



**Is the future card or  
phone payments?** The  
answer could be both

**Amid debate about whether digital wallets or card payments will rule the roost, Hans Sjölund, Head of Card Sales & Business Development at Tietoevry Banking argues that cards and phones can complement each other, using five scenarios to show how cards and phones work together for better convenience, security and trust in payments.**

The digital revolution has enabled an entire generation of new payment methods, from digital wallets through to wearables, crypto-currencies and account-to-account transactions. Some estimates suggest<sup>1</sup> that half of the world's population will use digital wallets stored on mobile devices by 2050. However, with non-cash transactions set to grow by 80% through 2025<sup>2</sup>, that's only part of the story.

“ Estimates that half the world will use mobile wallets are only part of the story – card use also grew above trend after the pandemic.

As new research from Payments Cards and Mobile<sup>3</sup> shows, the use of payment cards actually grew far above trend across Europe coming out of the pandemic. The number of cards in circulation last year grew by 20% more than the long term average across Europe, at 5.18%, while spending on cards shot up by 16.35% percent – more than three times the long-term average. Despite the much-hyped consumer preference for digital wallets in e-commerce, cards remain preferred for online shopping in key European markets such as the UK (51% of transactions) and France (53.9%), and neck-and-neck overall, at 42% of all online transactions compared to 44% for wallets.

## Why cards still work – and phones can too

“ While mobile phones are everywhere, cards have grown more powerful thanks to contactless transactions, multiple functions and biometric security.

In part, the ongoing popularity of cards can be explained by consumer familiarity and trust. A study conducted by Visa USA and The Strawhecker Group during the pandemic revealed<sup>4</sup> that 65% of US consumers preferred using contactless payment cards in any payment scenario for their familiarity and convenience. Over the last five years, new features such as near-field communication (NFC) contactless transactions, biometric security and multi-function cards that feature debit and/or credit, loyalty, buy-now-pay-later (BNPL) and more have combined to make cards more relevant in the digital age.

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<sup>1</sup> The Financial Technology Report, 23 March 2023: “Half the World Will Use Digital Wallets by 2025, Led by Developing Markets”: <https://thefinancialtechnologyreport.com/half-the-world-will-use-digital-wallets-by-2025-led-by-developing-markets/>

<sup>2</sup> See Payments Cards and Mobile, 7 June 2021: “Cashless Payment Volumes will More Than Double by 2030”: <https://www.paymentscardsandmobile.com/cashless-transaction-volumes-will-more-than-double-by-2030/>

<sup>3</sup> See “The Digital and Card Payment Yearbooks 2022-2023: European Overview” at [www.paymentyearbooks.com](http://www.paymentyearbooks.com)

<sup>4</sup> Visa USA, 7 January 2021: “Back to Business Study – one year on”: <https://usa.visa.com/content/dam/VCOM/blogs/visa-back-to-business-study-jan21.pdf>



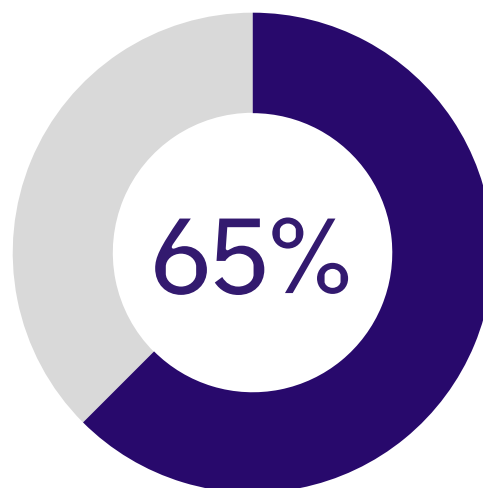
Over the same period, mobile phones have become almost ubiquitous, with mobile device penetration exceeding 100% in most developed economies and catching up fast elsewhere. There's growing evidence of a symbiotic relationship between cards and phones, whether that's India's FPL Technologies creating a physical card managed via an app, or the use of a digital wallet linked to a payment card as seen in 61% of wallets<sup>5</sup>. At Tietoevry, we believe that cards and phones can work together to improve the speed, convenience and security of payments both online and in-store. In what follows, we outline a number of use cases where cards and phones can work together:

## 1. Biometric security

All payments professionals will be familiar with the rising menace of fraud, especially in the digital channel. Although recent innovations such as two-factor authentication for online transactions have improved matters, biometric security features such as user fingerprints and iris scans are highly effective against fraud because they are unique to the user – as well as being easy to implement and operate. While they have been available on mobile devices for a decade, they are now becoming a feature on payment cards – and mobile phones are helping to make this happen.

Cards enabled with biometric security are sent without the user fingerprint stored on the card. The user's phone then helps to unlock this biometric field: on receipt of the card, the user places it on the back of the phone. The phone "speaks" to the card using near-field communication and unlocks the biometric field securely. The user then places their finger on the card and the phone guides the user through the onboarding process for biometric security on their card. The end result is a more secure in-person shopping experience – delivered safely thanks to a phone.

During COVID, US consumers still preferred cards



Nearly two thirds (65%) of consumers say that post-vaccine, they would prefer to use contactless payments as much as, or even more than, they are currently.

CREDIT = VISA/The Strawhecker Group

“ Mobile phones are enabling biometric security features on payment cards.”



<sup>5</sup> The Financial Brand, [undated], "Surging Digital Wallet use": <https://thefinancialbrand.com/news/digital-banking/mobile-banking-trends/surging-use-of-digital-wallets-threatens-traditional-credit-card-market-147287/>





## 2. In-store payments: phones as card terminals

In May 2023, Tietoevry Banking launched Tap on Phone, an innovative solution designed to make payment acceptance faster, easier and cheaper for merchants of all sizes. Using Tap on Phone, merchants can accept payments from any contactless card or mobile wallet directly from their standard Android mobile phone. Payment acceptance can now be enabled without the need for traditional card payment terminals, just software downloaded from an app store. Tietoevry Banking's Tap on Phone solution allows merchants to go to market quickly, and additional services can be integrated seamlessly. In this case, the phone becomes a payment terminal that accepts both wallet payments and cards.

