

Review Article

Mobile Banking - Security Risks And Security Preventions

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Abstract - Mobile banking can provide services that transcend time and space limitations. This is becoming popular with mobile banking technology. Suppose the bank can integrate mobile banking and existing services, make good use of the advantages of wireless communication technology such as Smartphones, and develop unique customer-oriented mobile banking services. In that case, it will be able to play a more important role in the banking sector. This paper focuses on mobile banking, benefits, limitations, types, security risks, and safe and secure mobile banking precautions.

Keywords – Mobile Phones, Security Risks, SMS

I. INTRODUCTION

Mobile banking has emerged as a wireless communication channel for creating value for customers in banking transactions. Today, the focus on modern banking services methods, banking and financial services using mobile phones, and mobile phones for banking and financial purpose. Another concept is a service that will allow customer details, such as bank details. Mobile banking is the use of mobile phones and Smartphones to support banking transactions. Banks and credit unions can use mobile banking to provide mobile banking services. Mobile banking plans to increase, as more customers prefer easy access to banking services from the convenience of their mobile phones [1]

II. MOBILE BANKING

Mobile banking can also be defined as a facility that banks offer to their customer's access to their bank accounts and use mobile devices such as Smartphones, tablets on a remote basis. It can carry out via SMS, mobile browser, or mobile applications. This service is available to customers anytime and anywhere. Mobile banking is a service that provides banking facilities with the support of mobile phones. It helps us to know about our account with the help of SMS. Mobile banking provides transaction and payment

facilities may also be provided through mobile banking, such as bill payment and shopping payment, and other bank services can also be provided with mobile banking help. It is very useful to us and provides all facilities from anywhere and anytime [2].

A. Roles Of Mobile Phones

Mobile phones wireless communication devices that are long-range, portable, and mobile phones are easy to use and comfortable, and with almost all the latest features. The Mobile phone becomes a necessity for many people throughout the world. Smartphone use has increased demand for mobile banking services, prompting many more banks. A large type of mobile phones and different operating system is also a big challenge for the bank as it is very difficult for them to provide standardized applications [3]

B. Benefits Of Mobile Banking

Time Reduction- Customers can check all the transaction of information using mobile phones [4]

Mini Statement- In offline mode, we can get detailed information about our transactions using MPIN through mini statement [4]

Security- During a transaction, such as a money transfer, an SMS confirmation code is provided to verify the authorized person [4]

Availability- Customer can use all mobile phones services at any time [4]



C. Limitation Of Mobile Banking

Internet Connection And Tower Problem- Internet connection is necessary to take advantage of the fact that customer lives in a remote area, such facilities cannot be provided because of tower problems [4]

Antivirus Software Update- Many customers are unaware of anti-virus software, so that malicious can affect their mobile phones [4]

Forget The Logout- If customer mobile phone theft means the unauthorized person can divulge all the details of our transactions [4]

D. Features Of Mobile Banking

Mobile banking is the innovative mobile banking services with their mobile devices, such as Smartphones [3]. Mobile banking provides our customers with direct access to the following features

1. 24 hours of smartphones access to account balances and transaction history[5]
2. Mobile deposit - checks can be conveniently deposited anytime, anywhere by using the smart phone[5]
3. Pay the bill– pay virtually anyone, no more paper checks[5]
4. Quickly and easily search history by date and description[5]
5. Person to person transfer- send money to anyone anywhere and at any time [5]
6. Personalized account balance and security alerts[5]

III. TYPES OF MOBILE BANKING

A. Wap Banking

Wireless application protocol means that access to banking facilities through the GPRS has enabled mobile phones. Customers can use mobile banking services such as balance inquiry, fund transfer, recharges, and tickets by accessing the mobile website from a mobile phone browser over the internet. The customer can access the following services through WAP [10]

Balance Enquiry-Account balance is viewed by the customer [10]

Mini Statement- The customer will access the latest transactions [10]

IV. SECURITY RISKS

Mobile banking has become more important in India during the last five years and so on. The volume of funds transferred through mobile banking has jumped

Stop Payment Of Cheques- The customer can stop the cheque online if it is not paid. The fee applicable will be the same as for charge applicable for all the counter service [10]

Intra Bank Fund Transfer- After registration of the beneficiary, the customer will be able to transfer the funds to oneself or any third party accounts within the bank's fund [10]

Interbank Fund Transfer- transfer of the interbank fund through the NEFT or IMPS [10]

Neft- At the beneficiary registration, the customers can transfer the funds to other banks accounts [10]

Imps- The immediate payment service is an interbank electronic instant mobile money transfer service through mobile. The customer can send or receive funds from other banks 24*7. IMPS based fund transfers of funds to bank accounts [10]

Service Outlet Locator- This service will display the address of the Branch or ATM based on the inputs as the PIN code or the location [10]

Bill Payment- Mobile banking is a service that allows you to pay virtually any person or company through your mobile banking account. It is safe, secure, and user friendly [10]

Atm / Branch Locator- Using this option, a user can inquire about the ATMs/Branches closer to a specific location. The user is provided with the options to search for the bank's ATMs and branches in the vicinity by entering the location name. The search results display the list of ATMs/branches in the mentioned location. The user can also view the location of these Branches/ATMs on Map and can navigate to the same [10]

A. SMS BANKING

Customer needs to sign up for this service, referred to as SMS banking; they can send SMS messages to the bank to ask about their account's balance, confirm the mini account statement, etc. [6].

