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How vulnerable are campus card programs?

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Protecting our campus card programs from hackers

Zack Martin

Editor, AVISIAN Publications

It's difficult to say how often campus ID cards or campus card systems are hacked. There is no organization charged with tracking incidents and most university administrators would prefer such incidents aren't made public. And sometimes it is just plain hard to determine what to classify as a hack.

Most people would first think of what happened at Harvard. A student obtained ID numbers of high-level university officials and then created fraudulent IDs with the information encoded on the magnetic stripe.

Then there is the incident at Carleton University in Ottawa, Ontario. Here a student installed key logging software in a computer lab and was able to cobble together some student ID card information along with user names and passwords.

Both these hacks have a common thread … mag-stripe technology. The simple fact is for a few hundred bucks worth of equipment, it's relatively easy to duplicate the data on mag stripe ID cards.

That's not to say mag stripe doesn't have its applications. For payments it's still perfectly acceptable, otherwise you wouldn't seen every payment card in the U.S. with a mag stripe. If money is lost it can be recovered, so it is merely a business decision or risk evaluation.

The more problematic application, especially on campus, is for physical access control. If unauthorized individuals can gain access to dorms or other secure areas, the student population is at risk.

Many universities are looking to contactless smart cards to increase physical security, in part because they are more difficult to counterfeit. But in the current economic climate it's going to be difficult for universities to tear out legacy mag stripe access control and install new systems.

In the interim administrators should to be highly vigilant securing IT and campus card systems to make it as difficult as possible for hackers to clone mag-stripe IDs and use them to access facilities.

I joined Avisian a little more than a year ago and in that time I've been working hard to learn the campus card space. My background in identity solutions, biometrics and payments has helped, but I'm amazed at everything universities are able to do with cards. I look forward to covering the industry. Please let me know what you think of the magazine and what else you would like to see covered. I can be reached at zack@avisian.com and I look forward to meeting many of you at NACCU in Orlando.

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Hun School of Princeton launches CardSmith program

The Hun School of Princeton, an independent college preparatory school in Princeton, N.J., has partnered with CardSmith, Doylestown, Penn., to offer the 1Card for its 585 students, staff and parents.

The enhanced ID card includes Raider Cash, a prepaid spending account students can use to make purchases at the campus bookstore, dining hall, snack bar, concession stand, vending machines, laundry rooms and selected local businesses.

Parents and students can access Raider Cash accounts 24/7 from an online account center to view transactions, add value, establish automatic allowances, and more. Raider Cash also features the new Raider Rewards program that provides additional benefits for Raider Cash purchases at the campus bookstore.

"When we started looking at doing a card program, the objective was to streamline our bookstore processes and have better tracking for dining operations," said Richard Fleck, the school's CFO. "Once we got started, we saw the opportunity to make the campus virtually cashless and provide additional convenience and control for parents, students, and staff."

The Hun School, founded by mathematician John Gale Hun in 1914, is a co-educational day and boarding school, serving students from 16 states and 10 countries in grades six through post-graduate.

Georgia university offers new online system for football tickets

The University of Georgia in Athens is joining the ticketless revolution, at least where football is concerned. A new system enables workers at the stadium to scan a student's ID card, which will show whether he's paid for his ticket before-

hand. Scalpers won't have tickets to sell and it is expected that more students will be able to get into football games.

The new system was adopted earlier this week and comes after many students complained they only were able to get tickets to three of the games last year.

Aspen deciding on biometrics in schools

The Aspen, Colo. School District is holding meetings to determine whether or not they want to implement a fingerprint-recognition system for students in lunch programs in their schools, according to an Aspen Times article. The district has already purchased the hardware and run a successful pilot test of the program.

The system will not be required of all students and school district officials expect most parents will not opt out of the program as it allows them to more efficiently track their child's lunch account information. Even if a parent decides to opt out of the biometric system, however, the new program will still enable those parents to view their child's purchases and replenish their accounts online.

Three meetings have been scheduled to educate parents on biometrics and the program specifics in hopes of assuaging privacy concerns that have been seen surrounding other such systems in other areas of the country. Further easing parents worries are the words of Michael Trader, president of the provider of the systems M2SYS, who says that rather than using fingerprint images, the systems utilize a few random points on the finger converted into binary data keeping any stolen data from being usable to recreate fingerprint images.

The school district is hopeful that the new system will both be well accepted by the community as well as ease lunch lines and worries about losing payment cards.

Campus card systems meet social ticketing

Event Innovation Inc, a Washington, D.C. based enterprise software company for sports arenas, concerts, and performing arts theaters, has developed new technologies for collegiate sports and campus based activities. The company says its Campus Card System manager can manage student ticket requests, automate ticket lottery capabilities and assign tickets to students to eliminate paper tickets.

Through what the company calls "social ticketing," students, faculty and staff can also request a ticket for an upcoming game or event, transfer tickets to each other, transfer or donate tickets back to the ticketing system for reissuing to others and purchase concessions and merchandise at the event.

Event Innovation was founded by several executives from campus card provider Blackboard, including Stephen Gilfus, Event's CEO and a Blackboard founder, and Ron Dinwiddie COO, former product developer of the Blackboard Commerce Suite.

Event Innovation does not sell or transact tickets. The company partners with ticketing software companies to provide an extension to their current capabilities.

University of Minnesota introduces CBORD's centralized campus card solution

Students at the University of Minnesota, Minneapolis and St. Paul, can now utilize online account management as well as make payments for goods and services at more campus venues due to its implementation of campus card provider CBORD's Odyssey PCS solution.

Odyssey PCS allows the university's card office to develop and implement a more convenient declining balance program, known at the

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university as Gopher GOLD. Previously offline only, Gopher Gold is now accessible via the Web to provide account management for the university's 51,000 students and 22,000 faculty and staff members.

Additionally, the card office was able to partner with University Dining Services to have Gopher GOLD accepted at all of the school's 32 campus venues. It may also be used at 314 snack and beverage vending machines, 13 library-provided copy services, 60 computer labs for printing, 335 laundry machines in its 10 residence halls, and more.

"Odyssey PCS was our number-one choice as we moved forward in transitioning our Gopher GOLD program from an offline system to an online declining balance program," said Shirley Everson, director of the U Card Office.

Other recent expansions involving Ithaca, N.Y.-based CBORD technologies include upgrades of the Foodservice Suite and EventMaster PLUS! food service and catering management solutions that control costs and ensure quality in food and event management. The university is also implementing CBORD's Webfood online ordering system to provide students with another dining option.

Blackboard offers integrated security, commerce management to more schools

Washington-based campus card provider Blackboard Inc. says some 14 colleges, universities and K-12 institutions, have selected the Blackboard campus commerce and security management platform. These institutions have joined hundreds of others which have signed up for campus ID card technology, on- and off-campus payment solutions, facility access control and other security solutions.

Some of the organizations that have recently selected Blackboard include: Cushing Acad-

emy, a K-12 boarding school in Ashburnham, Mass.; Endicott College, Beverly, Mass.; Fort Lewis College, Durango, Colo.; Jones County Junior College, Ellisville, Miss.; Maine College of Art, Portland; New York Law School, New York City; Northwest Nazarene University, Nampa, Idaho; Phillips Academy, Andover, Grades 9-12 boarding school, Exeter, N.H.; Point Loma Nazarene University, San Diego, Calif.; Ringling School of Art and Design, Sarasota, Fla.; Shenandoah University, Winchester, Va.; Tecnologico de Monterrey, Monterrey, Mexico; University of Arizona, Tucson; and Wallace State Community College, Hanceville, Ala.

Coinless laundry, online payments added for Bucknell students

Bucknell University students are now able to track online the availability of campus washers and driers and pay for their use with BU IDs with the recent launch of a new coinless laundry system.

Expanding on a list of campus services that can be accessed or purchased using the Bucknell identification card, the Lewisburg, Penn. school is also introducing an online payment system that allows students and their families to make electronic payments to their billing accounts as well as add funds to both Campus Dollars and Dining Dollars.

The BU ID is a multipurpose card that may be used for a variety of campus services including library borrowing, bookstore purchases, dining, copying, entrance to athletics events, campus box office purchases and now laundry. The card also serves as personal identification and allows entry to residential and other campus buildings.

Using the card, students will be able to pay for laundry at any of the campus laundry facilities, saving the need for coins.

The new service includes LaundryView, a Web

site that displays the status of every laundry machine on campus. The system shows the amount of time remaining in the cycle for machines that are in use and allows students to reserve machines and receive text-message alerts when they become available.

The new Campus Dollars is a prepaid flexible spending account that serves as an alternative to cash or checks. These dollars may be used for dining, laundry and other campus purchases. Students may add Campus Dollars to their accounts using the online payment system or with cash or check.

Heartland CEO calls for industry cooperation to fight cyber criminals

In light of the recent security breach reported by Heartland Payment Systems, its CEO has called for more "information sharing" among payments companies and others. "I have talked to many payments leaders who are also concerned about the increasing success and frequency of cyber crime attacks," Robert Carr, Heartland's founder, noted.

"Up to this point, there has been no information sharing, thus empowering cyber criminals to use the same or slightly modified techniques over and over again. I believe that had we known the details about previous intrusions, we might have found and prevented the problem we learned of last week," he added.

He said Heartland's goal is to turn this event into something positive for the public, the financial institutions which issue credit/debit cards and payments processors.

Heartland learned it was the victim of a security breach within its processing system in 2008. The company believes the intrusion has been contained and that its campus solutions, including its Give Something Back Network, were not affected. No confidential merchant

data, Social Security numbers, unencrypted personal identification numbers, addresses or telephone numbers were retrieved in what is believed to be a global cyber-fraud operation. Heartland does not yet know how many card numbers were obtained.

"Just as the Tylenol crisis engendered a whole new packaging standard, our aspiration is to use this recent breach incident to help the payments industry find ways to protect its data - and therefore businesses and consumers - much more effectively," Carr said.

For the past year, he has advocated industry adoption of end-to-end encryption, which protects data at rest as well as data in motion, as an improved and safer standard of payments security. While he believes this technology does not wholly exist on any payments platform today, Heartland has been working to develop this solution and is committed to deploying it as quickly as possible.

