1. Introduction

DFCC started its journey in 1956[1] as 'Development Finance Corporation of Ceylon' which was subsequently changed to DFCC Bank and was the first bank for development finance projects in Sri Lanka. Now with more than 50 years relationship with the customers the reputation of the bank is very high thus attracting the major corporate client base in Sri Lanka. As of the 2007/08 the net credit portfolio stood at 47 billion rupees spread among more than 50,000 corporate clients [2]. DFCC Bank is a significant net transferor of financial resources to under developed regions of Sri Lanka [2]. For years, the Bank has been sourcing and channeling concessionary funds from bilateral and multilateral agencies to develop the small and medium enterprise sector, the benefits of which have reached thousands of people across the nation, making a difference in their lives, providing sustainable livelihoods and enhancing the quality of life of Sri Lankan[1].

DFCC Bank's core activity has been long-term project financing to the private sector. In response to market opportunities and demands, the Bank's scope of business was broadened to include investment banking, fee based services, venture capital, fund management, stock broking, consulting and commercial banking through subsidiaries and associate companies[1]. Today, DFCC Bank offers a gamut of financial services to its customers and is continuously looking for new horizons, reaching for greater heights and mapping new game plans to reach its vision of being the premier financial services group.

The following shows how the DFCC bank progressed during the past 50 years [2].

- May 1956 – DFCC Bank commences operations with share capital of Rs.8 million.
- Aug 2003 - Acquired 90% stake in National Mercantile Bank Limited. It was subsequently renamed as DFCC Vardhana Bank (DVB) after 95.6% acquisition by DFCC Bank and is being effectively used to make inroads into commercial banking sector. Presently DFCC Vardhana bank has established

more than 40 branches in strategic locations in all parts of the island, and they are now in the process of opening branch units within the post office network as well.

- Mar 2007 – starting with a meager share capital of Rs. 8 million in 1956, after years of consistent growth, as at now DFCC Banks total assets can be valued at more than Rs.63 billion. More than the monetary values, the greatest achievement has been, being able to help numerous medium and small-scale entrepreneurs realize their dreams and there by contributing towards the development of the nation as rightly expected of any development bank.

Main functions of DFCC are offering lending and leasing facilities to its customers. For DVB it is retail banking facilities, such as savings accounts, current accounts (with o/d facilities), fixed deposits, pawing facilities and international banking transactions. The following figure (figure 1.1) illustrates the main activities.
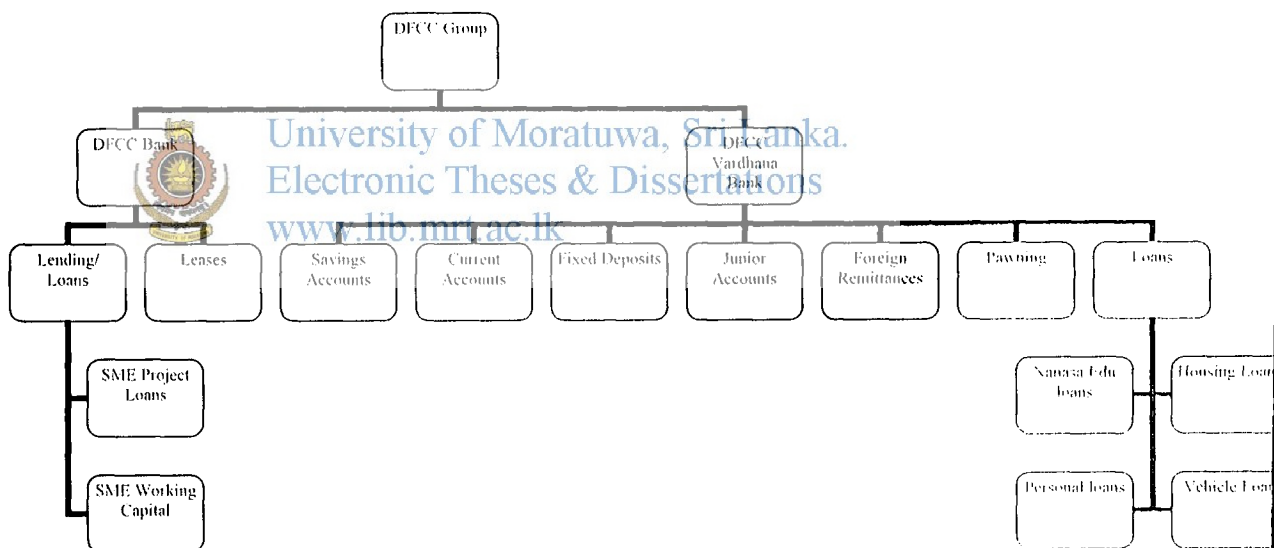

Figure 1-1: Main functions of DFCC

For the banking activities both banks have several systems from different vendors.

