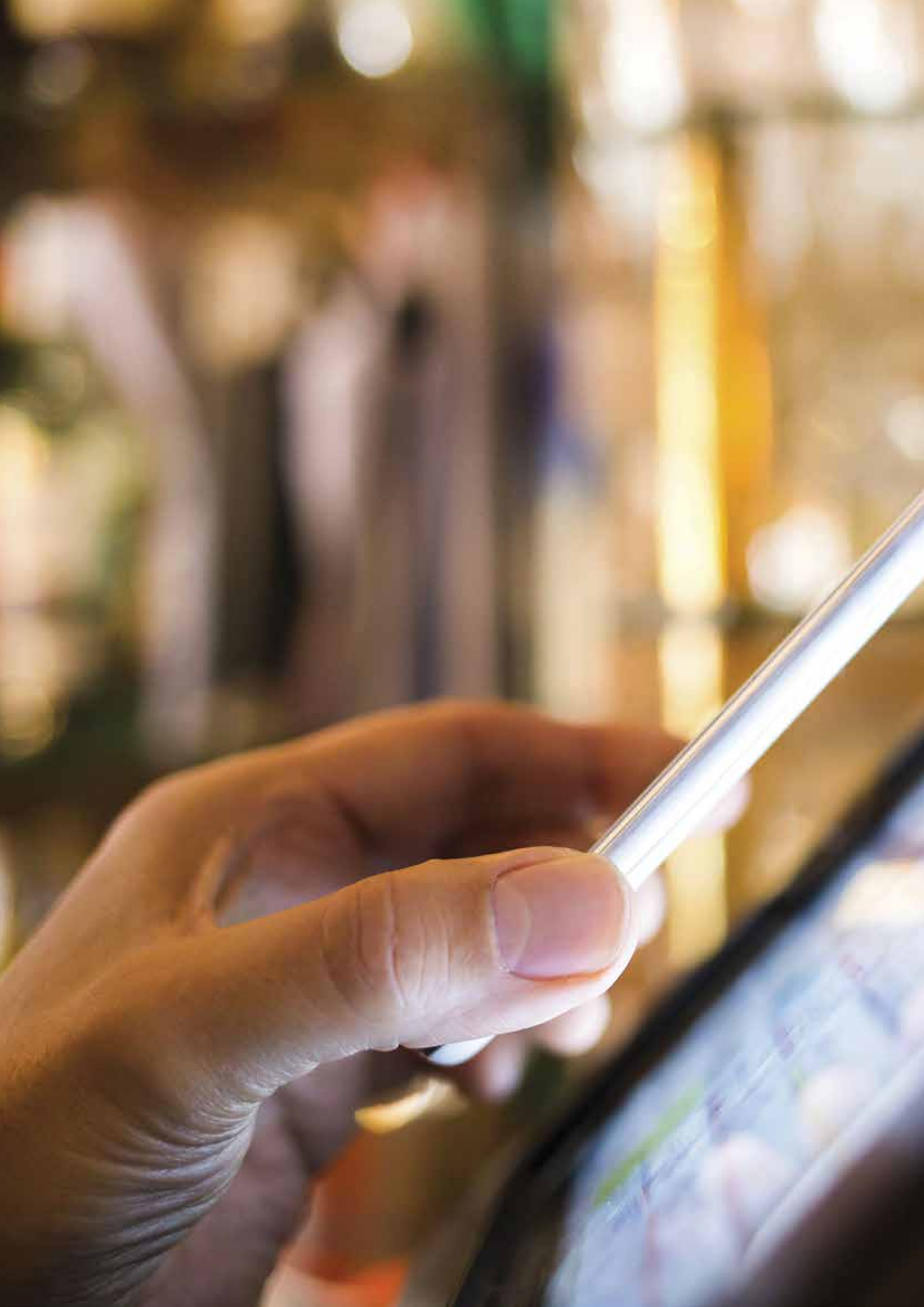


MNO GUIDE TO ENABLING THE NFC ECOSYSTEM



Introduction

This guide is designed to give Mobile Network Operators (MNOs) helpful insights and suggestions around successfully implementing their market launch of Near Field Communication (NFC) mobile contactless services. It also discusses how the MNO can support this goal by acting as an “enabler” to Service Providers.

