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Customer Service Functions Automation for Effective Banking Management in Nigeria

Kamalu U.A., Akuwudike A. I.
Department of Electrical Engineering, University of Portharcourt, Nigeria.

Abstract: This paper automates the functions of a bank's customer service desk for effective management. The Customer Service Desk is the unit in a bank's branch that treats customer's requests and responds to customer's complaints. The main task is to automate the way customer's requests like account opening, cheque book and ATM requests, product migration etc. are treated in a bank. The design was developed using a HTML web and programming editor. The design is based on the functions of the customer service desk and to achieve this, it is broken down into modules. These modules are automated for the users, which are the customers and the customer service representatives. The result is a system that automates the manual process of customer service in banks via the web-based system. Treating requests and making enquiries becomes more systematic, faster and easier with the automated customer service desk. This creates an enhanced customer experience which in turn increases customer loyalty and retention.

Keywords:customer, automation, services, desk, bank, product, migration.

I. INTRODUCTION

The structure of the financial services industry in Nigeria, during the past years, has changed drastically. This brought about very important changes in the market. Because of current developments and how wide competition is, it is becoming more challenging to identify the unique characteristics that will enable any bank outperform its competitors. The gradual resurfacing of the Nigerian middle class has created a class of financially smart and knowledgeable customers. Their standards for service quality have also risen. Because of the financial service providers' intense competition amongst themselves to attract new customers, it is no longer just enough to provide products, specific customer segments and their identified expectations have to be closely aligned.

Customer service professionals and experts in banking and finance, have different opinions as to what constitutes effective customer services in the banking sector, but they all agree that it is an age long issue for which there does not seem to be any consensus in sight. This issue on how to boost banks profitability by improving customer service, has a long history in the banking sector. The importance of customer service in the Banking system is absolutely essential for continuity in business and expansion given the competitive nature of banking services. Providing an unbeatable customers services sets apart most successful business organizations.

In order to survive both from domestic and the increasing level of global cross-border competition, banks need to change their process of servicing their customers. Firstly, to capture and retain the most profitable customers and secondly to redirect unprofitable customers into service channels which can limit the costs and maximize potential revenues (Mols, 1998).

The customer service desk is the first point of call in a Bank. This creates pressure very often on the customer service staff at the branches of Banks. That is why the automated customer service desk is being proposed as a new approach to customer service operations.

This paper will address the design and implementation of software that automates the functions of the customer service desk. This software would be interactive, user friendly (easy to learn and use no matter the literacy level), it should be reliable and flexible (easy to upgrade functions).

The system will provide some significant importance to the management as well as the users of the system. With the automated customer service desk, time taken to completely solve customer's issues will be shortened since the system will be able to alert the customer service staff in case of problem. Thus, it will be able to reduce delays.

This work is limited to the functions of the customer service desk. All other banking activities can be done at the branch. The design is limited to software; there would be no hardware design. The software prototype will run on a windows operating system; it may be hosted on the World Wide Web. The developed software currently runs on a windows operating system. It was not tested in other operating systems.

II. METHODOLOGY

This section considers the design and analysis of an automated customer service desk in banking. The design is aimed at achieving total automation of the unit. It is designed based on the function of the unit. To

achieve this overall function, the system is broken down into modules. The design is therefore based on these modules as shown in figure1.

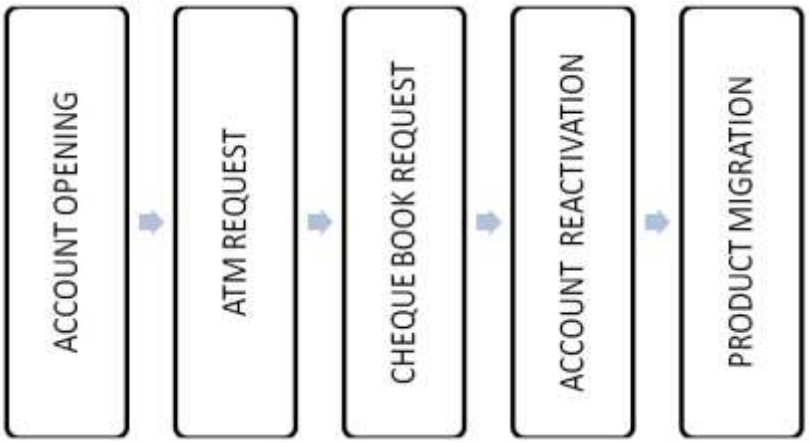

Figure 1 Block diagram of the modules of design of the customer service desk

Account Opening Module:

This is the process of establishing a relationship with the bank. A bank account is a financial account maintained by a financial institution for a customer (Wikipedia). It represents the funds that a customer has entrusted to the bank, from which withdrawals can be made by the customer. There are two broad categories of accounts; they are the savings account and the current account. A savings account is a deposit account held at a bank that provides principal security and a modest interest rate. It is one of the simplest types of bank account available to customers. Savings accounts are opened to encourage people to save. A current account is an account that allows deposit and withdrawals of money without notice. It is different from a savings account as third party withdrawals can be done via a cheque, other banks cheques can be deposited in it and its cheque can be paid into another bank account.

In this module, the prospective customer enters personal details on the create account page and uploads scanned documents. Mandatory documents are; passport photograph, Signature and ID Card. For current accounts, in addition to the above requirements, customer uploads two filled Reference forms and a Utility bill.The personal details the Customer fills on the online form are as follows: First Name, Middle name, Surname, Phone number, Email, Address, Occupation, work address, Next of kin name, Next of kin relationship, Next of kin address, Next of kin phone number, and Mother's maiden name.When customer enters personal details and submits the program checks all fields to ensure that customer entered details correctly. This is called validation, once validation is successful, an account number is generated.

The algorithm for generating an account number is shown below;

Step 1: Enter personal data
Step 2: Specify account type
Step 3: Upload data
Step 4: Validate Information.
Step 5: If validation is successful Generate account number.
Else, Return "All fields on form are mandatory"
Step 6: Display account number.
Step 7: End

The flow chart for the account opening module is shown below.

