A Novel Framework for Electronic Fund Transfer Using Big Data

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Abstract

Cashless transaction growth rate is very high in recent years. The traditional cash oriented transaction recently has been upgraded to Digital transaction, where the values of currency are transformed in numeric bits. As it provides a fast fund transfer from anywhere and at any time, people prefer various modes of cash-free transactions. Banking sectors in their part involved in developing apps to reduce the load of their consumers. But the problem is, each banking sector either private or public, develops and implements applications exclusively to operate its bank accounts alone. People having multiple bank accounts for various reasons have to make use of all these individual apps. Henceforth, they are forced to remember their confidential details for individual applications. Some researchers have come out with a diversified solution to bring down all the bank accounts to be accessed via a common layer. The major problem is, when a vast amount of data is being integrated, the volume, variety and veracity of data becomes huge which a conventional computing cannot withhold. Such a Big Data can be handled in an efficient manner in the proposed system. The system integrates the customer's multiple accounts in a common layer that satisfies all of his transaction needs.

Keywords: Big Data (BD), Card less/Contactless Payment System, Amalgamated Web Interface (AWI), Amalgamated Web Server (AWS), Amalgamated Data Warehouse (ADWH), Unique Customer Identification Number (UCIN).

1.   INTRODUCTION

A decade before, having smartphone in hands is a prestige. But today, due to the tremendous growth and innovations in the spectrum of Information and Communication Technology, getting a smartphone is like everyone's cup of tea. Almost it had become a part of the human body. Keeping it in mind smartphone manufacturers also design and integrate all the basic things into one device. These smartphones have got room for storing all sorts of data and provide it as and when needed by the user, thereby acts like a personal assistant. Innovative techniques seemed to be booming to use these devices to do all sorts of tasks like fund transfers, sharing confidential information between friends and families etc. A society of Digital cash era is booming that facilitates people to do fast transaction even with free-hand [1]. Many innovative measures are being introduced by The Monetary Authority of many countries to enhance the high customer services [2]. Figure 1 shows the various modes of technologies provided for the customers to do their transactions.

Figure – 1 Means To Interact With Bank

Among all the means, the technique of using credit and debit cards are widely in use [3]. Each bank will provide its customers a unique debit card the time they open the account whereas credit cards will be given only upon request. All these sorts of transaction technologies need the user to remember all of their confidential details like username, password, PIN and other techniques for all their bank accounts.

In case of card transaction, a Secret PIN is provided with each card and it is advisable to change the PIN at a regular interval,

as a mode of security. On the other hand if a customer uses net banking facility, there also he/she should change their confidential details at regular intervals. The same process is applicable for mobile banking also. Therefore, it is the responsibility of an individual to remember the respective details of the mode. If it has been forgotten or wrongly typed for the limited number of times, then that mode will be blocked and cannot be used thereafter, until it gets cleared by the authorized bank.

To provide all these payment methods as a service, each bank deducts an annual fee from the customers. If the customer has multiple accounts he/she has to pay a lump sum amount to the banks. Thereby, a considerable amount is getting squandered.

Herewith a system is proposed that uses all the above mentioned modes as per in Figure 1, by using cashless or a contactless way. This paper has been categorized in the following manner. Section 2 discusses the Background study. Section 3 covers the inconveniences in the existing system. In Section 4, the architecture and features of the proposed system are elaborately discussed. Section 5 provides the process flow of AWI in various transaction media. Section 6 concludes with future plan and Section 7 lists the policies of the proposed system.

2. LITERATURE REVIEW

To begin with, the cashless transaction is largely promoted by the card system. There are different types of plastic cards available in market that provide diversified methods of transferring fund. Figure 2 [4] depicts various types of card system.

If a person uses debit cards over credit cards, he/she will be safe from not falling into the pits of debt. If a person opens a new account, a debit card will be provided along with a PIN. In addition, he/she can avail other types of cards like credit card and Travel card according to their living status. On banks perspective, manufacturing of cards is considerably high [5]. Further, the magnetic stripe at the back of the card gets damaged during each swipe and the card has its own validity period too. Beyond that validity period, the concern bank will issue a new card to the user. To adjust with these expenses, the customers are in turn charged in sake of service fees.
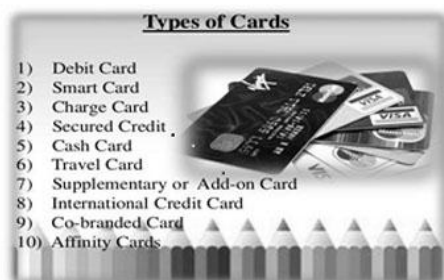

Figure – 2 Various Types of Plastic Cards

To promote the use of credit cards over debit cards the customers are given additional credits if they repay the credited amount prior to the deadline period. Therefore the usage of credit cards started engulfed debit cards, a survey says [6]. The reason behind this is quite obvious, where the banks can in turn create revenues more in the name of interest.

