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Grow Business with ICMA Marketing Services

| By Jeffrey E. Barnhart

Are you looking to expand your company’s brand presence in the card manufacturing industry? Look no further than ICMA’s marketing solutions.

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For more information about these and all of ICMA’s marketing solutions, visit ICMA.com.

ICMA Hosts Virtual CardTREX June 10

| By Jennifer Kohlhepp

ICMA’s CardTREX will pack everything you expect from a card industry conference into a single-day online event on June 10.

CardTREX brings card industry professionals together for regionally focused education and networking. The event will feature two tracks. Educational and networking opportunities for European track attendees will be presented from 7 a.m. to 10:30 a.m. EDT. Educational and networking opportunities for North American track attendees will be presented from 11 a.m. to 2:30 p.m. EDT.

The cost to attend one track is $119 per person. If more than one individual from the same company attends a track, the cost is reduced to $99 per person. Attendance to each track must be purchased separately.

Attending either track will help you learn about new materials and technologies and enhance strategic business relationships in the region of the world where you work. You will also gain indispensable industry insights that you can leverage to drive innovation and profitability within your organization.

For more information, see page 27. To register, visit CardTREX.org/virtual/.
Biometric Card Advancements Accelerate

The greater interest in biometrics on cards is accentuated with EMVCo announcing in January that it has approved its first fingerprint sensor and chip configuration for secure financial cards.

By David Tushie, Magellen Consulting, ICMA Standards and Technical Representative

North American Card Market Valued at $5.4B in 2020

Despite the 22.2% decrease in unit volume from the prior year, this region’s revenue from cards manufactured increased 2.3% over the prior year to $3.3 billion. Personalization and fulfillment revenue dropped 15.3% to $2.1 billion.

By Jennifer Kohlhepp, Managing Editor, ICMA

The Card Sandwich Conundrum: How Many Layers are Too Many?

More layers mean more functionality and more security in ID products. Assembling all these layers accurately slows the assembly process down. So, how does manufacturing technology keep up and how many layers are too many?

By Elliot Lamb, Commercial Director, Oasys Technologies

Virtual CardTREX is Coming June 10

CardTREX will pack everything you expect from a card industry conference into a single-day online event.

By Jennifer Kohlhepp, Managing Editor, ICMA

How Will Quantum Computing Impact the Card Industry?

Quantum computers could break common cryptography, putting the encryption of banking cards, ID cards, passports, etc. at risk.

By Jennifer Kohlhepp, Managing Editor, ICMA
We’d love to hear from you!

*Card Manufacturing* contains feature articles, listings, events, company news, industry announcements, association updates and other information that will influence and grow your business. *Card Manufacturing* also includes messages from key industry executives as well as news and tips from the heart of the association—YOU.

- Interested in submitting a bylined feature for an upcoming issue?
- Do you have company information or accomplishments you want to share?

Please forward all news submissions, including press releases announcing new products or services, new hires, promotions, major contracts and acquisitions, milestones, community activities, case studies and any other industry news to Managing Editor Jennifer Kohlhepp at jkohlhepp@icma.com.

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In reality, the most recent acceleration in this technology can be traced to two intersecting developments: 1) smartphone adoption of biometric user authentication and 2) advancing low power semiconductor chip technology. Initially, fingerprint biometrics drove the transition from PIN to biometrics in smartphones. Refining the measurement indices and algorithms improved the False Acceptance Rates (FARs) and False Reject Rates (FRRs), providing a higher level of assurance that the user was authorized. More recently, the fingerprint biometric has been augmented with facial recognition biometrics, providing an indication of where card biometrics may be headed in the future. Coupled with these advancements is the emphasis on greater sophistication in chip design with ever lower requirements on the power needed to operate them. An additional significant effect is the substantial reduction in cost of these sensors and chips due to the volume of smartphones produced. Card manufacturers are able to take advantage of being far down the manufacturing learning curve (decreasing component cost with increasing volume) afforded by the “head start” in smartphone usage.

Of particular interest to those in the secure financial card industry is that these technology advancements now allow these fingerprint sensors and chips to be embedded in a standard ID-1 card configuration. Because of the low power requirements of these chips, no on-board battery is required to power them. Rather, similar to a contactless card, the radio frequency (RF) field of the point of sale (POS) or reader device provides sufficient energy to power these chips. When used in a transaction, the fingerprint sensor reads the cardholder fingerprint and it is compared to the stored biometric in the secure element of the card. The card then provides a message that the
fingerprint biometric is verified, similar to the process of a PIN if it is used as the cardholder verification method. Thus, the process fits well within the current EMV payment environment.

There is some friction in the enrollment process that is currently being addressed. It appears that three different processes could be used:

1. At home, using a suitable enrollment device (reader/writer). Similar to enrollment on a smartphone, multiple fingerprints (including multiple authorized users of the card) could be enrolled for any card.

2. Branch bank assisted enrollment.

3. Unattended enrollment device, like a kiosk or ATM machine.

Cardholders trust bank cards issued by a trusted third party (bank) with whom they have long standing relationships. They trust that their card is secure, more so than they trust a mobile device to be similarly secure. When that card is lost or stolen, or a data breach occurs, they trust that they will be held harmless when fraud is perpetrated with that card. Consequently, cards still hold the upper hand compared to mobile devices for payments and probably for the foreseeable future.

About the Author: ICMA Standards and Technical Representative David Tushie has had a long and continuing career in the card industry working for international companies such as Datacard, UbiQ and NBS Technologies. He has master’s degrees in engineering and business, holds U.S. and international patents in measurement and card issuance systems and has had several years of involvement with the ANSI, INCITS and ISO standards process. ICMA is represented at six ISO and ANSI standards meetings through his standards role within the association.
NORTH AMERICAN REGION
CARD MARKET VALUED AT $5.4 BILLION IN 2020

Jennifer Kohlhepp – Managing Editor, ICMA
The North American region of the global card industry, which is made up of the United States, Canada and the Caribbean, manufactured 7.4 billion cards in 2020. Despite the 22.2% decrease in unit volume from the prior year as a result of the global COVID-19 pandemic, this region’s revenue from cards manufactured increased 2.3% over the prior year to $3.3 billion.

