI Checkmate	260,069	+16%
5	Bull/Telesincro	237,414	+17%
6	V-Star	205,600	+41%
7	Dassault AT	150,050	+10%
8	Schlumberger	147,500	+18%
9	Lipman	146,200	+108%
10	Racal-Transcom	86,000	+91%
11	Ascom Monetel	80,100	+19%
12	Giesecke & Devrient	64,000	-33%
13	MobiNetix	60,700	+34%
14	Dione*	59,520	+11%
15	Keycorp/Tillsmith	58,310	-2%
16	DaSistemi	55,000	+38%
17	NBS	49,000	+12%
18	Panasonic	48,000	+37%
19	Banksys	45,800	-26%
20	Trintech	45,000	+29%
21	Omron	42,400	+149%
22	DataCar	42,000	-37%
23	Intellect	39,731	-55%
24	Sagem	37,000	+32%
25	Moneyline	31,500	+26%
26	Linkpoint	28,666	+8%
27	First Data POS Microbilt	24,000	-50%
28	Dionica	23,100	+4%
29	Urmet	21,500	-20%
30	Spectra Technologies	19,000	-17%
31	Anritsu	12,000	+20%
32	IDfone (2)	10,000	-63%
33	AhnTech	7,000	-18%
34	Hyosung	6,000	+67%
35	Intelligent	6,000	+100%
36	Baekdoo Infocrypt	5,500	-82%
37	Natech	4,950	-76%
38	Thyron	4,750	+8%
39	Dynamic Data Systems	3,500	+59%
40	Wann Connection Devices	3,000	0%
41	Checkline	2,780	-13%
42	Leigh-Mardon	2,492	+18%
43	Toshiba TEC	2,053	+216%
44	Itacomp	2,000	-60%
45	Pacific Info. Tech.	1,900	-5%
46	Datatek	1,490	+6%
47	NTT Data	1,000	-89%
48	Oki Electric	900	+80%
49	CSI	700	+27%
TOTAL		4,066,766	+6%

(1) Includes Veron of Italy and Ingenico Fortronic (formerly De La Rue) of Scotland. (2) Formerly LG Electronics.

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POS Shipments (from page 5) Top vendor in the U.S. continued to be VeriFone. Europe's market share leader was Ingenico. V-Star became the largest vendor in Asia/Pacific. Hypercom held the top position in Latin America. IVI Checkmate led in Canada. Schlumberger topped all other vendors in the Mideast/Africa region. □

POINT-OF-SALE TERMINAL MANUFACTURER SHIPMENTS 1998

Terminals are all stand-alone units with built-in card readers.

CONTACTS

AhnTech Sam Ahn is President in San Diego, California, (619) 516-5900 x108, fax (619) 516-5955.

Anritsu Toru Wakinaga is Asst. Mgr. of Int'l Sales in Tokyo, Japan, 81 (3) 347-37203, fax 81 (3) 344-20235.

Ascom Monetel Odile Caillot is International Marketing Manager in Guilhaersand-Granges, France, 33 (475) 814-204, fax 33 (475) 814-300.

Baekdoo Insoo Kim is CEO in Seoul, South Korea, 82 (2) 544-1102, fax 82 (2) 511-8102.

Banksys Bernard Van Der Landen is Strategies and Product Manager in Brussels, Belgium, 32 (2) 727-6372, fax 32 (2) 727-6767.

Bull/Telesincro Pedro Argany is EFT Business Unit Marketing Director in Barcelona, Spain, 34 (93) 580-2227, fax 34 (93) 580-2768.

Checkline Raja Ray is Marketing Manager in Potters Bar, Hertfordshire, England, 44 (1707) 827-010, fax 44 (1707) 827-070.

CSI (Credit Systems Int'l) James C. is President in Burnaby, British Columbia, Canada, (604) 415-1500, fax (604) 420-6134.

DaSistemi Alessandro Zamparo is Director in Milan, Italy, 39 (02) 265-99201, fax 39 (02) 265-99201.

Dassault AT Thierry Flajollet is Division in Plaisir, France, 33 (1) 308-12083, fax 33 (1) 308-12083.