UK community college to trial new biometrics
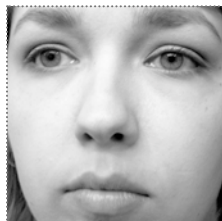
St. Neots Community College, located in Cambridgeshire, UK, has had a new facial scanning system installed for a trial-run attendance tracker, according to a BBC News article. As opposed to their previous, manual system, the new system has students punch in a PIN and have infrared photographs taken of their face to be compared to the encrypted stored sample.

Despite measures the school officials have taken in securing and protecting the data, some are speaking up saying that unless the school has the same level of security of their data as a passport office, there is not enough protection for the data to be considered safe. However, school officials insist that their data is encrypted, and otherwise secured at the same standard as other similar systems. Additionally, they hold that the grainy nature of an infrared photograph would do an identity thief little to

no good even if he were able to breach their system.

Student privacy rules tackle changes in technology

New student privacy regulations issued by the U.S. Department of Education enable universities to use ID numbers, but not Social Security numbers, in student directories as long as they can't be used to access education records without another form of authentication, such as a password.

In one proposal, regulators wanted to treat ID numbers like SSNs, but that would have meant expensive retrofitting by many universities and that idea was later scrapped. The Chronicle of Higher Education notes that campus officials still need to make sure that student records, such as grades, aren't posted just by student ID number.

The new regulations also give schools room to figure out how they can best protect a student's information.

Bowdoin's new one card system aims to improve security

Bowdoin College students and faculty are using a new ID card expected to increase on-campus security. The Brunswick, Maine school is in the process of converting to a new one-card system from campus card provider CBORD.

The new card will serve as both the students' ID card and key card, allowing them to access buildings and dorm rooms. It will also allow the online transfer of funds for use in laundry facilities, vending machines and cafeteria services.

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"The one card system allows us to monitor and control access to various buildings and modify privileges on an as-needed basis from our communication center," said one school administrator.

Connect by Hertz drives on to university campuses

Car rental company Hertz has joined the car sharing craze with Connect by Hertz, which has already signed up two college campuses, Ohio State University, Columbus, and Pepperdine University near Los Angeles. Approximately 10 cars will be placed on the campuses to provide students, faculty and staff an environmental alternative to car ownership.

The cars are available to drivers 18 and older with gas, maintenance, insurance and parking included in the hourly rate.

University members will be able to join Connect by Hertz for free with rates starting at $8 per hour. All Connect by Hertz members will have access to cars in all Connect by Hertz locales, including New York, London and Paris. Upon enrolling, members receive a smart chip enabled Connect card, which gives them keyless entry to any car in the fleet that the member reserves.

Upon making a reservation, each member receives an email confirmation as well as a text message indicating the reserved car's license plate and location. To unlock and engage the vehicle, a member swipes his membership card over the car's RFID reader.

Gemalto provides ID, payment cards for Brazil's Santander Universities Group
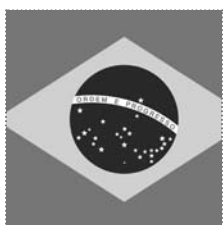
Digital security provider Gemalto is supplying the Banco Santander Universities Group, which currently partners with 700 universities around the world, with multi-functional contactless campus ID cards that can be used as a debit card while controlling access to university buildings.

It is Brazil's first multi-functional smart card for universities combining EMV payment and contactless access control on a single ID card.

Students at Sao Paulo's Anhanguera University will be the first to use the card for secure payment, access to campus buildings, and more. Gemalto personalizes each card at its center in São Paulo, then delivers the cards to the universities.

The Gemalto card can be used for a variety of other services and applications. For instance, students have the option to use their card as a Banco Santander EMV debit card, benefiting from the ongoing EMV migration in Brazil.

The University of Campinas, also known as Unicamp in São Paulo, was the first to join in the Santander University program with cards for the EMV payment functionality. Anhanguera will be the first to use the new multi-functional card. Santander University Division has already started distributing the cards to school's Valinhos, São Paulo campus.

The bank expected that more than 100,000 students would have the Gemalto-produced cards by the end of 2008. At Anhanguera University, the contactless card can also be used in libraries and labs. Students can use the card to check out books and to pay at their cafeteria.

PNC signs new five-year contract with Duquesne

Duquesne University, Pittsburgh, has renewed its contract with PNC Bank, extending the contract first established in 1996 for another five years. This banking relationship provides more than 10,000 students, faculty and staff with a variety of PNC resources, including mobile banking and a customized co-branded Web site.

Duquesne students and faculty who are customers of the Pittsburgh-based bank, can also register for free PNC AutoAlerts to moni-

tor spending and account balances. They can receive one free incoming wire transfer per monthly statement cycle and one free courtesy overdraft fee waiver during the 12 months after account opening.

Students, faculty and staff also have the option to link their Duquesne University identification card to their PNC accounts, adding ATM and purchasing functionality to the card. The ID is primarily used for daily campus-related purposes such as entering residence halls, checking out library books and accessing meal plans. The co-branded PNC Bank Visa Check Card, which includes an image of the campus fountain, can be used at ATMs and to make purchases anywhere Visa is accepted.

PNC also provides an electronic customer service center in the Student Union, that features an on-site customer service representative.

Economy forces university to delay campus card upgrade
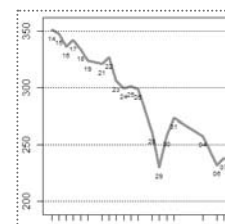
The economy and timing issues have forced George Washington University, Washington, D.C. to postpone implementation of its revamped card program that would bring it into the contactless world.

Dubbed Gworld 2.0, the system was to be fully operational by the fall of 2009, but that's been pushed back a year. Students would have started seeing changes as early as this spring if the plan continued on schedule.

The new cards are to include a tap-and-enter system, rather than the swiping system for access into buildings and residence halls. Focus groups recommended that the new card include a Metro payment option as well as other features that will be phased in after the new program's establishment. The multi-million dollar project involves replacing more than a thousand card readers.

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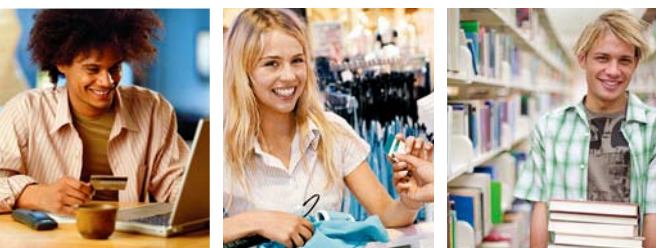
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Hackers on campus

Who's doing it and what's being done to prevent it?

Zack Martin
Editor, AVISIAN Publications

Hacking ... The image it conjures for most is that of a young man in a dark room lit by nothing more than the glow of a computer monitor, trying to break into some top-secret government system or steal credit card numbers.

On college campuses hacking can mean a number of different things and threats can come from students as well as outsiders. Hackers attack university databases and systems but they also are targeting the student ID card.

Several high-profile incidents have hit close to home with the campus card community, but securing cards isn't enough. Universities need to secure payment and IT networks as well or risk data falling into the hands of hackers.

What happened at Harvard is just about a campus card director's worst nightmare. In July 2008 a Harvard undergraduate student was caught making fake Harvard University ID cards. Not just any cards, but du-plicate cards of those belonging to the University President Drew G. Faust, Assistant Dean of the College Paul J. McLoughlin II, and Dunster House Superintendent H. Joseph O'Connor, according to the *Harvard Crimson*.

The student was able to replicate the magnetic stripe on the back of the card and gain access to buildings and gates across campus with only knowledge of the individuals' university ID numbers and a $200 card reader purchased on eBay. He was also able to make purchases using the individuals' Crimson Cash accounts, which are used to pay for items on and off campus.

The hack was the impetus for Harvard to launch new IDs for the students, faculty and staff in the Faculty of Arts and Science. The university rolled out iClass contactless smart cards from HID Global for physical access to facilities. The new card has two magnetic stripes on the back that are used for payments and other functions.

Mag stripe has its uses

At George Washington University in Washington DC, Ken Pimentel's biggest fear is someone copying the mag stripe on the card and using it to gain access to a dorm or somewhere else they should not go. "There's nothing wrong with mag stripe at the point of sale," says Pimentel, director of the university's GWorld Card Program.

He admits that they have experienced unauthorized people using accounts to pay for items on campus, but says, "someone can steal some money and we can get it back, but it's much more dangerous when they can get into a door."

Securing access control is Pimentel's main concern. He would like to switch to a contactless smart card for access control but says it's too costly in the current environment. "I've been telling [university officials] that we need to get away from mag stripe because it's vulnerable," he says.

Replicating a mag stripe can be easy with the right equipment, says Pimentel. But universities also need to be sure to secure all the back end physical access control equipment as well. The reader, door controller and wiring all need to be secured so nobody can skim numbers from the devices. George Washington University has 44,000 active cardholders and more than 475 access control readers across its campus, Pimentel says.

Protecting the wiring for physical access control system is important. "People can get access to the readers and watch the communication," he says. George Washington runs all the wiring for the system in conduit to prevent unauthorized access.

Protecting the network and the computers

Servers also need to be secured, Pimentel says. With hundreds of devices in the field you need to be able to tell when something may be going wrong or someone may be trying to gain access to the campus

The incidents at Harvard, Carleton, and NYU are each very different in nature. This highlights the wide range of potential vulnerabilities that exist in campus card systems. The following chart lists a number of these threats though there are many other areas that require vigilance from campus card administrators.

Credential threats
- Create duplicate, valid ID cards and use them for access or payments
  - Using campus card office's own issuance equipment
  - Using other issuance equipment
- Obtain valid ID card under a false identity

Data threats
- Steal data from the card program's internal systems (e.g. personal data on cardholders)
- Intercept data in transit between card system and peripheral or external systems
- Obtain access to email containing one or multiple sets or subsets of cardholder data
- Access stored credit and debit card information from revalue systems either online or offline
- Steal computer equipment that holds cardholder data

Infrastructure threats
- Hack card readers to gain access without proper ID or obtain products without proper payment authorization
- Sniff lines to intercept data between reader and system

card system. "You need to follow three tenets: authenticate, authorize and account," he says.