Gemalto has gained extensive experience in working with MNOs and Service Providers to successfully implement more than 50 commercial NFC deployments worldwide. This has given us real-world knowledge from the field, which we are pleased to share in this best-practice guide for the global MNO community.

We explore how, as an MNO, you can optimize your approach to NFC and work with Service Providers across key areas of NFC implementation, to help streamline the process and achieve success faster.

We explore three key aspects of NFC implementation:



1

Supporting NFC participation
How to help Service Providers develop their NFC services



2

Simplifying NFC engagement
Ways to clarify and streamline NFC for participants



3

Accelerating NFC success
Actions to help you boost NFC in your market

1. Supporting NFC participation



Helping Service Providers develop NFC services

As an MNO, you have a vital role to play in your market to enable and support participation in the NFC ecosystem.

The MNO typically acts as the prime motivator and central coordinator for an NFC deployment, bringing all the involved parties together on the journey. Consider ways you can help participating Service Providers to develop their NFC services by:

- > Positioning yourself as an NFC enabler to support and encourage Service Providers
- > Facilitating Service Provider integration within the NFC service
- > Helping Service Providers evolve their brand and go-to-market proposition for NFC
- > Proposing adapted and relevant business models (Secure Element (SE) rental, MNO TSM access, etc.) to Service Providers and agree on transparent (and not exaggerated) SE rental
- > Informing Service Providers about the realistic reach they can hope to achieve

Stimulating the convergence of key participants

The MNO can play a major role along with the other key actors in an NFC deployment – including banks, payment schemes, and contactless POS suppliers. All these ecosystem players can lead NFC deployment together through the formation of associations or formal joint venture organizations.

You can also look for other relevant actors in your market – such as retailers. For NFC payment, it's a good idea to include retailers in the picture as early as possible, so that you can launch with a strong core lineup of participating merchants.

To support this, you can work with payment schemes to encourage retailers to upgrade their POS base for contactless payment. For example, in Poland, MasterCard and Visa are believed to have subsidized contactless POS terminals and TSM provisioning. In France, Groupe CB has a dedicated service to help merchants adopt contactless technology. In Australia, retail group Coles has introduced Visa payWave contactless payments in all their stores (see panel on page 5).

For success, your participating POS deployment network should be substantial at launch. Driving wider acceptance of contactless payment is a key step on the path to NFC smartphone payment.

Contactless payment brings benefits to customers in terms of convenience and simplicity. For retailers, contactless payment reduces costs and delivers more sales, thanks to quicker transaction processing at the checkout.

Building the right NFC business model

MNOs can propose adapted and relevant business models (for SIM rental, MNO TSM access, and so on) to Service Providers and agree on transparent SIM rental models. In the early years of NFC, pricing for services has sometimes been unrealistic, and has restricted Service Providers from building their own business case. New thinking can help move the NFC market forward.

MNOs can adapt pricing to the specific use cases – for example, the price for credentials hosting may not be the same for all use cases. MNOs can also partner with TSM hub vendors to resell SIM access.

A resell or revenue sharing model helps to facilitate the commercial discussions by reducing cost of entry and increasing commercial reach. End-users should not be charged for the service, as they perceive that no new card is being issued – rather, they see this as a ‘card companion’.

MNOs are achieving greater NFC success by adapting their pricing models – this is a global trend that even the GSMA has witnessed. The organization recently conducted a study on mobile commerce trends with 13 MNOs in Europe, North America and Asia (*“Compete or collaborate? How to succeed in digital commerce”*, GSMA, February 2014).

