

HITACHI
Inspire the Next

RETAIL BANKING THOUGHT LEADERSHIP

Cash from an ATM without a card or a pin?



Hitachi Digital Security

VeinID MAKES CASH VIA YOUR FINGER A REALITY.

DESPITE THE HUGE RISE IN CONTACTLESS PAYMENTS AND THE PROLIFERATION OF MOBILE BANKING APPLICATIONS, CASH IS STILL KING. IN THE EUROZONE, THE AMOUNT OF CASH IN CIRCULATION HAS BEEN STEADILY RISING SINCE THE INTRODUCTION OF THE SINGLE CURRENCY IN 2002.

IT'S A SIMILAR STORY IN THE UK WHERE THE NUMBER AND TOTAL VALUE OF NOTES IN CIRCULATION HAS INCREASED YEAR ON YEAR FOR THE PAST 10 YEARS.

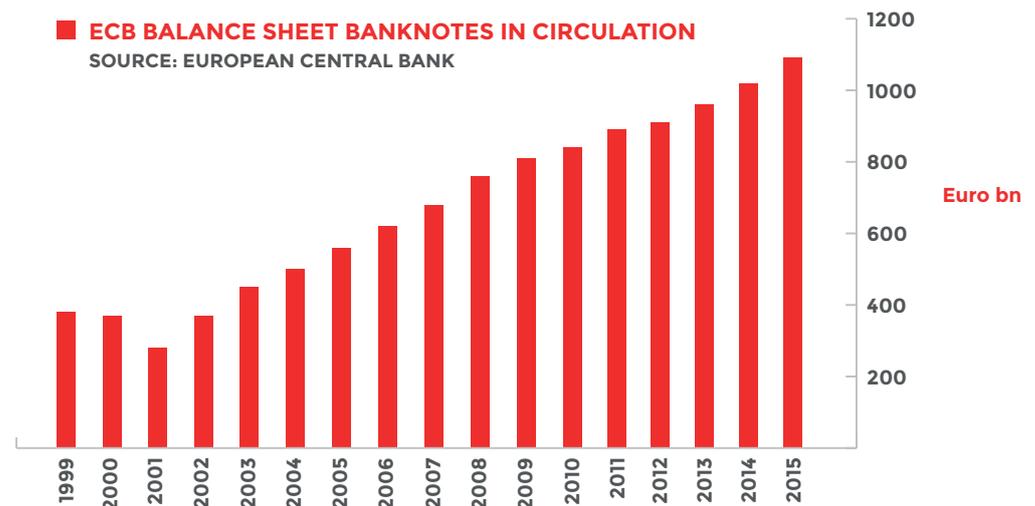


Understandably, as the transaction volumes grow, card based fraud continues to grow as the cyber criminals change and develop their techniques to bypass the standard safety features.

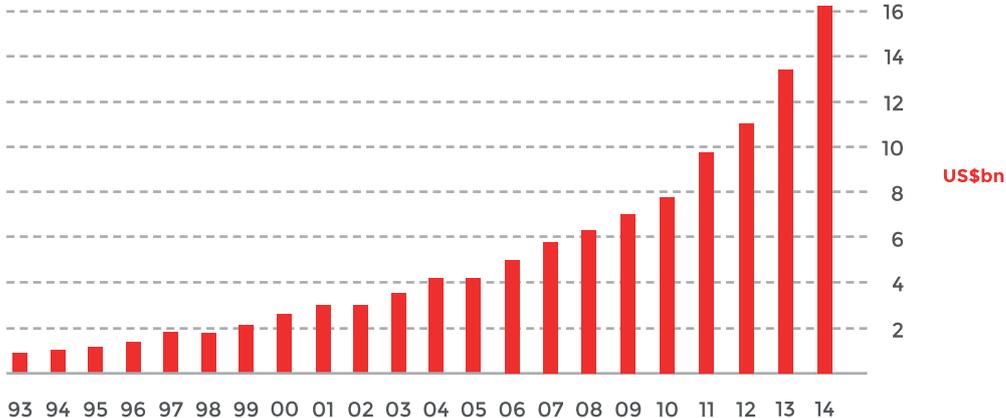
RESEARCH FROM THE EUROPEAN ATM SECURITY TEAM (EAST) SHOWS THAT GLOBAL ATM LOSSES ROSE TO £124M IN THE FIRST HALF OF 2015, AN 18% INCREASE ON THE PREVIOUS YEAR.

