

Development of Mobile Payment Ecosystem

NFC Based Payment Services

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Mobile phone will become *trusted* personal device

Mobile phone has become one of the essentials people have always with them
>3 billion mobile subscribers

Mobile devices continue to evolve and will play a central role in people's life




- Mobile phones will become *trusted* personal devices storing user's security sensitive credentials, which are used to access both proximity and online services
 - Traditional cards (payment, loyalty, transit, access, ...) as well as user-IDs, passwords and keys are securely stored and processed in the Secure Element of the mobile phone
- NFC plays a key role in this evolution

NFC enables intuitive and convenient local interactions with mobile phones

- Near Field Communication (NFC) is an evolution of contactless and short range RFID technologies
- Enables easy and intuitive ways of using mobile phones with touch-based technology -> operating distance of a few centimeters
- NFC technology
 - Optimized for proximity transactions, as well as handovers to other bearers
 - Standardized in ISO 18092
 - Works in globally available 13.56 MHz range, data exchange rate between 106-424 kbps
 - Compatible with the existing and to-be-built contactless payment and ticketing card infrastructure based on ISO 14443 standard

NFC USE CASES


Service initiation

 Batteryless tags

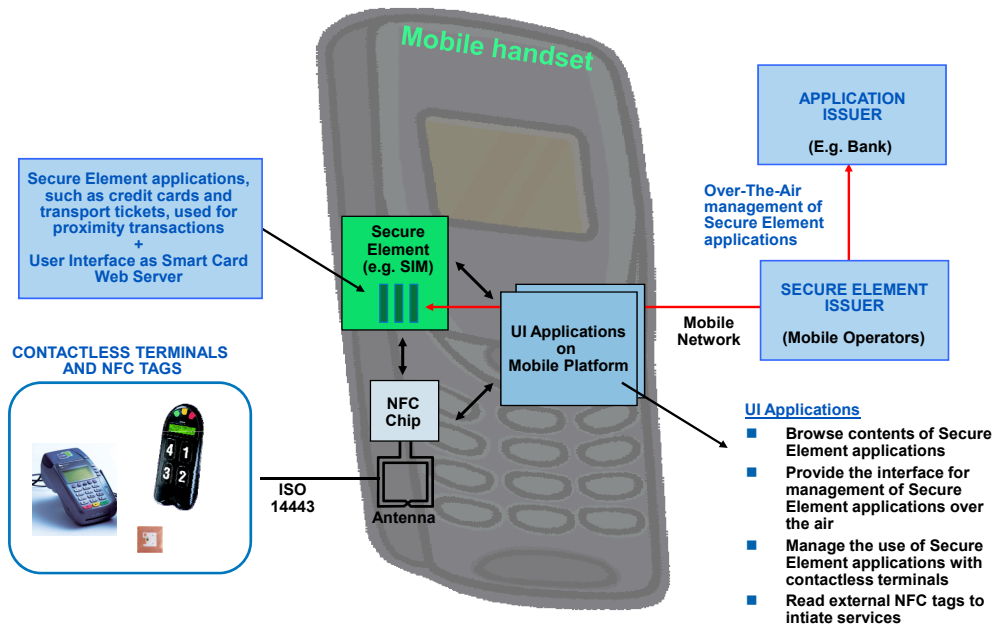
Payment & ticketing



Sharing

 Other NFC phones and devices

Mobile phone will be *the* NFC device for consumers



NFC phone providers great value to consumers

CONSUMERS with NFC phone



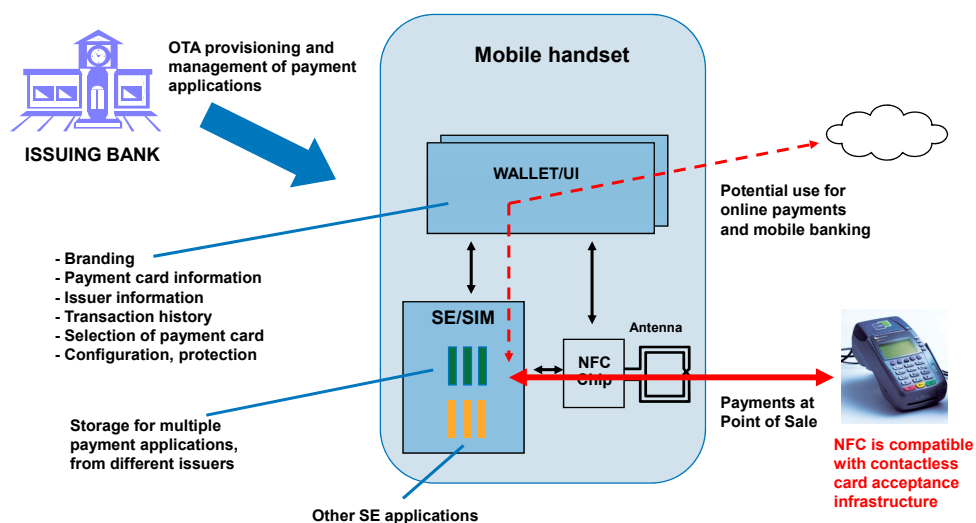
- Always with you
- Online connected
- Proximity interactions
- Customized UIs
- "Active smart card"

