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Financial Services Clipsheet
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Check-21

Long-term benefits of Check-21 *9/10 AB* 10/28, the effective date of Check-21, will be a watershed date for banking. This law will revolutionize US banking by requiring that banks be able to receive substitute checks - IRDs. Check-21 will affect almost every facet of banking, including products, marketing, facilities, equipment & technology investment, float & check clearing, & operations. Though the result will be revolutionary, the implementation will be evolutionary. Banks need only be ready to receive substitute documents, not to create them. This approach has caused uncertainty about the impact on individual banks, so it is not surprising that Check-21's effect has not yet made it into earnings forecasts. When forecasting earnings, CFOs speak with assurance when they have some idea about portfolio growth & are confident about interest rate trends. They have a good handle on what cost cuts can do for earnings. But the result of a Check-21 investment is determined by what other banks do. No framework or business model shows how fast Check-21-related benefits will accrue. There are competitive benefits to be gained, & banks that act slowly may suffer for it. Most banks still have time to go beyond what the legislation requires - but they must have a plan. Check-21 represents an opportunity to reduce the costs of moving paper within & among banks. These costs may be significant, particularly if a bank has a large network spread over a number of states or does a lot of check clearing. The law opens the door to addressing the needs of corporate customers. Traditionally their deposits are collected through a lockbox system, but banks with an effective imaging system can use capture technology within the framework of Check-21. Those banks can provide electronic deposit services, including image services, for which demand is increasing. Check-21 can greatly expand the geographic market for banks to serve existing customers & compete for new business better. & because checks are cleared faster, banks can enhance their availability-of-funds policy & reduce fraud. Banks should communicate with each other to help ensure success in the electronic era. Those with elaborate image exchange & capture strategies can reap the full benefits only if their competitors have deployed systems that support this strategy. The whole industry will win if everyone moves to participate in Check-21 with all deliberate speed.

Setting sights higher than Check-21 *9/15 AB* Much of the banking industry considers this year the culmination of a years-long effort to implement an electronic processing system to replace the vast paper check infrastructure. But some executives are more excited about the next potential transition in payments: processing & settling transactions in real time, & across all of a bank's networks. Yes, Check-21 is expected to transform a check processing system that handles more than 40 billion paper items every year. & yes, that shift should lead to annual cost savings of billions of dollars. But those changes are just a step in the right direction, according to William Randle, CEO of Synoran LLC, a Columbus, payments technology vendor. Instead of just automating paper check processing, he is focused on developing a payments system that can automate & streamline all of a bank's transactions. "Check-21 is just a minor thing, really," he said. "The future of payments" does not revolve around image replacement documents, the paper printouts of check images that will be legal instruments & will shortly enter the check processing system. & using image exchange networks to settle checks is just a way to automate a paper-based system, & it leaves much room for improvement, he said. The future of payments revolves around "creating a whole new environment that's more efficient," Randle said. "This country is not known as having one of the more efficient payments systems in the world." & he has a big personal stake in this vision. He said this week that Wells Fargo has become the first banking company to license Synoran's net settlement system, which will enable the bank to clear & settle transactions faster. Eventually, when other banks adopt comparable technology, the system will give Wells a much clearer image of its positions. Randle called the system a way for banks to monitor incoming & outgoing payments to multiple partners & across all of their parallel payment systems. Banks today move money across numerous systems: the ACH, ATMs, credit card transactions, wire transfers. These operations are generally handled by different bank units, which often do not communicate with each other, & many of these systems do not settle their accounts until the end of each workday. Though a bank may be expecting many incoming ACH payments, that balance could be negated by a large outgoing wire transfer. As a result, he said, the bank probably does not have a clear view of its positions until all of these payment networks have finished processing their daily activity. "We see the need for a real-time payments hub. There's no way a bank can know its intraday position across the entire enterprise, but I think bankers will want to know that, if they could." Mitch Christensen, Wells Fargo, does want to know. "We want the ability to control & manage our settlement. There isn't a lot of that capability out there right now." Wells has completed testing & installing the Synoran settlement system, & by next quarter it will be able to use the technology to settle several different types of payments, including cash, paper checks, check images, & wire transfers. If other banks implement this type of system, Wells will be able to keep tabs on its intraday positions with correspondent banks. That type of information is invaluable, he said, because processing payments faster would help Wells dramatically improve its risk management procedures. The funds would be available sooner, & more importantly, Wells would know exactly how much money is available, so it can better invest its funds, even for short periods. "We think information is critical. "We want that information available as soon as possible." Randle has been working on these technologies for more than a decade, since he was an executive vice president spearheading an ambitious electronic payments effort for Huntington. When the company decided in 2001 that it no longer wanted to be involved in developing technology, he bought out its stake in the technology & formed e-Bank, which has since become Synoran. Along the way he picked up a few marquee partners who have bought into his vision of a unified payment system: MCI, which is providing the networking backbone; EDS, which has a joint marketing agreement with Synoran; & Oracle, whose database applications are at the foundation of the net settlement system. Andrea Klein, Oracle, said the level of information offered by a net settlement system "appeals to banks that want to look at payments as an enterprise." Many other banks around the word are interested in the concept, Klein said; she expects "several" to sign up to use the system this year. "We see this as a global initiative." Randle says the large banks that are most forward-thinking in making payments a key part of their business will be the logical target market. "If they accept that payments are a large part of their revenue, then they will want their system to be as efficient as possible." Randle says it is a big leap between the siloed payments systems, often paper-based, which dominate banking today, & the efficient, integrated one he envisions. Fortunately, the industry is currently at an important inflection point. Check-21 will take effect Oct. 28, & many banks have decided they will need to invest in new technology. Though Check-21 systems are expensive, the cost of getting left behind in the transition to check imaging could be worse. As long as banks are ready to go shopping, Randle hopes they will be willing to spend a bit more to upgrade other parts of their payments infrastructure. If it weren't for Check-21, he would not expect banks to be investing in Synoran's system for 2 to 3 years. "Legislation is the catalyst for big change."

Check-21 & fraud *9/1 NorthwesternFinancialReview* As an attorney focusing much of my practice in the bank fraud area, I have been particularly interested in the effects Check-21 will have on the world of check fraud, both positive & negative. Like many, I am optimistic that Check-21 will notably decrease a number of prevalent types of check fraud. Still, banks & businesses should carefully consider some of the negative implications for check fraud detection & prosecution that flow from Check-21. In a perfect post-Check-21 environment, where most banks participate in the electronic exchange of check images (keeping in mind that this requires an agreement either between banks or between banks & an intermediary processor), the collections process will decrease from 2 - 3 days to a few hours & float will fade away. Thus, check kiting will decrease dramatically & payor banks & their customers will have more immediate access to checks to determine their legitimacy. With earlier fraud ID, fraudulently procured funds could be retrieved from the bank of first deposit before they are released to the perpetrator. This is the tangible benefit of decreased float. On another front, image exchange will push fraud detection from a paper environment to a more efficient, perhaps more reliable, electronic image-based fraud detection platform. However, as banks consider the expense associated with wholesale check imaging, image quality is typically the first cost-cutting casualty. Herein lies the problem. The Fed's imaging standards under Check-21 require no more than a binary black & white check image for the creation of a substitute check - not grayscale & certainly not color. Watermarks, coloring, bleed-through ink & other common check stock security features will be lost in the imaging process. Thus, check imaging presents a fraud detection risk & a new liability risk to a reconverting bank under the Check-21 Act. A hypothetical: A substitute check drawn on the account of ACME, Inc., is presented to ACME's bank, which pays the item & sends the substitute check to ACME. The check was altered, & security measures on the original check would have alerted ACME & its bank to the alteration, but the security measures did not survive the imaging process. ACME has a statutory indemnity claim against the reconverting bank. This is a statutory liability for the reconverting bank that didn't exist prior to Check-21. Perhaps just as troubling, there is mounting sentiment among prosecutors that they will be less likely to prosecute check fraud cases where an original check is not available. Prosecutors worry that wholesale truncation & shorter timeframes for destruction of original checks will seriously hinder law enforcement's ability to request & secure original checks before they are destroyed. Without the ability to use the original check for fingerprinting, check stock comparison & other evidentiary purposes, some prosecutors feel that their ability to convict will decrease and/or the cost for pursuing a conviction (i.e. having to hire handwriting experts) will be unrealistic for smaller fraud matters. So what can banks & businesses do? Focus on fraud prevention - Fraud prevention efforts should begin to focus on identifying & implementing image survivable check security features, employing more sophisticated automated fraud detection platforms, integration of imaging systems & corporate security efforts, & real-time information sharing among banks & businesses to prevent repeat offenders. Finally, while it is not fraud proof, positive pay services remain one of the best methods for detecting & preventing fraud losses. Find alternative methods to deter fraud - Deterrence is crucial. If prosecution of check fraud offenders begins to lag due to unavailability of original checks, the onus will fall on banks & businesses to seek out offenders & send the message that fraud will not be tolerated. A shift would necessarily occur from criminal prosecution & restitution to civil enforcement & collections efforts. The voice may change out of necessity, but the message must remain the same. Identify & manage risk tolerances - Finally, as with any risk of loss, it is important that banks & businesses identify the check fraud risks associated with Check-21 & make a calculated business judgment based on their tolerance of those risks. If a bank is willing to accept the risk associated with the hypothetical, but only up to $100,000, a bank may not want to convert the original or image of a 6-figure check to a substitute check, thus foregoing the statutory indemnification that flows from creating substitute checks. This is a calculation that only the bank or business can weigh.

Banking & Payments

Barriers to direct deposit of social security benefits *9/14 PRNewswire* Retirees & other individuals who receive their government payments, like Social Security, by direct deposit are significantly less likely to have a problem with their payment than those who get checks. Yet the growth rate of direct deposit is down sharply, & many Americans still receiving checks are elderly, disabled or low-income individuals who would benefit most from this safer, easier & faster payment alternative. Seeking to address this challenge before the first wave of baby boomer retirements, the Treasury commissioned a study that revealed check recipients' reluctance to adopt direct deposit. *Understanding the Dependence on Paper Checks*, the Treasury, with the Fed, is launching a 6-month pilot marketing campaign to increase direct deposit use among Social Security & SSI beneficiaries. The pilot campaign, Go Direct, will focus on 10 markets: the counties surrounding Chicago & Springfield; Knoxville, Memphis & Nashville; Austin, Dallas, Houston & San Antonio; & all of Puerto Rico. These 10 markets were selected because they represent large metro areas & capital cities within states having a high number of federal benefit check recipients. "Without a doubt, electronic payments are superior to checks in terms of safety, speed & convenience," said Don Hammond, Treasury Fiscal Assistant Secretary. "Many of the people who still use checks would benefit the most from direct deposit. This research provides valuable insights on how we can reach out to these payment recipients so that they can fully understand & take advantage of the benefits of direct deposit." Direct deposit use among federal beneficiaries grew rapidly in the late 1990s but has largely leveled in recent years. Despite ongoing educational efforts, the growth rate of direct deposit has slowed to less than 1% per year for Social Security payments. The Federal government issues 13m benefit checks monthly, with Social Security & SSI representing the vast majority. Direct deposit offers a significant cost savings to taxpayers. The Treasury mails 160m benefit checks a year, at an additional annual cost of $100m in postage, printing & other costs. Unless more people choose direct deposit, the cost of printing & mailing checks will skyrocket in the next few years as America's 77m baby boomers start hitting retirement age in 2008. Treasury has determined that for every check payment converted to direct deposit, the government saves 62 cents that can be invested in making payments to future generations. The study uncovered a number of reasons why benefit recipients are reluctant to switch to direct deposit. Emotional ties. Many check recipients said they prefer a physical check because it provided a welcome ritual that reminded them to pay bills & balance their checkbooks. Check recipients feared that direct deposit would take away their sense of control, whereas getting a check in the mail felt like "cash in hand." Inertia. Some of those interviewed said they were willing to switch, but simply hadn't done it yet, while others said they had no incentive to make a change. Information gap. The research revealed a fundamental lack of understanding about electronic payments. While nearly all respondents said they were familiar with direct deposit, most were unable to explain accurately how it worked. Mechanical gap. Check recipients were significantly less likely than direct deposit users to have a bank account or trust the banking system. Of those surveyed, 27% of Social Security & 68% of SSI check recipients did not have bank accounts. Yet nearly half of Social Security recipients without bank accounts said they regularly cashed their benefit checks at a bank or CU. Check recipients varied widely across geography, race & economic status. The research shows that 31% were at least somewhat inclined to switch to direct deposit, while 53% were somewhat to very resistant. Those who were more receptive to switching tended to be more comfortable with technology & trusting of banks, were younger, more urban, & more likely to belong to a minority group than the neutral or resistant groups. "Direct deposit is an important component of the modern economy," said Gary Stern, FRB Minneapolis. "The Fed is supporting the Treasury in Go Direct because one of our core responsibilities is to foster an efficient & effective payments system. This campaign facilitates the elimination of costly check payments in our

society." Treasury asked the Fed, its fiscal agent, to conduct the research study & develop & implement an aggressive pilot campaign geared at converting a large number of checks to direct deposit. The Go Direct campaign is expected to launch this fall, & will seek to increase the number of direct deposits in the pilot markets. The campaign will focus heavily on grassroots outreach to benefit recipients, largely through partnerships with community-based organizations & financial institutions. Ken Fergeson, ABA, one of many national organizations that are champions for the Go Direct campaign, said: "We know from the research that 80% of people getting Social Security checks come into the lobbies of financial institutions to cash their checks. Banks across this country are ready to do what we can to convince people that direct deposit is the way to go."

