Towards an Interoperable Future
Driving Service, Standards and Certification of NFC

Koichi Tagawa
Sony
Chairman, NFC Forum

WIMA NFC Monaco
April 13, 2012
Marketplace Overview
Global Market Developments

- The last three months have seen major NFC announcements from:
  - Device manufacturers
  - Financial service providers
  - Mobile OS vendors
  - Public transit authorities
  - Retailers

- Partnerships formed to launch major NFC initiatives

- 63% of consumer respondents 18-34 are ready to make mobile payments (source: MasterCard)
What the Analysts are Saying

- **Deloitte**
  - In 2013 there may be as many as 300 million NFC smartphones, tablets and eReaders sold
  - NFC-based mobile transactions are expected to reach nearly $50 billion worldwide by 2014
  - 1 in 6 users worldwide will have an NFC-enabled phone by 2014
  - 500 million people around the world will use their mobile devices as travel tickets on metros, subways and buses by 2015; NFC will drive this growth

- **Gartner Research**
  - 50% of smartphones will have NFC capability by 2015

- **Frost & Sullivan**
  - By 2015 NFC technology will be the most-used solution for mobile payment and NFC will enable worldwide transactions totaling about $151.7 billion

- **Forrester Research**
  - Named NFC to its Top Mobile Trends for 2011

- **Yankee Group**
  - Global mobile transactions predicted to grow to more than $1 Trillion by 2015
NFC Phones Here Now

Available in the market…

- **Nokia Symbian Belle** 600/700/701
- **Google Nexus S**
- **Google Galaxy Nexus**
- **Samsung S5230/S5260**
- **Samsung SHW-A170K**
- **Samsung GALAXY S II**
- **Sagem COSYPHONE**
- **Nokia C7**

- **Pantech Sky Vega Racer**
- **Motorola MC75A HF**
- **Sonim XP3300 Force**
- **BlackBerry Bold 9900/9930**
- **HTC Ruby/Amaze**
- **LG T530/Ego**
- **Sony Xperia S**
More NFC Phones Available Now

- Nokia Oro
- Nokia 603
- Acer E320 Liquid Express
- Samsung Galaxy Nexus
- Huawei Sonic
- Sky Vega LTE
- Blackberry Curve 9350/60/70
- HTC Incredible
- Casio DT-X8
- Casio Ruggedized IT-800RGC 35

ALSO:
- Hedy/Unicom phones
- Shanghai Simcom/Eastcom phones
NFC Tablets

A fast-moving new segment, with several models recently announced and demonstrated:

- Samsung Windows Tablet prototype – demonstrated and handed out at Microsoft Build conference, September 13-16
- Sharp RW-T107 Android Tablet with NFC functionality built in – launched in Japan
- TazPad from TazTag aimed at retail – launched in France
- Samsung Galaxy Note phone/tablet with NFC – coming to U.S. in summer 2012
NFC Forum Member Platforms

Android

bada

BlackBerry

Symbian

Windows Phone
More NFC Device Categories

Additional types of NFC devices, available now and on the way...

**Smart Meters for utility companies from Landis & Gyr and NXP**

**Nintendo Wii U**, expected to ship in 2012, will have NFC in controllers

**Glidepoint NFC trackpad** from Cirque, shown at CES 2012

**Sony RC-S380 reader/writer**, the world’s first product certified by the NFC Forum, can communicate with any devices that conform to the NFC Forum specification

**Moneto**: NFC microSD for the iPhone from DeviceFidelity, shipping now

**ViVOtech NFC payment terminals** come in a range of form factors

**Revosys V5 interactive taxi terminal/tablet** offers NFC payment capability; Verifone also supplying taxi devices
More Than Payments – NFC Has Many Use Cases

- NFC can be used for much more than payments, it is well suited to a wide array of uses:
  - Transit Fare and Access
  - Loyalty and Couponing/Targeted Marketing/Location-Based Services
  - Device Pairing
  - Healthcare/Patient Monitoring
  - Information Exchange
  - Hospitality
  - Automotive
  - Gaming
  - Government Access
  - Application Downloads
  - In-store Marketing: information gathering with educational tags
  - Access Control/Security Patrols/Inventory Control (tags and readers)
Members – March 2012

**ASSOCIATE MEMBERS**

- Allian Test Labs Ltd.
- Applus
- ASSA ABLOY
- AT4
- BKM
- Bb Backboard
- C gestures
- CIP
- CGC
- COMPRION
- CUBIC
- DAIMLER
- Daimler Semiconductor GmbH
- ERICSSON
- Fime
- Gemalto
- HARMAN
- HITACHI Inspire the Next
- HUAWEI
- Ixxi
- JCB
- JCB Korea
- KITC
- KOVIO
- L-LOGIC
- MEDIAK
- Micropross
- mmRida
- NORDIC
- Oberthur Technologies
- Panasonic
- Pannex
- POLAR
- Sandisk
- SASKEN
- SGS
- SHARP
- SK C&C
- SQUATIS
- Stolmann
- TDD Japan
- TDK
- TOSHIBA
- TTA
- UFM
- Verifone
- VIVO
- Xaar
- YOKOGAWA
- ZTE