1.1. Application systems used by DFCC bank

The DFCC Bank mainly concentrates on lending areas of loans and leases. DFCC bank depends on following applications for its day-to-day operations.

- 'Net SYMBOLS' Core banking application
- Loan Origination ('LO') – Loan application tracking with workflow management.
- 'SkyBank' leasing application - supports the leasing facilities.
- 'Oracle Financials' – set of books for DFCC accounting activities
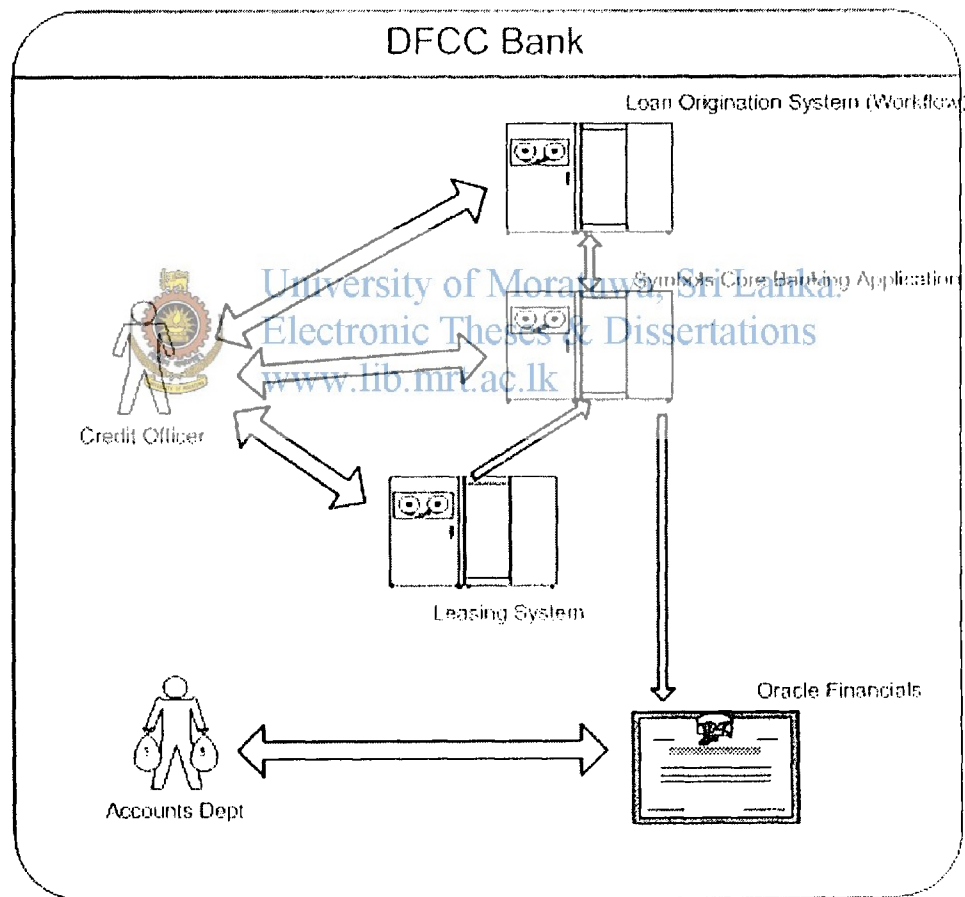
Illustrated in figure 1.2.

