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A Study on Mobile Banking Apps

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Abstract

Mobile Banking is a service provided by a bank that allows its customers to conduct transactions remotely using a mobile device such as a smart phone or computer. Some apps also enable copies of statement to be downloaded and sometimes printed at the customer's premises. Based on a survey conducted by Forrester, it will be attractive mainly to the younger, more "tech-savvy" customer segment. There are different mobile devices and it is a big challenge for banks to offer. Due to the nature of the connectivity between bank and its customers, it would be impractical to expect customers to visit banks or connect to a website for regular upgrade of their application.It should be noted that studies have shown a huge concerning factor of having mobile banking more widely used, is the customer's unwillingness to adapt. Many consumers, whether the y are misinformed or not, do not want to begin using mobile banking for several reasons. It is used in many parts of the world with little or no infrastructure, especially remote and rural areas. In Nov 2077 the SBI launched an integrated banking platform in India called YONO offering conventional functions but also payment services for things such as online shopping, taxi booking or online education.

Keywords: Mobile Banking and Mobile device.

Importance of Study

From the bank's point of view, mobile banking reduces the cost of handling transactions by reducing the need for customers to visit a bank branch for non-cash withdrawal and deposit transactions. Mobile banking does not handle transactions involving cash, and a customer needs to visit an ATM or bank branch for cash withdrawals or deposits. Many apps now have a remote deposits option; using the device's camera to digitally transmit cheques to their financial institution. Mobile banking differs from Mobile payments, which involves the use of a mobile device to pay for goods & services either at the POS (point of sale) or remotely.

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The earliest mobile banking services used SMS, a service known as SMS banking. With the introduction of smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers'. Mobile banking before 2010 was most often performed via SMS or the mobile web. Apple's initial success with Phone and the rapid growth of phones based on Google's Android (operating system) have led to increasing use of special mobile apps, downloaded to the mobile device. With that said advancements in web technologies such as HTML5, CSS3 and JavaScript are seen more banks launching mobile web based services to complement native applications. These applications are consisted of a web application module in JSP such as J2EE and functions of another module J2ME[1]. Recent study (May 2012) by Mapa Research suggests that over a third of banks had mobile device detection upon visiting the bank's main website. A number of things can happen on mobile detection such as redirecting to app or website to providing a menu of mobile banking options for the user to choose from.

Objectives of the Study

The following are the Objectives of the study is to be given below they are:

1. To understand the Mobile Banking apps
2. To study the Mobile Banking apps

A Mobile Banking Concept

Mobile Banking refers to provision of an aliment of banking financial service with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market, to administer accounts and to access information. According to this model mobile banking can be said to consist of three inter related concepts: Mobile accounting, brokerage, financial information services. Most services in the categories designed accounting and brokerage are transaction-based. The non-transaction based services of an informational nature are however essential for conducting transactions for instance balance inquiries might be needed before committing a money remittance.

Methodology of Study

Secondary data is collected from the sources like Internet etc.

Mobile Banking Services

Mobile banking services may include:

Account information like mini-statements & account history, alerts, term deposits, loans, mutual funds /equity and insurance policy management.

Transactions like funds transfer, including bill payments and check remote deposit.

Support like status of requests for credit, including mortgage approval, cheque book & card requests, exchange of data messages and email, including complaint submission and tracking, ATM location.

Content services like loyalty-related offers, location-based services. A report by the US FedEx (March 2018) found that 21% of mobile users are used it in the past 1 year". On a survey conducted by Forrester, it will be attractive mainly to the younger, more "tech-savvy" customer segment. 1/3rd of mobile users say that they may consider performing some kind of financial transaction through their mobile. But most of the users are interested in performing basic transactions such as querying for account balance & making bills etc.

Future Functionalities in Mobile Banking

Based on the "International Review of Business Research Papers" from World business Institute, Australia, following the key functional trends possible in world of it: With the advent of technology and increasing use of Smartphone and tablet based devices, the use of it functionality would enable customer. Objective based functionality enrichment In Mobile Banking Communication: Interaction with agents, advisors. Pervasive Transactions capabilities: Comprehensive "Mobile wallet" Customer Education: Connect with new customer segment: Connect with Gen Y-Gen Z & Micro level revenue themes positioning offerings over it across all the industries experience for multiple roles and hierarchies in corporate banking Build Brand: Built the bank's brand while enhancing the "Mobile real estate".