Shoppers & banks cash in on check law *Virginian-Pilot 9/14* I lost my checkbook. At least, it seems like I lost it, because when I looked at my bank statement, I noticed that I had written just 5 checks last month. Five. This would not bother my husband. He hasn't written 5 checks in the past 5 years. But I am one of those women who has been known to carry her checkbook in a holster on her hip. I used to easily write 30 checks a month for bills & clothes & food. Now I find that my checkbook is no longer a part of my mandatory gear. I toss the checkbook into the same drawer as my unpaid bills & get to it a couple of times a month. Maybe. & now it looks like I'll be writing even fewer checks. At the end of October most banks are supposed to follow a modernization law, known as Check 21, passed by Congress last year. Instead of handling paper checks, the law allows banks to process electronic images of original checks. The main change for check writers is that our checks won't have that blessed two- to four-day cross-your-fingers float period. Now checks will be processed in a few hours – almost as quickly as an ATM transaction. This law is supposed to be great for the banking industry, saving billions every year. But is it good for us? We seem to use credit cards & debit cards & ATM cards more than ever. I paid for a $3.03 cup of coffee with my ATM card at Barnes & Noble the other day. Made me feel weird. Like writing a check for a quarter. Then the guy in front of me at Walgreens bought a 63c pack of gum with his card & got $20 in cash – cheaper than the $2.25 ATM fee. Even at my son's school the kids use debit cards to pay for lunch & school supplies. Cash? What cash? A check? Heaven forbid anyone try to write a check in front of me. I'm sure to give the potential check kiter the old fisheye. Ain't she got no stinkin' badge? On one hand, the convenience of the ATM card, the swiftness of the electronic check, the swipe of a credit card seem perfect for our online lives. On the other hand, they worry me. Money on a card doesn't seem to spend like real money. I still balance my checking account. I still keep track of my spending & watch myself consistently fall off my budget (it's a very slippery budget, mind). But the money I spend swiping doesn't seem quite as real while I'm spending it. When I was writing checks for diapers & electricity & petunias & clarinet lessons & cups of coffee, the act of writing the check kept me pretty honest. I had a lot of time to think about how often the words "Home Depot" or "Target" or "Talbots" popped up on my register. I had a long time to write out "One Hundred Dollars & no cents." I kept track of my bank balance. The challenge of our increasingly cash-free society will be how we make electronic money feel like real money. Maybe Congress could throw us a bone & require stores to post ATM swipers at the front of the store. Maybe store owners could post not only our current balance but the date the mortgage is due. The projected electric bill. The proposed cost of educating three bright children. The expected expenses of living well as an octogenarian. Then we could be sure that the billions the banks save will be the billions they didn't have to spend on transporting & tracking & storing paper checks. & not the extra billions we will be spending one swipe at a time.

Company News

ACOM, NetDeposit & Check-21 *9/9 Businesswire* ACOM Solutions, a leader in the development & marketing of hardware-software check processing solutions, has entered into a partnership with NetDeposit, Inc. to provide MICR-enhanced desktop laser printers for the Salt Lake City company's Check-21-compliant end-to-end electronic check processing & optimized clearing & settlement solution, it was announced by NetDeposit's Royce Brown & Sam Mikhail, ACOM. Current deadline for Check-21 compliance is 10/04. Engineered for extended security & the rigors of magnetic ink printing in ACOM's own laboratories, the MICR laser printing solutions provide production capacities of 26-45 pages per minute. Each printer in the NetDeposit Printer Partner Program has been tested against X9.90/100 standards to ensure compliance with standards specifications for clarity, sharpness & clearing viability as IRDs, the executives said. NetDeposit has produced more than 1m IRDs through its technology platform, which electronifies paper documents & checks & manages item-level clearing through the optimum eligible channel, whether IRD, image exchange or ARC/ACH. "The ability to substitute IRDs for original cancelled checks will bring tremendous benefits in cost, efficiency & settlement velocity to banks, third party processors & commercial businesses. Through our Printer Partner program we're able to offer our customers access to the most reliable & high quality IRD check rendering systems available today. Endorsed MICR check printing systems like ACOM Solutions, coupled with NetDeposit's Distributed Print Server product, bring banks, third party processors & commercial businesses a secure, integrated, cost effective way to produce high quality IRDs." "NetDeposit's highly scalable IRD solution coupled with ACOM's affordable family of MICR laser printers extends these advantages to a large potential user base that includes community banks & other organizations that have low to medium IRD print requirement but do not require massive production capabilities. "ACOM's printer solutions can operate in split-run & cluster environments at larger institutions, achieving production-printer output levels at significantly lower costs while distributing the risk of interrupted production." Besides NetDeposit, ACOM's MICR laser printer solutions have been tested & approved by EDS & Fiserv, & are in use for business payroll & accounts payable check production at 2,000 companies in the US & abroad. "As the first-to-market, standard-setting leader in IRD development & production solutions, it has been imperative that we acquire best-of-breed partners to deliver our end product IRDs. Our reputation & progress as a company rests with our ability to fulfill our promises of quality & consistent on-time delivery. ACOM's MICR engineering skills & long history of quality & performance makes the company a valuable ally in addressing this vital & promising new market."

Bankers Exchange & Check-21 *PRWEB 9/13* Banker's Exchange, one of the nation's leaders in providing new & used bank equipment, today announced the launch of a public service campaign aimed at helping customers understand Check-21. Banker's Exchange unveiled the first in a series of public service announcements to be posted online explaining what must be done now & what can wait regarding the Check-21 Act. Kim Miller, Banker's Exchange, said, "Many of our customers have asked us about Check-21. We have prepared a series of articles intended to explain what the Check-21 Act is & what impact it will have on your institution & your customers. The first one addresses the long-term planning vs. short-term action items." Check-21 is an initiative by Congress to revise the rules governing the exchange of checks between financial institutions, which essentially enables a more electronic check collection system for the country. While it does not require banks to change the way they collect checks it does make check reproductions an option, & therefore indirectly does require any bank & its customers to accept such paper reproductions of original checks when requested by any institution choosing that option. Check-21 legislation is intended to reduce the costs & delay of paper processing & transportation requirements of check clearing as it is today. The Fed first proposed the legislation to Congress at the end of 2001 after an extensive study of the current system, but the concept gained significant momentum after 9-11 when airport closures of several days held

checks from moving from city to city for collection. These events underscored the need for a more reliable way to collect check payments by enabling a bank to capture & transmit check images electronically, instead of transporting paper for collection. "Imagine a bank on the East Coast presenting checks to payer banks on the West Coast. Sending an image file electronically instead of putting checks onto a plane –check truncation – could mean collecting many checks one day faster & having the funds one day earlier. It means that fog or snow will not delay the collection of the checks. When an image file is received by a correspondent bank, the Fed, or a service bureau, that party can print & deliver IRDs, speeding up the overall collection process. The Fed will be offering services to support Check-21, but in the short run you are likely to see more in the way of new requirements imposed by the Fed. As of 10/28 the Fed will require the use of check stripping equipment on any repaired items submitted to them in High-Speed Cashletters rather than the use of older document carriers. The new requirement to perform check repair using check strippers centers around the simple reality that, with the Fed now scanning all items, current check scanning equipment does not register adequately clear images of items held in document carriers." Long-term, Check-21 will give the country a more electronic check collection system, reduce risk, reduce cost, & accelerate funds availability for consumers & businesses. It should contribute to further progress in electronic check presentment & check safekeeping, in which banks do not return paid checks to their customers & the growth of online bill payment in place of check writing. "While the arrival of IRDs in the check presentation process will be gradual, the here & now requirements of Check-21 minimally means you must ensure your check repair operation employs the use of check stripping equipment. If you need help converting your check repair processing to utilize check strippers or are looking for a low cost check repair solution for low volume sites, please contact a Banker's consultant for a full consultation & proposal."

Dexit fights for piece of pie *9/11 NationalPost* As the squeegee kid approached my car at a bustling downtown Toronto intersection, I was feeling a tad mischievous so I asked her if she accepted Dexit as a form of restitution. Her brow creased & she slowly scratched her head. The squeegee gal assuredly isn't the only one who hasn't heard of Dexit - the next hope for creating that much-hyped cashless society. Unveiled last year, Dexit - a hybrid of the words "debit" & "express" - is similar to the Esso Speedpass, that little plastic key fob that Esso customers tap on gas pump terminals to register their purchases. Much like the Esso Speedpass, Toronto-based Dexit Inc. issues its users (numbering 32,000, although it was projected there would be 50,000 by now) small plastic key fobs that can be used at participating merchants. Some 250 retailers are on board, located mainly in Toronto's downtown, ranging from gas stations & parking lots to fast-food outlets & newsagents. A consumer can join Dexit by registering by phone or going online at http://www.dexit.com. After going through the steps of providing personal & security information, a consumer can choose 2 ways of putting money on his or her Dexit account: by setting up a pre-authorized debit account. Alternatively, the value can be added to the account by going through a bank, whereby a Dexit accountholder will make an electronic bill payment to Dexit. After registering, the Dexit key fob is mailed to the consumer within 5 to 10 days. The inspiration for Dexit came to CEO Renah Persofsky when she was sitting in a Starbucks coffee shop a few years ago & observed a customer paying for his latte with a prepaid Starbucks card. "The idea of the customer not having to worry about having money & [the clerk] not having to fumble around for the exact change it seemed like such a good idea. The problem with cash is you have to go & get it; you have to carry it around with you; & if you lose it it's gone forever." Not so with Dexit. If the key fob is lost or stolen, it can be deactivated (preventing unauthorized use) & a new tag is issued for a fee of $10. As well, despite credit & debit, Persofsky notes that 90% of transactions are still done via cash. Persofsky notes that most banks offer 10 free debit transactions, after which there is a charge of 30c to 60c per purchase. "I don't know if you ever stood behind someone making a debit transaction for a cup of coffee - by the time they've entered their PIN number, you're ready to shoot them," noting that the average Dexit purchase is less than $4. Of course, nothing is free, including Dexit. Retailers pay an undisclosed merchant fee (just as they do when accepting credit card purchases). As for the Dexit user, the Dexit card can be loaded with a cash value of up to $100. But each time it is refilled, the consumer pays a $1.50 service charge. What if Dexit should go out of business? Balances are non-refundable & are non-insured, although Persofsky says all money is held in trust. Dexit must achieve critical mass if it is to have any hope of being successful. Dexit is hoping to grease the expansion wheels via its partnership with Bell Canada, which has a relationship with 500,000 merchants. Herb Underhill, Bell Canada, is bullish that Dexit will indeed take off in the years ahead. "The merchant fee paid by retailers to process a Dexit transaction is less than credit, debit & the cost of handling cash." Still, the big question is: Will Dexit ever become a *de rigueur* form of payment. The company raised $25m in an IPO last June. But it's been a rocky ride: for IQ 2004 revenue was $3,371 with operating expenses of $2.8m. Dexit has many loyal users. Guy Anderson, 34, a Toronto wholesaler for a mutual fund company, signed onto Dexit last May & uses it daily. "For me, it's the easiest thing I've ever come across - when I buy a coffee, I don't have to fumble for change & I get an instant receipt," says Anderson. "I'm in sales, & I think it is unprofessional to walk around with a pocket full of change." Anderson says he tracks all his Dexit purchases online. "It's a great way to keep track of all that miscellaneous spending." Only time will tell if Dexit will emerge as the next debit-like success story or join other payment schemes on the scrap heap. On Friday, I tested Dexit at 10 merchants: PharmaPlus, Teriyaki Experience, International News, McDonald's, Tim Hortons, Gateway News, Dairy Queen, Druxy's, Imperial Parking & Petro Canada. The framework for the test: At each merchant, I purchased an item with the new Dexit tag & then an item using good old fashioned cash. To be fair, no cash purchases were made using exact change. I would start the stopwatch once the clerk had tallied the total price. The results? Dexit is certainly faster than debit, but when it comes to quickness, cash is indeed king. Cash transactions ranged from 4 - 8 seconds; whereas the fastest Dexit transaction was 11 seconds (at McDonald's & Tim Hortons) while the slowest was a snail-like 51 seconds at PharmaPlus (this was primarily due to the cashier needing assistance to "wake up" the Dexit machine). The clerk at Teriyaki Experience required assistance from her manager when I presented my Dexit tag, which meant 39 seconds elapsed before the transaction could be processed. The hands down worst experience was at Imperial Parking when the lot attendant informed me that I could not pay by Dexit because the power to the machine had been cut, although, the Dexit machine was still illuminated. Bottom line: toting around a few loonies & toonies doesn't really weigh me down. & while Dexit has its merits, I'm far from keen in paying a $1.50 fee just for the privilege of topping up my tag with more of my own money.