A little bit modernized, a sort of debit cards has been introduced and widely used across the globe called as smart cards that make use of a "chip" embedded on the card. That chip holds the details of the customer. [7] Has suggested a technique, where an integrated credit cum debit card can be devised. However, this approach has overcome the problem of carrying multiple cards, even then suffers with few drawbacks. The significant disadvantage is the cost of manufacturing and maintaining it. Since the manufacturing cost of this smart card would be higher than the normal one, higher service charges will be levied from the customers' bank account. Another issue with this technique is, the mechanism involved in operating the card. This card interacts with the system multiple times and the crucial part of verification is done on both sides. If either of the side gets failed, the transaction could not be initiated or done. According to a common man point of view, the accessing mechanism is also slightly complicated. A well- educated or a person having sufficient knowledge only can use this card.

Card Fraud is another main disadvantage of existing Card system. [8][9]Report the rate of credit card frauds. The statistical report [10] clearly visualizes the rate of loss over years. In consumer's perspective, if the card is lost, an affordable charge will be deducted to reproduce a new card.

While using cards over the net, to make the consumers feel safer, banking sectors have made a tie up with Payment Service/Security Providers (PSP) that authenticates the transactions using "digital certificates". [11] states the scheme of service fee being levied on customer for various card transaction.

Cardless or contactless transaction such as Internet Banking and Mobile Banking are currently in use. The modulations of such techniques are growing day by day [12] [13]. Each and every concern maintain their own applications for their customer service.

Digital Wallet suggested by [14] is another technique that provides convenient way for people, to carry multiple cards in a single case. Google Wallet, Apple's Passbook like applications provide such facilities. Even in this idea, they are asking the consumers of banks to store their debit and credit cards only. The difference is, they have implemented Near Field Communication (NFC) that allows users to have a justifiable transaction. Not in all shopping zones such an NFC enabled Point Of Sale (POS) machine to do the transaction is available. In near future, it may come as a reliable medium. At the side NFC-enabled ATMs [15] are another booming e-

commerce technology that are designed to prevent theft like skimming, phishing, spoofing etc.

[16] Provides an alternative solution in POS which transfers the fund in the form of color-encoded light signals through the mobile screen, instead of using NFC smartphones. To implement this system the vendors have to use optic reader. A digital cash system is introduced by [17], where the consumer is facilitated to do his/her any type of fund transfer without any physical device. Even, there is no need of smartphone to carry. The registered mobile number and security PIN is enough for their transaction.

All the above techniques have got its own strengths and weaknesses. The main drawback is that, all are comparatively costlier.

2.1. INCONVENIENCE FACED IN ACCESSING THE EXISTING SYSTEM:

The various inconveniences sensed by both bank and its customers are as follows:

- Carrying number of credit and debit cards is becoming an unsafe method.
- The date of renewal of existing card also plays a major role as the part of the banker and the customer.
- For each and every card, a nominal annual fee is being charged from customer's account.
- Another difficulty in using the Debit card is in POS Terminals, where a service charge is being deducted while swiping the card. The same problem also arises, when the customers do the fund transfer using debit card over online shopping.
- For utilizing Internet Banking and Mobile Banking systems, the consumers have to maintain their username and password of each concern.

2.2. DEMERITS IN THE EXISTING SYSTEM:

Demerits of the existing methods are furnished below:

- The card fraud and theft rates increases year by year [8] [10].
- If a card or wallet is stolen, chances are high that any person may come to know about its crucial data.
- NFC-enabled ATMs are expensive as it needs to install a chip that supports NFC technology.

2.3 ADOPTING UPCOMING TECHNOLOGY:

Every day new technologies are introduced in the information technology arena. One such definite eye opener is big data. [18] Clearly narrates what it is all about. When it comes to process a vast amount of heterogeneous, structured, unstructured and semi structured data, it can be handled only

via big data technique. The widely known programming model currently under use is the Map Reduce.