To gain access to George Washington's system employees have two-factor authentication using an RSA token, Pimentel says. The firewall used to protect the system has to be different than the typical ones too. "You need a next generation firewall that sees the requests, knows they don't look right and sends notification," he says. "You just can't sit there and be passive."

But the biggest security intrusion is theft, Pimentel adds. Someone steals a laptop or hard drive and takes off with the information. At George Washington the entire hard drive has to be encrypted so that if it falls into the wrong hands it would be worthless.

The Carleton case

Carleton University's card program was the victim of a hacker, sort of, says Kathleen Kelly, campus card coordinator at the Ottawa, Ontario university.

"I would use the term 'hacked' loosely," says Kelly, also president and chair of the Corporate Relations Committee at the National Association of Campus Card Users. The student was able to access students' personal information, but he didn't break into the campus card system.

The incident occurred in the university's computer lab where print stations are equipped with magnetic stripe readers. When a student prints a job he goes to the station, logs-in with user ID and password and swipes his ID to authorize the job to print.

The hacker did two separate things to gain the student's personal information. He installed key logging software on a computer in the lab to capture user names and passwords as they were typed. He also installed another program on the print station to record information from the magnetic stripe of the student IDs, Kelly says.

He then took these separate pieces of information and was able to match the student's ID card information with the user name and password, Kelly says.

After collecting the student information he sent a report to university officials and the student newspaper with the names and data of the 32 students whose information he collected, Kelly says. Nothing illicit was done with the stolen student information.

The student hacker sent the information to university officials under a false name, according to news reports. From the information, university officials were able to backtrack to figure out what the students had in common and where the data had been obtained.

He was charged with mischief to data and unauthorized use of a computer. The penalties for the charges range from fines to jail time. The student voluntarily left Carleton.

Though the student did not use the information in a malicious manner, the question of what could have been done remains. The mag stripe on the campus card can be used to pay for laundry, printing and small purchases at the university, Kelly says. There is a $12 daily spend limit on the card for vending machine or unattended purchases. The card is also used for physical access to two of the residence halls. A PIN is not required for either the payment or access transactions.

If the student had created fake cards using the information, he potentially could have gained access to the secured dormitories or made purchases with the stolen accounts. The usernames and passwords obtained could potentially enable access to email accounts or campus services.

The 32 students impacted had new cards issued and had to change their user names and passwords, Kelly says. Also, because of the incident the university has locked down all print stations, preventing new software from being installed on the machines.

The university also plans to move to HID's iClass contactless smart card for physical access control Kelly says.

Fraud and social engineering also pose threats to campus card programs

Christopher Haley, vice president of product development at CBORD, says many campuses would like to upgrade physical access control systems, but the economy is making it difficult.

While there may be high-tech fixes to prevent hacking, university employees also need to be prepared to battle good old fashion social engineering and face-to-face fraud, Haley says.

New York University's card program has had some issues with individuals trying to pass bad checks, says Ann Marie Powell, director of NYU Card Services. The university has different summer programs where non-students stay on campus, use IDs and load value on to the card to pay for items around campus.

In one instance NYU caught a man who had passed bad checks at other campuses before NYU and had already registered at another New York area university when he was arrested by the New York Police Department, Powell says.

NYU was able to catch the fraudster because it had the proper procedures in place, Powell says, adding that a university needs to make sure the check clears before the funds are placed in the campus card account for use.

Hacking and fraud can take on many different aspects on the college campus. Universities need to be prepared to do battle online as well as in the real world. Campus card administrators must step up and make sure their systems are prepared for the myriad of dangers that can threaten systems on a regular basis.

Policy and procedure manual a necessity for campus card offices

Does your campus card office really need a policy and procedures manual to be effective? Absolutely, if for no other reason than to cover your back when you're on vacation or sick, says Kristy Vienne, director of the Bearkat One Card Services at Sam Houston State University, Huntsville, Tex.

"You can get by without one, but if you leave or get promoted, you don't want to rely on word of mouth to continue programs and services you started," Vienne told a NACCU webinar audience in late October.

A number of campus card offices run on a day-to-day basis without a formal policy and procedure manual, but it's not recommended. It can lead to dangerous situations, "and locks us into a 'we've always done it that way' philosophy," says Vienne. "At one time there may have been a good reason (something) was done that way, but it may not be the best way now."

A policy and procedure manual can help a campus card office provide a consistent service regardless of the personnel in the office. And if policies and procedures are detailed in writing, "it prevents you from getting into a grey area, which can be dangerous, especially when dealing with students," Vienne says.

Such a manual also documents who is responsible for implementing and enforcing a particular policy. For example, who's responsible for daily activities, such as deposits, or emails? And who is that person's backup?

A manual can also provide documentation to show changes in policies and procedures, fee changes, hours of operation and a source of information if the correct personnel are not available.

Policies vs. procedures

"A policy outlines the overall rules and the reason and purpose of the program or service," Vienne says. "A procedure shows you how you do it. That includes who is responsible for each part of the process and instructions on how to successfully deliver the process in a step-by-step guide."

"In theory, someone should be able to pick up your manual and know how to complete the procedure without assistance," she adds. In fact, that's a good way to find out if your explanation of the procedure is detailed enough. "Test it, give it to someone who's never done it and let them try to do it without help from you. That way you can find missing steps."

A policy and procedures manual isn't something you're going to sit down and dash out in a day, a week or even a month. It could take six months or more to finish. But it will be well worth the effort and could avoid that telephone call interrupting your vacation because someone doesn't know how to issue a campus card.

Wireless door locks provide safety and relief at Mount Holyoke College

Wired locks were proving difficult at Mount Holyoke College in South Hadley, Mass. Because of this the college turned to wireless doors both to provide more security for its 2,100 female students, and to give some administrative relief to campus personnel.

The college's previous encounter with wired doors hadn't gone well, says Douglas Vanderpoel, director of the college's Auxiliary Services. They wanted to enable students to access their dorms by swiping their magnetic stripe student ID card.

"We had experience with wired locksets, and it was quite the fiasco to coordinate the wired doors," Vanderpoel says. "We had done a science center with about 100 wired doors and it was a nightmare, the whole coordination piece."

A wired installation often involves numerous tradesmen to get set up and maintain. For example, an electrician is responsible for the conduit for the wire, the communications person pulls the wire, the carpenter hangs the door, the locksmith installs the lock and the low voltage technician connects everything.

Vanderpoel cites other examples of problems the wired doors produced, for example doors not closing correctly and having to be hung again which led to electrical wiring being cut. He adds that all of this could have been avoided with better communication and coordination. Also, and more importantly, these problems wouldn't have existed with wireless locks.

The college had tested offline locks before. "But we had issues with those as far as updating in a timely manner," says Vanderpoel.

"We really wanted to go with the added security of card access on the doors."

So the school turned its campus card provider: Heartland Campus Solutions.

Long time General Meters customer

The college has been a General Meters customer since 1998 and continued with them following the acquisition of General Meters by Heartland Payment Systems in 2007.

It made sense to go with lockset provider Ingersoll Rand since Mount Holyoke had been beta testing the wireless devices for Heartland, says Vanderpoel.

One of the beauties of this system, says Vanderpoel, is that it's vendor neutral. "I'm not married to someone by using the Ingersoll Rand product because it works on multiple systems, whereas in the old days you were kind of married to whomever you chose."

The wireless locks went into the school's new 172-bed dormitory, which opened last fall and includes both wired exterior doors and wireless

Mount Holyoke College, a 171-year-old school for women, is located 90-minutes west of Boston. The school was originally founded in 1837 as Mount Holyoke Female Seminary and gets its name from Mount Holyoke, the western most peak of the nearby Holyoke range in the Connecticut River valley of Western Mass.

Photo: Michael Malyszko, Mount Holyoke

interior door locks. It was a good test site because it was the school's largest install in a single building, says Fred Emery, vice president and general manager of Heartland Campus Solutions.

Multi-swipe entry method

The new dorm features single rooms, doubles and suites. With the suites, students actually have to swipe three times to get into their bedrooms–once to enter the dorm, again to enter the suite and a third time for the bedroom.

"Students were reluctant to always have the door locked so Heartland helped us with a function called key mode, where students can set the card up to work like a key," says Vanderpoel. "Normally, you swipe the card once to unlock the door and swipe it again to lock the door." Students also wanted to be able to lock the door from inside where there's no reader. So Heartland came up with another solution that allows the student to press the handle three times on the inside within five seconds. It will then lock, says Vanderpoel.

But the new dorm isn't the only campus building now with wireless locks. "We have wireless in our office areas and other areas that are difficult to get to with wire, such as the main door of a building and a couple of exterior doors," says Vanderpoel. There are currently about 268 wireless doors and 200-wired doors.

Despite the college's small size, it has 20 dormitories spread across the campus's 800 acres. "We have as many dorms as some of the bigger schools," says Vanderpoel. In addition, a new dorm renovation is underway that will open for the second semester with 60 wireless locks.

"Our thought when we built the new dorm was that it would be the standard for all of our other dorms," says Vanderpoel. "The rest will eventually have wireless access, but those renovations will occur over a period of years."

Photo: Douglas Vanderpoel, Mount Holyoke

In addition to students, the college's 1,000 faculty and staff also have campus cards that can access doors to which they've been given permission to enter.

How the system works

The door controllers are manufactured by Heartland. "We've configured our technology so we can control 32 doors from a single controller," says Emery. "Usually you can manage up to 16 doors with a single wireless controller, but now we've doubled that, bringing costs down for our clients."

In addition, just one computer system is needed to keep tabs on all the doors, just like any wired access door, says Vanderpoel. The doors are updated every 10 minutes and every time you use it too, he adds.

The multi-door controller is attached to a battery-operated transmitter that communicates wirelessly with the door lock. "We are connecting to the database in real time. Nothing is stored on the card. The lock reader will send to the transmitter which, through the controller, will check with the database to see if that person has rights to get into that door."

The locks work in the 900 MHZ range, rather than the normal 2.4 MHZ normally associated with WiFi. "It's called a spread spectrum system. It encrypts but also helps with any interference. It can transmit on one frequency and receive on another," says Vanderpoel. "It also allows for it to transmit through walls easier."

The student's mag stripe card, once swiped, "is read and sent to the server and the server comes back with a pass or fail," he says.

