

How softPOS can enhance large merchants' customer journeys and experience across all verticals

White Paper

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Tap, Tap, Tap...

Tap to Pay¹, Tap to - or "on" - Phone², Tap on Mobile³... If the wording is not exactly the same, all these - relatively - new marketing names share one thing in common: they all relate to the so called "softPOS" topic.

If nowadays softPOS is a trendy subject, it is not that new and may cover different understanding. In short it stands for Software Point Of Sale, a technology allowing to turn any NFC internet connected smart device into a contactless physical and virtual card reader. Any merchant can now accept contactless payments with any smart device, even a Commercial-Of-The-Shelf one (COTS). No additional hardware is required ; it is a fully software-based alternative to traditional payment terminals.

The infographic (see page 5) explains the different technologies and standards, and gives an overview and comparison with the other merchant POS possibilities: traditional, mPOS⁴ and smartPOS devices.

In this white paper, we will explore the different market trends that explains potential and opportunities brought by the softPOS solutions, what technology or standards are currently available and what is coming next. We will highlight why and how large merchants, and not only individuals (micro) and small business organisations, can benefit from a softPOS solution, with some uses cases in different market segments and verticals.

1 Apple
2 Respectively Visa & Mastercard
3 Worldline
4 mPOS stands for mobile POS



The inexorable ascent of the smart devices in the payment landscape

It is obvious for everyone that the smartphone is now part of our daily life, as a consumer and as a professional. Worldwide, the mobile adoption has never been so high, and still increasing. GSMA states that the worldwide penetration rate will increase from 67 to 78%, and in Europe from 78 to 83%⁵. In a recent survey Klarna claims that 47% of the GenZ use their smartphones when shopping in a store and 35% use phones to make payments⁶. In comparison, in France, the share of smartphone users who use a proximity mobile payment has increased from 15,6% in 2019 to 21.1% in 2021⁷, behind UK (24,4%), Italy (25,9%), US (43,2%)... and China (87,3%).

This usage increase is highly supported by the cashless and contactless trend. Oaklen (previously PwC) states that worldwide cashless transaction volume will more than double by 2030⁸. The global contactless payment market is projected to nearly quadruple in value by 2026. Research and Markets' Contactless Payment Terminals Market⁹ report found that the global contactless payment terminals market was valued at \$13 billion in 2020 and is expected to reach \$51 billion by 2026. This would nearly quadruple the size of the global contactless market in the span of a few years.

On the merchant side, at its POS location, two major trends are about to revolutionise the existing, traditional, POS infrastructure. Android is most likely to become the next operating system standard, and the mobile POS (mPOS) is leading the growth race, with 56% increase, from 20 million units shipped worldwide in 2021 to 32 million by 2026¹⁰.

Payment devices: from hardware to software, from a single functionality to a world of possibilities...

On the payment side, the evolution from POS - traditional payment terminals which are often called "card machines readers" with card payments as their sole purpose - to mPOS can be summarised by the addition of mobility, a wider and coloured touchscreen display, embedding other services such as an access to the store's data. You may also read or hear about "smart POS", which is in fact more of a synonym. Nevertheless, this term suggests a proximity with the smart devices ecosystem development, being easier to integrate with the POS environment but are embedding other functionalities and value added services.

These "m" and "smart" POS terminals are nowadays more and more built based on the Android technology. Why such a trend? Well, Android terminals modernises payments, bringing a range of powerful applications, tools and functionalities to enhance the customer journey, which in turn drives revenue and loyalty for the merchant. In fact, Android brings more than that. The devices are one component of a much larger commerce platform. With the Android platform, endpoint devices get smaller, smarter, as well as more powerful, bringing additional functionalities. Payments are connected seamlessly across the physical POS, software and the cloud.

The Android POS solution provides merchants easy access to vetted, secure third-party applications. These applications can be developed on Android's open APIs, allowing for downloads from the app store or development of personalised applications. In this system, multiple players in the ecosystem, including processors, ISOs, ISVs, gateways, and developers can distribute their apps more widely by taking advantage of conventional and market-specific app stores. This enables an ecosystem that allows for more options, and connects merchants to a wider array of applications, content and media. For merchants, it's an excellent way to provide a personalised, modern checkout experience to customers.