The North American region personalized and fulfilled 5.9 billion cards in 2020, a 20.7% decrease in unit volume from the prior year. Personalization and fulfillment revenue dropped 15.3% to $2.1 billion.

In 2020, the number of financial cards in this region decreased 2.5% to 1.4 billion. However, this market segment’s revenue increased 48.1% to $1.3 billion as a result of the enriched mix of contactless cards.

“North America will experience growth as it recovers from the pandemic,” said Al Vrancart, ICMA founder emeritus and industry advisor. “Financial contactless cards will continue penetration in the United States and North America will continue to see growth in the government and health, transportation, access control and gift card market segments. However, innovations and new technology and processes will continue to change the landscape.”

The number of traditional (magnetic/barcode/other) cards manufactured in North America decreased 25.6% to 13.8 billion. The number of chip cards manufactured in this region decreased 7.4% to 2.56 billion. Chip card revenue increased 11.1% to $2.66 billion.

In 2020, the number of financial cards in this region decreased 2.5% to 1.4 billion. However, this market segment’s revenue increased 48.1% to $1.3 billion as a result of the enriched mix of contactless cards.

continued on page 10
The number of access control cards decreased 39.1% to 350 million and the number of transportation cards decreased 39% to 250 million. Access control card revenue totaled $183 million, a 25.3% decrease from the prior year, and transportation card revenue fell 36.2% to $127 million.

The number of loyalty promotional cards decreased 33.3% to 350 million and the number of ID membership cards fell 25.9% to 140 million. Loyalty promotional card revenue was down 33.3% from the prior year to $28 million and ID membership card revenue dropped 21.1% to $15 million.

North America produced 2 billion gift cards, which is 29.8% less than it did in 2019. Gift card revenue fell 29.8% to $160 million.

The number of retail and gas cards decreased 11.3% to 900 million and the amount of revenue these cards generated increased 9.6% to $320 million.

The number of SIM cards decreased 13.2% from the prior year to 525 million. This market segment’s revenue amounted to $485 million, which is 17.8% less than it was in 2019.

The number of government and health cards decreased 7.7% to 600 million units and their revenue decreased 3.1% from the prior year to $570 million.

North America has the third largest share (22.4%) of the global card industry, having manufactured $3.3 billion worth of cards and personalized and fulfilled $2.1 billion worth of cards in 2020. The Asia Pacific region has the largest (41%) share, having manufactured $7.5 billion worth of cards and personalized and fulfilled $2.4 billion worth of cards in 2020. Europe has the second largest share (23.2%), having manufactured $3.9 billion worth of cards and personalized and fulfilled $1.7 billion worth of cards.

The information in this article was compiled from Vrancart’s March 2021 North American Card Industry Statistics and Market Trends webcast, which is available to ICMA members by logging in to the members-only section of ICMA.com.

ICMA members can download the complete Global Card Market and Personalization & Fulfillment Reports in the members-only section of ICMA.com for free. Non-members can purchase the reports by emailing info@icma.com.
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HOW WILL QUANTUM COMPUTING IMPACT THE CARD INDUSTRY?

Jennifer Kohlhepp – Managing Editor, ICMA

Although it is difficult to understand, quantum mechanics is the most successful scientific theory that has ever been created and it has completely transformed our view of the world, according to Jörg Fischer, Innovations, Bundesdruckerei GmbH.

“All about tiny particles, quantum mechanics is a fundamental theory in physics that can be used to explain the micro world,” Fischer said. “It attempts to describe and account for the properties of molecules and atoms and their constituents—electrons, protons, neutrons and other more esoteric particles such as quarks and gluons.”

Some of the fundamental phenomena of quantum mechanics needed for quantum computers are quantum superposition, entanglement, tunneling and fragility.

Superposition means that two (or more) states can exist together. It is the power to be a wave and a particle at the same time. Light has particle and wave properties, and the two states can exist simultaneously.

Entanglement means properties of two systems remain correlated even after they are separated. They can still change one another as if they are still connected. “Albert Einstein called it spooky action at a distance,” Fischer said. “Maybe entanglement is like the bond between a mother and child.”

Tunneling is the power of a particle to move through a wall even though it does not have the energy.

Fragility means that observation affects reality, results are probabilistic and measurements are destructive.

“These ‘superpowers’ will be used in quantum computers, which are exponentially more powerful than classical computers,” Fischer said.

Richard Feynman and his colleagues formulated the first theory on quantum computing in 1982.

“In contrast to classical computers where a bit can be either 0 or 1, quantum computers will use qubits, which can be 0 and 1 at the same time (multiple states at once),” Fischer said. “Superposition and entanglement enable qubits to compute huge amounts of data (300 qubits can calculate more states than there are atoms in the universe).”

Quantum computers are still very complex systems (approximately 10 feet by 10 feet in size) that often operate at -273.2 degrees Celsius. They have to repeat calculations in order to get results and cost several tens of millions of dollars to operate.

“In the news, Google claims quantum supremacy is coming and that they can do in minutes what would otherwise takes thousands of years with a classic computer,” Fischer said. “I think within three years, we will have a quantum computer dealing with 1,000 qubits.”

What impact will quantum computers have on card security?

Quantum computers could break common cryptography, which relies on mathematical problems difficult to solve. These computers could break the encryption of banking cards, ID cards, passports, etc.

“The Diffie Hellman algorithm, RSA and elliptic curve cryptography will all be unusable,” Fischer said. “We need something else in order to solve this problem.”

The good news is quantum computer-safe crypto algorithms already exist as post quantum cryptography, which is secure against attacks from quantum computers. Future systems need cryptographic agility and dynamics and different algorithms for different applications.

“Cryptographic algorithms are the future security features,” Fischer said. “The standardization of post-quantum cryptography is underway at IEEE, ANSI, ETSI, NIST and ISO. Why are we so active at Bundesdruckerei? Because the time is running. Although many are working on standardization, it takes time and it is needed for a secure future.”