Figure-3 [19] depicts a snapshot of how Map/Reduce programming model works.

[20]The working principle of the Map Reduce has been carried out in two main phases: the Map phase and the Reduce Phase.

Map Function:

[21] Map Function is the first step in Map/Reduce Algorithm. It takes input tasks say Data sets, and divides them into smaller sub-tasks. Then perform required computation on each sub-task in parallel.

This step performs the following two sub-steps:

i   Splitting

   Splitting step takes input Data set from Source

   and divides it into smaller Sub-Data sets.

ii   Mapping

   Mapping step takes those smaller Sub-Data sets and

   performs required action or computation on each Sub-

   Data set.

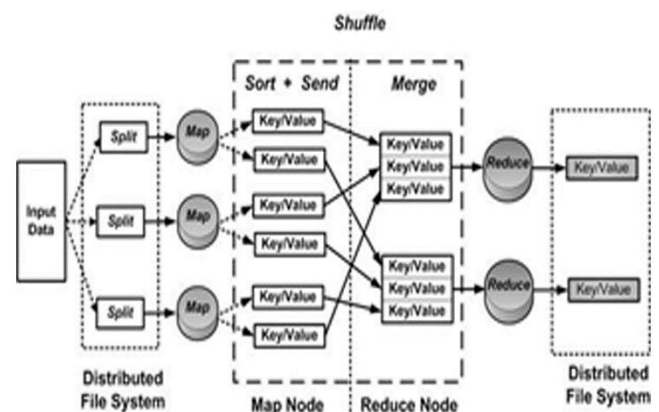Map Function provides an output in key and value pairs <Key, Value>.

Figure 3 – Map/Reduce Programming Model

Shuffle Function:

Shuffle Function also known as "Combine Function", is the second step in Map/Reduce Algorithm. It takes a list of outputs coming from "Map Function" and perform these two sub-steps on each and every key-value pair.

 It performs the following two sub-steps:

i.   Merging

   Merging step combines all key-value pairs which have

same keys (that is grouping key-value pairs by comparing "Key"). This step returns <Key, List<Value>>.

ii. Sorting

Sorting step takes input from merging step and sort all key-value pairs by using Keys. This step also returns <Key, List<Value>> output but with sorted key-value pairs.

Finally, Shuffle Function returns a list of <Key, List<Value>> sorted pairs.

Reduce Function:

It is the final step in Map/Reduce Algorithm. It performs only one step: Reduce step.

It takes list of <Key, List<Value>> sorted pairs from Shuffle Function and perform reduce operation.

Map/Reduce Final Step Output:

Final step output looks like first step output. However final step <Key, Value> pairs are different than first step <Key, Value> pairs. Final step <Key, Value> pairs are computed and sorted pairs.

3. PROPOSED SYSTEM

The proposed system as in Figure 4, has been designed in a robust manner to handle and to overcome all the above lacunas. User friendly, fast and secured transaction is possible by using the following components:

- Communication medium (ATM, Smart Phone, Point of Sale (POS), Internet).
- Intermediate Servers for each medium.
- Payment gateways to authenticate secured fund transfers.
- AWI (Amalgamated Web Interface) – Front end layer by which users communicate.
- AWS (Amalgamated Web Server) – The Middleware which processes all the requests and responds efficiently.
- ADWH (Amalgamated Data Warehouse) – The Big data Ware house contains all the types of data.
- Registered Banking databases – that are ready to share their customers' details with our system.

3.1 How The System Works:

The proposed system will work in the following manner:

3.1.1 AWI:

Figure – 6 depicts the AWI interaction with the customer. This web application can be accessed via any of the handheld devices like smart phones, tablets or pc browser etc. As usual, the signing process is mandatory. Customer who wants to use this system have to sign up in this interface by giving their preliminary confidential details such as Aadhar card or their Social Security Number (SSN), Mobile number and email. Immediately a Unique Customer Identification Number (UCIN) will be generated once the authentication process is over and verified via their Mobile number or email. The process starts only after this validation. The user must add at least one of his/her bank account.
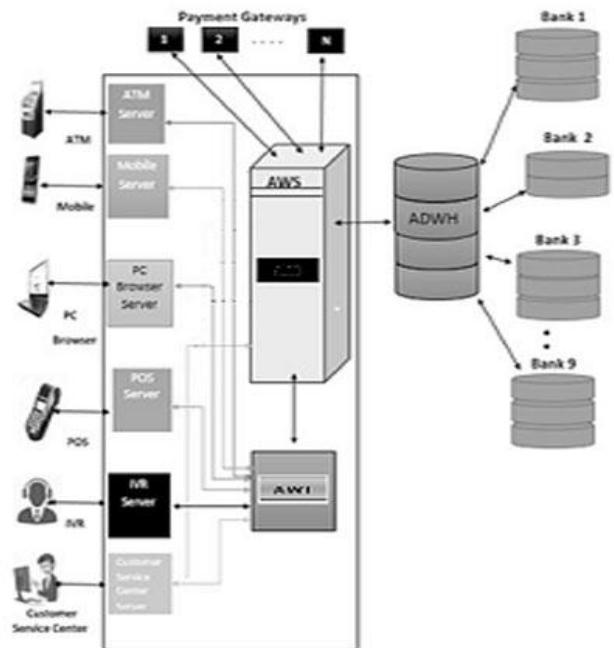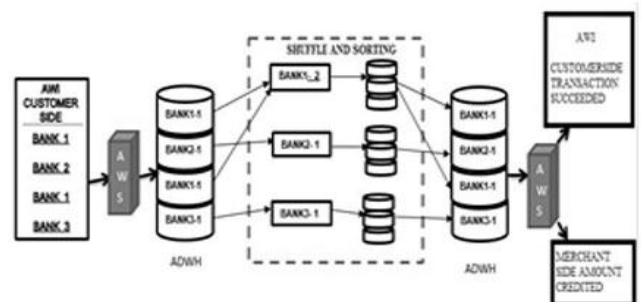

Figure 4 – Overall System Architecture

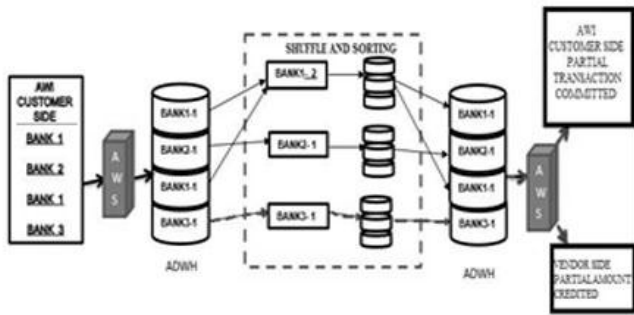**Figure – 5 (a)** Overall System Architecture – Transaction Success

Figure – 5 (b) Transaction Partially committed

Figure – 6 AWI - USE CASE Diagram

The AWI application validates the entered details of the customer by accessing all the banks account registered by them. If the customer has not given any of his/her important details like PAN, ration card, driving license etc., this interface notifies them. Proper alert will also be given if the entered details are wrong.

At the initial level, once the UCIN has been activated, customers must submit all of their proof details within a time stamp. They, can further integrate their bank accounts at any point of time. The system is capable of integrating a maximum of 9 Bank Accounts in a Single Interface. Upon request that

days' balance in each of his/her account will also be sent to the registered mobile number.

Every day customer have to generate an Online Shopping Password (OSP), either via this interface or through Short Message Service (SMS) that will be sent to his/her registered mobile number. This OSP's lifespan lasts till that days' midnight and the customer must use this pin wherever the transaction is performed. If OSP has been forgotten, the customer can request to resend at any time.

In addition to all these, customers can do fund transfer between any of his/her registered bank accounts. The Electronic Fund Transfer (EFT) that includes National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), and Immediate Payment Service (IMPS) are all applicable as per the traditional methods.

3.1.2 *AWS:*

Intermediate servers will send all their requests to our AWS, a secured Web server that interacts with the ADWH. The Amalgamated web server will work in a highly effective manner and won't act as a normal web server. Our AWS is designed in such a way to achieve high *throughput* (i.e.) time taken by the AWI and AWS to handle enormous transactions per second and *low Latency,* the actual time taken by the client's request to reach the Web server.

3.1.3 *ADWH:*

This is the kernel of the entire architecture. It maintains all the customers' bank accounts metadata. Via AWI, the customer can do any sort of fund transfers using this. The time the customer logs in, with the metadata information, this ADWH will pull the bank accounts of the corresponding customer to continue the process. Therefore, no confidential details will be maintained in this ADWH. And, since it communicates to the registered bank accounts of the customer only when there is a need, it achieves high throughput. Henceforth, it acts an agent between the customer's individual bank accounts and the respected bank. Another merit is, if the customer's profile details or bank details entered for synchronizing, mismatches with respect to another registered bank, a proper warning shall be given.