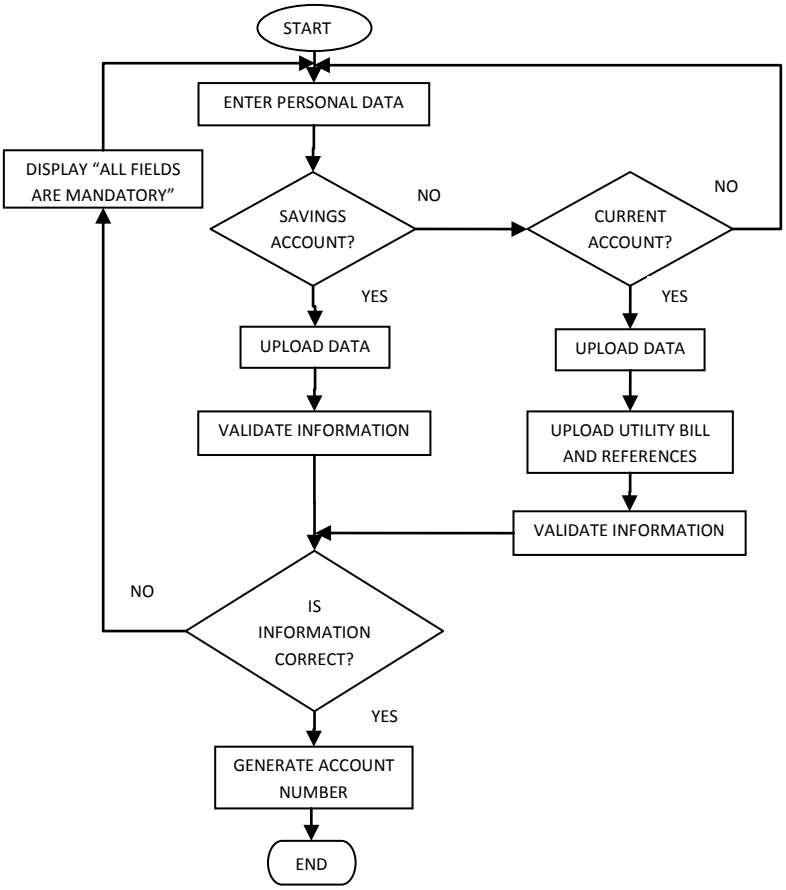

Figure 2 Flow chart for the Account Opening Module

From the flow chart and algorithm a software code was generated using PHP programming language. This software is designed to run on windows operating system.

ATM Card Request Module

An ATM card can be defined as a payment card issued by a bank used at an automated teller machine (ATM) or any other authorized terminal to perform various financial transactions. The automated customer service desk gives customers the opportunity to request for their ATM's at the convenience of their homes.

To request for an ATM card, the customer enters; Account number and chooses pick up branch and submits request. When customer submits form, a message pops up displaying "you can pick your ATM card at branch A in 2 working days" for instance. A notification is then sent to the customer service agent that instantly processes request and dispatches ATM to specified branch.

The algorithm for the ATM Request module is shown below.

Step 1: Enter personal data.
Step 2: Enter account number and Branch
Step 3: Validate information.
Step 4: Send notification to agent
Step 5: Display pickup date and branch.
Step 6: Stop

The flow chart for the ATM Request module is shown in figure 3.3 below.

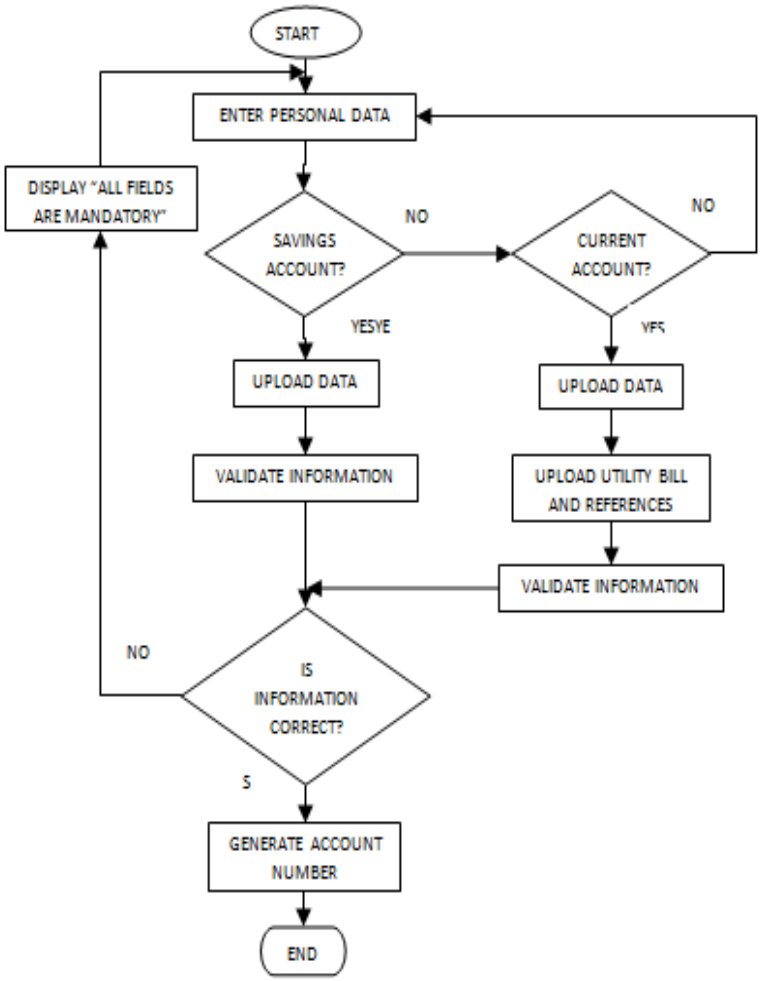

Figure 3 Flow chart for the ATM Request.