No power? No problem.

If network connection is lost, such as if the power goes out, the lock and controller can store local information, says Emery. In addition, the cards can be checked against a local list until the network connection is regained.

All the exterior doors in the new dorm are wired because they will handle more people and have more functionality than a wireless door. "An offline wired door can hold 3,000 accounts, while a wireless door (suitable for a dorm's interior rooms) can only hold 20 accounts," says Vanderpoel.

The college also has video surveillance tied to the doors. "When alarms go off, we can pull up video feeds in that area," Vanderpoel adds. "We also have door ajar alarms but they're not set to go off that quickly."

Besides ingress and egress, the Mount Holyoke magnetic stripe card can be used in vending, laundry and meal plans as well as at 10 to 12 off-campus merchants, says Vanderpoel. "We're probably at a limit with our off campus program. The next step is to let Heartland handle it with its Give Something Back Network."

What's next for Mount Holyoke? "Doug really pushes the envelope of the system," says Emery. "He's constantly seeking new ways to use the card system and giving us ideas."

Alabama's Crimson Tide distributes student football tickets online with help of Blackboard

Distributing football tickets equitably to students has often been an exercise in frustration, particularly if there aren't enough tickets to go around. This is often the case at schools where football reigns supreme or when football teams consistently have winning records. Both scenarios are true for one of the Southeastern Conference's powerhouses, the University of Alabama in Tuscaloosa.

But the ticketing process became far easier for both students and university personnel last fall when the campus rolled out a new program called "My Football Ticket." Simply put, the new solution enables students to manage their football ticket account online. Actually, "ticket" in this case is a misnomer because a physical ticket is no longer required for entry to the games.

Since Paul "Bear" Bryant made football an institution when he began coaching there 50 years ago, Alabama has never had trouble selling out the stadium. But for students that has meant long lines. And when you have a team that went undefeated during the regular 2008 season and was ranked Number One for the last several weeks of the year, the ticket problem is compounded.

The idea for My Football Ticket originated in the Student Government Association, says Jeanine Brooks, director of the University's Action Card. Previously, she explains, students bought their reduced fee ticket packages, but they still needed a physical ticket and their ID card swiped to enter the stadium because only students were allowed to use a student ticket.

"The SGA wanted a more efficient way to get students in the stadium and they preferred not to have to deal with paper tickets," she says.

After the idea first surfaced, university officials met to decide how to implement it. "We looked at developing an in-house system, but then decided the Web site was better," says Susan Hunter, director of Enterprise Development and Application Support at the university's Office of Technology Information.

"Students are used to going to our site to check their balances and transactions. We just had to add another tab. Blackboard developed that piece because it was a custom application. Students are looking for self service, 365 days a year, 24/7," says Hunter. The university requested the program in February 2008 and had it back in June.

"The university came to us in early summer," recalls Dan Gretz, senior marketing director for Blackboard, which services some 450 colleges, including the University of Alabama. "We thought it was an interesting case, because it's really a good example of how schools can use Blackboard's existing technology."

"I was absolutely amazed at how the students adapted," says Brooks. "I thought our office would be swamped with questions, but we opened the system up and still went home at 5 o'clock. But it took lot of work behind the scenes."

The most visible addition was the new tab on the school's Web interface. "The front-end required some customization but the back-end works with existing technology," Brooks says.

The back-end involves assignment of privileges. "Within our software, schools are able to assign certain privileges to a cardholder's account. A privilege can be a meal plan or access to a building," says Gretz. "In terms of My Football Ticket, you have a privilege set for each game that you have a ticket for, and that grants you access to that game."

Besides student convenience, there was another reason the school wanted a different way to manage the tickets. It all boiled down to numbers. The university enrollment has jumped from 19,000 to 27,000 in about five years. The stadium seats 91,000 fans and is sold out every game.

"We have 15,000 student seats for those 27,000 students," says Brooks. "There has been some history of students selling tickets online for a higher price or selling whole ticket packs online at one of the auction sites."

Even non-students could buy these tickets, then upgrade them for a regular admission ticket by paying the difference.

Now, with My Football Ticket, each spring the university announces to the students that football student ticket packages are for sale. "It's first come, first serve," says Brooks. "They go online and purchase student packages and the athletics department supplies this data to Action Card."

After that, if the student intends to go to the game, he doesn't have to do anything but show up and swipe his card. "Before we were having to tear a ticket and swipe the card. Readers are fast but we still have to examine the picture on the card," says Brooks. "The new ticketless system has really expedited entrance to the game."

It has also stopped non-students from attempting to use a student ticket at the gate, she adds.

Enabling ticket sharing or donating

Another feature the SGA wanted for students was the flexibility to make last minute redistribution. For example, if a student decided they couldn't go to the game, the ticket could be transferred to another eligible student.

The student has two ways to do it. He can assign his ticket to another eligible student or he can donate it to a wait list pool. The university encourages this offering prizes such as $100 scholarships, tickets to bowl games or Bama Cash that are awarded based on a random drawing.

Students who don't have tickets apply to be on a wait list, which opens at 6 a.m. the Sunday following a game. The donated tickets are assigned, again on a first come basis, and students are issued an email receipt. If students fail to check their email to see if they've won the ticket, they lose it. Since the university has no way of knowing this, the seat could go empty, "but we have not really seen this," says Brooks.

A student transfers his ticket to another student by giving his first name, last name and email address. No numbers are exchanged between students, says Brooks. However, there is one problem, she noted. Names have to match exactly. First letters of each name on the Action Card are capitalized. Thanks to the popularity of texting, many students have picked up some bad habits, even in their emails, and use all lower case letters.

Donated tickets started slowly but grew each game as word about this capability got around.

The hardest ticket to get is for the Crimson Tide's annual battle with rival Auburn. Students who donated tickets for that game were eligible for the biggest prize, two tickets to the Sugar Bowl in Louisiana. "We had 598 donated tickets for that game," says Brooks.

Last football season, students still had to swipe a reader to request a ticket to the SEC championship and bowl games. The university had 10,000 requests for between 1,200 and 1,300 tickets, says Brooks. "Next year, we would like to move the request reader swipe to an online request via My Football Ticket."

As of mid-January there had been 130,063 hits at the My Football Ticket site, 14,677 transferred tickets and 3,677 eligible students who received a donated ticket after placing their name on the waiting list, says Brooks.

This new system probably won't extend to other sports. The only one that might benefit is basketball, but it hasn't been a problem yet, says Brooks. "At Other NCAA athletic events, you just swipe your card for admission."

My Football Ticket has already received at least one honor. "We won the NACAS (National Association of College Auxiliary Services) Collaboration award because the system involved Action Card, SGA, the university's IT department, student affairs, the athletics department and Blackboard. All had to work together to make this happen," says Brooks.

While it's only being done at Alabama now, "It is certainly a functionality that could be repeated elsewhere. We have had some interest from other schools," says Gretz.

"This solution serves multiple needs," he adds. "It's primarily about operating more efficiently. Not having to issue paper tickets makes the whole process more cost effective."

It also increases student service, Gretz notes. Schools are looking for these types of student services and the student feedback has been very positive.

Quiet war being waged on JSA patent

Andy Williams

Associate Editor, AVISIAN Publications

Had that simple little piece of plastic that students use to identify themselves remained just that, a student ID card, there probably would have been no war. But the moment universities or card providers decided to let parents or students use the Web to place money into student accounts, the battle was on for the soul of that plastic card.

As David Johnson, president and founder of JSA Technologies said in a 2004 interview: "If there's no way to put money on a card, what good is it?"

That is the core of the battle being fought. The card has become a valuable asset. The only issue now is who owns the technology that makes that card so valuable?

JSA would say it does and, so far, no one has stepped forward to publically dispute that claim.

At the heart of the matter is U.S. patent number, 6,963,857 that was issued about four years ago, although it was first applied for in 1998. The patent is owned by JSA and in its simplest form covers the account to account transfer of funds between networks via the Internet. That would seem to cover most campus card programs that use the Web to reload money to student accounts from other bank accounts.

When the patent was first awarded, it sent ripples throughout the campus card industry and it continues to do so today. The subject matter is so controversial that no one, even those who have signed JSA's patent agreement, would

discuss it on record with CR80News. JSA is the only one talking.

JSA stands for Johnson, Sloane and Associates, although there is no "Sloane." The "J" of course is for its president David Johnson. During an interview with CR80News five years ago, Johnson explained that when he went to incorporate, Johnson and Associates was already taken, so he pulled a name from the phone book.

Jim Doyle, JSA's vice president of operations, describes the organization as a virtual company. "All our employees work out of their homes."

The company's flagship product, which it will license to anyone who wants to use it, primari-
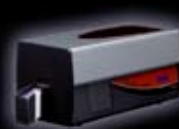
JSA patent timeline

July 12, 1999

David Johnson and JSA Technologies files patent for "Network-accessible account system"

November 8, 2005

U.S. Patent No. 6,963,857 is issued to JSA Technologies

April 16, 2008

CBORD announces license agreement

September 24, 2008

JSA files patent infringement case against Informed Decisions Corporation

December 8, 2008

CardSmith announces license agreement

January 13, 2009

Article One Partners names the JSA patent to its $50,000 prior art search

ly universities, is called StudentLink. "It is nothing more than the ability for a parent to give a son or daughter money at college," says Doyle. "If you go on the Internet and go to your bank account and you're in Florida and your son is in Ohio and you want to send money to the Ohio State Card, you'd be going through JSA. It's the ability to reach into your bank account or your credit card account and grab cash and send it to a university card. That's what we hold the patent on," he says.

JSA started the patent process in 1998, and this also appears to be about the same time that some colleges and universities began developing in-house systems. If a college can prove it had a system in place prior to JSA's patent no fee has to be paid, suggests Doyle. That's known as "prior art," but so far, he says, no one has stepped forward with such evidence.

Prior art is a key term in patent law. It constitutes information that has been made available to the public in any form before a given date that might be relevant to a patent's claims of originality. If an invention has been described in prior art, a patent on that invention is not valid.

If prior art exists, it would invalidate the entire patent and not just excuse the possessor of that art from liability under the patent. In the U.S. prior art that can be documented one-year prior to the patent's filing date is typically considered acceptable as a one-year "grace period" is granted to acknowledge the likelihood that a patent application is typically not filed on the day of its conception.