Figure 5(a) depicts the concept of a successful transaction. Once the customer enters into the system he/she can view all of his/her bank details. The ADWH will identify each and every customer by their UCIN.

Transaction starts by requesting the AWS. The AWS in return sends the request to the ADWH. This ADWH will have the ability of handling parallel transactions by using the BIG DATA programming model. Connections will be established to the corresponding bank accounts, only after the requests enter into the SHUFFLE AND SORTING zone.

In this zone, the Mapper function will identify the request based on the bank accounts and amount to be debited. It will

shuffle and group the bank accounts thereby produces an intermediate result in a <key, value> pair. Here, the key is the bank account and the values are the amount to be withdrawn based on the customer requisition. This intermediate result will be further sent to the Reducer function.

The Reducer function once receives this set will establish the connection to the corresponding bank server and the amount will be deducted from each of the bank account independently.

The aggregated amount will be computed by the ADWH and this will in return send to the AWS. The AWS will further transfer the amount to the corresponding Merchant account, and thereby the amount will be successfully transacted from customer to the merchant.

All the transactions will be initiated only when the customer's finger print or pattern lock has been recognized. If finger print is provided, it will be checked with the SSN/AADHAR profile. Whereas pattern lock is used, the process continues.

If the customer is a variably abled person (i.e.) without both hands, he/she can make use of the UCIN to start the transaction. To conclude the transaction, the generated OSP should be compulsorily given by the customer.

Figure – 5(b) depicts, what happens when a transaction could not be successfully completed. During the session time, there are possibilities for the system to get failed, due to various reasons like hardware failure, software failure etc. In that scenario also a partial transaction could be done by the proposed system.

For instance, assume that a particular bank has got some technical failure. If the customer, initiates the transaction by depending upon that bank, definitely the bank cannot interact with our ADWH during sorting phase. The sorting phase could not establish connection, even then our system will simply set a failure flag for it and continues aggregating the remaining amount and our AWS will send a partial amount to the merchant account. The failed flag indicates the customer about that particular bank and it is the responsibility of the customer to use another bank to pay the balance amount. All these transactions will have a transaction-id that has been sent to both the merchant and the customer. Therefore, it helps the merchant to identify individual customer even at peak time. The merchant gets assurance that the amount has been paid by the customer, henceforth he can deliver the packages to them.

There are some situations where the transaction could not be initiated. For instance, the bank where the merchant having his account slows down, the merchant has to enter his alternate bank account to initiate the transaction.

MapReduce pseudo code:

Function IndividualAmountMapper

```
(AccountNumber, Amount,
    interm_result_store)
partCountSum = [data.AccountNumber,
            sum(data.Amount)];
add (interm_result_store, 'PartialCountAmount',
        partCountSum);


Function TotalAmounttopayReducer
    (intermKey, intermValIter, Tot_Amount_Store)
% intermKey is 'PartialCountSumDelay'
Failedbanklist = {4};
s=partCountSum;
For I = 1: intermValIter
    count = 0;
    sum = 0;
while hasnext(intermValIter)
countSum=
        getnext(intermValIter);
    count = count + countSum(1);
    sum = sum + countSum(2);
if count==s
    errflag = 1;
    Failedbanklist = {s};
End
For i=1:s
    fprintf('TRANSACTION FAILED IN
            %s\n', Failedbanklist{s});
```

4   PROCESS FLOW:

4.1 Transaction modes:

A transaction could happen in three different modes: successful, partially committed and failed transaction.

- A successful transaction is one which leaves all the bank accounts being accessed by the customer in a consistent manner.

- A partially committed transaction is identified in 2 means:

  i.   At POS, Partial amount is being transferred from the customer account to the merchant account at the time of transaction.

ii. In the case of ATM, the proposed system will not encourage partially committed transaction. However, the customer will be notified with the corresponding bank number that obstructed the entire cash flow.

- A failed transaction is categorized into the following ways:

   i. Enough cash is not available in the ATM.

   ii. Either hardware or software failure.

   iii. At POS, the sum amount is not credited to the merchant account due to no response from the merchant's bank account.

   iv. At ATM, the customer tries to withdraw from multiple banks and one of the bank has undergone some failure thereby no response from it.

4.2 Transaction via ATM:

Figure – 7 illustrates the concept of how a customer can access ATM.