Fed seeks to regulate payroll cards *9/14 DJ* The Federal Reserve Board issued a proposed rule to regulate payroll cards just like other electronic payments such as debit & credit cards. Under the Fed's proposal, payroll cards would be subject to Regulation E, which implements the Electronic Fund Transfer Act. So-called payroll cards give companies a way to pay wages electronically, without requiring workers to have a bank account that can receive direct deposits. "Payroll cards have become increasingly popular with some employers, financial institutions & payroll service providers." Such cards function like debit cards as consumers use the cards to access funds at an ATM & make purchases. Bankers & consumer advocates on the Fed's Consumer Advisory Council last October urged the Fed to set clear standards for payroll-card programs. Consumer advocates have raised concerns about abuse of payroll cards, such as high fees & potentially predatory practices. The OCC in May issued an advisory to national banks on payroll cards, cautioning them on the risks involved & outlining steps they must take before issuing the cards. "The

board believes that it is appropriate to apply the Reg E provisions, such as initial disclosures, periodic statements, error resolution procedures, & other consumer protections, to consumers who receive their salaries through payroll-card accounts. The board believes that the benefits to consumers in covering payroll-card accounts under Regulation E outweigh the incremental costs that would be imposed on the institutions that offer these accounts," the Fed said.

Fidelity & InterCept *9/10 AB* When it closes its $408.2m deal for InterCept, Fidelity National Financial would become the 2nd largest core processing outsourcer for banks. The company made 2 announcements Thursday. One involved the deal for InterCept, an Atlanta vendor with 425 core-banking clients. The other: Fidelity National has shelved a plan described in May to spin off its bank-technology operations into a new company. It chalked up the second development to unfavorable market conditions for new stock offerings & the need to focus on the InterCept deal. The deal is a resolution of InterCept's effort over the past year either to take itself private (which it was unable to do) or to divest parts of the company in order to sell itself (which it seems to have done). Gary Norcross, Fidelity Integrated Financial Solutions, the bank processing division of Fidelity National, said that purchasing InterCept would boost his firm's revenues & its community-banking, core-processing & item-processing customer rosters. Fidelity National is the nation's largest title insurance company. The deal would double the size of its EFT business & give it relationships with the 6,000 customers that use InterCept's CallReporter regulatory reporting system. Analysts said the deal would put Fidelity National in a strong #2 position in the bank technology outsourcing market, behind the longtime leader, Fiserv. That #2 position would be particularly noteworthy because Fidelity did not enter the banking technology market until early last year, when it bought Alltel's bank processing unit for $1.05b. The InterCept deal would be Fidelity National's 7th acquisition in the market since then. Fiserv & Metavante have been snapping up technology providers this year. "This changes the pecking order," said Arthur Gillis, Computer Based Solutions. By his reckoning, InterCept had $259m of revenue last year, when Fidelity National had $853m of revenue from bank processing alone. Fiserv had $2.7b. Without the InterCept deal, Fidelity National is on track to report $1.2b of revenue from bank technology for this year. That figure would put it about at parity with Metavante. Tacking on InterCept's revenue would put Fidelity National clearly ahead of Metavante, he said. Norcross made a veiled criticism of Fiserv, by saying Fidelity National had done a better job than some competitors in integrating the products from multiple acquisitions into a more efficient platform. Fiserv, itself the product of more than 110 acquisitions since 1984, operates many of its units as independent businesses & often with products that have not been combined into an interrelated system. Leslie Muma, Fiserv, refuted Norcross' boasts & said he was not concerned by the growth of his competitor. "Organization doesn't stop product competition if you have multiple products in the same market. Not every bank in the world wants to buy the same product. We'll see who makes the most money." Jim Eckenrode, TowerGroup, said Fidelity National has become a more important player in the bank markets it serves. However, it still has a long way to go before it can challenge Fiserv for leadership. "They are making a real hard run at it. They're still not as big as Fiserv, but they're getting there on the item processing side." There is potential for additional consolidation. "There are still too many vendors in this market doing the same thing. It's a waste of productivity to have so many redundant players in the market." & Norcross said Fidelity National would continue to seek takeover opportunities. "We have always been an acquisitive company. We always want to take advantage of opportunities." It is likely to look overseas, where it hopes to expand. It has a toehold in Europe; in April it acquired Sanchez Computer Associates, a core processing vendor with customers in Eastern Europe. Last month Fidelity National said it would buy the German core processing software firm Kordoba GmbH & Co. KG. Norcross said Fidelity National would continue to look at companies that could expand its product offerings or market share domestically. It said it would pay $18.90 a share for the 21.6m shares of InterCept's common stock. That would be an 8% premium over InterCept's closing price of $17.45 Wednesday. Norcross expected the deal to close by mid-December. In addition to providing core processing for 425 clients, InterCept handles item processing for 720 banks, mainly community & midsize ones. It operates an EFT system that connects to most regional networks. But last year it attempted to become a private company. When it could not find financial backing, it hired an investment banking firm in order to explore a sale. One of InterCept's problems was its Internet Billing Co. Ltd. unit, iBill, which processes credit card payments primarily for pornographic Web sites. The high chargebacks associated with this service led to higher fees from the main credit card associations & made iBill an undesirable part of the parent company. InterCept sold iBill to a unit of Penthouse in March. Norcross minimized the troubles at InterCept. "They did like a lot of people did during the dot-com craze - they had made some investments that turned out to be not good investments. But the business that remained, the business that we are acquiring, remains fundamentally sound." No decisions have been made regarding the future of InterCept's team including John Collins, CEO, & Lynn Boggs, COO. "We would like to see John & Lynn remain a part of Fidelity." But because of the deal, & a sluggish market for stock offerings, Fidelity National said it would delay the spinoff of its technology holdings as a company that would be known as Fidelity National Information Services. The spinoff has been delayed at least until IQ, & Fidelity National cautioned that it might not happen at all. Norcross said the InterCept deal is "a significant event that will affect the financials," so the prospectus would have to be re-filed. "The market has not been favorable for IPOs recently."

Fidelity's BankWare ImageCentre Voyager *9/14 PRNewswire* Fidelity National Financial released ImageCentre Voyager, a platform for check image exchange. ImageCentre Voyager was developed by BankWare, a provider of check imaging solutions, which was acquired by Fidelity Information Services in 4/04. The ImageCentre suite provides financial institutions with a complete browser-based payment processing & document management solution. The new Voyager module enables client financial institutions to exchange check images with image exchange networks, correspondent banks & other financial institutions. The product was implemented as a pilot at 3 unique multi-billion dollar financial institutions: Harleysville National in Harleysville PA; Univest Corp in Souderton PA; & Banc Corp in Birmingham AL. These implementations have facilitated the daily exchange of images with various third parties, including the Federal Reserve Bank. "ImageCentre Voyager is a key component of our image exchange strategy," says Linda Lockhart, $2.8b Harleysville National B&T. "We installed Voyager for image exchange in May of this year & have been impressed with the performance, ease of use & capabilities of the software." "Exchanging check images electronically is a revolutionary shift in payment & item processing," says Bob Darty, BankWare division. "As the image exchange industry evolves, Voyager will enable our clients to take a leading role & improve profitability by reducing courier costs & non-interest expenses, & shortening the collection cycle." Features of ImageCentre include the system's completely browser- based architecture, single-menu interface & integrated product suite. ImageCentre Voyager adds the ability to import & process check images, export check images, print IRDs & generate return files. "Implementation of ImageCentre Voyager in conjunction with Check-21 enables Univest to achieve extensive operating efficiencies," said Richard Swartley, Univest. "The innovative software allows for a transition to full check image exchange, & will be a part of our Check-21 strategy." As a single source image solution, ImageCentre provides integrated fraud detection solutions. ImageCentre modules include Account Guard, Automated Signature Verification & Check Kiting. With image exchange & the reduction in check clearing times, ImageCentre assists financial institutions in their efforts to improve fraud protection by detecting suspicious activity earlier in the payment process.

IBM & Pegasystems *9/7 BS&T* IBM's alliance with Pegasystems demonstrates the strategy of working with solution providers in specific vertical industry groups. Pegasystems offers financial services firms a hub for exception management, incorporating workflow tools & an automated rules & decisioning engine. The software is designed to complement core processing systems by managing any complex workflow process. For example, Pegasystems software can help banks manage credit card disputes in accordance with the complex & frequently-changing rules from Visa & Mastercard. The IBM-Pegasystems relationship began long before the late July announcement. "Traditionally, we've had a lot of Big Blue customers," says Samir Gulati, Pegasystems. "We started out with their PL1 products in the '70s & '80s." But now, the loose partnership has turned into a closer working relationship on several levels. "The value for us is to leverage IBM's relationships with banks, to get us deeper into other areas besides the one or 2 areas we might be in." The partnership may lead to closer integration with IBM's stack of financial solutions & technology infrastructure. Other IBM partners in the payments area are Fair Isaac & S2 Systems. "IBM is encouraging us to make sure that our applications integrate with Fair Isaac & S2." Pegasystems' developers will remain conversant with IBM's system architecture & corporate strategy. "We've had the IBM tech folks come to our development shops. We work with the WebSphere team to make sure that our software integrates seamlessly." The IBM-Pegasystems relationship is not an exclusive one. Pegasystems maintains relationships with firms such as Accenture, BearingPoint & CSC.

Pegasystems & Check-21 *9/15 Businesswire* Pegasystems released PegaBanking Smart Adjust 4.1, the retail banking industry's leading cross-payment platform for automating payment exception handling. Addressing exceptions in check, ACH, debit card, ATM & other areas, Smart Adjust 4.1 allows customers to manage payment exceptions with a single solution, dramatically lowering the cost of handling non-standard transactions of any payment type. New features include the ability to process substitute checks & automate handling of ACH disputes. Smart Adjust 4.1 has been built to help banks comply with Check-21 by providing the capabilities necessary to handle substitute checks - as well as paper checks, check images, ACH & other electronic payment types. By handling disputes, errors, & issues across all types of payments, Smart Adjust helps financial institutions & service bureaus streamline their operations & deploy a single solution to address payment issues. Built on Pegasystems' newest version of its industry-leading, Java-based BPM platform, Smart Adjust is built for change & can be easily adapted to suit evolving business needs & industry practices. Smart Adjust 4.1 is Pegasystems' latest version of its retail payment exception solution & leverages Pegasystems' proven success in automating exceptions handling for leading banks for the past 15 years. Smart Adjust 4.1's new functionality includes: - Support for substitute checks in all research & adjustment processes. Smart Adjust allows retail banks to seamlessly manage paper checks, images & substitute checks for customer inquiry, customer dispute & inter-bank adjustment purposes. - ACH return automation, a new capability that eases the costs & risks of exponentially escalating ACH volumes by intelligently researching & responding to customer disputes of ACH transactions. Smart Adjust provides end-to-end automation of case initiation, accounting, correspondence, document management, regulatory compliance management & inter-bank communication for such disputes. - Pre-packaged integration with Pegasystems' enterprise exception monitoring application, for proactive monitoring & reporting capabilities across multiple departments. This complements the pre-existing integration that Smart Adjust offers with Pegasystems' components for image retrieval & viewing, & transaction data storage & research. "Banks today face enormous change in responding to Check-21, preparing for image exchange & supporting the escalating volumes of electronic payments," said Robert Hunt, TowerGroup. "The real challenges lie in the disputes, exceptions & customer issues that arise with these changes. Banks need a single solution that manages exceptions for checks & electronic payments that is flexible enough to adapt to changing business needs, & which provides cross-department processing capability for effective management of all payment types." Check-21's arrival & the growth of electronic payments are driving up exception management costs significantly. ACH network volume grew 21 percent year over year in the second quarter of 2004, & ACH debit returns are projected to grow 18 percent from 2004 to 2005. Smart Adjust keeps exception management costs under control, replacing costly manual work with automated processing that researches transactions, manages images & correspondence, performs intelligent decisioning & resolves cases without human intervention. In addition to increasing operational efficiency, the application dramatically reduces write-off expenses by resolving cases faster, & improves customer service by delivering information & images to the front office in real-time. "The transaction exceptions that impose high operational costs & risks on financial institutions can often be quickly resolved when automated solutions are properly applied to the problem," said Pegasystems' Alan Trefler. "We've added greater intelligence to Smart Adjust with each release, so that banks & service bureaus can handle a greater proportion of payment exceptions automatically & profit from the growing volume of electronic transactions." Pegasystems' smart BPM applications leverage 20 years of experience with some of the world's largest financial institutions, including BofA, BoNY, Citigroup & JPMorgan Chase. 10 of the top 30 US banks use its retail payment exception solutions, & the company also counts 8 of the top 15 US credit card issuers, & all 12 US Federal Reserve Banks, among its customers.