Quantum effects can be used for new cryptographic methods. Encrypting a decryption needs keys that have to be securely transmitted. Quantum key distribution relies on quantum entanglement for the key exchange, which was already demonstrated in 2017. Entangled photons can be used to transmit the key.

Bundesdruckerei has several ongoing projects. “In cooperation with CERN, we are researching future concepts for identity management and cryptography based on quantum mechanics,” Fischer said. “We are investigating post quantum cryptography for ID documents and standardization with PoQuID. PlanQK is a platform and ecosystem for quantum assisted artificial intelligence.”
THE CARD SANDWICH CONUNDRUM:
HOW MANY LAYERS ARE TOO MANY?

Elliot Lamb – Commercial Director, Oasys Technologies
Credit cards and smartcards used to be like BLTs, consisting of printed card images on sheets with three or four layers. Now they are more like super club sandwiches with eight, nine or even 10 layers—particularly in the identification credential arena.

Identity credentials, such as ePassport pages and ID cards, have security features contained in the layers of their structure. As the number of security features increases, the layer count increases. So what?

These layers need to be in a certain order, orientation and accurately aligned—all of which can make the assembly process rather slow.

A person can typically assemble the four layers that make up a typical bank card sheet (set) in the correct order and orientation in around 30 seconds (without taking accuracy into account). So, based on a typical card sheet (48 cards to view), the simplest card structures can be assembled at rate of around 5,000 cards per hour.

Card production systems typically need to produce five to 10 times that amount. So, if assembly is not to become the bottleneck in the process, five to 10 people per shift would be required for that single stage of production.

Increasing the number of layers to eight (that's one big sandwich!) takes more than twice as long. That's before accuracy, mistakes and scrap are taken into account. You can now start to see the issue.

**Assembling the 'Super Sandwich'**

More layers—holographic layers, laserable layers, antenna layers and window structures to name a few—mean more functionality and more security in ID products. Assembling all these layers accurately slows the assembly process down. So, how does manufacturing technology keep up and how many layers are too many?

At this level of complexity, automatic assembly/collation is the only practical solution as ID and smartcard-style products require accurate alignment and a high level of consistency. ID cards or licences with variations are always subject to the question, “Is this genuine?” At the same time, many millions of cards or passports need to be issued within a particular timescale to meet national rollouts.

The ‘Super Sandwich’ Assembly System

A modern automatic assembly system is typically six to 12 times faster than manual collation with a much higher yield. Automatic machines that assemble card and ID sandwiches (collation systems) have been around for a while, but recent advancements have considerably improved their speed and accuracy.

Like any sandwich, the layers vary in thickness and consistency. The layers in ID card structures have become much more challenging and require a new level of automated technology to assemble them reliably and fast. There are three main challenges:

1. **Alignment**: As the number of layers increases, “drift” occurs. Whereby the more layers that are added, the greater the overall error in the set/stack. As you layer your sandwich, it inevitably starts to lean to one side. This happens when each layer is not stacked correctly on the previous layer.

2. **Material**: Different layers need different alignment solutions. For example, registering (aligning) the position of a transparent hologram needs a different sensor than positioning a buried RFID antenna layer that you can't actually see.

3. **Thickness**: The sandwich in this case must also be within ISO standard thickness. And so, the more layers there are, the thinner each layer will need to be; 25 microns is now not uncommon. This thickness is notably harder to feed, register

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and position with the same accuracy, speed and consistency. Try picking up a very finely sliced piece of onion without it tearing, folding or breaking up!

These challenges have mostly been overcome with the advancements of automated collation systems using a combination of print, induction and optical sensing systems.

**How to Increase Layer Count**

Having a machine that handles eight to 10 different sandwich layers simultaneously is possible, but it is not practical for most security printers. There are more practical ways to handle the “super sandwiches” and increase the system’s flexibility.

One way around this issue is to run sub-assemblies in which you assemble two to four layers in a “first run” process and then run them back through the machine as a “single” layer in combination with more outer layers to complete the build. Handling a project this way, the system can cope with more layers when necessary but can still be small enough to carry out more standard card assembly runs (four to six layers). Additional technology is needed to enable this process to work successfully and maintain quality and accuracy throughout the whole layer count. This is where state-of-the-art ID and card “sandwich making” is these days.

So, maybe spare a thought the next time you “tap and go” while buying your lunch—the card you use may have more layers than the club sandwich you just bought.

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**About the Author:** Elliot Lamb has worked in the international card manufacturing industry since the 1980s when cards were made of bakelite and polished wood. Having never found anything more rewarding and resilient than the niche industry, he has thrown his inconsiderable weight behind Oasys Technologies where he serves as commercial director.
CPI Card Group First Licensee in ICMA EcoLabel Standard Program

CPI Card Group Inc. recently became a licensee for the new International Card Manufacturers Association (ICMA) EcoLabel Standard Program created by ICMA. CPI is the first company to become a licensee for the program, which recognizes ICMA member card manufacturers for their commitment to sustainability and for specific card products that meet program requirements.

CPI’s Recovered Ocean Bound Plastic and High Upcycled Content payment cards have both been certified through the new program, with the cards meeting the ICMA EcoLabel criteria as verified by a third-party assessor. The Recovered Ocean Bound Plastic card, known as Second Wave™, is the first to market, EMV® compliant, dual interface capable, high quality payment card featuring a core made with recovered ocean-bound plastic. The High Upcycled Content card, known as Earthwise™, is also EMV compliant and dual interface capable, is produced using post-industrial upcycled plastic. The two cards are part of Earth Elements™, CPI’s portfolio of more eco-focused payment cards—designed to empower financial institutions and the consumers they serve.

For more information, visit cpicardgroup.com.

Entrust Launches Virtual Reality App to Display New Card Printer

Entrust has launched a virtual reality app to showcase its latest card printer, the Sigma, for anyone interested in checking out the new features.