- To initiate the transaction process, the user has to place his/her palm on the Biometric scanner to scan the finger prints.
- As if the aadhar card details are already merged with AWI, it identifies the user profile and activates the Fund Transfer Screen.
- ATM displays all the names of the registered banks of the customer with an input area to enter the amount to be withdrawn.
- Finally, the system will show the total amount to be withdrawn. After confirmation, the customer has to enter the OSP he/she received in the registered mobile number.
- The conventional operations of ATM remain the same.

4.3 Transaction via POS:

Figure – 8 illustrates the concept of how a customer can do cashless/cardless fund transfer in a shopping mall.
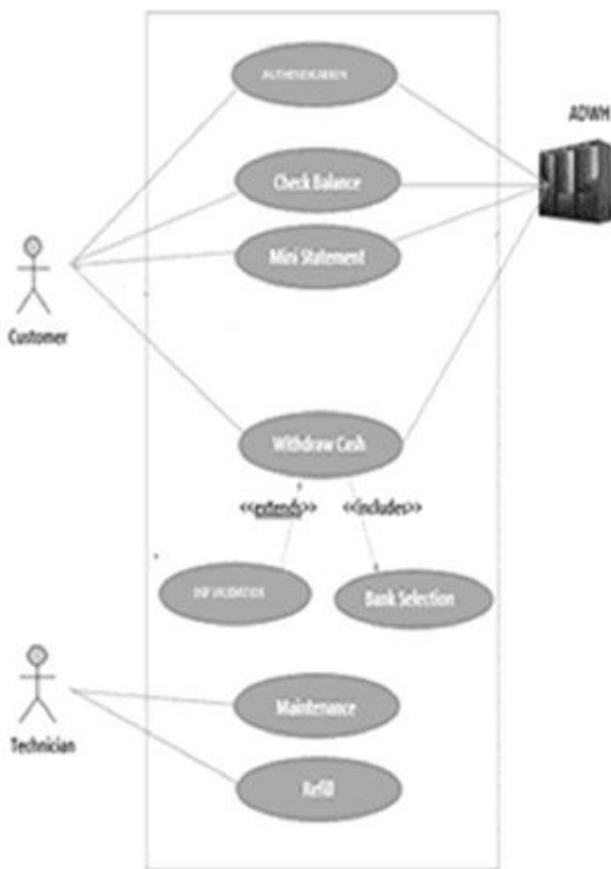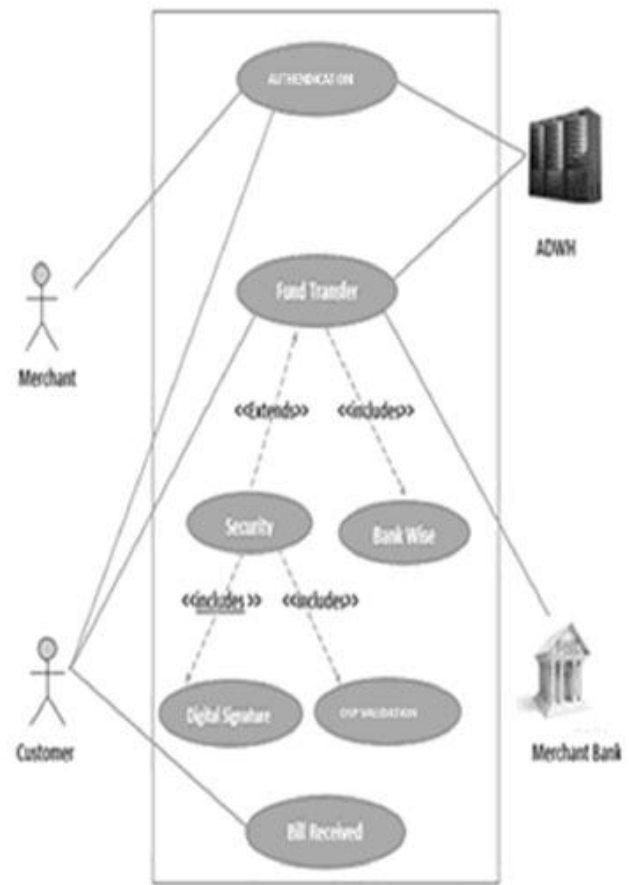

Figure – 7 ATM - USE CASE Diagram

Figure – 8 POS - USE CASE Diagram

As per section 4.1, At POS transaction can be happened in the following ways:

Successful transaction:

Invoice will be first given by the merchant. Upon successful transferring original bill will be generated with the transaction id.