5 GSMA « Mobile Economy 2021 »
 6 Klarna survey source
 7 Global proximity mobile payments, by country 2021 | Statista eMarketer
 8 "Future of payments 2022" by Oaklen (previously PwC)
 9 Research and Markets Contactless Payment Terminals Market
 10 Juniper Research May 2021 "POS Terminals - Changing the Payments Experience"

Evolving customers behaviours implies merchant adaptation

These technological innovations and trends have to be put in perspective with customers changing their way to purchase and pay. This brings additional challenges for every merchant. A recent survey from Tribe¹¹ states that 50% of merchants' biggest concern for the next 12 months is how to compete with large chains which offer innovative customer experience at the checkout. In a more mid/long-term perspective, their 2 biggest challenges are:

- 84% desire to improve their customer' experience
- 51% demand for digital in-store payment experiences such as kiosks, self-checkouts and more

Improving customer's experience by bringing additional technology in the POS is obviously something any merchant could - technically speaking - easily do. Adding latest mPOS and furthermore smartPOS terminals in the field could bring such innovative solutions, as they allow mobile check out especially. But the key challenge merchants and all the ecosystem is facing is... cost-effectiveness. In the same report¹¹, 31% claimed that keeping costs under control was one of their key priorities for the next coming 12 months. This percentage is in line with PW consultant's white paper¹² about the customer's journey in retail environment: 30% of retailers think they major concern remains the financial optimisation, an euphemism for cost reduction, as payment's flow and processes are concerned.

SoftPOS, the ultimate solution?

SoftPOS in an innovative way to answer these expectations altogether. By reducing the hardware volume requirements, but increasing the number of payment terminals at the same time, adding extra and evolving functionalities and linking payment flows to core business applications, it is, in theory, the perfect fit. On top of that, maintenance is made a lot more easily, and at reduced cost.

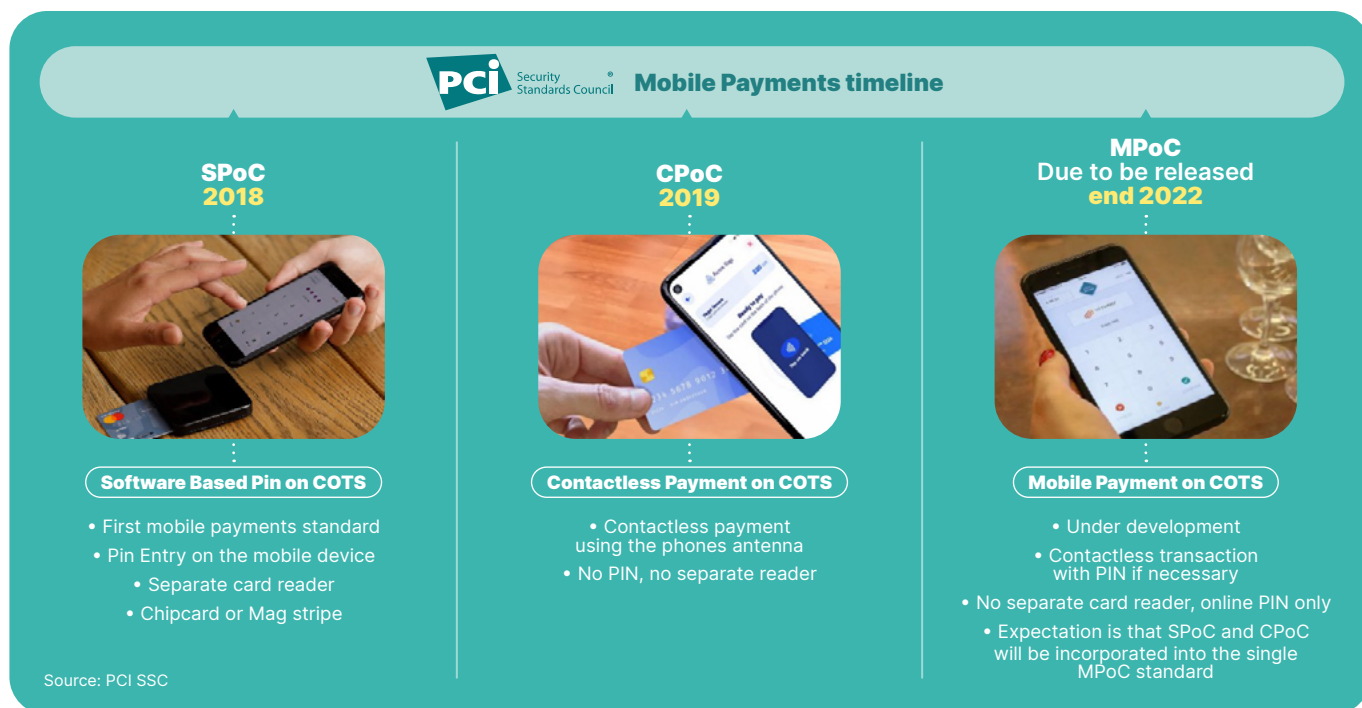
The technology around smart devices – mobiles and tablets – like NFC and biometrics has pushed the boundaries of possibilities further, as these devices can now allow to make and receive payments as additional functionalities.

