

ABC Bank Systems Analysis and Design

Name

Institution

Introduction

ABC is a micro-finance institution that deals with retail banking. Amongst the services provided by the organization include fixed deposit, call deposit, savings, account, business account, and mortgage services. ABC microfinance operates in the US and plans to expand into Canada so that the company can have a presence in the entire North American region. Currently the main clients of the institution are college students and aspiring entrepreneur's whose main goal is to establish or expand their businesses whose turnover does not exceed \$50,000. However, to access the company's services, customers must be physically in any of their satellite offices. Besides, these customers must also visit their specific branch that they opened an account from, a scenario which is cumbersome and time consuming.

The company's information systems are outdated and calculations are done through a spreadsheet accounting package which takes time and sometimes is prone to errors. The scenario has made business services in the institution to be very slow, and the organization cannot cope up with new business demands such as rolling mobile banking services or even deploying internet banking facilities. The institution feels that it is time that their information systems infrastructure should be overhauled so that the micro-finance can have a competitive edge amongst its peers hence attract a new client base that will drive revenue to the company. It is in light of this fact that the paper shall conduct a system analysis and design to identify key business services that should be streamlined through automation so that operational processes are enhanced. However, the first step is to identify key business processes conducted by the financial institution to understand technology to be integrated into the company's operational processes.

Key Business functions of ABC micro-finance Bank

ABC is a deposit taking institution meaning that clients either deposit or withdraw money into the bank. Besides, the organization provides a number of facilities including fixed deposit, call deposit, letters of credit, overdraft facilities, and mortgages among other facilities. However, the problem is that clients must always physically contact their respective branches for any meaningful service to take place. Therefore, the first step is to develop an enterprise wide information systems network infrastructure so that all the envisaged applications designed to provide different services can run on top of the network. Besides, the proposed network infrastructure will also assist to integrate the different bank branches by creating what is referred to as branchless banking. The proposed network infrastructure will also be scalable enough in the sense that applications fostering mobile and internet banking can be rolled out.

The first step is to design the network infrastructure by considering both the physical and logical layouts. The proposed network shall be designed in such a manner that whenever the bank opens up a new branch, new systems can be easily connected to the main network that directly connects to the master database holding clients sensitive information such as bank account details, balance, loan portfolio among other financial details.

Applications that run on top of the network will also have to be considered too, and these include the electronic banking platforms which in most cases are acquired as custom made applications or can be bought from the shelf as a ready-made application. However, a feasibility study must be conducted and this is also the phase when the paper dwells on the banks system analysis and design.

System Analysis and Design of the proposed Information Systems of ABC Bank

Problem Statement

In this particular project the paper discusses some of the issues with both front and back office automation. The main issue with the business is delays in preparing customers information a scenario that leads into business loss due to the extended wait times before a client is finally server. The main issue in the case shall be analyzed through the use of a SWOT analysis and a fishbone diagram that depicts additional explanation of the problem.

SWOT ANALYSIS

Strength

- Round the clock access to customer information
- Timely access to information
- Enhanced accuracy of banking transaction
- Enhanced efficiency arising from automation
- Streamlining operational costs due to enhanced information systems
- The diversity that assists to capture different types of markets because the services are available over the internet
- Sophisticated technological products
- Ability to provide the customers with more than one channel to access banking information

Weaknesses

- Large initial capital outlay required for expensive IT infrastructure
- Clients have different options

- Hostility from employees due to looming retrenchment as a result of cost cutting initiatives driven by modern technology
- Persistent wants of customer wants and needs
- Increased cost of service

Opportunities

- Possibility of an extensive customer base
- Ability to leverage on electronic banking products such as internet and mobile banking
- Prospects of global expansion and due to international markets there is an excellent business opportunity

Threats

- Failure of products due to non-acceptance by customers
- Competitions arising from lower price operations
- Uncertainty of the banking sector
- Continual changing technology

The paper proceeds and analyzes some of the fundamental issues bedeviling the organization with their current system. It was recommended that ANC bank should acquire a modern state of the art solution that can assist in key business processes such as front and back office operations. Some of the proposed approaches towards deploying a robust and scalable solution include the Fishbone Diagram.

The fishbone diagram is a tool applied in quality management and it is used in organizations to solve individual problems. During creation of the diagram cross functional teams including the

support function staffs management, technical staff, and any other workers are used. Through cross-functional teams brainstorming sessions tend to transpire as success, because, a fishbone diagram is used to assist the organization acquire structured inputs from workforce within an enterprise.