From the flow chart and algorithm a software code was generated using PHP programming language. This software is designed to run on windows operating system.

Cheque Book Request Module

A cheque is a legal document that orders a bank to pay a specific amount of money from a person's bank account to the person in whose name the cheque was issued to(. The writer of the cheque also known as the drawer, is the account holder and the person who was issued the cheque is called the payee and the ordering bank is the drawee. Cheques are a type of bill of exchange and were developed as a way to make payments without carrying large amounts of cash.

A cheque book is the legal document required for a customer to operate his account. To request for a cheque book, customer enters the following details into the fields; account number, number of cheque leaves and branch for pick up. When customer submits form, a message pops up "you can pick your cheque book at branch B in 2 working days". A notification is then sent to the customer service agent to instantly process cheque book and dispatch to specified branch.

The algorithm for the ATM Request module is shown below.
Step 1: Enter personal data.
Step 2: Enter account number and Branch
Step 3: Validate information.
Step 4: Send notification to agent
Step 4: Display pickup date and branch**.**
Step 5: Stop
The flow chart for the Cheque Book Request module is shown in figure 3.4 below.

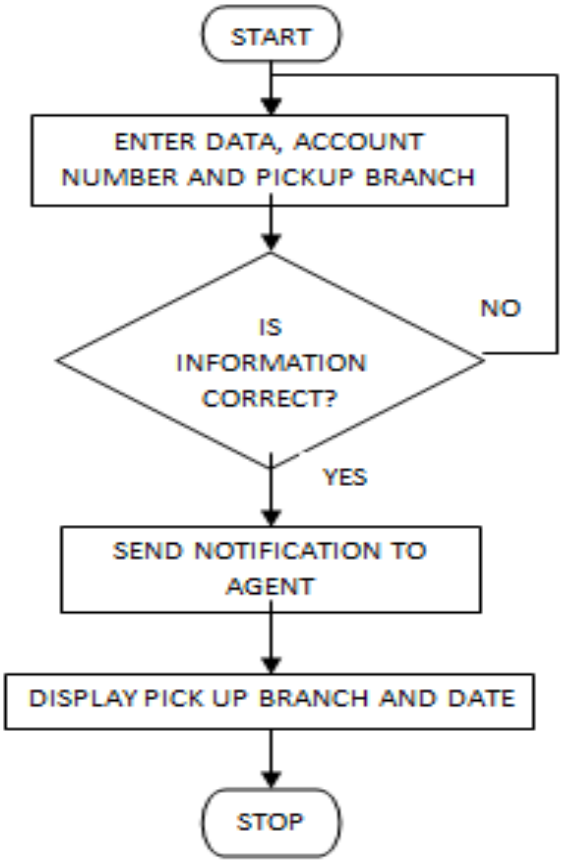

Figure 4 Flow chart for the Cheque book Request Module.

From the flow chart and algorithm a software code was generated using PHP programming language. This software is designed to run on windows operating system.

Account Re-activation Module:

If there is no financial transaction on a bank account for an extended period, the account may go dormant. The amount of time it takes for an account to get dormant varies from bank to bank. No withdrawals or outbound transfers can be done on a dormant account. The funds can however be claimed by the owner or beneficiary at any time. The re-activation of a dormant account can be done conveniently via the Automated Customer Service Desk.To re-activate a dormant account, customer clicks the account re-activation tab and enters account number to re-activate the account. The account is then instantly re-activated.

The algorithm for the Account Re-activation module is shown below.

Step 1: Enter account number
Step 2: Validate account number
Step 3: If validation is successful
Change Account status to Regular
Else display "account number is not valid"
Step 4: Display Account re-activated
Step 5: Stop

The flow chart for the account Re-activation module is shown below.

