Implementation User Guide

Oracle FLEXCUBE Universal Banking

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ORACLE

Implementation User Guide
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1. Preface

1.1 Introduction

The objective of this manual is to provide an understanding to the Oracle FLEXCUBE implementation team at Oracle Financial Services Software and the site, of the various steps, components, tasks and requirements to implement Oracle FLEXCUBE.

This manual highlights the most common implementation activities to be performed. Further, detailed background information on the objectives and the requirements for each major implementation task is also provided in the manual.

This manual applies to Oracle FLEXCUBE implementations in all business units. Some of the activities may be carried out in parallel and will commence well in advance of the actual Oracle FLEXCUBE installation. Because of this, each branch will have a designated project manager from Oracle Financial Services (formerly i-flex), who will coordinate all activities.

It is important to establish what an Oracle FLEXCUBE implementation involves. This can be broadly divided into three phases, as follows:

- Pre-implementation
- Implementation
- Parallel Run

Pre-Implementation phase consists of all activities that have to be carried out before the project team from Oracle Financial Services (formerly i-flex) arrives at the site. These activities typically include recommending the hardware configuration needed for Oracle FLEXCUBE, preparation of the project plan and identifying the project team from Oracle Financial Services (formerly i-flex). On the client side, the activities could include installing and setting-up the hardware, network, system software and ensuring the availability of other facilities requested by Oracle Financial Services (formerly i-flex).

Implementation phase consists of installing Oracle FLEXCUBE software, user training, data base design and financial conversion leading up to the start of parallel run. Our project manager is responsible for installing Oracle FLEXCUBE software and conducting user training. The project manager will also provide all necessary help to the branch users for other activities in this phase and coordinate with the branch officer responsible for this phase to ensure success.

Parallel Run will involve running existing system along with Oracle FLEXCUBE and reconciliation of the output until dropping off the old system and going live on Oracle FLEXCUBE.

The Oracle FLEXCUBE Implementation team, under the auspices of the Project Manager will assist the branch in completing each phase of the implementation task.

1.2 Audience

This manual is intended for the following User/User Roles:

Role	Function
Back office data entry Clerks	Input functions for maintenance related to the interface.

Back office Managers/Officers	Authorization functions.

1.3 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

1.4 Critical Patches

Oracle advices customers to get all their security and vulnerability information from the Oracle Critical Patch Update Advisory, which is available at Critical Patches, Security Alerts and Bulletins. All critical patches should be applied in a timely manner to ensure effective security, as strongly recommended by Oracle Software Security Assurance.

1.5 Organization

This manual covers all the necessary stages involved with implementing Oracle FLEXCUBE in any banking or financial services organization. The manual is organized as follows:

Chapter	Description
Chapter 1	*About this Manual g*ives information on the intended audience. It also lists the various chapters covered in this User Manual.
Chapter 2	*The Homework* describes the structure of Implementation teams and the Project plan. The project plan explains all the major activities such as who is responsible and start/completion dates. It is to be used by the Project Manager from Oracle Financial Services (formerly i-flex) and Senior Branch Manager as a Navigation Chart in determining quickly where we are, what has been done, what remains to be done. The plan is updated weekly or twice a month and distributed to Branch Management, Oracle Financial Services (formerly i-flex) Management and Audit Division.
Chapter 3	*Audit Requirements* describes the necessary procedures to be used during the implementation of Oracle FLEXCUBE.
Chapter 4	*Database Design* describes the essential information gathering process for designing the Database. Database design for the purpose of this section mainly involves identifying the Bank/Branch level and core parameters, designing chart of account, crystallizing front end products and product level parameters, Limits and MIS requirements.
Chapter 5	*Data Input* describes suggested methodology translation of the Database set-up plan in chapter 5 into the Oracle FLEXCUBE Table. The activity primarily involves static database (non-financial) input.
Chapter 6	*Database Callback* describes the tables and fields that have to be verified after the initial Database design and input is completed. Based upon the review further changes maybe required and the callback performed on an ongoing basis, until the database is correctly setup.
Chapter 7	*System Trial Run* describes how the branch staff should conduct a trial run of the system to ensure that Oracle FLEXCUBE software and hardware is functioning properly and in a controlled manner.

Chapter 8	*Financial Conversion* describes how the conversion process (loading of financials into Oracle FLEXCUBE for the first time) will take place for branches that are currently manual or migrating from an existing automated system including MicroBanker to Oracle FLEXCUBE.
Chapter 9	*Parallel Run* explains how the postings on Oracle FLEXCUBE and the existing system (manual or otherwise) will be conducted, the callbacks and reconciliation to be performed.
Chapter 10	*Contingency Plan* describes the procedures to be followed in case of disruption of business due to abnormal or emergency situations.
Chapter 11	*Post- Implementation Review* describes the criteria to be used in a post-implementation review, which will be conducted by QAG team from Oracle Financial Services (formerly i-flex). The thrust of this review is to ensure that the implementation process, as defined in the Implementation Manual has been followed, audit/control issues have been adhered, and how the next implementation can be improved. Relevant feedback from this review will be incorporated into the implementation manual.
Chapter 12	*Implementation Sign-Off* describes the list of activities to be completed before getting sign-off from the branch.

1.6 Abbreviations and Abbreviations

The following abbreviations and jargon have been used in the manual:

Abbreviation	Description
DBA	Database Administrator
GL	General Ledger
OS	Operating System
POIROT	Problem Incident Recording and Tracking System
RDBMS	Relational Database Management System
BC	Bills & Collections
FC	Oracle FLEXCUBE
FT	Funds Transfer
FX	Foreign Exchange
IC	Interest & Charges
LC	Letters of Credit
LD	Loans & Deposits
MM	Money Market
RE	Reconciliation

SE	Securities
SI	Standing Instructions
SV	Signature Verification
SFR	Software Fix Report
SPC	Single Point of Contact
Front end	Refers to FX, MM, FT, LD, LC, BC, SE and SI modules

1.7 Glossary of Icons

This User Manual may refer to all or some of the following icons:

Icons	Function
	Exit
	Add row
	Delete row
	Option List

2. The Homework

There are a number of things you have to do in those order has been signed and my papers are being processed days. This chapter outlines these activities.

Coming first in the list of a number of things are the following:

- Structure of the implementation teams
- The project plan
- Methodology for status reports

Note

Add informing people back home about your address and telephone number at the project site, and the contact person at Oracle Financial Services (formerly i-flex).

This chapter contains the following sections

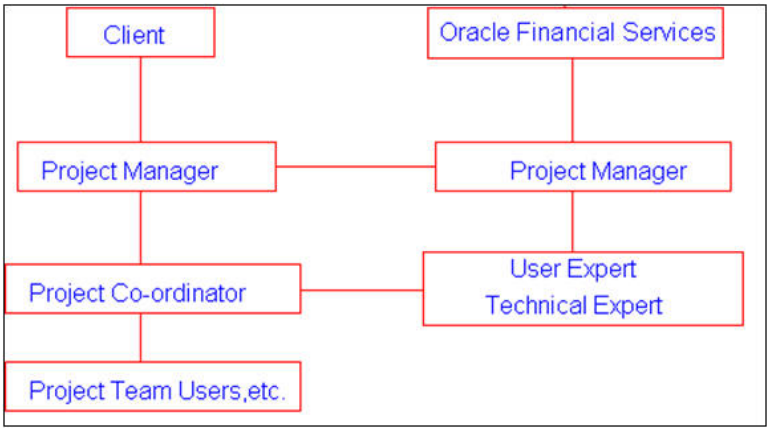
- Section 2.1, "Structure of Implementation Teams"
- Section 2.2, "The Project Plan"
- Section 2.3, "Methodology for Status Reports"
- Section 2.4, "Components of the Project Plan"

2.1 Structure of Implementation Teams

The Implementation Team from will comprise one or more members, of which one member will be identified as the Project Manager. Reporting relationships between the members of the implementation team and the head of implementation should be clearly understood.