## 3. Online authentication: fast and easy digital ID

To help fight fraud in the digital channel, the European Commission introduced Strong Customer Authentication (SCA) as part of the provisions of its second Payment Services Directive (PSD2). SCA mandates that all transactions worth more than €50 must be authenticated using a secondary factor (such as a passcode) unless certain exemptions apply. To date, SCA has been criticised for introducing additional friction in the transaction process and causing a spike in cart abandonment rates. According to checkout.com<sup>6</sup>, SCA has added 30 seconds on average to checkout times since 2020.

However, recent innovations mean that Android users can now use their cards as a second authentication factor, tapping their card on their phone to confirm their identity when checking out online. This is accepted under SCA because the card and phone are both physically owned by the user. As of Q3 2023, Apple have confirmed much wider availability for this function in their devices in Europe, having already enabled it in the US and Asia. By providing a convenient and rapid way to authenticate that's compliant with SCA, this example of cards and phones collaborating should give a further boost to e-commerce growth.

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<sup>6</sup> Checkout.com, "Removing Friction at the checkout": <https://www.pymnts.com/study/checkout-conversion-index-digital-payments-ecommerce#wpct7-f1168151-o1>

## 4. Card and mobile wallet as one

As discussed in our introduction, it's not always a given that consumers prefer digital wallets over cards. In January 2023, research firm JD Power published evidence<sup>7</sup> that the number of Americans preferring cards over mobile wallets increased from 47% to 49%. And as we've seen, European wallet users surveyed by Marqueta said they had at least two cards (one debit, one credit) linked to their digital wallet. In the future, it's probable that consumers will appreciate the flexibility of being able to pay with either a physical card or a digital wallet depending on circumstances: in a recent survey for Payments Europe, 78% of consumers said<sup>8</sup> they wanted to be able to choose how they paid – while 48% of merchants in the same survey said they still saw cards as their main source of non-cash revenue out to 2026.

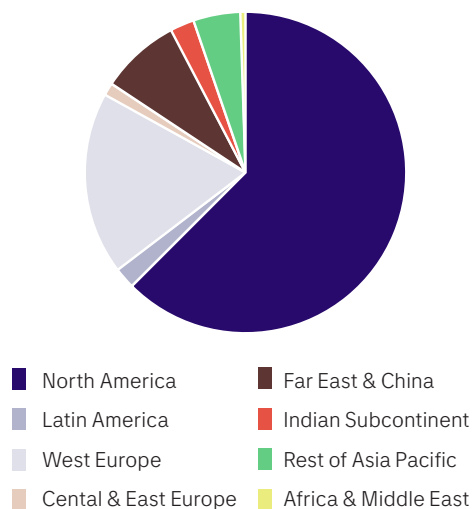
“Consumers appreciate the flexibility of being able to switch between cards and wallets, while merchants still see cards as their main non-cash revenue source.”

## 5. Physical + virtual = phygital

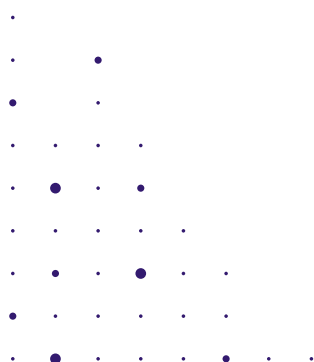
Virtual cards may be the payments phenomenon of the 2020s. In 2021, the virtual card market was valued at \$1.9 billion, but Juniper Research say<sup>9</sup> this could grow to around \$6.8 billion by 2026. Juniper say two-thirds of the market for virtual cards comes from the corporate sector, which values this payment form for its security, low cost and simplicity when it comes to associating payments with internal budgets.

Virtual cards can be produced instantly and issued via e-mail or direct to a digital wallet; they can also be linked to a physical payment card. They can also be employed on a single-use basis, making them harder for criminals to harvest for fraudulent purposes. In addition to which, they are a sustainable, convenient alternative to traditional corporate expense cards – though, as is the case with digital wallets, many users value the ability to link a virtual card to a physical card for convenience and choice.

Two-thirds of the v-card market is corporate



CREDIT = Juniper Research



<sup>7</sup> JD Power, 24 January 2023, "A growing number of Americans still prefer the convenience of plastic" <https://www.jdpower.com/business/resources/mobile-wallets-gain-popularity-growing-number-americans-still-prefer-convenience>

<sup>8</sup> Payments Europe, November 2021, "The Evolution of the European Payments Market": [https://www.paymentseurope.eu/wp-content/uploads/2021/11/The-Evolution-of-the-European-Payments-Market\\_Payments-Europe\\_Spread.pdf](https://www.paymentseurope.eu/wp-content/uploads/2021/11/The-Evolution-of-the-European-Payments-Market_Payments-Europe_Spread.pdf)

<sup>9</sup> Juniper Research, undated 2021, "The Virtual Cards Market": <https://www.juniperresearch.com/infographics/virtual-cards-statistics>



**In common with most other areas of business, the payments market is going through dramatic change as part of the digital revolution.**

In such times of rapid change, many consumers look to the familiar while adapting to change. As digital innovation continues, the role of the physical card is also changing – both through more powerful biometric cards, and through the innovations Tietoevry and others are introducing that combine cards and phones to deliver greater security, speed and flexibility for consumers and corporate clients.

**To optimize both cards and mobile devices in your payments strategy, contact:**

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