Figure 1-2: Application Systems used by the DFCC Bank

1.1.1. Activity diagrams for the loan process of the DFCC Bank

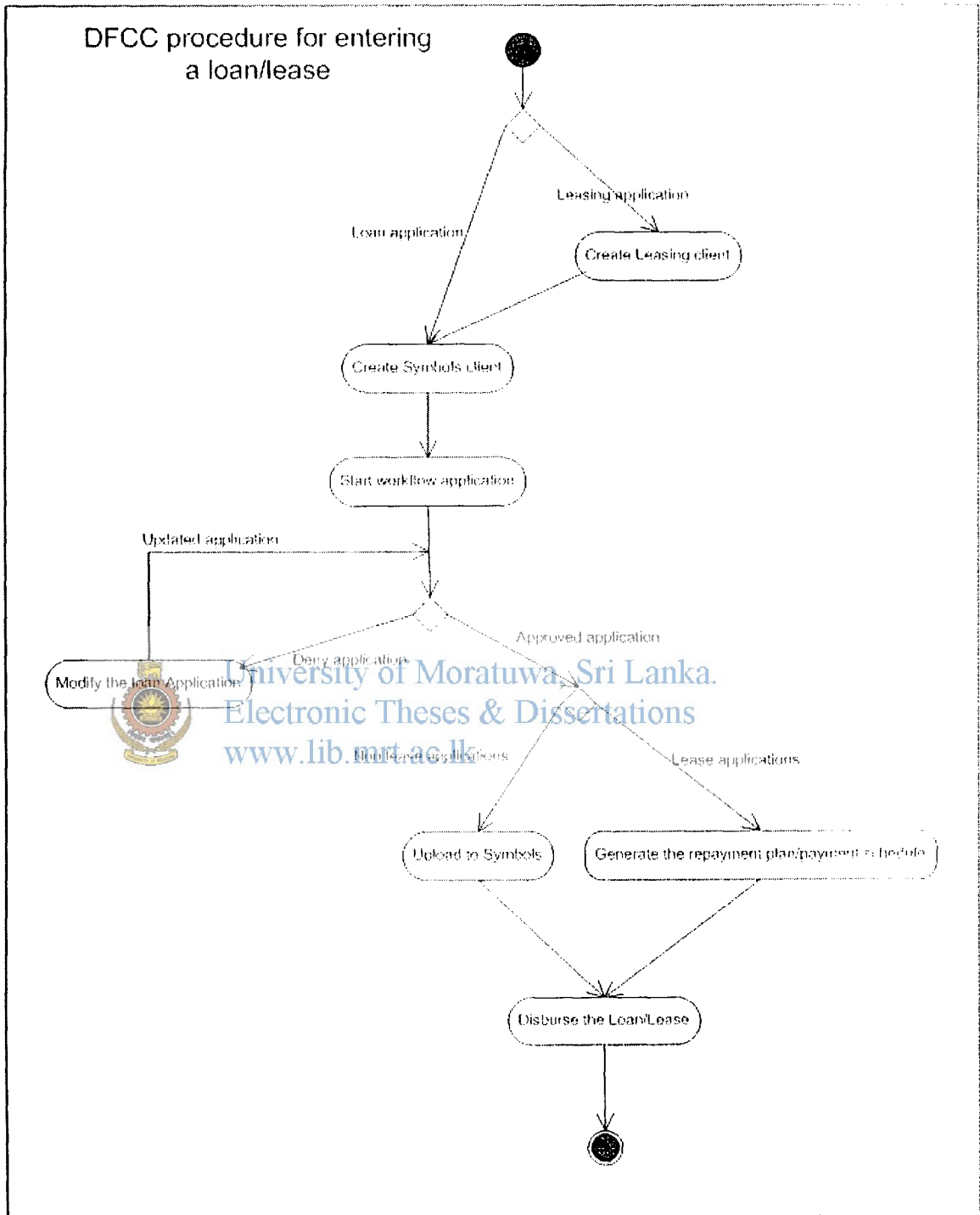**DFCC procedure for entering a loan/lease**

Figure 1-3: Activity diagrams for the loan process of the DFCC Bank

1.2. Application systems used by DFCC Vardhana bank (DVB)

The DFCC Vardhana Bank is the subsidiary commercial bank of the DFCC group.
DVB has implementations of following applications.