- Fast and convenient payments
 - No cash, fast check-out
- Fast and convenient ticketing
 - Purchase tickets with mobile, anywhere anytime
- Enhanced loyalty schemes
 - Coupons and vouchers always with you in your mobile
- Browse the card applications and content locally on the phone
- Manage your applications over-the-air, anywhere anytime
- Easy access to services in your surroundings, with a simple touch of a phone
- Easy sharing of mobile content

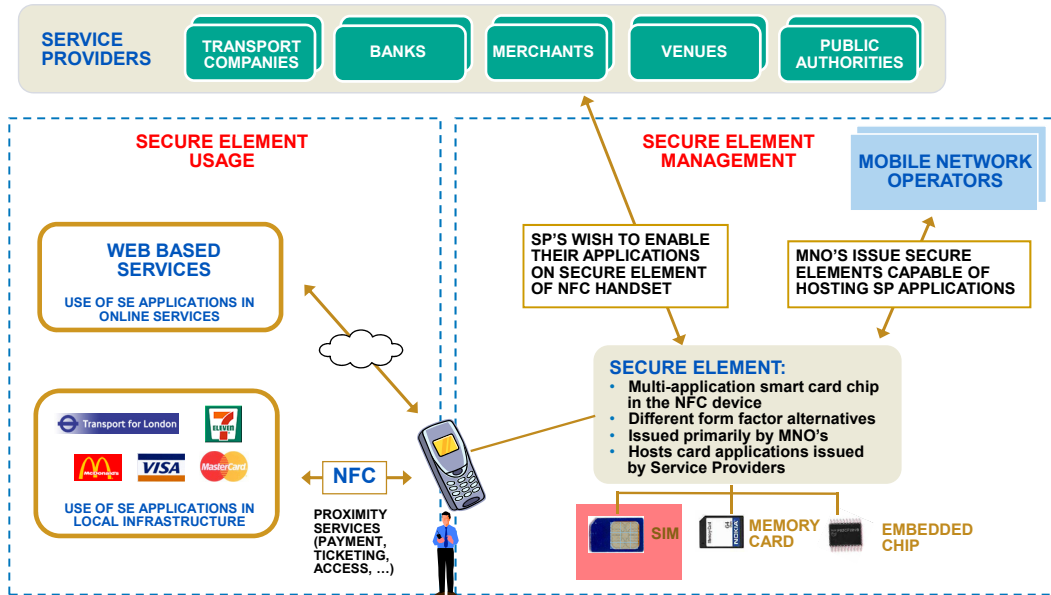
Considerations on the NFC ecosystem

- NFC will be an ecosystem – new services, new business opportunities, intersection of multiple industries
- NFC ecosystem creation will be service driven, not a technology push
- Payment and ticketing are the first applications, other will follow thereafter
- Rollout will start in locations with existing contactless smart card infrastructure
 - NFC is compatible with the infrastructure and thus can leverage the investment made for contactless card acceptance
- These locations will provide the natural starting point for infrastructure creation for NFC based service initiation from Smart Poster embedded with NFC tag
- Payment and ticketing applications need to be provisioned over-the-air after the consumer has purchased the NFC phone
- Establishment of the NFC ecosystem is a collaborative effort between the stakeholders, such as mobile network operators, banks and transport companies