Challenges for a Mobile Banking Solution

Key challenges the sophisticated mobile banking applications are:

Handset accessibility

There are different mobile phone devices and it is a big challenge for banks to offer a mobile banking solution on any type

of device. Some of these devices support Java ME and others support SIM Application toolkit, a WAP browser or only SMS, Interoperability issues however have been localized, with countries like India using portals like "R-World" to enable the limitations of low end java based phones, while focus on areas such as South Africa defaulted to the USSD as a basis of communication achievable with any phone.

The desire for interoperability is largely dependent on the banks themselves, where installed applications (Java based or native) provide better security, are easier to use and allow development of more complex capabilities similar to those of internet banking while SMS can provide the basics but becomes difficult to operate with more complex transactions. There is a "myth" that there is a challenge of interoperability between mobile banking applications due to a perceived lack of common technology standards for mobile banking. In practice, it is too early in the service life cycle for interoperability to be addressed within a country as very few countries have more than one mobile banking service provider.

In practice, banking interfaces are well defined & money movements between banks follow the ISO-8583 standard. As mobile banking matures, money movements between service providers will naturally adopt the same standards as in the banking world. In January 2009, Mobile Marketing Association (MMA) Banking Sub-Committee, chaired by Cell Trust and VeriSign Inc., published the Mobile Banking Overview for financial institutions in which it discussed the advantages and disadvantages of Mobile Channel Platforms such as Short Message Services (SMS), Mobile Web, Mobile Client Applications, and SMS with Mobile Web and Secure SMS'.

Security as with most internet-connected devices, as well as mobile-telephony devices, cybercrime rates are escalating year-on-year. The types of cybercrimes which may affect mobile banking might range from unauthorized use while the owner is using the mobile banking, to remote hacking, or even jamming or interference via the internet or telephone network data stream. This is demonstrated by the malware called SMS Zombie A, which infected Chinese Android devices. It was embedded in wallpaper apps and installed itself so it can exploit the weaknesses of China Mobile SMS Payment system, stealing banks credit card numbers and information

linked to financial transactions". One of the most advanced malwares discovered recently was the Trojan called Bankbot. It went past Google's protections in its Android app marketplace and targeted Wells Fargo, Chase, and Citibank customers on Android devices worldwide before its removal by Google in September 2017.

This malicious app was activated when users opened a banking app, overlaying it so it can steal the banking credentials. The banking world, currency rates may change by the millisecond. Security of financial transactions, being executed from some remote location and transmission of financial information over the air, are the most complicated challenges that are need to be addressed jointly by mobile application developers, wireless network service providers and the banks' IT departments. The following aspects needed to be addressed in offer a secure infrastructure for financial transaction over wireless network Physical part of the hand held device. If the bank is offering smart-card based security, the physical security of the device is more important.

Security of any thick-client application running on the device, in case the device is stolen, the hacker should require at least an ID Password to access the application. Authentication of the device with service provider before initiating a transaction, this would ensure that unauthorized devices are not connected to perform financial transactions & User ID / Password Authentication of bank's customer only. Encryption of the data being transmitted over the air, encryption of the data that will be stored in device for later / off-line analysis by the customer, onetime password (OTP) is the latest tool used by financial and banking service providers in the fight against cyber fraud". Instead of relying on traditional memorized password, OTP are requested by consumers each time they want to perform transactions using the online or mobile banking interface. "When" the request is received the password is sent to via SMS. Therefore, the provision of service level agreements (SLAs) is a requirement for this industry; it is necessary to give the bank customer delivery guarantees of all messages, as well as measurements on the speed of delivery, etc. SLAs give the service parameters in which a messaging solution is guaranteed to perform.

Scalability and reliability: another challenge for the Chief information

officer (CIO) and Chief technical officer (CIO) of the banks are to scale-up the mobile banking infrastructure to handle exponential growth of the customer base. With this, the customer may be sitting in any part of the world (anytime, anywhere banking) and hence banks are ensuring that the systems are running in a 24 x 7 fashion. Customers will find it most useful; their expectations from the solution will increase. Banks unable to meet the performance and reliability expectations may lose customer confidence. There are systems such as Mobile Transaction Platform which allow quick and secure mobile enabling banking services. Recently in India there has been phenomenal growth in the use of Mobile Banking applications, with leading banks adopting Mobile transaction Platform & the Reserve Bank of India (RBI) publishing guidelines for its operations.