The GSMA found a range of different collaboration models currently in operation worldwide – equity joint ventures (JV) and associations, but also many single MNO initiatives. There was no single leading MNO collaboration model in the market, with Europe especially fragmented – but there is definitely a general trend to collaborate via joint ventures and associations. The GSMA opinion is that these collaborative models will be the most successful.

The GSMA also found a variety of commercial models in operation, with varying policies and fees. SIM rental and activation fees are the dominant commercial model. Transaction-based fee models appear only in some cases. The SIM rental model is under pressure (from competition and regulatory changes) – a shift to transaction-based models is expected. End-user data and marketing is seen by many MNOs as a potential additional revenue stream.

SUCCESS STORY: CONTACTLESS PAYMENT AT COLES

Major supermarket group Coles serves 18 million Australian shoppers per week. Coles introduced Visa payWave contactless payments across their stores in April 2013.



Contactless payment has made transactions faster and easier for end-users – with the full security and reassurance of Visa. The solution is quick, convenient, secure, innovative, value-adding, and revenue-increasing. Processing times for contactless are 15% faster than cash – so time normally spent at checkout can now be used to shop for more items in the store.



Over 50% of all credit card transactions at Coles are now contactless. This success is a key step in the deployment of a mobile contactless payment ecosystem.



2. Simplifying NFC engagement

Making NFC simpler for Service Providers

MNOs can do much to simplify NFC engagement for Service Providers. In this section we explore the best approaches to TSM and NFC technologies.

Deploying TSM with generic configuration

The Trusted Service Manager (TSM) role is a vital requirement to coordinate all the key players and processes of an NFC ecosystem. It is important that when putting a TSM in place that it uses a generic configuration based on international standards and protocols.

If the TSM is non-standard or too customized, this can hinder the expansion of the NFC ecosystem. It may prevent additional parties from joining you if their systems are incompatible with the TSM. Interoperability is the keyword for successful future growth and development.

The implementation of a generic TSM configuration will facilitate the on-boarding of additional Service Providers and will thus extend your future service reach. It allows you to simplify the deployment of NFC services, which guarantees quick time-to-market and cost efficiency for all players by bringing competition between suppliers.

MNOs can follow the industry-standard simplification framework from GlobalPlatform and SIM Alliance that includes commonly-used SIM card profiles (for package mutualization) and proven MNO TSM and OTA configurations.

The recent GSMA survey of 13 MNOs in Europe, North America and Asia (*"Compete or collaborate? How to succeed in digital commerce"*, GSMA, February 2014) also studied TSM deployment strategies.

The GSMA found that fundamental TSM strategies generally trend towards a shared TSM or "TSM hub" approach. An industry-standard generic configuration of TSM or TSM hub allows a scale effects for MNOs, plus easier integration and less complex integration for Service Providers. There is a growing need for inter-MNO and inter-country shared TSM and TSM hubs, in order to simplify integration for multinational Service Providers.

The initiatives surveyed all show a high openness to industry-wide standards for TSM, including compliance with GlobalPlatform (for card and messaging) and TSM Modes. Alignment on technical standards and adoption of an open architectural solution will allow easier standardized integration for Service Providers.



The benefits of a TSM hub

The emerging TSM hub model offers many benefits for the NFC ecosystem. It allows existing and future participants to 'plug into' a shared, interoperable, industry-standardized TSM platform.

An MNO can partner with a TSM hub vendor to resell SIM access, in order to simplify and multiply the commercial relationships with the Service Providers, by creating a single point of engagement for all the players.

For Service Providers, a TSM hub offers seamless, 'one plug' deployment of mobile services and apps across a comprehensive portfolio of mobile network operators, smartphone types and security architectures. They get one-stop access to the largest and most comprehensive security framework, and a single point of engagement for access to multiple mobile networks and devices. Service Providers can maximize the reach of the Secure Element and Trusted Execution Environment (TEE) with a low capex investment, thanks to a shared platform and increased connectivity.