At its end, the bank will identify a Project Manager, who will be a single point of contact between the team from Oracle Financial Services (formerly i-flex) and the bank. A thorough knowledge of the team structure helps establish and sustain the communication links amongst the implementation members.

A typical structure of the Implementation Team is illustrated below:



2.2 The Project Plan

A tentative project schedule should be drawn up, listing the major activities and the proposed time frames. It will help you define the goals of the project and give you a fair idea of the work involved. When all the details of the project are known, this schedule can be enriched to generate a comprehensive project plan. This plan will include time frames, resource requirements and utilization of resources.

The project managers of the implementation project, both from Oracle Financial Services and the bank should draw up the project plan. It should be modified (if necessary) and updated periodically. Communication about the project plan, its progress and modifications should be copied to the following people. Who should be directly involved in project planning at their respective levels:

- Senior Operations Manager of the bank
- Project Manager from Oracle Financial Services (formerly i-flex)
- Project Manager from the bank
- Financial Controller of the bank
- Head of Information Technology Division
- Head of the Internal Control Unit

The project plan should clearly identify duties, responsibilities and the tentative dates for start and completion of various activities. The progress should be monitored at regular intervals.

2.3 Methodology for Status Reports

A formal and regular reporting process should be established at the very beginning of the project and continued till it ends. This ensures that progress is monitored regularly and problems are highlighted appropriately; thus not giving scope to any conflicts in the future.

Status Reports are of two types. Current Status Report should be sent to the Head of Implementation every fortnight from the day you begin the project. Another type of report is the Support Status Report generated every fortnight after the bank is live on Oracle FLEXCUBE. This report should be addressed to the Single Point of Contact with the bank and copied to the Implementation Head and Head of Global Support at Bangalore.

The Current Status Report should give the following information:

- Work completed during the fortnight.
- Work scheduled for the next fortnight.
- Problems encountered during the fortnight.
- Billing details.

The following is a sample Current Status Report:

Current Status Report:

1. The Project: Implementation of Oracle FLEXCUBE at First Commercial Bank at Melbourne, Australia (FCB)

2. The People:

CustomerMs. Annabel Smith (IT Head)

Mr. Jim Hacker (Systems Manager)

Oracle Financial Services Sylvia John

Ramkrishnan S

3. Reporting Period:15/03/98 to 31/03/98

4. The Schedule

Activity	Plan Start	Plan End	Actual Start	Actual End	Responsibility	Remarks
S/w Installation	15/03	19/03	17/03	20/03	Oracle Financial Services	Given below
User Training	22/03	25/04	23/03	In progress	Oracle Financial Services	Given below
Database Set-up	24/03	30/04	24/03	In progress	Oracle Financial Services	Given below

Remarks: Software installation was delayed because hardware was not available. User training was delayed because a few key users were on leave. Database set-up has begun.

5. Action Items:

Activity	Plan Start	Plan End	Actual Start	Actual End	Responsibility	Remarks
Code Structures	08/04				FCB	
General Ledger	08/04				FCB	
List of Customers	08/04				FCB	

6. Achievements during the period:

Software installation completed.

User training for Data Entry module completed.

7. Outstanding Issues:

None

8. Plan for the Next Fortnight:

User training for Foreign Exchange and Money Markets. Database set-up for Branch Parameters, Customers, General Ledger.

9. Billing details:

Professional working days: 10 working days + 1 Saturday

Milestone achieved for billing: S/w installation

Expenses to be billed to client: Airfare and incidental expenses to Melbourne.

2.3.1 Support Status Report

The Support Status Report should be generated after the branch has cut-over to live. This report is a summary of the problems solved during the fortnight. The number of problems raised, solved and outstanding should be listed first, followed by a brief description of the problems and solutions provided. For outstanding problems, the proposed course of action should be stated.

The following is a sample Support Status Report:

Support Status Report

Reporting Period: 16/02 to 30/03

1. The Statistics

Category	Queries	Problems
Brought forward from last report.	05	09
Received in this period.	02	00
Solved/Answered.	05	04
Not a problem.	00	00
Referred back to the bank for more information.	00	00
Outstanding.	02	05

2. Description of queries answered

Query on Accounting Role Mapping Explained.

3. Description of problems solved

Minor UI error on Journal Entry input form (Till No 001).

4. Outstanding Problems

Another Minor UI Error on SV form (being Fixed).

5. Information awaited from Site

Problems faced in implementing the solution for changing term deposit contracts.

2.4 Components of the Project Plan

An implementation project can be divided into various phases. The format for the plans for these phases is given in this section.

This section contains the following topics

- Section 2.4.1, "Management Summary of the Project"
- Section 2.4.2, "Project Plan for the Bank"
- Section 2.4.3, "Implementation Team"
- Section 2.4.4, "Project Monitoring"
- Section 2.4.5, "Hardware Planning"
- Section 2.4.6, "Hardware/Software Installation"
- Section 2.4.7, "Client Workstation Requirements"
- Section 2.4.8, "User Documentation"
- Section 2.4.9, "Oracle FLEXCUBE User Training"
- Section 2.4.10, "Security Management System and Controls"
- Section 2.4.11, "Branch Database Design"
- Section 2.4.12, "Static Data Input"
- Section 2.4.13, "Oracle FLEXCUBE System Trial Run"
- Section 2.4.14, "Contingency Plan"
- Section 2.4.15, "Stationery"
- Section 2.4.16, "Job stream formulation"
- Section 2.4.17, "Pre-conversion trial run"
- Section 2.4.18, "Financial conversion"
- Section 2.4.19, "Parallel Run"
- Section 2.4.20, "Index"

2.4.1 Management Summary of the Project

This master plan identifies the dates, responsibilities and status of the various phases of implementation. This plan is a good reference for the management at the bank and Oracle Financial Services for monitoring the project. This plan should be in the following format:

Activity	Who	PS	PE	AS	AE	Status
Project plan preparation.						
Hardware installation.						
Communication drivers installation.						
Oracle installation.						
Oracle FLEXCUBE installation.						

User training.						
Data Center Staff training.						
Database design.						
Database set-up / Static conversion.						
System trial run.						
Financial conversion.						
Parallel run.						

2.4.2 Project Plan for the Bank

Objective

To prepare the project plan for the implementation of Oracle FLEXCUBE at the site

Activity	Who	PS	PE	AS	AE	Status
Discuss strategy with Oracle Financial Services .						
Prepare draft plan.						
Finalize plan.						
Finalize contracts, agreements, etc.						

Milestones

2.4.3 Implementation Team

Objective

To select a team of personnel from the bank, who will be responsible for the implementation of Oracle FLEXCUBE.

Activity	Who	PS	PE	AS	AE	Status
Evaluate activities and personnel needed.						
Select the Project Manager for the branch.						
Select the implementation team for the branch.						
Define responsibilities.						

Milestones

2.4.4 Project Monitoring

Objective

To monitor the project by holding meetings and reviews

Activity	Who	PS	PE	AS	AE	Status
Form the Automation Committee for the branch.						
Conduct weekly meetings.						
Send fortnightly status reports.						

Milestones

2.4.5 Hardware Planning

Objective

To plan, organize and complete all the preparatory work for setting- up the hardware required for the implementation of Oracle FLEXCUBE.