"A lot of work has been put into developing this system," says Doyle. "Our very first customer was Harvard which wanted to do this. Everyone said no one would ever want to send money over the Internet but once we developed the software, it caught on like wild fire. We've transferred more than a half billion dollars in the last 10 years, and we're tracking to do $300,000,000, in 2008."

He emphasizes that JSA's patent isn't on StudentLink. That's just a brand name. "Our patent is on the technical way we transfer the money. If I wanted to put money on my Target card," adds Doyle, "that's covered by the patent."

Doyle would not name companies who have signed up for a patent license or others the company has tar-

geted as possible patent violators. He says that fewer than a hundred companies have so far been granted a patent license.

How does a university or campus card supplier find itself in violation? Most of the time, it's simply not being aware of JSA's patent, says Doyle. "What happens, you will have a university with a strong IT department which says 'why don't we do a campus card program?' They do the parking, laundry, prepare an Internet site where parents can install money, but they didn't do due diligence. They get the site up and running and people like myself send them a letter. We find that 99% of the time they didn't know a patent existed. If they're apologetic, and most are, they can continue with their program and we come to terms with them for a royalty fee," says Doyle.

The other option is for the university to discontinue its current program and "move right to the StudentLink program on which we charge a fair fee," he adds.

Letter from JSA to NACCU members

When JSA first started to send out letters to universities alleging patent violations, it created quite a stir in the campus card industry, so much so that JSA's president posted an open letter on the NACCU Web site in 2006 explaining what JSA was trying to accomplish.

"Recently JSA Technologies contacted numerous private companies and several institutions of higher education regarding the licensing of a patent invented and commercialized by our company," read the letter.

"(JSA)...has spent considerable time and resources developing and commercializing its patented software. The patent was obtained to protect the business and intellectual property rights of JSA Technologies. Without the patent, companies with greater capital resources could use our invention for their financial gain and attempt to drive JSA Technologies out of business. That is why we sent communications to college and universities who have developed solutions that may infringe upon the patent. We want to grant them licenses to our patent so they may continue their operations," the letter goes on.

Finally, the letter points out that JSA Technologies developed "our unique WebVTS (short for

Web Value Transfer Service), StudentLink and MerchantLink products" to address the needs of the campus and business communities.

"If JSA cannot meet the business requirements of a given college or university, we do not want to prohibit the institution from finding a solution that does. If, however, the solution uses our patented technology, we will request an appropriate licensing agreement."

That letter and JSA's subsequent requests for patent licenses from affected universities or campus card providers has apparently had the desired effect, although Doyle will not say who or how many have signed up.

"We've never gone all the way to court," says Doyle. "A patent litigation will run between $500,000 and $2 million. It's not worth spending this kind of money. We've not yet been fully challenged, but I believe we will this year for the first time." But again, he won't divulge names or potential litigants.

CR80News identified three lawsuits that JSA has filed against various companies alleging patent infringement. None of the legal actions made it to court because the parties apparently settled out of court.

Boston, Mass.-based Informed Decisions Corp., which operates CASHNet that assists universities, colleges, and community colleges in payments processing, settled out of court, says Doyle.

However, this is the patent suit named by Article One Partners, a prior art search company that is offering a cash bounty to anyone producing proof that a system similar to that patented by JSA was in use prior to the company's initial patent application date.

Data Futures based in Harlan, Ky., also settled. The company develops software that provides food service and transportation management for school systems, as well as client management software for providers of healthcare to use on home visits.

The third suit involved campus card system provider, The CBORD Group. According to the release CBORD put out last year announcing the settlement, "The license applies to existing and new CBORD Web-deposit customers in all markets for which CBORD currently provides this capability. The patent license agreement
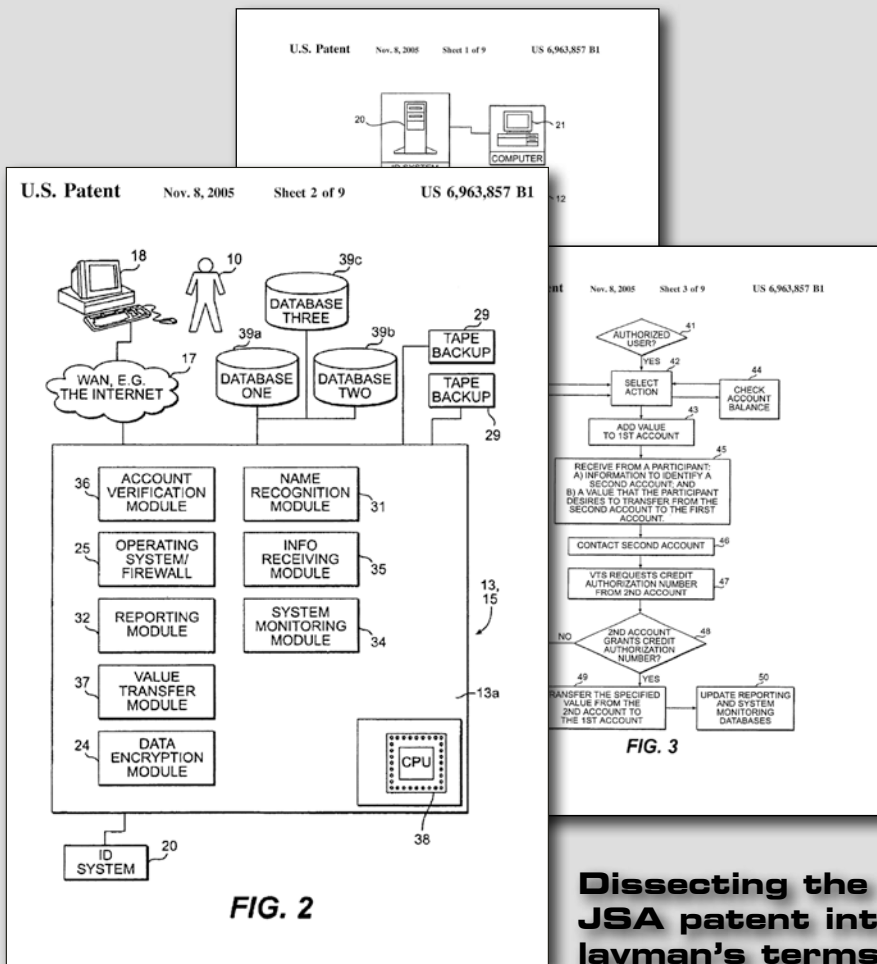
Dissecting the JSA patent into layman's terms

We have done our best to translate the morass of 'patent-speak' into language that the average non-attorney can understand. The following translation is from the abstract of the JSA patent.

Actual language: The present invention is directed to methods of, and systems for, allowing an account participant to add value via a wide-area network to a first account from a second account. A first account server coupled to a wide-area network supports the first account. In a preferred embodiment the wide-area-network-accessible value transfer station (VTS) includes a central processing unit for executing instructions, and a memory unit. The memory unit includes an operating system, software for receiving from a participant via the network a) second account identification information, and b) a value that the participant desires to transfer to the first account from the second account, second account verification software for receiving the second account identification number from said receiving software and for verifying that the second account authorizes the transfer of the specified value, and value transfer software for receiving a value from the receiving software, for receiving a verification from the verification software, and for transferring the specified value to the first account from the second account if the verification is received.

Translation: The patent is for a system that enables an account holder to transfer funds (or value) from one account to another account via the Internet (or wide area network). The first account operates on a specific network. A value transfer station (VTS) is a computer or similar device with connectivity to that network. The VTS runs software to accept (for the account holder) a second account number and a dollar (or value) amount to be transferred into the first account. The software also (1) verifies that the second account authorizes the transfer (e.g. that sufficient funds or credit are available), (2) receives the electronic transfer of the funds, and (3) adds that value into the second account.

applies to all Web-deposit features in CBORD products, including, but not limited to, ManageMyID, NetCardManager, WebCard Center, and UGryd. All existing customers of any CBORD-provided web-deposit product are covered by this license. Existing customers of a CBORD Web-deposit product are properly licensed and need do nothing more. For new or other implementations of Web-deposit capabilities, customers must acquire a CBORD Web-deposit product to be properly licensed."

The release did add that its patent license agreement "does not provide JSA with a license to use, interface with, or otherwise integrate with any CBORD product."

Another card provider, CardSmith, Doylestown, Penn., never even got to the lawsuit state. The company obtained a patent license from JSA in late 2008.

Its press release announcing the patent agreement simply stated that CardSmith had reached a permanent license agreement with JSA Technologies. "As a result of this agreement, all current and prospective CardSmith clients are fully and properly licensed with JSA Technologies to use CardSmith's On-Line Cardholder Account Center and Web Value Transfer Service."

Its president, Jay Summerall, in the same press release, added, "Web-based value transfer is a fundamental and valuable element of our service, and it was very important to us to eliminate any uncertainty with respect to the JSA patent as it concerned CardSmith or our clients."

Doyle also won't disclose license fees, except to say: "Some people have paid hundreds of thousands of dollars for a license. It all depends on how you're using it." He says there are several ways the fee could be paid, either one time, an ongoing royalty or a percentage of the profits. "Most opt for the one time charge."

CR80News contacted several campus card providers–including CBORD and CardSmith, which already have patent licenses, and Blackboard and Heartland Campus Solutions–requesting comments. All declined to speak on the record about the issue.

So it appears, there is a battle being fought but it's being done quietly.

Despite economy campus banking partnerships grow

Two financial institutions see double-digit increases

Chris Corum & Andy Williams
AVISIAN Publications

College Banking partnerships are alive and well despite a lousy economy. Last year was actually a pretty good one for banks doing business with college campuses in the U.S. In fact, according to CR80News' annual College Bank Survey, two reported hefty double-digit increases.

Participating in the survey were U.S. Bank, Wells Fargo, Wachovia, PNC Bank, TCF Bank, Commerce Bank and Heartland Campus Solutions/CNB Bank (new this year).

The group as a whole (except for Heartland which had just one institution from 2007) had a net gain in 2008 of 11 campuses, up two over the preceding year. This gain equates to a growth rate of 11% year over year. Include Heartland's nine campuses for 2008 and last year's net gain jumps to 19%.