In its 2021 Global Payments report¹³, McKinsey confirms the softPOS status: *"payments providers are competing to offer customized solutions like..., "tap to pay,"... that make the payment experience seamless, pleasant, and increasingly contactless. Simplification in the merchant onboarding process can also help in attracting more sellers, reducing cost, and elevating the merchant experience"*

Coincidentally, earlier this year Apple announced launching its softPOS solution called Tap to Pay¹⁴. If the acquisition of the Canadian company Mobeewave earlier in 2020 by Apple went somehow silent, this announcement is another story. Considering that Apple Pay is one of the key drivers for mobile payments awareness and usage as of today, a lot of experts predict that this could disrupt the payment industry. Whatever the future of payment's platform will be, Android, Apple or both, it has given softPOS the legitimacy it was probably looking for.

It is also true that softPOS is about to become a mature solution. Since 2018 when PCI DSS released the first announcement of the SPoC standard which would allow mobile solution providers to develop products that enable merchants to securely accept PIN-based payments with the PIN entered on a commercial off-the-shelf (COTS) device¹⁵ to the upcoming MPoC standard, the route has been paved with different steps (see infographic "PCI Standards timeline" below).

According to Juniper Research, the number of merchants worldwide using software Point of Sale solutions to accept contactless payments on an ordinary NFC smartphone or tablet will increase from 6M in 2022 to more than 34.5M by 2027¹⁶ with the rollout of Apple's Tap to Pay feature being among the key drivers of this growth.



11 "Solving the post pandemic payments puzzle" on www.tribepayments.com, or see [MPE2022 Tribe's keynote](#)
 12 Découvrez «l'Observatoire Parcours d'achat & Paiement 2022» (oaklen.eu)
 13 Global Payments Report, 2021, Mc Kinsey
 14 Apple empowers businesses to accept contactless payments through Tap to Pay on iPhone, February 2022
 15 What to Know About the PCI Software-Based PIN Entry on COTS Standard (pcisecuritystandards.org)
 16 NFCW, August 9th

Is there still room for the traditional POS?

Considering that the total number of merchants accepting cards worldwide would reach 100M by end 2025¹⁷, softPOS would represent more than a third of the total global POS fleet. This means that current and legacy POS solutions would still be the vast majority.

Some might say that softPOS is purely designed for micro and small merchants, because of low transactions volumes, well known – daily used - devices (personal or professional), fast and easy set up and activation, and low-cost solution. In this case it could lead to a replacement of the SumUp, Square, Zettle and alike solutions as well as entry m/ smart POS devices. For large merchants, it is however another story. The traditional payment terminals have been designed to meet a long list of specific requirements as well as a mandatory reliability: ruggedised form factor, large screen enabling complex interactions, closed Android OS (preventing from malwares, hacks, etc.), off-line mode (most of the time a hard prerequisite from retailers or other merchants). In addition some professional accessories are required or requested: multi charging docking station, bar code scanner (on top of the camera), tool for visually impaired people.

These devices are less likely to be stolen (contrary to consumer goods), have a decent autonomy - thanks to large batteries -, embed (quasi) all payment methods available - chip & PIN, magstripe, contactless, etc... If needed, a set of API for business application integration can be provided and last but not least, they provide a specific consumer UX, designed for cardholders to be reinsured to do a transaction on a specific/secured device...