B. USSD BANKING

Bank provides mobile banking to people who no longer use Smartphones or use USSD to access the internet. They can use bank-issued USSD codes to benefit from banking services. Customers dial a code and then click send a menu with the banking services such as checking the balance, mini account statement, etc. [6].

Over 150 percent. However, once the protection put in place for online banking does not translate well on mobile apps. Mobile banking does have several security issues. Additionally, viruses in Smartphones are quite common,

and they can override the apps' security setting. And finally, the app needs constant updates to make bugs and viruses are protect.

	software risk	Phone risk	Online risk
Online risks of mobile banking	<ul style="list-style-type: none"> • Unauthorized access • Malicious • Malware • Mobile virus 	<ul style="list-style-type: none"> • Memory card • Download Applications • Mobile browsers 	<ul style="list-style-type: none"> • Emails • SMS • Online Games

Table 1. online risk of mobile banking

Malware Attacks

There is also a risk of malware attack that you will be able to access your account information as username, password, and other information and the risk of malware attacks on mobile banking services [2].

Phishing

Phishing is a general problem faced by banks worldwide. It is where a person steals information of users like bank details. It is to get confidential information phone phishing like asking OTP or getting bank account details. Usually, they try to trick bank customers by email or mobile phone. The false emails or messages alert against any imminent account closure or security problems. They will be encouraged to fill in a form, including bank details [7].

Spoofing

Spoofing is an identity theft where a person is trying to use the identity of an authorized user. The fraudsters send emails with a link to a fake website which asks you to update or confirm account related information like mobile banking user ID, passwords, PIN, credit or debit card number, etc. They use certain logos, color schemes, fonts, and images to imitate the original page. The customer can be tricked and have their information and passwords captured by the websites. [7].

Cooperate Account Takeover

A corporate account takeover is a case of malware in which fraudsters gain access to a business' finances to make unauthorized transactions, including the transfer of funds from the company, create and add new fake employees to payrolls, and steals sensitive personal information that may not be recoverable. The takeover of corporate accounts is a growing threat to small businesses. Businesses must understand and prepare for this risk. Malicious hackers are using phishing, phone calls, and even social networks to target employees. When the email is open, the malware is loaded on to the mobile phone, which then records login credentials, passwords, and reports to the fraudsters [11].

Skimming

Fraudsters use this method to use debit cards or credit cards to get our important banking details like account number and your PIN. The ATM it detects is connected to a skimming device. When a customer swipes his debit or credit card, it stores the private banking information. The fraudsters will then use this information on your card to make online transactions, even your PIN [7].

V. SECURITY PREVENTIONS

Mobile banking apps are helpful and, at the same time, risky to their users. Although the app's security is regularly enhanced, they are still vulnerable to fraud. [8]. Here are some safe and stable mobile banking [9]

- Set up a pin/password to access your mobile phone's handset menu.
- To keep track of your banking transactions, register / update your mobile number and email id.
- Delete spam messages and chain messages regularly.
- Do not use any URL in a message that you are uncertain about.
- Please share your mobile with someone else or send it for repair/maintenance
 - 1 Delete your browsing history
 - 2 Clear cache
 - 3 Clear temporary memory files with your account number and other confidential information
- Do not store confidential information on your mobile phone, such as debit card/credit card number or PINS.
- Install on your Smartphones an effective mobile anti-malware/ anti-software.
- Keep it updated.

- Keep your mobile operating system and applications updated with the latest security, including the browser.
- Password secures your mobile device from unauthorized access.
- When not in use, turn off wireless device services such as WIFI, Bluetooth, and GPS,
- Do not use unsecured WI-FI in public places
- Download app from official app stores like google play store.
- Never disclose personal information or online banking credentials via SMS or Email. Are these used for identity theft?
- Log out from online mobile banking after your transactions are completed.
- Be aware of shoulders surfers. Be careful while entering personal information in public places, such as your account data and your mobile password.
- In case you lose your mobile phone, call 24 hours customer care to disable your applications.
- Never download and install untrusted applications.
- Always check the application permission and only issue certain permissions that have appropriate meaning for that application intent.
- Always remember in settings, do not allow "untrusted sources" to install apps.

VI. CONCLUSION

Mobile phone technology is a growing technology in the banking sector that allows us to save our time. It can access

our account and information of our account from anywhere and at any time and keep us alert with our account transaction and other information needed. We discussed the customer faces and the banking sector's major problems through mobile banking services and suggestions to protect the account details from unauthorized persons through mobile phones. We need to improve our security and authentication for security services and give customers confidence in mobile banking services.

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