The Innovation Connection: How NFC is Driving New Global Opportunities

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Marketplace Situation

Global Market Developments

- Business models are coming together to launch major NFC initiatives
  - MNOs and financial service providers are collaborating
  - Handset manufacturers, governments, financial service providers, universities, and retail companies are joining forces
- Transport operators are mandating use of NFC
- Stadiums are implementing NFC for ticketing
- NFC enables quick and secure connection handover, which is useful for Bluetooth pairing, WiFi set up, and more
  - 10,647 new Bluetooth-approved devices just in the last year (source, Bluetooth.com)
- SNS check in, and many other services, increasing
- Consumer acceptance and excitement are high with approval ratings up to 85%

NFC Phones Here Now

Available in the market…

Google
Nexus S

Samsung
S5230

Samsung
SHW-A170K

Samsung
GALAXY S II

Sagem
COSYPHONE

Nokia
C7

Pantech Sky
Vega Racer

Motorola
MC75A HF

Fifth Media
Axia A206

Casio Ruggedized
IT-800RGC 35

ALSO:
- **Hedy/Unicom phones**
- **Shanghai Simcom/ Eastcom phones**

NFC Phones on the Way

Coming soon…

Nokia Symbian Belle 600

Nokia Symbian Belle 700

Nokia Symbian Belle 701

LG Optimus Net

Sony Ericsson Xperia

Huawei Sonic

BlackBerry Bold 9900/9930

Samsung Wave 578

LG T530

Sonim XP3300 Force

Gentag GT-601

Fonelabs X-series

Toshiba Regza

Nokia N5

HTC Incredible S

ALSO:
- **ZTE phones**
- **Additional Android "Gingerbread" phones**

Speculation…

And Introducing -- 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 use – launched in France

NFC Is More Than Payment and Mobile Phones

- NFC mobile phones are for more than payments:
  - Secure access to buildings and PCs
  - Inventory control with tags and readers
  - Security patrols
  - Patient monitoring
  - Information gathering with educational tags

- NFC brings value to many electronics in addition to phones --and these are shipping as well!

What the Analysts are Saying

- Juniper Research:
  - 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

- Frost & Sullivan
  - By 2015 NFC technology will be the most-used solution for mobile payment

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

- Yankee Group
  - Global mobile transactions predicted to be US$241 billion in 2011 growing to more than $1 Trillion by 2015

NFC Forum

Mission and Goals

- The mission of the NFC Forum is to advance the use of NFC technology by:
  - Developing standards-based specifications that ensure interoperability among devices and services
  - Encouraging the development of products using NFC Forum specifications
  - Educating the market globally about NFC technology
  - Ensuring that products claiming NFC capabilities comply with NFC Forum specifications