**IMPLEMENTER MEMBERS**

- 3Alogics
- Adamsoft
- Allian NTT DATA Info. Technology Decision
- Athena
- Smartcard
- BURY Sp. z o.o.
- CASSIS
- Consult Hyperion
- DAI
- DB
- Deister Security
- ELLIPSA
- Fujitsu
- Jabra
- HITECH
- HTC
- Interference
- Meftek
- Impressos
- Novatec
- O2
- Poken
- Posiflex
- Vodafone
- Skidata
- SYSNET
- TGU
- UPM RFID
- Visa
- Winter
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WINTER
- WI...
Current Focus of Work

- Establish the N-Mark as the global symbol of NFC functionality
- Continue to develop and enhance specifications to meet market demand
- Expand and simplify the Certification Program to speed products to market
- Focus on educating the ecosystem about the potential of NFC through liaisons, partnerships, and industry outreach
- Establish confidence and credibility in the technology, for everyone in the value chain
- Clarify the basis upon which innovation, partnerships, and the NFC Ecosystem will flourish
NFC Forum N-Mark

- Consumer-facing mark
- New - available for devices and software, via free, click-through license agreement
  - Continues to be offered for tags and media
- Universal symbol for NFC technology
- Shows where to touch another N-Mark to use NFC technology
- Use on smart posters, devices, software, POPs, signage, labels, cards, and much more
- Represents ease, convenience, greater device functionality, and fast action
- Download at: www.nfc-forum.org/resources/N-Mark/
<table>
<thead>
<tr>
<th>Liaison</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSMA</td>
<td>Mobile</td>
</tr>
<tr>
<td>EMVCo</td>
<td>Payment</td>
</tr>
<tr>
<td>Asia Pacific Smart Card Alliance (APSCA)</td>
<td>Smart Cards</td>
</tr>
<tr>
<td>National Retail Federation (ARTS)</td>
<td>Retail</td>
</tr>
<tr>
<td>Mobey Forum</td>
<td>Mobile</td>
</tr>
<tr>
<td>American Public Transport Association (APTA)</td>
<td>Transit</td>
</tr>
<tr>
<td>Open Mobile Alliance (OMA)</td>
<td>Mobile</td>
</tr>
<tr>
<td>Smart Card Alliance</td>
<td>Smart cards</td>
</tr>
<tr>
<td>ETSI (expired but under discussion to renew)</td>
<td>Telecom</td>
</tr>
<tr>
<td>Continua Health Alliance</td>
<td>Health care, advertising</td>
</tr>
<tr>
<td>Global Platform</td>
<td>Secure chip, standards</td>
</tr>
</tbody>
</table>
Building the Ecosystem

- Business Goal: Make certification easier, faster and more economical
- Liaisons key to building out the ecosystem and ensuring interoperability
- Develop B2B relationships to endorse, cross-recognize our program
NFC Committee Philosophy
Our Mission

1. Ensure core specifications for vendor product development
2. Continue to solicit business requirements from field for relevant specifications
3. Explain how specifications work

Our Approach

1. Issued 17 specifications (NCI - candidate release)
2. Current market knowledge obtained from members, liaison partners, and vertical roundtables
3. Application Documentation (industry targeted technical specification documents)
4. Educational Materials (Ecosystem Committee webcasts, sales, and marketing collateral)
Our Compliance Approach
Compliance Committee

Our Mission

1. Develop certification program to test products and services
2. Support interoperability programs

Our Approach

1. Announced Wave 1 certification (late 2010)
2. Wave 2 expected late 2012
3. First products certified
4. Growing Plugfest Events (scope, size, and specialty)
5. Expand Liaison Partners focused on verticals
Our Mission

1. Educate ecosystem about NFC - uses, players, potential

Our Approach

1. White papers on specific use cases
2. Webcasts on “deep dive” topics
3. Work with marketing liaison partners to educate specific verticals
4. Trade Show visibility
5. Speaking at Industry Events
6. Special events:
   — “Solutions Showcase”
   — Developer “spotlights”
2012 and Beyond

Vertical Special Interest Groups (SIGs)
NFC is Stable

- Core specs are in place
- Products being certified
- N-Mark launched and supported by many global companies
- Multiple use cases on multiple devices being deployed

What is still missing to optimize NFC for all potential use cases?
NFC is a “Horizontal” Technology

- Reaches across multiple devices and multiple use cases
- Consumers will not always realize NFC is the technology behind every use case
- “Killer apps” like phones for payment and transit may only be part of the eventual deployment, e.g.:
  - Tag reading
  - Consumer electronics pairing
  - Digital media transfer

Consumer demand for NFC is essential for success. NFC enables multiple use cases. To capture wider consumer demand, broader use cases must be available.
Our Solution

- **Build a platform for Special Interest Groups (SIGs) to get involved with NFC**

- **Rationale:**
  - Industries have no place to go to figure out how NFC can work in their vertical
  - Common approach necessary to achieve industry-wide interoperability, usage of marks, consumer education, etc.
  - We have the infrastructure to facilitate discussion and development
2-way communications make this work

- Give us Business Requirements for possible specifications and certification implications
- Jointly work on education and guidelines for each industry (e.g., white papers, demos, best practices, how-to guides, etc.)
- Look at NFC from the consumer perspective and make sure the value proposition is there

“First Generation NFC”
In Summary

- NFC is a broad and robust technology
- Our work is focused on ensuring a smooth and timely deployment for solutions providers
  - Specifications that cover all use cases now and in the future
  - Certification program that ensures compliance without undue complexity
  - Educational programs in conjunction with vertical market players to show and encourage the breadth of possible uses
Thank you!