



2011

# kinetic view

kinetic's overview of near field communication

## Introduction

Near Field Communication (NFC) is a short-range (up to 20 cm or 7.5 inches), wireless connectivity standard (ISO/IEC 18092) that enables communication between electronic devices.

## How it works

When two NFC devices come into close proximity, the radio-frequency field generated by one activates the circuit of the other. Data can then be transferred between the devices.

NFC is a more comprehensive standard that supports two-way communication between devices. It is based upon several similar technologies that are widely used for contactless (i.e. tap or wave) payment, ticketing, and identification.

NFC is considered to be inherently more secure than other wireless communications standards because data transmission only occurs when two devices are brought into close proximity. While encryption is not required, it may be used to ensure the security of data transfers.

An NFC-enabled device can both receive and transmit data. An NFC tag is a passive device that stores data that can be accessed by an NFC-enabled device. These are commonly embedded in transit passes, contactless payment cards, and certain forms of identification.

## Applications

NFC can enable a range of consumer applications. These include:

### Mobile Payment, Coupons, Loyalty Rewards

NFC-enabled mobile devices can be used to make in-store purchases. Loyalty rewards can be earned and applied during a transaction. The device can also be used to retrieve, store, and redeem coupons offered by marketers.

### Accessing Interactive Content

An NFC-enabled device can be used to retrieve digital content from NFC tags embedded in a variety of physical media. (Due to the limited storage capacity and transfer speeds of NFC tags, large files cannot be transferred directly from tag to reader. Multimedia content is instead delivered over traditional network connections.) This content can be personalized based upon stored preferences or other information made available by the user's device. An information kiosk, for instance, might deliver information in a user's own language, while a movie poster allows a mobile

user to find local showings and purchase tickets online. A similar advertisement for a retailer might allow consumers to locate a nearby store, view inventory, and download a coupon.

### Identification, Authorization

An NFC-enabled device can serve as a form of identification, allowing a user to enter a building, unlock a door or log on a computer. In contrast to a traditional access card, NFC applications can be configured to require a passcode, preventing the user's credential from being used if the device is stolen or lost.

### Ticketing

An NFC-enabled device can be used to download and present tickets for travel or an event, as well as to pay transit fares or store passes.

### Connecting Devices

NFC can be used to establish a connection between two devices over another communications protocol such as WiFi or Bluetooth. An NFC-enabled laptop, for instance, might connect automatically to a local network when placed on a conference-room table.

### Exchanging Information

NFC can be used to transfer small files (e.g. business cards) and simple instructions between mobile devices.

### Location-Based Check-ins

An NFC-enabled device can be used to check in to an event or a location (e.g. a restaurant or workplace).

## Considerations

Because NFC allows for the transfer of information from a passive (i.e. unpowered) tag to a mobile device, it is an ideal means of associating digital content with physical media. Quick response (QR) codes offer similar functionality. Though they may be read by a digital camera, already a standard sensor in most mobile handsets, NFC tags offer several advantages. Tags do not displace visual content on a communication; they can be read regardless of lighting conditions; and they cannot be easily obscured or defaced. Furthermore, proximity-based interactions are highly intuitive. Touching one device to another to transfer information or perform a transaction has physical analogues that are easily recognized.

Applications of NFC as a communications standard are based upon its limited functional range. Limitations in its range



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and speed will constrain its use to certain applications; however, it is not intended to replace WiFi, Bluetooth, ZigBee, or other high-speed wireless technologies.

While there are many potential applications of NFC, the most commercially promising is mobile payment. Because NFC is compatible with many existing contactless payment, ticketing, and authentication systems, it is preferred by many service providers as an enabling technology for contactless transactions. In some regions (e.g. Beijing, Seoul) the installed infrastructure for such systems is extensive. If successfully introduced, mobile payment services could drive consumer adoption of NFC-enabled handsets and allow for other uses of the technology.

Presently, market penetration of NFC-enabled smartphones is low. User adoption is expected to grow as NFC-enabled devices come to market and NFC services are introduced. While market forecasts vary significantly, analysts expect that 20-30% of handsets sold worldwide in 2015 will be NFC-enabled. By way of comparison, smartphone penetration was estimated to be 19% in China, 27% in the US, and 34% in the UK at the outset of 2011. Given the size of the global mobile-phone market, even modest penetration can create significant business opportunities.

## About Kinetic:

Kinetic is the world's largest out-of-home agency bringing Lifestyle and Environment communication solutions to advertisers. The company mission is to best understand how to connect brands with consumers when they are away from their home. This specialty approach includes expertise in shopper media, point-of-care, business travel, and multicultural.

Kinetic has six offices in the US and a client roster that includes many of the world's most admired advertisers.

To learn more about Near Field Communication or how to partner with Kinetic, please reach out to your Kinetic Account Team or:

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