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2/20/2021

Comp.4631

Mobile Payment Services on the Rise

Abstract:

As of 2021, mobile payment services such as Venmo, Apple Wallet, Google Pay, and Square are on the rise and have become more demanding within the last 5 years. With the ability to pay for services from your smartphone, cash and wallets are bound to be obsolete in the future the near future and I would love to discuss its pros, cons, and what lies ahead.

Introduction:

Within the last ten years, the progression of mobile payment services has made it easier for customers to purchase goods. Mobile applications such as Venmo, Apple Wallet, Google Pay, and Square are on the rise and have become an alternative for cash and physical debit cards. With the ability to pay for services from your smartphone, cash and wallets are bound to be obsolete in the future due to its ease of use, fast money transfers, and increased security. By using artificial intelligence, biometric authentication, and cloud-based technology, mobile payment services are becoming prominent to our everyday lives. However, challenges such as risk management, fraud, and personal user information is something to always keep in mind when making a purchase.

Technical / Scientific core:

By having your debit card saved onto to your smartphone with either Apple Pay or Android Pay, placing your device near a Point of Sale (POS) system allows the user to pay for goods in a matter of seconds. With biometric authentication, the payment gets accepted by the POS system as soon as your smartphone does a facial or fingerprint recognition scan. This level of security is highly efficient because it helps prevent fraud and identity theft by identifying the owner of the account. As this new technology progresses, “an industry study shows that by 2021, 18 billion biometric transactions will be taking place” (Asthana). Fortunately, biometric authentication processing is also being used when making in-app purchases such as Amazon, Venmo, and several social media sites. Venmo for instance is one of the top-leading payment services that allows its users to transfer money between each other’s accounts. When the money is transferred to their Venmo account, they also have the ability to transfer that money to their preferred bank account by paying a 1% fee. Although biometric authentication is secure, having your bank account information saved onto your smartphone is a huge security risk, therefore what is being done to keep that information secure?

The next level of security is that is important to keep in mind is Cloud computing. The main advantage of cloud-based mobile payments is that its controlled by completely secured environments and contain advanced tokenization methods where service providers can achieve high security levels for payment systems and solutions (Almasri). Cloud-based providers provide hardware, software, and networking components as a provision model known as Infrastructure as a Service (IaaS). Well known providers such as Apple’s iCloud integrates their services with user bank accounts using tokenization in the background. Tokenization is a data security method that creates algorithmically generated numbers called “tokens” that protects sensitive data. Mobile app developers are now starting to use the Plaid API that lets them integrate users bank accounts with their mobile applications to keep track of transactions using tokenization to transfer sensitive data.

Other than security, mobile payment services are also improving with the help of artificial intelligence. With AI there is a vast of opportunities for mobile payment services to improve, including user experience. An example can be seen with Amazon’s Alexa, where you can speak with their Alexa Agent to make purchases tied with the user’s Amazon account. By having vocal recognition, banking chatbots, and fraud detection, AI is paving the way for every mobile app service. Similarly, in POS systems, companies like Toast and Square make POS devices for restaurants and retail stores where the user can pay for their goods on Android-based tablets. These tablets contain AI bots that support the user to make payments and make suggestions on what else to buy.

Analysis, Discussion, and Conclusions:

The overall usability and reliability of mobile payment services has made it very convenient for the users to make purchases. Its reliability plays a key factor to when it comes to accepting and declining payments. For example, if the user doesn’t have enough funds in their account to make the purchase, the payment service should be declined in order to prevent overdraft fees. For usability, the Near Field Communication (NFC) between the mobile device and the POS system should be able to make the payment within seconds and receipts can now be emailed to the user immediately. Although physical cards are still very popular across the world, the advancement of mobile payment services are reducing the need for physical cards.

This semester for my Mobile App Development II course, I decided to work on a budgeting application that keeps track of user payment transactions using Plaid. The goal of the application is to help the user set a budget for their finances and provide tips on how to save their money. With Plaid’s API integration, the user can see the most recent transactions with more than one bank account that they own with tokenization processing in the background. Other than payment services, banking and budgeting apps are used everyday to keep track of balances, spending, and income and some of those apps also provide the users with discounted offers. Bank of America for instance has a service in their app called BankAmeriDeals which gives the user discounted offers to a multitude of stores nearby that can be applied when making a mobile payment either onsite or online.

To conclude, the future of mobile payment services is on the rise and with the progression of security, artificial intelligence, and an increase in demand of POS systems, more people will start to get accustomed to this fairly new technology. With security being improved with biometric authentication, tokenization of sensitive user information, and cloud-based mobile payment services, users can count on its reliability but must be wary of the level of access that companies such as Apple and Samsung have to their bank account data. I look forward into seeing its progression in the future and plan on learning more about it as I develop my budgeting app this semester.

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