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NFC Application Ecosystems: Marketing, Gaming, Access and Identity Applications

- Smart Card Alliance Mobile & NFC Council Webinar
- October 11, 2012



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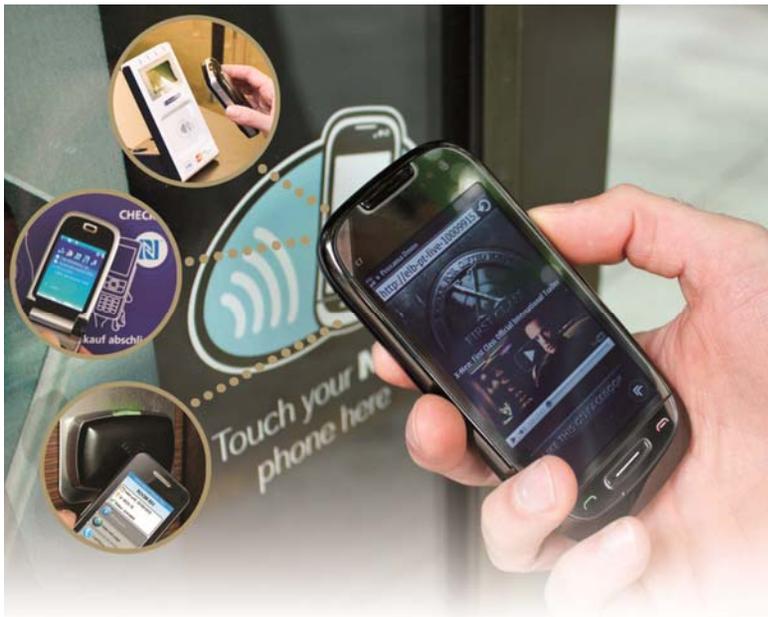


Introductions

- Brent Bowen, INSIDE Secure
- Chair, Mobile & NFC Council



Mobile & NFC Council



- *Raise awareness and accelerate the adoption* of all applications using NFC
 - Access control, identity, loyalty, marketing, payments, peer-to-peer, promotion/coupons/offers, transit, ...
- *Accelerate the practical application of NFC*, providing a bridge between technology development/specifications and the applications that can deliver business benefits to industry stakeholders.



Mobile/NFC Ecosystem Project

Objectives

- To educate broadly on NFC – especially beyond payment
- Describe ecosystem as it relates to the different applications (marketing, payments, identity, access, transit, peer-to-peer, posters, gaming, product labels) and different end markets (e.g., consumer, medical, enterprise) – especially beyond payment

Application Ecosystems

- Peer-to-Peer
- Tags and Posters
- Product Labels
- Marketing
- Gaming
- Access
- Identity
- Social Networking
- Payments
- Ticketing
- Transit



Today's Webinar Topics & Speakers



- **Introductions:** Brent Bowen, INSIDE Secure & Chair, Smart Card Alliance Mobile & NFC Council



- **NFC Marketing Applications:** Chandra Srivastava, Visa Inc.