That figure might have been higher, but financial services provider Higher One did not participate in this year's survey so the company's results are not part of the 2008 totals.

Recording the biggest gain, both in numbers and percentage increase was U.S. Bank, which grew from 30 in 2007 to 37 in 2008, a 23% increase. That compares to a 7% increase and a plus two in campuses added in 2007. PNC Bank ended the year with 17 college campus partnerships, a 21% increase over the preceding year. But when compared with the bank's 11 figure in 2006, it has seen a 55% increase over two years.

TCF Bank picked up one institution in 2008, going from 10 to 11.

Wells Fargo and Wachovia remained steady serving 24 and 16 campuses respectively, but with the pending merger, the two could become the largest university bank provider with 40 campuses, surpassing even traditional bank survey leader U.S. Bank.

The only other bank from our 2007 survey, Commerce Bank, remained the same at four institutions.

"It was a good year for us in terms of growing new partnerships," says Whitney Bright, U.S. Bank's vice president of Campus Banking. Of 2008, she says the bank "saw increased interest in banking ID programs at community colleges." That accounts for much of the bank's

Campus card bank partnerships: '07 -'08 comparison

Bank	'07 total	'08 total	% inc.
U.S. Bank	30	37	23%
Wells Fargo	24	24	0%
Wachovia	16	16	0%
PNC Bank	14	17	21%
TCF Bank	10	11	10%
Commerce	4	4	0%
Heartland/CNB	1	9	90%
Total	**99**	**118**	**19%**

23% growth in 2008 since five of the new additions were two-year schools, either community colleges or technical institutions.

"Last year was on par with our averages and was certainly better than 2007," says Bright. "We have a very long sales cycle. It typically takes us 12 months to go from first time talking to someone before we have a signed deal."

Bright says two opposites combined in 2008 that helped the bank grow more clients. "On one side, you had the banking industry having so much turmoil and trouble causing some universities to be apprehensive about partnering with a bank, but on the other side, as the economy continued to have a downhill slide and as schools faced increased pressures on budgets, they were looking for additional sources of revenue and bank partnerships can provide that."

An even better sign than increased partnerships is that "we have not lost anyone. Most of the contracts are in the five-year range. Once we have a partner for five years, they're pretty happy with us and re-sign," says Bright.

Wells Fargo's net zero gain was a result of not renewing two schools while signing up two others. It added Front Range Community College in Colorado and California State University, Stanislaus, Calif., says Kevin Duncan, Consumer Deposits Group for the bank's Campus Card Services.

The bank has also expanded into another state, Arkansas, "so now our retail banking footprint extends to 24 states," he adds. He also points out that "these numbers are solely for Wells Fargo and do not include numbers/information based upon the pending merger with Wachovia," and its 16 campuses.

PNC Bank, which gained three new campuses, is bullish on the university market, says Lorraine Morgan, PNC's marketing vice president for University Banking. "The number of schools which see value in having a banking services partner is growing," she says. "More schools than ever see a banking services relationship as a key to helping them meet commitments to the financial wellness of their students and meet the growing demands for student services. The financial aspects of a banking services

relationship are also compelling in the current economic environment."

Another growing area is the interest in campus ID cards linking to bank checking accounts. "PNC expects 14 or more (of its campus clients) to be linking up by the end of 2009 versus nine in 2008," she says.

Don Becker, assistant vice president for Student Banking at Commerce Bank, says that while his bank didn't gain any new clients in 2008, it has expanded into two more states, Oklahoma and Colorado. "We continue to have successful One-Card banking relationships with the four universities (the bank serves) and continue to operate full-service branch locations at Kansas State University and Missouri State University."

Becker echoes what many campus banks advertise nowadays, a "commitment to help our student customers develop solid habits so they become savvy financial consumers."

To accomplish this, Becker says Commerce works "closely with our university partners

Campuses organized by financial institutions

PNC BANK (17)			COMMERCE (4)			WACHOVIA (16)	
Allegheny College	PA		Fort Hays State University	KS		Clark Atlanta University	GA
Carnegie Mellon University	PA		Pittsburg State University	KS		Elon University	NC
Duquesne University	PA		The University of Kansas	KS		Fayetteville State University	NC
Edinboro University of Pennsylvania	PA		Wichita State University	KS		Florida A&M University	FL
Gettysburg College	PA					Georgia Perimeter College	GA
Indiana University of Pennsylvania	PA		**U.S. BANK (37)**			Guilford College	NC
Marymount University	VA		Austin Peay State University	TN		Mercer University	GA
Penn State University – 18 campuses	PA		Benedictine University	IL		NC State University	NC
Robert Morris University	PA		California State University Fullerton	CA		North Carolina A&T State University	NC
Seton Hall University	NJ		Case Western Reserve University	OH		North Carolina Central University	NC
St. Joseph's University	PA		Chicago State University	IL		Phila. College of Osteopathic Medicine	PA
Stevens Institute	NJ		College of Mt. St. Joseph	OH		University of Florida	FL
Temple University	PA		Creighton University	NE		University of N.C. – Chapel Hill	NC
University of Pennsylvania	PA		DeAnza Community College	CA		University of N.C. – Greensboro	NC
University of Pittsburgh	PA		Drury University	MO		Villanova University	VA
University of Scranton	PA		Foothill Community College	CA		Virginia Commonwealth University	TX
West Virginia University	WV		Gonzaga University	WA			
			Henderson State University	AR		**WELLS FARGO (24)**	
TCF BANK (11)			Iowa State University	IA		Baylor University	TX
DePaul University	IL		John Carroll University	OH		California State University – Los Angeles	CA
Eastern Michigan University	MI		Johnson County Community College	KS		California State University – Sacramento	CA
Minnesota State University – Mankato	MN		Kirkwood Community College	IA		California State University – Stanislaus	CA
Milwaukee Area Technical College	WI		Minnesota State University – Moorhead	MN		El Paso Community College	TX
Northern Illinois University	IL		Missouri Western State University	MO		Front Range Community College	CO
Northern Michigan University	MI		Morehead State University	KY		Mesa State College	CO
St. Cloud State University	MN		North Dakota State University	ND		Midwestern State University	TX
St. Xavier University	IL		Northern Kentucky University	KY		New Mexico State University	NM
University of Illinois	IL		Northwest Missouri State University	MO		Riverside Community College District	CA
University of Michigan	MI		Northwestern University	WI		San Francisco State University	CA
University of Minnesota	MN		Ouachita Baptist University	AR		Texas A&M University – College Station	TX
			Pacific University	OR		Texas A&M University – Corpus Christie	TX
HEARTLAND/CNB (9)			San Diego State University	CA		Texas State University – San Marcos	TX
Clearwater Christian College	FL		St. Louis University	MO		Texas Tech University	TX
Colorado Christian University	CO		Truman State University	MO		University of Arizona	AZ
Concordia University of Wisconsin	WI		University of Central Missouri	MO		University of Nebraska – Kearney	NE
Harrisburg University	PA		University of San Diego	CA		University of Nebraska – Lincoln	NE
John Carroll University	OH		University of Wisconsin – Eau Claire	WI		University of Nevada – Reno	NV
Lebanon Valley College	PA		University of Wisconsin – Oshkosh	WI		University of North Texas	TX
Reinhardt College	GA		University of Wisconsin – Stevens Point	WI		University of Northern Colorado	CO
Slippery Rock University	PA		Washington State University	WA		University of Texas – Arlington	TX
Tompkins Cortland Community College	NY		Waukesha County Technical College	WI		University of Texas – Brownsville	TX
			Wisconsin Lutheran College	WI		University of Texas – Dallas	TX
			Xavier University	OH		University of Texas – El Paso	TX

to provide the best products and services as well as a level of convenience that younger consumers have come to expect. For example, we've created customized micro-web sites for our university card partners and a web learning center for money management."

U.S. Bank, Wells Fargo and others offer similar services.

Newbie Heartland Campus Solutions began serving the campus card industry in 2007 following the acquisition of General Meters. The company reports 2008 figures of 9 campus banking partnerships, up from one the preceding year. Unlike the others in the survey, Heartland Campus Solutions is not a bank but rather a division of payment processing company, Heartland Payment Systems. The company offers banking services via its partner, Enid, Okla.-based CNB Bank, as a core component of the campus card offering.

One new trend that first surfaced following our 2007 survey continued into 2008.

U.S. Bank's Bright noted that more schools are now asking for Visa- or MasterCard-branded ID cards (debit only), "because it does create a true one card. Students these days want to have a card to make purchases online or go to restaurants to make purchases. More schools also want the convenience of that card to be issued instantly on campus."

Another new trend, mentioned by PNC's Morgan, is a move towards mobile banking. With a mobile phone's technology increasing, she says PNC introduced Mobile Banking last November. "It enables students to send text requests for balance information, receive low balance alerts and perform other services," she says.

Though the overall economy may be struggling and the financial industry in turmoil, campus card bank partnerships are strong. Perhaps difficult times provide a true indication of the value of a service. Those that survive and indeed thrive must be providing real benefit for the parties involved.

States served by campus card financial partners

State	Commerce	Heartland/CNB	PNC Bank	TCF Bank	U.S. Bank	Wachovia	Wells Fargo	Total
Alabama		•			•		•	2
Alaska		•					•	2
Arizona		•	•		•	•	•	5
Arkansas		•	•		•			3
California		•			•	•	•	4
Colorado	•	•	•		•	•	•	6
Connecticut		•			•			2
Delaware		•	•		•			3
Florida		•			•	•		2
Georgia		•			•	•		2
Hawaii		•						1
Idaho		•			•		•	3
Illinois	•	•		•	•	•	•	6
Indiana		•	•	•	•			5
Iowa		•			•		•	3
Kansas	•	•		•	•		•	4
Kentucky		•	•		•			3
Louisiana		•						1
Maine		•						1
Maryland		•	•		•			3
Mass.		•						1
Michigan		•		•			•	3
Minnesota		•	•	•			•	4
Mississippi		•			•			2
Missouri	•	•			•			3
Montana		•			•		•	3
Nebraska		•			•		•	3
Nevada		•	•		•	•	•	4
New Hamp.		•						1
New Jersey	•	•			•			3
New Mexico		•			•			2
New York		•			•			2
North Car.		•			•			2
North Dak.		•			•		•	3
Ohio	•	•	•		•			4
Oklahoma	•	•						2
Oregon		•			•		•	3
Penn.	•	•	•					3
Rhode Isl.		•						1
South Car.		•			•			2
South Dak.		•			•		•	3
Tennessee		•	•		•			3
Texas		•			•	•	•	3
Utah		•			•		•	3
Vermont		•						1
Virginia	•	•			•			3
Washington		•			•		•	3
W. Virginia	•	•						2
Wisconsin		•	•	•		•	•	4
Wyoming		•			•		•	3

	Commerce	Heartland/CNB	TCF Bank	PNC Bank	U.S. Bank	Wachovia	Wells Fargo
States Served	5	50	7	9	24	21	24

John Hopkins integrates gunshot detection with video surveillance

Television shows like HBO's *The Wire* and *Homicide: Life on the Street* depict Baltimore as a gritty city. While the shows are fiction, crime is a real concern and John Hopkins University is testing a system that detects gunshots in an effort to help keep the campus safe.