Activity	Who	PS	PE	AS	AE	Status
Oracle Financial Services to recommend hardware configuration.						
Decide on hardware Configuration.						
Decide-Import Hardware or to buy locally.						
Budget approval.						
Order Hardware.						
Clear hardware from customs or acquire it.						
Finalize support.						

Milestones

2.4.6 Hardware/Software Installation

Objective

To install hardware/software at the site for operation of Oracle FLEXCUBE

Activity	Who	PS	PE	AS	AE	Status
Install recommended hardware.						
Test hardware and workstations.						

Install UNIX .						
Install Oracle on server.						
Install Oracle on client.						
Install SQLNET.						
Install DEV2000/Forms/JDeveloper/PL-SQL Developer/Reports Runtime etc.						
Install Third party software - Business Objects/ BIP/OBIEE/BPMN/Control Software. Installing JRE/MSXML and required software on client machine for accessing Oracle FLEX-CUBE Application. Get the versions supported from DBA team.						
Install third party hardware – Scanners.						

2.4.7 Client Workstation Requirements

The following software needs to be installed on Internet Explorer.

- IE Version – 6.0 and above
- MSXML Parser – 4.0
- Please look for msxml4.dll under C:\Windows\System32 directory. Ensure that the option to hide system files is not chosen. If the dll is not there, install MSXML Parser 4.0.
- JDK Version – 1.5.0_03 and above
- To check the version installed on your machine, go to command prompt and execute 'java –version'.
- If the version is 1.5.0_03 or above, it is fine.
- Otherwise, get JDK 1.5.0_03 or above installed on your machine.
- JRE Version – 1.5.0_03 and above

To check and activate the installed version on your workstation, do the following:

1. Open Internet Explorer
2. Go to Tools Menu → Click Internet Options
3. Go to Advanced Tab → Scroll down and you should see Java (Sun), under which option Use Java 2 v 1.5.0_03 for applet.
4. Check this option.
5. If either the option is not available or the version no is lesser than 1.5.0_03, install JRE 1.5.0_03 or above on the system.
6. After installation, go to Control Panel.
7. Double click on Java Plug-in
8. Go to advanced tab and select the appropriate JRE version.
9. Go to browser tab and select Internet Explorer and apply the settings

10. Restart the Internet explorer and you should see the changed settings.
11. The following intranet settings are required for running FCJ
12. Open Internet Explorer
13. Go to Tools Menu → Click Internet Options
14. In General tab, click on 'Settings…'. Choose the option for 'Check for newer versions of the stored pages' as 'Every visit to the page'
15. Go to Security Tab →Click on Local Intranet → Click Custom Level button
16. Set Enable for all the options that you can see.
17. Set Low Safety for safety options.
18. If the operating system in Windows XP, there will be an option 'Use Pop-blocker', this should be disabled.

Get the versions supported by the Database Administration team.

2.4.8 User Documentation

Objective

To provide user documentation to the bank before the implementation of Oracle FLEXCUBE actually begins.

Activity	Who	PS	PE	AS	AE	Status
Obtain user documentation.						

Milestones

2.4.9 Oracle FLEXCUBE User Training

Objective

To provide the personnel at site with relevant training in hardware, software and system usage

Activity	Who	PS	PE	AS	AE	Status
Identify training needs.						
Train Data Center staff on UNIX/Oracle?						
Train users on Oracle FLEXCUBE application.						
Obtain feedback on training.						

Milestones

2.4.10 Security Management System and Controls

Objective

To evaluate and choose the access structure for all functions of Oracle FLEXCUBE. Appoint a member of the Internal Control Unit as a Systems Administrator, to maintain a protected environment for Oracle FLEXCUBE.

Activity	Who	PS	PE	AS	AE	Status
Define security levels according to functions.						
Implement control procedure.						

Milestones

2.4.11 Branch Database Design

Objective

To choose a database structure in the system that will provide maximum advantage and flexibility.

Activity	Who	PS	PE	AS	AE	Status
Prepare database training plan.						
Conduct database training.						
Design database.						

Milestones

2.4.12 Static Data Input

Objective

To input the static data necessary for the branch, based on the database design. This is an activity that has to be carried out before the financial conversion.

Activity	Who	PS	PE	AS	AE	Status
Complete database input forms.						
Maintain database based on input forms.						
Check database against source documents.						

Milestones

2.4.13 Oracle FLEXCUBE System Trial Run

Objective

To conduct a system trial run to ensure that it meets the requirements of the branch and to familiarize users with Oracle FLEXCUBE functions.

Activity	Who	PS	PE	AS	AE	Status
Prepare system trial run plan.						

Prepare input data.						
Conduct system trial run.						
Branch sign-off.						

Milestones

2.4.14 Contingency Plan

Objective

To assess the risks and formulate a plan to minimize downtime in the event of a fault in the hardware or software or network

Activity	Who	PS	PE	AS	AE	Status
Complete risk analysis.						
Prepare contingency plan.						
Review contingency plan.						
Audit sign-off for contingency plan.						

Milestones

2.4.15 Stationery

Objective

To evaluate the stationery requirements for source documents, manager checks, demand drafts, customer account statements and advices.

Activity	Who	PS	PE	AS	AE	Status
Determine requirements.						
Order stationery.						
Acquire stationery.						

Milestones

2.4.16 Job stream formulation

Objective

To define the necessary job streams, start-of-day, end-of-day and end-of-month procedure.

Activity	Who	PS	PE	AS	AE	Status
Evaluate work flows.						
Document job streams.						

Define End of Day and End of Month procedures.						

Milestones

2.4.17 Pre-conversion trial run

Objective

To conduct a final system trial run on the Oracle FLEXCUBE software, UNIX software, Oracle and network, hardware before the actual financial conversion. This will ensure that the performance will be satisfactory.

Activity	Who	PS	PE	AS	AE	Status
Prepare trial run plan.						
Prepare trial run input data.						
Conduct trial run.						
Branch sign-off for financial conversion.						

Milestones

2.4.18 Financial conversion

Objective

To convert the existing financial data to the Oracle FLEXCUBE system

Activity	Who	PS	PE	AS	AE	Status
Define conversion strategy.						
Select conversion date.						
Financial conversion.						

Milestones

2.4.19 Parallel Run

Objective

To prepare a full parallel run plan. This involves running the old system in parallel with Oracle FLEXCUBE.

Activity	Who	PS	PE	AS	AE	Status
Prepare draft work flows and procedure.						
Finalize parallel plan.						
Parallel start.						

Obtain audit approval to end parallel.						
Start live operation.						

Milestones

2.4.20 Index

Who	The person responsible for completion of the task
PS	Planned Start
PE	Planned End
AS	Actual Start
AE	Actual End
Status	Status of event

3. Audit Requirements

This chapter outlines the audit requirements to be met by the implementation team. They can be broadly categorized into two types; controls and documentation of processes.

This chapters contains the following sections

- Section 3.1, "Controls"
- Section 3.2, "Project Documentation"

3.1 Controls

This section contains the following topics

- Section 3.1.1, "Controls during Software Installation"
- Section 3.1.2, "Controls during database Set-Up"
- Section 3.1.3, "Controls during System Trial Run"
- Section 3.1.4, "Controls while making a change to the Code"

3.1.1 Controls during Software Installation

The following is the list of processes to be followed before the software is installed on the main machine (the machine on which the bank will carry on its daily operations):

- The plan for the installation should be distributed to all the concerned people at the bank. This plan should explain how the software will be put into operation. The progress and changes in the plan should be notified regularly to all these people.
- The procedure for logging errors should be established. It should state the steps involved for recording and tracking errors.
- A hand-off note of the system should be given to the data center operations.
- The procedure for handling contingencies should be documented. The concerned staff should be aware of the reports that have to be used, if the system is not available due to hardware or software problems.
- Training for the Data Center operators, users and the System Administrator should be completed.
- All sign-offs should be completed.