Equipping end-users with NFC handsets and NFC SIM

MNOs have a vital role when it comes to equipping end-users with NFC-compatible handsets. Some subscribers may already have NFC-enabled handsets, often without being aware of this feature. Other subscribers may need to upgrade to a recent NFC-enabled handset to start using the NFC service. The MNO can advise end-users on the benefits of upgrading to NFC capability. Other options include offering an NFC-enabled case or sticker to add NFC functionality to existing non-NFC handsets.

Secure NFC mobile payments and other core use cases also depend on the use of an NFC-compatible Secure Element to manage sensitive data and transactions. One of the best ways to achieve this is by using NFC SIM, where the Secure Element is embedded in the end-user's SIM card. As the issuer of the SIM card, this places the MNO as a major contributor and enabler of the NFC value chain.

The best way to support uptake of NFC services is through mass deployment of NFC SIM across the subscriber base – issuing NFC SIM to all new subscribers from now on, and to existing subscribers as soon as possible by facilitating upgrade to NFC SIM.



MNOs can use incentives to attract new customers and existing customers willing to upgrade their handsets to NFC. End-users can be encouraged to enroll to the service in the MNO retail store with the help of well-trained staff. For example, the majority of service activations on the Softcard wallet in the US are done directly in MNO stores.

By mass seeding NFC SIM and helping end-users to get equipped with NFC handsets, MNOs can increase reach for Service Providers – a major attraction for them.

NFC SIM also gives MNOs and banks a complementary and competitive solution to Apple Pay on the Android handset base.

Making your service easily accessible

To maximize the extent of your NFC service's reach, it makes sense to focus first on the major mobile operating system (OS) in the smartphone market – Android.

Android reached an 84.7% global market share in 2014, compared to 11.7% for iOS on iPhone (source: IDC). The launch of Apple's own NFC payment solution in September 2014, Apple Pay, makes it even more attractive for MNOs to offer their own secure Android-based alternative.

It therefore makes good sense to support Android OS first – then, once a critical mass is reached, you can port your wallet to additional OS options according to your market specifics.