The gunshot detection system was installed last year at Johns Hopkins University in downtown Baltimore. It hasn't led to any arrests or even detected gunfire yet, but it has detected two car backfires. Still, at least one university official says the system has tremendous promise.

That's one of the reasons Johns Hopkins allowed the system, donated by its developer, Planning Systems Inc. (PSI), Reston, Va., to be installed. PSI is a technology firm that specializes in threat detection devices. The company acquired the system from its original developer in the late 1990s primarily for its patented detection algorithms, says George Orrison, PSI's director of marketing, security technology.

Called the SECURES Gunshot Detection System, the Johns Hopkins installation relies on 93 small, almost undetectable sensors installed on city-owned streetlights and off-campus buildings surrounding the 140-acre campus.

Why Johns Hopkins? The university hadn't asked for such a system, says Johns Hopkins spokesperson Tracey Reeves. "They (PSI) came to us. We thought of it as an added level of security for our students." The university's main campus, known as Homewood, has about 6,400 students.

What made Johns Hopkins desirable for PSI is that it has an extensive video surveillance system which can be integrated with SECURES, says Orrison. "Johns Hopkins is relatively close and we also had a willing partner (iXP) as a video integrator that has done work with Johns Hopkins," he says. iXP designs and implements public safety and security solutions.

Another partner in the program has been the Baltimore Police Department which proved the system works during a live gun fire demonstration when it was first installed last fall.

Simply put, SECURES acoustically detects, triangulates and relays the gunshot activity wirelessly over a secure network to Johns Hopkins dispatchers who see the location of gunshots pinpointed to within 10 feet of where the shooting took place and within three to five seconds of the shots being fired.

The origin of the gunshot is displayed on an aerial photograph layered with other geographical data to provide the gunshot location and other pertinent information such as nearest address and building. "The sensors are self contained and battery operated so they are easy to deploy and to relocate if required," adds Orrison.

A 'blast of red'

At the command center, the gunshot location is displayed on a 40-inch LCD monitor that shows the nearest address and building for dispatch. The sensors can differentiate between gunfire, fireworks and vehicle backfire. A series of gunshots could indicate a running gunman and the SECURES system would track the direction of his travel, says Orrison.

Reeves says when a gunshot is detected, a "blast of red" appears on the command center monitors. If it's something like a car backfire or firecracker, the red splash consists of "fuzzy particles." So far, the only sounds recorded by the system have been two car backfires, she says. Gunfire inside a building is more difficult to detect unless a window is open, she adds.

Orrison says a primary benefit is that it enables police to more quickly arrive at crime scenes and locate witnesses or to apprehend the perpetrator.

Edmund Skrodzki, executive director for campus safety and security at the Homewood campus, said the gunshot detection system has a 90% percent accuracy rate with a false positive rate of 7%.

"Working together with the Baltimore Police Department, I believe that this new addition to our security measures will benefit our campus population as well as our neighbors in the surrounding area," he said when the system was first installed.

"I hope we won't have any gunshots but if so, we're well prepared," adds Reeves, "and the video is right there. If there's a running gun battle, these cameras will be able to follow that gun battle and make it easy for police to cover."

Orrison says other colleges have expressed interest in the system but there are no other installations at this time.

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Monday, May 4, 2009

Time		
9:00 AM - 12:00 PM	**WORKSHOP A** Smart Card Alliance: Smart Card Technology and Payments Applications	**WORKSHOP B** Mobile & Contactless Payments From EMV to NFC — Collis
12:00 PM - 1:00 PM	**Lunch Break**	
1:00 PM - 4:00 PM	**WORKSHOP A** Smart Card Alliance: Smart Card Technology and Payments Applications (cont.)	**WORKSHOP B** Mobile & Contactless Payments From EMV to NFC (cont.) — Collis
7:00 PM - 9:30 PM	**Smart Card Alliance OSCA Awards & Networking Reception**	

Tuesday, May 5, 2009

Time					
8:00 AM - 9:00 AM	**Continental Breakfast**				
9:00 AM - 9:30 AM	**Welcome Remarks**				
9:30 AM - 10:30 AM	**Keynote Session: Payments Industry Executives Roundtable**				
10:30 AM	**Exhibit Hall Grand Opening**				
12:00 PM	**Lunch in Exhibit Hall**				
	Concurrent Sessions - Choose from the sessions which best suit your needs.				
1:30 PM - 3:00 PM	**TRACK A: IDENTITY & SECURITY** gemalto **Identity Concepts in a Digital Age**	**TRACK B: PAYMENTS & APPLICATIONS** First Data **Contactless Payments**	**TRACK C: MOBILE & NFC** **Mobile Technology & Applications**	**TRACK D: EMERGING TECHNOLOGY** **Biometrics Standards & Technology**	**TRACK E: HEALTHCARE** **Healthcare Data Management**
3:00 PM - 3:30 PM	**Networking Break in Exhibit Hall**				
3:30 PM - 5:00 PM	**Identification and its Role in Securing Cyberspace**	**EMV Payments**	**Mobile Business Model Roundtable**	**Smart Cards, Tokens & Digital Identity**	**Health ID Cards & Applications**
5:00 PM - 6:30 PM	**Networking Cocktail Reception in the Exhibit Hall**				

Wednesday, May 6, 2009

Time					
8:00 AM - 8:30 AM	**Continental Breakfast**				
8:30 AM - 10:00 AM	**Keynote Session: Identity and Security Executives Roundtable**				
10:00 AM - 10:30 AM	**Networking Break in Exhibit Hall**				
	Concurrent Sessions - Choose from the sessions which best suit your needs.				
10:30 AM - 12:00 PM	**TRACK A: IDENTITY & SECURITY** **Citizen and Government ID Applications and Usage Models**	**TRACK B: PAYMENTS & APPLICATIONS** **Payments Trends and Applications**	**TRACK C: MOBILE & NFC** **NFC Technology & Applications**	**TRACK D: EMERGING TECHNOLOGY** **SIMcard and Secure Memory Card**	**TRACK E: LATIN AMERICA** **ID & Security**
12:00 PM - 1:30 PM	**Keynote Luncheon (Conference Attendees Only/ Exhibit Hall Only Attendees $50 Fee)** **Enabling End-to-End Trust in the Digital Transaction Age** Randy Vanderhoof, *Executive Director,* SMART CARD ALLIANCE * *See Session Description Below*				
1:30 PM - 3:00 PM	**Employee ID Applications and Usage Models**	**Transportation Payments**	**NFC Mobile Payment Ecosystem and Business Model**	**Secure Chip Design & Manufacturing**	**Payments**
3:00 PM - 3:30 PM	**Networking Break in Exhibit Hall**				
3:30 PM - 5:00 PM	**International Government ID Applications**	**International Payments Models**	**NFC Beyond Payments**	**Cryptography**	**Transit/Mobile**
5:00 PM - 6:30 PM	**Networking Cocktail Reception in the Exhibit Hall**				

Thursday, May 7, 2009

Time				
8:00 AM - 8:30 AM	**Continental Breakfast**			
8:30 AM - 10:00 AM	**Keynote Session: Mobile Business Executives Roundtable**			
10:00 AM - 10:30 AM	**Networking Break**			
	Concurrent Sessions - Choose from the sessions which best suit your needs.			
10:30 AM - 12:00 PM	**TRACK A: IDENTITY & SECURITY** **Biometrics Identity & Security Applications**	**TRACK B: PAYMENTS & APPLICATIONS** **Payments Security**	**TRACK C: MOBILE & NFC** **International Mobile Use Cases**	**TRACK D: EMERGING TECHNOLOGY** **Smart Card Readers and Controllers**
12:00 PM - 1:00 PM	**Lunch**			
1:00 PM - 2:30 PM	**Using Trusted Identity Across Domains**	**Prepaid & Loyalty Programs**	**Mobile Security**	**ID Card & Security Standards**
2:30 PM - 3:00 PM	**Networking Break**			
3:00 PM - 4:15 PM	**Roundtable Discussion Sessions - Identity/Security and Contactless/Mobile**			

A 20-year low in violent crime

That's not to say SECURES isn't in use elsewhere. Both Harrisburg, Pa. and East Orange, NJ have installed the systems, as well as Prince George's County, Md., he says.

"Responses to SECURES have led to the aid of wounded victims, to the apprehension of perpetrators and to the collection of forensic evidence that has been used by police investigations and as evidence by district attorneys," says Orrison. "SECURES has also been a contributor to the deterrence of gun related violence." For example, East Orange reported a reduction in violent crimes in the deployed areas – (down to) a 20-year low, he adds.

"Other cities around the country are actively pursuing the acquisition of SECURES with particular interest in integrating with video surveillance systems. SECURES can also be used to provide the necessary input to direct cameras to the location of a gunshot event," says Orrison.

SECURES has two commercial system offerings, a standard one with 100 sensors that can cover up to one square mile for $150,000 and another, "known as our high incident area system with 20 sensors that can cover up to 20 city blocks" for $90,000. Installation is an additional $25,000 to $35,000, says Orrison.

How have students and their parents at Johns Hopkins reacted to the gunshot detection system? "We have found and quoted a few students who think it's great because it's another layer of protection," says Reeves. "Parents like knowing it's there and our security department likes the program," she says.

