T-LABS VIEWS ON WALLETS

Jörg Heuer, Mar 2014
A journey from early mobile wallet components towards a convergent cross-operator wallet supporting online and proximity transactions and value added services.

**Prepping up Technologies**
- UICC-secured VPN
- NFC & UICC-based facility access
- P2P money transfer
- InfoCard

**Early Mobile Wallet**
- Wallet UI and card metaphor on iPhone
- Mobile Wallet for NFC-based POS payment

**Convergent Wallet**
- Online shopping on PC using mWallet and NFC for payment
- Online payment
- mWallet for payment, loyalty cards and coupons

**Wallet Ecosystem**
- Issuer portal for coupons
- Issuer portal
- Wallet in the cloud
- GSMA POS Protocol
- 3rd Party App Protocol

**2006**
- Project RMV2go
- German eTicketing
- Standard VDV KA
- NFC Handset (J2ME)

**2007**
- NFC Trial @Telekom Cafeteria
- POS Payment
- Integration of XTC Platform
- Collection of Bonus Points
- NFC Handset (J2ME)

**2011**
- MWC & CeBIT 2011
- POS Payment
- Public Transportation
- Event Ticketing
- iPhone/NFC Handset (J2ME)

**2012**
- IAA 2011
- Car Key in mWallet
- Continental, T-Systems
- Online Payment
- NFC Handset (Android)

**2013**
- CeBIT 2012
- POS Payment
- Issuer Portal
- Loyalty, Couponing
- NFC Handset (Android)

- 3rd Party App Protocol

**2013**
- HSV Trial
- MWC: Future Wallet
- CeBIT: Future Wallet

**Telekom Innovation Laboratories**
MORE THAN PAYMENT
THE FOCUS OF A DIGITAL WALLET IS SHIFTING...

Payment ... still can be improved through digital wallets, aggregating various cards and coupons in the transaction, advanced receipting and improving general transparency and ease of use.

Ticketing ... can save money for operators of many services, but also offers many options to improve user experience.

Couponing – Wallets can remove numerous hurdles in acceptance (pick up coupons via NFC, QR/Barcode or from web pages) – and digital coupons don’t take up space!

Identity/Loyalty – Proving identity and logging into services is the main hook for integration of online services – and it is identical to today’s loyalty cards.

➢ Convergence between physical and online world will allow for exponential growth of options and opportunities, combining online deployment with real world usage and vice versa!
WALLET VISION – TECHNOLOGY-NEUTRAL AND OPEN USER-CENTRIC WALLET AS A PARADIGM

Open to transaction technologies

Open framework & APIs for various services & ...

Open to security means

Wallet Operator

Embedded SE
UICC
Crypto
Cloud
SD card

QR codes
NFC
Online
BT Low Energy

Tickets
Payment
Access/ID
Coupons
Transport
Loyalty

banks
marketing agencies
restaurant chains
event agencies
retail chains
transport companies
FUTURE WALLET DEFINITION
DIGITAL ITEMS AND THE ECOSYSTEM

Wallet Anatomy
We have come to the conclusion that a wallet worthy for the 2020ies needs to encompass various devices, communication technologies, web and cloud service aspects. The main constituents are:

- **Items** – digital objects containing identity and security credentials and functions
- **Security** – can be realized in various ways, most of them can be conveyed through the wallet
- **Communication** – can take place via NFC, optical or acoustic code, most importantly: APIs and IP

Wallet Ecosystem
- **User** – the center of the design; if it’s not the user’s wallet to contain everything needed, it’s no wallet
- **Wallet Provider/ Operator** – trusted entities in a market with proper technical means and access to customers
- **Service Provider: Issuer** – provides content like cards, tickets, keys, coupons into the wallet
- **Service Provider: Acceptor** – receives items – or their communication – from the wallet to identify, authenticate, authorize, ...
AN ABSTRACT VIEW ON A WEB TECHNOLOGY-BASED WALLET FOR THE VIRTUAL – AND THE REAL WORLD

Mobile Device

Wallet

Device Capabilities

QR codes
Bluetooth
NFC
BT Low Energy

Apps

Online

Wallet in the Cloud

http

sync