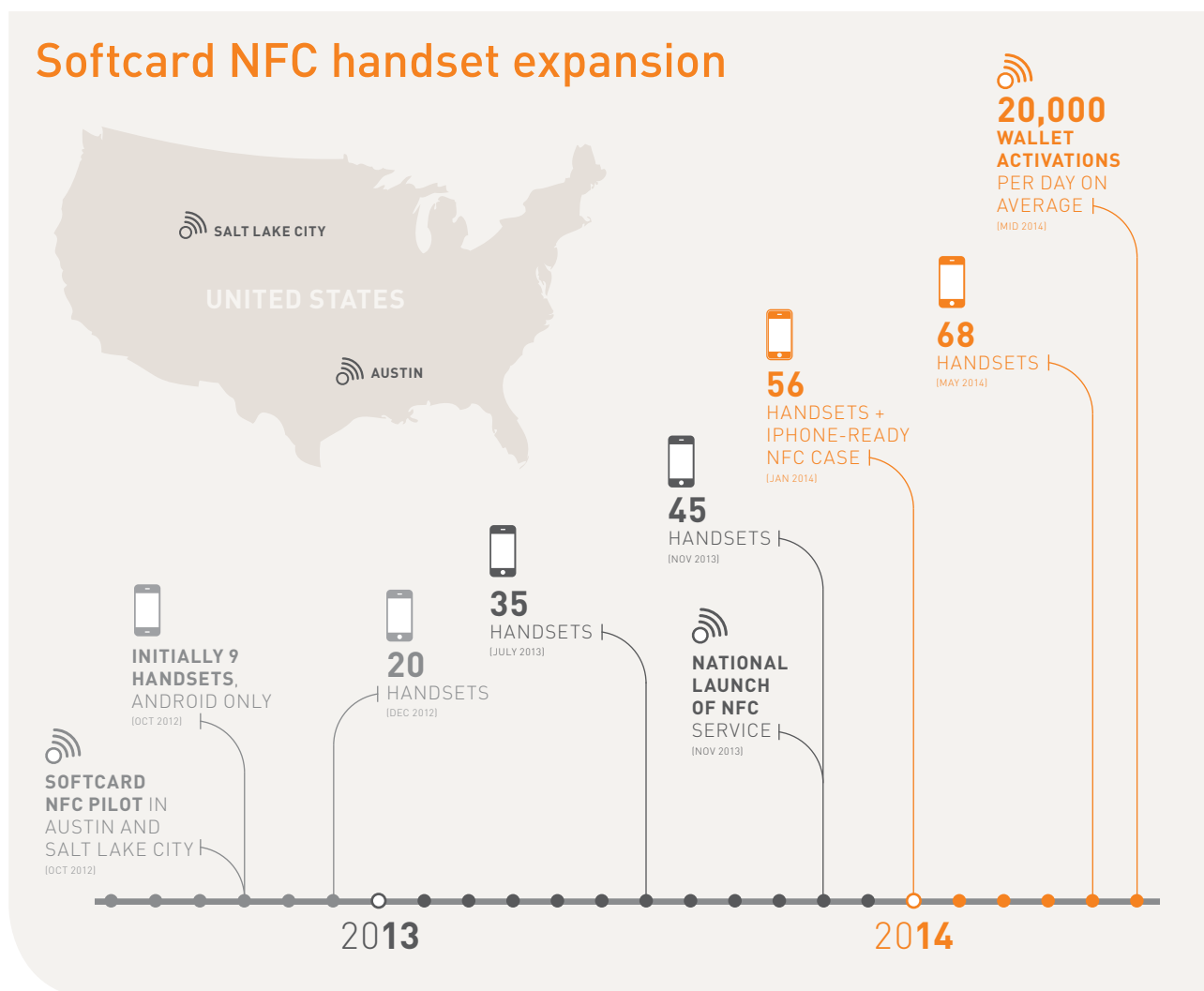
It's also sensible to start by supporting the most popular NFC handset models in your market, and then

progressively support additional models to show that your service is accessible. However, try to focus end-users towards one or two 'flagship' NFC handset models, as this will help reduce your support costs.

You can also potentially offer alternative NFC solutions to end-users not equipped with NFC phones (NFC stickers, iPhone NFC cases, and so on).

Focusing now on equipping end-users with compatible NFC handsets and NFC SIM facilitates smooth NFC uptake, overcomes technical barriers to service adoption, and avoids potential frustration and disappointment among end-users discovering the service and willing to install it.

In the USA, Softcard started with an initially small range of NFC handsets in 2012, and has since expanded to include over 60 compatible handsets (see panel below).



3. Accelerating NFC success

Following the fastest path to widespread NFC usage

The MNO has a key role to play in order to accelerate and boost the uptake of NFC among end-users. You can stimulate and educate on NFC mobile payment in your region. You can make your service highly visible and attractive by promotion in stores and through advertising, and invest in customer communications to promote your core value proposition and calls to action.

Developing your go-to-market strategy

No off-the-shelf approach to NFC will be exactly right for your ecosystem. You will need to adapt your go-to-market strategy to the maturity and dynamics of your market.

Today the mobile payment market is very fragmented – so any newcomer in the business must differentiate its service from competition. You can achieve this by making your service highly visible and attractive, investing in communication and marketing, and building a strong brand and clear value proposition for your service.

You should be ready to answer the pragmatic questions end-users are asking. What's in it for me? Where can I use it? How can I get it?

Innovative communication media can be used to differentiate your service and highlight its value proposition. You can raise awareness around your service and educate end-users about NFC and mobile wallet.

It's important to reassure end-users about security, but best not to overload them with technology details and technical explanations of your service – most users won't care about this.