The virtual app enables users to place the card printer on their own desk or tabletop, spin the printer around 360 degrees and zoom in for a closer look at the component parts. Users can explore all the features that make the Sigma printer simple, secure and smart. The virtual reality app also enables users to add multi-hopper, laminator and tactile impression modules, as well as provides links to all relevant PDF brochures and other printer resources.

The virtual reality app is available now for free download on both the Google Play and App Store.

Fingerprint Cards Gets Biometric Module Order From ‘Top 3’ Card Maker

Fingerprint Cards has received another volume order for its T-Shape fingerprint sensor module for biometric cards. In announcing the order, the company declined to name the client concerned but described it as “a global Top 3 card manufacturer.” The company also noted that the order follows “a couple of initial commercial launches of biometric payment cards” featuring its own fingerprint sensor technology.

The Sigma printer is Entrust’s vision for next generation of direct-to-card printing for both ID and financial card instant issuance. The printer is designed for modern cloud environments, while retaining the same ease of use as previous models. Entrust insists that a card operation can be issuing credentials or mobile flash passes within minutes of unboxing the printer. Adding to the ease of use, the Sigma printer can be fully managed through Entrust’s intuitive dashboard.

For more information, visit entrust.com.

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The announcement comes after a couple of important developments concerning the T-Shape sensor in November 2020, when Fingerprint Cards announced that it had attained approval from China’s Bank Card Test Center for its T2—the second generation version of the T-Shape module. The company also announced that the India-based smart card manufacturer M-Tech Innovations had partnered with FPC to start making T-Shape-integrated cards.

The T-Shape is an important and relatively new component of Fingerprint Cards’ portfolio, representing the company’s efforts to become a leading supplier of fingerprint sensors in the

For more information, visit fingerprints.com.

Fiserv Expands MoneyPass ATM Network to Capital One Customers

Fiserv Inc. recently announced a new agreement with Capital One that will offer customers secure, convenient, surcharge-free access to their funds at thousands of ATMs across the nation.

The agreement will add more than 1,500 Capital One ATMs at Capital One branches, cafés and select off-site locations to the MoneyPass ATM network from Fiserv, one of the largest surcharge-free networks in the country. Capital One 360 Checking customers will be able to conduct unlimited surcharge-free transactions at 34,000 additional MoneyPass ATMs nationwide.

For more information, visit fiserv.com or capitalone.com.

G+D Provides HypoVereinsbank with Metal Cards

While normal debit and credit cards are made out of plastic, G+D uses stainless steel to produce premium cards. Market demand for metal cards is currently rising on a broad level. HypoVereinsbank (HVB), as a part of the UniCredit Group, has decided to issue a special premium edition, the “HVB Visa Infinite Metal,” which is provided by G+D.

The G+D cards weigh 22 grams and offer a completely new experience to the cardholder and produce a clear metallic sound when they are placed on a hard surface. Unlike many other metal cards of this top category, they support two-sided contactless payment, enabling the customer to enjoy a smooth user experience without compromise at point of sale.

In addition to numerous services, the card is included in the “HVB Platinum” account model. HVB’s premium metal cards offer several advantages to cardholders including access to approximately 1,300 airport lounges worldwide via the Priority Pass, free cash withdrawals at ATMs worldwide and extensive insurance benefits. In addition, the metal cards provide worldwide access to 24/7 HVB Concierge Service, for example for flight and hotel bookings or access to exclusive events.

For more information, visit gi-de.com.

Goldpac Jointly Launches Financial Digital Development Alliance

The Financial Digital Development Alliance, comprising 202 financial institutions in the field of banking and adjacent industry bodies, was formally established in November 2020. As one of the leading representative enterprises in the area of financial science and technology innovation in China, Goldpac participated in the launch of the alliance together with China UnionPay Data and major domestic financial institutions.

Through the “five new” services, which are promoting new links, integrating new resources, building new platforms, integrating new technologies and sharing new futures, the alliance will consolidate the strength of industry, education and research, carry out industrial research and promote industry exchanges, strengthen scenario convergence and cooperation between different industries, promote data sharing and risk prevention and control, as well as apply scientific and technological innovation to promote the digital transformation of the financial industry. Furthermore, the alliance will practice financial inclusion, assisting with the healthy development of the real economy, and promote the formation of an open, cooperative and win-win digital financial industry ecosystem.

As a founding member, Goldpac will continue to improve its innovation ability and service levels in order to better boost the digital transformation of the financial industry in China. In the future, Goldpac will carry out more extensive and deeper business cooperation with leading financial institutions, provide all-round services for the financial industry to accelerate the digital transformation of the financial industry, promote the integration of online and offline development and enhance the intelligent, digitization and scenarization of financial services.

For more information, visit goldpac.com.

HID Global Helps Bring Students Safely Back to Campus

HID Global recently announced that Bay State College safely brought its students back to its campuses in Boston and Taunton, Massachusetts using a digitized contact tracing solution that includes HID Bluetooth BEEKs Beacons to provide real-time location services. The HID Bluetooth beacon is in the form of a simple badge holder that is used to carry existing ID badges for students, faculty, staff and guests.
The beacons are part of a robust solution that makes it possible to quickly and easily perform contact tracing, removing the manual and time-consuming effort to identify who has been in contact with whom on campus.

For more information, visit hidglobal.com.

**USPS Expands Digital Fingerprinting Service**

The U.S. Postal Service (USPS) is expanding the digital fingerprinting service it offers the public to hundreds of new post offices this year. USPS struck a deal with IDEMIA to bring its biometric capture and in-person proofing services to between 400 and 500 post offices, out of 31,000, by the end of 2021.

The financially ailing agency wants to use its nationwide retail network to generate more revenue, while also meeting its five-year strategic goal to improve people’s access to e-government services.

The FBI introduced an electronic departmental order several years ago requiring USPS to conduct identity history summary checks (IDHSCs) of potential employees. The process required fingerprints be sent in, which took weeks. So, USPS launched a digital fingerprinting pilot with the FBI two years ago and found the new service took hours with a high return on investment. All searches go through the FBI’s system.

