

NFC Technology and Social Networking

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Abstract— In todays modern world, social networking has become an inseparable part of human life. Indeed, social networking has been the story of this decade. NFC is a complementary technology that facilitates social networking in a secure way. Social networking is evolving beyond just interactions between individuals to include commercial nodes. A business can be enhanced or can even thrive solely through social networks. The popularity of social networking as a de facto medium of communication among the thinking public is dampened only by privacy and security concerns. In this paper we will discuss how NFC technology helps in social networking and bring people closer and also the advent of mobile devices (and their embracing of NFC technology) in social networking. By using NFC technology, social networking is no longer restricted to the PC only.

Keywords— Social networking, NFC Technology

1. Introduction

NFC is a short-range radio technology that operates on the 13.56 MHz frequency, with data transfers of up to 424 kilobits per second. It offers safe yet simple communication between electronic devices. Users of NFC- enabled devices can simply point or touch their devices to other NFC-enabled elements in the environment to communicate with them, making application and data usage easy and convenient. NFC is an open platform technology and was approved as an ISO/IEC global standard in December 2003. Near Field Communication (NFC) is a technology for contactless short-range communication. Based on the Radio Frequency Identification (RFID), it uses magnetic field induction to enable communication between electronic devices. The number of short-range applications for NFC technology is growing continuously, appearing in all areas of life. Especially the use in conjunction with mobile phones offers great opportunities for social networking and other applications. One of the main goals of NFC technology has been to make the benefits of short-range contactless communications available to consumers globally. The existing radio frequency (RF) technology base has so far been driven by various business needs, such as logistics and item tracking. While the technology behind NFC is found in existing applications, there has been a shift in focus most notably, in how the technology is used and what it offers to consumers.

With just a point or a touch, NFC enables effortless use of the devices and gadgets we use daily. Here are some examples of what a user can do with an NFC mobile phone in an NFC-enabled environment:

- Download music or video from a smart poster.
- Be in touch with people through social networking.
- Exchange business cards with another phone.
- Pay bus or train fare.
- Print an image on a printer.

-Use a point-of-sale terminal to pay for a purchase, the same way as with a standard contactless credit card.

-Pair two Bluetooth devices.

This fast and easy communication between all types of wireless devices through touch and go convenience makes NFC the perfect solution for controlling data in our increasingly complex and socially connected world.

2. NFC Technology Working

Between the two NFC devices, an electromagnetic field is generated where the data can be exchanged in one, or both directions, depending on the type of devices used. NFC works using magnetic induction (Air-core transformer): a reader emits a small electric current, which creates a magnetic field that, in turn bridges the physical space between the devices. That field is received by a similar coil in the client device, where it is turned back into electrical impulses to communicate data such as identification number, status information, or any other information. So-called 'passive' NFC tags use the energy from the reader to encode their response, while 'active' or 'peer-to-peer' tags have their own power source and respond to the reader using their own electromagnetic fields (Braue 2011).

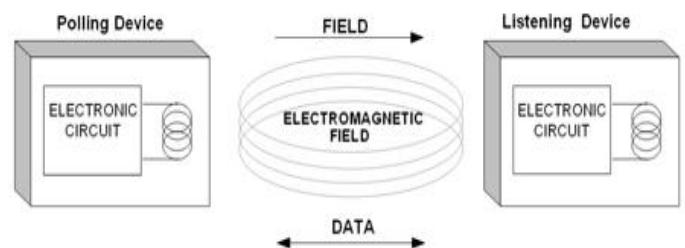


Figure 1 : Working Principle of NFC

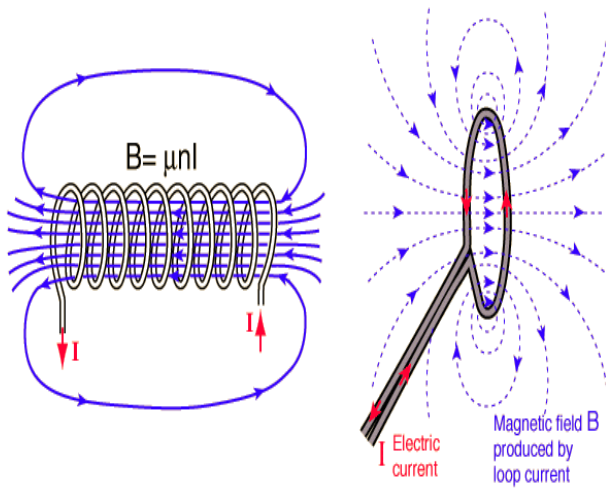


figure 2 : Electromagnetic Fields

It can be used to induce electric currents within passive components as well as just send data. This means that passive devices don't require their own power supply, and can instead be powered by the electromagnetic field produced by an active NFC component when it comes into range. Unfortunately, NFC technology does not command enough inductance to be used to charge our smartphones, but Qi charging is based on the same principle.

3.NFC Based Social networking

The success of a social network is of course dependent on its reliability. The presence of trusted sources helps spread information to targeted audience. The user would rather rely on a friend or colleague's experience and recommendation rather than a stranger's. Tapping two NFC enabled devices can help transfer information in a secure manner. The validity of the source can be immediately verified due to proximity. This could be peer-to-peer or be in a multi node fashion. (We already notice conference halls using NFC tags for various exhibitors.) A secure peer-to-peer communication means that sensitive data like documents and pictures can be shared within the envelopes of privacy and security.