Application distribution: Due to the nature of the connectivity between bank & its customers, it would be impractical to expect customers to regularly visit banks or connect to a website for regular upgrade of their mobile banking application. It will be expected that the mobile application itself check the upgrades & download necessary patches (so called "Over the Air" updates). However, there could be many issues to implement this approach such as upgrade / synchronization of other dependent components. User adoption should be noted that studies have shown that a huge concerning factor of having mobile banking more widely used is a customer's unwillingness to adapt. Many consumers, whether they are misinformed or not, do not want to begin using it for several reasons. These can include the learning curve associated with a new technology, having fear about possible security compromises, just simply no wanting to start using technology, etc.

Personalization: It would be expected from the mobile application to support personalization such as: Preferred Language, Date / Time format, Amount format, Default transactions, and Standard Beneficiary list.

Mobile Banking in the World

This is a list of countries by mobile banking usage as measured by the percentage of people who had Non-SMS mobile banking transactions in the previous 3 months.

Rank	Country Territory	Usage in 2018
1	South Korea	47%
2	China	42%
3	Hang Kong	41%
4	Singapore	38%
5	India	37%
6	Spain	34%
7	United States	32%
8	Maxico	30%
9	Australia	27%
10	France	26%
11	United Kingdom	26%
12	Thailand	2%
13	Canada	22%
14	Germany	14%
15	Pakistan	9%

Outcomes of the Study

African nations such as Kenya would rank highly if SMS mobile banking were included in the above list. Kenya has 38% of the population as subscribers to MPesa as of 2011". Though as of 2016 its applications have seen a tremendous growth in Kenyan banking sector that has capitalized on android play store & apple store to put their applications. Kenyan banks like Equity Bank Kenya Limited Eazzy banking application and The Co-operative Bank Mco-op cash application has proved to be a success mobile banking applications. Eko India Financial Services, the business correspondent of State Bank of India (SBI) and ICICI Bank etc, banks are provides bank accounts, deposit, withdrawal and remittance service, micro insurance and micro-finance facilities to its customers (nearly 80% of whom are migrants or the unban section of the population) through mobile banking.

In year of 2010, its users soared over 100% in Kenya, China, Brazil and United States with 200%, 150%, 110% and 100% respectively. Bangla Bank launched the very first mobile banking service in Bangladesh on 31 March 2011. This service is launched with 'Agent' and 'Network' support from mobile operators, Banglalink and Citycell. Sybase 365, a subsidiary of Sybase, Inc. has provided software solution with their local partner Neurosoft Technologies Ltd. There are around 1.6 billion people in Bangladesh, of which, only 13% have bank accounts. With this solution, Dutch-Bangla Bank can now reach out to the rural and unbanked population, of which, 45% are mobile phone users.

Under the service any mobile handset with subscription to any of the 6 existing mobile operations of Bangladesh would be able to utilize the service. Under the it services, bank-nominated Banking agent performs banking activities on its behalf, like opening mobile banking accounts, providing cash services (receipts & payments) and dealing with small credits. Cash withdrawal from a mobile account can also be done from an ATM validating each transaction by 'mobile phone & PIN instead of 'card & PIN".

Other services that are being delivered through mobile banking system is person-to- person (e.g. fund transfer), person-to business (e.g. merchant payment, utility bill payment), business-to-person (e.g. salary/commission disbursement), government- to-person (disbursement of government allowance) transactions. In May 2012, Laxmi Bank Limited launched the very first mobile banking in Nepal with its product Mobile Khata. Mobile Khata currently runs on a third-party platform called Hello Paisa that is interoperable with all the telecoms in Nepal viz. Nepal Telecom, NCell, Smart Tel and UTL, and is also interoperable with various banks in the country. The initial joining members to the platform after Laxmi Bank Limited were Siddartha Bank, Bank of Kathmandu, Commerz and Trust Bank Nepal and International Leasing and Finance Company.

In country with roughly 30 million population, over 5 million has subscribed to mobile banking in Nepal" '8 Barclays offers a service called Barclays Pingit, & Hello Money offering services in Africa, allowing transfer of money from the United Kingdom to many parts of the world with a mobile phone. Pingit is owned by a consortium of banks. In April 2014, the UK Payments council launched the Paym mobile payment system, allowing mobile payments between customers of several banks, and building societies using the recipient's mobile phone number". In Nov 2017 the SBI launched an integrated banking platform in India called YONO offering not only conventional banking functions but also payment services for things such as online shopping or online education' etc.

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