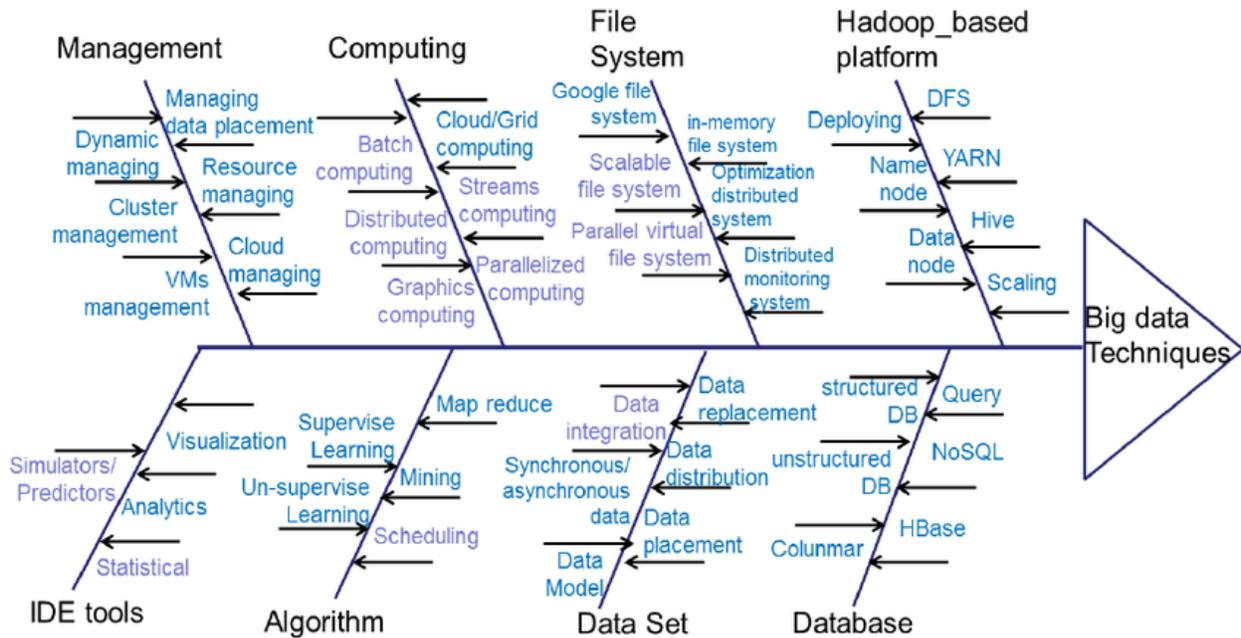


Fig 1.0 Proposed fishbone diagram for ABC bank

Solution

The paper proceeds and analyzes some of the issues faced by financial institutions using outdated manual systems and it came to our attention that such organizations should adopt a more enhanced solution to avoid such problems in future in order to bolster their businesses by regaining customer trust. Some of the proposed solution includes:

- The financial institution should revamp its existing IT infrastructure so that the bank can begin providing modern financial products and at the same time avail their services round the clock 24/7365
- Enhance the security of information systems so that the organization, employees, and customers feel safe whenever conducting transactions in the envisaged platform
- Avoid unnecessary delays when processing customer information or even when handling requests such as replacement of ATM cards or during instances when initiating loan requests and applications

Goals

- The main goals of the proposed solution is to provide an automated systems that satisfies both the organization and the customers in regards to secure and accurate transactions
- The system shall provide all the requisite information for the organization to run swiftly and efficiently by ensuring
 - Prompt financial reports
 - Provide data and information to be used by other systems
 - Safeguard both customers and corporate information

Data Flow Diagram (DFD) Modeling in Banking

A data flow diagram graphically depicts the flow of data and information within an information systems infrastructure. A DFD is applied in preliminary phases to develop an overview of the system without dwelling into intricate details that can later on be expounded. DFD reveals the information to be entered and output by the system, and how information travels before it is

finally stored inside a repository. However, the DFD does not reveal intricacies such as process timing or whether particular processes operate in sequence or parallel.

However, there are two kinds of DFD, the physical and logical. The logical illustrates data flow necessary for the system to operate by describing some of the processes undertaken, data required and produced by any process, and stores the data. The physical section illustrates how the system shall be implemented in terms of how the system designer envisages the solution. Therefore physical DFD can be used to elaborate on the set of data items appearing on pieces of paper moving across the office. There is also a possibility that physical DFD include references to duplication or redundant data, and the data store, and if deployed as database tables it comprises of a de-normalized database.