- After finishing the shopping, the consumer has to move to the checkout section to pay for the purchase.
- At the time of payment, the cashier gives the generated bill for the purchased goods.
- Then the customer has to activate the Interface through his/her mobile Application, by providing Biometric or Pattern lock system.
- The operations in the AWI continue in the following procedure:

o Here, for the consumer's convenience, the purchase amount can be transferred from a maximum of any of the 4 banks' accounts.

o This process continues until the purchase amount and the sum amount typed by the consumer should tally.

o Then the device is handed over to the Merchant to enter the Merchant's Bank Account number with its secret code, to which the sum amount has to be credited.

- Once the Client side details are entered and verified, the Server side process is activated.

o After successful validation of the entries in the Interface, the authentication is done by the customer by entering the OSP.

o Then the particulars of the fund transaction is processed through AWS and ADWH.

o The actual Fund Transaction in corresponding banks are carried out.

- After the transaction is committed, two bills are generated for Merchant and Customer.
- At the same time, the customer gets an Acknowledgement of Successful payment.
- Then the customer is delivered with his/her purchased products, by verifying the generated bill.

Partially committed:

- If any of the customer bank accounts is not responding at the time of POS, a partial amount will be credited to the merchant bank account.
- The products will be handed over only for the amount paid by the customer. Bill will be generated for that products alone.

- If the customer is willing to buy the product for which amount has not been credited, they have to pay in cash. For that, a separate bill will be generated.

Failed transaction:

No Transaction occurred due to the situations discussed in the section 4.1.

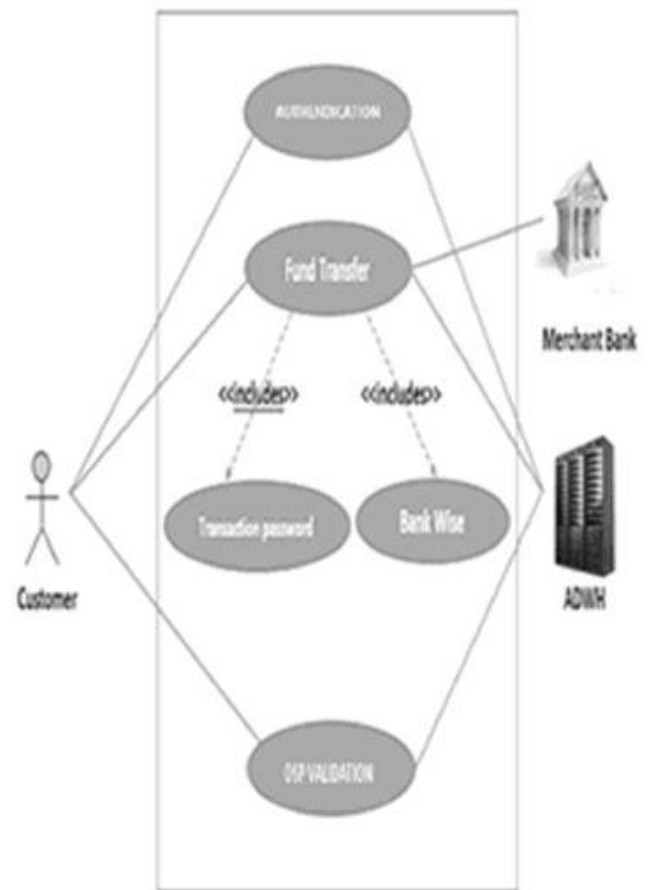**4.4 *Transaction via PC/Mobile Browser:***

Figure – 9 Net Banking (Online Transaction) - USE CASE Diagram

Figure – 9 illustrates the concept of how customers can   feel comfort with online transaction.

- After selecting the products in an Online Shopping Website, the Payment mode will be initiated by the authentication process using AWI username/UCIN and its corresponding password.
- The session lasts only for limited time duration, where the customer will be entering into the secured web page.

- The consumer will be given a privilege to select the maximum of 4 bank accounts from where the purchase amount can be deducted.
- This process continues until the purchase amount and the sum amount typed by the consumer should tally.
- Immediately, OSP has to be entered for dual security Fund transaction.

5. SALIENT FEATURES OF THE PROPOSED SYSTEM:

The proposed System had done sufficient changes on both the central bank and Customer perspective.

