



WEARABLE TECH 2021: THE FUTURE IS NOW

AN SPA INSIGHT PAPER

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Introduction

In July of 2017, the Smart Payment Association (SPA) published [Wearable Tech: A Growing Payment Opportunity](#). With sales of wearables booming, the paper explored the huge potential of a world in which open- and closed-loop payment technology could be integrated into a wide range of smart devices.

From initiatives like bPay Loop and Android Wear 2.0 through to the complexity involved in integrating open-loop payments into wearables, the first edition of our Wearable Tech paper sought to provide an overview of the major factors influencing consumer adoption and issuer support.

Four years on, and in the wake of dramatic changes to both consumer technology and the world in general, we wanted to revisit some of those issues with a fresh perspective. We wanted to understand how the market had grown, which new innovations had been driving it forwards and, crucially, whether some of the obstacles that we'd reported on in 2017 had been overcome.

To aid with that, we sought the views of SPA members with their fingers firmly on the pulse of wearable payments. Contributions from companies including Thales, G+D and IDEMIA offered invaluable insight into the new technologies, trends and challenges that define the wearable payments market of 2021.

As wearable technology grows smarter and more versatile, and as consumer acceptance of new ways to pay continues to rise, the opportunities for issuers will only become more significant. This paper provides an updated view on the fast-moving wearable payments market, and the actions that issuers need to take today in order to be ready for tomorrow.





1. FOUR YEARS ON: THE WEARABLE PAYMENTS MARKET TODAY

In our last in-depth look at wearable payments, we covered a market on the edge of momentous change. While closed-loop payments – utilized primarily in leisure and entertainment venues like theme parks, music festivals, and sports matches – dominated the wearables landscape at that point, growing everyday use pointed to a more expansive and mainstream future.

Today, there is no doubt that this potential is beginning to be realized. In 2019 alone, the global wearable payments market was valued at \$285.47 billion by one source¹, with a CAGR projection of 21.7% expected to drive that to some \$1.37 trillion by 2027.



Naturally, a dramatic increase in device sales is behind that projected rise: ABI Research believes that more than 86 million payment-enabled wearable devices will have been sold by the end of 2020². This builds on the explosive growth seen earlier in the decade, with the number of (payment or non-payment enabled) wearables sold rising from 94 million in 2017 to around 121 million just one year later³.

CCS, the analyst house behind that insight, believes that this figure will grow significantly again by 2023, projecting sales of around 260 million wearable devices at that time.

All of this would mean little without a corresponding increase in consumer spending using wearables. Here too, though, market watchers believe that momentum is growing.

A study by Visa suggests that wearable payment volumes will have reached \$501.1 billion by the end of 2020, accounting for 20% of all proximity payments⁴. A separate survey suggests that wearable payments increased by 365% between 2017 and 2020, with a quarter of Europeans planning to buy goods and services using the technology in the future⁵.

Perhaps most importantly, consumers are beginning to see real value from wearable payments. Between 2018 and 2019, Belgian bank KBC conducted a trial in which 1,000 customers were issued with a wearable payment device of their choice from a selection of four – with smart rings, watches, key fobs, and bracelets on offer. Six in 10 carried that item on them at almost all times, two-thirds noted that they would consider

¹ Wearable Payments Market Outlook – 2027 – Allied Market Research, July 2020

² ABI Research – Q3 2020

³ Optimistic Outlook for Wearables – CCS Insight, 20 March 2019

⁴ Paying with wearables: The next big thing in IoT – Visa Innovation Blog

⁵ Wearable payments are taking over Europe – Printec, 16 January 2020



buying a wearable after their trial experience, and more than half would firmly recommend them to family and friends ⁶.

Crucially, while debit cards remained the payment method of choice for the trial participants, wearables followed just behind. Cash, perhaps surprisingly, was relegated to third place. The wearable payments tipping point is well and truly here.

2. SMART OR PASSIVE? CONSUMER CHOICE COMES TO THE FORE

It isn't just consumer adoption that has changed since our last look at wearable payments. With the technology underpinning wearable devices evolving rapidly, issuers and manufacturers alike have been able to pursue the opportunity to bring new and innovative devices and functionality to the market.