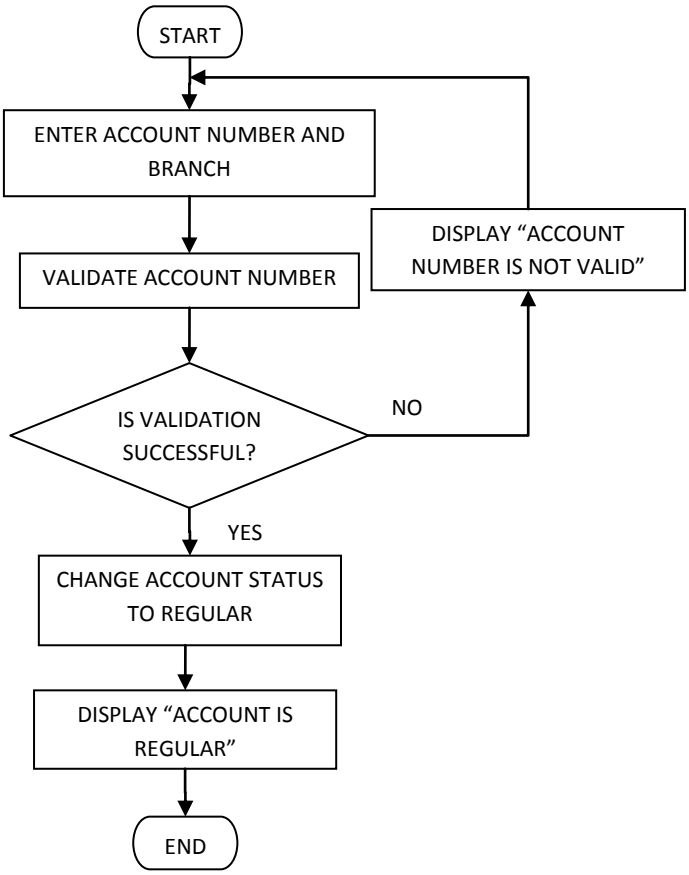

Figure 5 Flowchart for the account re-activation module.

From the flow chart and algorithm a software code was generated using PHP programming language. This software is designed to run on windows operating system.

Account Product Migration Module:

An account product is a unique service created to satisfy a banking need. A customer may want to move from one product type to another. To do so, the customer may need to provide additional documents where necessary for the product type he needs to migrate to. In the prototype for the automated service desk, two types of products were used, the Savings account and the current account.

When migrating to a current account from a savings account. The customer will need to upload the following documents; a valid ID card, two references and a utility bill. To do this, customer enters the following details in their respective fields; Account number and select product to move to.The algorithm for the Account Product migration module is shown below.

Step 1: Enter account number and product.
Step 2: if product = savings
Display "upload documents"
Upload documents
Change Account type to current
Else Change Account type to savings
Step 4: Migrate Account Product
Step 5: End

The flow chart for the Account Product migration module is shown in figure 6 below