- **Gaming Applications:** Deborah Baxley, Capgemini



- **Access Applications:** Tom Zalewski, CorFire



- **Identity Applications:** Steve Rogers, Intellisoft



- **Q&A:** Randy Vanderhoof, Smart Card Alliance



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NFC Marketing Applications

- Chandra Srivastava, Visa Inc.
- Smart Card Alliance Mobile & NFC Council

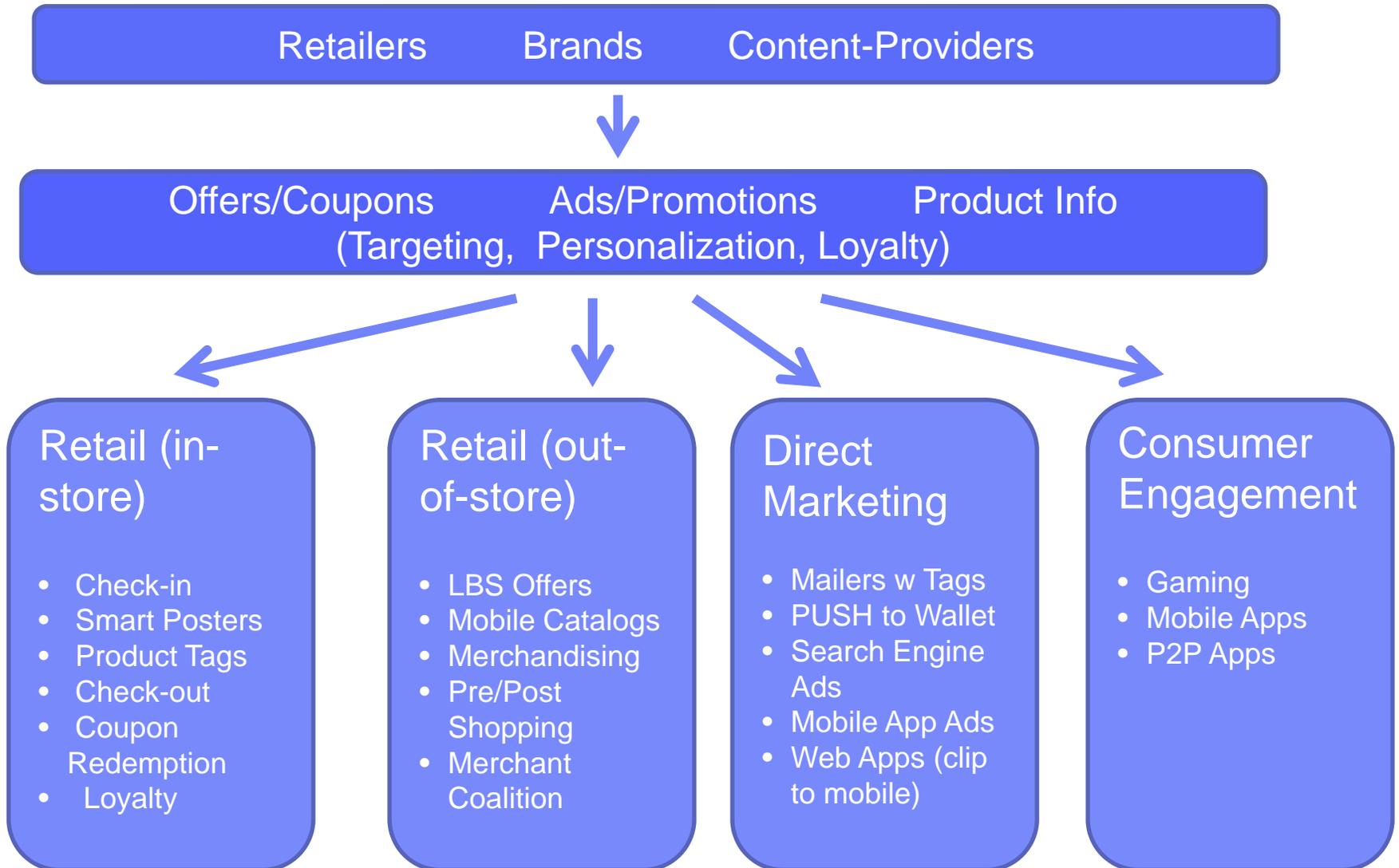


Mobile Marketing Applications

- **Targeted & personalized content**
 - Right customer, Right content, Right time, Right place
- **Mobile Marketing content**
 - Digital Offers / Coupons – redeemable for discounts at retailers
 - Ads / Promotions – promote products
 - Product Information – provide additional information
- **Mobile Marketing applications**
 - Retail In-store – consumer is in-store shopping
 - Retail out-of-store – consumer is out-of-store shopping
 - Direct Marketing – push marketing via wallets, tags & apps
 - Consumer Engagement – gaming, P2P mobile Apps



Mobile Marketing Ecosystem





NFC Mobile Marketing Ecosystem Players

Category	Examples	Role	Standards
Wallets with Offers & Loyalty	C-SAM, Isis, Google, PayPass, Serve, Toro, Visa, VeriFone, ViVOtech	Provide Wallet enabled with payments, digital offers and loyalty cards	Proprietary
Check-in, LBS	Foursquare, Google, Isis, Loopt, Shopkick	Provide Retail check-in based on NFC tap on Smart Posters/Tags, or on Location Based Services	GPS, Cell location, Smart Posters, Proprietary
Smart Poster / Tags	All things Mobile, Proxama, Proximity Sky, Identive NFC, NFC Superstore	Provide Smart Poster and tags linked to back end service to mobile marketing and mobile offers	NFC Forum guidelines; Proprietary for content management linked to tags/posters
Offer/Loyalty Redemption at POS	Isis, Google, ViVOtech, VeriFone, Visa	Provide Apps to support transfer of offers and loyalty data from mobile NFC phone to Retail POS systems and redemption of offers	Proprietary specs; retrofit to existing couponing standards, Network Redemption
Mobile Offer Codes & Barcodes	MMA, ACP, You Technology, Coupons.com	Provide guidelines for digital offer standards	GS1, Mobile Marketing Association (MMA) Guidelines, Association of Coupons Professionals (ACP) Guidelines, Retailer Specified
Offer Reconciliation	Inmar, NCH, You Technology, Retailer in-house	Provide offer settlement & reconciliation for CPG coupons and retailer sponsored offers	Proprietary