Most of these features are not available for the so called "Commercial Off The Shelves" phones, e.g smartphones and tablets any consumer can purchase in a retail store. Some of these large merchants would neither want to become early-adopters of a brand new way of paying - although very innovative- , but still with some limitations that may not be accepted by the consumers, or even themselves: only accepting contactless payments, uncertain integration capabilities with their own core business software(s), limited card schemes acceptance, lower transaction speed, mandatory internet connectivity, etc.

For all these reasons, we can safely say that the traditional POS remain very relevant for merchants, however the softPOS solution is an additional enhancement to the customer's journey.



What could be in it for large merchants?

Although softPOS is ticking all boxes for micro and small merchants, medium and large ones do not want to be left outside the playground.

Whatever the size of the merchant, challenges are quite similar. If you think of cost reduction for example, why would a large merchant pay for an extra payment device if a payment app can easily be installed on its existing terminals? Why shouldn't a large merchant consider linking the payment process to additional features? Why would a large merchant refuse to pay less for his payment terminals' maintenance? Why would a large merchant deny to scale up his payment terminals in a very easy and fast way?

Merchants are always looking to reduce investments and cost, while at the same time providing better customer journeys to consumers.

There are some use cases (see page 9) where a large merchant is interested in a light and flexible solution. If on top this solution can be installed on a professional device having some of the features listed before, then it's even better.

SoftPOS for large merchants not only procure some immediate benefits such as enhancing their productivity, reducing their costs, but can also help them improve their customers' experience and relationship, while opening new business possibilities.

Reinventing the payment experience

Large merchants need fast payment check-outs, a reliable solution in every kind of situation, accepting all payment means for every type of customers and this is what a specific payment terminal is bringing. But adding more flexibility, more mobility, adding some capacity to deploy a payment solution in a very short time at a POS, being able to equip its sales force with a unique device for several functionalities, that's what a softPOS solution is aimed at... By adding such innovative possibilities in addition to a traditional payment terminal fleet is most likely an interesting direction large merchants should investigate.

New business opportunities across all verticals

At Worldline, our experts in various verticals such as Grocery & Speciality Retail, QSR & Restaurants, Hospitality, Travel, Petrol & Energy, Transport, Parking... are all of one mind: softPOS is not only legitimate for large merchants, but the steppingstone towards new business opportunities.

Several use cases are common across different verticals: grocery or speciality retailers, QSRs, or even theme parks somehow faces similar issues: how can they increase the speed and conversion at check-out and add sales opportunities? The answer is simple: *queue busting* and *pop-up stores*! softPOS is ideal for these use cases, where flexibility, light and agile solution are vital.

SoftPOS allow to combine the in-store data (stock...), as well as a core business application such as the retail - grocery or speciality - online shop, the payment acceptance capacity in one single smart device. This trio makes the *endless aisle* finally a reality... Transforming an opportunity in a direct sale is no longer a dream, but a possibility.



Merchants may add loyalty, or customer's experience rating on top of their sale, at the same time. Right away. In two shakes of a lamb's tail... or in a few taps should we say! Would that not delight any customer?

Since the pandemic and Covid-19 era, deliveries haven't stopped their continuous increase. And no-one predicts the end of such a trend. In many verticals, from Retail to Petrol & Energy and QSR, the delivery is a must, and the *Payment on delivery* allows to get paid for the exact amount of delivered goods, on the spot. Why should a delivery (wo)man get annoyed with two terminals? He/She already uses a smartphone as a GPS, for professional phone calls, stock management or whatever business data available on their smart device (phone, phablet or tablet). Adding a payment acceptance solution on such a device would obviously be more efficient and mean no additional device to manage, store, charge, maintain, etc...

The Covid-19 pandemic has also boosted *Payment at table* and helped the QR code to win its spurs by the same occasion. But again, different verticals such as QSRs, restaurant and hospitality – different verticals - share a common issue: improve their customer experience and staff productivity. Why should a waiter go back to its cash register location to take a specific payment terminal and not use the same device he already uses to take the order to accept payment? In some restaurants, you may also find tablets to order your meal. Why not adding the payment acceptance on the same device? 1 device instead of 2 reduces costs and makes the staff, and the customer, happier!

The last main identified use case that goes across many different verticals are obviously the Kiosk *Self-check-out* and *PED backup*.

