



Smart Card
Alliance



The Future of NFC Mobile Payments

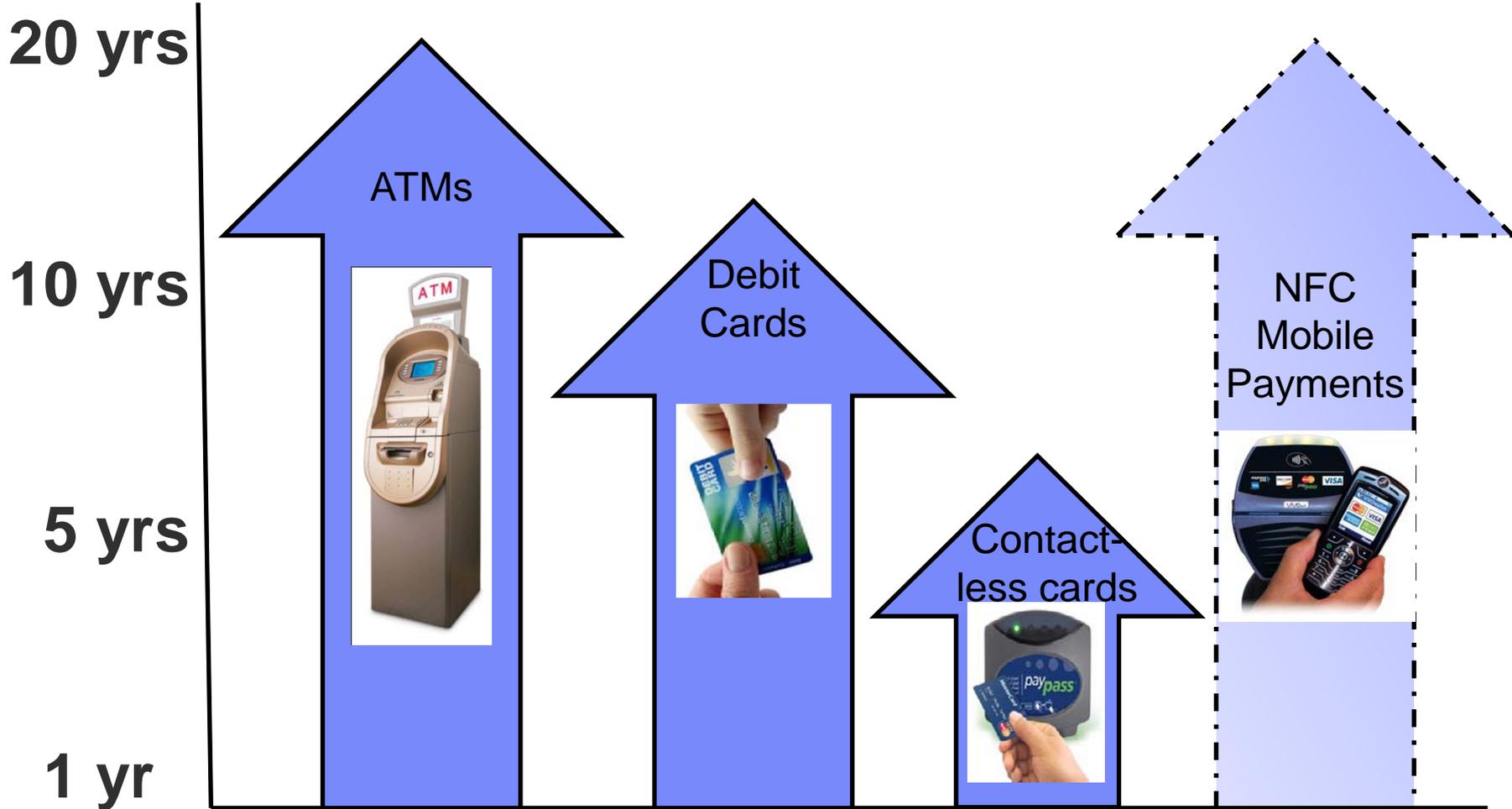
Transit Payments Markets Migration to NFC Mobile Payments

Randy Vanderhoof
Executive Director



Sponsored by the ITS Professional Capacity Building Program, ITS Joint Program Office, Research and Innovative Technology Administration, U.S. Department of Transportation

History of payments innovation



Contactless Payments



Mobile and NFC

- Near Field Communication (NFC) is a short-range wireless connectivity technology (also known as ISO/IEC 18092)
- The primary uses of NFC are to:
 - Connect electronic devices, such as wireless components in a home office system or a headset with a mobile phone
 - Access digital content, using a wireless device such as a cell phone to read a “smart” poster embedded with an RF tag
 - Make contactless transactions, including those for payment, access and ticketing



NFC Mobile to Become a Payment and Interactive Marketing Platform

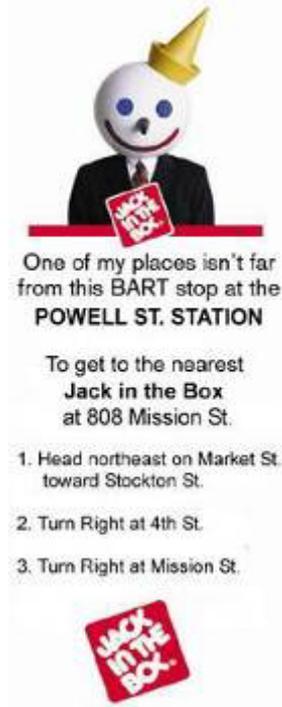


NFC – Near Field Communication Based on ISO Standard & Compatible with Contactless Payment Standard