- 'Net SYMBOLS BT' Branch Teller application
- 'Net SYMBOLS RB' Retail banking application
- 'Bank Trade' application supports e-Commerce type of operations
- 'SWIFT' facility - supports inter bank money transfers.
- 'ATM Switch ware' – supports Automatic Teller Machine (ATM) functionality
- Pawing System for pawing approvals
- 'Oracle Financials' – set of books for DFCC Vardhana Bank accounting activities

Illustrated in figure 1.4.

DFCC Vardhana Bank

ATM Server

ATM

International SWIFT network

Symbols Core Banking
Application

SWIFT

Bank Officer

Bank trade System

Symbols Branch Teller Application

Oracle Financials

Accounts Dept

International Dept
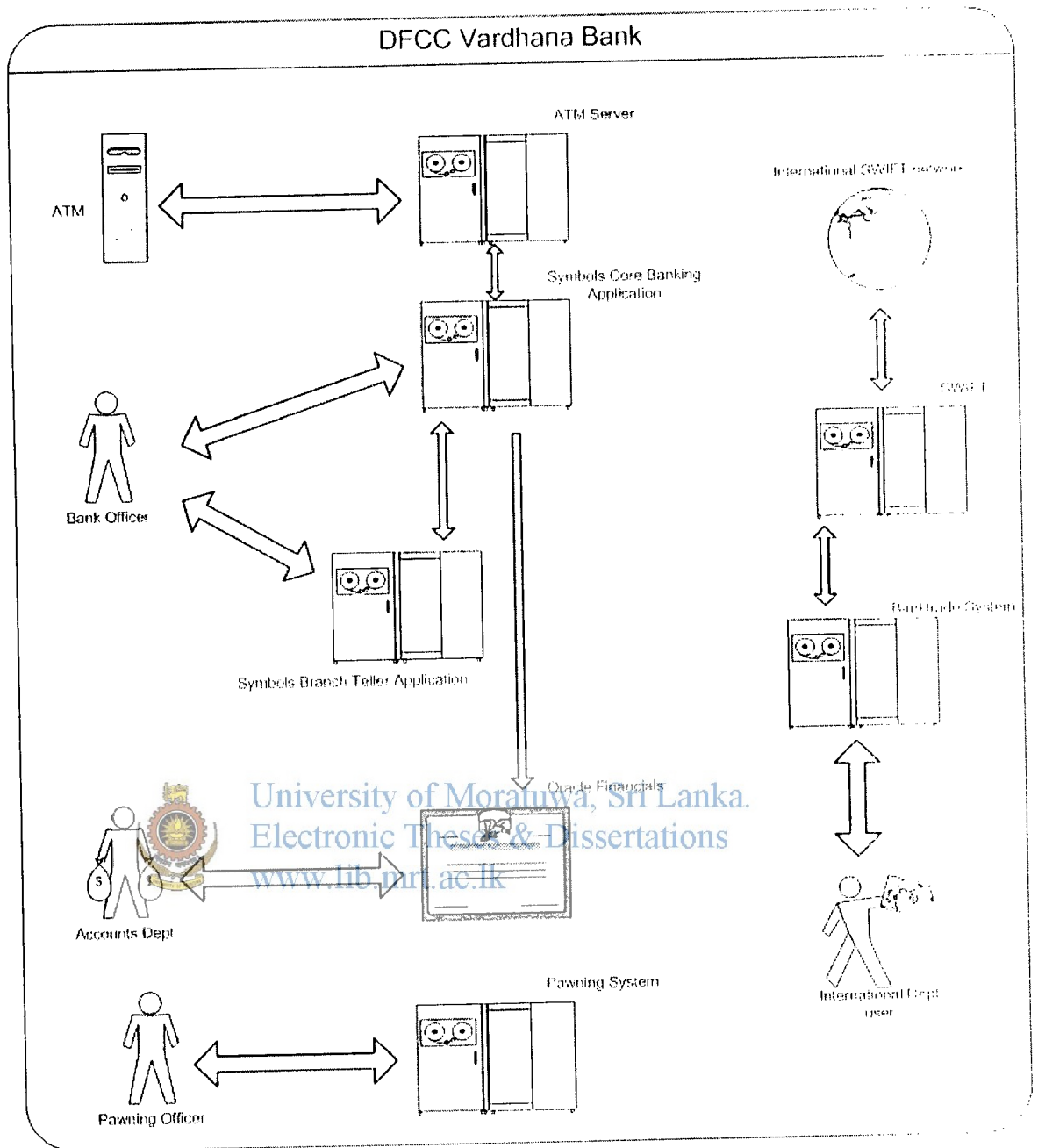user

Pawning System

Pawning Officer

Figure 1-4: Application systems used by DFCC Vardhana bank (DVB)