Digital Check selected by Aqubanc *9/15* Aqubanc selected Digital Check Corporation's TellerScan line of check image scanners for their check, payment and form processing solutions. Aqubanc's decision was based in part of the availability of a common programming interface (API) that exists today among the TS200, TS210, TS220, and TS400es check image scanners, is distributed exclusively by Digital Check to their partners, and, that Aqubanc would not be dependent on any third-party interface to react to enhancements made to API by Digital Check that may impact operation of the Aqubanc solution because the third-party interface was not up-to-date.

Silver Bullet - single point of interface to check image devices *9/9 SilverBullet* Silver Bullet Technology has developed an industry standard software tool, Ranger, designed to allow item processing applications to run unchanged on a wide variety of check scanner types, including Unisys, NCR, BancTec, Canon, Panini, Seac Banche & Maverick. ARGO Data Resource Corp, whose Teller solution has set the industry standard in branch automation for 20 years, is pre-integrated to Ranger Software to give ARGO clients multiple check image device options. With over a 50% market share among the nation's top tier banks, ARGO's Teller solution continues its tradition of anticipating changing market conditions by providing distributed image capture capabilities for check image processing. "In our rapidly changing industry, bankers need options," said Bryan Clark, Silver Bullet. "A single check scanner interface gives banks the freedom to mix & match software & check scanner types. Now that IQA is a standard feature, Ranger has become an obvious choice for large banks & Check-21 software vendors." "With the addition of distributed image capture to the Teller solution, our customers can cost-effectively pass quality imaged & balanced transactions to the payment processing infrastructure," said David Engebos, ARGO. "With partnerships like Silver Bullet Technology, we are able to provide the nation's largest banks who are using ARGO's Teller solution the ability to reduce integration risk & migrate to their check image strategy within their timeline." Silver Bullet Technology provides item processing software & solutions that have come to serve as the *de facto* standard for financial institutions. Silver Bullet's Ranger Transport API enables end users to utilize virtually any item-processing software with virtually any check-scanning hardware. The firm provides professional

services, including contract programming & project management, to
banking, mortgage & related industries. Founded in 1980, ARGO provides software solutions to the financial services industry. More than ½ the top US banks use ARGO applications, processing in excess of 5m transactions every hour. ARGO solutions include branch automation (Sales & Service & Teller), Consumer & Business Lending, Mortgage origination & processing, Investments & Insurance Sales, Contact Center, along with integrated CRM & Sales Performance Management. ARGO brings 24 years of experience, a recognized client base, a reputation as an industry leader, a proven track record of successful implementations, strong revenue growth, stable management, & dedication to R&D.

Swift seeks approval for trade services utility *9/10 Finextra* Financial messaging network Swift is working on plans to develop a commercial Trade Services Utility that would enable banks to extend their influence in the corporate trade supply chain. The Swift board set up a Trade Services Advisory Group (TSAG) last year with a mandate to review Swift's trade strategy. The group recommended that Swift expand from its present focus on traditional collections & documentary credits to supporting the banks' full range of supply chain services. As a first step, the banking co-operative developed a prototype for a central industry matching utility - the SwiftNet Trade Services Utility (TSU) - for processing corporate trade documents. The TSU is a matching & rules based engine which compares & associates data elements from corporate documents. The SwiftNet TSU prototype was launched on 8/9/04, with 200 matches achieved in the first 3 weeks. The objective, says Tom Turner, Swift Board member, chairman of TSAG & Royal Bank of Scotland, is to help establish the commercial validity of the TSU approach & to gain practical input on functionality for a commercial solution. Swift is working with a group of banks to define the requirements for the development a commercial offering. "Swift is uniquely positioned to develop a TSU which would enable banks to provide innovative trade supply chain services to their customers." If the banking community reacts positively to the prototype & to the market validation, Swift will seek board approval in 12/04 to develop a commercial product, which could be available for piloting towards the end of 2005.

Payments developments abroad

Australia - big banks plan to join forces for cost-cutting drive *9/14 AustralianFinancialReview* Australia's main banks are working on new ways of pooling back-office functions on core services such as internet banking & credit card processing as they seek to drive profit growth through cost reductions. Westpac, Commonwealth Bank & National Australia Bank are considering establishing joint ventures run by external suppliers that go way beyond the cheque voucher processing initiative announced earlier this year, which is designed to cut costs by more than 30%. "We have had to learn to dance together. If we can make this work, it won't be long before others follow," Westpac group executive Michael Coomer said. Coomer said the plans provided important alternatives to other cost-cutting measures like branch closures that had alienated customers. "Banks need to share facilities more than they do now. Possibilities include cheque clearing, credit card operations, payments & settlements." Banks are under growing pressure to improve the efficiencies of their businesses as their revenues are affected by higher interest rates & greater competition after a decade of cost cutting that helped deliver bumper profits. The upcoming annual profit results of Westpac, NAB & ANZ, which rule off their books on 9/30, will be closely monitored for evidence of further cost reductions. Many internet platforms put in by the major banks are now in need of replacement & a shared platform could reduce development & running costs, & help the banks fight security threats. Industry analysts claim business process outsourcing can cut costs by up to 25%, while the banks can expect to reap extra savings of up to 15% by pooling their resources. NAB has estimated cheque-processing collaboration could result in a 34% saving for each bank. But moves to share more back-office functions beyond the cheque-processing venture are likely to attract the attention of the Australian Competition & Consumer Commission. Coomer conceded in his address to The Australian Financial Review's BankTech 04 conference in Sydney that new initiatives would pose a new "challenge for competition regulators". Last month the ACCC - after long deliberations - finally gave Westpac, NAB & CBA the go-ahead to outsource their combined voucher-processing facilities. EDS, IBM & Unisys are vying for the contract. ANZ Banking Group has struck a separate alliance with computer group Kaz to provide cheaper cheque processing. However, the regulator yesterday emphasised it had only considered the joint-venture model in relation to voucher processing. "Any new proposal would have to be considered on its merits." There are some who believe it will take a long time before the banks are able to agree on sharing facilities more than they do now. Steve Shipley, EDS, said it could be 5 - 7 years before there was any substantial co-operation between the major banks on the use of service providers functioning as "utilities". Past experience with outsourcing shows the banks have been reluctant to get too close. EDS runs the CBA's information-technology operations & Westpac's mortgage processing. It was required to establish separate companies for the two jobs. Outsourcing experts say the utility model of outsourcing business processes promises big savings but is still unproven, particularly in the Australian market. Macquarie Equities' William Ammentorp questioned whether the promised cost-saving benefits from the use of shared facilities would be available. Arno Franz, TPI, said the utility model required standardisation. "That means compromise & the banks are still to show they are willing to wear that."

China - payment clearing systems *8/31 EconomistIntelligenceUnit* Settlement between companies & their banks in China has traditionally been largely paper-based, & poor communication between parties has made the verification of transactions difficult. Insufficient flows of information & poor standards of record-keeping-money often appears without any indication of its origins—has led to a high rate of failed transactions, or, perhaps more frustrating, a situation in which payments sit indefinitely, awaiting reconciliation. The PBC operates a national clearing system, Electronic National Interbank Settlement System, or E-Link, which has expanded rapidly to cover virtually the entire country by mid-2004. The system is based on the PBC infrastructure, with all of its 2,153 sub-branches acting as relay stations for payments among banks in different parts of the country. The system will gradually be phased out & replaced with the more sophisticated China National Advanced Payment System, a real-time system so far used mostly for large amounts (exceeding Rmb500,000). Branches of China's 4 state-owned commercial banks often prefer to use their own EFT systems. These facilitate payments between companies that are clients of the same bank but are of little help to those that use different banks. The domestic banks' extensive networks are a major competitive advantage that foreign banks have sought to use to speed up payments. HSBC reached agreements with all 4 state-owned commercial banks in 2000 to allow payments to its clients to be made from any of the Chinese banks' branches. In 10/02 the PBC set up a national clearing centre linking 96 of China's 111 city commercial banks, helping the banks to link up with one another's payment systems. The measure was beneficial to the city commercial banks, which frequently serve only customers in their specific localities & were at a disadvantage compared with the large state-owned commercial banks. China has independent clearing systems for payments between companies in the same city, run by local PBC settlement offices. Electronic FX settlements for now are virtually non-existent. Despite China's entry into WTO in 12/01, foreign banks' operations in China remain highly restricted (the liberalisation of the financial sector will occur only gradually over the next 5 years). The State Administration for Foreign Exchange (SAFE) still monitors forex transactions. Some payments in US dollars may be processed straight though, but even for these, SAFE requires hard copies of the transactions-partly defeating the point of the

automated system. A series of recent agreements between foreign & Chinese institutions have facilitated crossborder payments. Deutsche Bank signed an agreement in 7/02 with China Post (the national postal agency that operates an extensive postal savings system with 150m clients) to process incoming & outgoing payments denominated in US dollars & euros. The agreement connected China Post to Eurogiro, an electronic-payments network predominantly owned by postal agencies, which, because of their non-bank status, cannot use the SWIFT network connecting financial institutions in 198 countries. The advantage of the deal is that Deutsche Bank, the only global bank in the Eurogiro network, provides a bridge through which China Post can access SWIFT. The agreement lets a customer outside China instruct his or her bank to wire money to an account held by China Post at Deutsche Bank. Since the transaction is performed electronically, the recipient can immediately pick up the money at China Post collection points inside China. In 3/01 Western Union Financial Services, the money-remittance subsidiary of First Data, announced an agency agreement with China Post to permit money transfers to & from overseas locations from China Post outlets. Unlike Deutsche Bank's system, which allows electronic transfers between different accounts, Western Union's agreement involves the physical transfer of cash at China Post outlets. Western Union has an agreement with the Agricultural Bank of China for transfers of US dollars between China & destinations overseas. MoneyGram, a unit of Viad's Travelers Express, has established a position in the market for money transfers through deals with some of China's premier financial institutions: Industrial & Commercial Bank of China, Bank of Communications & CITIC Industrial Bank. CITIC Industrial Bank says that its link with the MoneyGram network lets it send money to 150 countries in a maximum of 15 minutes. HSBC operates Hexagon, its corporate cash-settlement system, in China, although the service is limited to renminbi transactions. Virtually all other foreign banks operating in China have signed service-level agreements with the big 4 state commercial banks, which bolster the foreign banks' collection & distribution systems.