Mobile Marketing Considerations

- **Ability for Targeting & Personalization**
 - Consumer enrollment, profile & preferences
 - Access to consumer behavior & transaction history
 - Content correlation to consumer profile/activities
- **Consumer Discovery & Content Delivery**
 - Types of consumer interactions – check-in, poster taps, etc
 - Content delivery – types & timings
- **Retailer Participation**
 - Technology enablement for in-store or out-of store marketing
 - Level of participation
- **Content Provider Participation**



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Gaming Applications

- Deborah Baxley, Capgemini
- Smart Card Alliance Mobile & NFC Council



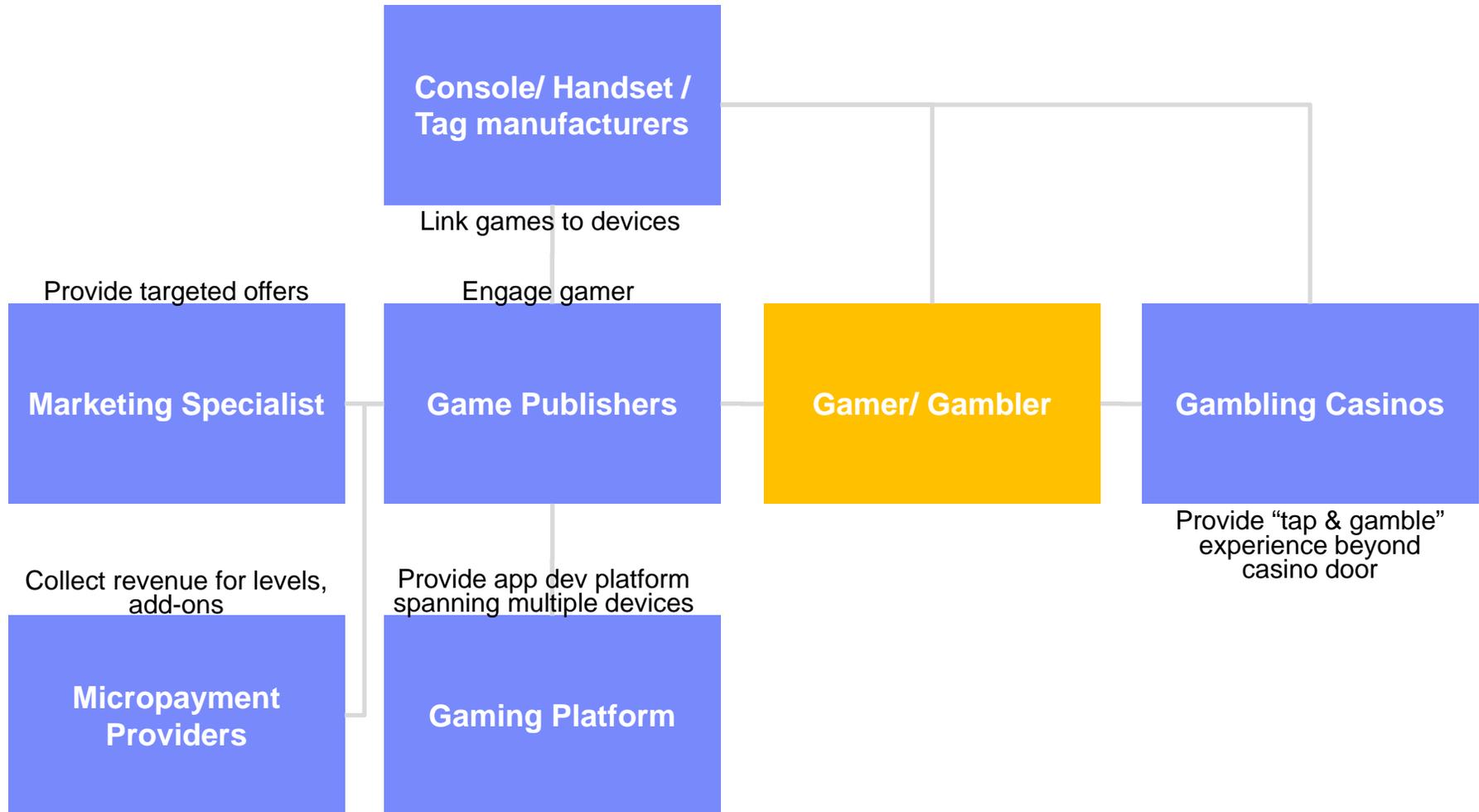
Gamification unlocks “the MAGIC of NFC”