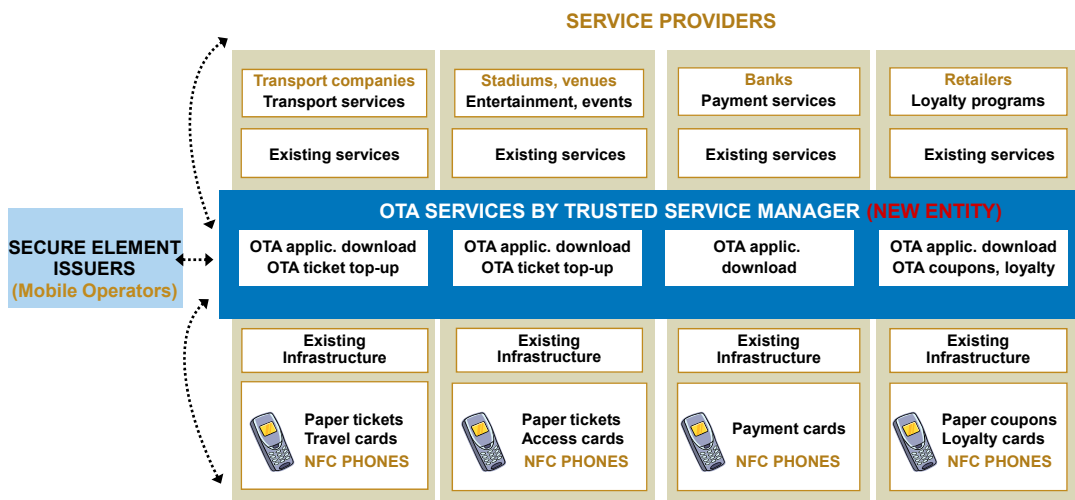
Mobile payments with NFC phones



NFC Secure Element management and usage



NFC OTA services needed for different industry verticals

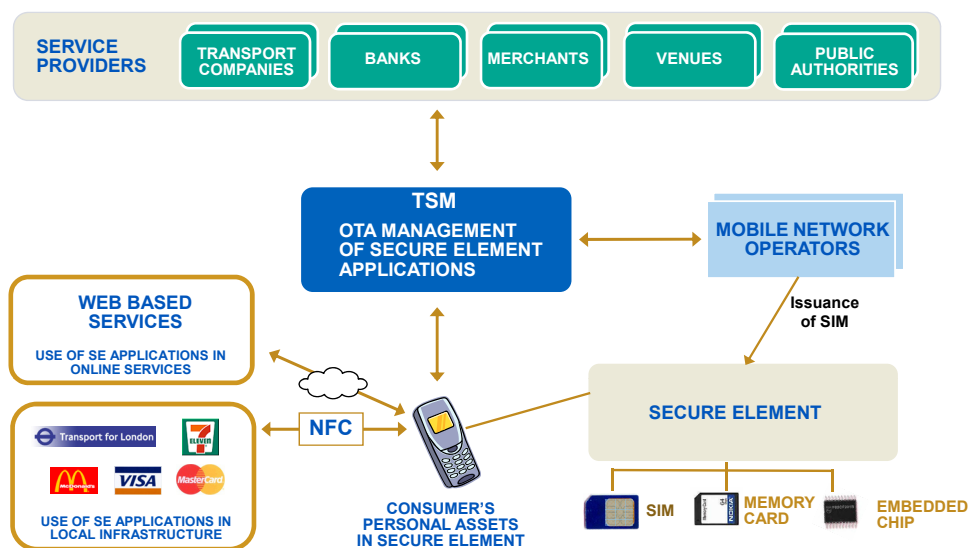


GSMA proposes TSM for OTA services

- Mobile NFC will be successful provided that the mobile NFC ecosystem:
 - Is steady, providing value for all entities within it
 - Is efficient, by introducing a new role of the Trusted Service Manager
- Trusted Service Manager (TSM) – securely distributes and manages the Service Providers services to the MNO customer base
- To increase the efficiency of business relationships, the role of Trusted Service Manager (TSM) is proposed. The TSM's role is to:
 - Provide the single point of contact for the service providers to access their customer base through the MNOs
 - Manage the secure download and life-cycle management of the mobile NFC application on behalf of the service provider
- TSM need to fulfill certain requirements, and in particular:
 - Ability to contract with and support a high number of partners
 - A good business reputation in handling services securely
 - Being seen as a trusted partner in the ecosystem

(Source GSMA, February 2007)

OTA Management of Secure Element Applications by TSM



Requirements on OTA services for NFC mobile payment applications

- Post-issuance process
- High security, including Visa and MasterCard certifications
- Support for different payment application standards / specifications
- Support for all NFC devices & all Secure Elements
- Flexible online interfaces to interact both with issuing banks and MNO's
- Support for the OTA following services
 - Load and install of payment application
 - Personalization of payment application
 - Life-cycle management – lock, unlock, delete
 - Creation of Supplementary Security Domain
 - Data update, such as EMV counters
 - Wallet interactions

Conclusions

- Mobile phone becomes consumer's trusted personal device – NFC plays an essential role in this evolution
- NFC enables the implementation of mobile payments compatible with the contactless card acceptance infrastructure
- NFC phone offers great possibilities to enhance the consumer experience on contactless payments and possibilities to provide other mobile financial services
- NFC phone contains a Secure Element (SE) for storing all consumer's applications, including payment applications
- MNO's will predominantly take the role of the SE issuer, SIM is the natural choice for the SE while other form factors will exist too
- Payment applications will be post-issued over-the-air to the SE of the consumer's NFC phone
- Trusted Service Manager (TSM) is a new entity in the NFC ecosystem providing trusted and neutral OTA services for enabling and managing Service Provider (SP) applications on the Secure Element of the NFC phone
- TSM has to be able to serve all SP segments and fulfill the specific requirements of each segment, including those related to payment applications

Thank You!

Further information available:

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Venyon provides TSM services to NFC ecosystem

“Venyon provides trusted services to the NFC ecosystem by enabling Service Providers – such as banks, merchants, transport companies, media companies and public authorities – to securely provision and manage online their security sensitive applications on the consumer’s NFC enabled mobile devices, in cooperation with Mobile Network Operators.”

Venyon is white label TSM providing a single point of contact for

- Service Providers to enable and manage their security sensitive applications on NFC handsets
- MNO's to reach these Service Providers

Trusted Service Manager = provider of OTA Secure Element management services