At a basic level, wearable payment devices now fall into one of two categories:

- > **Active devices:** Fully connected devices that give users functionality that goes beyond pure payments. Payment-enabled fitness trackers such as Fitbit (Fitbit Pay) and Xiaomi's Mi (Mi-Pay) series of wristbands fall into this category, as do devices with even greater functionality like Apple and Samsung's extensive line of smartwatches.
- > **Passive devices:** typically taking the form of fashionwear such as rings and (non-fitness tracking) wristbands, these devices often do not use a battery but offer users the ability to make contactless payment in a subtle and discreet way such as the SwatchPAY! series. Already in wide use in the events and leisure industries, passive devices are gradually gaining traction with style-conscious and technologically savvy consumers too.

While the form and function of devices in both these categories have developed rapidly – the sixth generation of the Apple Watch launched just five and half years after the first, for instance – the core technologies that power them has remained largely consistent. The actual payment capabilities of these devices are delivered using three methods. These are:

- > **Stickers:** miniature contactless cards that can be stuck to any item of the user's choosing.
- > **Chips and tags:** contactless card tech that can be inserted into an object such as a wristband. Tags tend to be removable, whereas chips are embedded into items such as rings and fobs.
- > **Fully integrated:** these are specific device and application combinations that provide integration between the wearable and a funding method.

Stickers, chips and tags will often rely on a mobile phone with a dedicated application to load a balance, or to connect to a customer's bank account.

The choice between a smart or passive device, of course, depends largely on the needs of the user. Leading the charge right now are smartwatches and fitness trackers, something that looks unlikely to change.

⁶ Contactless Payment Ring Is the Most Popular Wearable for Paying – Smart Ring News



Projections up to 2027 suggest that wearable payments via smartwatch will outstrip those made via dedicated payment bands by more than 2:1 over that period ⁷.

The key here is not about volumes however, but flexibility, according to Verónica Martin of G+D. “Smartwatches are attractive devices, but they also come with a high price tag that can put them out of reach for many consumers,” she says. “Rings, payment bands, and other wearable payment solutions tend to be much more affordable and will help to drive mass market appeal as well as meeting multiple different use cases.”

3. THE WEARABLES DEFINING A NEW DECADE

The mass market appeal that Martin mentions is already on show in numerous devices to have made their way to the market in recent years.

Accepted at more than 40 million retail locations across the world, the K Ring wearable supports MasterCard, and bank account funding, and allows owners to pay simply by bringing the device to a contactless payment pad or terminal. Powered by electromagnetic induction from the card reader, the K Ring - like any other type of passive wearable - has no need for charging, meaning that users can keep it literally on hand at all times.



In Japan, SPA member Thales helped Panasonic to deliver a major wearable payments rollout for stadiums hosting matches in the J1 League – the country’s premier soccer league. Across the country, wristbands were made available to fans as substitutes for payment cards and cash, and allowed supporters to pre-purchase their match tickets, food, and other goods. A similar project has also been deployed for London’s Saracens rugby team ⁸.

G+D, which provides embedded technology and passive devices supporting all major payment networks, has helped issuers and OEMs to launch their own wearable offerings in recent years.

Having been involved in the creation of wristbands for a varied range of clients including Australia’s Hume Bank, Canada’s TransLink, and Dawson Racing, G+D’s innovative StarSign key fob has been shortlisted in two categories at 2021’s Card and Payments Awards. The world’s first biometrics-enabled Fast Identity Online (FIDO) security key, an integrated fingerprint sensor allows StarSign holders to confirm transactions using their fingerprint.

⁷ Wearable Payments Market Outlook – 2027 – Allied Market Research, July 2020

⁸ Contactless wearable technology – Payments in style - Thales



Other lifestyle lines are starting to emerge, too. Indian watch brand Titan followed Swatch's lead in September last year, launching its Titan Pay service alongside a range of NFC-equipped wristwear. DressCode Shirts recently launched its CashCuff line of wearables – the “world's first payment shirt” according to the UK-based company. And compatriot Tovi Sorga, a British luxury goods retailer, now offers high-end leather payment bracelets and key tags.

