NFC – Near Field Communication
Agenda

- Welcome
- What is NFC?
- How does NFC work?
- What is the current NFC environment like?
- Uses of NFC
- Verizon and NFC
- Guest Developer – Josh Krohn, Tagstand
- Q&A
Announcements

• Part of a series of webinars from the Verizon Developer Community
• Presentation will be posted
• To ask questions, please submit via the GoToWebinar console
Speakers

• Carlo Longino, Wireless Industry Partnership
• Marc Greenbaum, Verizon Wireless
• Joshua Krohn, TagStand
• Gibbs Murayama, Verizon Developer Community
What is NFC?
NFC In a Nutshell

• NFC – Near Field Communication
• A standards-based technology for short-range wireless communication
• Ensures interoperability between devices, infrastructure and services
Key Advantages of NFC

• Two-way communications
  – Rather than many previous RFID systems, which were only one-way

• Low speed, but very simple setup
  – 106-424 kbps
  – Can be used to bootstrap faster connections such as Wi-Fi or Bluetooth
A Brief History of NFC

• NFC can be traced back to contactless card systems
  – Often used for public transportation
• NFC grew out of effort to harmonize various systems
• NFC Forum – 2004
• First NFC handset – Nokia 6131 – 2006
• First Android NFC device – Samsung Nexus S - 2010
FeliCa

• Launched by Japanese train operators, Sony, NTT DoCoMo in 2002
• Initially was contactless card; “Osfau keitai” released in 2004
Felica

- Users could download new applets to add apps and services
  - E-money, plane tickets, shop loyalty cards, hotel/office access keys, coupons, tickets
How Does NFC Work?
Simple Scenario

- Initiator – powered device such as a phone
- Target – often unpowered, such as a tag
  - Can also be powered – POS device
  - Generally read-only, sometimes rewriteable
- If both are powered, P2P is possible
Sample Usage Scenario

- Smart movie poster
  - Embedded NFC tag
  - Unpowered
- Contains many services
  - URL redirect
  - Foursquare checkin
  - WiFi login
  - Trailer download
  - App download
Sample Usage Scenario

- Poster is in physical world
- Scanned by device
  - Tag powered by RF

Movie Poster

RF transmission + power

Handset

Embedded NFC tag

4cm
Sample Usage Scenario

- Tag returns possible actions
  - View trailer – starts WiFi or Bluetooth, downloads trailer
  - Buy ticket – URL redirect to ticketing site; purchase made, tickets sent back to device
  - Ticket could then be used to enter, sent to friend, etc.

Embedded NFC tag

Movie Poster

Handset

RF transmission + power

Possible actions

4cm

Embedded NFC tag
The Current NFC Environment
Devices

• Growing device availability
  – 100m NFC handsets this year

• Particularly Android
  – Samsung Galaxy S3
  – HTC Droid Incredible 4G LTE
  – Droid Razr M, HD, Maxx
  – Others from Samsung, HTC, Motorola, LG and More

• Windows Phone, BlackBerry

• More details at
  http://www.nfcworld.com/nfc-phones-list/
Tags

- Widely and cheaply available
- $1 each in small quantities, large bulk discounts available
- Variety of formats
Tags

• Many things to consider when choosing tags
  – Physical size/format/environment
  – Tag memory capacity
  – Re-write/read-only capable
  – Cost
  – Security
  – NFC Forum Type
    • Match the correct tag to the application
Public Infrastructure

- Little available
- Payments/POS systems generally “off limits”
- Google Places NFC stickers
- Depending on the presence of somebody else’s NFC tags is a problem
Mobile Payments

- ISIS
- Google Wallet
Uses of NFC
NFC applications

• Misconception that NFC=Mobile Wallets
  – Not true!

• Non-payments uses outnumber payments
  – Ticketing
  – Access control
  – Customer loyalty programs
  – Coupons
  – WiFi Network access
  – Bluetooth setup
  – Asset tracking
  – Content delivery
Verizon and NFC
## NFC Initiatives

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<tr>
<th>Secure / Payments</th>
<th>Secure / Non-Payments</th>
<th>Non-Secure / Non-Payments</th>
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<td><strong>Mobile Commerce</strong>&lt;br&gt;Joint venture founded with AT&amp;T and T-Mobile&lt;br&gt;• Payment Cards&lt;br&gt;• Cash Card&lt;br&gt;• Offers&lt;br&gt;• Loyalty Cards</td>
<td><strong>Physical Access</strong>&lt;br&gt;Logical Access&lt;br&gt;Mass Transit&lt;br&gt;Mobile Ticketing&lt;br&gt;Biometric Access</td>
<td><strong>Proximity Engagements</strong>&lt;br&gt;Peer to Peer Transactions&lt;br&gt;Smart Posters&lt;br&gt;Social Gaming&lt;br&gt;In-Home / Lifestyle</td>
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Ecosystem Accelerator

Verizon “Best Emerging NFC App” Award
@ WIMA NFC USA Show
November 2012

- WIMA has created a dedicated awards track for Verizon at the WIMA NFC USA developer contest on November 28th, 2012.
- Targeting 50-75 submissions
- Promoted as part of WIMA overall WIMA contest
- Verizon will exhibit Finalists in our booth
- Verizon will have the opportunity to promote and leverage these applications for NFC marketing
TAGSTAND AND NFC

- NFC Task Launcher History
- Other Projects and Use Cases
- Why NFC
NFC TASK LAUNCHER

- Why?
  - Nexus S has NFC Hardware, but NFC is not useful for me....
  - How can I use this to make my life easier?

- Problems
  - Where’s the documentation?
    - This is no longer an issue on Android. Google has some excellent example projects as well as several IO talks on Youtube detailing how to use NFC within your apps.
  - Where to get NFC tags?
    - Tags can be sourced from a number of vendors now throughout the world.
OTHER USES

- What else?
  - Promotions
  - Time Keeping
  - Health Care
Why use NFC in your applications?
- Consumers really like it
- Make interactions simpler
- Enhance user experience and create richer interactions
Message from the VDC
Verizon Developer Community (VDC)

The focus of The VDC (Verizon Developer Community) is to support mobile developers with their developmental needs with information, tools and API’s that help to develop and enhance applications to run on the Verizon Wireless network.

http://developer.verizon.com  Follow us on Twitter: @VerizonDev

THE PROGRAM

• VDC is the entry point to all VZ Tools & Platforms
• Merchandising opportunities to distribute your app or services to millions of customers
• Develop your app for basic phones, smart phones and tablets
• Utilize our 3G and 4G LTE networks to develop and distribute across networks

BENEFITS
Verizon APIs, Tools and Platforms

• Verizon APIs
  – SMS, MMS, Terminal Status & Location and Carrier Properties

• Developer Tools
  – NBI, ScanLife, Urban Airship, Printer On, Mobile Roadie, Open Mobile, Kiip, and more…

• Verizon Platforms
  – Brew, Enterprise, FIOS, M2M, Vodafone, and more
Upcoming Webinars

Check back to the VDC frequently or follow us on Twitter for updates on upcoming webinars

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Thank You

- Recording and details of future webinars at:
  

- Thanks to all our speakers

- Questions? carlo@wipconnector.com

- See you on November 15

Developing for Tablets