- **Gaming is the one use case that might make NFC “cool” – providing a catalyst for mass adoption**
 - Enable interactivity with real-life items such as plush toys and posters
 - Make gaming more social by incorporating peer to peer

- **The blurring of physical and virtual creates revenue opportunities for gaming companies**
 - Entice gamers to purchase toys
 - Increase engagement levels among gamers



Mobile/NFC Gaming Ecosystem





NFC + Gaming Ecosystem Players

Category	Examples	Use of NFC
Console/handset/tag manufactures 	<ul style="list-style-type: none"> • Nintendo • Nokia • Samsung • NXP 	<ul style="list-style-type: none"> • Link games with real world items • Support peer-to-peer gambling • Support micropayments • Instant purchase game items or apps/games
Game publishers      	<ul style="list-style-type: none"> • Nintendo (Wii, Pokemon) • Rovio (Angry Birds "Magic") • Sifteo (Cubes) • Activision (Skylanders) • Vectorform (Pandemic 1.0) • Nukotoys 	<ul style="list-style-type: none"> • Use USB-based or handset NFC readers to enable interactivity with real-life, unlock new levels, offer discounts and rewards to players • Provision down-load codes on physical goods • Combine collectables with game • Enable peer-to-peer gaming ("pairing") • Pair mobile phones with accessories, e.g. speakers, TV
Gambling Casinos 	<ul style="list-style-type: none"> • TBD 	<ul style="list-style-type: none"> • "Tap-n-gamble" extending gambling experience beyond casino floor
Gaming Platform 	<ul style="list-style-type: none"> • SCVNGR 	<ul style="list-style-type: none"> • Enable publishers to build location-based games compatible with multiple handsets
Micropayments   	<ul style="list-style-type: none"> • Sometrics • Zong • Mopay 	<ul style="list-style-type: none"> • Replace scratch-off cards • Enable game publishers to market free games then monetize virtual currency
Target Offers 	<ul style="list-style-type: none"> • Sometrics 	<ul style="list-style-type: none"> • Serve targeted offers based on location, demographics, conversion history & social affiliation



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NFC Access Applications

- Tom Zalewski, CorFire
- Smart Card Alliance Mobile & NFC Council



Access Control

- **Manage and Monitor Real-Time Access for Authorized Users**
 - Physical Access
 - Public or Private Buildings or Facilities
 - Corporate Campuses/Offices, Remote Facilities or Buildings
 - Hotel or Public Facilities
 - Servicing & Maintenance of Public-use Kiosks, Vending/Ticketing Machines
 - Logical Access
 - Corporate, Private or Limited-Access Networks

- **Ability to Issue Open-Ended, Time or Event-Triggered Credentials**
 - Time of Day, Week, or Re-occurring period
 - X number of Uses / Attempts
 - Location-Triggered Access

- **Ability to Grant Transfer of Access Credentials**
 - From Authority to End User
 - From End User to End User (similar to P2P)



Access Control Application/Stakeholders

Category	Applications	Examples / Stakeholders
Consumer / B2C	<ul style="list-style-type: none"> • Hotel Access • Memberships • Rental Properties • College Campus 	<ul style="list-style-type: none"> • Hotel rooms, concierge lounges • Entertainment, country clubs, airline clubs • Vacation rentals • Dorms, student buildings
Corporate / B2E	<ul style="list-style-type: none"> • Employee Campus • Field Facilities 	<ul style="list-style-type: none"> • Access badge replacement • Remote location temporary access
Field Work Force	<ul style="list-style-type: none"> • Residential / Real Estate • Cleaning / maintenance • Hospitality • Inspectors 	<ul style="list-style-type: none"> • Real Estate Agent property access • Real-time access, tracking and documentation • Special Events, • Medical Facilities
Industrial Facilities	<ul style="list-style-type: none"> • Remote Utility Facilities • Authority Access 	<ul style="list-style-type: none"> • Public Utility Premises, Microwave/Radio Sites • Automated or Remote Equipment Shelters
Vending and Kiosk for Servicing / maintenance	<ul style="list-style-type: none"> • Ticketing Kiosks • Lottery/Slot Machines 	<ul style="list-style-type: none"> • Access to Transit Kiosk, Self Service Parking Kiosk • Convention center, Casinos,
Logical Access	<ul style="list-style-type: none"> • Corporate Networks • Private Networks • One -Time Use 	<ul style="list-style-type: none"> • Off-site employees • Temporary or contract workers



