TIZEN™ DEVELOPER CONFERENCE
MAY 7–9, 2012

An Authentication Framework for Secure NFC Applications

Charles Walton

9 May 2012

A History of NFC Innovation

INSIDE Secure: A Leader, Pioneer in NFC

A leading position in the NFC market…

- **One of only 2 vendors worldwide currently shipping NFC chips in volume:**
  - Over 17 million NFC chips sold in 2011
  - Design wins & strategic partnerships with leading mobile device and SIM providers

..INSIDE Strengths

- **Multiple Innovative Solutions**
  - 4th generation NFC chips
  - Roadmap to 65 nm technology node
  - Open NFC software for multiple ecosystems
- **Proprietary Secure Element for 2012**
- **Applications, Authentication Infrastructure**
- **NFC Booster for Legacy Mobile Phones**
  - SIM, microSD Form-Factors

Near Field Communications (NFC)

Secure Connectivity Standard

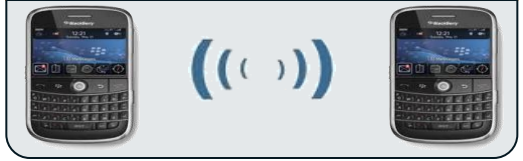
- Low-power short-range wireless
- Enables contactless communication between devices when they are brought within a few centimeters of each other
- Compatible with large installed base of RF readers, smartcards and tags
- Enables a new breed of proximity-based applications for mobile handsets, tablets, PCs and other consumer electronic devices