SoftPOS makes perfect sense for large merchants that needs to have a *complementary solution to their existing POS fleet*. Light, flexible, mobile, cost-efficient and ready to use solution, it allows Point Of Sales and their managers to face any issue they have very rapidly, with their current Pin Entry Device fleet.

Going further, in an ideal world, softPOS would also be suitable for *unattended payment terminals* such as those located in vending or parking machines, transport validators, car wash, hub lockers, laundries, reverse vending, retail pharmacies dispensers, restaurant Drive-thru's, etc ... on top of the kiosks already mentioned. Although that is maybe early stage as there are probably some challenges to overcome, such as the module integration into the machines and kiosks themselves. That would nonetheless be a game changer for the whole unattended terminals ecosystem.

In addition to these cross-verticals use cases, we can mention some specific more ones, where softPOS brings efficiency, cost reduction and easy set up:

- Assisted sales (Speciality retail)
- Taxi payment (Travel)
- Ticketing & control (Transport)
- Temporary parking (Parking)

Use cases definitions

Queue busting: solution that allows merchants to scan/record multiple items with a handheld mobile device and perform a payment transaction for check-out, ultimately saving time for the consumer and increasing throughput for the merchant

Endless aisle: sales technique by which retailers are able to provide in-store customers with the opportunity to order products - and take the customer's payment - that are either not normally sold in the store or that are currently out of stock

Pop up store: a shop or store that is deliberately temporary. It's a store that "pops-up" for a limited period of time to achieve a particular goal

Payment on delivery: action of delivering goods to the customer's location (people's houses, places of work or any other place) against on site payment

Assisted sales: consists of giving advice and doubts solving by the store employees, to possible customers, in order to get an immediate sale and payment

Payment at table: technology that allows restaurants' guests to pay items or meals directly at the table they sit via a handheld point of sale device used by a server (alternative technology: by scanning a QR code with their own smartphone), ultimately saving time for the consumer and increasing productivity for the server

Self-check-out (SCO): also known as assisted checkout (ACO) or self-service checkout (SSCO). Technology that allows customers to complete their own transaction from a merchant without needing a traditional staffed checkout

Ticketing & Control: process of selling tickets or fines for trips or events

Unattended terminals: self-service payment terminal where the customer will activate the transaction by themselves without any staff help or action. This means that the payment devices need to be securely enclosed and tamper proof for a secure self-service solution

Technical definitions

POS: (payment): the Point Of Sale refers to the system to complete a merchant transaction...at a point of sale location

mPOS: mobile POS

SoftPOS: generic and market term for software POS

Pin on Glass: PIN entry capability on a device's touch screen (generic expression)

COTS: Commercial Off The Shelf. Refers to ready-made merchandise - for softPOS a smartphone or tablet - that is available for sale