Access Stakeholders

➤ B2B Channels

- Corporate Employee Access
 - Physical Access and Logical Access
- Field Workforce Management
 - Field employees requiring access to secure sites
 - Vendor or partner access such as real estate or property management
 - Sales staff, direct or partner

➤ B2C Channels

- Customer access to hotel or lounge facilities
 - May extend to other rental facilities or properties, rental equipment, etc

➤ Other Channels

- Extends to ID and alternate forms of access authentication
- Time stamping and real time management
- Health & medical industry, regulatory inspectors, local authorities



Field Work Force Example - NFC

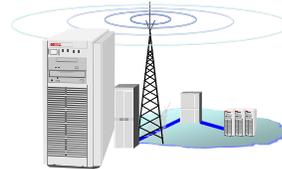
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Dispatch Console



SP TSM



MNO TSM



NFC Field Workforce Access Applications

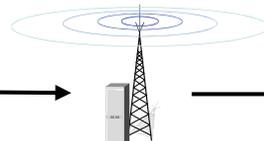
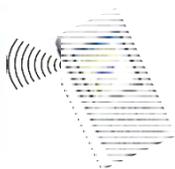


Real Estate Agent Access



Field Technician Access Remote Utilities Station

2



1. Employee momentarily touches phone to lock
2. Lock provides ID to phone
3. Phone requests credentials from SP OTA

4. SP validates phone, location & permission to access lock
5. SP sends lock access code to MNO & logs event

6. MNO routes credentials to phone SE



7. Phone requests PIN from employee
8. Employee touches phone to lock a second time
9. Lock opens and sends conformation to phone
10. Phone sends successful access event to SP server



Access Considerations

➤ Residential and Industrial Lock Applications

- Connected lock
 - Networked or hardwired connection
 - Allows commands to be sent via non-NFC link
 - NFC used as trigger, back-end makes access decision
 - i.e. service discovery triggers SMS to server for access request
- Stand-alone lock
 - Requires commands to be sent only by NFC
 - Back-end does not always need to be invoked to obtain access

➤ Levels of Security

- SE or no SE required?
 - Business model of SE owner, drive for 100% occupancy vrs \$ for space
 - Liability and exposure for a given application

➤ Ability to Log and Document Access Credential History

- Liability
- Law Enforcement



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NFC Identity Applications

- Steve Rogers, Intellisoft
- Smart Card Alliance Mobile & NFC Council



NFC - Identity

NFC – Smart phone IDENTITY authentication & verification:

- Strong identity and attribute management
- Familiar / accepted / synergistic form factor - “use every day”
- Significant CPU power and memory
- Easy-to-use and safe smart phone applications
- Biometric authentication (photo, face, iris, fingerprint, voice...)
- Visual display of verified badge
- Strong authentication, PKI, out-of-band, location GPS

NFC - Secure storage & use of multiple IDENTITY credentials:

- Driver's License
- Passport
- Health / Insurance ID
- Student ID
- Retiree ID
- Corporate ID
- Access Control (PACS, LACS)
- Professional Certificate
- Training Certificate
- Entitlement Account
- Debit /Credit Account
- Loyalty / E-Ticket



NFC – Identify Others

NFC phone as electronic IDENTITY credential reader:

- Access to Enterprise Identity Infrastructure
- Situational Awareness
- Just-in-Time Credentials
- Emergency Responder Verification
- PIN and Biometric Verification
- Strong Authentication
- Privileges / Authorization
- Location Based (GPS)
- Information Privacy
- Attribute Attestation (ERO, NRF, ESF, NIPP...)
- Interoperability with Standards-Based Credentials
- Incident Scene Management and Tracking
- Secure Information Sharing
- Reader / Credential Communications Security





