Research Paper 2 Mobile Connectivity and Mobile Commerce

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A key technology behind mobile payments is NFC

1. **NFC is the preferred technology behind mobile payments. Dig into NFC and list several of its advantages in this area of mobile payments over other wireless technologies such as Bluetooth (5 Marks)**

NFC means "near-field communication," which refers to a technology that allows wireless-enabled devices in close proximity to communicate and share data. NFC has a wide range of uses, such as ID verification, wireless device pairing, and key fobs for access control systems (Treece, 2024).

* Convenient NFC mobile payments allow customers to pay with a variety of devices without requiring staff to handle the device (Treece, 2024).
* NFC technology can be used across a range of applications by businesses in many different industries, making NFC mobile payments suitable for a broad variety of businesses (Treece, 2024).
* Payments fund within 24 hours and frequently transfer to your business bank account the next day, thanks to NFC mobile payments (Treece, 2024).
* Although cardholder verification issues make NFC mobile payments somewhat less secure, as was previously mentioned, the majority of NFC payment apps now require multifactor authentication, making it very difficult for payments to be intercepted (Treece, 2024).

**Reference:** Treece, D. (2024, February 13). Business News Daily. https://www.businessnewsdaily.com/16250-nfc-mobile-payments.html

1. **One of the reasons that NFC is considered secure for payments is that mobile payment platforms use tokenization for each transaction. Research and explain what tokenization is and how it works. (5 Marks)**

Tokenization is frequently used to stop credit card fraud, is the process of securing sensitive data by substituting an algorithmically generated number, or token, for the original data.

There are different scenarios of tokenization:

**Apple pay tokenization:**

When we take a picture of your credit card and load it into your iPhone 6 or 7 or 7s, Apple Pay tokenization takes place. Instead of sending the credit card details to the card's issuing bank or network, the random number (the token) is generated and sent back to Apple, which programs it into the phone. This ensures that the number stored on the phone cannot be extracted into anything that would be of value to fraudsters.

**Google pay Tokenization:**

Tokenization in google pay also works as same way. Let's say you want to buy something straight from an app on your phone concert tickets, clothes, books, whatever and none of these apps have access to your credit card details if your phone contains a token. Tokenization within apps functions similarly to this. When you upload your card information into the app, Google creates a stand-in “token” to represent your actual account number. This makes it nearly impossible for someone to get at your actual credit card details.

**Any Ecommerce website:** When you purchase a coffee table on Ikea.com, for instance, your information is safe even if the retailer experiences a hack, since the retailer may never actually see or store the credit card number. Instead, if someone manages to get into the system, all the criminal can see is the randomly generated tokens.

***Reference:*** https://squareup.com/ca/en/townsquare/what-does-tokenization-actually-mean

1. **Research three leading mobile wallets. Create a grid that lists each of the wallets, their features, strengths and weaknesses, ease of use, and security. (5 Marks)**

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| --- | --- | --- | --- |
|  | **Google Pay** | **Apple Pay** | **PayPal** |
| **features** | It adds feature of making it simple to send money to friends, it functions similarly to its Apple equivalent | With the help of the iPhone 6's Apple Pay feature, customers can load their credit card details and use their phones to make payments at any of the thousands of participating retailers | Paypal allows users to send and receive money is the foundation of PayPal's entire business model. |
| **strengths** | Google pay is cross-platform compatibility (iOS & Android). | Apple pay has strong security features, easy integration with the Apple ecosystem, and widespread acceptance at different retailers. | It provides cross-platform compatibility. Android and ios both users can use it. |
| **Weaknesses** | It restricted acceptance of merchants in certain areas and P2P payments restricted to specific nations. | It restricted availability for iOS users only, limited compatibility with android devices. | It can take longer to use than simply taking out a card because you have to check in at the store before you can make a purchase, which makes it a little trickier to use than the others |
| **Ease of use** | It has user friendly interface. So,we can easily send money to anyone. | It provides user-friendly interface with biometric authentication (such as Touch ID and Face ID). | It has google services with user friendly interface |
| **Security** | It is secure because of tokenization and specific features of device | Those who are concerned about privacy and theft will probably consider this the best of the bunch because no one sees your card number during a transaction, Apple doesn't keep a record of your purchases, and purchases require the use of Touch ID, a fingerprint identity sensor | Because of the tokenization ,It provides more security. |

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**Reference:** Shanna. (2020, October 26). *Which Mobile Wallet is Right for You: Apple Pay Vs Paypal Vs Google Wallet*. Fitzsimons Credit Union. https://www.fitzsimonscu.com/which-mobile-wallet-is-right-for-you-apple-pay-vs-paypal-vs-google-wallet/

1. Which of them would you recommend and why? (5 Marks)

Use of mobile wallet depends on users but I would recommend Google Pay as easy to Install in smartphone including ios and android and smartwatches. Google Pay includes multiple layers of protection to ensure that your money is not misused or stolen. Your payment card information is not retained or shared with anyone.  
  
The information entered is saved on Google's secure servers, and Google then provides a temporary virtual card. No vendor you pay will ever see or save your banking details. To complete a transaction, you will be requested to enter a one-time security code, which prevents hackers. Google Pay provides an added layer of security over a credit card by allowing you to block the service remotely in the event of phone theft and keeping access protected by not only a PIN but also your fingerprint. Even if your phone is stolen, the criminal will be unable to access Google Pay without knowing your access code or biometric authentication, and you may use Find My Phone to locate, lock, or wipe your phone remotely. Apart from this, If you always carry your phone or wear your smartwatch, it doesn't matter if you forget your wallet at home. Simply seek supermarkets or stores that accept Google Pay and make your purchases with a few taps on your phone app. The number of retailers who accept Google Pay is growing, especially in urban areas.

**Reference:** *The pros and cons of Google Pay 2023*. (n.d.). https://www.inkdepot.com.au/the-pros-and-cons-of-making-payments-with-google-pay-a-65.html