Due to the complexity of the system, we shall only elaborate modules centering on online banking facilities, because through online banking, the customer can virtually conduct all the transaction in a similar manner as if they were attending a physical or rather a brick and mortar banking facility. The paper provides a basic snapshot of the online banking system and the system is designed to illustrate branch, customer, and account type depicting the solution as a single high-level process with relationships to external entities on bank, account, and transaction. The high level entities and process flow of online banking system shall include modules that conduct the following transactions:

- Managing different account types
- Managing customers
- Managing branches
- Managing balances

- Managing transactions
- Managing individual account's
- Managing the entire financial institution

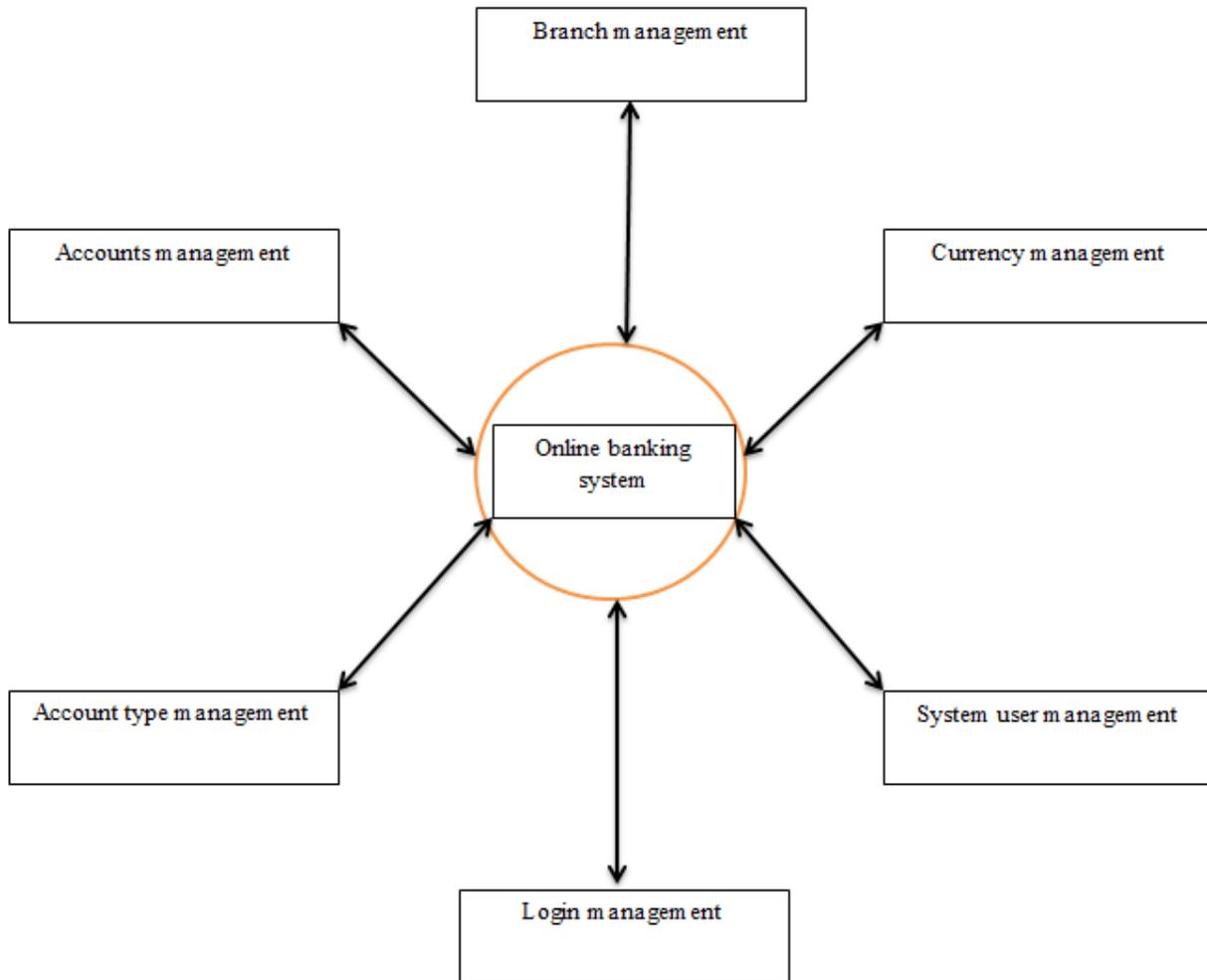


Fig: Zero level data flow diagram of the envisaged online banking solution

DFD first level in proposed online banking system

The first level depicts how the envisaged system is segregated into sub-systems or processes dealing with one or more data flows from external agents, and which together provides different

functionalities of the electronic banking system in its entirety. The system also identifies the internal data stores dealing with balances, branch, customer, account type and transactions which should always be present for the online banking system to operate error free and also illustrates the data flow between different departments of the organizations. The first level data flow diagram also gives a more comprehensive breakout of pieces as highlighted below.