NFC - Identify Yourself

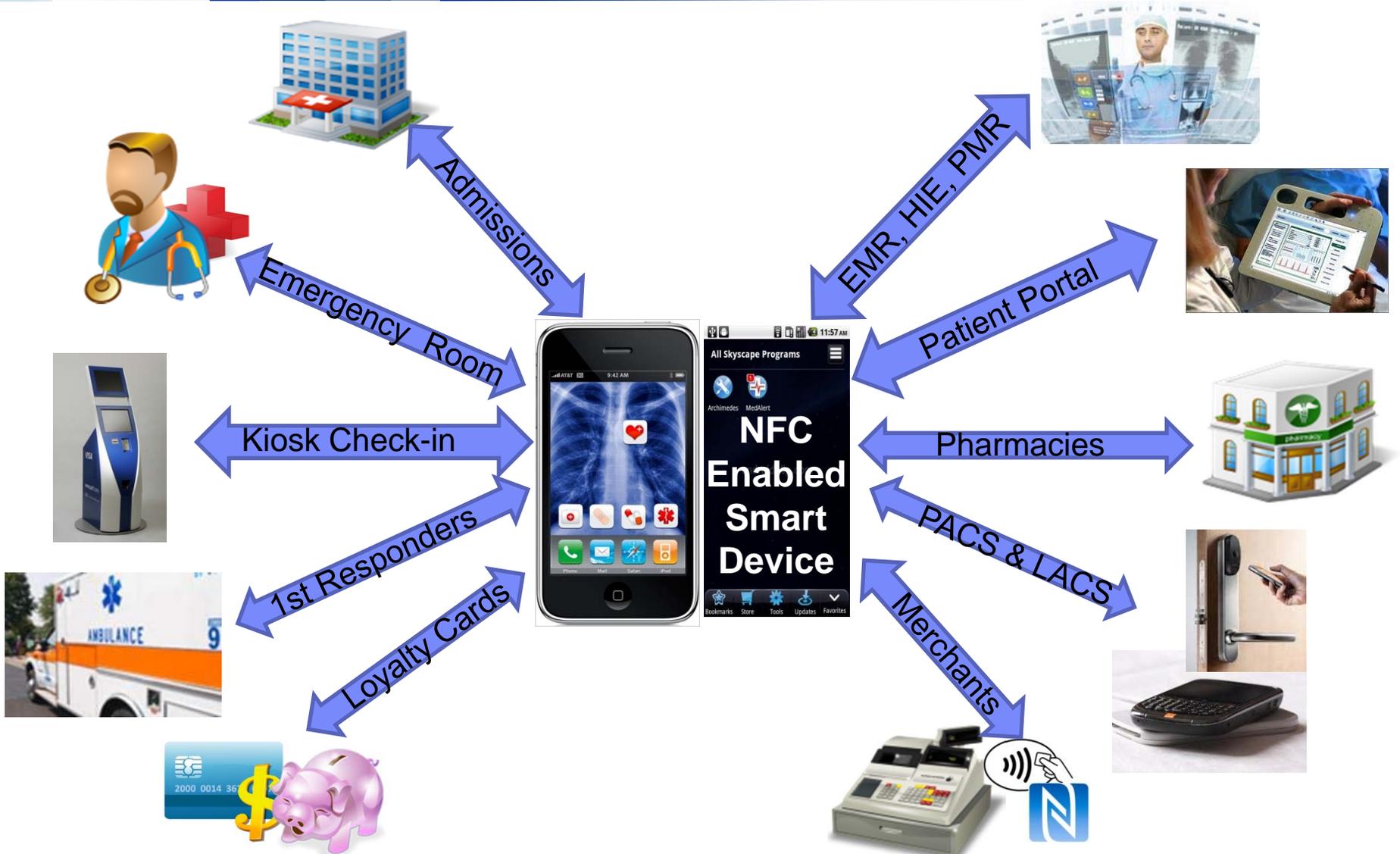
NFC Identity Credentials for identity verification purposes:
WHO are you and WHAT are you allowed to do...

- Virtualized Credentials
- High Assurance and Trusted Identity
- Incident Scene Access
- Physical Access to Facilities
- Transportation
- E-Ticketing
- Payment & Financial Transactions
- Health Records and Services
- Logical Access to Networks and Information Systems
- Professional Certification Verification
- Legal Authorization
- Digital Signature
- Secure Email