1.2.1. Activity diagrams for the banking process of the DVB

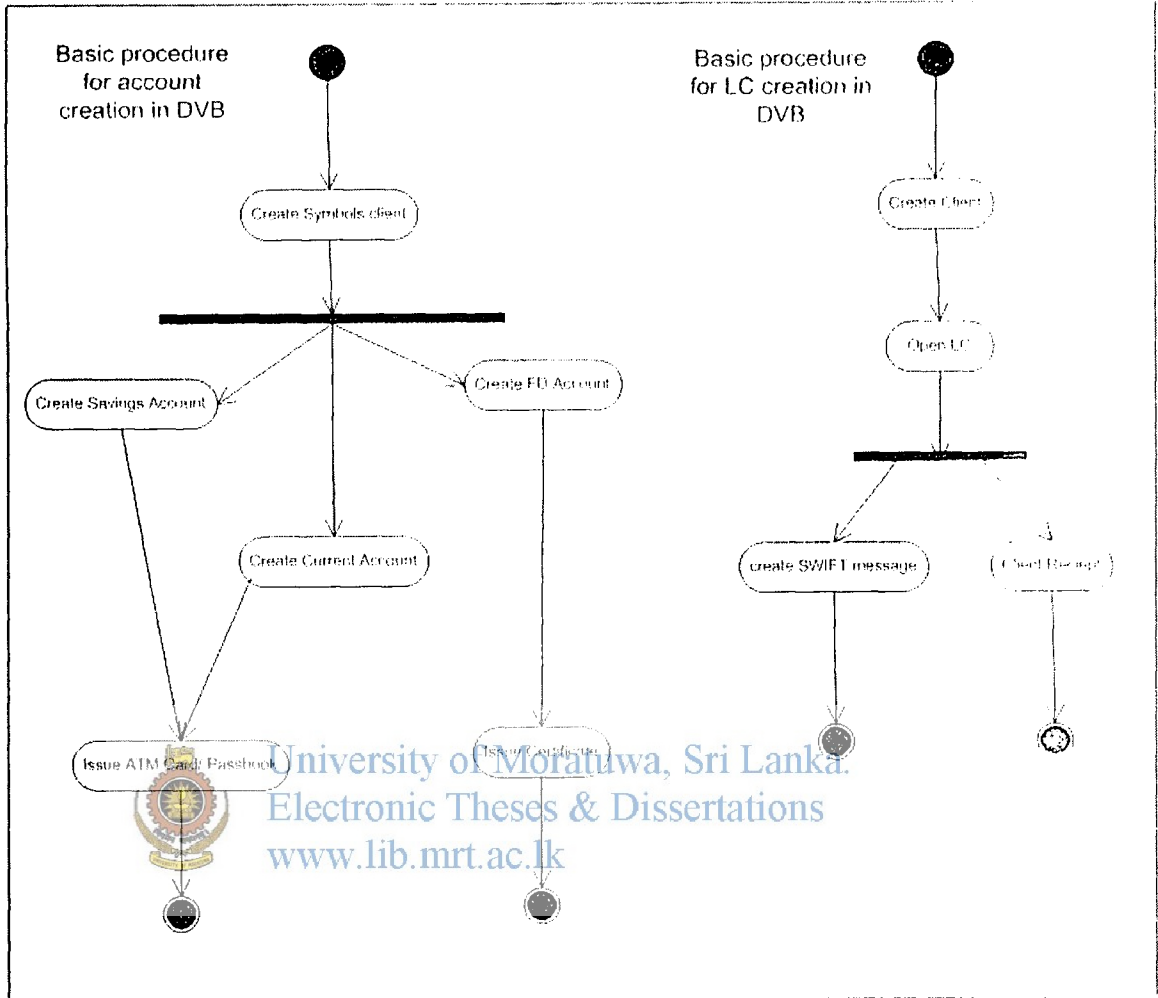Figure 1-5: Activity diagram for the banking process of DVB

1.3. Problems and weaknesses of the manual system

As mentioned in the above there are several systems that run on the DFCC and DVB banks. Thus any information generation is very time consuming (timing data gathered are mentioned in chapter 2), might be erroneous and could be even manipulated. This is illustrated in figure 1.6.