3.1.2 Controls during database Set-Up

The database set-up should take place in a well-controlled environment. The characteristics of this controlled environment are as follows:

- If the data is to be uploaded automatically, a *written* approval should be obtained from the Manager - Operations. This approval should be obtained on the basis of the Database Design document and Conversion Plan Document prepared for this purpose. These documents should form the references for post-upload checks. Spread Sheet and Code translation tables used for upload also have to be verified and approved. The automated upload can be of two types. The input can be automated while the authorization is manual or both input and authorization are automated. In either case, a Maintenance Control List or List of Data uploaded should be taken immediately after the upload, which has to be signed-off by the Manager-Operations.
- The data should be input only after the concerned person authorizes the Software Data Input forms. Ideally, it should be prepared by the maker, checked by a checker, entered by the input clerk and the data input authorized by an authorizer.

- The entire database set-up should be signed-off by the bank s Internal Control Unit before the financial conversion begins.

3.1.3 Controls during System Trial Run

A trial run has to be conducted by the users before the operations go live. The objective of the trial run is to ensure that requirements of the customer are met. The test plan for the trial run should be prepared by the users themselves. The implementation team should only assist them.

The system trial run should be conducted in a controlled test environment. The software and test data files should be protected from random development changes during the trial run.

The documentation of the System Trial Run should consist of the following:

- The test plan for the Trial Run
- The data used for the Trial Run
- The results of the Trial Run
- Any variations and problems
- Any corrective actions taken

The System Trial Run should be signed-off by the internal auditors of the bank. The basis for this sign-off is the documentation of the Trial Run.

3.1.4 Controls while making a change to the Code

Any problem that needs a software fix should be recorded through the POIROT.

When a program is to be modified at the site, two extra environments should be maintained, as follows:

Development Environment where the programs should be modified, unit tested and system tested by a member of the implementation team.

Acceptance Environment where trial runs of modified programs should be conducted. The trial run should be completed before the program is copied on to the main environment where the live operations are going on.

A separate schema with skeletal data can be maintained for this purpose.

Note

No changes should be made directly onto the main environment.

Access controls to the Development and Acceptance environments should be limited to the members of the implementation team from Oracle Financial Services.

The fix that has been put in has to be recorded in the POIROT.

3.2 Project Documentation

This section contains the following topics

- Section 3.2.1, "Management Documentation"
- Section 3.2.2, "System Documentation"

- Section 3.2.3, "Software Installation"

3.2.1 Management Documentation

- A project plan, which defines the scope of the project, objectives, budgets, task scheduling, time frames and deliverables, should be prepared.
- A progress report of the project should be documented and circulated every fortnight.
- The minutes of the management review and discussion should be documented.

3.2.2 System Documentation

- Updated system documentation should be maintained. This should include:
  - Enhancement specifications and approval
  - Software inventory lists
  - Training Manuals
  - Operations Manual
  - User Manuals
  - Implementation Manual
  - The test plan for System Trial Run

3.2.3 Software Installation

The details of installing Oracle FLEXCUBE are discussed in the 'Oracle FLEXCUBE Release and Installation' document.

4. Database Design

Oracle FLEXCUBE offers very high degree of flexibility to the users in respect of basic parameters around which the bank operates or wishes to operate. This is one of the most critical activities in the implementation project and requires a detailed analysis of the bank s current and expected operations. The exercise involves not only understanding and translating the existing process methodologies but also suggesting and exploring the possibilities of better and improved strategies so as to exploit the full potential of Oracle FLEXCUBE. This activity in fact begins during the product walk-through stage itself.

This chapter contains the following sections

- Section 4.1, "The Designers"
- Section 4.2, "The Design Process"
- Section 4.3, "Review of Products"
- Section 4.4, "Review of Account and Ledger Structure"
- Section 4.5, "Outlining Basic Core Parameters"
- Section 4.6, "Gathering Customer Data"
- Section 4.7, "Outlining Product Level Parameters"
- Section 4.8, "Review of Advice, Reports and MIS Requirements"

4.1 The Designers

The team doing the database design comprises the following:

- Project Manager from Oracle Financial Services (formerly i-flex)
- Project Manager from the bank
- Financial Controller of the bank
- Functional heads of the bank
- IT head
- Key operational staff

4.2 The Design Process

The process involves the following major steps:

- Review of products/business offerings of the bank
- Review of Account and Ledger structure
- Review of charges/interest items
- Outlining basic core parameters
- Gathering Customer Data, including credit lines.
- Outlining product level parameters.
- Review of advice, reports and MIS requirements.
- User profiles including access rights, transaction and authorization limits etc.
- System performance parameters.

4.3 Review of Products

The spectrum of products currently offered by the bank and those proposed to be offered by the bank have to be carefully analyzed. The exercise would involve

- Identifying the nature of the products.
- Listing the basic features of each product.
- Possible regrouping of products based on common features or parameters.
- Restrictions of currency, branch, in the products.
- Differentiation in making available the products among different class of customers/ branches etc.

4.4 Review of Account and Ledger Structure

The exercise involves designing the Chart of Account. The existing account structure has to be analyzed and possibly redrawn based on the new requirements as also the keeping in view the features offered by Oracle FLEXCUBE. The tiered (tree) structure of accounts, the nature and type of each GL with parent-child relationship has to be established. Currency and branch restrictions at each GL HEAD level have to be taken into account. The Central Bank and Head Office reporting requirements have to be analyzed. The nature of account code structure (GL account mask) has to be established and appropriate code numbers assigned to accounts.

4.5 Outlining Basic Core Parameters

Core level parameters and codes are established in this activity. Some of major parameters are:

- Bank/Branch parameters including name, address, GL mask, Customer a/c masks, restricted passwords and other particulars.
- Currencies - Currencies used by the Bank, Currency codes, Currency pairs, Rate types, Rate codes, Conversion definition etc.
- Reporting Lines - for Head office and Central Bank reports, establishing links with GL accounts
- Holidays
- Accounting Periods - within a financial year
- Inter-branch Accounting set-up
- Limits - Lines, sub-lines
- Transaction codes with clearing float days etc
- Messaging Parameters
- Override Parameters
- Product groups
- Product Status codes
- Account Revaluation set-up
- End of cycle setup, including frequency of processes, sequence of process
- Classes for securities modules usage

4.6 Gathering Customer Data

- Establishing broad customer categories and account classes

- Obtaining a list of customers and reclassifying the customers based on the categories (customers would also include Central Bank, correspondent banks, clearing house, brokers etc.)
- Deciding on the Customer Identification code structure
- Allocating new CIF to the customers
- Obtaining other static information about the customers
- Maintaining a translation table for old and new CIF numbers if any
- Account statement periodicity
- Broker setup, including brokerage rates etc

4.7 Outlining Product Level Parameters

This is critical activity and should be very carefully undertaken. The products defined are applicable across all branches and are defined only at H.O. Major steps involved are:

- Identifying products within each functional modules (including Account Class in respect of Current Savings and Nostro Accounts)
- Identifying the basic features of each product for product level parameters, including the events for each product
- Identifying the accounting entries to be passed and the advices to be generated for each event
- Interest, commission, charges and fees applicable (ICCF Rules).
- Taxes Applicable (Tax Rules)
- Identifying GL accounts for the products including ICCF and tax components
- Product start date should be given carefully (the value date of the oldest live contract under the product)
- Mapping accounting Roles to the respective accounts
- Identifying life cycle events and mapping accounting roles
- Product restrictions in respect of branch, currency, customer categories etc
- In the case of Securities module, the parameters have to be identified for three types of Products – Security product, Portfolio product and Deal product

For more detailed product level parameters set-ups, respective user manuals must be referred to.