But while further innovation will undoubtedly occur during 2021 and beyond, IDEMIA's Charline Allard suggests that the focus for wearable payments in the year ahead might be on consolidation rather than revolution.

“Few industries in general will be focusing on innovation as the financial consequences of COVID continue to be felt, and that is likely to be the case with regard to wearables as well”, she says. “I think that the priority for the time being should be on raising awareness of the kinds of devices that exist today and how they benefit consumers. It's about expanding the market rather than constantly trying to reinvent it.”

4. CONVENIENCE, SAFETY, AND CONTROL: HOW WEARABLES MEET CHANGING CONSUMER NEEDS

Wearable payments address one need above all else: convenience. Paying for goods and services with a simple flick of the wrist is infinitely faster and easier than by handing over cash, or even tapping in a pin number. And while the difference may be relatively slight, wearables offer greater convenience than even contactless cards and mobile payment apps – removing the need to fumble with a wallet, purse, or phone.

In recent years, however, the use case for wearables have developed beyond pure accessibility. “With closed-loop payments, wearable devices offer an excellent way to control someone's spending while still making it easy and convenient for them to pay for goods,” explains G+D's Martin.

“That has a big implication for both, younger and older citizens, because you can provide them with a level of autonomy while still having ultimate control over their finances,” she continues. “Wearables with biometric sensor also remove the need to remember a card or a PIN number, which is a major benefit to anyone with memory-related health issues.”

That capability is similarly useful for younger generations, notes IDEMIA's Allard. “In Asia, and China in particular, there has been a surge in wearables because it gives parents a very easy way to control their children's spending without having to micromanage it on a daily basis,” she says. “Parents can set a spending limit for a device, and check how and where it is being used via the accompanying app. So there is a safety and security element to this approach, too.”

That safety aspect isn't just limited to the very young or very old though, explains Martin. “Wearables are inherently quite discreet, much more so than a wallet, card, or mobile phone. And even if you do lose a

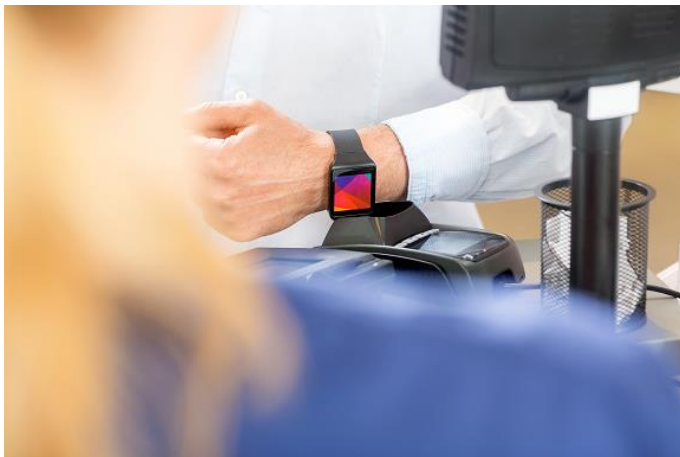


wearable or have it stolen, you can just terminate the link to your bank account or remove the funds from that device,” she notes.

Personal safety, of course, took on a greatly different meaning in 2020 due to COVID-19. Almost overnight, even the simple act of shopping became a potential health risk, with the vast majority of customers wanting to pay as quickly and frictionlessly as possible. Here too, wearables have offered a solution.

“There is a significant cleanliness benefit to wearables, not to mention the advantages of being able to pay very quickly” comments Thales’ Valerie Gleize. “Wearables give shoppers a way to pay without having to handle cash or a terminal and can help them get in and out of a store rapidly – both of which are essential right now.”

“Wearables even prevent customers from having to touch their wallet or a phone after they’ve picked up goods from store shelves, so from a hygiene point of view, they’re really a perfect solution,” she notes.



5. THE CHALLENGES STANDING IN THE WAY OF WIDER ADOPTION

In our 2017 Wearable Tech paper, we covered four obstacles then standing in the way of greater adoption of wearable payments. These were:

- > The complexities associated with enabling open-loop payments on wearables.
- > Security considerations at either device or POS level.
- > Limited availability of contactless POS terminals in key territories.
- > Value limits on contactless transactions.