USPS hopes to extend digital fingerprinting to other federal agencies as well, making it a bigger player within the employee vetting space across government.

For more information, visit idemia.com.

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**Liveo Research Italy Helps Develop Antimicrobial Overlay Film**

**Liveo Research S.r.l. Italy** and Swiss antimicrobial expert SANITIZED AG have partnered to offer an overlay film with built-in antimicrobial material protection produced with a highly optimized and scalable manufacturing process.

Liveo Research S.r.l. is the exclusive provider offering PVC foils with the quality brand Sanitized® for antimicrobial card solutions including keycards and financial cards.

For more information, visit liveoresearch.com.

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Mastercard Partnership Turns Wearables into Secure Payment Devices

Mastercard in partnership with MatchMove, a Singapore-based “Banking-as-a-Service” provider, and Tappy Technologies, a wearable payment integrator, have introduced tokenization into a small, flexible chip that can be attached to a range of battery-less wearables and accessories such as watchstraps or keyrings, turning them into secure contactless payments devices.

MatchMove cardholders can now add their Mastercard to this payment chip by placing the wearable or the accessory on a Bluetooth-connected device developed by Tappy Technologies.

After downloading the Tappy app and following the in-app instructions, the MatchMove Mastercard will be tokenised via Mastercard’s Digital Enablement Service (MDES) into the secure payment chip of a wearable via the Bluetooth device. This contactless-enabled wearable device works exactly like any contactless card or digital wallet where the user taps the wearable at any contactless accepted terminal.

A Mastercard global 2020 study found 91% of respondents in Asia Pacific were using tap-and-go payments, while 75% said they would keep using contactless after the pandemic is over due to concerns about safety.

For more information, visit mastercard.com.

Uganda Begins Nationwide Distribution of Biometric ID Cards

The National Identification Registration Authority of Uganda (NIRA) recently began a nationwide process to distribute digital ID cards to citizens who successfully applied for them but did not pick them up. Uganda is on the path to issuing digital IDs for all citizens.

In 2019, the country secured the services of Muehlbauer for the production of digital ID cards for Ugandans. The East African country has since embarked on a vociferous campaign to popularize the initiative, and Muehlbauer said last year nearly 30 million citizens had registered for the permanent biometrics-backed ID number.

For more information, visit muelbauer.de.

Thales Reveals Double-Sided ID Card Reader

Thales has showcased the world’s only double-sided ID card reader, the first to be able to examine ID cards or driving licenses in the cloud in less than four seconds.

The Thales Gemalto Intelligent Double-sided ID Card Reader CR5400i enables fast, secure and remote identity document verification. The reader protects businesses (airports, casinos, hotels, stores, etc.) from fraud and forgery thanks to sophisticated mechanisms for superior document authentication. The “i” version permits multiple intelligent readers to be centrally connected via WiFi, which is ideal for organizations that need to deploy a fleet of readers such as retail stores and financial institutions. The compact device can also be set up, managed and serviced remotely.

For more information, visit thealesgroup.com.

DeFi Project KingSwap Launches Visa Debit Card Globally

DeFi project KingSwap recently announced the launch of its Visa debit card, available globally. The card offers no annual fees or foreign transaction fees, with rewards of up to 3% back on all deposits. Accepted anywhere that Visa is accepted, KingSwap’s debit card uses a tier one bank and its distributors for payment processing and banking solutions.

KingSwap’s Visa debit card features a sleek, high-end metal design and entitles card holders to perks including high-yield rewards. By owning one of these debit cards, users will be able to purchase cryptocurrencies with lower fees on the KingSwap platform. They’ll also gain access to benefits and products through KingSwap’s partnerships.

KingSwap’s Visa debit cards are limited in quantity and available on a first-come, first-serve basis for users who have completed KYC verification and begun staking on KingSwap. KingSwap will release four tiers of Visa debit cards, starting with the King’s Royal Black Card, followed by the Queen Platinum Card, Royal Knight Gold Card and Blue Squire Card.

KingSwap Visa Debit Cards are loaded with fiat rather than digital assets and all transactions are denominated in fiat currency. Use of the card is subject to terms and conditions of the applicable cardholder agreement and may be subject to fees such as ATM fees.

For more information, visit visa.com.
Egypt Aims to Link National ID System with VeinID Technology

The Data Communications and Information Technology Company (Data CIT) has contacted government agencies responsible for issuing national ID cards in Egypt to link them to finger-vein recognition technology. This will take place through a technological solution provided by FinGo Co. in partnership with an English company.

It’s the world’s first identity authentication and payment solution powered by Hitachi’s VeinID technology, which is secure because of the individual differences in the map of the veins between one person and another. It also proves that a person is alive by evidence of blood flow inside the veins. In addition, it cannot be falsified because it does not appear on the surface of the skin.

This technological solution can be used in multiple applications, including electronic payment applications as an alternative to credit cards. It can be used as a means to obtain government services or as an alternative to the identification card for employees of large companies and institutions. At the same time, vein fingerprint recognition can be used with the national ID cards or ration cards and any other means that require identification.

Amazon Offers Palm-Based Payment Option in More Stores

Amazon now offers its Amazon One contactless payment device at eight Seattle-area stores.

Initially introduced at two Seattle-area Amazon Go stores in September 2020, Amazon One is a proprietary technology designed to let customers use their unique palm signature to pay or present a loyalty card at a store. Amazon provides Amazon One payment at five select Amazon Go, Amazon Go Grocery, Amazon Books and Amazon 4-star stores in and around Seattle and starting February 1, the retailer started offering Amazon One at an additional Amazon Go store in Seattle and expanding the technology to two more Seattle Amazon Go locations.

To sign up for Amazon One, customers insert their credit card in an in-store Amazon One device or kiosk and then hover their palm over the device and enter their mobile phone number to complete sign-up. Since no two palms are exactly alike, customers can register both palms.

Amazon One uses the information embedded in a customer’s palm to create a unique palm signature that it can read each and every time the customer uses it. Amazon One is protected by multiple security controls and palm images are never stored on the device but are encrypted and sent to a secure area Amazon custom-built in the cloud where it creates palm signatures. Customers can request to delete data associated with Amazon One through the device itself or via the Amazon One online customer portal.