The following are some of the information requirements of the management and of the customers.

- Tracking of the foreign funds that get transferred out side the country.
- The customer/group portfolio thus no information on the exposure before granting a loan.
- Assets and liability reports from all the systems.
- A groups global position
- Branch wise credit positions
- Gather information on a specific product category (Commercial SME project, Vardhana Nanasa loan scheme) in respect to branches.

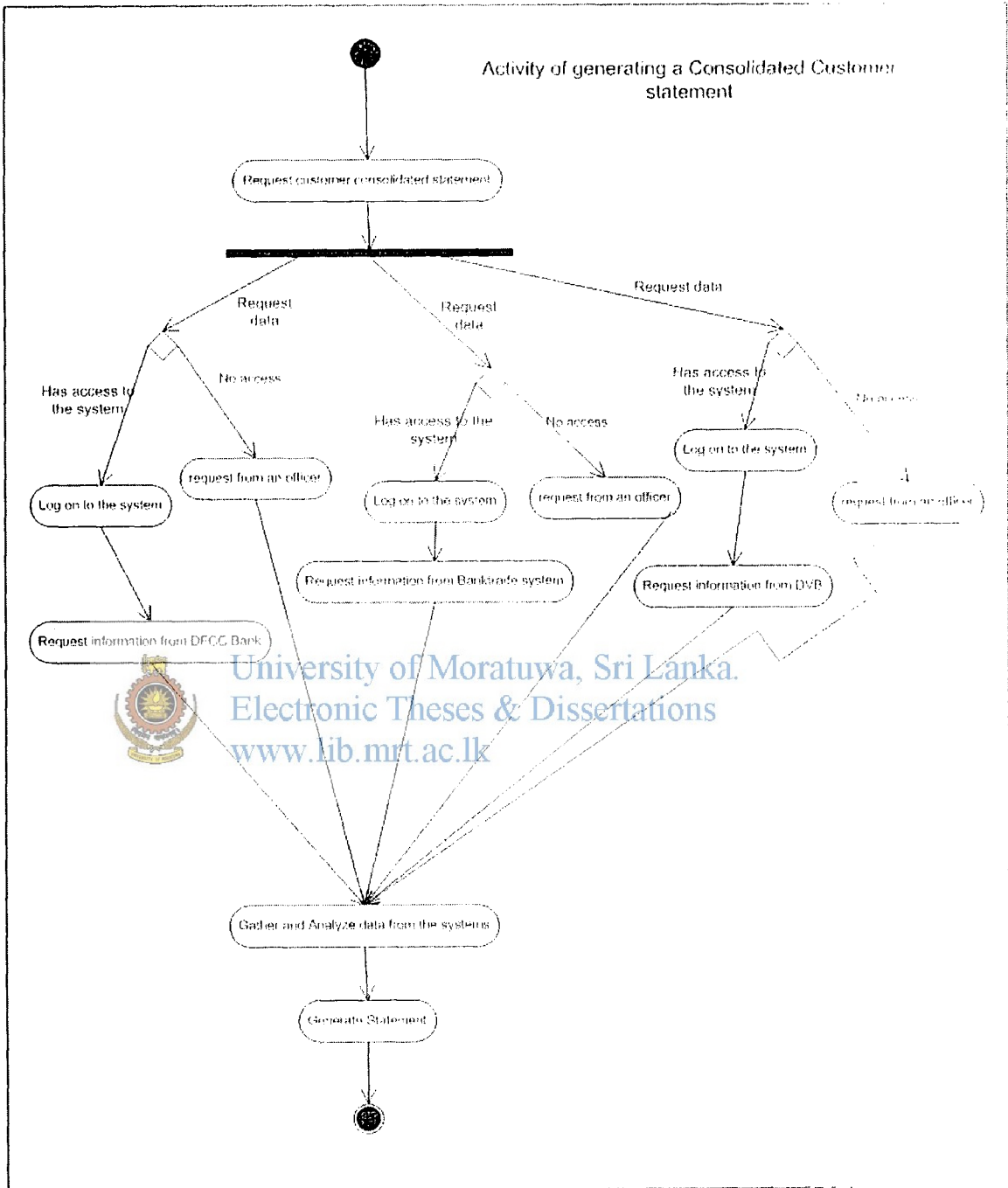## 1.4. Activity of a MIS executive – consolidated customer statement

