



Enhancing Banking Services with Biometrics Authentication

Do you know who is transacting?

This timeless question has become more complicated in recent years for the banking industry. A typical bank customer visits an ATM a few times a week and only rarely pays a visit to a human teller. In today's anonymous landscape, how does the bank know who's transacting?

More and more often at banks around the world, the answer is fingerprint authentication. Unlike other forms of strong authentication such as cards and PINs, biometrics is the only means of determining "who" is using the system. And with the introduction of Lumidigm® multispectral imaging, biometrics solves the transactional security question while bringing user convenience to the table.

What does multispectral imaging have to do with it? The promise of biometrics — worry-free authentication performance as seen in the lab — was not fully realized in the field for many years because conventional biometrics technologies rely on unobstructed and complete contact between the fingerprint and the sensor. In the real world, dry fingers or a dusty sensor can interfere with the finger/platen contact requirements of conventional fingerprint sensors.

Multispectral imaging isn't as fussy. This more-effective technology uses multiple spectrums of light and advanced polarization techniques to extract unique fingerprint characteristics from both the surface of the skin and the subsurface, where fingerprint ridges have their foundation. Unlike surface fingerprint characteristics, which can be obscured during imaging by moisture, dirt or wear, the "inner fingerprint" lies undisturbed and unaltered beneath the surface. When surface fingerprint information is combined with subsurface fingerprint information and reassembled in an intelligent and integrated manner, the results are more consistent, more inclusive and more tamper resistant.

Fast forwarding to today, we now see a growing number of banks worldwide deploying multispectral imaging biometric authentication as both a retrofit to existing ATMs or as part of their next generation ATM rollouts. Not only do these solutions provide a definitive answer to the question "Who is transacting?" but they offer bank customers a fast and easy way to conduct their business.

Latin America Leads the Way

With its highly advanced financial systems technology, Latin America is embracing fingerprint technology for their ATMs. What started out as a security project has ended up being a product differentiator that attracts customers: banks enhance security with biometric authentication while offering their customers the convenience of doing all those things people would like to do at the ATM, unencumbered by remembering a PIN or even a card.

The Bolsa Família Program, which provides payments to low income families in Brazil to help keep their children in school, was the catalyst for using fingerprint biometrics to replace individual PIN numbers for access to Brazil's second largest state-owned bank, Caixa Econômica Federal (CAIXA). Many users in the

program do not have bank accounts and use the ATM only once a month to get their stipend. As such, they often forgot their passwords and bank managers were spending too much time resolving getting PINs renewed or changed. With 14,000 ATMs involved in the program and many millions of registered customers, this was a major problem.

Diebold ATMs with multispectral fingerprint readers replaced the PINs that bank customers historically used to authenticate their identity and access their accounts. CAIXA customers now simply insert their card and touch the fingerprint reader to conveniently withdraw their funds from the ATM and be on their way. No PIN to remember, no training required. It's that simple.

The “Beach Program”

One of Latin America's largest private banks has deployed 27,000 ATMs enabled with Lumidigm fingerprint authentication. The multinational bank had concerns that multiple identities were being employed by some people within their banking system. The organization needed a way to insure that each person had only one identity and provide all customers with convenient access to their accounts. A biometric would solve both challenges.

The bank initially deployed multifactor authentication, having their customers use their bankcard plus a finger to authenticate a transaction at the ATM. In an effort to make banking services as convenient as possible for its customers, the bank also piloted cardless transactions. Limited value transactions were made available to customers who keyed in a portion of their account number and pressed their finger to the sensor. Billed as the “Beach Program”, the bank's customers could leave their wallets at home when they went to the beach or to a nightclub and still have access to cash. The pilot program was so successful that today the bank has expanded the cardless authentication option to all customers at all ATMs. Their finger is their wallet — the ultimate in banking convenience.

Clearly, high reliability is critical in this type of program. Additionally, ATM use is not typically supervised; there may not be a person on hand for customers to consult if there is a problem with a transaction. Because multispectral imaging technology provides good reads on the first try by viewing the surface and subsurface of fingerprints in any condition, fingerprint readers using the technology were chosen for the ATMs. As a result, security has been increased with a simple, easy, intuitive touch of a finger, and the banks have a new convenience program to offer their customers.

Biometrics Beyond ATMs in Banking

In markets where an ATM infrastructure may not yet be established, a biometric handheld device is used to authenticate both user and service provider to ensure proper delivery of service and provide a complete non-repudiated audit trail of those transactions. In India, the government has been diligently working for decades to find ways of providing services to the citizens of an entire sub-continent and, likewise, commercial entities also want to reach out to the poor, especially those who have been previously excluded because of the limited capability of conventional biometrics technology. With those goals in mind, long-term initiatives related to Financial Inclusion and Public Distribution systems have turned to biometrics as a means of securing field transactions and ensuring that citizens are protected and government services are being provided to those who are authorized to receive those benefits.

Thus, besides multispectral imaging sensors being used in biometric ATMs, they are also deployed in handhelds that act like micro ATMs in applications where banking services — such as opening savings accounts, transferring funds, making deposits, withdrawing cash and obtaining loans — are taken to remote rural areas where citizens have no access to banks.

These fingerprint sensors guarantee that rural employment beneficiaries are actually the ones to withdraw their weekly wages. Other multispectral imaging-based handhelds are being used in public distribution systems and education projects, where the biometric is used by citizens for collecting rations and for the authentication of students' attendance reporting.

Preventing Identity Fraud

Biometric authentication reliably answers the question, “Who is transacting?” and provides added convenience to the end customer. But is it secure? Multispectral imaging sensors also incorporate best-in-class liveness detection. The technology's subsurface capability allows the sensors to evaluate the spectral qualities of the finger presented — and if it is a fake, it's rejected. Also available are encryption solutions to prevent man-in-the-middle attacks and tamper-resistant devices that self-destruct when opened.

Liveness detection capabilities are never more important than in South Africa, where concern over fraud and identity theft has grown to level where a banking risk information center (SABRIC) requires banks to take active measures to become “safe, secure and risk free.” Fully-deployed biometric systems throughout the country are now meeting that goal. Today, multispectral imaging biometrics is deployed in the largest banks in South Africa at teller windows and is being piloted at the ATMs.

Reliable, Convenient, Secure... and Proven!

Multispectral imaging biometrics has been successfully deployed at banks and ATMs for several years now. The technology is proven; the applications are varied. Does your bank want to find ways to improve transactional security? What form of authentication will provide them with identity assurance, convenience and a compelling ROI? Do customers prefer the increased convenience — and security — of using their finger instead of remembering their PIN or bringing their card to the bank? Customers already using biometrics at their ATMs insist that they prefer their fingers over PINs and cards.

Bottom line: biometrics is the only technology that assures identity and knowing “who” to a high degree of certainty. Biometrics is also unique in its ability to raise the bar on security while adding convenience for the end user.