MTR and AlipayHK Launch QR Code Payment Service

The MTR Corp. and AlipayHK have launched a QR Code payment service. Passengers can pay for subway rides by scanning a QR Code at all 93 stations on the Mass Transit Railway in Hong Kong.

continued on page 22
The payment service is expected to cover 80-90% of Hong Kong’s public transportation by 2021. AlipayHK’s mobile wallet and payments app was launched in May 2017. It now has about 2.7 million active users and 62,000 retailers supporting payment in Hong Kong.

Voter ID on Mobile Now a Reality

As of February 1, all India voters will be able to download their digital voter ID card if their mobile number is linked with the Election Commission (EC).

The EC rolled out the electronic version of the voters’ photo identity card, which can be stored on mobile phones and downloaded on personal computers, on January 25. The e-voter card will be available in the PDF format and cannot be edited. The digital voter ID card can be self-printed and laminated by the voter when required.

Elections in poll-bound West Bengal, Tamil Nadu, Assam, Kerala and Puducherry will be the first to use e-voter card as elections are due in these states and the union territory in April and May.

The physical card takes time to print and reach the voter, and the idea is to provide faster delivery and easy accessibility to the document. Introduced in 1993, the elector photo identity cards are accepted as proof of identity and address.

SBM Bank India and StashFin Launch Contactless Prepaid Cards

Singapore-based neobanking startup StashFin and SBM Bank India recently announced the launch of their co-branded contactless prepaid cards. Designed through collaboration, these prepaid cards will boost access to credit for underbanked consumers. With this launch, the business partnership is set to bridge the growing credit gap in India.

The card comes with a contactless EMV chip, offering the cardholders 24/7 access to funds. With its enhanced safety and security features, the prepaid card acts like a personal overdraft facility, allowing the customer to take loans up to INR 500,000. This card can be used for free ATM cash withdrawals and online/offline payments at all merchant platforms and point-of-sale terminals across India. Notably, with a hassle-free approval process, card users can convert all their purchases into EMIs and pay interest only on the funds used, a feature available on the StashFin SBM card.

Card Payments Skyrocket in China, Subdued in Australia

Card payments in China have been on a sustained growth path for the last few years. While the growth has been somewhat affected by COVID-19, it is still forecasted to register a robust compound annual growth rate (CAGR) of 11% through 2023, while Australia is estimated to register a subdued growth of 1.9% in 2020 against the previous estimate of 5.3%.

An analysis of payment cards analytics reveals that card payments registered a CAGR of 19.8%, rising from CNY55.0 trillion ($7.9 trillion) in 2015 to CNY113.3 trillion ($16.3 trillion) in 2019.

The COVID-19 pandemic affected card payments in 2020 and subsequently registered 7.1% annual growth. However, the market is forecasted to recover quickly and grow at a robust CAGR of 11% between 2020 and 2023 to reach CNY166.2 trillion ($23.9 trillion).

China introduced stringent lockdown measures quickly, which allowed the country to control the virus and limit transmission. This, along with the introduction of stimulus package of worth $829.95 billion, which is equivalent to 5.61% of GDP, has set the stage for a strong recovery.

China was the largest debit card market globally with an estimated 8.1 billion debit cards in circulation in 2020, driven by financial inclusion programs. Credit and charge cards, on the other hand, were much smaller at 0.82 billion in 2020. As a result, debit cards remain the most preferred card payment method, accounting for 57% of the total card payments by value in 2020.

The increase in consumer demand for credit, especially from the growing middle class, has helped the growth of credit and charge card transactions during the review period. Credit and charge card payments increased at a CAGR of 19.3% compared to the 15.7% growth of debit cards during 2015–2020. As a result, credit and charge cards’ share in the total card payments value increased from 39.4% in 2015 to 43% in 2020.

The Australian payment card market on the other hand, which has been on the rise for past few years, registered a marked slowdown in 2020 due to COVID with reduced consumer and commercial spending. However, with gradual recovery in economic activities and growing preference for contactless payments, card payments are expected to rise.

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However, with the gradual recovery of economy, the growth is expected to improve over the forecast period increasing at a compound annual growth rate (CAGR) of 5.7% between 2020 and 2024 to reach A$872.9 billion ($613.6 billion) in 2024.

Australia is one of the most developed contactless card markets with majority of
Due to the current pandemic, the use of contactless cards is on the rise as even smaller merchants are now insisting on non-cash and contactless payments.

To encourage the shift away from cash, the limit for contactless card payment was temporarily increased from A$100 ($70.30) to A$200 ($140.59) effective April 2020.

**Flowbird Goes Contactless in Minneapolis**

Flowbird users in the Minneapolis/St. Paul region can now pay with their contactless credit and debit card or digital wallet such as Apple Pay and Google Pay, allowing a swift “tap-and-go” payment process at the kiosk.

All kiosks are solar-powered and equipped with a 9.7” full color touch display that resembles the look and feel of a tablet. The kiosks wirelessly communicate to Flowbird’s analytics platform, which provides the city with the tools analyze parking activity trends and streamline operations. All paid information is communicated wirelessly with the city’s citation insurance system provided by Gtechna.

Flowbird smart kiosks are used throughout the Minneapolis/St. Paul region for on-street parking, parking at city parks, and for off-board fare collection for Metro Transit’s Bus Rapid Transit system.

**Kakao, Samsung Card Launch KakaoPay Credit Card Business**

Kakao has teamed up with Samsung Card for the launch of KakaoPay-labeled credit card, as part of the Kakao affiliate’s move to tap deeper into the financial market.

KakaoPay is a mobile payment operator growing rapidly based on the large user base of its mother firm, Kakao, the nation’s leading mobile messenger provider.

Under the partnership, both firms agreed to launch KakaoPay’s private label credit card (PLCC) as early as May.