Encouraging NFC end-users

There are a number of proven ways to help encourage end-users to install and use your NFC service. You can enrich your payment application with extra services – such as a prepaid service. You can encourage end-users to install the NFC service via incentives and offers. Ensuring a frictionless enrolment process makes things fast and simple. Then you should aim to convince and satisfy end-users at the first use of the service.

Offering a prepaid service

Prepaid services are now familiar to many end-users and are perceived as a low-risk way to get started with mobile payments.

A prepaid service offers convenience and spending control, encouraging end-users to adopt it, and ultimately educating them about mobile payment. Prepaid service is also already a thriving market, especially in the mobile payment area. While credit card service activations are sometimes low in the initial months of service, prepaid service activations are a proven major driver of mobile wallet adoption.

You can issue a virtual card companion of an existing plastic prepaid card for a simpler enrolment flow. It's best not to charge activation fees for this. You may also enable direct debit to facilitate top-ups.

Giving activation-based incentives

Offering customers an initial signup credit is a proven incentive for NFC deployments worldwide.

For example, US customers signing up for a new American Express Serve account through the Softcard mobile wallet were offered a \$50 account credit. Canadian customers signing up for a Rogers Prepaid Card through the Rogers SureTap wallet were offered a \$50 credit. French customers registering for Orange Cash were offered a €10 credit. Dutch customers signing up for a Vodafone SmartPass prepaid card were offered a €10 credit.

These kinds of financial incentives and rewards are very powerful and enticing, and can help end-users see the added value of the mobile wallet over traditional payment methods.

Making the enrolment process fast and simple

Enrolment is a strategic step for the success of an NFC project. Ensuring a seamless first use of the service avoids frustration and disappointment among end-users. A frictionless enrolment process can be ensured by following simple best practices.

For example, you can offer a physical 'companion card' to accompany the payment service in the mobile wallet. You can preload the mobile wallet in your NFC handsets – for example, the Softcard Wallet is already preloaded in many handsets from participating MNOs. Displaying the mobile wallet application on the front screen of the handset increases visibility to end-users.

Other good practices include preloading the payment applets in the SIM, sharing the applet package between Service Providers, and ensuring that the SIM is fully activated.

A well-planned and simplified enrolment flow model ensures optimum enrolment to NFC services.

EXAMPLE OF SIMPLIFIED ENROLMENT FLOW

- 1 Open preinstalled mobile wallet app
- 2 Select existing payment card type
- 3 Enter card number and security code
- 4 Activate virtual card
- 5 Mobile payment ready to use



Encouraging end-users to re-use the service

Optimized enrolment is important, but once end-users are on board, they also need to be encouraged to keep using the service. To support this, the MNO can explore various ways to enrich the value of the wallet, as described in the following sections.

Offering a wider panel of payment cards

End-users targeted by NFC projects are not traditional prepaid card users, and markets where NFC projects have been launched are all dominated by credit and debit card usage.

Focus initially on the dominating type of cards in your market. For example, Softcard focused initially on integrating credit cards, which are more popular in the US market than debit cards.

Offering a wider range of payment options is not a must-have at the service launch, but it becomes more necessary once a critical mass is reached – when limited payment card portfolios can create frustration among end-users.

Offering the ability to add a wide range of credit cards and debit cards is attractive to end-users. As your deployment grows, it's a good idea to progressively integrate as many banks and cards as possible.

You can facilitate TSM-to-TSM connections by selecting generic GlobalPlatform implementation. This helps to limit upfront infrastructure investments for Service Providers.

Turning the wallet into the favored payment means

There are a number of incentives that the MNO can use to encourage end-users to see the mobile wallet as their new best way to pay. Incentives and offers raise awareness of the service as retailers are making strong

communication efforts. They can boost the service adoption as it makes it very attractive to the end-users. They can also help to educate end-users as they encourage them to use the service on a regular basis.

You can propose transaction-based incentives, building and animating a network of retailers and brands. For example, the Softcard Wallet gives access to many offers proposed by partner retailers like Jamba Juice, Coca-Cola and Toys"R"Us.