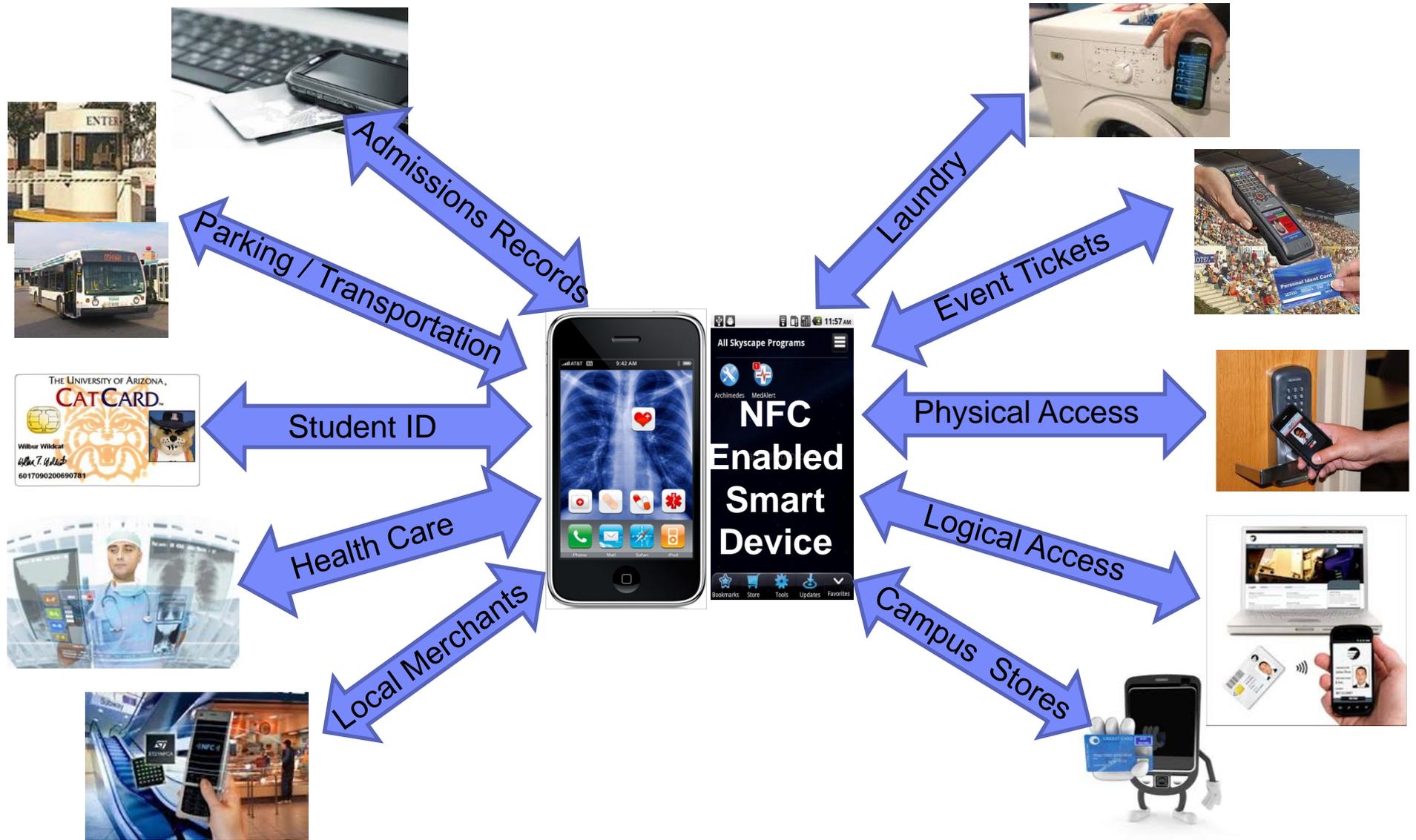


Medical Services Use Cases



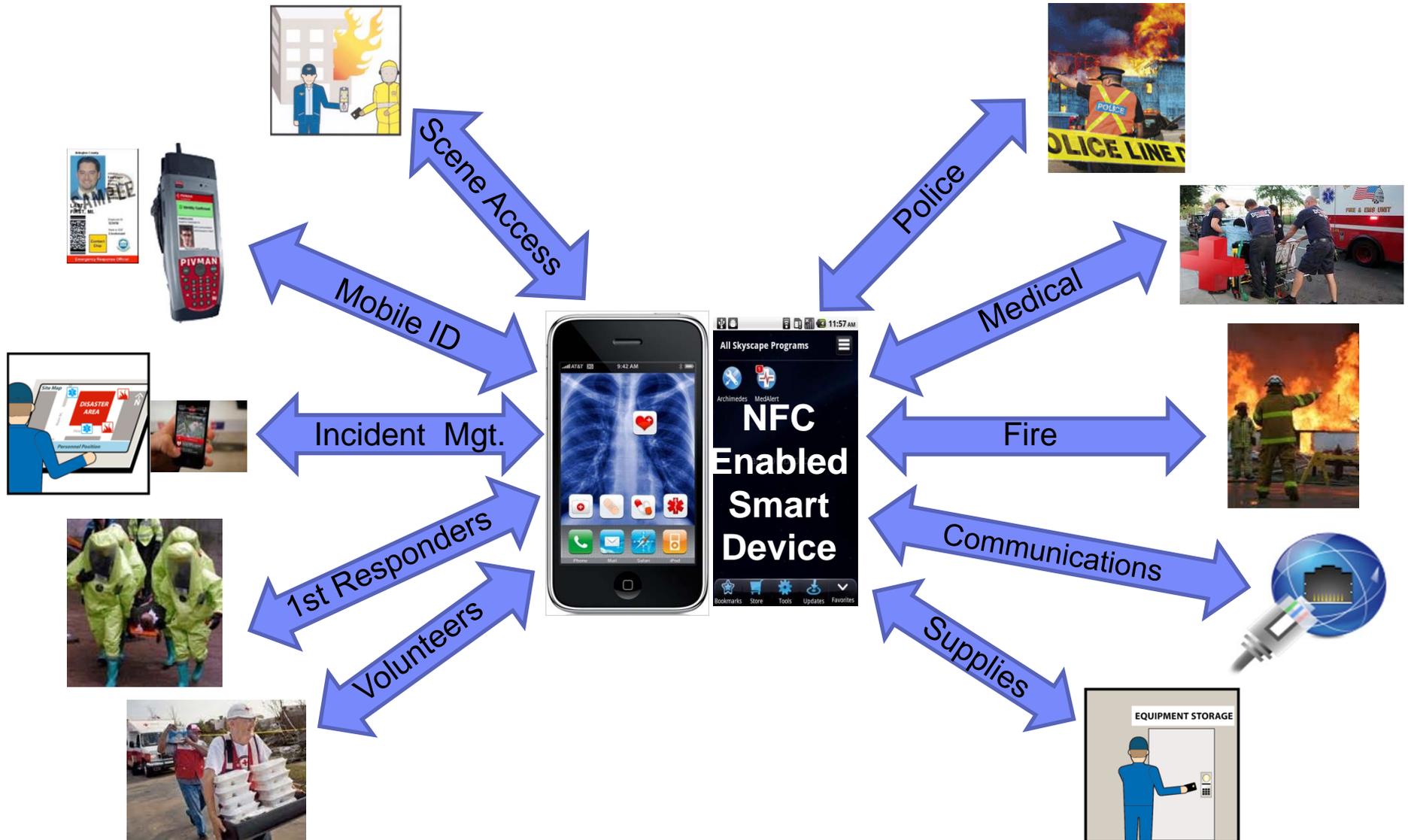


College Campus Use Cases





Emergency Responder Use Cases





NFC Identity Ecosystem Players

Category	Examples	Role	Standards / Laws
College and University Campus Environment	<ul style="list-style-type: none"> • HID / ActivIdentity • Ingersoll Rand • Identive Group • CBORD • Blackboard 	Identity Security Access Control Data Exchange Ticketing Payment	ISO14443 NFC NIST FERPA Proprietary
Emergency First Responder Environment	<ul style="list-style-type: none"> • HID / ActivIdentity / CoreStreet • Northrop Grumman • Advanced Response Concepts / WidePoint • Collaborative Fusion Inc. • CISCO 	Identity Police Fire Medical / EMS Utilities Communications DHS Transportation HAZMAT	ISO14443 NFC NIST FEMA Proprietary NIMS NRF, NRP, ICS, NIPP ERO
Medical Use Environment	<ul style="list-style-type: none"> • Quest Diagnostics • Lab Corp • SAFE BioPharma • HID / ActivIdentity 	Identity Records Security Access Payment	ISO14443 NFC NIST Proprietary EMRS HIPAA SAFE



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Questions & Answers



Mobile & NFC Council Webinar Series

- **NFC Application Ecosystems: Social Media, Payments, Ticketing and Transit Applications – October 25, 2012, 1pm ET/10am PT**
 - Social Media Applications: Brent Bowen, INSIDE Secure
 - Payments Applications: Josh Kessler, MasterCard Worldwide
 - Ticketing Applications: Tom Zalewski, CorFire
 - Transit Applications: David deKozan, Cubic



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