Last year, KakaoPay received applications for the project through a competitive bidding process, and Samsung Card, the nation’s second-largest card firm, was selected as its partner. Both sides have since collaborated on every aspect of the process of launching the PLCC including its design, marketing and promotional benefits.

The planned launch of the Kakao-labeled credit card comes as big tech firms are eyeing aggressive expansion into the financial sector. KakaoPay and Samsung Card will share profits in commissions generated from the cards.

Early last month, Naver also partnered with Hyundai Card for the launch of the Naver-branded PLCC. Under the alliance, Naver aims to expand its financial influence here by generating synergy with Hyundai Card’s expertise in branding and data science.

Though the details are yet to be fixed, Naver, operator of the online payment service Naver Pay, aims to expand the user base of its Naver Plus Membership service through the PLCC partnership with Hyundai. Currently, customers who sign up for the membership service, paying a monthly fee of 4,900 won ($4.37), can receive a 5% discount on any transactions made through Naver Pay. The company attracted more than 2.5 million users for the membership service within only about six months of its launch in June 2020.

Hyundai Card has been one of the nation’s most active card firms in terms of launching PLCCs, while the KakaoPay PLCC marks a first for Samsung Card.

Kakao also hopes to strengthen its mobile dominance by allowing Kakao PLCC users to receive benefits when making transactions on a series of Kakao platforms such as taxi-hailing service operator Kakao T and content provider KakaoPage.

KakaoPay users can make transactions in about 600,000 online and offline stores by using the platform. They can also collect points and use them as replacements for cash when making online transactions.
ICMA'S LATEST
ACE-COMMERCIAL CLASS ANNOUNCED

ICMA would like to congratulate the following individuals who successfully completed the Advanced Card Education (ACE)-Commercial training program:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANIZATION NAME</th>
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<tbody>
<tr>
<td>Ayodele Abioye</td>
<td>SecureID Ltd.</td>
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<td>Humberto Arias</td>
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<td>Prabhat Mishra</td>
<td>Idemia Identity &amp; Security USA LLC</td>
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<td>Dai Nippon Printing Co. Ltd.</td>
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<td>Kevin Pohl</td>
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<td>Anastasiya Shutava</td>
<td>Credit One Bank</td>
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ICMA recently expanded its ACE program to include ACE-Commercial virtual training.

The purpose of ACE-Commercial training is to provide sales, marketing, customer service and other card industry professionals at your company with the opportunity to learn the fundamentals of card manufacturing. Others who may find this training beneficial include suppliers and consultants who want to have a deeper understanding of the card industry opportunities and challenges experienced by card providers.
Employees who participate in the training series:

- Receive a high-level overview of the major components of a card manufacturing business.
- Learn about the production of cards.
- Review customer service support and sales issues that arise in the sale and support of card products and projects.
- Review top-of-mind questions and topics that customers of card products may have.

Unlike ICMA's other ACE programs, which require students to pass an exam to achieve a corresponding certification, ACE-Commercial is designed to provide employees in customer-facing roles with high-level card industry education without the need to enroll in certification-level curriculum.

Conducted by David Tushie, ICMA's standards and technical representative, ACE-Commercial is taught virtually in two, 2-hour sessions on the same day. There are no pre-requisites, but the program is only available to current ICMA member companies.

Upcoming ACE-C Training

- **Wednesday, June 23, 2021 at 11 a.m. EDT**

*Note: Date is subject to change.*

Employees who complete the training class will receive a certificate of completion.

The cost to attend the training is $249 per attendee or $210 per attendee for groups of five or more from the same organization. Private company training is also available at a reduced rate for groups of 10 or more.

For more information, pricing and to register, visit ICMA.com.

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This year's ICMA Card Manufacturing & Personalization EXPO will take place on Nov. 7-10, 2021 at the Renaissance Orlando at SeaWorld in Orlando, Florida. The theme is *Cards Reimagined*, and we will celebrate ICMA’s more than three decades of uniting the card industry during the event.

Geared toward small businesses and large corporations, ICMA’s EXPO includes speed networking sessions, dedicated exhibition hours and leading-edge educational presentations on trends, technology and the future of the card industry.

Sponsorship and exhibiting opportunities for the 2021 EXPO are now available. For more information, contact dwebster@icma.com.

For more information about the EXPO, visit ICMAEXPO.com.

SPONSORS

The following companies are sponsors of this year’s event. We appreciate their support and encourage everyone to recognize their generous contribution to this event. The valuable support of our sponsors contributes greatly to the success of our events.

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- **SICPA**
  - Hotel Keycard and Badge Sponsors

- **Archway**
  - Meeting Room Seat Drop Sponsor

- **Burgopak**
ICMA will host CardTREX virtually on June 10. CardTREX will pack everything you expect from a card industry conference into a single-day online event. CardTREX is unique in that it brings card industry professionals together for regionally focused education and networking. The event will feature two tracks. Educational and networking opportunities for European track attendees will be presented from 7 a.m. to 10:30 a.m. EDT. Educational and networking opportunities for North American track attendees will be presented from 11 a.m. to 2:30 p.m. EDT.

Both tracks will feature three educational presentations on hot topics and trends specific to the region.

The European track will feature:

**Biometric Payment Cards: Ready for Mass-Market Deployment by Fingerprint Cards**

Biometric payment cards are rising as the next innovation in bank cards. Combining extensive R&D work with key learnings from numerous pilots and first commercial launches, the latest generation technology delivers increased performance and enables the most cost-effective biometric cards to be produced while minimizing the time to market. In this session you will learn why and how biometric payment cards are now ready for mass-market deployment.

**Sustainable Innovation: Done Right, One Plus One Equals Three by Peo Akkeson**

Peo Akkeson will speak about his company’s experiences creating and patenting a wood card and how innovation requires stepping outside of comfort zones including the processes established by PVC card manufacturing. He will also discuss the importance of honesty, integrity and transparency when it comes to sustainability and environmental stewardess, noting it is crucial to get third-party scientific and fact-based verification.

**A Presentation by Thales Group**

A title and summary for this presentation was not yet available at press time.