Card office will play larger role in university's bottom line

Cindy McCall
Vice President of Marketing The CBORD Group Inc.

Economic downturns impact universities in many ways. Hiring, purchasing, philanthropy—the financial climate beyond a university's walls impacts virtually every area of its operation. While universities are likely to identify new areas of cost savings and revenue generation to deal with a struggling economy, their focus on student services will not waver.

The card office will become a major player in the all-important task of maintaining financial solvency while providing student services that differentiate one university from another.

Cost savings

Technology integrations and partnerships will be more important than ever in the coming year. The labor savings achieved when platforms share data without manual intervention provide important cost savings and add value to investments. This could involve integrating campus card and housing management solutions, automated room assignment processes or point-of-sale platforms and menu management software that provide automatic updates of inventory levels and product movement patterns. All are designed to save time and money, allowing employees to work smarter while achieving significant labor cost savings.

Revenue generation

Off-campus programs will remain a popular means of generating university revenue while improving student services. For example, when Western Kentucky University, Bowling Green, implemented CBORD's UGryd off-campus payment platform, more than 33,000 transactions were processed off-campus in the program's first year even while discretionary deposits to student accounts grew by 19.5%.

Student discount programs will become increasingly popular aspects of off-campus programs, which can be fully integrated with the university ID card. In addition, membership sales in such programs provide a good revenue stream. Many Student Advantage customers have revenues on track to exceed $15,000 this year.

Security will remain a top priority

Even with budget cuts and resource reallocation, security will remain a top priority for university administrators. With competition for enrollment heating up, technology designed to secure facilities will provide dividends in student enrollment and retention. Technology solutions for intelligent video monitoring, access control, alarm management, and emergency notification will continue to gain prominence.

The coming year will provide new challenges for card office employees, but with these challenges will come an equal number of opportunities. Creativity and strategic thinking will open new doors and foster new ideas that will improve campus communities as well as the university's bottom line.

Lost ID card? It will cost you ...

But how do you determine how much it will actually cost?

While students may complain when they have to fork over money for a replacement student ID card that was originally free, most have little choice if they want to keep availing themselves of the university's services.

Still, CR80News wondered what the going rate was for lost or stolen cards. We interviewed 20 campus card administrators and discovered that replacement rates vary widely, from $5 to $25 per card. Some even had varying rates, depending on whether this was the first, second or third time the student lost the card, or whether he was trying to replace a simple mag stripe card or one with more advanced technology on it.

The responses from campus card administrators closely tracks a "Benchmarking Survey" conducted six years ago by the National Association of Campus Card Users, which listed universities charging from $5 to more than $25 for a lost or stolen card. Two thirds of universities responding charged either $10 or $15. Keep in mind these are six-year-old figures.

Most colleges in the benchmarking survey, 85%, said they charge a flat replacement card fee, while the remainder indicated they do have a sliding scale.

If the DMV charges, the campus should to

Alex J. Herzog, director of One Card operations for the University of Nevada, Las Vegas, probably best summarized the reason universities charge a replacement fee. "If you don't charge a fee for the card replacement, students will be less responsible for them."

The university charges $20 for lost or stolen IDs. "We kind of follow our state Department of Motor Vehicle rules," says Herzog. "They certainly won't give out a free driver license if you lost it or if it was stolen."

Here are some of the responses from CR80News' survey. Then we'll provide some suggestions on how to figure what it costs the university to produce a card, which may provide a better benchmark on what to charge students.

California Polytechnic State University, San Luis Obispo, charges the least among those surveyed by CR80News, $5, says Craig Schultz, director of user support services.

The University of Rochester in New York charges $10 to students but nothing for faculty and staff, says Cheryl Kilts, manager of the customer service center. Also levying $10 is the University of North Carolina at Chapel Hill, reports Jim Clinton, director of operations for UNC's OneCard.

Tompkins Cortland Community College, Dryden, N.Y., also charges $10 for lost or stolen cards, but if students need to replace a worn-out card, as long as they bring in the card, the new one is free, says Tova Sturmer, TC3 card manager.

Other schools follow similar procedures. California State University, Sacramento, levies $15, says Gina Lombardo, OneCard manager. However, she adds, if the card is stolen and the student can produce a police report verifying the theft, the charge will be waived.

Purdue University, West Lafayette, Ind., charges $20, says Wayne L. Hilt, card services manager. "The only time we do not charge for lost ID cards is when we have documentation that the card was lost in a home or apartment fire. We do not want anyone going back into a burning building to retrieve an ID card. That occurs very infrequently, but we have had a few cases over the last 13 years." Purdue's replacement fee has remained steady at $20 since 1991.

Audrey Wilson, director of the OneCard program at Angelo State University, San Angelo, Texas says it's $20 for permanent cards, $5 for temporary cards or badges. The university has always charged for lost cards.

"In some situations we might waive the fee if there is a compelling reason," adds Wilson. She said that when the program was first started in 1997, the replacement fee was $5 for the first replacement and $10 for each replacement after. "When we moved to the OneCard, the replacement fee changed to $20 and has remained at that price since 2004."

Mark McKenna, program director, CATcard service center, University of Vermont in Burlington, says the replacement fee is $3, but that's only if the original card is surrendered. If it's lost or stolen, the charge is $15.

He says the University of Vermont used to charge $10 for the first card and $20 for every card after. "We changed after 11 years to a flat $15, mostly to eliminate the price difference."

Anthony Smucler, coordinator for the campus ID office at Central Michigan University, Mount Pleasant, says that $20 price "has been in effect since 1996 and I do not have any plans on raising this cost in the next few years."

Rowena E. Dunn-McKenzie, director of the PBACard and support services at Palm Beach Atlantic University, West Palm Beach, Fla., says that while students pay $20 for lost cards, employees don't have to pay anything.

At the upper end is the $25 that George Washington University, Washington, D.C., charges its students, says Kenneth Pimentel, director of the GWorld card program.

Students at Colorado University in Boulder will only pay $5 if the card is stolen and the student can produce a police report. Otherwise, the charge is $25, says Lawrence Drees, campus card program director.

Sliding scales

Carolyn Hartley, ID card services manager at the University of New Mexico, Albuquerque, says her school offers a sliding scale for replacement cards: $10 for the first, $15 for the second and $25 for third and subsequent replacements.

A similar sliding fee is in place at Babson College, Wellesley, Mass., says Steve Heaslip, manager of auxiliary services. It's $10 for the first two, $20 for the third, $30 for the fourth, per academic year, he adds.

What does a card actually cost?

Even more interesting than the wide range of fees charged by campuses is the wide range of replacement costs reported. Fees are typically calculated, at least in part, based upon actual cost of production. Our survey suggested that perceived costs varied dramatically.

At LSU, which charges $15 for lost cards, it costs the university $11.49 to produce each card, the university's student newspaper reports.

Angelo State's Wilson says it costs the university about $20 "for all of the pieces involved," which would include material costs and the labor to reproduce a card. So it's a break-even process for the university.

"I'm sure (staff time) is the most expensive part of duplicating a student ID," says the University of Southern California's Brenda DeLong, director of USCard Services, which charges $18 for a replacement card. She says USC isn't allocated to include staff time. That's "viewed as a fixed cost."

Tompkins Courtland CC's Sturmer estimates that "based on staff time, supplies and overhead it's roughly $4.74 per card" to produce. "I use regular mag stripe cards and have gotten some smoking good deals on supplies."

"This is a difficult question to answer. Blackboard is the most expensive part of our card office so you would need to factor all of that into the cost," adds California State University's Lombardo.

University of Vermont's McKenna says it costs the school about $2.25 a card "figuring depreciation, labor and supplies for print ribbons, holographic overlays, card stock."

University of New Mexico's Hartley estimates it costs the university about $3.50 to reproduce the card.

Purdue's Hilt says it costs the school $10, which "includes the supplies, the equipment depreciation, and labor."

Creating a formula to analyze replacement costs

It seems that even campus card providers found it difficult to produce a formula on replacement card costs because of the number of variables involved. Bill Norwood, chief architect at Heartland Payment Systems Campus Solutions, has some suggestions.

"To calculate replacement card costs, a school should determine how many cards its students lose – which, on average, across the country – is approximately 20%," says Norwood. "That means a school with 20,000 students will replace 4,000 lost or stolen cards annually."

These are not figures he pulled out of the air. They come from experience. He managed the card program at Florida State University in Tallahassee for eight years, plus he has done work at many other schools over the years. "After 15 years of talking with schools, it always comes out around 20%. Some are higher and occasionally one is lower. The lower number usu-

ally comes from the schools that have a large graduate/adult enrollment base," he says.

The school with 20,000 students will produce another 5,000 new cards for incoming students, usually about 25% of the population. "This means the campus annually produces almost half the number of its ID cards, taking approximately 25% of the staff's time on an annual basis," he says.

A blank piece of plastic with a mag stripe costs around 20 cents, says Norwood. The printer ribbon used to produce the front and back of the ID card adds about 50 cents more to the card's cost. So the consumables cost about 70 cents per card.

He says staff costs to produce replacement cards should be considered "part of the day-to-day operation of the card office. The card office will spend 15% of its staff time on carding."

Assume the staffing cost to be $80,000, and allocate 15% for time spent on lost and stolen card replacement, for a total of $12,000. For each of the 4,000 replacement cards, that equates to $3 in staffing time.

Next printer hardware costs should be added. "Keep in mind there are incremental expenses for card printers, which, on average, cost $4,000," says Norwood. "A larger school may require multiple printers to process students in a timely manner during orientation and carding events. Most printers are replaced approximately every four to five years."

For our example, assume that the campus has three printers for a total cost of $12,000. Each year, 4,000 replacement cards and 5,000 new student IDs will be produced. If the lifespan of the printers is five years, then 45,000 cards will be produced for the $12,000 outlay. Add about 27 cents more to the price of each card.

Take the 70 cents consumables cost, add the $3 labor cost and the 27 cent printer amortization and you have a replacement card that runs just about $4.00 per card.

"If it's a prox or smart card, replacement costs rise to $10 or more, says Norwood. "A school can determine its actual costs by plugging in its numbers for all of the above."

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