2.1 Secure Authentication for Mobile Banking Using Facial Recognition

In the past decades, banking was done inside the banking hall which was tasking to both the customers and the bankers. The long queues, paper-based data and even the time taken to perform even the smallest transaction can be an uphill task. This has now been a thing of the past since the advent of the internet and mobile phones.

The number of online banking users has increased in Nigeria and indeed the world; this has led

to many experts in mobile banking software and mobile phone technology to research new and convenient methods for customers to perform banking transactions remotely via their mobile phones. Mobile banking is also known as mobile phone bank. It is referred to as the using mobile phone for banking related business.

Security has become a primary concern in order to provide protected mobile transaction between the clients and the bank servers. Secure authentication of client information depends on some fundamental security approaches which will not jeopardize the client sensitive information. This has led to different researches ranging from single-factor authentication, two-way authentication, and multifactor authentication. Bearing in mind the cost of providing these services to clients, most banks are weary of balancing profit making and security. In Nigeria today, most mobile banking applications use the single-factor authentication which consist of the username and password.

Secure mobile banking will build confidence in customers knowing that their information is secure and they can carry out secure transactions without fear of man-in-the-middle attacks. Though the issue of theft strongly depends on how a client protects his/her mobile phone device

from third parties.

**Problem Identification of the Current System**

* 2-Way Authentication consists of Username and password only.
* Poor level of security.
* It is easy for hackers to breach into the account.
* It is possible for hackers to clone the SIM card.
* When SIM card is cloned, the bank server will assume the hacker as the authentic user.
* In case of theft, mobile phone can be hacked into, whilst the bank server would allow access into the
* account assuming the hacker to be the authentic user.

**OVERVIEW OF THE PROPOSED SYSTEM**

The proposed system is expected to provide higher level of authentication (multifactor authentication) which will bring unauthorized access to the barest minimum. Before access will be granted, the user will have to take a facial photograph to have access to his/her account, the geometry of the face, distance of the eyes and the nose is compared. This photograph will be compared with the photograph in the bank server and the NCC server for verification, if it passes the verification, access will be granted, otherwise it will denied. In the event of unauthorized access, a security alert message will be sent to the bank.

**Result And Discussion**

On the program end, the security is multi-factored. A username and password level, a facial recognition level and a secret question and answer level. Users are limited to five trials after which access is denied. Two dependable databases are also used to authenticate genuine users; these databases are the NCC database and the issuing bank database. In an advent of facial defection, users are advised to see their bank information technology operators. The response time for a complete transaction is seven minutes maximum putting other limiting factors into consideration; the false acceptance rate is 3%.the implication of false acceptance rate is given by elements on image background and facial defects. The advantages of this system include;

i.Secure and transaction

ii.Cost effective

iii.Transaction can be done anywhere remotely (with availability of mobile network)

**Conclusion**

In a bid to make the Nigerian economy cashless, attention should be focused on security. When the security is trusted, it will build customer satisfaction and discourage the use of cash. The number of mobile phone users increases by the day and the success of the security on mobile banking will encourage new users to adopt the trend. Introducing this level of authentication using facial recognition on users’ account to authenticate

from the Nigeria Communication Commission’s database and the facilitating bank’s database, will no doubt contribute to mitigate mobile banking fraud.