Easy-to-use

Reader Mode

Card Emulation

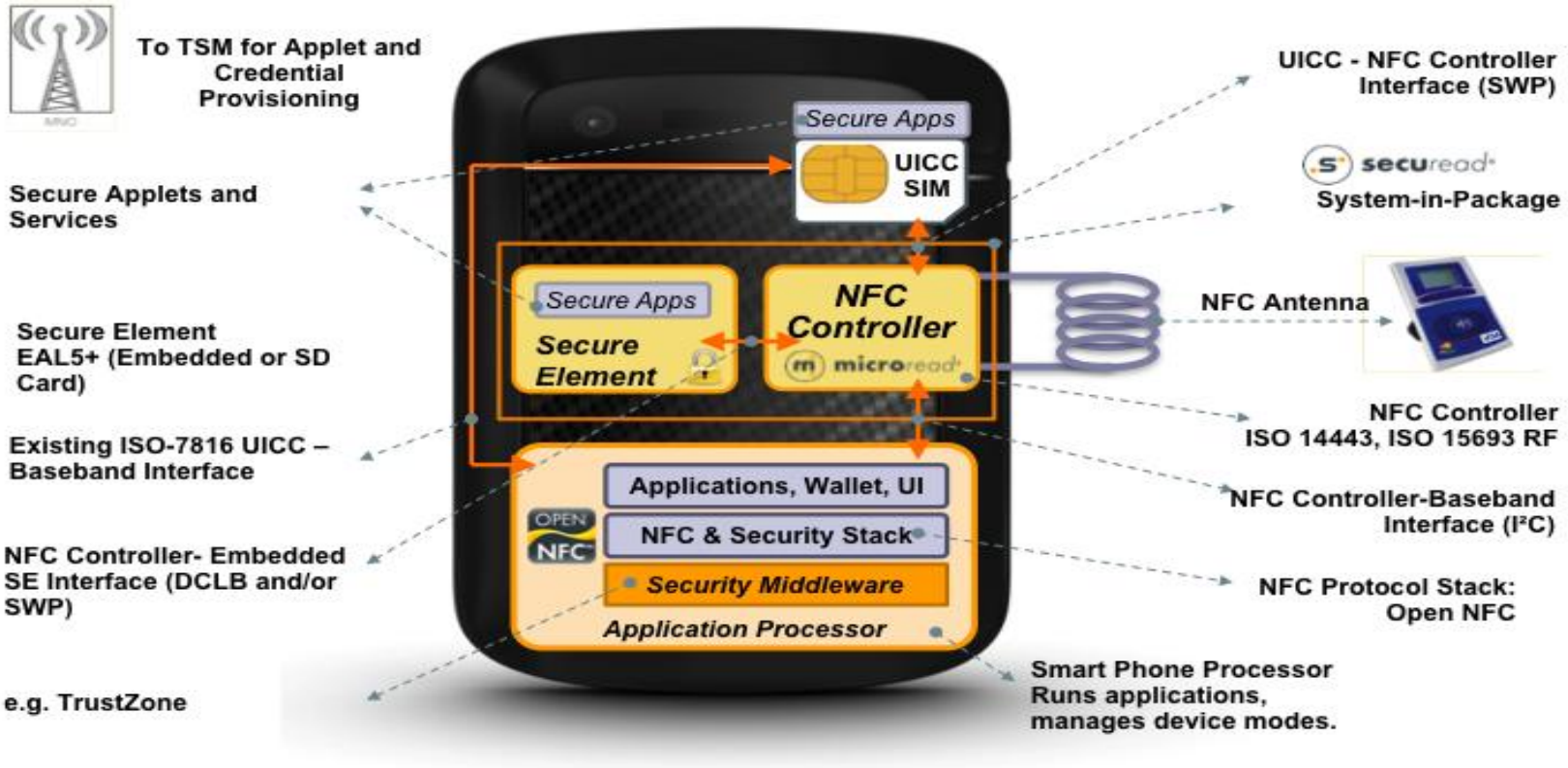
Device to Device



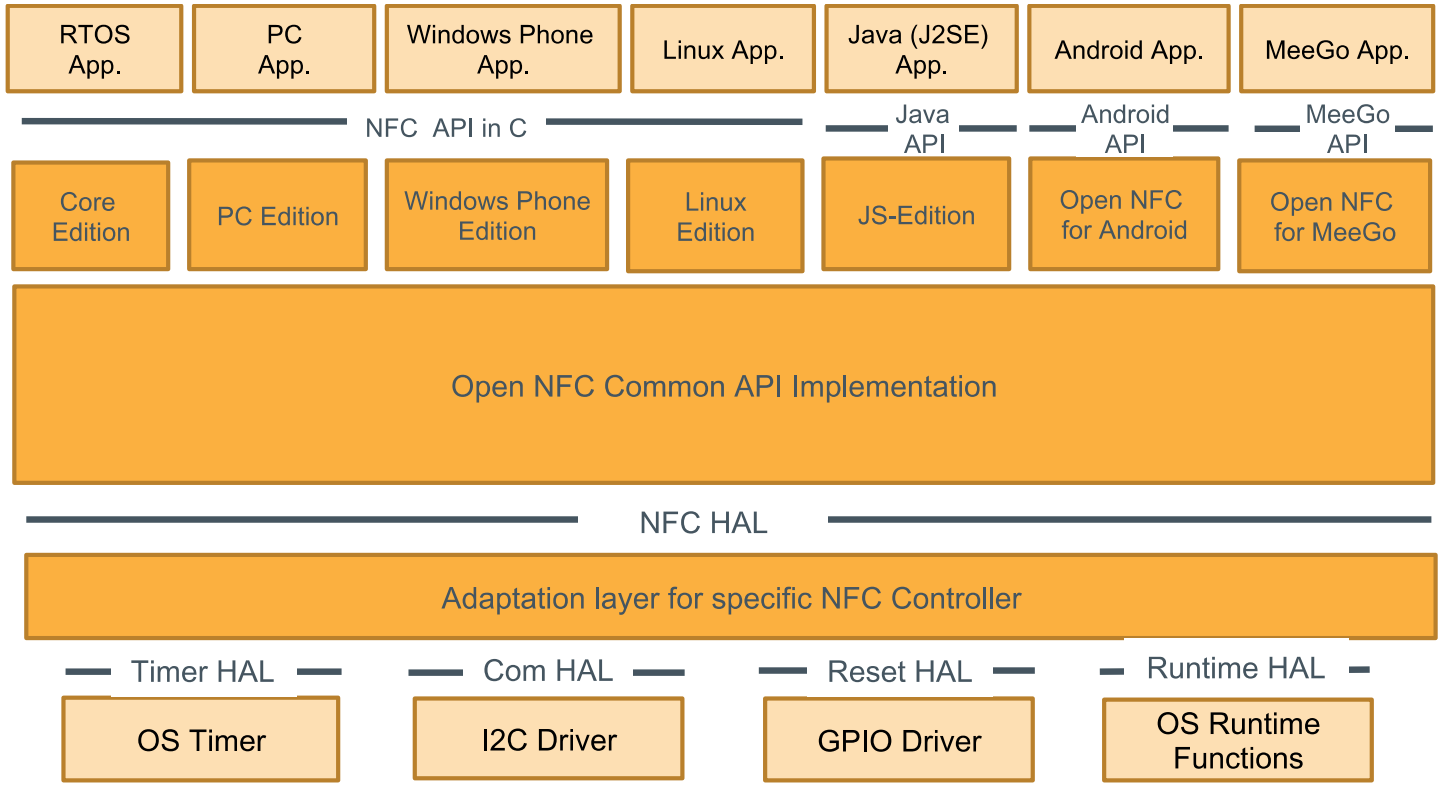
Platforms for Unlimited Applications

- Smart posters
- ID check
- Download of mobile coupons
- Mobile advertising
- Transport and ticketing
- Mobile payments
- Access control
- Information exchange
- P2P payment
- Social networking