The North American track will feature:

**Paper Vs. Plastic: How and Why the Gift Card Industry is Migrating to Paper by Neenah Papers**

Join Neenah in a conversation about how highly engineered paper cards are making inroads into the closed loop gift card market and where the company sees additional opportunities. Let’s examine what’s driving the change—environmental and economic perspectives as well as operational considerations for card manufacturers.

**Elevating the User Experience with Specialty Cards by Valid**

While mobile payment options are increasing in popularity, the need for unique specialty cards and experiences is also growing. Consumers want to feel connected to the brands they associate with and having a physical contactless, metal, environmentally friendly or innovative card will not only further brand messaging but strengthen relationships with current cardholders and drive in new business.

**7 Golden Rules for a More Sustainable Card Production by Liveo Research**

Liveo Research reviews production improvements and technology that are enabling manufacturers to reduce the environmental impact of card production processes.

Both tracks will also feature a roundtable discussion and time for networking. Attending either track will help you learn about new technologies and trends and enhance strategic business relationships in the region of the world where you work. You will also gain indispensable industry insights that you can leverage to drive innovation and profitability within your organization.

**Sponsor CardTREX**

Sponsorship opportunities are available. Sponsors will have time to address attendees, co-lead roundtable discussions and brand event materials. For more information, contact Diane Webster-Sweeney at dwebster@icma.com.

**Pricing**

CardTREX is an ICMA members-only event. For details on becoming an ICMA member, email info@icma.com.

The early registration cost to attend one track is $119 per person. The cost for two or more individuals from the same company to attend one track is $99 per person. Those who would like to attend both tracks, must purchase each track separately. The price to attend will increase by $20 one week prior to the virtual event.

For more information, visit CardTREX.org/virtual.
Have You Tuned into ICMA’s Webcasts Lately?

As a member benefit, ICMA hosts live webcasts featuring card manufacturers, personalizers, issuers and other experts delivering virtual presentations about the global card industry.

ICMA members can watch the presentations live, listen via conference call portal and post questions for immediate feedback. ICMA members who miss or want to review a webcast can access the archives in the member’s-only section of ICMA.com.

ICMA members who would like to present a webcast should email an abstract to Jennifer Kohlhepp at jkohlhepp@icma.com.

ICMA’s EcoLabel Program: A New Opportunity for Card Manufacturers

Take the next steps to become a licensed ICMA EcoLabel manufacturer. It’s a great opportunity to demonstrate your sustainability initiatives.

ICMA’s EcoLabel standard program is now available for member card manufacturers to be recognized for their commitment to sustainability and for their cards that meet program requirements.

ICMA’s green card standard at a glance

In response to consumer and card issuer demand for green transaction and identification cards, the ICMA EcoLabel Standard Program establishes criteria for the environmental impact of a manufacturer’s cards through a third-party ecolabeling program.

Manufacturers can become EcoLabel Program licensees. Licensees can showcase their support of sustainability initiatives.

Licensees can offer issuer clients a valuable EcoLabel opportunity for cards that meet established criteria in the following categories:

- Reduced materials
- Recycled content
- Compostable
- Biobased content

Sign up for the EcoLabel program today and demonstrate your commitment to green! Questions? Visit icma.com or contact us at info@icma.com.
NEW BLOGS POSTED ON ICMA.COM

Have you read ICMA's latest blogs?

*Top 3 Benefits: Why Create an ICMA Member Directory Listing* explains how ICMA's online member directory makes it easier than ever for anyone searching the web for card products and services to find an ICMA member company that meets the specific needs of their project.

As consumers seek alternatives to handling cash and touching point-of-sale terminals in an effort to protect themselves, the global card industry offers consumers *5 Ways to Safely Handle Cards Amid COVID-19.*

*The True Value of Winning an ICMA Élan Award* features interviews with several 2020 winners who relate how winning goes far beyond earning worldwide card industry recognition. Winning an Élan Award of Excellence also means prestige, brand recognition and new business opportunities.

To read all of ICMA's latest blogs, visit the blog section of ICMA.com.

ASSOCIATE MEMBERS

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Ken Hutchins
advanide.com

AdvanIDe is one of the leading semiconductor providers, focused on components for RFID transponders, chip cards and RFID readers and terminals. The company’s products are used in the secure access market for applications including access management and control, automated fare collection and object identification, and secure ID and transactions for eGovernment, M2M, secure authentication, IoT and related uses.

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For more than 100 years, Neenah Inc. has been a market leader in the creation and manufacturing of specialty papers for premium writing, text, cover, digital, packaging and label applications.
industry calendar

2021

June
ICMA’s Virtual CardTREX
June 10, 2021
European Track
7-10:30 a.m. EDT
North American Track
11 a.m.-2:30 p.m. EDT

Seamless Asia
16-17 June, 2021
Virtual

September
Money 20/20 Europe
21-23 September, 2021
Amsterdam

October
Money 20/20 USA
October 24-27, 2021
Las Vegas

November
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November 7-10, 2021
Orlando, Florida

TRUSTECH
30 November-2 December, 2021
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ICMA: The Premier Card Manufacturing & Personalization Organization

Access three decades of card industry data. Network with industry thought leaders and peers. Make an impact around the globe.

- **200+** members representing 43 countries
- **30 years** of the card manufacturing industry
- **200+** companies recognized by prestigious Élan Awards of Excellence
- **1,000+** industry articles provided through Card Manufacturing magazine, monthly Inside ICMA e-newsletter, and weekly In-brief e-newsletter
- **12** Global Card Market Statistics Reports covering 12 markets to support your business planning
- **3** industry leading training & recognition programs
- **UNLIMITED** opportunities for building business partnerships
- **300+** Global EXPO attendees and over 50 exhibits
- **50%** of members with the association for 10+ years
- **15** events have been held in over 15 countries
- **200** exclusive online articles, reports, presentations & resources
- **1,100+** nearly 15 companies recognized by prestigious Élan Awards of Excellence
- **Website** - visited by 5,000/month - drives traffic to member websites and offers on-demand member training
- **2** regional education events in North America and Europe

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