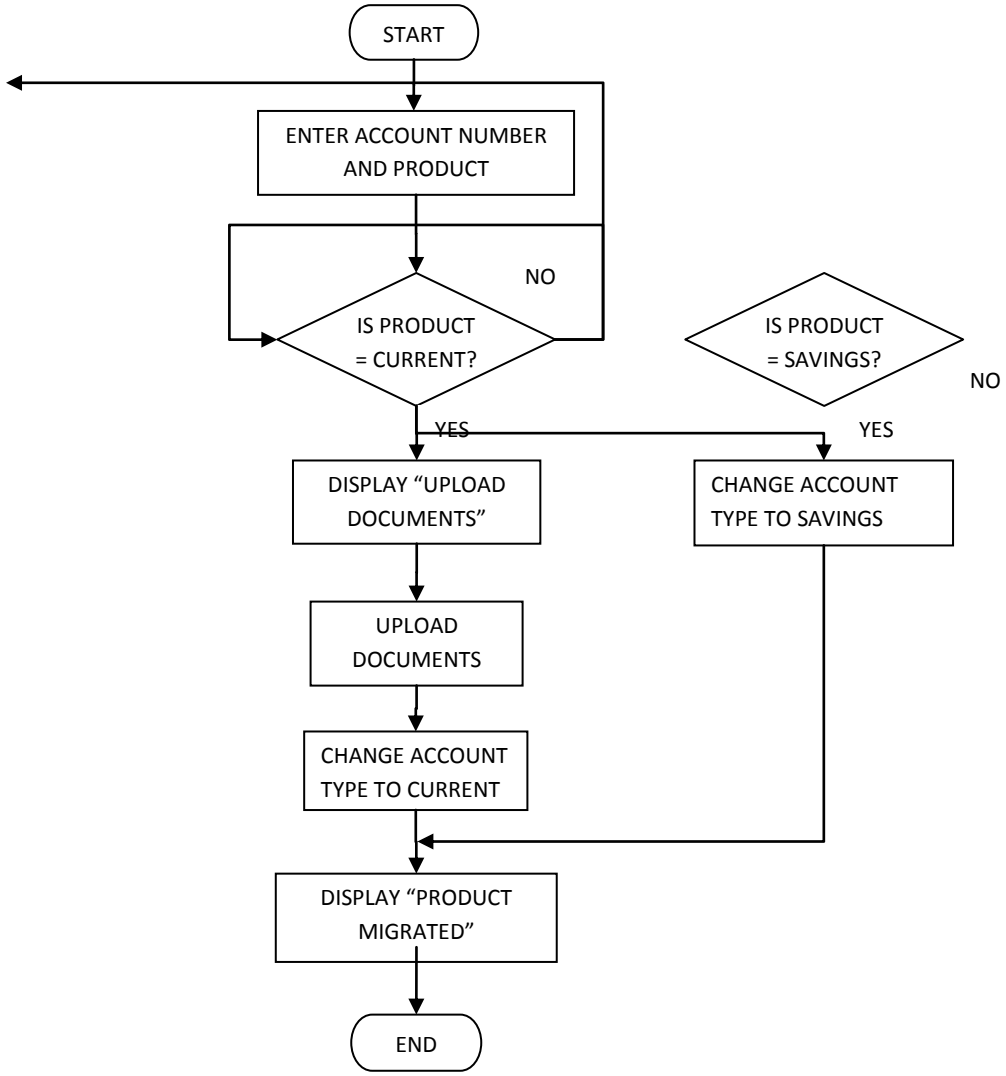

Figure 6 Flowchart for the account product migration module.

From the flow chart and algorithm a software code was generated using PHP programming language. This software is designed to run on windows operating system.

Security

The security measures put in place to ensure the safety of the automated customer service desk is a unique Personal Identification Number (PIN) which is sent via sms to the customer's registered phone number each time a customer wants to log in. This PIN authenticates the customer and he goes ahead to enter it to gain access to the automated customer service desk.

III. Results And Discussions

This section presents the result obtained from the designed automated customer service desk. The design was based on a modular approach; also the result presentation will equally be based on this.

Account Opening:

For customer to establish a relationship with a bank he needs to have an account with the bank. To create an account the customer enters their personal details as shown in figure 7 below.