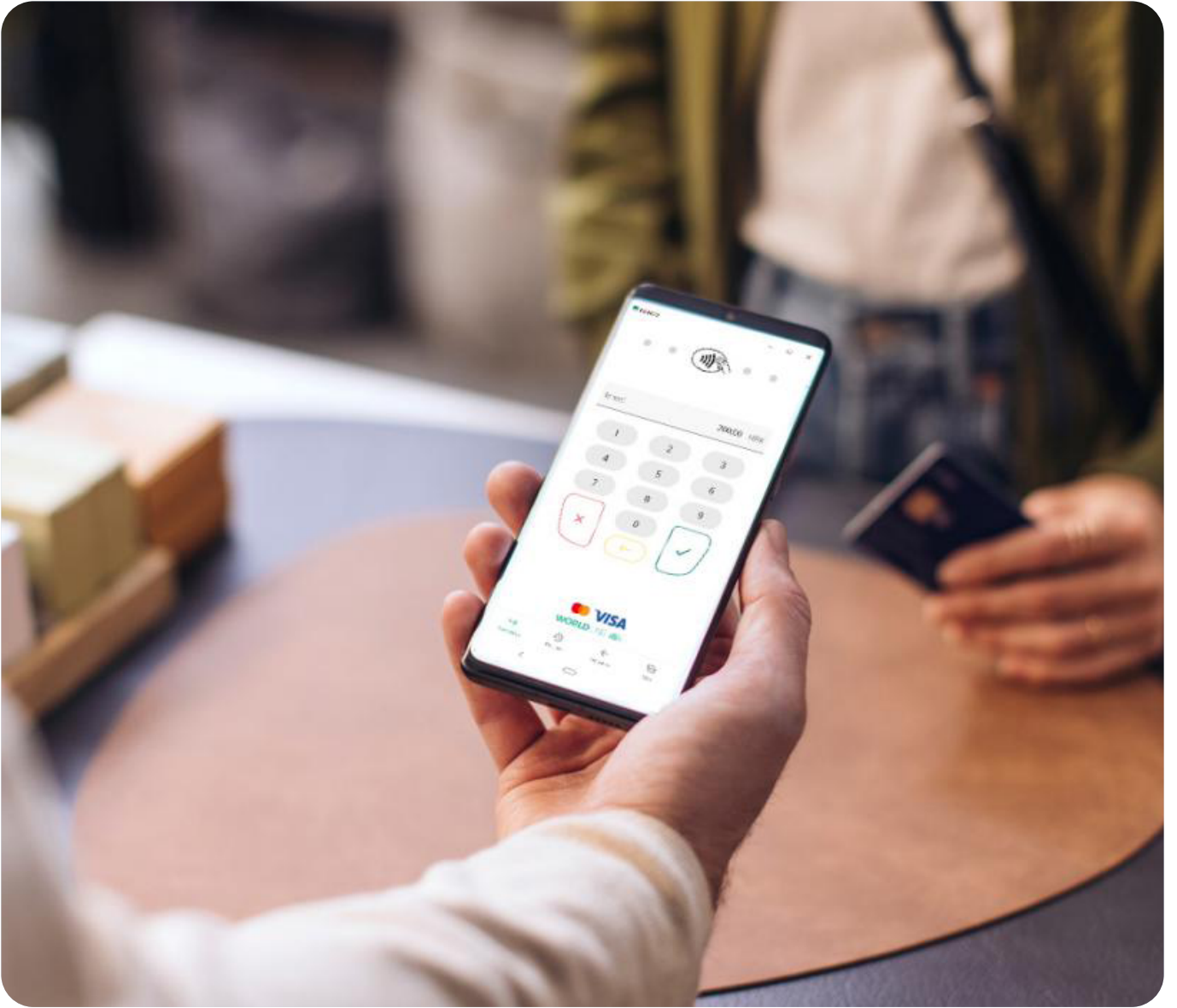
SPoC: PCI standard for "Software-based PIN entry on COTS". A smart device combined with a PCI approved card reader or SCR (Secure Card Reader for PIN). This reader has no keypad, the smart device touch screen is used to enter the PIN code ("PIN on Mobile")

CPoC: PCI standard for "Contactless Payment on COTS"¹⁸. This is the true softPOS solution. It only allows EMV contactless transaction, on a merchant smartphone or tablet with built-in NFC

MPoC: Latest PCI standard for "Mobile Payments on COTS" (working title). The purpose of MPoC is to provide a modular, objective-based, security standard that will support various types of payment acceptance channels and consumer verification methods on COTS devices. The goal is to create a flexible mobile standard and program for payment solution development, allowing for both PIN entry and contactless payments through the COTS-native interfaces. The second RFC (Request for Comments) has ended July 15th this year, and the release of the standard is planned towards the end of 2022¹⁹

¹⁸ [Just Published: PCI Contactless Payments on COTS](#)
¹⁹ [Request for Comments: New Mobile Payments on COTS \(MPoC\) Standard \(pcisecuritystandards.org\)](#)





Summary of identified use cases per vertical



Grocery Retail	Speciality Retail	QSR & Restaurant	Hospitality	Travel	Petrol & Energy	Transport	Parking
Pop-up Store Queue busting	Pop-up Store Queue busting	Pop-up Store Queue busting	Pop-up Store Queue busting (Theme Parks)				Temporary parking
Endless aisle	Endless aisle			Taxi		Ticketing & Control	
	Assisted sales	Payment at Table	Payment at Table				
Payment on delivery	Payment on delivery	Payment on delivery			Payment on delivery		
Kiosk - Self check-out	Kiosk - Self check-out	Kiosk - Self check-out	Kiosk - Self check-out				

PED (Pin Entry Device) back up

Example / case study



LODZ METROPOLITAN RAIL

Polish Lodz Metropolitan Rail adds payment in their inspector's devices



Łódzka Kolej Aglomeracyjna (Lodz Metropolitan Rail) is a commuter rail service operating between the Polish city of Łódź and surrounding towns in the Łódź Voivodeship (province). The company was founded in 2010. It is fully owned by the Łódź Voivodeship government.