In the UK alone £27.3m was stolen through card based cash machine fraud in 2015 (according to Financial Fraud Action UK Ltd.) based mostly on genuine PIN and card data being used by criminals.

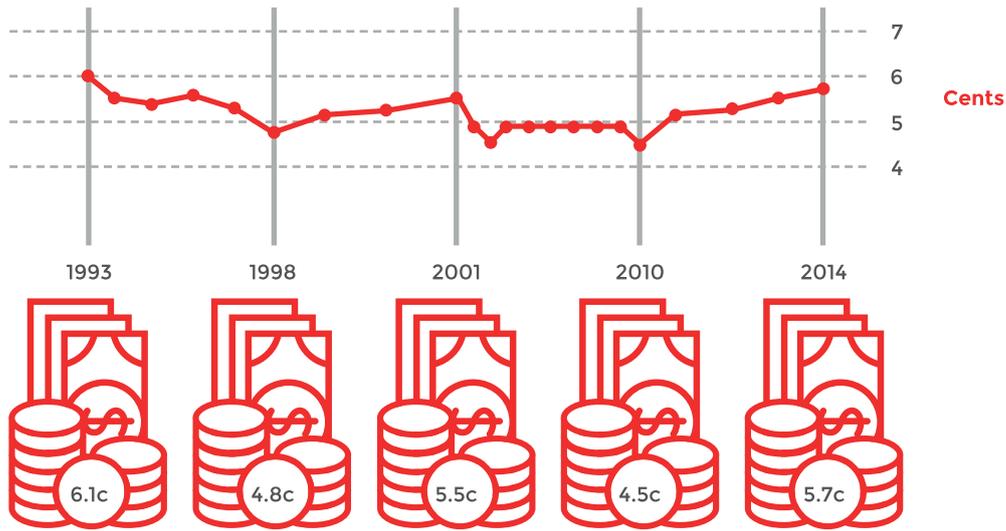
In these cases, criminals target ATMs specifically to steal card and PIN data using entrapment and skimming devices and distraction techniques including shoulder surfing. Such types of fraud are generally well documented and understood but the increasing sophistication of the fraud means that cardholders must be more vigilant than ever when using their cards and PINs in public places.



CARD FRAUD WORLDWIDE 1993-2014
SOURCE: THE NILSON REPORT, 2015



LOSSES IN CENTS PER \$100
SOURCE: THE NILSON REPORT, 2015



SINCE ATM RELATED CRIMES ALMOST ALWAYS INVOLVE A CARD AND A PIN, HOW ABOUT IF THE CASH WITHDRAWAL TRANSACTION WAS AUTHENTICATED BY THE CARDHOLDER'S BIOMETRIC DATA RATHER THAN OR IN ADDITION TO THE PIN? HOW ABOUT IF THINGS WENT A STAGE FURTHER AND ALLOWED CARD-LESS CASH WITHDRAWALS BASED ON BIOMETRIC AUTHENTICATION?

Such innovations would make things far easier for customers and could further reduce the incidence of fraudulent withdrawals at a time when market research appears to show that consumer acceptance of biometric transactions in banking is growing rapidly.

Such steps started in Japan from around 2005 onwards. In response to encouragement from local regulatory organisations, banks in Japan decided to increase the security for their customers. They started to deploy biometric scanners on ATMs to improve the security level of cash withdrawals.

It meant that for the first time, in addition to PIN entry, customers were able to authenticate their cash withdrawals via a simple and fast biometric scan with the authentication adding no more than a second or so to a normal ATM operation.

BASED ON A SURVEY BY HITACHI MORE THAN 80% OF THE BANKS IMPLEMENTING BIOMETRICS IN JAPAN HAVE SELECTED HITACHI'S FINGER VEIN AUTHENTICATION SYSTEM.

As a result, more than 100,000 scanners have been installed in ATMs and kiosks for self-service transactions and more than 60,000 scanners have been installed at branch teller counters.

The use of this technology for banking transactions has now spread to other Asian countries including Taiwan.

The concept spread to Europe from around 2010 onwards and the first deployments on ATMs appeared in Poland. Polish banks went a stage further than the Japanese banks and introduced cash withdrawals validated using finger vein authentication with no need for a card to be used at all, so called, card-less cash. There are now multiple Co-Operative banks offering biometric ATM services in Poland and the original use-case for payments of social benefits for unbanked citizens has been extended to include services for regular account holders.

HOW PAINFUL IS THE DAILY £300 CASH WITHDRAWAL LIMIT, ESPECIALLY ON THOSE OCCASIONS WHEN EXTRA CASH IS NEEDED?