Closed Mobile Wallet Example NFC Smart Poster Pilot



**Get directions to
the nearest Jack
in the Box on your
phone screen**



Open Mobile Wallet Models

Google Wallet



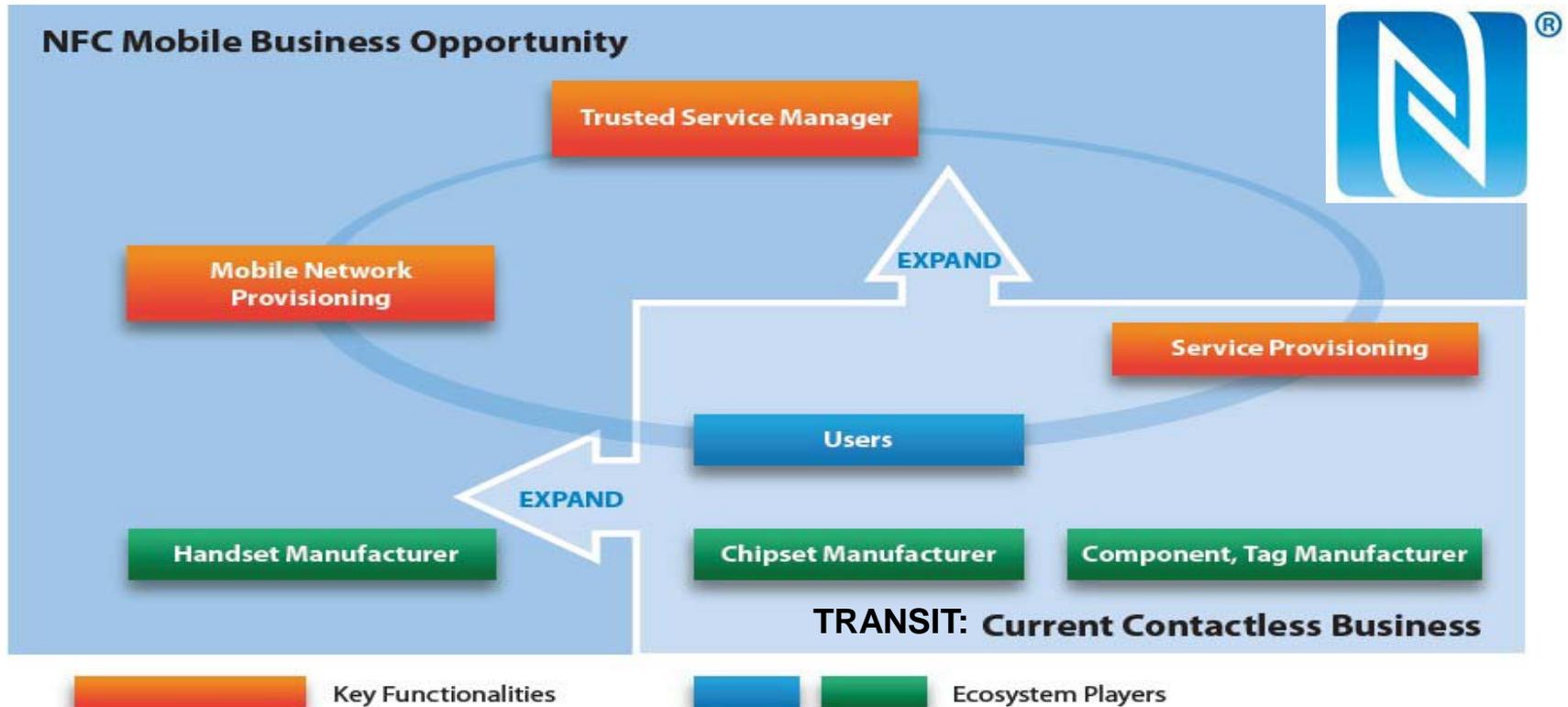
Isis



Orange/Barclays



Transit Connection To The NFC Mobile Ecosystem



The Trusted Service Manager (TSM) provides a contact point between transportation service providers and NFC mobile phones.

NFC and Application Security



➤ **Several secure architectures are available to implement NFC applications:**

➤ **Removable elements:**

- UICC (SIM) based secure element
- MicroSD card-based secure element



➤ **Non-removable elements**

- Embedded hardware secure element
 - NFC radio and secure element built into device



Role of Transportation in the Roadmap of Payments Innovation

- **Migration from closed loop to open payment**
- **Transit riders fit next generation payment target profile**
 - Low value, high speed transactions
 - Repeat users
 - Bridge to other merchant services
 - Demand interactive data exchange
- **Credit, debit, prepaid usage experience**
- **Service-driven, not profit-driven**



Challenges for Transit Payments

- Banking and transit don't speak the same language
- Transit demands for speed and flexibility with low risk
- Open payments not uniformly embraced by established vendors and integrators
- Within transit – rail, buses, subway, light rail have different fare collection policies and structures
- Wireless service not always available



Questions ?

Randy J. Vanderhoof Executive Director

191 Clarksville Road,
Princeton Junction, New Jersey 08550 USA
Main: (1) 800-556-6828
Direct: (1) 609-587-4208
Mobile: (1) 609-731-8251
Email: rvanderhoof@smartcardalliance.org



www.smartcardalliance.org

*. . . accelerating the
widespread adoption of
smart cards and secure
IC chips in North America
and Latin America*