4.8 Review of Advice, Reports and MIS Requirements

- Examining various advices required to be generated during the life cycle events of a product.
- Formats of all advices, including Customer Account statement.
- Customized advice formats for specific customers.
- Media for sending advices to various customers.
- MIS reports, codes including MIS cost codes, MIS classes, pool codes, MIS groups, GL linkages
- Report set-up, including printer set-up, server and client printing
- Report generation periodicities and circulation
- Report and advice archival

This section contains the following topics

- Section 4.8.1, "User Profiles Including Access Rights, Transaction and Authorization Limits"
- Section 4.8.2, "System Performance Parameters"
- Section 4.8.3, "Other Activities"
- Section 4.8.4, "Review of the Design"

4.8.1 User Profiles Including Access Rights, Transaction and Authorization Limits

- Defining user profiles or roles
- User transaction limits
- User authorization limits
- Restricted passwords
- User time level
- OS, RDBMS access to Data center personnel, joint access etc

4.8.2 System Performance Parameters

- System parameters to optimize performance, at the OS level
- System parameters to optimize performance, at the RDBMS level
- System parameters to optimize performance, at the network level
- System parameters to optimize performance, at the workstation level

4.8.3 Other Activities

- Changes to existing workflow to take advantage of new system set-up
- Gathering information for customer accounts and nostro accounts
- Creating Translation tables for new and old account numbers
- Identifying vaults and cash tills
- Collecting data of user to product mapping in the operations for assigning user roles to enable the users to do the work allotted to them
- Identifying Teller type transactions - including charge-bearing transactions
- Customer settlement accounts
- Branch level parameters for various modules with respect to accruals
- Deciding the source for consolidated financial reporting, in case of a phased implementation, where some branches would be only on the old system and some would be on Oracle FLEXCUBE
- Deciding backup procedures including frequencies, media etc

4.8.4 Review of the Design

The Database design should be reviewed and signed-off by everybody involved in the database design exercise.

5. Data Input

In this activity, the database is populated with the Parameters, Code set-up and other static information (non-financial) as finalized in the database design activity.

This chapter contains the following sections

- Section 5.1, "Approach"
- Section 5.2, "Methodology"
- Section 5.3, "Core Parameters and Tables Input Sequence"

5.1 Approach

The data input activity involves the following major steps:

- Breaking down the data base design and parameters into field level inputs.
- Working out the sequence of database table population.
- Deciding on the input methodology - manual, automated or mixed.
- Activity plan and time estimation, bunching of parallel activities where ever possible.
- Planning the resource requirement.

5.2 Methodology

Population of data into the database can be carried either manually or can be automated. Large volume data are best automated. Parameter inputs of specialized and critical nature should be manually input for better control. If the existing operations of the banks are carried out in multiple systems (including manual registers, if any), it would be better if the data from these systems are first collated and translated into a common system, such as spread sheet package.

Automated data population can be carried out using standard conversion tools supplied as a part of tool-kit along with office automation package such as spreadsheets.

For banks moving from MicroBanker to Oracle FLEXCUBE, standard conversion tools for the purpose would be used.

The data and field structure to be maintained in the spread sheet for upload should be clearly worked out. As mentioned earlier, data relating to a common table, from different sources should be collated and made available in a single spreadsheet. The IT department of the bank should be made primarily responsible for making available the spread sheets in appropriate formats. Oracle Financial Services implementation team may offer any assistance, if required.

Code and identifier translation from old values to new values should be carefully checked out. Appropriate strategy should be evolved if the existing codes are not translated on one-to-one basis. Such cases should be dealt with separately, if required, manually. A master list of all such translations should be printed and kept aside for future cross-referencing.

Data which is planned to be input manually should be first filled in an appropriate input form and verified and signed off by the person responsible.

Data input and conversion process is likely to be different for each installation. For every implementation a conversion plan has to be prepared, covering all the activities of the bank, automation strategies etc.

Before embarking on data input the following should be ensured:

- The conversion team is aware of the strategy and is familiar with input required.
- Responsibility for making available correct input data in spread sheets is fixed.
- Responsibility for checking and maintaining the code translation table and cross-referencing master lists is spelt out.
- A dummy database or schema is created and the conversion tools are well tested.
- Sample inputs done by the team to become familiar with the forms.
- User ids are created with appropriate rights for the purpose of inputs.

5.3 Core Parameters and Tables Input Sequence

Input of static data and parameters in various tables requires a specific sequence to be followed. This is due the reason that certain tables are dependent on other tables, thus necessitating the maintenance of those tables first. Inputs to some of the tables can be grouped together. It is not necessary that all maintenance have to follow a sequence, certain inputs especially maintenance of various products can be done in parallel, if they are independent of each other.

Sequence of main tables for maintenance and key fields are outlined as follows:

Maintenance Table	**Depends On**
Core Parameter maintenance	
Bank maintenance	
Branch maintenance	
Countries	
Transaction codes	
System dates maintenance	Branch maintenance, Local holiday maintenance
Accounting periods maintenance	
Status codes maintenance	
Currency definition maintenance	
Currency rate type maintenance	
Currency pair maintenance	Currency definition maintenance
Local holiday maintenance	Branch maintenance
Currency holiday maintenance	Currency definition maintenance
Clearing holiday maintenance	
Currency denom. Maintenance	Currency definition maintenance
Interbranch (IB) maintenance	Branch maintenance, IB GLs maintenance
Reporting lines	

GL.	Reporting lines
Account class maintenance	
Customer category maintenance	
Customer (CIF) maintenance	Branch maintenance, Customer category
Customer accounts maintenance	Customer (CIF) maintenance, Currency, ACCLASS

This section contains the following topics

- Section 5.3.1, "Core Parameters (Miscellaneous) Maintenance"
- Section 5.3.2, "Bank/ Branch Parameters"
- Section 5.3.3, "Accounting Period Maintenance (Bank/ Branch Parameter)"
- Section 5.3.4, "Holiday Maintenance"
- Section 5.3.5, "System Date Maintenance (Bank/Branch Parameter)"
- Section 5.3.6, "Customer Maintenance"
- Section 5.3.7, "Other Bank/Branch Parameters"
- Section 5.3.8, "Revaluation"
- Section 5.3.9, "Limits"
- Section 5.3.10, "Customer Accounts"
- Section 5.3.11, "Front-End Module Product Set-up"

5.3.1 Core Parameters (Miscellaneous) Maintenance

Apart from maintaining bank and branch parameters, you will also have to maintain a set of core (miscellaneous) parameters that govern processing in Oracle FLEXCUBE. The following table describes the contents of the Oracle FLEXCUBE back-end table CSTB_PARAM that contains all such miscellaneous parameters. Even though the contents of this table have been described in some detail, it is actually not intended for the users of the bank to alter / add / remove. Based on the processing requirements of the Bank, the data in this table will have to be configured by the Oracle Financial Services implementation team during the implementation process.