Many of the social networking sites like facebook, Twitter, LinkedIn and others use the NFC technology for sharing of information. The Business side of social networking includes referrals, business cards and resumes. In the not so distant past business meetings did not have the luxury of online support for follow-ups. The advent of LinkedIn and similar services has brought a sea of change in growing one's business network. Many business acquaintances start today through online referrals and email exchanges prior to face-to-face meeting. In a changing landscape, NFC offers a way to offer the reliability and the flexibility of both worlds. NFC enables exchanging of contact information that could be a mix of old world in person meetings and exchange of electronic credentials. Electronic business cards or LinkedIn profiles can be shared with a simple bump of two NFC devices.

Social networking sites and mobile devices alike are showing increasing commercial applications. Businesses can distribute NFC credits and coupons in the form of tags or custom mobile devices. For small businesses, the NFC enabled device can

itself be used for electronic money exchange – both for collection and payment. Services such as those that cater to event planning and viral marketing find creative use for NFC to spread the message on social networks. Users can tap on to NFC tags on venue locations to update their location-based status and even redeem coupons where applicable. Elsewhere in a marriage of digital and real products, game makers embed NFC tags in plush toys linked to games. Tapping these tags help reveal new gaming levels or provide the user with Facebook or any other gaming platform credits delivered to the user's account. Also gaining ascendency in the popularity chart are NFC devices like Clickkeys that are touted as a "electronic combination of (your) business card and an electronic carrier bag... Click. Connect. And Share". The use of Clickkeys in the real world leads to information collection in the long run which is the lifeline for social media platforms. Twitter-like messaging platforms to find a place in the NFC world where tapping two NFC devices sends a short message from one device to another. The success of these social applications is dependent on how seamless the integration is with the online counterparts such as Twitter and Facebook.

In the recent days the use of NFC and the social networking is getting very popular and globally acclaimed. Many surveys and researches are carried out in order to develop this technology. In a recent survey, more than 31% of mobile developers are supporting NFC in their mobile apps today and an additional 45% plan to support the technology in the next 12 months. The mobile developers from around the world revealed that more developers have plans to support NFC in the near future than several other emerging device features, including voice recognition, range finding and device pairing. We feel developers are very optimistic about the technology and the potential it offers, especially in applications for social networking, security and access. NFC is the next evolutionary step in mobile computing. The extent to which NFC will impact us is only constrained by the imagination of the developers.

Many of the new emerging social networking sites, medias and apps are using/planning to use the fast growing NFC technology for these products. Italian start-up Free Access has developed a new service that enables users to send each other Twitter-like NFC-based short messages by simply tapping their NFC handset over a friend's phone.

Touch Twits are part of a new service called PhoobyBook that allows users to manage multiple social web identities in a single SIM-based application that stores profiles, preferences and contacts associated with each of the users web identities. All this information can be immediately exported or imported to/from existing services (eg Facebook, MySpace, etc), creating what we call user profile portability having one identity independent of how many communities the user belongs to. In addition, 'PhoobyBook' provides personal messaging, mobile microblogging, etc, which may be seamlessly linked to their Internet-based counterpart (Facebook, Twitter, MySpace, etc). Furthermore, based on peer-to-peer NFC interaction, PhoobyBook lets users exchange short messages by proximity, i.e. by tapping their handset over a friend's phone. These short messages, called TouchTwits, establish restricted and more intimate relationships between groups of users, creating new, compelling interaction forms.

Belgian start-up 'Getyoo' has launched in beta a web-based platform designed to enable people to gather all their contacts and social activity in one place. Getyoo is designed to be used with 'Clickkeys', NFC-enabled devices that allow users to exchange information with people, objects or things in the real

world and then easily upload the information they have gathered to the internet. The Clicky simply bridges the gap between real people and their virtual presence on social networks. Getyoo is also planning to launch an API that will enable NFC phones to function as Clickies in the future.

4.NFC Application

NFC has high potential to enhance social media engagement. Imagine a quick tap of the phone or scan of an NFC tag and within an instant, a consumer has posted your content to their Facebook or Twitter. With NFC allowing the constant sharing of information, your consumers can circulate and share branded content, increasing your brand visibility within the social space. Further, NFC tags available on your storefront and other posters can allow customers to quickly download information such as hours of operation, other locations and reviews and share this information with their friends. Similar to social media engagement, location-based networking will allow content sharing to soar. A perfect example is Foursquare, an application that allows you to check in at different locations with your phone, find restaurants in the area and connect with your friends, which can ultimately lead to discounts, savings and rewards. Although Foursquare does not necessitate any scan or phone-touching to check-in, another application GoWalla requires you to be in a designated area in a restaurant or bar to be able to check-in. Imagine the possibilities of allowing your customers to check in with a tap of their phone and connecting with others who have already checked in at the same location. Real time sharing of photos and comments as you are experiencing them is invaluable, as is providing your customers unlimited opportunities to share and spread your content.

5.Conclusion

In today's world of social networking, NFC has become a very useful technology to ease the application in more and more

efficient and easy way. NFC has the potential to be a disruptive technology, changing the way that lives are lived, transforming everyday tasks, making things easier, more intuitive and more effective. NFC wireless communications can be applied in many different ways, some of which are outlined in this paper. However, perhaps most exciting of all is the creation of an environment with all the key components for NFC to become a mass adoption technology. From here, any number of applications can be created to sit within the environment.

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