Dione Ricky Garrido is Managing Director in High Wycombe, Bucks, England, 44 (1494) 429-600, fax 44 (1494) 429-600.

Dionica Vincenzo Palermo is Managing Director in Milan, Italy, 39 (02) 921-03342, fax 39 (02) 921-03342.

Dynamic Data Systems Robert is General Manager, Business Development in Melbourne, Australia, 61 (3) 956-17477, fax 61 (3) 956-17477.

First Data POS Microbilt Bill H. is in Kennesaw, Georgia, (770) 218-4999, fax (770) 218-4999.

CANADA - 149,067

Rank	Manufacturer	Units
1	IVI Checkmate	62,065
2	NBS	40,500
3	Keycorp	22,790
4	V-Star	8,350
5	VeriFone*	6,700
6	MobiNetix	3,000
7	Wann Conn. Dev.	3,000
8	Schlumberger	1,500
9	Hypercom	712
10	Intellect	250
11	CSI	200

MIDEAST/AFRICA - 147,610

Rank	Manufacturer	Units
1	Schlumberger	25,000
2	Ingenico	24,050
3	Lipman	18,400
4	Dione*	15,200
5	Dassault AT	13,700
6	Bull/Telesincro	13,688
7	V-Star	13,300
8	VeriFone*	7,000
9	Ascom Monetel	6,000
10	Natech	4,400
11	Hypercom	3,030
12	Racal-Transcom	2,000
13	Moneyline	1,000
14	Keycorp/Tillsmith	512
15	Thyron	300
16	Intellect	30

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V-Star Jackey Hwang is Sales Manager in Kaohsiung, Taiwan, 886 (7) 363-5110, fax 886 (7) 363-5109.

Wann Connection Devices Deepak Wannar is President in Nepean, Ontario, Canada, (613) 225-9266, fax (613) 225-4593.

Some figures for the prior year have been restated.
*estimate.

AMERICA - 350,868

Manufacturer	Units
ercom	118,682
/Telesincro	80,516
Fone*	73,000
ar	23,050
nico	12,600
corp	11,380
sault AT	11,050
et	6,500
umberger	5,000
	2,500
om	2,000
omp	2,000
atek	1,490
llect	500
ys	300
etix	300

U.S. - 1,414,044

Rank	Manufacturer	Units
1	VeriFone*	543,892
2	Hypercom	388,876
3	IVI Checkmate	198,004
4	Lipman	68,500
5	MobiNetix	56,000
6	DataCard	42,000
7	Linkpoint	28,666
8	First Data POS	24,000
9	Schlumberger	20,000
10	Dassault AT	14,300
11	Ingenico	8,500
12	NBS	6,000
13	Ahntech	5,000
14	IDfone	4,000
15	V-Star	3,200
16	Intellect	1,140
17	Bull/Telesincro	614
18	CSI	500
19	Moneyline	500
20	Thyron	350
21	Keycorp/Tillsmith	2

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EUROPE - 1,399,946

Rank	Manufacturer	Units
1	Ingenico	260,000
2	Bull/Telesincro	141,652
3	VeriFone*	129,000
4	Dassault AT	109,000
5	Schlumberger	90,000
6	Racal-Transcom	84,000
7	Ascom Monetal	70,600
8	Giesecke & Devrient	64,000
9	DaSistemi	55,000
10	Banksys	45,500
11	Hypercom	45,394
12	Trintech	45,000
13	Dione*	44,320
14	Lipman	44,100
15	Sagem	36,000
16	Moneyline	30,000
17	V-Star	27,200
18	Intellect	26,498
19	Dionica	23,100
20	Urmet	15,000
21	Intelligent	6,000
22	Thyron	3,800
23	Checkline	2,780
24	MobiNetix	900
25	Keycorp/Tillsmith	502
26	Natech	300
27	Oki Electric	300