Parameter Name	**Description**	**Typical Values & Examples**
Operating System related parameters		
OPERATING_SYSTEM	The OS on which the Database is installed	UNIX / WINNT
WORK_AREA	The path on the server where server debug output / any other handoff file of Oracle FLEXCUBE is written	Valid Directory
DIRECTORY_SEPARATOR	The character that denotes directory separation	/

ESC_SEQ	Specifies the escape sequence for printing	(s8S
SPOOL_OS	Used to indicate the Operating System and based on the operating system path convention, the report spool path and path for moving and purging the spooled files	WINNT
TRACE_AREA	Parameter for specifying the trace file path if invalid file handling occurs in debug file generation	/tmp
S390	Used for indicating whether it is ASCII or EBCDIC installation. 'FALSE' implies ASCII installation.	TRUE / FALSE
X9$	The code denoting the specific bank at which Oracle FLEXCUBE is being implemented; the typical convention is that the first three characters represent the currency and the next 4 characters represent the bank.	INRCITI
ORG_NODE	Indicates the current host name	Alpsi.world
Display Control parameters		
SHOW_ALL_FT	If this parameter is set to Y, all the FTs are shown in the FT contract online form; else if it is set to N then only the FTs having Booking date as today are shown.	Y/ N
SHOW_ALL_FX	Same as above, but for FX online screen	Y/ N
SHOW_ALL_LD	Same as above, but for LD online screen	Y/ N
SHOW_ALL_MM	Same as above, but for MM online screen	Y/ N

SHOW_ALL_BC	Same as above, but for BC online screen	Y/ N
SHOW_ALL_LC	Same as above, but for LC online screen	Y/ N
SHOW_ALL_SI	Same as above, but for SI online screen	Y/ N
LOV_CUSTNAME	If this parameter is set to Y, the customer names is also displayed along with the CIF id in the customer option-list	Y/N
LC_SINGLE_FFT	If this flag is set to Y, the advice tag OTHER-FFTS will get populated. Else, each individual FFT defined will be available for message format definition and the consolidated tag will not get populated	Y/N
Accounting related parameters		
ACCOUNT_STATEMENT	Whether the account statement that is sent to customers periodically should be booking dated or value dated	BOOK_DATED; VALUE_DATED
IC_NADJ_PADJ_TAGS_REQD	Whether Amount Tags indicating Positive and Negative Adjustment (in case of IC adjustment arising out of Back Valued transactions) is required. If this flag is set to Y and suitable accounting is setup, Positive / Negatives IC adjustment will be passed with absolute amounts with appropriate sign (Dr / Cr) rather than passing negative values in accounting.	Y/N
VDBAL_UPDATE	Whether Value-dated balances should get updated online	ONLINE; OFFLINE

CCY_DATE_WISE_CHECK	If this parameter is Y, then the End of Day process (while marking EOTI) will check if the accounting entries are balanced currency-wise and value-date wise. If the check fails, a configurable override will be shown.	Y/N
IC_ACCR_ON_HOLIDAYS	If this parameter is set, IC (daily accruals) will pass one entry each for each day even when EOD is run before a set of holidays (such as on Friday). Else IC passes one entry for the entire holiday period.	Y / N
GL / MIS related parameters		
GL_REBUILD	To enable automatic EOD rebuild of GL balances	Y/N
GL_PERIOD_CHECK	To indicate whether GL (real and contingent) balance check should be done for all periods or current period	ALL; CURRENT
MIS_REBUILD	To enable automatic EOD MIS rebuild	Y/N
REFINANCE_DAILY	This flag must be set to Y if MIS daily refinance functionality is required. From Version Oracle FLEXCUBE 4.4 onwards, this flag is available in Bank Parameters.	Y/N
Kondor Plus Interface related		
KONDOR+	Whether Kondor Plus interface is available at this installation	Y/N
KPLUS_BRCODE	Branch code of the branch where Kondor Plus interface is installed	Valid Branch Code

KPLUS_USERID	Oracle FLEXCUBE User ID of the User doing Kondor Plus Upload	Valid User ID
KPLUS_FILE_PATH	Main Directory Path where all the Kondor Plus related files/ directories are located	Valid directory path
KPLUS_IN_DIR	Directory on Oracle FLEXCUBE server to which files from Kondor will be copied	Sub-directory of the KPLUS_FILE_PATH
KPLUS_WIP_DIR	File from Kondor will be moved to this directory from where interface will read the file and populate upload tables	Sub-directory of the KPLUS_FILE_PATH
KPLUS_SUCCESS_DIR	File from Kondor will be moved to this directory if the upload writing was successful	Sub-directory of the KPLUS_FILE_PATH
KPLUS_ERROR_DIR	File from Kondor will be moved to this directory if the upload writing was unsuccessful	Sub-directory of the KPLUS_FILE_PATH
KPLUS_DIR_FILE	Name of the file which will be written by Oracle FLEXCUBE into each the above mentioned paths	*.TXT
BROKER_BOOKING_METHOD	This specifies whether the default brokerage booking method is in Advance / Arrears where K + interface is installed	1/2
BROKER_PAYABLE_CCY	This specifies the default brokerage payable Currency where K + interface is installed	Valid Currency
BROKER_LIQ_TXN_CODE	This is the transaction code that the system should use to liquidate the brokerage booked through K + interface	Valid transaction code
CUSTOMER_LIMIT_CCY	Specifies the Limit Currency in CIF upload through Kondor Plus	Valid Currency

Other Interface related parameters		
ELIXIR_IN_DIR	This is the directory in which the ELIXIR (clearing interface) file will have to put in for Oracle FLEXCUBE to read	Valid Directory path
MUREX_UPLD_DIR		
MUREX_TXN_CODE	Used to get default txn code for DE upload in MUREX interface	Valid Oracle FLEX-CUBE txn code
KIR_TXN_CODE	Used for indicating transaction code for DE Uploads in pc832.fnc (applicable only when KIR inter-face is installed).	
KIR_UPLOAD_DIR	This is the directory in which the KIR data file will have to put in for Oracle FLEXCUBE to read (when KIR inter-face is installed)	Valid Directory path
EMSNT	Whether EMS NT (for messages) is installed	Y/ N
ATM_INSTALLED	Indicates whether ATM interface is existing	Y/N
ATM_DELAY	ATM EOD processes will start after the time delay specified in this parameter	
MAINT_NETT_REQD	This pertains to RBAN changes. The parame-ter is used for indicat-ing if unnetted entries are to be inserted into actb_transaction_list-ing (used in acpks.sql) before accounting net-ting takes place.	Y / N
RBAN_PATH	Used in achandof.fnc for specifying the path for generation of Transaction Handoff files.	Valid Directory Path
SSN checking related parameters		

SSN_FT_CHK_REQD	This parameter must be set to Yes for SSN based (anti money laundering) checking to be active. This will validate the total amount (SSN_AMOUNT) of FT transactions (outgoing FTs) that can be input for a given Customer (identified by his Social Security Number) within a running period of days (specified as SSN_DAYS) in a specified CCY (SSN_CCY)	Y/N
SSN_AMOUNT	Refer above	Valid Amount
SSN_DAYS	Refer above	Valid Number (of days)
SSN_CCY	Refer above	Valid Currency
Regulation CC related parameters		
REGCC_AMT1	This is the amount of Day 1 availability for Regulation CC	Valid Amount
REGCC_AMT2	Additional availability under Regulation CC	Valid Amount
REGCC_CCY	Currency of the above amounts	Valid Currency
Signon related parameters		
COPYRIGHT_VERSION	The year of the Copyright clause to be displayed on the Signon Screen	Eg: 2001, 2002
RELEASE	The version of Oracle FLEXCUBE to be displayed on the SIGNON screen	Eg: 4.5; 5.0
Other parameters		
CUST_ACC_UDF	This parameter is applicable if the customer account mask in the bank should contain a User defined field. This field should have the name of the UDF that is part of the customer account mask	UD#CUST

AUTO_PRINT	This parameter should indicate whether the advices generated during the batch processing should be printed automatically or not	Y/N
DERIVED_TAG	Used to indicate whether derived tags functionality is used or not	Y/N
MAINT_HIST_REQD	Used for indicating if maintenance log history is required	Y/N
LC_LIAB_AMT_ACTUAL	This Parameter is used to indicate if Liability tolerance(maintained at product level) is to be considered for LC amount validation or not. Used in BC Contract Online for defaulting LC Liability amount to LC amount in Bills. If set to 'Y', tolerance is not considered for defaulting .	Y/N
SGEN_PARAM	This flag should be set to Y if SGEN feature is required for FTs	Y/N
TRANSACTION_LIMIT	If this parameter is set, then the transaction level amount limits checking feature will be turned on	Y/N

5.3.2 Bank/ Branch Parameters

Specify the following details.