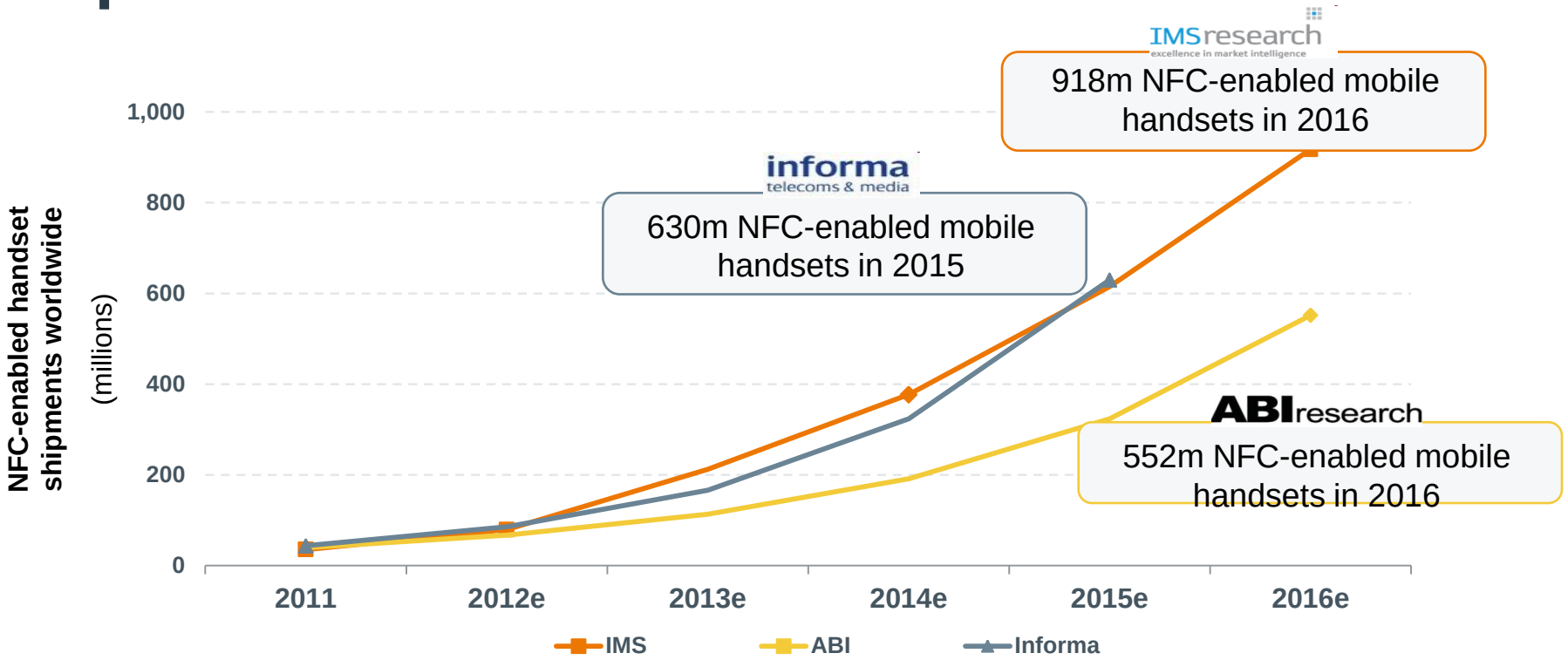
High Level NFC Architecture



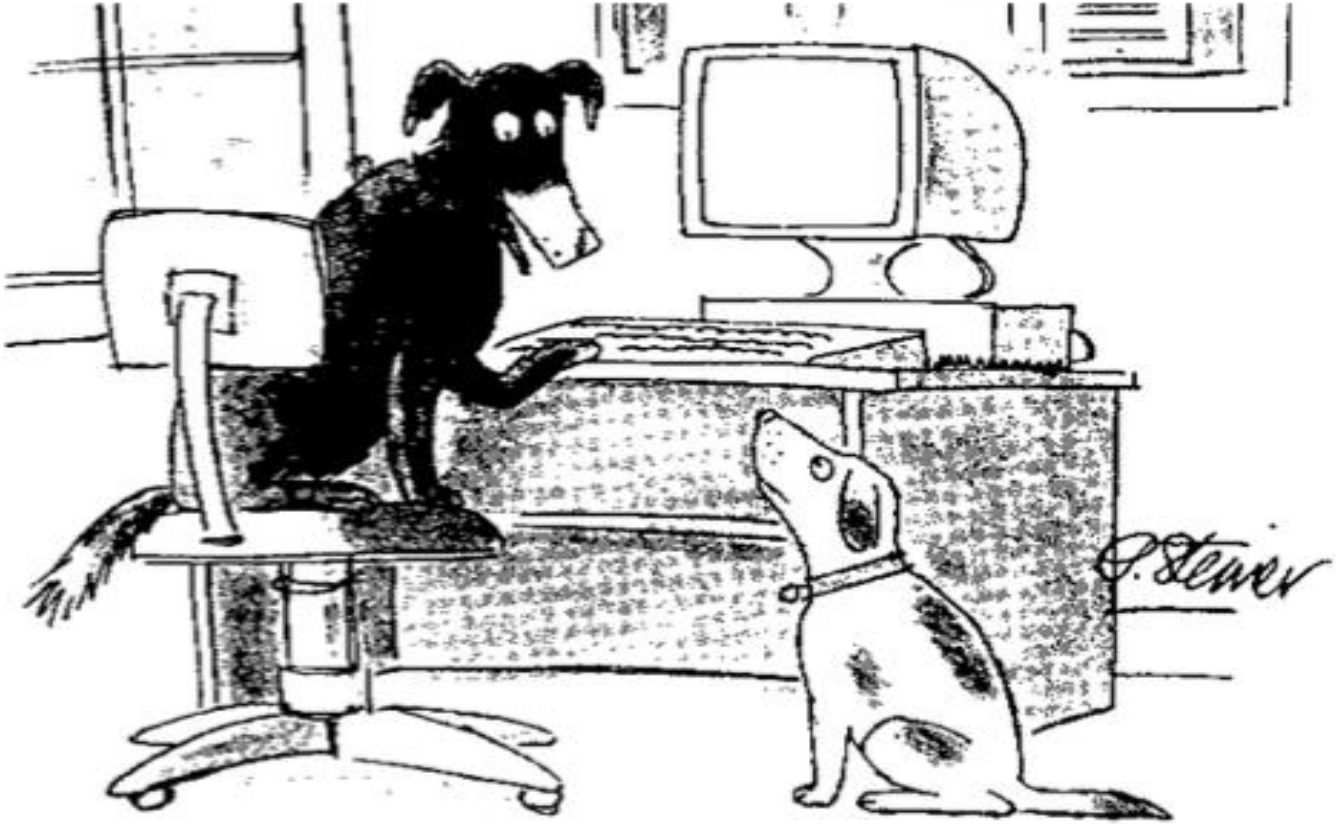
INSIDE's Open NFC Software Stack