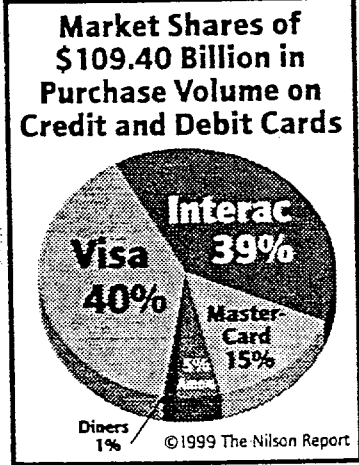
ASIA/PACIFIC - 605,231

Rank	Manufacturer	Units
1	V-Star	130,500
2	Ingenico	89,700
3	Hypercom	89,455
4	VeriFone*	81,000
5	Panasonic	48,000
6	Omron	42,400
7	Keycorp	23,124
8	Spectra	19,000
9	Lipman	15,200
10	Anritsu	12,000
11	Intellect	11,313
12	Hyosung	6,000
13	IDfone	6,000
14	Schlumberger	6,000
15	Baekdoo	5,500
16	Dynamic Data	3,500
17	Leigh-Mardon	2,492
18	Toshiba TEC	2,053
19	Ahntech	2,000
20	Dassault AT	2,000
21	Pacific Info. Tech.	1,900
22	Ascom	1,500
23	NTT Data	1,000
24	Sagem	1,000
25	Bull/Telesincro	944
26	Oki Electric	600
27	MobiNetix	500
28	Thyron	300
29	Natech	250

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CANADA GENERAL PURPOSE CARD RESULTS 1998

was generated by purchases at merchants. The remaining 9.9% (\$7.31 billion) came from cash advances. Transactions totalled 1.14 billion — 65%



on Visa cards. MasterCard had the highest percent increase in both cards and volume. Use of general purpose debit and credit cards at merchants totalled \$109.40 billion, of which 60.7% (\$66.40 billion) was on the global brands and 39.3% (\$43.00 billion) was on Interac, the country's PIN-based domestic debit card brand. Interac's market share of purchases at merchants grew to 39%, nearly matching Visa which fell from 44% the prior year. MasterCard fell below 15% from 16%. American Express and Diners Club also declined. Purchase transactions on Interac cards topped 1.36 billion, higher than Visa, MasterCard, Amex, and Diners combined, even though the 34.2 million Interac cards are accepted at only half as many merchants. Prior issues: 668, 645, 620, 598 □

Canada Results (from page 1) ... Canada has no global brand debit cards. Visa and MasterCard brands accounted for 94.9% (35.9 million) of the country's total cards. Dollar volume on all four brands totalled \$73.71 billion, of which 90.1% (\$66.40 billion)

TOP BANK CARD ISSUERS 1998

Rank	Issuer	Volume (mil.)	Cards (000)	Brand
1.	Canadian Imperial	\$16,472.0	4,360	V
2.	Royal Bank	\$14,071.8	6,000	V
3.	Bank of Montreal	\$10,636.0	7,116	MC
4.	Toronto Dominion	\$7,959.4	5,367	V
5.	Bank of Nova Scotia	\$4,663.0	2,843	V
6.	Nat'l Bank of Canada	\$2,773.3	2,117	MC
7.	Canada Trust Co.	\$2,505.4	1,267	MC
8.	La Confed. des Caisses	\$2,500.3	1,680	V
9.	CU Elect. Trans. Serv.	\$873.8	682	MC
10.	Citibank	\$715.0	824	V
11.	Canadian Tire	\$607.5	575	MC
12.	MBNA	\$560.5	770	MC
13.	Laurentian Bank	\$254.0	310	V
14.	Capital One	\$190.0	298	V
15.	Alberta Treasury	\$120.3	77	MC
16.	Wells Fargo	\$80.1	9	MC
17.	Vancouver City Savings	\$50.6	50	V
18.	GE Capital	\$24.0	5	MC
19.	TransCanada	\$7.2	8	MC
20.	Bank One International	\$3.6	6	V

V = Visa, MC = MasterCard. Totals for cards and volume differ slightly from those reported by Visa and MasterCard because of variations in the conversion rate used to report in U.S. dollars and different reporting practices regarding active cards in force versus total cards in circulation. Visa affiliate banks are Investors Group Trust, L'Alliance des Caisses Populaires d'Ontario, Sottomayor Bank, Surrey Metro Savings CU, and Westminster Savings CU. MasterCard affiliate banks include Banca Commerciale Italiana, General Trust, Hongkong Bank of Canada, and Korea Exchange Bank. © 1999 The Nilson Report