5.3.2.1 Bank Parameters

Initial skeletal information relating to Bank and branch, such as Bank Code, Name etc. will have to be uploaded. Next, the Customer account Mask and GL mask as decided during the database design discussions should be entered. Preferences such as inter-branch accounting scheme, rate copy option, and GL on-line update option can be entered.

Following fields are to be entered at a later stage after setting- up currencies, Chart of a/c, Transaction codes etc.

- Year-end PL account
- Year-end PL transaction code
- Default currencies

5.3.2.2 Branch Parameter

As in the case of Bank Parameters, skeletal Branch Information such as branch name address etc. will also have to be uploaded.

Following other inputs such as have to be captured after Chart of Accounts, Customer Maintenance is completed:

- Suspense GLs
- Financial Cycle
- Netting suspense a/c
- Walk-in customer

5.3.2.3 Users for Database Inputs

Login as MAIN with password as PASSWORD and create roles, users and assign functions.

Country Maintenance

- Country code
- Country Name

Currency Definition

- Currency code
- Description

The following tables relating to currencies can be maintained later:

- Currency Rate Type
- Currency Pairs
- Currency Rate
- Denomination

5.3.3 Accounting Period Maintenance (Bank/ Branch Parameter)

Some of the key inputs are:

- Financial Cycle code, description
- Period codes, start date, end date

5.3.4 Holiday Maintenance

Local Holidays

To start with, local holidays, particularly for the current year may be maintained. Holiday table for other years may be maintained later, prior to product maintenance.

Other holiday tables, Currency holidays and Clearing holidays can be maintained later.

5.3.5 System Date Maintenance (Bank/Branch Parameter)

The empty database will be on a specific date, which has to be updated to a current date, the next working date has to be suitably updated.

5.3.6 Customer Maintenance

Specify the following details.

Customer Category

Customer categories as decided during the database design phase have to be input.

Customers

Customer information can be uploaded at this stage using the agreed upload strategy. Prior to uploading customers, appropriate translations of existing codes with new CIF numbers, categorizing customer s etc. should be in place. If MIS categorization of customers is also uploaded simultaneously, then MIS categories have to be maintained first. Otherwise, a methodology for updating the customer information with MIS categories later on will have to be worked out. It may be noted that CIF is at the bank level, common across the branches.

General Ledger

Creation of Chart of Accounts in the database is one of the most critical activities in database input, therefore has to be handled with extra care. It is advisable to automatically upload the chart of account from a spreadsheet to avoid input errors. It is better to keep separate spreadsheets for node GLs and leaf GLs, so that they can be uploaded separately.

Reporting Lines

GL Reporting Lines for both head office and central bank reporting have to be first input before creating the Chart of Account in the database. Here again the possibility of data upload from a spreadsheet can be explored.

Chart of Account

The node GLs have to be input before input of leaf GLs. Period/Year end P&L GLs, to which the account balance will be transferred, have to be input and authorized before creating the INCOME & EXPENSE GLs.

5.3.7 Other Bank/Branch Parameters

The bank/branch level parameter tables have to be revisited to update suspense GLs, year-end P&L GLs, Walk-in customer CIF etc.

Transaction Codes

Transaction codes for various accounting transactions to be passed in the system. Funds availability for the transactions to be input.

Override Parameters

All the errors will be a part of the database. However, most err Categorizing errors under overrides, errors, ignore, on-line authorization options.

Messaging

Allowed operations for message handling

Inter-Branch Maintenance

Identifying due to, due from GLs for inter branch postings**.** Inter branch accounting route to be decided. Accordingly, the maintenance has to be maintained.

Product Groups

Broad grouping of products offered by bank

Status Code

Product status codes to be maintained.

Bank Codes

Bank codes, Bank name - Clearing House members have to be created here.

Till/Vault

Till or Vault id codes for cash / teller transactions.

Journal Entry, MM/LD, BC Parameters

Product related parameters at Bank level

5.3.8 Revaluation

Reval Set-Up

Revaluation profit/ loss accounts, rate types applicable for revaluation etc. in respect of accounts to be revalued

5.3.9 Limits

Limits Template

Defining credit lines and sublines

Security & Issuer

Details of security, Issuer of security

Type

Defining collateral types

Other maintenance such as limits (customer level); Collateral, margins etc. can be set up later after product set-up is completed.

5.3.10 Customer Accounts

5.3.10.1 Customer Maintenance

Specify the following details.

Account Class

Broad account categories with user-defined identifier are maintained here. Nature of accounts falling under the class (Current, Savings, Nostro etc.), GL account linkage, Reporting lines, Statement and other generic preferences, Branch, Currency and customer restrictions are specified.

Customer Accounts Maintenance

Opening of customer accounts (current, savings, nostro etc.). Here again, possibility of auto upload/creation of accounts using a spreadsheet could be explored. While creating the upload spread sheet, or creating the accounts manually, utmost care is to be taken in allocating account class, account number and other account level specific preferences. A master list containing the map or translations of old account number with new numbers should be kept aside duly approved, for future reference.

Interest & Charges

Interest and charges applicable to various customer accounts and account classes - Calculation method, formula and other parameters will be based on the database design worked out earlier as per the requirement of the bank.

End of Cycles

The processes to be run as per design are to be set up for each of the branches.

5.3.11 Front-End Module Product Set-up

This is one of the major milestone activities in database input.

On a broad level, product set-up follows the following steps:

- ICCF Maintenance - ICCF rules, Floating rate set-up, if any

- Tax maintenance - Tax rules and Tax scheme maintenance, where ever applicable
- Brokerage Maintenance - As applicable
- Product Specific standard tables, codes, free format text maintenance
- Messages

Note

For more specific product level set- up, you can refer to the respective User Manuals.

It would be more convenient to first identify and create generic rules for ICCF, Tax etc. which could be applied across the products or modules.

6. Database Callback

This activity is primarily aimed at checking up the static table maintenance input against the original source documents and spreadsheets used for the input. This will be the first level check leading to detailed check in the next stage of System Trial run. A broad list of reports that can be used for database call back is included in this section. More specific strategies should be evolved based on the criticality of the data and the database design. Database call back exercise should be preferably undertaken by set of staff not involved in the input, internal control department should also be involved. The called back reports should be authenticated by the concerned authority from the bank and should be kept aside for future implementation or system audit.

6.1 Suggested List of Reports for Callback

The Maintenance changes log report can be used to identify all the maintenance carried out and can be used for the call back. *It is suggested that this report be used to fully check all the database setup done at the bank.* In addition, reports/dumps of the data in various tables can be printed to check with the source sheets.

Static Maintenance

- Bank Parameters
- Branch Parameters
- Customer CIF report

General Ledger

- Chart of Account
- GL-MIS Linkage Report
- MIS Class Maintenance
- Budget Maintenance

Currency

- Currency Definition
- Currency Pair
- Currency Rate Type
- Ccy Denomination

Reports

Maintenance Changes Log Report

Customer Maintenance

Customer accounts

Interest & Charges

- Interest Calculation Details
- Product Print
- Rule Print

Brokerage

- Brokerage Rules
- Broker Profile

Tax

- Tax Rules
- Tax Schemes

Bills

- Bills Branch Parameter
- Commodity Codes
- Discrepancy codes
- Document Codes
- Free Format Codes
- Instruction Codes
- Product Codes

LC

Product Report

End of Cycle

Process Definition Print

In addition to these reports, adhoc reports should be generated for checking any other maintenance.