- The system limits the number of bank accounts being used by the customer.
- Manufacturing and maintaining of a huge number of plastic cards will be reduced.
- Central bank will have a full control over the transactions since all are made via wired and wireless transfers.
- The proposed system helps The Monetary Authority to monitor the transactions in a transparent manner. Thus it plays a vital role in developing a corruption free world [22].
- On the perspective of Monetary Authority, tracing a customer has been made very easy, since the proposed system logs the vital credentials such as Citizen card, driving license, PAN, voter id etc.,
- The generation of OSP per day facilitates the added security for any transaction.
- On the system's perspective, it reduces the generation of OSP for all the bank accounts as and when needed by the customer.
- On the customer's perspective, the problem of remembering the login credentials and secret PINs for all of his/her bank accounts is considerably reduced.
- Customers will be given easy access to all of his/her account in a single layer.
- If their smart phone is stolen or missed, they can easily communicate with the central banks' call center and can immediately block it.
- The AWI will be activated only after recognizing the customers' finger print. If the person is variably abled, they can make use of their UCIN and OSP to perform transaction.

6. FUTURE ENHANCEMENT:

The proposed system makes use of the traditional banking slightly, but has changed the way the fund transfer can happen in a digital and secured manner. In addition to that, it is highly secured, because it does not maintain the customers' bank credentials within it. The proposed system also controls the citizens of the nation to maintain a maximum of 9 bank accounts which is considered to be a reasonable number. If any of the bank accounts are not used by the customer for a longer period, Notifications will be sent to them to close it. In near future, this system can make use of the cloud environment to increase high throughput and low latency.

7. POLICIES:

The following are the policies to be implemented:

1. Proper registration in AWI is mandatory.

2. During registration, user must provide at least three ID proofs. Any of the following proofs is acceptable;

   a. Aadhar card

   b. PAN

   c. Voter Id

   d. Driving License

   e. Passport Number

   f. Ration card number

   g. Employment Id   etc.,

3. Aadhar proof is mandatory to register. Maximum of one month duration is given to submit it from the date of registration. If not, ADC will be kept deactivated.

4. To re-activate the ADC, KYC has to be submitted to The RBI agency.

5. Re-registration is applicable only when entered detail mismatches.

6. After successful registration, Unique Customer Identification Number (UCIN) will be generated for the customer.

7. The information such as primary phone number, primary mail address, and permanent address will be updated to all amalgamated accounts, for consistency.

8. The customer has to take printout of the registered form. Having self-attested on it, he/she must submit it to The RBI agency in person.

9. If the Amalgamated Web Interface password has been forgotten, the customer can get a system generated password over his/her registered mail address/mobile number, upon his online request.

10. If the Registered UCIN is forgotten, the customer must go to the corresponding central banks' monetary agency to fill the KYC form to reset it.

11. In case of emergency or the customer needs to change their mobile number, they are given the privilege to

change it by calling to the central banks' monetary agency call center, answering to the secret questions and providing a minimum of 2 proofs.

12. The call center will authenticate the customers' new mobile number by sending a One Time Pin and they can start using it.

13. If the customer has changed his/her mobile number, the immediate day they have to intimate it with a written statement to the central bank agency.

14. If not, the customers' AWI account will be de-activated.

15. To reset the secret PIN, if it is forgotten, the customer must verify himself/herself by calling to the authorized call center.

16. The system has been designed in an aesthetic manner that it will start tracing the customers' transactions done via their individual net banking.

17. OSP must be generated at least one hour before the transaction starts for the day.

18. Only one OSP per day is generated and is sent to the customer's registered mobile number.

19. If needed, the same OSP can be re-generated for a given number of times.

20. Together with the OSP message, the balance for all integrated Bank Accounts are also sent to customer's registered mobile.

21. A nominal charge will be deducted for additional request to know the updated balance from the AWI.

22. The customer has been given the privilege to use a maximum of 4 bank accounts per transaction.

23. Each transaction is tracked individually.

24. In AWI, the customer has been given a privilege to transfer the amount within his/her registered bank accounts. Charges applicable.

25. The present terms and conditions for any sort of transactions followed by each banking sector are continued.

26. For any type of transaction, registered mobile number is mandatory.

27. To get the transaction initiated either finger print or UCIN is mandatory. If UCIN is used, the customer must enter the OSP to complete the transaction. If Finger print is used, OSP is an optional one.

28. Transfer of amount within registered bank accounts follows traditional methods.

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