Rapid NFC Market Growth



Sources: Informa, IMS Research, ABI Research



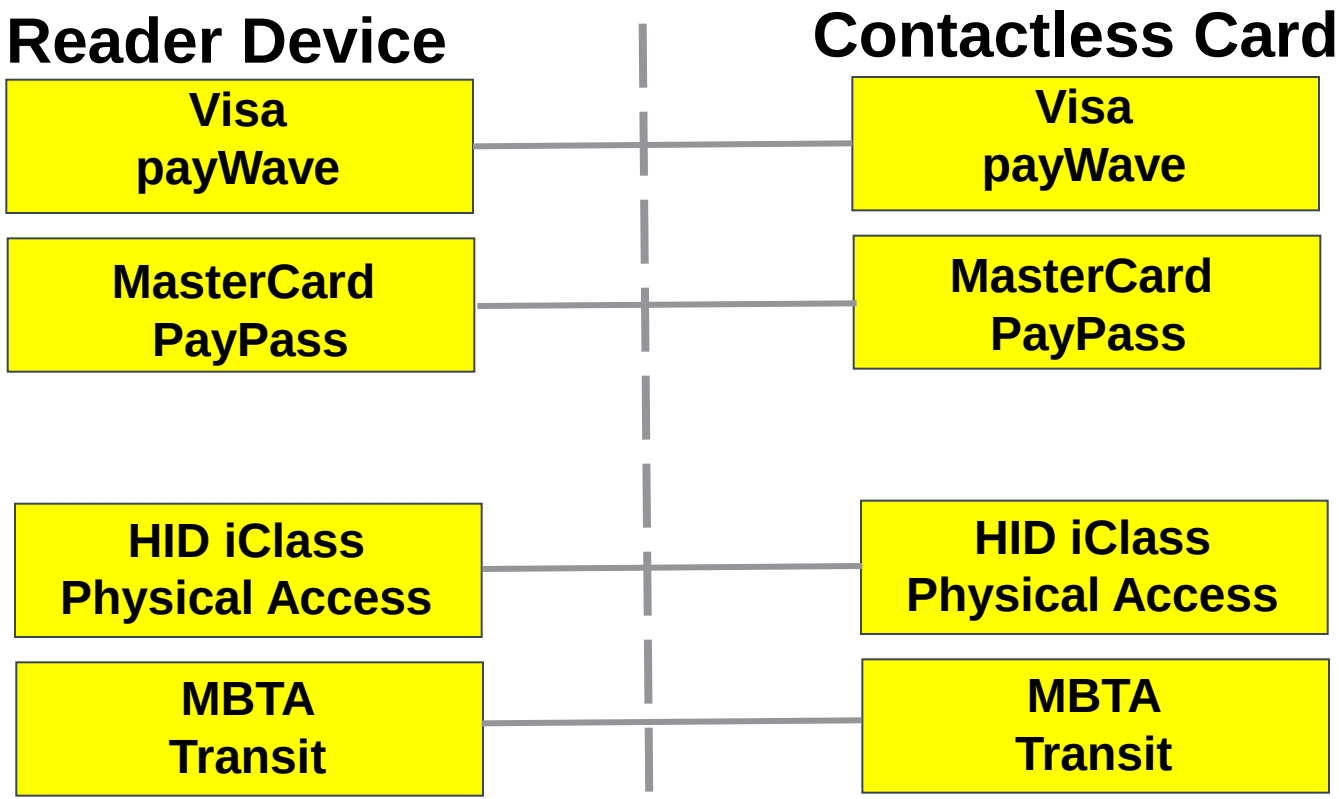
"On the Internet, nobody knows you're a dog."