Italy - payment clearing systems. *8/31 EconomistIntelligenceUnit* Major Italian banks are members of the Euro Banking Association (EBA), which provides same-day transfer service in euros on a netted basis using the SWIFT messaging network. EBA operates an integrated pan-European crossborder euro retail payments system provided by Italy's Societa Interbancaria di Automazione (SIA), the firm that operates the automated platforms for Italian payments systems. Major Italian banks participate. The system automates the processing of high-volume, low-value payments with an International Bank Account Number (IBAN). This system, STEP 2, enables banks to implement EU rules requiring the same charging structure for crossborder euro transactions as for domestic transactions, without having to absorb excessive additional costs As Italian banks generally do not have large international branch networks to speed other international payments, they find alliances particularly useful. Sanpaolo IMI is part of IBOS (formerly Interbanking Online System & now using the tag line "International Banking–One Solution"). There are 12 IBOS banks in total, including Bank One & Wachovia, Credit Commercial de France (part of HSBC), HypoVereinsbank in Germany, Royal Bank of Scotland, & Banco Santander Central Hispano in Spain. Irrespective of where accounts are maintained, all IBOS banks can concentrate funds nightly into a pooling or zero-balance structure. In the euro-area, it is possible to pool in euro across the whole region. Intesa Group is a member of the Unicash group of 13 bank groups in 25 countries located in Europe (including Russia). Unicash has similar objectives to IBOS, but no non-European members. It offers one-stop account opening & crossborder cash pooling. Many members are savings banks and, as such, may not be ideal partners for large corporates in some countries. Transfers can be made in real time domestically through the Bank of Italy's Bi-Rel service & internationally (for euro transactions) by using Bi-Rel to access the European System of Central Banks' RTGS network, Target. Target operates throughout the EU, not just in the euro-area. There is a link to Switzerland. Bank of Italy, together with the Bank of France & the Bundesbank, are developing Target 2, a next-generation common platform for those who want to move from the current euro-area hub-&-spoke model in which each EU member state has its own "leg" of Target. Although this is the most expensive method of making a crossborder payment, many corporates favour Bi-Rel for its sophistication & speed. The number of transactions increased by 9% in 2003, whereas the total value was down 4%—another sign that the system is being used for progressively smaller payments. Bi-Rel implemented improved features in 2003 to allow more intra-day flexibility and, in particular, creation of intraday liquidity reserves to accommodate the needs of CLS users. From 12/03 the system incorporated multilateral netting for securities settlement via a delivery-versus-payment link, Express II, as an alternative to settlement in central-bank money. Intesa Group & UniCredito are shareholders & settlement members of CLS Bank, which began operations in 2002. 9 Italian banks are third-party participants. CLS Bank provides global multi-currency settlement services for foreign-exchange transactions, using a payment-versus-payment mechanism (where one currency leg is settled if, & only if, the leg in the other currency is settled). It is liquidity-hungry but reduces the need for forex transactions. An interbank settlement process—which can take several days-uses the RTGS systems of the central banks of the 11 participating currencies to create a real-time, 5-hour funding, settlement & payment window. The currencies are Australian, Canadian, Singapore & US dollars, pound sterling, euro, yen, Swiss franc, Swedish krona & Danish & Norwegian krone. There are plans to add Hong Kong & New Zealand dollars, Korean won & South African rand. Bank charges have historically been high in Italy, but competition, electronics & borderless screen-based trading are changing this, at least for corporate customers & particularly for foreign exchange.

Taiwan - payment clearing systems *8/31 EconomistIntelligenceUnit* There are 5 major interbank payment systems in Taiwan. The Interbank Funds Transfer System is a large-value, New Taiwan-dollar payment system established in 1995; it functions electronically & is operated & governed by the Central Bank of China (CBC). It works on a real-time basis & on a designated-time basis, the latter with settlement on a net basis at the end of each business day. It settled NT$501.2bn in transactions each day in the first 4 months of 2004, & all banks are members. The Clearinghouse System is an interbank paper-based payment clearing system regulated by the CBC; it settles using the banks' current accounts maintained with the CBC. The Nationwide Interbank Remittance System, operated by the state-run Financial Information Services Company (FISC), facilitates the remittance of transactions among different financial institutions all over the country. It makes immediate settlement through accounts at the CBC. FISC works together with Chunghwa Telecom, TransAsia Communications & 10 other financial institutions to offer "many-to-many" mobile-phone banking—meaning that customers have a choice of banks & telecom providers. As of 7/04, 144 financial institutions had signed up to offer the service. The Credit Card & Shared ATM System, run by FISC & monitored by the Ministry of Finance, uses interbank settlements of credit card transactions between card-issuing banks & retail merchants' banks to provide continuous availability of withdrawal, transfer, inquiry & cash-advance services. The Central Government Securities Settlement system, a real-time gross settlement system dealing with central government bonds, was launched in 1997. Issuance, transfer, redemption & interest payments are settled via accounting entries in computerised records. Taiwan banks, led by Chinatrust Commercial Bank, are beginning to adopt CLS, allowing them to settle cross-border currency transactions on a same-day basis. The CBC instituted system-wide RTGS in 9/02, after lengthy delays. The new system abolishes the buffer period that cheque writers had to make up deposits in their cheque accounts & now works as in most Western countries. (If there are insufficient funds in an account to cover a cheque, it will immediately be recorded as bounced.) If 3 bounced cheques are recorded in one year, the account will be rejected by all financial institutions.

Cheque recipients are allowed to probe cheque issuers' credit standings
& previous cheque-bouncing records in the preceding three years, via phone or Internet.

E-Billing & E-Procurement

2/3 of US companies using EIPP *9/9 ElectronicPaymentsInternational* 2/3 of US companies with annual revenues exceeding $500m use some form of EIPP system to streamline their financial management processes, with 8 out of 10 respondents from companies that do not currently use the technology planning to implement it within the next 2 years. The *B2B Spend Management Surve* by Mastercard & Ariba, characterised forms of EIPP as solutions that enable either EDI or non-EDI electronic invoice receipt or presentment, or the ability to accept or make electronic payments. The survey questioned 105 professionals with decisionmaking or influencing power over corporate purchasing methods at organisations with over $500m in annual revenues. 80% of all B2B transactions are still processed using paper cheques. "Although paper cheques continue to be the dominant payment method for B2B transactions today, the opportunity for electronic payments to displace paper is enormous," said Alenka Grealish, Celent. "Of the estimated 9.58b B2B transactions that will be completed in 2004, 7.63b, or 80%, will be done with cheques but we believe that electronic B2B payments will grow from 20% today to 50% by 2010." 51% cited the reduced processing time & resulting lower costs as the primary benefits of using EIPP. According to a 4/03 Gartner report (*Big Payoff of Web Billing & Online Customer Service*), a typical business biller could save $2.7m a year if all business bills were delivered over the internet. Others have reduced the costs of processing & delivering paper invoices from an average of $5 to as low as $2, the report says. Some 62% of respondents to the Mastercard/Ariba survey said they rely on EIPP technology to make electronic payments to suppliers & 35% use the technology to receive payments from customers. Cost was cited by 25% of respondents as the main barrier to EIPP adoption, followed by complexity (22%), & aversion to making changes to their IT systems (19%). Of respondents whose companies do not have EIPP systems, 69% reported plans for future deployment, with 48% of those implementations expected in the next year. "The survey results clearly demonstrate that purchasing professionals from large companies in virtually every industry recognise just how inefficient paper-based & manual processes are for their business," said Mastercard's Phil Philliou. "The majority have seen 1st hand that EIPP saves their companies time & money & has a impact on bottom line performance."

Cards, ATMs & Networks

NCR unveils portable ATM *9/14 Finextra* NCR has unveiled Cash4all, a wireless cash machine, housed in a fibreglass pod, which has been designed for use at outdoor locations & temporary events such as music festivals. The cash4all machine was unveiled to banks & independent ATM deployers at the Wellington Arch in London. The ATM includes ink-staining technology developed by NCR subsidiary Fluiditi. When a physical attack is detected by sensors in the ATM, indelible ink is released under high pressure. The technology protects cash while the machine is being refilled. NCR says the ATM's wireless communications removes the need for a fixed line, enabling quick & easy installation in locations such as petrol, bus & train stations. The machine can easily be moved to different locations, allowing the ATM to be installed at temporary events, such as music festivals. Simon Rubin, NCR, says: "Although external ATMs typically drive higher transaction volumes than their internal counterparts, they have been countered by the higher costs associated with their installation, service & security."

Visa - growth in business spending to increase to $15 trillion in 2005 *9/14 Businesswire* Commercial spending by US businesses & government entities will continue to expand by an estimated 3.6% next year, according to projections from the latest Visa Commercial Consumption Expenditure index released today. Business spending is estimated to reach $14.5 trillion by the end of the year, up 4.4% or $577b from 2003. Visa forecasts.6% growth in 2005 to $15 trillion, with business spending steadily increasing through 2010, when it is expected to reach nearly $18 trillion. "This version of CCE continues to reinforce the opportunity to help businesses & government agencies transition from checks to other much more efficient forms of payment," said Michael Dreyer, Visa. "We know that less than 2% of CCE is captured on payment cards. That is why Visa is working with our member banks to help their commercial & government clients best manage their spending to achieve new levels of procurement & payment efficiency by eliminating the costly process of using checks." Visa's CCE index is the first financial metric to standardize how business & government spending is tracked & forecasted in the US. Reflecting economic recovery & the continued momentum of its commercial business, Visa announced it reached a commercial volume milestone, processing $104.7b in payments over VisaNet for the first time during the business year ended 6/30/04. The growth rate of Visa's commercial payment volume outpaced that of the market segment, posting a 20.4% increase in commercial payment volume in 2003. Visa has produced a growth rate of 22% since 1999, while the market segment itself, as defined by the CCE, experienced a growth rate of 2.5%. "This is positive news for our Members, who trust that we have the insight to help them best meet the payment needs of their business clients. One of our top priorities at Visa is to ensure that we have payment solutions that cover the wide spectrum of business purchases, whether the amount is $50 or $5m."

What does it cost to implement contactless payments? *9/1 CardTechnology* Adding a chip & antenna inlay increases the cost of a payment card by about $1.50, says Sue Gordon-Lathrop, Visa. As for enabling payment terminals to communicate with contactless cards via radio signals, that can be done by plugging in a radio frequency device or installing a module with RF capability into more modern terminals. The add-on reader costs $150 or less & integrating RF into a new terminal costs no more than $120, says Mohammad Khan, Vivotech, a supplier of the RF devices. The 2 leading US terminal providers, Hypercom & VeriFone, offer terminals with built-in contactless capability. Vivotech, Israel-based OTI & Japan's Panasonic offer RF technology that POS terminal vendors can build into their devices. However, larger costs may come in changes to back-end systems to utilize security features of contactless systems. Because of the cost, some card issuers & transaction acquirers may defer some of those security options, although experts say contactless cards will still be far harder to copy than magnetic stripe cards. Comparing the 2 systems being developed for the US, AmEx ExpressPay & Mastercard PayPass, experts say cost may be more of an issue for PayPass. In part, that is because AmEx acquires its own transactions from merchants, while many acquirers handle Mastercard transactions. There can be differences in the security methods of the 2 schemes. Each ExpressPay chip stores a serial number that is different from the AmEx account it is linked to. For instance, the host computer can recognize that a purchase from ExpressPay device 123 should be billed to account 456. Using a different number means that even if transaction data is intercepted & decrypted, the fraudster would not have a real AmEx card number. AmEx limits its risk by allowing only $150 per day in ExpressPay transactions. Mastercard allows issuers to choose whether to use the same number for PayPass devices as the underlying account number, or a proxy number. One additional security step Mastercard is taking is requiring that each PayPass transaction be identified as such & that the terminal affirm it can communicate with PayPass cards. That way the issuer's host computer knows to reject PayPass purchases from a terminal not equipped to handle PayPass. The PayPass host knows to look for a cryptogram, which is a feature of ExpressPay & PayPass. In both

cases, the chip carries a secret code, or key, that is used to generate an encrypted message for each transaction. The host computer knows each card's secret key & decrypts the message to verify that it came from a valid chip. The cryptogram is a key defense mechanism because, while a fraudster could encode a magnetic stripe with an account number from a PayPass card, the mag stripe could not create the cryptogram. All this requires relatively small changes to payment terminals & acquiring systems. But any change typically requires acquirers to recertify their systems with payment schemes, a costly process. Mastercard says the changes are mandatory for acquirers, but that any change must fit into an acquirer's normal software development cycle, so timing of revisions may vary from one acquirer to another. Issuers, too, may have to make changes to their host systems to decrypt the cryptogram & verify that the data sent matches that which this particular chip should send for this transaction. This ensures that data copied from a previous transaction would be rejected. This approach is borrowed from EMV, the international standard for chip-based payment cards, which is beginning to roll out in Europe, Asia & elsewhere. Issuers that have implemented EMV could decrypt cryptograms from contactless cards. But US issuers are not yet moving toward EMV & thus face significant costs to add this mechanism. Early PayPass issuers may put off that upgrade, sources say. Mastercard says that issuers can choose which of the risk-management features of PayPass to implement & when. Even without using all the available security features, contactless cards are far more secure than magnetic stripe cards, says Colin Tanner of UK-based Consult Hyperion. That's because criminals can easily obtain magnetic stripe encoders & create phony mag-stripe cards once they have an account number, he says. Putting your hands on a contactless smartcard chip loaded with a payment application & the secret keys needed to add data to it is not so easy.