Activity of generating a Consolidated Customer statement

Figure 1-6: Activity of a MIS executive

1.5. Project aim and objectives

1.5.1. Aim

The main objective of the proposed application is to provide solutions to below stated problems and facilities for any other future requirements

1.5.2. Objectives

- To provide end users with single point of access to meaningful analytical data, integrated from three OLTP systems, which otherwise needs to be viewed by logging into all three transaction systems.
- Be able to create reports which support functionalities such as slicing, drilling and pivoting on data to make maximum the use of information.
- System should facilitate users to run parameterized predefined reports using filters and facility to schedule lengthy time consuming reports.
- Due to the nature of banking information, security of the data to be maintained at required levels at all times by means of implementing role based password security and to prevent unauthorized access to data.
- System to maintain historical as well as current data for trend identifications and at the same time summarized data for faster query response.
- Ability to group related information together and to provide a global view of a parent (groups) company's exposure. Drilling into consolidated figures should reveal detailed figures of its siblings.

1.6. Scope of the project

The scope of this project is restricted to extract & integrate data from following three systems initially, only due to time & resource limitations.

DFCC Bank - 'net Symbols' CORE banking Application

DFCC Vardhana Bank - 'net Symbols' RB & BT Applications

DFCC Vardhana Bank - 'Bank Trade' e Commerce Application

Data in the data warehouse will be synchronized with the production data only up to the previous end of day position. This is because extracting information from the OLTP systems during production hours would compromise the performance of OLTP

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systems, which is undesirable. Also not to mention the additional network traffic it may cause.

Tools to be used in building the Data warehouse

- Oracle data warehouse builder
- Oracle Business Intelligence tools
- SQL scripting (Toad)
- MS Office suite

Development environment

- Oracle Data warehouse
- Oracle Business Intelligence Enterprise Edition
- Windows XP

1.7. Deliverables

- Oracle Database data structures such as table creation scripts and master data population scripts.
- Discoverer Administrator layer creation dump and Metadata setting up information for implementation purposes.
- Backend data mappings from source systems to staging and data warehouse
- Pre-defined Discoverer reports aligned to business requirements.
- Analysis of business requirement & System Design documentation.
- User guide and Technical guide

1.8. Parameters for the measurement of success

To measure the accuracy of the reports generated from the new application is by comparing with the respective reports from the 3 systems.

User reviews, feedback from the users will also help to measure the accuracy of the product.

1.9. Risk and risk mitigation plan

1.9.1. Risks

- Due to the limited knowledge on software tools (Oracle Suite) to be used, the learning curve involved in mastering the implementation software tools is a bit of a concern.

- Success of the project completion within the given time frames is also somewhat dependent on bugs encountered on software tools themselves, compatibility issues arising due to product versions and the means of overcoming them.

- Identification and extraction of required information from multiple source systems and data compatibility issues surrounding them, maybe due to unavailability of source code or proper technical documentation might create some serious delays.

- Security of the confidential data of the customers will be with the users of the system

1.9.2. Mitigation plan

- Getting the required knowledge on tools beforehand

- This system will only be given to the Management and only to the users who are authorized by the management

1.10.   The client

Mr. Neville Fernando.

VP – Business Development, Group IT.

DFCC Bank,

73, W. A. D. Ramanayake Mw.

Colombo 2.

Structure of the dissertation

The outline of the dissertation will be as follows. Chapter 2 will explain the Problem domain and chapter 3 will explain the Technology Adapted. Chapter 4 and 5 will describe Approach to the solution and Analysis and Design respectively. Chapter 6 will cover the Implementation and chapter 7 will cover the Evaluation of the deliverables. Finally Chapter 8 will explain the Conclusion & Further works to be done.

Next chapter will cover more on the problem domain.