Current Situation for NFC Application Growth

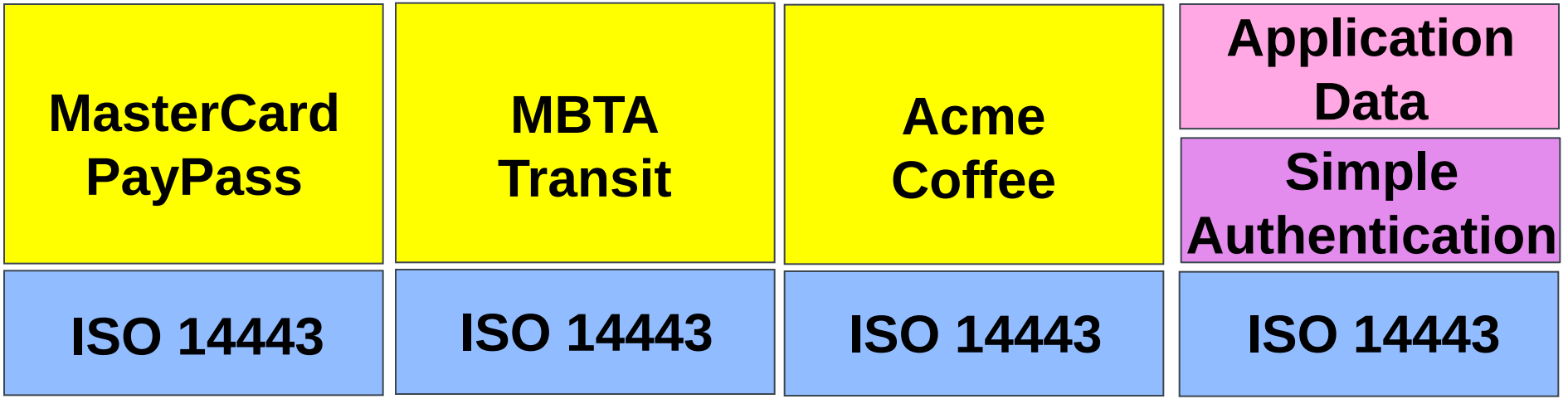
- **Attributes**
  - Proprietary Vendor Solutions – Evolving from Card Market
  - Card Applet, Reader Firmware Pair for each Scheme
  - Multi-App Smart Card Paradigm Evolution to TSM
  - Chip Based Application and Credentials

- **Scaling Challenges**
  - Drives greater secure chip capacity requirements
  - Slower, less flexible, more expensive, less open
  - In short, tech-centric (old paradigm) drivers

Historical, Legacy Approach – Why?