Chip in phones will allow secure financial transactions *9/5 SundayBusiness-UK* One of the dreams of the dot.com era may be about to become reality. Philips & Samsung are to equip phones with microchips that allow users to make secure financial transactions. At the height of the technology boom, Scandinavian start-ups were proposing mobile phones be used to carry out functions such as translating into Mandarin Chinese & acting as electronic payment devices, beaming digital cash into the register at a touch of the keypad. Samsung is to become the second big mobile maker after Nokia to adopt technology enabling phones to behave like smartcards. Neither Nokia nor Samsung has leaked details of their products but both are expected to rollout phones that contain the transaction technology this year. It is thought the phones could behave like the kind of contactless smartcard used to enter offices. The phone would be directed at a payment point & the keypad clicked to allow the transaction. In many Asian cities, contactless smartcards are used for shopping & for the payment of fares on public transport. The main developers of contactless smartcard technology are Philips & Sony. A mobile phone has advantages over a smartcard. Better suited for the wireless transmission of data, phones have technologies such as Bluetooth or infra-red connectivity. They have enhanced security. The phone keypad can be used to enter PINs. The screen can be used to verify the amount of any transaction. The phone can access financial websites & make online payments. It can check a bank balance or download cash. Because the mobile can be used as an interface between the user's bank account & the point of payment, it would not necessarily have a credit limit of £10,000 or more now common to many credit cards. The phone could download a few hundred pounds of credit & only replenish this when given the PIN & clearance by the phone's owner. Visa is interested in using mobile phones as payment devices.

Shoppers flock to debit cards *9/6 MinneapolisStarTribune* In the ongoing battle for shoppers wallets, cash is no longer king. Plastic finally has outstripped cash & checks as the most popular way to buy items at the checkout line, according to Dove Consulting & ABA. The biggest factor behind the change in consumer buying habits is the explosive growth of bank-issued debit cards, which draw money directly from a consumer's account when a purchase is made. Shoppers like the cards because they are convenient; banks are pushing them because they are cheaper to process than checks & are a lucrative source of fee revenue. 1 out of 3 purchases now are made with debit cards, compared with one out of 5 purchases 4 years ago. People are whipping out the cards everywhere from burger joints & gas stations to parking lots & thrift stores. "It's convenient," Danny Sanchez, 25, said after swiping his Wells Fargo debit card to buy a cheeseburger & fries at a Hardee's in St Paul. Sanchez, a graphic design student at Minneapolis Community & Technical College, said he prefers using a card because the payments are easier to track & he doesn't like to carry cash. Banks have a vested interest in encouraging customers like Sanchez to use their cards. Most banks do not charge any fees to own or use a debit card. However, they do collect an interchange fee from merchants each time a customer swipes a debit card. The fee typically ranges from 0.7 - 1.5% of the purchase amount. The fees add up. Last year, TCF collected $53m from its debit cards, more than double the $20.7m it collected in 1999. "Banks save on expenses & earn more fee income, so they have a clear interest in enticing more people to use these cards," said Ben Crabtree, Piper Jaffray. Banks are so fond of the cards they have begun offering cash rewards & discounts similar to those traditionally offered by credit card companies. Holders of US Bank's Visa check card earn a small cash reward - equal to 0.25% of a purchase amount - each time they sign for a check card purchase. Last year, US Bank gave back $35m to its check cardholders through the rebate program. Those not interested in the cash can receive airline miles or points toward the purchase of consumer items. "This is the best debit card, hands down, anywhere in the country," boasted Christine Hobrough, US Bank. US Bank is not the only bank pushing plastic. Last month, TCF unveiled the TCF Miles Plus card that lets customers earn points that can be redeemed to buy airline tickets. Cardholders earn one point for every dollar spent. Based on an August sampling of air fares, about $25,000 spent on the card would earn enough points to buy a flight from Minneapolis - NY on a major carrier. TCF's product is a credit card, but it functions like a debit card with purchases deducted directly from checking accounts. & unlike most credit cards offering airline miles, TCF's card has no annual fee & is not subject to travel blackout dates or airline seat restrictions. "Traditionally, cards have been commodity products" for banks. "But a card like TCF's Miles Plus is powerful enough that it might actually help the bank win some new customers." The cards are valuable retention tools. Banks have found that customers are less likely to switch to a competing bank if they are trying to accumulate mile points or other rewards on their cards. "It's about creating customer loyalty," said Ed Kadletz, Wells Fargo, which unveiled a debit card rewards program of its own in April. "Let's say you've got a Wells Fargo credit card, a debit card, automatic bill payment, the relationship becomes very deep & very broad. You get comfortable & you are less likely to leave to another financial institution." However, consumers should keep a close eye on fees. 1 of 5 banks nationwide charges customers a fee when they enter a PIN, instead of signing for a purchase. None of the major Minnesota banks charge this fee, but in some parts of the country it can range from 10c - $1.50 per transaction. Fear of fees is a major reason Dan Lindquist, 39, St. Paul, uses cash for just about everything. Each Friday, Lindquist withdraws just enough cash from the bank to make it through the week, & only uses his debit card to make big purchases. "You can swipe a debit card here & swipe it there & not even notice that you've just spent a few hundred dollars," said Lindquist, a delivery driver at Target. "With cash, I always know how much I'm spending." Number of debit cards nationwide: 299m. Growth in number of debit cards since 1999: 24%. Value of products & services bought with debit cards last year: $700b. % of banks that offer debit cards: 96%. % of banks that charge customers for using a debit card: 21%. Average debit card sale: $85. Average number of debit card transactions per household annually: 125.

The rise of the mag-stripe hybrid *9/9 ElectronicPaymentsInternational*
The rise of the magnetic stripe hybrid model - showcased by Starbucks' Duetto stored value programme - may be the final nail in the coffin for chip in the US. Acceptance by US consumers was the dream of the chip card. After the expectation that loyalty would be the killer application on chip, the industry looked to multiple purses for the promise of the smartcard's projected prominence. However, magnetic-stripe cards have once again sprung to the fore. Apart from Starbucks, Bentley Commerce Corp from LA has progressed through the process of delivering credit or debit & stored value on a single card. In March, the company announced its alliance with Morgan Beaumont, a Sarasota company that will manage the technology, & in July, it debuted its Platinum Business Trade Card in which barter currency can be accessed through a magnetic-stripe card acceptable among the company's 15,000 barter member companies (100,000 individual users). The real-currency piece - credit for cardholders with acceptable credit histories & debit for the remainder - is likely to appear in 3 - 4 months, after the product's security makes the cut, says Bruce Kamm, Bentley Commerce. "We tried to do this in 1999 & 2000 & didn't have a lot of success finding a bank or issuer to work with us. We never got far with it." But Morgan Beaumont-developed software for POS & chip's shift to security & government applications leave Bentley with a lesser challenge. Terminals can recognise cardholders as part of the barter-exchange network. They proceed with a transaction from the barter currency fund or contact the credit or debit host for transactions occurring between a barter buyer & non-barter seller or vice versa. In addition, 2 transactions can occur at once. If a barter member wants to use the exclusive currency to pay for a meal at a network restaurant, he can add the tip from his credit or debit account. Kamm says unlike hybrid portfolios in which balanced use of payment functions are dubious, "I know they'll be using both applications actively. It's a solution that has been needed in our industry for a long time. We're providing the specific functions that our cardholders need." But just as Bentley's cardholders come from a familiarity with the company's 4-year-old online trading environment, Starbucks' Duetto Visa cardholders originated from frequent gift card use. "Hybrid cards as a concept have been around way more than a decade, maybe 15 years, & they just never caught on. Some people go back to compartmentalisation & the way people think. You have a number of cards for multiple purposes, & that's how you do your accounting," says Jim Accomando, Accomando Consulting. Starbucks' stored-value card was so successful, he says, it was a natural to extend it to a hybrid. He doubts the credit application is getting as much use as the stored-value one. Duetto "was the next fancy thing. But when it really comes down to it, Starbucks people are still using the Starbucks Duetto as a prepaid card." People may take hybrid cards because they think they're cool, but, "the lines just don't get used." Research group Comdata evidently resides in the other camp, the one that says hybrid presents a much-needed solution to operational inefficiency, in its case, in the trucking & retail industries specifically. Its BusinessLink hybrid Mastercard, introduced in March, answered customer demand. The credit-&-debit-card-in-one enables efficiency & control in work force purchasing & payroll distribution. All spend - fleet, T&E, etc - & payroll, occurs on one platform & one card. Comdata's 400 current takers of BusinessLink transact mostly through the credit or purchasing function. "That is the normal point of entry. Many customers who have BusinessLink are in the process of looking at adding the pay card feature, which is the debit capability," which can be used at ATMs or the POS with a PIN. Perhaps part of the reason Sickles believes both functions will take off comes not only from his task of selling the product but his knowledge of using it. "The card I am carrying is not only my corporate purchasing/T&E card, but I receive reimbursements on it, & it is my swipe card to enter our facilities." The 'authenticated ID feature joins purchasing capability & employee payroll and/or expense reimbursement among the BusinessLink suite of services a customer can adopt. "We believe hybrids are just a much better way to do business," Sickles says, noting that the debit capability reduces the cost of payroll distribution through paper cheques by 40% or more, & the credit function reduces the process costs involved in purchasing - purchase orders, dedicated staff, etc - by 25% or more. So confident is Comdata in BusinessLink that it is considering adding functions - health benefits being one example. "If there's a good business reason & if they make money on both sides, we'll see more hybrid cards," says Peter Quadagno, Quadagno & Associates. "But the business cases haven't been investigated." Being bullish on mag-stripe hybrids, "Why would we adopt chip now? Now that mag-stripe cards show off multiple payment options, the infrastructure for smartcard technology likely won't emerge beyond transportation & government security applications in the US."

E-Commerce & M-Commerce

Maths mystery is prime threat to online security *9/8 Finextra* Scientists at a UK conference have warned of serious repercussions for e-commerce & cryptography from the possible resolution of a 150-year old mathematical theory. Louis de Branges, Purdue, claimed to have proved the Riemann hypothesis, which seeks to explain the apparently random pattern of prime numbers. Such numbers are the key to Internet cryptography, which is used to secure Web transactions. Proof of the hypothesis would mean that all cryptic codes could be breakable, so no Internet transaction would be safe. Marcus du Sautoy, Oxford, said: "The whole of e-commerce depends on prime numbers. If the Riemann hypothesis is true the proof should give us more understanding of how the primes work. If it does, it will bring the whole of e-commerce to its knees, overnight. So there are very big implications." No need to panic just yet as boffins remain unconvinced that de Brange has proved the theory. According to UK Guardian, Oxford University's du Sautoy described de Branges' formulation as "rather incomprehensible".

Micropayments *9/9 ElectronicPaymentsInternational* The phenomenal success of Apple's iTunes music download service has been instrumental in transforming electronic micropayments into a cutting-edge & profitable business model after years in the doldrums. & the success of micropayments in delivering digital content may see the concept rolled out in the physical world. If there is one area where the electronic payments revolution has struggled to make an impact in the last decade, it is in the low-value payments sector, which is loosely defined as payments below $5 made via the internet, POS or mobile. The problems associated with applying the traditional card payment model to low-value payments have been well-documented. For merchants, card processing & interchange fees are often higher than the transaction value itself (fixed fees typically cost $0.25 per transaction, & variable fees up to 2% of the transaction), while 'live' customer service costs an average $5 to $10 per inquiry & standard chargeback fees can cost as much as $30 per incident. Such costs make processing $1 transactions unviable. In the heady days of the dotcom boom the solution came in the form of 'internet currencies,' which were launched with the aim of allowing consumers to pay for online content & services without ever having to reach into their wallets for a card. However, the high-profile collapse of e-currency start-ups such as Beenz & Flooz demonstrated the problems inherent in that first dotcom revolution: an over-reliance on advertising revenues, a lack of common standards & practices in a rapidly evolving market (including a lack of interoperability with existing payment systems) & a widespread attitude among consumers that the internet should remain 'free' to the end-user. Of this first wave of online micropayment start-ups, only PayPal managed to succeed, but it is significant that the company had to dramatically re-adjust its focus in order to flourish. Since its acquisition by eBay in 2002, PayPal has come to dominate the online auction space but its impact in the wider internet-based micropayments sector has dimmed as a result. After years of such high-profile flops the micropayments market is finally beginning to look forward to a brighter future. TowerGroup predicts that in the US alone the market for internet & mobile electronic micropayments will increase by 23% to $11.5b in revenues by 2009 (up from just over $2b in