Challenges

- Allow controllers to easily accept payments - eliminate unnecessary additional HW
- Win the public RFP against tough competition
- 1st SoftPOS integration based on API



Solution

- Crew equipped with Point Mobile PM85 devices distributed by SSK Rail
- Developed specific API to fulfill the requirements for this solution and future integrations
- Full integration with Lodz Metropolitan Rail application



Benefits

- Ticket sales process is easier, more comfortable
- It is safer as contact with cash is eliminated
- 1 device (Point Mobile PM85) for control and payment acceptance makes life easier for them

How Worldline can help large merchants develop their business?

Worldline is a global leader in the payments industry and the technology partner of choice for merchants, banks and acquirers. Worldline is at the forefront of the digital revolution that is shaping new payment ways. As such, Worldline has teamed up with end-to-end payment experts, engineers and security specialists - including from former companies such as Ingenico or SIX Payment services to develop a strong expertise on the topic, from the very beginning of the softPOS development up until today, from the first PCI PTS approved Android terminals with PIN entry capabilities to the newly introduced WL Tap on Mobile solution.

Worldline is committed to delivering transactions that create a network of trust that can be passed on. We invest extensively in delivering innovative solutions for payments, including card transactions, enabling our clients to transform their business models, manage risks and fraud, and anticipate regulatory changes anywhere in the world. Leveraging our scale and our complete service portfolio, we work closely with our customers to help them anticipate the future, and make the most of the opportunities it offers. This is how we created **WL Tap on Mobile**.

Enhance your customers' journey with WL Tap on Mobile

WL Tap on Mobile is a full softPOS unique end to end solution based on an Android application, that allows all merchants of all sizes – from micro to large – to accept payments using a smartphone (COTS), a tablet or an enterprise device. Worldline has designed the WL Tap on Mobile solution to meet specific requirements from micro to medium merchants (MS/Regional Business), as well as for large merchants (MS/Global Sales Vertical).

The package includes acceptance, acquiring, transactions and devices dashboards and management, as well as onboarding and support. Worldline provides the necessary content to support app-to-app integration if required. The solution is already available in some European countries, and the rollout to cover all major European countries has already begun.

For more information, please contact your usual Worldline representative
<https://business.worldline.com/GSVcontact/confirm>



Julien Decoster,
head of new instore experience at Worldline

"Since more than 40 years, we're continuously improving the products and services delivered to our merchants. Since a few years, the payments industry is in a true revolution, and the traditional payment terminals are now part of this revolution. A device which has been dedicated to only one usage during years, have been slowly turned in a multi services devices, mainly thanks to the rise of Android as an operating system. Now the next step is coming, it's not only the software that is impacted : the hardware part is replaced, to the profit of already existing devices : smartphone, tablets, or even enterprise devices. Advantages are so numerous it will be too long to list. In my opinion, the main one is : one smart device, known by everyone, for everything!"

WL Tap on Mobile in short



Android application



Physical & virtual
 Visa & Mastercard
 cards accepted



Built in security level
 procedures
 (PCI certified)



One service
 contract for the full
 solution/package



Works on any Android
 smart device with touch
 screen, NFC and
 Internet connection



Contactless payments
 only, under or above
 CVM limit with
 Pin entry on glass



Digital receipt,
 by email and/or
 QR code

About Worldline

Worldline [Euronext: WLN] is a global leader in the payments industry and the technology partner of choice for merchants, banks and acquirers. Powered by 20,000 employees in more than 50 countries, Worldline provides its clients with sustainable, trusted and innovative solutions fostering their growth. Services offered by Worldline include instore and online commercial acquiring, highly secure payment transaction processing and numerous digital services. In 2021 Worldline generated a proforma revenue close to 4 billion euros.

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Acknowledgement to PCI SSC
for providing Mobile Payments standards' timeline,
images & diagram.
September 2022



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