- Processing account types and generating reports of a particular account type
- Processing customer records and generating their reports
- Processing branch records and generating corresponding reports
- Processing balance records and generating corresponding reports
- Processing transactions records and generating corresponding reports
- Processing account records and generating corresponding reports
- Processing bank records and generating corresponding reports

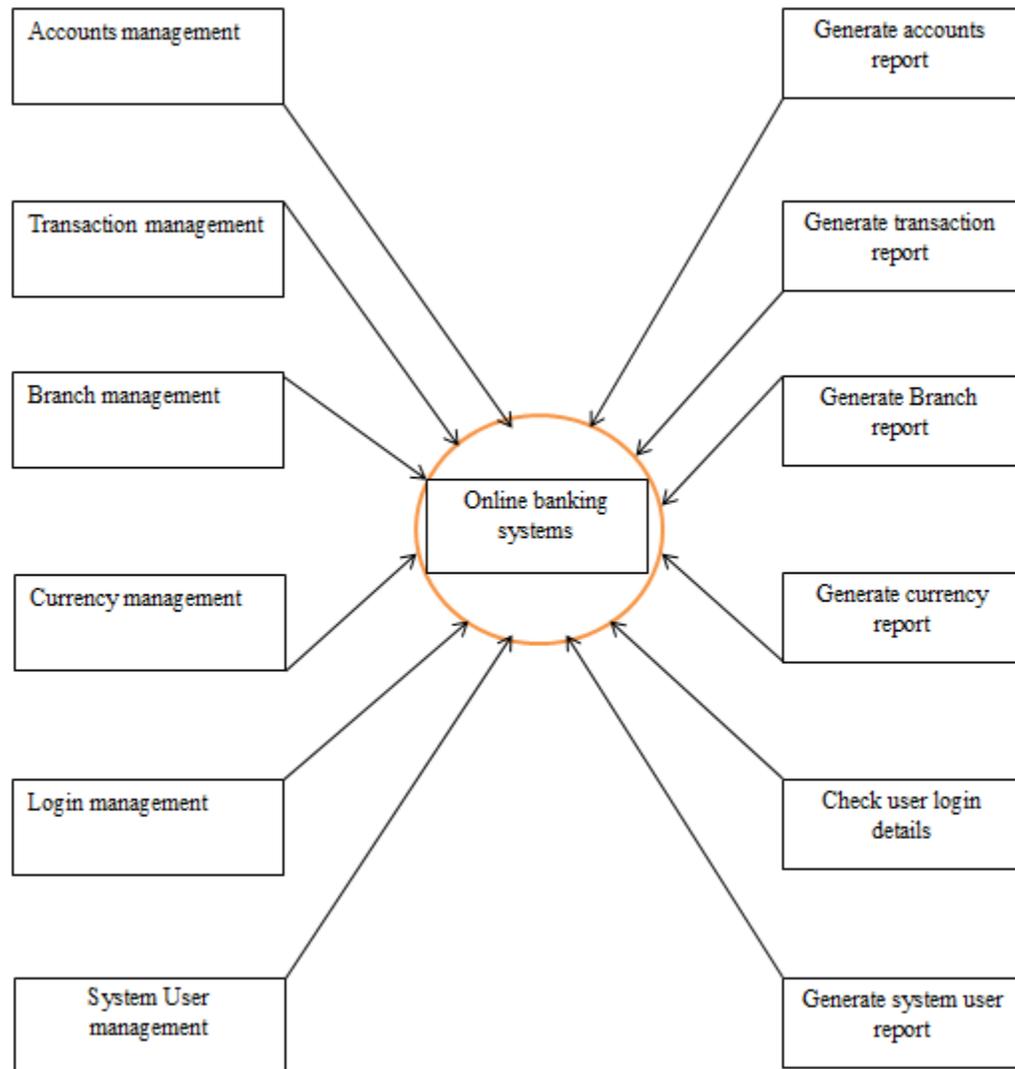


Fig: First level data flow diagram in the envisaged online banking solution

The Second Level Data Flow Diagram

The second level DFD trickles into deeper parts of level one and shall require more comprehensive functionalities to arrive at the necessary level of detail regarding online banking functionality. The first level illustrates how the system is clustered into several sub-systems or modules, while the second level shows comprehensive details in relation to the financial

institution, account, transaction, balance, branch, customer, and account type. Some of the typical low level functionalities of the online banking system entail:

- Ability of the system admin to track detailed information regarding branch, balances, and account type
- Ability of the admin to apply filters such as branch, balance, and bank
- Generating reports of customers, branch, balance, transaction, account, and bank
- Managing details of the customer, balance, and account
- Viewing, deleting, editing, and adding records of account type branch, transaction, and records of banks
- Admin logging into the system and managing diverse functionalities of the online banking system

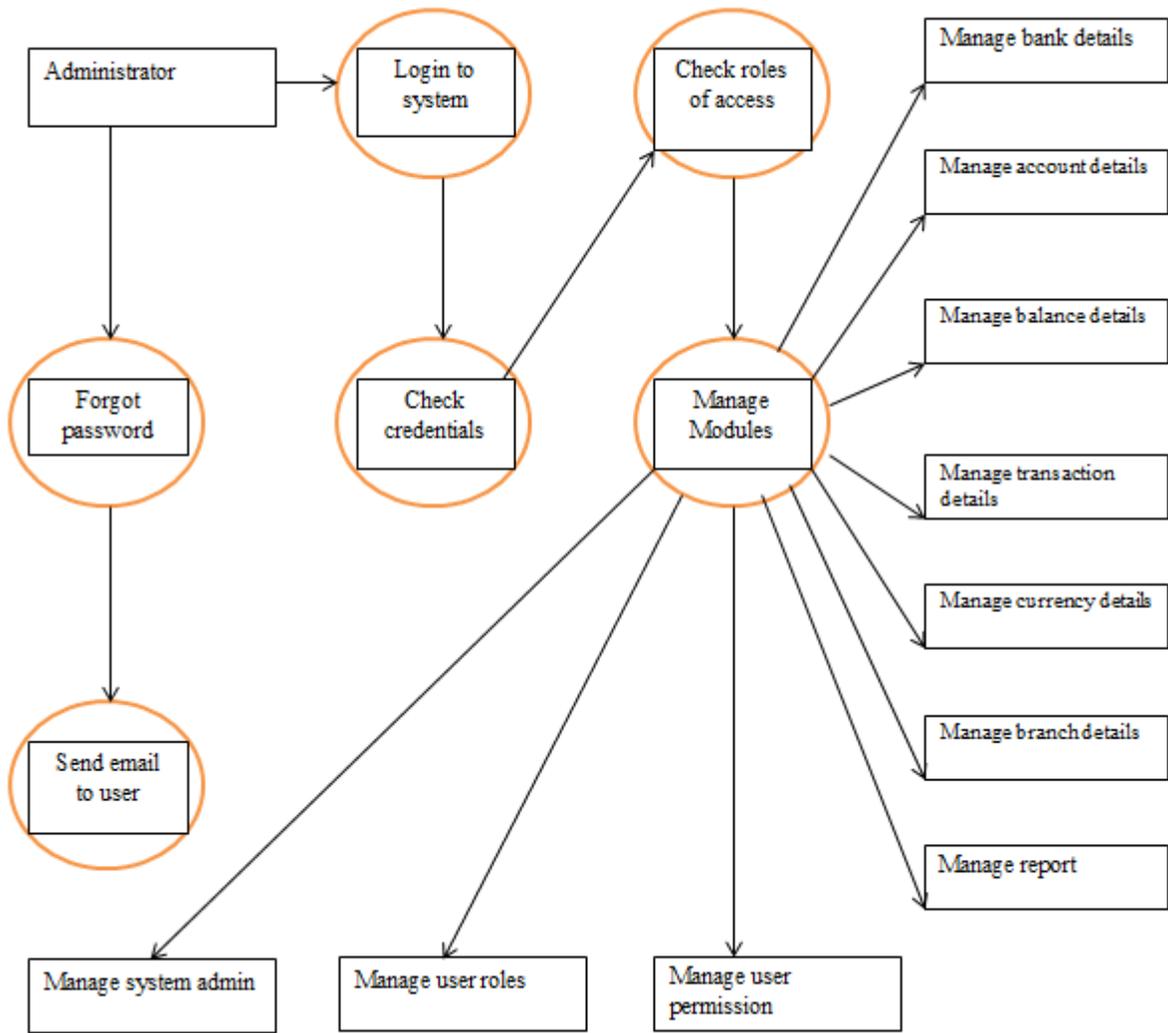


Fig Second level data flow diagram of the proposed online banking system