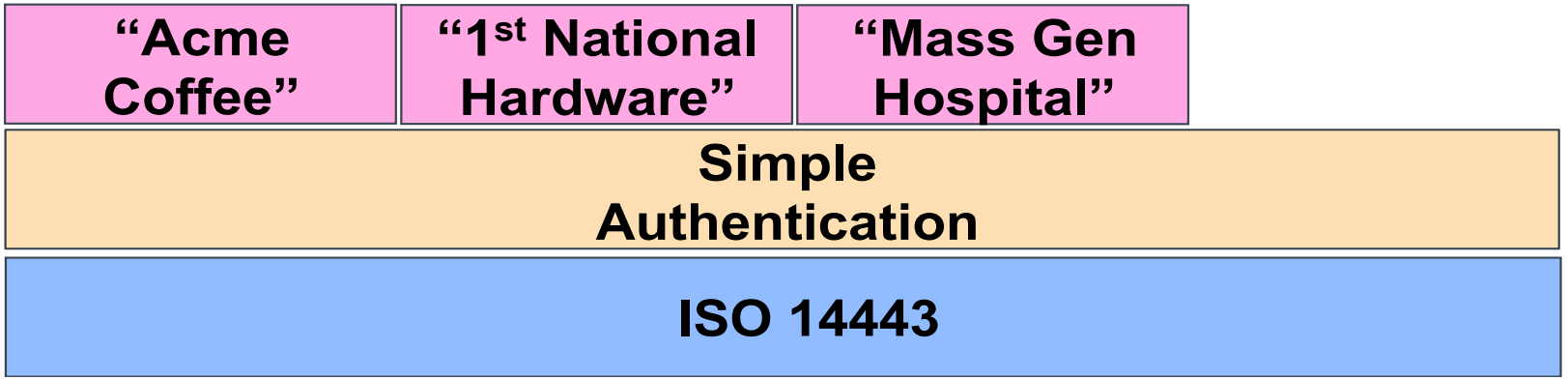


Approach to Contactless Standards



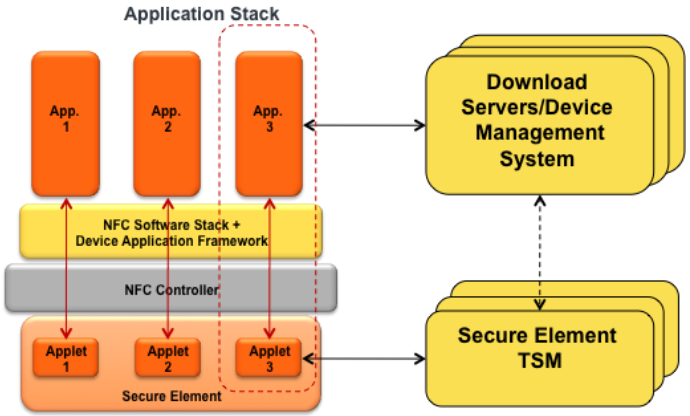
- Separation of Contactless Application Protocol
- Component for Standard Authentication
- Component for Data Exchange
- Move Data Management to Server-Based Services

An NFC Authentication Scheme

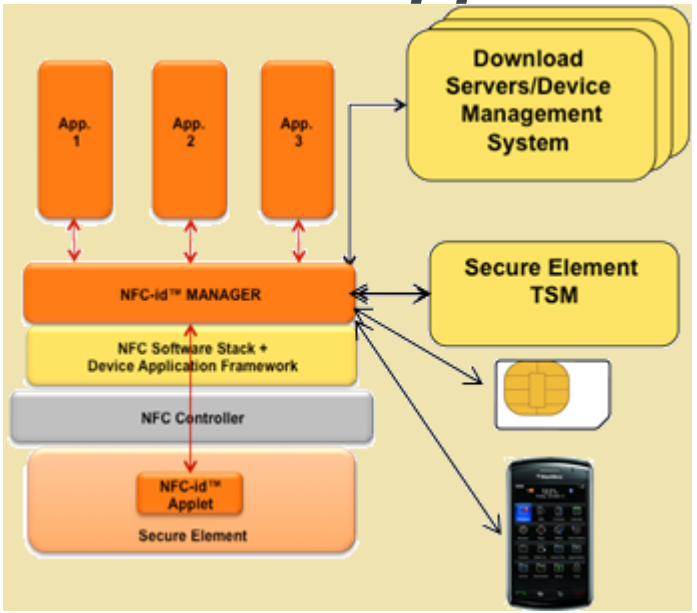


- Targeted to New NFC/Contactless Applications, Fast Time to Market
- Open framework for future applications, vs. “walled garden”
- Elimination of Applet, Terminal Application Scalability Problems
- Applicable to use cross vertical markets, cross hardware ecosystems
- New Vertical Market Schemes in Target: Retail Commerce, Health, …
- Preserve Legacy Data Flows for Magstripe Applications