CANADA GENERAL PURPOSE CREDIT CARDS — 1998 vs. 1997

Brand	TOTAL VOLUME		PURCHASE VOLUME		CASH VOLUME		TOTAL TRANSACTIONS		PURCHASE TRANSACTIONS		TOTAL CARDS		OUTLETS (mil.)
	(bil.)	Chg.	(bil.)	Chg.	(bil.)	Chg.	(mil.)	Chg.	(mil.)	Chg.	(mil.)	Chg.	
Visa	\$48.27	+10.6%	\$43.38	+10.2%	\$4.89	+14.5%	746.45	+5.8%	709.49	+5.7%	22.12	+10.4%	0.50
MasterCard	\$18.64	+16.9%	\$16.26	+12.2%	\$2.38	+62.4%	329.18	+8.1%	315.79	+7.8%	13.75	+18.3%	0.57
Amer. Express	\$5.44	+7.1%	\$5.40	+7.1%	\$0.04	+45.0%	60.0	+6.4%	59.79	+6.4%	1.78	+15.3%	0.26
Diners Club	\$1.36	-4.0%	\$1.36	-4.0%	—	—	9.14	-5.0%	9.14	-5.0%	0.22	-11.0%	0.14
TOTAL	\$73.71	+11.4%	\$66.40	+10.1%	\$7.31	+25.1%	1,144.78	+7.0%	1,094.21	+6.9%	37.87	+13.4%	0.57

Purchase volume includes all spending for goods and services including mail order, telemarketing, all other forms of direct marketing, and electronic commerce. Cash volume is credit card advances including balance transfers. There are no debit card withdrawals through the Visa or MasterCard systems. Total outlets is not the sum because most outlets accept some or all of the brands shown. © 1999 The Nilson Report

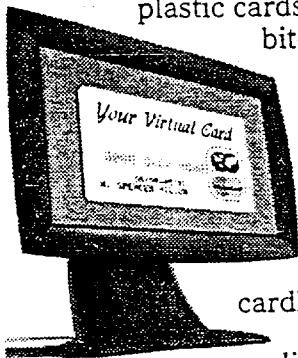
Registration (from page 1) ... Bob May. May, who has 20 years experience in this business including 17 years as President of Credit Card Sentinel (now owned by Signature), offers the following arguments in favor of in-house operations, but warns that experienced professionals must be called in to set up and monitor operations, and to design and schedule promotions.

In-bound telephone centers that operate 24 hours a day can handle the incoming calls. Cost of promotions can be reduced by inserting literature in statement messages, card carriers, card-application literature, etc. Administration, data storage, and data retrieval can usually be handled by a staff of three or four people. Instead of receiving a 20% commission from an outside contractor, May claims card issuers running in-house programs can generate up to \$200,000 per 100,000 accounts annually after the third year. Chevron, Discover, and Metris are examples of highly successful in-house programs. May's company is Card Innovations in Thousand Oaks, California, phone and fax (805) 374-9182. Prior issue: 689 □

Virtual Cards (from page 1) ... 1.8 million new Visa/MasterCard credit card accounts. By advertising on the World Wide Web — either at Web portals, at sites operated by their co-brand card partners, or at sites they operate themselves — they are able to generate applications that can be submitted and approved on-line. Issuers then mail a PVC plastic, magnetic-stripe Visa or MasterCard card to these consumers to be used for both purchases at merchants selling on the World Wide Web, and for purchases and cash access at all Visa/MasterCard outlets worldwide.

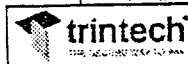
At least one company is looking at Internet card account acquisition in a different way. Trintech will offer issuers software to create "virtual" payment cards. Instead of PVC plastic cards mailed to consumers, Trintech envisions

bit-mapped images of cards that would exist only on the cardholder's computer screen. Virtual cards might be issued for on-line purchases only, such as for corporate procurement. Or, issuers might also issue plastic cards to those accounts. Expected to be available in August, Trintech's software, known as Netissuer, will be able to create any brand of general purpose or proprietary credit or debit card.