The availability of contactless POS terminals is an issue rapidly disappearing: In the past years, there has been a significant deployment of contactless capable terminals driven by increased usage of mobile payments and contactless cards. The COVID-19 pandemic has even further accelerated this transition. New acceptance solutions based on mobile phones also contribute to the increase in contactless acceptance capability.

The value limits on contactless transaction does remain an issue, in particular in Europe due to the strong customer authentication mandate imposed by PSD2. The SCA exemptions apply to wearables but they are subject to a limit of 50€ for any given transaction, to a cumulative amount of 150€ for consecutive transactions and to a maximum of five consecutive transactions without SCA. Above these limits, an action is required from the wearable holder to authenticate.



In many countries, user authentication can be handled by means of a PIN code entered by the user on the payment terminal and verified online by the bank server. In other countries where this capability is not supported by terminals, banks and OEMs are implementing SCA on a companion mobile phone where the user is asked to confirm possession of the wearable. In both cases, the SCA limits are not managed on the wearable device but on the bank server.

Regarding security and complexities associated with enabling open-loop payments on wearables, greater use of tokenization will likely help consumers overcome any lingering concerns.

“Tokenization makes things easy for issuers and consumers alike,” says Thales’ Gleize. “Our wearable device tokenization solution works identically to the kind used for payment cards, so the device essentially becomes an extension of that card. It can be cancelled, blocked, and managed just like a debit or credit card would, which makes it a very simple thing for a bank or an issuer to communicate to customers.”

Helping customers understand that wearables are just as secure as traditional payment methods could be a priority according to one recent study. Research conducted in 2019 shows that – of 3,000 adults from the US, UK, and Australia – around two-thirds are sufficiently worried about security that it may deter them from using wearable payment devices .

6. ISSUERS AND BRANDS: WHO’S IN CONTROL?

As highlighted earlier in this paper, one of the major developments over the past few years has been the coming together of payment card issuers, technology vendors, and brands from the fashion and lifestyle sectors. This poses obvious questions as to who is in control of the wearable payments market; who should be driving it forward?

The answer, according to Gleize, should be taken case-by-case: “It’s a two-way street. In some instances, you’ll have fashion or fitness brands that want to add extra functionality to an item or device that they already sell. In others, forward-thinking banks and issuers will approach a manufacturer and see what opportunities might exist to partner on either an iteration or something completely new.”

That sentiment is echoed by G+D’s Martin, who notes that form factors are likely to play a key role in determining future applications of wearable payment tech. “Ultimately, the device has to be something that consumers want or need to have with them at all times,” she explains. “Watches, key fobs, step trackers; all of those items could very easily have payment functionality embedded within them, which presents an opportunity for those manufacturers.”

“Those lower-end devices also deliver a level of financial flexibility that is absolutely essential to the long-term success of the market,” she continues. “We’re talking about items in the €10 – 50 range, which makes them much more attainable than a smartwatch.”

For Allard, the chance to increase the customer experience is too good of an opportunity for issuers to pass up. “Wearable payments aren’t there just for the sake of it,” she says. “They deliver real benefits to



consumers, which makes them a potential differentiator for issuers and banks. They're a simple but effective way to expand a payments brand, and acquire and retain customers."

No matter who happens to be pushing a wearable device to market though, Allard notes that some degree of multiapplication functionality is increasingly imperative.

"Wearable devices don't need to go toe-to-toe with smart devices in terms of what they can do, but adding to the contactless functionality is relatively simple and can deliver a quick win," she continues. "If you have payment capabilities, adding things like tap-in/tap-out transport ticketing and building access is a logical next step. By making the device more versatile, you're also making it more valuable to the user."

7. WEARABLE PAYMENTS: A WINNING COMBINATION

Since our last deepdive into the world of wearables, major developments in technology and society alike have helped to push the payments opportunity to a whole new level.

From convenience to personal safety, wearables present numerous benefits to consumers. As a result, they present major opportunities to both financial organizations and manufacturers too, from branding to acquisition.

Underpinned by cutting-edge security and smart solutions that offer consumers a choice of ways to pay, wearable payments deliver a winning combination that can deliver benefits for all.





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