The cardholder can win too since, with an improvement in security levels, banks can offer higher daily or single limits on cash withdrawal transactions. Cardholders would no longer need to worry about who is standing behind them or no longer feel the need to shield the PIN number during entry to the ATM pin-pad.

IT Card SA is a Polish financial services provider who runs a large third party ATM network. Renowned for their innovative activities around payments processing, IT Card launched the first independent shared network of biometric ATMs in Europe in 2014, called Planet Cash. With more than 1,000 VeinID equipped ATMs in the market and plans to deploy around 1,700 in total, users can register at participating banks and withdraw cash without a card at Planet Cash branded ATMs at strategic locations across Poland. An aggressive marketing campaign went with the launch of the service and based on the motto, "Cash within your finger", was designed to show the simplicity and convenience of card-less biometric transactions.

The IT Card case is a very good example that shows how the technology can be based on a "retro-fit" or a "new build" case. It is installed in a number of different ATM models from each of the major manufacturers including Wincor Nixdorf, Diebold and NCR. Being able to "retro-fit" to the existing installed base is an important consideration and it typically takes around 2 hours for a service agent to fit out an existing ATM.



For effective deployment, Hitachi provides a set of components covering both the hardware and software side to allow the VeinID solution to be integrated seamlessly with both the ATM side control software and the back-office systems. The main back-office element is a black-box finger vein transaction server taking care of: (1) the cardholder registration process, (2) biometric templates, (3) management of biometric readers, (4) authentication process flow, (5) audit and transaction logging, (6) interfacing with existing banking systems as necessary including the ATM Host and Authorisation System.

As a shared ATM network provider, IT Card's approach was to install both the "Host" and "Switch" version of the finger vein server system allowing biometric transactions to be switched as needed between IT Card and the biometrics server systems of the member banks and allowing the in house processing and authentication of biometric transactions for those banks where IT Card is the contracted processor. Such "switch" and "host" services for biometric transactions are the first of their kind to be deployed commercially.

IT Card's approach is one of both security and customer convenience. With the proliferation of biometric scanners on mobile devices, citizens are becoming far more comfortable with the idea of using biometrics in everyday transactions. IT Card wanted to connect with existing and new customers and provide a new and easy to use kind of service that was safe, secure and easy to use and an upgrade on what was currently available.

**USING FINGER VEIN BIOMETRICS TO AUTHENTICATE
ELECTRONIC AGREEMENTS.**

**VeinID IS HITACHI'S BIOMETRIC SOLUTION FOR
SIMPLE AND SECURE AUTHENTICATION OF EVERYDAY
TRANSACTIONS. IN THIS ARTICLE, WE EXPLORE THE
USE OF VeinID FOR THE SIGNING OF CUSTOMER
AGREEMENTS IN DIGITAL FORM.**

**HAVE YOU BEEN THROUGH THE PROCESS RECENTLY
OF APPLYING FOR A NEW MORTGAGE OR A BANK
LOAN OR SIGNING UP TO A FINANCE AGREEMENT
FOR A NEW OR SECOND-HAND CAR?**

**DID YOU NOTICE HOW MUCH PAPER WORK IS
INVOLVED AND HOW MANY TIMES YOU NEED
TO SIGN THE DOCUMENTS?**



Streamlining of operations and improving accountability whilst at the same time strengthening audit trails are all key goals in managing the provision of services to end customers. One of the key areas of focus now in many companies is the digital transformation of traditional business processes. For example, in the banking sector, one of the biggest areas for digital improvement is the move towards paper-less interactions with customers.

HOW MUCH EASIER WOULD IT BE IF WE COULD PROVIDE A SECURE AND PRACTICAL BIOMETRICS SYSTEM THAT ALLOWS CUSTOMERS TO SIGN AGREEMENTS SIMPLY BY PLACING THEIR FINGER ONTO A BIOMETRIC SCANNER ? NO NEED FOR PENS, PAPER HANDLING, PIN NUMBERS, CHIP CARDS AND SO ON.

Many banks and large volume sellers of finance agreements such as car-dealers are deploying “sign-pads”, data-input devices that allow written signatures to be captured in a digitised form which are then added to the agreement as an image. The process of capturing such an image or mark is often called an “electronic signature” and it simply shows that the person has used their “mark” to confirm the approval of the document being signed. It is quite different to a legally binding digital signature

The sign-pad is not always so easy to use and the “pen” may slide around the glass surface making the signing process difficult. The signing step may need to be repeated several times in order to get a good quality image, appearing unwieldy to customers.