2003) with internet micropayments accounting for $6.7b & mobile micropayments reaching $4.8b. A separate survey by Ipsos-Insights claims that more than 10m Americans have purchased digital content for less than $2 in the last 12 months - a 150% increase on a study conducted by the group in 10/03. Only pornography can claim to have had more of an influence than online music on the way the internet has evolved in the last decade. As well as sending shockwaves throughout the music industry, the success of illegal peer-to-peer networks such as Napster appeared to sound the death knell for companies attempting to charge for 'on demand' music downloads. The success of Apple's iTunes download service, largely achieved on the back of the phenomenal popularity of its market leading iPod MP3 player, has proved that the music industry's doomsday scenario has not come to pass. Apple has seen its average weekly song downloads rise from 250,000 songs per week in 4/03 to 2.5m songs a year later & is now generating annual revenues of $150m. The service claims to be the first to offer over a database of over 1m songs for download. In July, Apple made iTunes available in the UK, France & Germany & the service is expected to be rolled across the whole of the EU by next month. iTunes enjoys a 70% market share but the success of the scheme has led to a plethora of new entrants into the market, which according to Forrester will be worth $3.2b by 2008. Most significant among these is the new legal incarnation of Napster, owned by digital media company Roxio, which went live across the US in 10/03 & has since been rolled out in the UK & Canada. Other services include Real Networks' Rhapsody & MusicRebellion.com. The success of such schemes represents a major shift in the consumer's attitudes towards internet content & a move away from the assumption that the internet should be 'free' to all. TowerGroup cites a UCLA survey that claims that 47% of respondents would be willing to pay for a previously free online service that began charging, while only ¼ would resist the change. "While the free internet is not in danger of disappearing, we are witnessing a steady shift from free-to-fee as more merchants monetise high-value digital content production & distribution & turn to micropayments as one way to enable this shift," writes Ed Kountz, TowerGroup. So why are micropayment models such as iTunes flourishing when so many of its predecessors failed? In most cases the key is in managing to incorporate card payments - still the preferred method & de facto standard for paying for goods over the web - into the payment model without falling into the trap of having the transaction values swallowed up by the card fees. The most successful way of solving this problem is to use some form of account aggregation, which means that the payment is not filed with the card issuer until a number of small purchases total a larger amount, & therefore incurring just a single processing fee: it remains easier & cheaper to process one $10 payment than 10 $1 payments. If an iTunes user were to make a just a single music download costing $0.99 during the card authorisation period then it is likely that Apple would be forced to process the transaction at a loss, but the success of iTunes suggests that one-off purchases are rare & in most cases Apple is able to compile many downloads into one transaction. But account aggregation model is just one solution & TowerGroup notes that the micropayments market is still hampered by, "a large number of competing (and in some cases struggling) transaction & platform types." The flat fee (or subscription) model remains the most popular method for charging for content online & is, in Tower's opinion, the model that all other competitors must attempt to displace. TowerGroup said it expects a gradual migration from subscription to per-use payment models but it is likely that both methods will exist in parallel for the foreseeable future. "Some things will be subscription & some will be pay-as-you-go," said Rob Carney, Peppercoin. "It's like buying a newspaper. You can buy a subscription or go to a newsstand. & it some cases a la carte transactions will drive subscriptions." "Small payments are part of the broader portfolio of payments services that an online merchant is going to need. Maybe selling things for a dollar but selling other things for $100. You want to be able to use both." New methods challenging the subscription model include merchant aggregation solutions, which are traditionally facilitated by third party vendors, & fall into 2 categories: single-merchant solutions that net customers' transactions from a single merchant & the more sophisticated multiple-merchant solutions, which offer even greater cost savings by grouping together customer transaction data from several merchants. In both cases, costs are driven down by grouping together a number of small charges by either total value or within a set time period. Prepaid schemes, while they are still largely limited to mobile data services, offer significant cost savings as it automatically avoids problems associated with credit risk & defaulted

Typical cost of processing a $0.50 transaction

Payment option	Sample fee structure	Transaction cost	Total cost
Credit card	3% of sale + $0.25	(3% x $0.50) + $0.25 = 0.27	$0.27/$0.50 = 3% Servicing costs of $5 to $20
Low ticket / no receipt	2% of sale + $0.10	(2% x ($0.50)) + $0.10 = $0.11	$0.11/$0.50 = 22% Servicing costs of $5 to $20
Micropayment (Aggregation)	3% of aggregated sum of 20 payments + $0.25	(3% x (20 x $0.50)) + $0.25 = $0.55	0.55/(20x$0.50) = 5.5% Minimal servicing costs

Source: TowerGroup 2004

Leading US providers of micropayment services

Company	Primary (secondary) channel served	Solution description	Geographic focus	Sample clients
bcgi	Mobile	Prepaid (Wireless Wallet, leveraging prepaid wireless management products)	North America	Verizon*, Cingular Nextel, Boost (prepaid wireless management solutions)
Qpass	Mobile/internet	Direct-to-bill	North America	AT&T Wireless Nextel, Cingular Wall Street Journal, Los Angeles Times
Peppercoin	Internet (POS)	Small-Payment Gateway for aggregating multiple transactions across merchants for more cost-effective processing	North America	Smithsonian Folkways, MusicRebellion.com, Golden Tee
Bitpass	Internet	Prepaid cards, in increments of up to $1,000, for digital content consumption on bitpass.com / merchant sites	North America	Primarily small content vendors
PayPal	Internet	Targeting online music consumption with lower fee structure for digital content	North America/ Europe	Owned by eBay, working to move beyond online auctions
PaymentOne	Internet (macro and micro)	Direct-to-bill, credit card ACH prepaid	North America	United Online, America Online

*Verizon is testing a proprietary prepaid management platform
Source: TowerGroup 2004

payments, factors that are largely responsible for the high fees involved with card payments. Another method identified by TowerGroup is the direct transfer model (funds debited directly from the customers current account) but the report notes that this method has only had limited consumer take-up to date. Today the revival of micropayments is closely related to the rise of mobile-based digital content such as ringtones, logos & games, which has now grown to a market that was worth $3.5b last year. The most common method employed by operators to facilitate such transactions is the direct-to-bill model with purchases billed directly to the customer's monthly mobile phone bill. The market has been buoyed by the rise of Premium SMS, which has allowed third parties to stimulate the market. According to payment software company Valista, as much as 15% of revenues at mobile phone operators is now coming from non-voice revenue such as personalisation, messaging & digital purchases, & in Japan data generates more revenue than voice. TowerGroup notes that this market has largely flourished outside the US, with mobile accounting for just $200m of the $2.1b processed in electronic micropayments in the US in 2003. But outside the US the market is growing quickly. The most high-profile scheme is NTT DoCoMo's i-mode service in Japan, which levies a 9% fee on digital content transactions. "The attractiveness of a 9% commission in a world where most digital content remains free has prompted other operators' interest in replicating DoCoMo's success, leveraging the efficiencies of operators' established data billing systems. What's more, mobile providers are among the few companies whose billing systems are optimised for high volumes of low-value transactions. The shift of vision for mobile commerce away from short-term adoption of mobile proximity payments has led to mining of opportunities that leverage the early successes of low-value digital content products." Kountz notes that the next step for mobile content is to, "create branded services that are operator-supported & can be used across multiple networks." Europe's Simpay, the mobile payments brand created by Vodafone, T-Mobile, Orange & Telefonica, is one of the first instances of such a cross-brand venture. The company's first product, which will enable mobile digital content purchases under €10 is set for launch by the end of the year. The dominant mobile-payments model thus far has been direct billing to operators (or BOBO; billing on behalf of others), which has proved attractive to operators as they are kept in the payment loop without having to do anything - they simply take a cut of the transactions processed via their networks. But the potential for using a mobile phone purely as a payment mechanism (ie: for buying physical goods via the phone rather than for accessing mobile-based content such as ringtones & games) is likely to be the next stage of evolution for mobile micropayments, as long as regulatory barriers such as the EU's controversial e-money directive are overcome. The lines between telecoms & internet micropayments is blurred. In the UK, BT's Click & Buy service, which dropped the reference to micropayments in its brand name in order to extend its focus to higher ticket purchases, has managed to attract 250,000 subscribers by charging online payments direct to its standard BT phone bill. The economies of scale in selling digital content is obvious as Peppercoin's Rob Carney explains: "I could reproduce something digitally 10b times & the marginal cost for doing this is zero. So I could sell this even for a penny. If there's still some way to make money at that low price then those kind of volumes make sense. In the physical world there is a limit to how low you can go. Plus there's the alternative of paper & coins to consider." Carney is bullish that, ultimately, it is in the physical world where micropayments will have the biggest impact. "The excitement & innovation is coming from the digital side but the physical micropayments market dwarfs the digital opportunity in terms of potential revenue." This year Peppercoin joined forces with US video game manufacturer Incredible Technologies to facilitate credit card micropayments for coin-operated products, including the company's flagship golf game, Golden Tee, which is expected to generate annual top-line revenues of $400m - almost 3 times the turnover of iTunes. "By offering consumers the ability to use whatever they have in their pockets to pay for a game, we expect to see earnings increase dramatically as it has in other industries, & expand the size of the overall market," said Elaine Hodgson, Incredible Technologies. TowerGroup predicts that micropayments for 'soft' physical goods such as video gambling, game machines & other kiosk-based POS environments will be the primary markets for micropayments in the physical world - & the potential for growth is enormous. Tower estimates that the market for transactions valued at less than $5 totalled $1.32 trillion in the US last year, with an average transaction value of $3.72. The last stronghold of cash may finally be under threat.

Wireless transmissions that travel only a few centimeters may be just the ticket for embedding cell phones with smartcard technology *9/14 MIT-TechnologyReview* When comparing wireless transmission range, longer is almost always better. Yet the developers of a new technology called Near Field Communications, NFC, boast not about how long a distance it works over, but how short. With a range of just 10 cm, NFC can get by with a very small, low-cost radio transmitter that draws only a pittance of power. Its very feebleness of transmission helps to ensure security. Forget about a hacker snooping on your Wi-Fi session from a laptop outside the building—with NFC, even a colleague sitting next to you at a meeting may be too far away to sniff the signal. Yet if you do want to swap data & move your NFC device next to hers, the connection is immediate. What's more, you can take the same device down the hall & use it to buy a soda from a vending machine. These attributes were enough to convince Nokia, & as of August 30, Samsung, to announce that their next-generation cell phones will come equipped with NFC chips. Nokia's NFC-enabled handsets are promised by the end of the year. For handset vendors, NFC represents a low-cost entry into the smartcard market. Cell phone users could potentially use their phones as "contactless" smartcards for electronic turnstiles, event ticketing, & even checking out at the supermarket. The technology would also let users display images from a digital camera phone on a nearby TV, graze promotional offers from subway billboards, or swap contact information between devices. & with the help of Philips & Sony, the 2 consumer electronics giants that jointly developed the technology, the low-cost radio chips could appear in everything from TVs to PCs to digital cameras. ABI Research predicts that by 2009, NFC-enabled products will account for ½ the cellular handset market. NFC adheres to a standard ratified last year that specifies transfer speeds up to 424 kbs operating at a frequency of 13.56 megahertz. (Early NFC devices will be limited to ½ that speed.) NFC offers a much shorter range than the RFID technology on which the new standard is based: 10 centimeters instead of 2 to 5 meters. But like RFID, NFC transmits information via inductive electromagnetic coupling in the radio frequency portion of the spectrum. The key difference is that NFC adds software that enables instant setup of peer-to-peer networking. As with P2P wireless communications between Bluetooth- or ZigBee-enabled devices, NFC devices automatically seek each other out & establish a communications link. (The popular Wi-Fi wireless networking technology is different, as it requires an access hub.) This P2P approach also differs from RFID networks, which are set up in a master/slave relationship in which passive chips are read by expensive, powered "reader" devices. NFC devices, on the other hand, can be set to either passive or active mode, so they can send identification data even when the device is turned off (passive mode), making it ideal for smartcard applications. At the same time it is also capable of playing the active role, orchestrating communications with other active or passive RFID-based devices. The key advantage of NFC (aside from its low cost) is the speed with which you can initiate a communications session. "NFC has very fast & easy configuration & pairing," says Tariq Shahab, Philips. Bluetooth, which is designed to exchange data between devices in close proximity, requires tedious setup procedures between communicating devices. "To use Bluetooth with different devices, you have to go through a lot of configuration, but with NFC it's just touch & go." Due to this instant connection capability, NFC is being pitched as a kind of virtual connector that can act as a lingua franca for setting up sessions using other, more powerful, wireless technologies such as Bluetooth & Wi-Fi. In other words, devices could first introduce themselves via NFC before moving to a faster, longer-