Trintech's virtual card will offer cardholders "one-click shopping" in which all data needed to fill out an on-line sales slip is uploaded to the merchant's server with a single keystroke. Currently, when payment cards are used for on-line purchases, cardholders must key in all data typically found on the merchant's sales slip and even more (card account number, expiration date, cardholder name, shipping address, e-mail address and/or phone number to confirm purchase). This lengthy process results in cancellation of two-thirds or more of all electronic commerce transactions. Virtual cards will also allow for on-line statement stuffers or "smart ads" in which issuers download sales messages about other financial products they sell to the cardholder's PC. And, issuers will earn revenue by selling advertising space on virtual cards to other businesses. Don Marcotte is VP Sales at Trintech Inc. in San Jose, California, (408) 535-0328, fax (408) 559-9537. □

TRINTECH, a POS terminal manufacturer when formed in Ireland in 1986, has become much better known as a card payments software vendor, with expertise in Internet commerce. The company offers: PayGate software products to issuers



and acquirers for merchant accounting, cardholder accounting, authorization, and draft capture including an Internet payment gateway service that links Web merchants to card authorization networks ... PayWare software that resides at a merchant's server to link to an acquirer's payment gateway, and NetWallet, an SSL/SET digital wallet.

DIGITAL WALLETS are not virtual cards. Wallets are software that act as a secure vault to store the account information of several payment cards, a digital certificate to identify the cardholder, and shipping information (to receive purchased goods). Wallets use SSL or SET encryption. Some wallets automatically input shipping information at the merchant's site. Some give the consumer the option of paying by digital cash or electronic check. Most reside on the user's personal computer. Newer versions, called "thin" wallets, reside on a card issuer's server.

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FOURTH 50 BANK CREDIT CARD ISSUERS IN THE U.S. — 1998