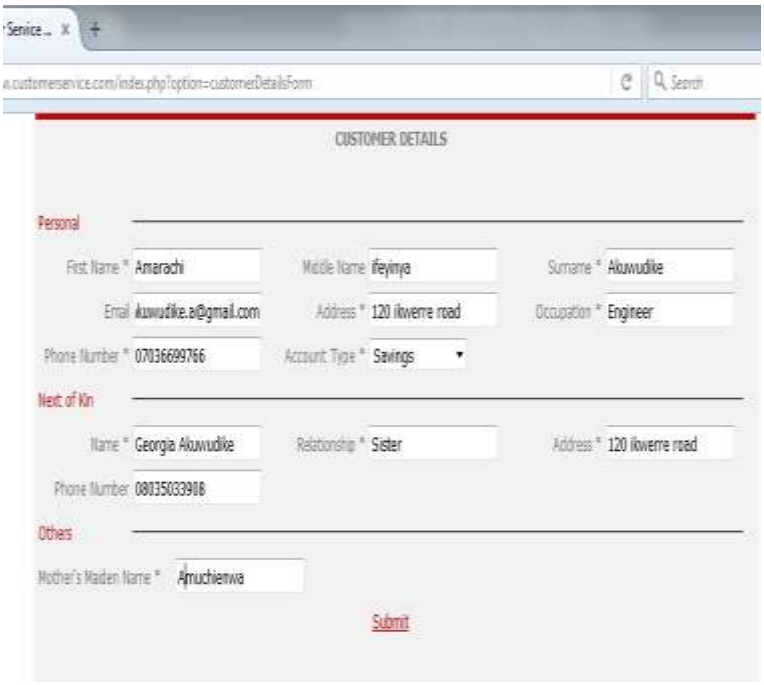

Figure 7 Customer Details Form for Account Opening

A ten digit account number is generated after the customer enters their details in the customer details form as shown below

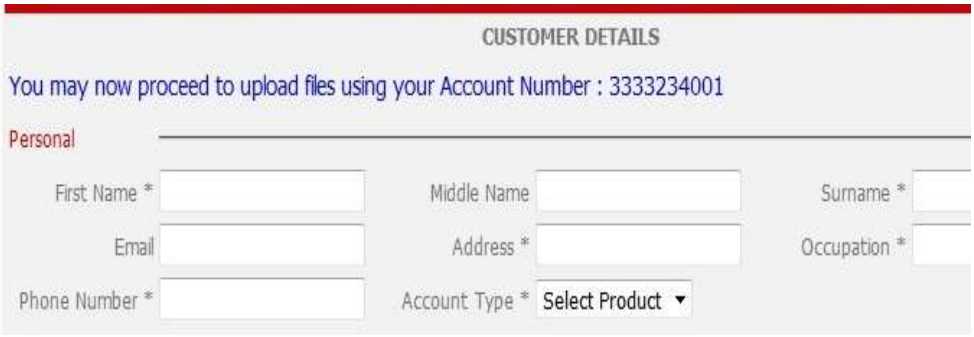

Figure 8 Account number generation

The customer is then prompted to upload their photo, signature, ID and (or) references and utility bill. Figure 9 displays how uploads are done via the automated service desk.

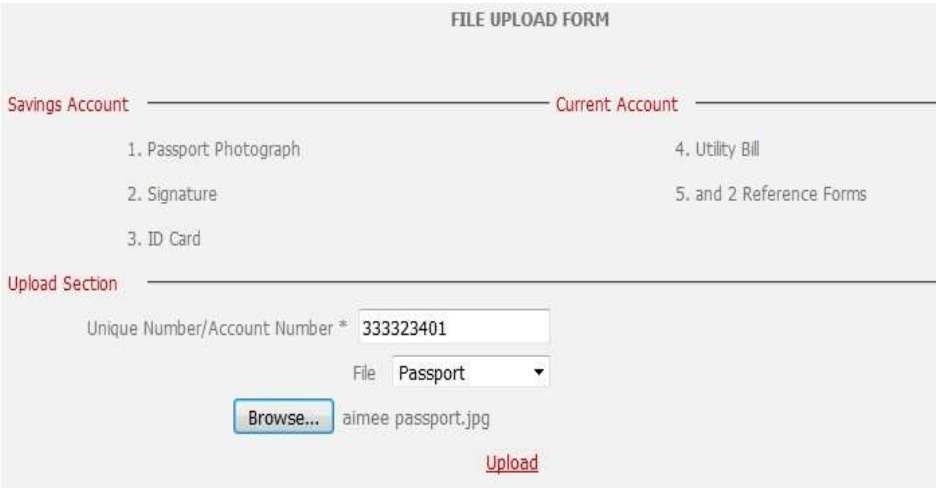

Figure 9 File upload form

ATM Card/Cheque book Request

To operate an account with a bank a customer needs an ATM or/and a cheque book. When a customer requests for an ATM card or cheque book, the customer gets a notification on when to pick his card or cheque book. Figure 10 Shows the outcome of the ATM card request module.

