



# Come closer, go further

Unlocking the potential of Near Field Communication

# Putting you in



# touch with a bigger world

Welcome to the world of Near Field Communication (NFC) - the short-range and secure wireless technology that makes connectivity for personal communication and portable devices really easy. But it does much more than connect devices. It's a totally new way of doing things - by touch. It also enables many new mobile applications and innovative services. So it can put your company and your customers in touch with a bigger world.

The key to NFC is that it's extremely intuitive to use - simply touch two NFC-enabled devices together and they connect. Establishing a wireless link between devices or enabling end-to-end global transactions. Making a ticket payment or reading smart labels. Storing ownership rights or an electronic door key. People want easy electronics and NFC's intuitive operation delivers it, changing the way we interact with technology and our environment. All this is in marked contrast to the complex way we're forced to set up and interconnect most electronic equipment.

NFC is a new technology with a lot of potential. The NFC Forum was founded by Philips, Sony and Nokia. Now it counts more than 60 of the biggest names in the electronics, software and finance industries among its members. If you're an equipment manufacturer or a software developer, a service or content provider, this is one technology that presents so many opportunities you can't afford to miss out on it.

What does NFC mean for equipment users? In short, simplicity and convenience. Using it is easy whether it's in mobile phones and PDAs, or advanced consumer electronics and new computing devices. It opens up a whole new set of value-added services and new marketing opportunities. Now take a look at how it might make a world of difference to your business.

***"Simplicity is the ultimate sophistication"  
- Leonardo Da Vinci***





# Make shopping magic

Whether shopping's your hobby or a necessary evil, there are ways NFC can make it a lot more fun. Picture a scene where a mother and young daughter enter a toy store to look at a fairy costume. A label on the attractive box shows there's a movie clip and demo available. Just touching the box with her mobile phone, the mother shows the child the video clip on the phone's display. While music plays and the contents are described, a model shows the full costume from front and back, complete with wings, tiara and wand.

## *Like a wave of a wand, an NFC phone can give products a voice and put an end to queuing*



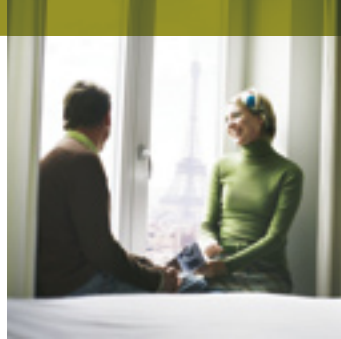
After the clip, the price and an option to buy the costume appear on the screen. One click and two satisfied customers leave the store. The costume's security tag has been neutralized and a reference number sent to the phone as a receipt.

So imagine a world without checkouts, a shop with no queues. With NFC, you could make this fairy tale come true. Acting as a card reader, NFC can automatically retrieve a web link from a

smart label. It can then benefit from the phone's fast 3G Internet connection to initiate streaming of video clips. Acting as an electronic wallet with smartcard encryption, NFC's payment functionality is secure for banking applications. Thanks to NFC chips and phone system solutions available today, you can make shopping magic.



## ***NFC can take the stress out of traveling, letting you keep all travel items in a smartphone***



For personal or business travel, NFC offers countless opportunities to make life easier. Imagine after booking a vacation online, a young couple transfers the travel itinerary from their PC to a smartphone. The smartphone can then make the credit card payment. This is no ordinary itinerary or phone. It contains secure e-tickets for public transport, reservations for the hotel and car rental and a limited amount of cash for small transactions such as parking payments. At the railway station, the smartphone opens a turnstile next to the airport shuttle.

At the airport, the flight check-in is automatic and the seats are where they're supposed to be. Arriving at the hotel, the couple sees a long queue at the reception desk. Fortunately, they spot a terminal for self-service check-in. With just one touch, the smartphone swaps the reservation information for an electronic room key. An easy and stress-free start to an enjoyable time.

Could your itinerary, money, tickets and door keys all be stored in your smartphone? Yes. Thanks to NFC all are realistic options today. Combine the ticketing and security functionality of NFC with what the smartphone already does - organizing schedules, storing holiday lists, navigation maps, music, photos, and the smartphone becomes an obvious choice for keeping travel simple. And for keeping travel items securely in one place. As you can see, NFC has far-reaching possibilities for travel. And all of them are within your reach now.



# Keep travel simple





## Do deals faster

It's nearly 4 p.m. and the deadline approaches. You're about to hear if the deal your team's been working on for months has to come to fruition. You and your colleagues are at the airport waiting for a flight. Your boss is at the office on the other side of the world in a management conference when he gets the news. Your cell-phone rings and your boss says he wants to speak to all of you.



For privacy, you opt not to use your phone's hands-free loudspeaker. Instead, you all bring your phones together and 'beep' - in one simple action NFC routes the phones to a conference call number and within seconds you're all in on the call. An ad hoc conference call has been set up in seconds and you're all able to hear the good news.

Authenticating phone numbers for GSM conference calling is just one simple example of how NFC can make working easier and more efficient.