We're Well Into The Journey

Define and Stabilize Technology

Support Interoperability
Enhance Technology
Support Ecosystem

Refine Technology
Expand Ecosystem
Promote End User Usage

2008   2009   2010   2011   2012/13

Members – September 2011

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Members – September 2011

NFC Forum Activities

- 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

N- Mark

N-Mark

- Consumer-facing mark

- Shows where to touch another N-Mark to use NFC

- No cost to use, free license, available to everyone

- For use TODAY on smart posters, cards, labels, etc. using NFC Forum tags

- For use as a touchpoint on certified devices
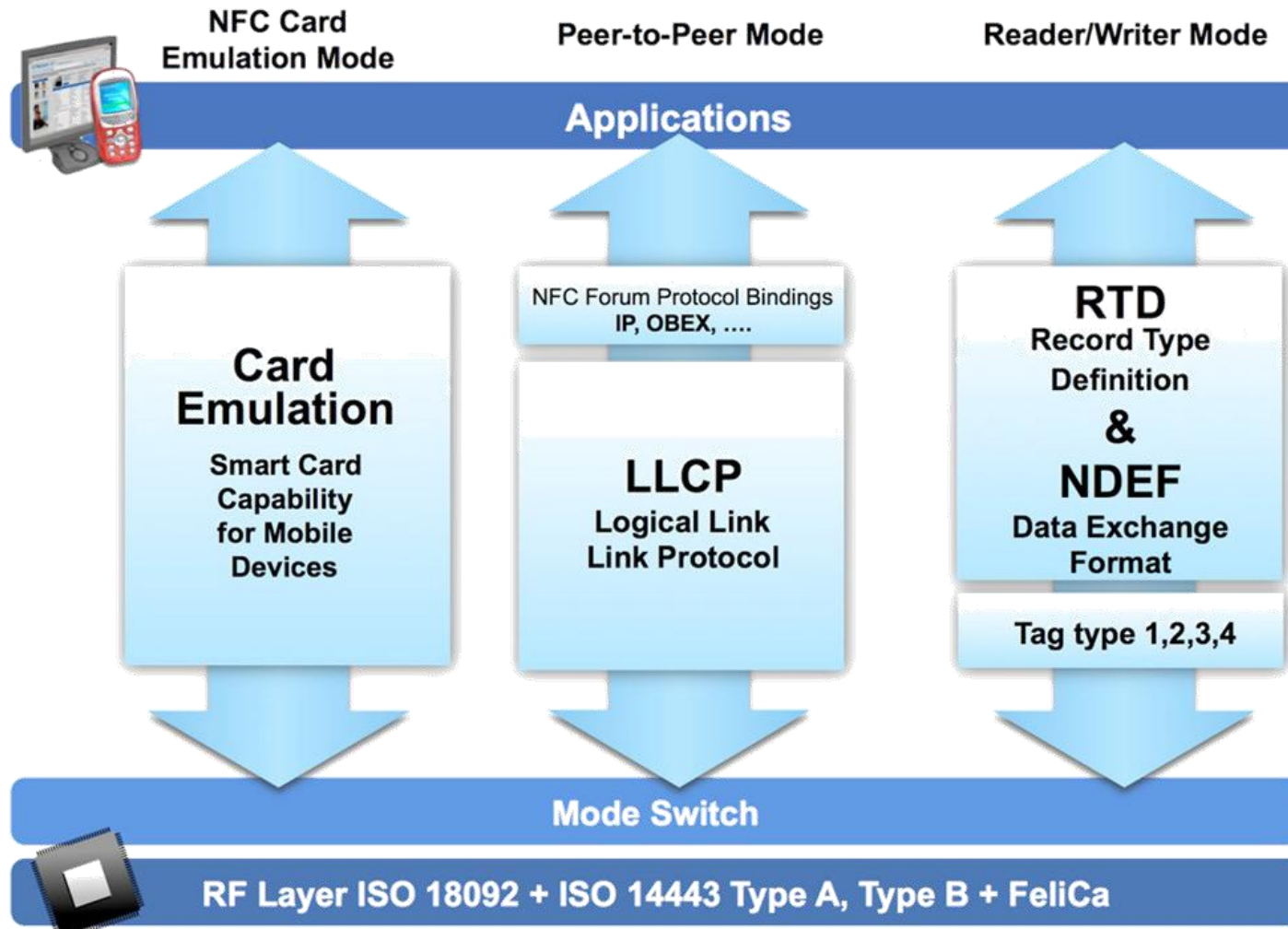
NFC Forum Brand Book

- Under development
- Promotes the NFC Forum Brand
- Defines and establishes guidelines for using the NFC Forum Marks
- Outlines rules for using Forum Marks with other industry service marks, gives examples
- Describes geographical and product usage restriction