'98 Rank	Visa & MasterCard Credit Cards Issuer, State of Issuance, Type	Outstandings	Total Volume	Active Accounts	Credit Cards
151	Educational Comm. CU Fla. CU	\$42,224,000	\$48,336,000	15,700	25,000
152	Pacific IBM Employees FCU Calif. CU	\$42,017,805	\$68,032,087	14,635	25,988
153	Pulaski Bank & Trust Ark. CB	\$41,693,290	\$60,688,800	14,808	24,095
154	Direct Federal Credit Union Mass. CU	\$40,986,086	\$56,204,352	13,215	22,919
155	Harborstone Credit Union Wash. CU	\$40,280,000	\$51,399,400	19,000	35,000
156	Chartway FCU Va. CU	\$39,900,000	\$69,000,000	35,000	49,940
157	Rockwell Federal CU Calif. CU	\$39,840,942	\$66,196,485	16,191	28,152
158	NASA Federal Credit Union Mo. CU	\$39,000,000	\$90,700,000	19,000	42,800
159	Fulton Bank Pa. CB	\$38,023,533	\$137,341,954	38,503	84,121
160	Service Credit Union N.H. CU	\$37,900,000	\$40,520,000	17,150	26,700
161	Citizens Bank Mich. CB	\$37,890,881	\$98,945,550	31,209	67,904
162	Bank of Hoven S.Dak. CB	\$37,800,000	\$36,120,000	60,300	98,000
163	United National Bank N.J. CB	\$37,592,253	\$80,820,065	63,782	81,330
164	Hudson Valley Federal CU N.Y. CU	\$37,277,398	\$71,489,901	18,864	32,148
165	Wright Patman Congress. FCU D.C. CU	\$36,632,980	\$57,302,740	13,481	22,401
166	American First Federal CU Calif. CU	\$36,400,887	\$46,385,230	15,571	23,757
167	Tinker Federal CU Okla. CU	\$36,105,736	\$78,283,162	22,264	48,359
168	Colorado State Employees CU Colo. CU	\$35,908,289	\$59,251,795	16,533	28,803
169	Robins Federal Credit Union Ga. CU	\$35,893,510	\$31,199,519	17,355	26,670
170	Bank Fund Staff FCU D.C. CU	\$35,552,000	\$83,000,000	10,800	22,000
171	United Serv. of America FCU Calif. CU	\$34,243,449	\$32,261,782	11,169	16,359
172	NWA Federal CU Minn. CU	\$33,996,043	\$96,679,214	24,530	49,680
173	Northwest FCU Va. CU	\$33,886,262	\$53,110,932	12,019	25,549
174	Provident Central CU Calif. CU	\$33,748,605	\$65,912,183	17,967	31,118
175	The California Credit Union Calif. CU	\$33,734,895	\$58,200,518	16,007	26,043
176	Union Federal Savings Ind. TH	\$33,618,572	\$74,014,389	18,862	47,990
177	Pacific Service Federal CU Calif. CU	\$33,261,285	\$64,263,127	14,581	28,554
178	US FCU Minn. CU	\$33,116,665	\$53,135,221	15,264	27,871
179	Andrews Federal Credit Union Md. CU	\$33,029,361	\$43,627,336	18,473	38,466
180	Great Lakes Credit Union Ill. CU	\$32,717,229	\$44,476,211	13,482	23,692
181	Howard Bank Vt. CB	\$32,204,899	\$79,464,649	22,993	39,388
182	Educational Employees CU Mo. CU	\$31,992,179	\$62,017,454	16,073	32,217
183	Technology Credit Union Calif. CU	\$31,633,905	\$97,409,595	12,499	16,250
184	Vermont National Vt. CB	\$31,409,000	\$83,747,000	29,393	65,081
185	American Eagle FCU Conn. CU	\$31,274,787	\$92,112,020	24,701	44,351
186	Central Bank & Trust Ky. CB	\$30,639,429	\$11,320,696	8,394	10,963
187	FirstBank Colo. CB	\$30,530,268	\$140,829,658	28,300	50,579
188	State Dept. Federal CU Va. CU	\$30,125,656	\$64,363,241	13,436	21,128
189	First Community CU Mo. CU	\$29,974,321	\$88,375,573	17,213	30,074
190	Arkansas Federal CU Ark. CU	\$29,772,962	\$38,648,991	11,766	22,725
191	MacDill Federal Credit Union Fla. CU	\$28,655,507	\$45,307,915	13,580	25,058
192	Western Federal CU Calif. CU	\$28,586,980	\$77,566,895	17,249	34,775
193	Lockheed Georgia Employ. FCU Ga. CU	\$28,053,719	\$42,122,291	11,986	20,220
194	Anheuser Busch CU Mo. CU	\$28,040,810	\$69,485,097	17,792	34,601
195	Langley Federal CU Va. CU	\$27,425,000	\$49,512,300	17,014	29,976
196	Fairwinds FCU Fla. CU	\$26,544,021	\$48,728,637	16,744	32,153
197	Star One Federal CU Calif. CU	\$26,219,451	\$91,090,610	14,921	31,395
198	Tennessee Valley Federal CU Tenn. CU	\$25,922,411	\$35,000,000	11,728	15,747
199	Columbia Community CU Wash. CU	\$25,754,037	\$39,443,044	11,958	22,246
200	USE Credit Union Calif. CU	\$24,937,161	\$41,803,454	10,231	19,155
TOTALS Fourth 50 1998		\$1,683,968,459	\$3,215,247,073	963,686	1,729,491

Type - CB = commercial bank, TH = thrift, CU = credit union

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Voice FX (from page 1) ... voice response (IVR) technology eliminates the need for live operators to handle incoming calls generated by marketing campaigns. Voice FX was formed 10 years ago to develop Internet and interactive voice-response services that automate student grade reporting and course registration for colleges and universities. This same technology has been tailored for issuers of credit and debit cards to handle phone applications from the general public generated by: direct mail programs (matching phone responses to a database of prospects who received solicitations) ... and print and broadcast campaigns (no database). Jeffrey Cohen is COO at Voice FX Corporation in Conshohocken, Pennsylvania, (610) 941-1000 x1360, fax (610) 941-9844. ☐



H. Spencer Nilson

May 31, 1999