There are so many new applications that could exploit NFC's automation, identification and communication aspects. Visualize doctors who can diagnose and treat patients thanks to NFC-enabled telemedicine. Or the sales person who can automatically file his travel expenses after a tiring trip. Consequently, whether you're schmoozing with e-business cards or trading pharmaceutical formulas, NFC can speed up and secure more transactions. With the promise of saving costs or generating revenue.



***In business and many occupations, NFC can boost productivity and make your working day easier***

# Play in more places



How do we have fun waiting around? Texting messages, playing games or listening to MP3s? There will be a time when smart posters will be on the walls of waiting rooms and subway stations, offering access to new content and much more. After touching a tag in a poster with a cell-phone, you'll be able to download and watch trailers of the latest movies. When you've found one you like, simply store it until you get home. Then touch your TV screen or advanced remote control with your phone. You'll be prompted with a pay-per-view option to watch it straightaway on your home cinema.



Utilizing smart posters and labels, NFC functionality can offer huge opportunities for the leisure industry and for filling our free time. We will be able to buy concert tickets, songs and new games from posters, read restaurant menus and book a table, or get full brochures on the services, products and hobbies we're interested in. What's more, NFC will let us carry and organize that content on multiple devices, wherever we want to relax. So we won't have to take time in the evening to plan a music playlist for a party - we'll do it on the way to work.





***Delivering downloads anywhere, NFC finds more time for relaxing and leisure services***



*At a party or on a date, NFC supports social interaction, letting you capture & swap personal content*

# Get people together







It's a children's birthday party in full swing. Everyone wants to see some of the photos of the cake and candles taken on dad's digital camera. With a single touch of the camera on the TV, a slide show begins. Grandma sees a perfect picture of the birthday girl and asks for a copy. With no effort at all, the portrait is transferred from the camera to an LCD picture frame for Grandma to keep.

One of the most important activities in life is socializing. The art of conversation and sharing things are what distinguishes us from other beings on this planet. From small talk to deep discussions, we establish connections to build close relationships with others. NFC establishes close peer-to-peer connections instantly and seamlessly, pairing and launching any form of fast wireless connectivity (Bluetooth, Wi-Fi,

UWB, etc.). To start a conversation, facilitate an introduction, get a phone number or break the ice in awkward situations, new NFC gadgets might be just the thing. And for those of us who know each other already, NFC-equipped devices make it just that bit more spontaneous to share personal memories and music with the ones we love.

# NFC - the inspiration for your

***"Imagination is more important than knowledge"***

Albert Einstein

Nearly half a century ago, the first laser was called "a solution looking for a problem." No one could envisage that one day lasers would be everywhere - playing music, printing documents, scanning groceries, and carrying our voices and emails around the world. Clearly, it's difficult to imagine the potential of new technologies in the beginning. But in the end, those who do can revolutionize whole industries overnight, making desirable products and reaping vast rewards.

***"An idea is salvation by imagination"***

Frank Lloyd Wright

In a competitive world, good ideas are a godsend. NFC is a great idea and it's yet to be fully exploited. Whenever we've tested it and demonstrated it at exhibitions, people have been impressed. We don't know all its applications yet but as a founding member of the NFC Forum, we recognize its potential. As inventor of the technology and market leader in contactless chips, we also have more know-how than anyone else on how to integrate and develop NFC technology in your products and services.

***"An invasion of armies can be resisted, but not an idea whose time has come"***

Victor Hugo

NFC is like an exclusive whisper in the wireless world. Coming closer brings a unique level of security. Moreover, touching is an intuitive action for people and a natural way to make things happen. NXP can give you a head start in NFC. And now is the right time for NFC. Take advantage - come closer. Partner with us and we'll take you and your customers much further.

# next innovative idea



## *NFC technology at a glance*

NFC is a short-range (10 cm/4 inches), secure, low-bandwidth wireless technology. It operates in half-duplex mode in an unregulated band at a frequency of 13.56 MHz. It offers easy, automatic wireless connections without the need for logins or device selection. In a nutshell, NFC:

- ▶ can transfer any kind of data between electronic devices at 106, 212 or 424 kbit/s
- ▶ can act as a virtual connector to intuitively secure and automatically launch much faster broadband data transfers by any other wireless technologies (including Wi-Fi/802.11, Bluetooth, UWB, etc.)
- ▶ is compatible with today's field-proven contactless/RFID infrastructure (mobile ticketing and e-payment systems): ISO 14443, MIFARE and FeliCa smart cards
- ▶ technically performs 3 functions: secure smart card emulation, peer-to-peer data transfer and information access (in reader mode)
- ▶ is an international standard (ISO/IEC 18092, ECMA, ETSI) now advanced by the NFC Forum ([www.nfc-forum.org](http://www.nfc-forum.org)) industry association - sponsored by some of the biggest names in electronics, software and finance.

For full technical details, see: [www.nxp.com/nfc](http://www.nxp.com/nfc)



**[www.nxp.com](http://www.nxp.com)**

NXP Semiconductors is in the process of being established as a separate legal entity in various countries worldwide. This process will be finalized in the course of 2006.

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Date of release: September 2006  
Document order number: 9397 750 15649  
Printed in the Netherlands