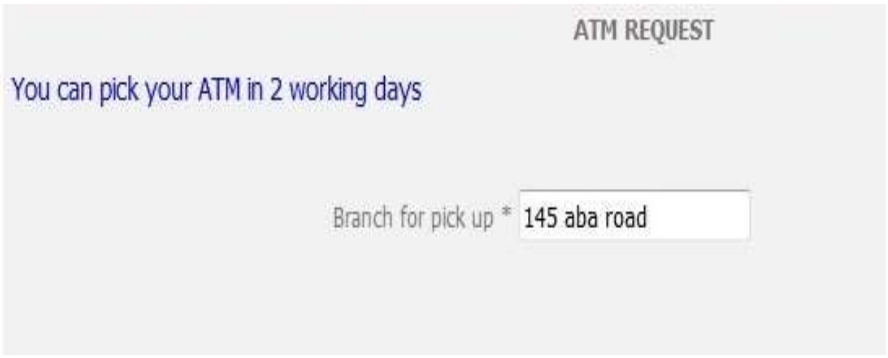

Figure 10 ATM card request page

Account Re-activation

Account re-activation is the process of making a dormant account active. When an account is re-activated the customer gets a notification that the account is re-activated. To re-activate, customer logs in and clicks on the re-activation tab and clicks the "re-activate" link and the account will be re-activated. Figure 11 shows the Account re-activation page.

Figure 11 Account Re-activation page.

Account Product migration

Switching between account types is known as account product migration. To migrate an account, customer clicks on the migration tab and chooses the desired account type to be migrated to. When an account has been migrated from any account type the customer is notified that the migration has been effected. Figure 12 Shows the Account re-activation module.

Figure 12 Account product migration page

Customer Satisfaction

The relationship between financial performance and automated service quality and is mediated by customer satisfaction. Satisfaction is the state felt by a person who has experienced a performance or outcome that has fulfilled his or her expectations. Therefore satisfaction is as a result of perceived performance of relative expectations. Expectations are formed on the basis of past experiences with the same or similar situations, statements made by friends and other associates, and statements made by the supplying organization (Kotler and Clarke, 1987). Customer satisfaction can be defined as when the customer's expectation of the service provided matches his perception of the actual service received (Sasser et al., 1978; Parasuraman et al., 1985). The automated customer service desk is set to deliver superior customer satisfaction with its convenience and quick problem resolution.

IV. CONCLUSION

Automated customer service desk is easy to establish and provides easy access for all users and can serve multiple users simultaneously and accurately. By automating the functions of the customer service desk, it gives advantages for the customer by its speed and convenience and for the customer service personnel by reducing the amount of face to face contact.

The Minimum requirement to start up the automated customer service desk is a database, where to collect data of each solution and a web server to store the content. Users of the automated customer service desk will also require interface to easily connect into a solution they need help with and this interface should be very simple and should also give good user experience. It also requires stable environment and server.

Finally, a prototype web application based on the general framework has been designed.

The automated customer service desk developed is a very useful system. It is developed to be used by a bank to easily solve customer's problems, treat requests and increase management efficiency. With that in mind, the system can also be improved further according to the users need and expectation. Some of the additional features are:

1) The automated service desk can be improved to run on other operating systems e.g Linux, Macintosh, and IOS etc.
2) The automated service desk can be optimized to work as an app on mobile devices.
3) Increased security features can be put on the automated customer service desk to authenticate the customer.

The automated customer service desk is designed based on a study done on the way customer service is done in banks from the inception of banking till date. From the literature review done, the findings and information pertaining to the automated customer service desk was gained. The main contribution of this project is the ability to automate the way a bank runs its customer service desk. Treating requests and making enquiries becomes more systematic, faster and easier with the automated customer service desk.

All stakeholders benefit from the automation in long term. The quality of service increases over time when using automated customer service desk. And it improves customer satisfaction and loyalty towards the service.

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