Another approach to encourage users to use the payment service is to offer cash back on purchases. For example, American Express gives \$1 back on each purchase of \$1 or more (up to \$50 per month), while Orange Cash gives €25 once €100 is spent.

Incentives can have a measurable impact on service adoption. Wallet-users engaged in loyalty and offers tap up to 2 times more frequently than users who only make payments (Source: Softcard, May 2014).

US juice-bar chain Jamba Juice recently operated a successful "free smoothie" incentive promotion with Softcard. As Jamba Juice CEO James D. White says, "Softcard represents a growing percentage of our total transactions nationwide, and our stores have experienced more than 50% month-over-month growth in Wallet use. By the end of the first quarter, Jamba Juice customers had redeemed more than 270,000 free smoothies and we expect to hit one million by this fall. The success of the 1 Million Free Smoothie Campaign has created habituation among our customers."

In a recent seasonal promotion, Toys"R"Us offered \$15 off of any purchase over \$30 for Softcard wallet payers. The retailer recorded Softcard Wallet transactions worth several millions of dollars over a period of 3 months, one of the most effective digital coupon campaigns they have ever run (source: Softcard, May 2014).

Making the service free to end-users

As mentioned above, for successful growth of the service it should ideally be free of any activation fees. Paying extra for a mobile payment service is a show-stopper for most end-users. As a result, there is a growing trend to make services free to the end-user.

Unlike MNOs and banks, end-users do not see the mobile wallet as an additional payment method, but more as a

complementary application – so they are reluctant to pay for this kind of service. Making it free will boost service adoption.

There are also advantages to not charging any monthly fees. By making your service free you can make it more attractive and suppress a major adoption barrier.

Examples of NFC payment service fee models worldwide

COUNTRY	ACTIVATION FEES	MONTHLY FEES	CREDIT CARD TOP-UP FEES
Canada	FREE	CAD \$2.5	CAD \$2
UK (A)	FREE	FREE	3% of the amount
UK (B)	£5	FREE	4% of the amount
Germany	FREE	Free the 1st year then €9.9/year	€1 + 1% of the amount
Spain	FREE	FREE	€1 if top-up >€25, FREE if top-up <€25
France (A)	FREE	FREE	€0.79
France (B)	FREE	Free the 1st year then €1	N/A
USA	FREE	FREE	FREE

Adding extra non-payment services

The mobile wallet is not just about payment, it can become a general tool for everyday life. End-users will expect to be offered more than just payment to fully adopt mobile wallet services.

While payment is usually the initial core use case, you can progressively enrich your service with non-payment services, such as transport ticketing, mobile coupons, loyalty cards, access, and so on.

For example, Vodafone is expanding the functionality of its mobile wallet beyond NFC by enabling customers to store hundreds of loyalty, membership, transit and promotional cards in their wallet by simply scanning them in using the camera on their smartphone.



Next steps

We hope that this guide has demonstrated how real-world experiences and learnings from successful NFC deployments can help the MNO to act as an enabler to Service Providers and launch their services into the market even more effectively.

For more information and advice on your NFC deployment, talk to Gemalto.

About Gemalto

Gemalto is the trusted market leader for NFC solutions. We provide the experience, technology and capability to deliver a secure, future-proof service platform – enabling you to mass deploy NFC today and secure your NFC future. We are uniquely positioned to successfully support our customers with NFC initiatives. Our unmatched track record includes more than 50 major NFC projects worldwide, with many of the world's leading MNOs, banks and Service Providers.

Gemalto's UpTeq NFC SIM is a secure and flexible platform that enables the widespread adoption of mobile NFC services, ensuring NFC revenues and opportunities.



Gemalto's Allynis Trusted Services Hub is the turnkey business service that enables MNOs, banks, enterprises, transport operators and others to benefit from a single connection to securely deploy their mobile payment and other value-added services across a comprehensive portfolio of smartphones and mobile networks across the world.

Learn more and contact us:

www.gemalto.com/nfc