The electronic signature can be verified subjectively by comparing it with a security document such as a driving licence, passport or ID-Card or a lookup by the sales advisor in the customer’s account profile. Cases of identity theft are growing and the risk with subjective verification is high since written signatures can be forged and ID documents can be faked. It could be automatically checked in “biometric” mode by using a “handwriting biometrics” system which runs an algorithm to compare the captured signature against a stored template previously taken from the customer. The accuracy rates when used in this way however are perhaps not as high as would be liked for automatic authentication.

The subjective approach is not great for paper-less operations since there is a potential problem when it comes to trying to prove the authenticity of the document at a later date. With electronic signatures, the signed document could be changed after the signing process and the signer might never know. Hence it is important to print a copy for both parties to keep in case the document is ever disputed in the future.

Printing the document seems to defeat the original goal of trying to improve the process by getting rid of the paper. All that we have achieved is a capture of the signer's signature and automatic import of it into a document that still needs to be printed.

Ideally we want to be able to turn the signing process into something that has legal standing. It would be great to dispense with the printing and managing of paper with all of its associated costs. If the sales-advisor is able to spend time with the customer at the sales point using an interactive device such as a tablet or touch screen to select and view the product and define the relevant selection criteria, this focused time, without the interruption of collecting and viewing paper documents, can be a very valuable time to focus on the requirements and needs of the customer and to ensure that the best options for the customer are chosen.

We are looking for a way for both parties to digitally sign the document in the same easy and practical way. A digital signature is an extension to an electronic signature and uses various algorithms to fulfil a number of security related goals: to authenticate and confirm the parties to the agreement at the time of signing, to provide a basis for confirming the identities of the signers at some future date and to create a unique "footprint" for the document that can be recreated or checked to ensure that the document was never changed after the initial signing process.

In order to minimise disruption to existing systems, Hitachi's solution for this is based on a back-office signing system linked with network appliance VeinID scanners. Such a system can be used within the framework of "secure operations". All the customer needs to do is to make a one-time registration process with the provider. Using such a scheme, a bank for example, can offer a "secure banking account" option where the customer is able to verify relevant transactions using their biometric data.

CUSTOMERS COULD FOR EXAMPLE BE GIVEN AN OPTION TO SELECT CERTAIN TYPES OF TRANSACTIONS TO BE VERIFIED IN THIS WAY. THIS COULD INCLUDE:

- Counter based banking transactions (withdrawals and deposits).
- Agreement signing.
- Increased limits for cash withdrawal at ATMs.
- Changes to personal data (address, employment details etc.).

Hitachi provides a web-services interface to integrate with existing IT environments and the associated back office system manages: biometric registrations and template data, the authentication process, authentication and creation of digital signatures, management of biometric devices, audit log and transaction history, attachment of the digital signature to the electronic document and interaction with enterprise document management systems (EDMS) to either send the documents into workflow for further processing or for storage into the EDMS.

Hitachi's VeinID network appliances are designed to have minimal impact on the corporate network environment with the only additional resource required being a 220-240V power outlet. With the appliance under the control of the central finger vein system there is minimal integration effort with existing systems.

The processing flow is simple. Based on the customer's option selections, an electronic agreement is created by existing systems and a VeinID authentication request is sent via web-services to the finger vein server. The finger vein system controls the authentication process. The customer is prompted to scan their finger. The live-scan data is validated inside the secure scanner device against a template that was stored at registration time. The authentication step is very fast, no more than 1 second and if successful, the digital signature is created and attached to the document. The resulting digitally signed document is stored in an electronic vault and a copy is sent to the customer's e-mail address.

THE PROCESS TO CREATE A DIGITALLY SIGNED DOCUMENT AUTHENTICATED BY FINGER VEIN BIOMETRICS IS FAST, SIMPLE AND VERY ACCURATE. TYPICALLY A FEW SECONDS FROM THE TIME THE CUSTOMER PRESSES THE "I AGREE" BUTTON. IT IS A PRIVACY COMPLIANT SOLUTION WHERE IT IS VERY DIFFICULT FOR A PERSON'S BIOMETRIC DATA TO BE CAPTURED OR COMPROMISED WITHOUT THEIR KNOWLEDGE.

Market research by a number of banks has shown that customers are far more likely to accept and use the technology when compared to other biometric systems such as finger print or facial recognition. It can be a key enabler for digital transformation.

FURTHER INFORMATION

Please contact Hitachi Europe Limited for further information about Hitachi's finger vein technology, applications and devices.

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