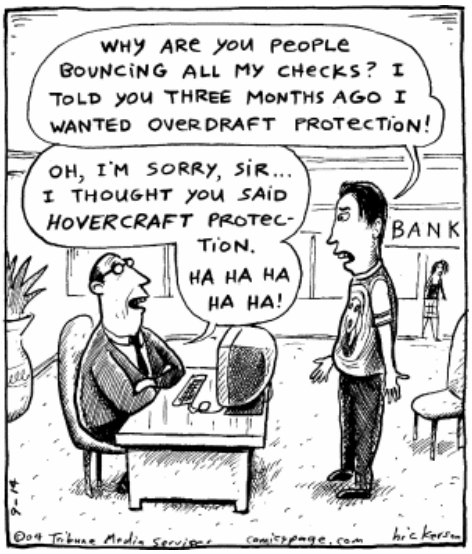
range medium. An NFC chip can also act as a smartcard, as long as it is integrated with a security controller chip equipped with encryption. Visa, the third major partner with Sony & Philips in the NFC Forum that is pushing the technology, has sold hundreds of millions of contactless smartcards, primarily in Asia, where they are used mostly for mass transit fare collection. The more robust NFC is compatible with this RFID technology. If people can move through a turnstile faster & more securely by holding up a contactless card instead of swiping a card through a reader, it should be even more convenient to hold up a cell phone. Smart cards are often too thick to comfortably fit more than one in a wallet, & users need to stop to fish them out of the wallet & slide them back in again. Initial applications of the NFC smartcards will be in point-of-purchase locations where check-out speed is at a premium, such as ticketing, supermarkets & video stores. Philips is especially keen on selling NFC as a tool for public interactive advertising. Shahab describes a scenario in which pedestrians walking through an airport or subway would stop & glide their phones close to a billboard embedded with an NFC chip. Doing so might download a song, ring-tone, game, ticket, or coupon using either NFC or a faster wireless technology like Bluetooth or Wi-Fi. Alternatively, they could download a URL that the cell phone could automatically connect to in a Web session. Philips is working with content providers such as Vivendi Universal to develop similar displays. Numerous proposals for such public interactive marketing schemes have been bandied about in recent years, with very little progress. They all confront obstacles that are likely to limit their impact. The technology needs to work simply, quickly, & reliably, & the displays need to be sufficiently numerous—& the offers sufficiently irresistible—to convince busy pedestrians to stop & interact. NFC faces an additional obstacle: Although a 10-cm range is an advantage for a smartcard, it could pose practical & psychological barriers for interactive marketing in a crowded commuter setting. ("Excuse me, ma'am, while I caress the billboard with my cell phone.") Once the RFID revolution gets rolling in shipping & retail (& some project that could take over a decade), economies of scales should drive down the cost of NFC chips from their present level of a few dollars to 20c (minus the encryption chip). At that price, it should be affordable to embed chips in magazines & other interactive venues. NFC boosters list intriguing applications such as wireless mice, door keys, & patient ID tags containing medical records. Here NFC is competing with numerous other wireless technologies—from Bluetooth & ZigBee on the low end to ultrawideband & Wi-Fi on the high end. Although those technologies tend to be more expensive than NFC, they are also faster & longer-range. The idea of using NFC as a universal set-up scheme for other devices is compelling, yet NFC suffers from the inconvenience of always having to bring devices close together. Finally, with TV powers like Sony & Philips pushing it, NFC could be built into set-top boxes & PCs & play a role in authenticating interactive TV or online purchases-especially if it becomes tightly integrated with an encryption chip. Yet here, NFC faces even more competition. NFC's initial success, then, will likely depend on the speed with which electronic payment companies—and here one would look first to NFC Forum partner Visa-actively involve vendors in adding NFC support to smartcard ticketing schemes. Gradually, NFC could then follow contactless smartcards into more universal retail transactions. To help entice consumers, the handset vendors may spark interest in using NFC to display digital camera images on TVs or swap contact information. With these non-monetary tasks, success may hinge upon the lack of same for its closest competitor, Bluetooth—a technology that received a jolt in late August when original developer Ericcson announced it was shutting down its Bluetooth division. If a few more handset vendors chime in, it's not difficult to foresee NFC emerging as the foundation for the cell phone's next starring role as a universal smartcard. Before the "smartcard smart phone" becomes a reality, there will be many more plays & players to be heard from—Mastercard, Motorola, Microsoft & Matsushita, just to start with the M's. Yet if NFC follows through on its claims for simplicity & affordability, it could very well lie at the core of a development that will truly make the cell phone indispensable.

Mobile electronic wallet will be the purse of the future *9/13 BusinessDay-SouthAfrica* Mobile electronic wallet will be the purse of the future. As the first high-speed one-to-one cellular data service, SMS allows text messages of up to 160 characters to be sent for 75 cents. But GPRS now allows SMSs with text messages of up to 4000 characters for about R1, says Ahmed Ayob, MD of Cointel. He says today cellular always-on internet data access services match & exceed dial-up connectivity speeds, with general packet radio service (GPRS) & 3G services coming down the line at speeds of up to 380kbps, "Immediacy & speed are becoming a given. The next step is being able to deliver large amounts of information to the phone, like video streaming & music, & network operators are trying to meet this challenge." The cellphone is now poised to become a mobile electronic wallet, enabling users to initiate secure online payments, either from a monetary value stored on the SIM or through initiating a debit or credit-card transaction. In the 1990s there was talk of the cellular networks becoming banks, but this never materialised, says Ayob. He says the cellular networks are good at transaction processing, prepaid services & billing, but have no track record for giving credit or looking after other peoples' money. "So it makes sense for the cellular networks & the banks to pool their expertise & resources to deliver transaction payment services to the mobile phone." He says this has already started happening, with companies such as Cointel providing payment gateways that link cellular operators to the banks. "Companies like us form a bridge between the 2 & provide secure debit & credit transaction services & prepaid airtime top-ups on top of this." Ayob says they handle R850m worth of transactions a year through a payment gateway. However it will take a culture change for retailers & their customers to get used to initiating payment transactions with a cellphone when paying for goods & services at the point of sale. Cellphone payments are likely to take off with tradesmen first. The company has created Simtransact, a product that allows plumbers, electricians & other trades people that bank with Absa or Standard Bank to use their cellphones as a POS terminals.

Other

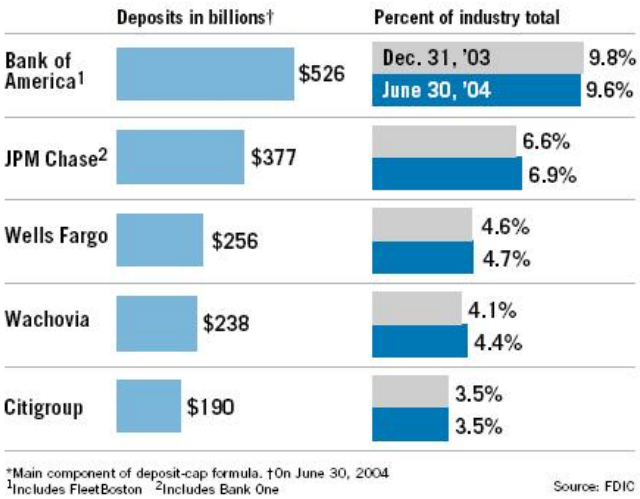
How retailers are turning to tech *9/9 Kiosk.com* Newbie shoppers entering a Food Lion in Mooresville NC might think they've come to the wrong place. The shop looks more like an electronics emporium than a traditional grocery store. Customers bustle about brandishing handheld scanners. Information kiosks dish out maps on how to find any item, such as that lattice pie crust hiding between aisles 7 & 8. & near the pharmacy, a high-tech blood-pressure monitor takes shoppers' readings & keeps the data for a year. While this Food Lion experimental store seems extraordinary, technologies assembled within it could become common within 2 years as retailers prepare for a makeover as dramatic as any on the Mix It Up home-design TV show. Gone will be today's cashier stations, price tags, paper sales signs, pharmacy waits, & deli lines. Hold on to your cart, because your shopping experience might soon have little resemblance to anything you experience today. What's behind this shift to technology? With consumers growing more accustomed to the quick convenience of shopping on the Internet, brick-&-mortar retailers are having to hustle like never before. They find that new technologies are often the only way to keep costs down while offering customers a better shopping experience. Buyers appreciate kiosks that can suggest the perfect recipe to go with white wine. & a self-checkout that halves the time spent waiting in line can be a big draw. Add changing demographics, & the time is ripe for shopping to get a tech infusion. As the population ages, buyers look for technologies that offset their declining capabilities. Baby boomers like gadgets that make up for their deteriorating eyesight - such as the hand-held scanner Food Lion is testing out that displays an item's price & description in larger type. "A lot of the high technology is really addressing some

biological problems that our society is having," says Craig Childress, Envirosell. "If you want to be here down the road, you have to look at consumer trends & change," says Susie McIntosh-Hinson, Food Lion. The $3.6 trillion US retail industry now spends 2.1% of its sales a year on technology, up from 1.8% in 2001, according to IBM Global Services' 2003 survey of 78 CIOs & tech managers. Early results indicate the payoff can be sizable. New gizmos & software can speed up sales growth from 5% today to 7% - 8%, says Marshal Cohen, NPD Group. Consider this: By recommending curtains that go with the bedding a customer has picked, an in-store kiosk can increase that buyer's spending by 25% or more, estimates Francie Mendelsohn, Summit Research. An interactive digital store sign that Intel is working on might notice that a buyer has put a bottle of shampoo in his cart & suggest a conditioner that complements it. This type of technology has one drawback which could slow its adoption. To make shopping more convenient, "the retailer is going to know you - your size, your brand preferences - better than you know yourself." That means buying habits, preferences, & personal data will be collected by retailers, potentially sparking privacy concerns. Already, some customers avoid preferred-shopper, or loyalty, cards & make purchases with cash only. As stores get more high-tech, retailers will need to persuade shoppers that they won't sell or misuse their data. If retailers can ease concerns, the store of the future will unfold. You can catch an early glimpse at chains like Stop & Shop Supermarkets, which is testing a device called a Shopping Buddy. This gizmo is the size of a large purse that attaches to a shopping cart's handlebar. It sports a flat screen that can scan a customer's preferred-shopper card to reveal a list of past purchases. A shopper can then use the data to compile fresh grocery lists, & the Buddy will direct them to the aisles where the items can be found. Most customers leave a grocery store still having something they wanted to buy but couldn't find. Made by tech companies Symbol & Cuesol, the Buddy can suggest an entree to make for dinner & provide customers with a related list of ingredients & cooking instructions. At 3 experimental Stop & Shop stores, it allows shoppers to place an order with the deli: Just hit "the usual" button to order your favorite chicken sandwich. The contraption will notify the shopper when it's ready to be picked up. Stop & Shop is about to roll the Buddy out chainwide. Other clever technologies will boost retailers' profit margins by encouraging customers to take on some of the work typically done by store workers. IBM Research has developed a special scale allowing shoppers to weigh their own produce & get a price printout, so they can move through checkout faster. Using 5 factors, including the products' color, size, & texture, the scale's camera is so precise it can differentiate between 2 different kinds of apples, which is something most produce managers struggle with. That's why in many stores different kinds of apples are typically sold at the same price. With this scale, retailers will be able to charge more for some kinds of produce. Better yet, the scale's software - the same one NASA uses to enhance space photos - can even identify fruit & veggies through plastic grocery bags. Self-checkouts, representing 5% of US cashier lines today, reduce staffing needs as well. Typically, such setups allow one worker to oversee 4 lines instead of one. As these are rolled out en masse in the next 2 years, they'll either reduce the total number of people hired or free workers to greet shoppers or demonstrate new products. Another area where technology can play a pivotal role is by reducing fraud & identity theft, which costs consumers billions annually. San Francisco's Pay-By-Touch has developed a fingerprint-based electronic wallet used at several Roundy's & Piggly Wiggly grocery stores. To sign up, customers scan a finger & swipe their debit & credit cards at an in-store kiosk. The next time they come to a cashier, their fingerprint reading will open a customized screen, with a list of their payment options. "We guarantee that no one else can be interpreted as being you," says Craig Ramsey, Pay-By-Touch. This technology reduces transaction time by 34%, allowing stores to handle more customers with fewer employees. However, the bulk of innovation will happen behind the scenes. Cuesol has developed a device the size of a cell phone that attaches to the front of shopping carts, pinpointing their exact location within a store. Then the carts all show up on a computerized map. If a manager sees scores of consumers heading to the pharmacy, staff can quickly be sent there to reduce lines. Cuesol will begin testing the system at select Stop & Shop stores in 3 months. The jobs of the rank-&-file will get easier, too. Microsoft is developing a location-based information database that workers can use to get answers to customer questions. If a shopper asks a salesperson in the TV section how to get cable service, the database might retrieve a local provider's number. But the same question, when asked by someone in an area selling various cables & hardware components, might generate an answer like "coaxial cable." "This will enable employees to get up to speed & become educated quicker," says Brian Scott, Microsoft. High tech won't solve everything. Much can be accomplished by simply making stores less cluttered & their layout more immersive - like the cosmetics sections in department stores, says Tom Gibbs, Intel. It's important to keep in mind that "people can only handle so much change. Retail technology is about to take a giant leap. & it promises to be a profound - & profitable - one for both retailers & consumers.



Allies? Not Likely

Five top companies ranked by percent of domestic deposits*



*Main component of deposit-cap formula. †On June 30, 2004
[1]Includes FleetBoston [2]Includes Bank One

Source: FDIC