16 Specifications Published

Specification	Milestone	Date
Data Exchange Format Technical Specification		
NFC Data Exchange Format (NDEF) Technical Specification	Adopted	24-JUL-2006
NFC Forum Tag Type Technical Specifications		
NFC Forum Type 1 Tag Operation Specification 1.1	Adopted	13-APR-2011
NFC Forum Type 2 Tag Operation Specification 1.1	Adopted	31-MAY-2011
NFC Forum Type 3 Tag Operation Specification 1.1	Adopted	28-JUN-2011
NFC Forum Type 4 Tag Operation Specification 2.0	Adopted	28-JUN-2011
Record Type Definition Technical Specifications		
NFC Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC Text Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC URI Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC Smart Poster Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC Generic Control Record Type Definition (RTD) Technical Specification	Adopted	7-MAR-2008
NFC Signature Record Type Definition (RTD) Technical Specification	Adopted	18-NOV-2010
Reference Application Technical Specifications		
NFC Forum Connection Handover 1.2 Technical Specification	Adopted	7-JUL-2010
Protocol Technical Specifications		
NFC Logical Link Control Protocol (LLCP) 1.1 Technical Specification	Adopted	20-JUN-2011
NFC Logical Link Control Protocol (LLCP) 1.0 Technical Specification (deprecated)	Adopted	11-DEC-2009
NFC Digital Protocol Technical Specification	Adopted	17-NOV-2010
NFC Activity Technical Specification	Adopted	18-NOV-2010
NFC Simple NDEF Exchange Protocol (SNEP) specification	Adopted	31-AUG-2011
NFC Device Internal Technical Specifications		
Certification Documents		
NFC Forum Device Requirements (.zip file including the document and two exceptions)	Adopted	24-OCT-2010
Device Test Application Specification for NFC Digital Protocol and NFC Forum Type 1/2/3/4 Tags	Adopted	27-OCT-2010
	Last updated 06-JUL-2011	

NFC Modes

Potential New Technical Work Streams

- **Keeping up with market demand**
  - Incorporation of Peer to Peer Active Mode in the NFC Forum specifications
  - Securing NFC communications
  - Supporting ISO 15693
  - APIs for NFC Support in Operating Systems
  - Support of Higher Bit Rates
  - Use of alternative technologies for touch based communications

Ecosystem Components

- Efforts focused on defining and implementing low-level NFC communications protocol, radio frequency functionality and related infrastructure

- Support industry efforts to standardize various parts of the ecosystem

- Also support the use of existing standards-based building blocks that meet industry requirements
  - No specific technology preference

- Scope may change depending on:
  - missing building blocks identified by respective verticals
  - how critical these are to the deployment of NFC technology

Compliance Committee Outreach

- Program and announced players in place for first Certification Wave

- Work continues on second Wave activities

- Business Goal: Make certification easier, faster and more economical for vendors

- Strategy: Develop B2B relationships to endorse or potentially cross-recognize our program

  - Discussions underway with EMVCo to analyze specs and testing for commonalities and discrepancies

  - Reaching out to other liaison partners

  - Identifying key bodies representing vertical industries to approach

NFC Forum Certification Mark

NFC Forum Certification Mark

- Industry-facing mark
- Granted to products that complete NFC Forum certification
- For NFC Forum members only
- Available TODAY

Activities to Expand Opportunities

- Formal opportunities for members to share business developments at face-to-face meetings

- LinkedIn group just formed

- Twitter
  - Communicate relevant information about NFC, Forum announcements

- Event partnerships with Yankee Group (4G World) and SCA

- Spotlight events for developers

- White papers
  - Smart Posters
  - NFC in Public Transport
  - National Retail Federation Mobile Blueprint (collaboration)

- Competition to encourage innovation

- Webcasts on both technical topics and business use cases

Outreach is Critical

Liaison	Category
GSMA	Mobile
EMVCo	Payment
Asia Pacific Smart Card Alliance (APSCA)	Smart Cards
National Retail Federation (ARTS)	Retail
Mobey Forum	Mobile
American Public Transport Association (APTA)	Transit
Open Mobile Alliance (OMA)	Mobile
Smart Card Alliance	Smart cards
ETSI	Telecom
IN DISCUSSION	Heath care, advertising

Ongoing technical and business development conversations for joint programs

- Reaches across multiple devices and multiple use cases
- Our work is to ensure smooth and timely deployment
  - Specs that cover all uses 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!