The Future of Secure NFC Applications

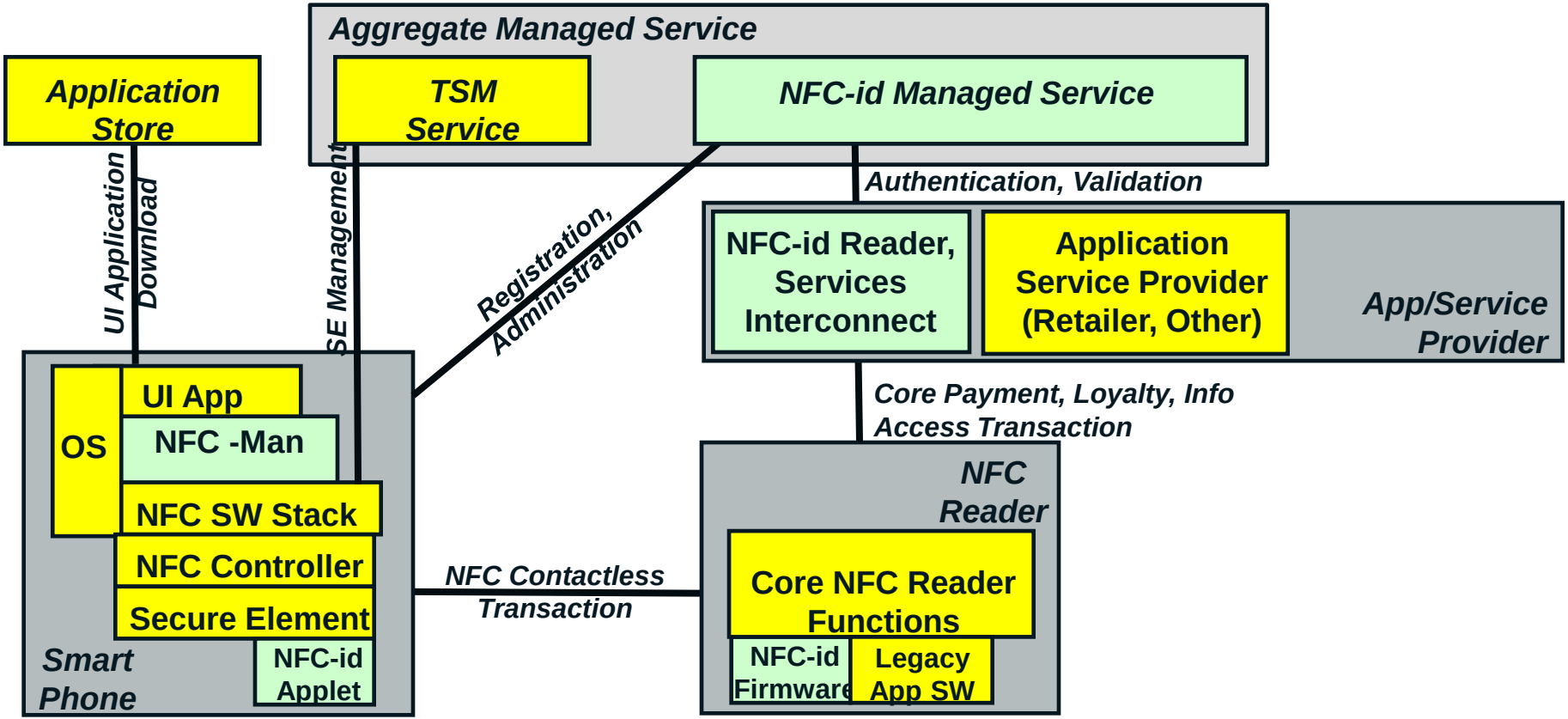


- SE: Multi-applets, multi-credentials
- Storage: Drives increased SE capacity
- Auth: Multiple, different schemes
- Interop: Fragmentation, lack of standard
- TSM: More complex, heavy



- SE: One user credential
- Storage: Minimizes storage requirements
- TSM: Simplified SE Administration
- Flexible: Credentials in eSE or UICC
- Flexible: Fast to market for developers

A System Approach: 'An NFC-id'



Strong Value Proposition in the Ecosystem

Common Framework – 'The SSL for NFC'

Smart Phone OEM	Wireless Carrier, TSM	App Service Provider	Reader Device Maker	Merchant	Consumer

The Benefits of NFC-id to the Application Enablement Community

- **Minimizes SE Storage Space Requirements**
- **Minimizes TSM Applet and Credential Downloads**
- **Minimizes Reader Device Updates**
- **Application and Developer Simplicity**
  - **Focus on UI Application, Faster/Simpler Application Rollouts.**
  - **Applicable for Proximity, WIFI, OTA Transactions**
- **Flexibility for Multiple Administrative Domains if Desired**

Summary Points

- Next Wave of NFC Applications and Services will require a common framework for industry growth
- For Mobile Commerce, services meeting the needs of the retail segment: Methodology, Tools, Core Authentication.
- Framework of NFC-id within Tizen Ecosystem
- Open NFC for Tizen Ecosystem

Charles Walton, General Manager
INSIDE Secure
617-953-4251
cwalton@insidefr.com

TIZEN™ DEVELOPER CONFERENCE
MAY 7–9, 2012