7. System Trial Run

This forms a part of User Acceptance Tests. The trial run should be carried out by the users, to establish the functionality of the product vis-à-vis their expectations. Further, the various cross links and parameters set up during database design and inputs are tested. This is a crucial phase since the sign-off from the customer depends on the successful completion of the trial run. Another objective of the trial run is to help the end-users get familiar with the system.

7.1 The Logistics

It is essential that the test plan of the trial run is prepared and executed by the users. The implementation team from Oracle Financial Services should only assist the users in this exercise. This assistance should be restricted to providing guidance in formulating the test plan, the procedure to be followed during the trial run and the documentation that is necessary. All aspects of the trial run should be documented. This document is the basis for the sign-off from the users and their auditors. It should contain the following information:

- The test plan for the trial run
- The data used
- The results
- Any deviations in the functionality
- Any corrective actions or workarounds suggested

The number of days over which the trial run should be spread should be decided based on the number of modules that have to be implemented. The results should be documented daily, along with any problems and solutions provided.

This section contains the following topics

- Section 7.1.1, "The Database for Trial Run"
- Section 7.1.2, "The Approach"
- Section 7.1.3, "Components of the Trial Run"
- Section 7.1.4, "Components of the Test Plan"
- Section 7.1.5, "Handling Errors"
- Section 7.1.6, "The Schedule"
- Section 7.1.7, "Phase One"
- Section 7.1.8, "Phase Two"
- Section 7.1.9, "Phase Three"

7.1.1 The Database for Trial Run

The trial run should be conducted on a separate scheme containing the static database as maintained after the database design and input. In some cases system trial run may be carried out in the pre-shipped maintained database. However, it is advisable to carry out the test in the actual database set-up for the bank.

7.1.2 The Approach

The test plan for the trial run should be a representative of the real life situation in the bank. All conditions, those that occur during the course of a normal day and those that are critical but may happen rarely should also be covered in the test plan. As far as possible multiple

features should be tested using a single transaction so as to keep the number of actual transactions to a minimum. It is easier to control and review the results when the number of transactions is less.

The trial run plan should ideally contain the detailed test plan, schedule for the trial run and responsibilities. The following people should be involved in the system trial run:

- Personnel responsible for the input and authorization of data.
- Staff from the IT department involved in End of Day runs and monitoring hardware performance.
- Staff from the Credit Department to check the functioning of the Central Liability sub-system.
- Staff from the Fincon department to verify the General Ledger structure.
- Staff from the security department to check on the system security and controls.

7.1.3 Components of the Trial Run

The trial run should establish the following:

- The functionality of the product.
- Compatibility with the hardware.
- The functionality of the Operating System (system utilities, recovery of data files, response time, especially for large volumes, back-up and restoration of data).

7.1.4 Components of the Test Plan

All types of transaction in a specific module should be included. Care should be taken to include transactions that may occur rarely also, along with samples of transactions that are entered more often. Volume testing should be a part of the test plan.

The test plan should contain the list of output messages that have to be generated for the transactions.

The system dates for the trial run should cover End of Day, End of Month, End of Month of February (29th) for a leap year, End of Year and Beginning of Day processing.

7.1.5 Handling Errors

An Error Control Log (Test Incidence log) should be opened in which all the errors encountered during the trial run have to be registered. Each error should be allotted a number. The following details should be recorded for an error:

- The exact condition under which the error occurred
- The nature of the error
- The expected result
- An evidence of the error (in the form of a screen dump, batch entries or something similar that establishes the occurrence of the error)

The errors should be monitored on a daily basis and solutions provided within the time frame agreed upon. This time frame should depend on the nature of the problem and its impact on conversion.

7.1.6 The Schedule

The System Trial Run has three distinct but concurrent phases. Each phase should emphasize on testing a certain set of system features. The recommended schedule is

described in the following sub-sections. This schedule can be modified to suit the requirements of a site.

7.1.7 Phase One

Phase One should focus on the features of the hardware, the operating system and the various controls. Besides these the functionality of Core subsystems should be tested Core should include the following sub-systems:

- Security Management System
- Bank/ Branch Maintenance
- Limit Tracking/ Central Liability
- Accounting Services
- Journal, Teller entries
- End of Cycle (EOC)
- Management Information System

The features to be tested for the *Operating System* are as follows:

- Activating and de-activating workstations
- Efficiency of task initiation and operation
- Running system utilities
- Error detection, isolation and correction capabilities
- Ability to continue operations after a software failure
- Data restoration and recovery procedure
- System start-up and closing down
- Backup on tape and other media

For *system controls*, the features to be tested are:

- Control of access to the different data areas through the operating system
- Control of access through Security maintenance (restricted access)
- Verification of audit trails

The tests for *hardware* should be to ensure the following:

- Compatibility of client work-stations
- Functioning of printers
- Functioning of image scanners, if any

All the relevant reports must be checked and findings of End of Day run should be recorded.

7.1.8 Phase Two

Phase Two should include tests to establish the functionality of the all the front-end modules

7.1.9 Phase Three

During Phase Three, transactions in all the sub-systems modules that may occur on a day have to be input. The End of Day operations should be carried on and reports checked. This exercise will establish the proper functioning of the system under real-life conditions.

It should be noted that the three phases are only for the purpose of proper focusing. These are not sequential phases. Depending on the number of resource personnel available, Roles can be assigned to each person to focus on the critical features of each of the phases.

Note

The list of features that has been prepared for the standard Product Test Plan, is available as a part of the release. It can be used as a reference while preparing the test plan for the trial run.

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8. Financial Conversion

This phase involves populating the database with financial information, transactions and all the live contracts from the existing system to the new system.

This phase of the implementation of Oracle FLEXCUBE poses many challenges. If these challenges are not planned for, it may result in serious difficulties during and after the conversion. This may then involve a re-conversion, resulting in project delay, loss of time, effort and additional expenditure.

This chapter focuses on the preparation and activities necessary to convert a branch to Oracle FLEXCUBE. Every implementation is likely to have specific requirements. Broad guidelines for the activity are mentioned here.

This chapter contains the following sections

- Section 8.1, "The Players"
- Section 8.2, "Scope"
- Section 8.3, "Planning"
- Section 8.4, "Conversion Procedure"
- Section 8.5, "Sample Conversion Accounting Entries"

8.1 The Players

The key players in this phase of the implementation are:

- Implementation team from the bank
- Senior Operations Manager
- Independent Control Unit Head
- Financial Controller
- Project Manager from Oracle Financial Services (formerly i-flex)

8.2 Scope

This chapter discusses the various aspects of the financial conversion for products of a branch that are covered by the following Oracle FLEXCUBE modules:

- Core
- Money Market
- Foreign Exchange
- Funds Transfer
- Letters of Credit
- Bills and Collections
- Loans and Deposits
- Securities

8.3 Planning

Financial conversion is often done under enormous time pressure. Input of financial data into the system calls for meticulous attention to the smallest detail and requires advance planning. The plan for conversion should cover the activities listed below.

This section contains the following topics

- Section 8.3.1, "How to do"
- Section 8.3.2, "When to do"
- Section 8.3.3, "Methodology"
- Section 8.3.4, "Conversion Sequence"
- Section 8.3.5, "Pre-conversion Checklist"
- Section 8.3.6, "Standard Instructions for Conversion"

8.3.1 How to do

- The steps involved in conversion may vary depending on the Oracle FLEXCUBE module through which the products will be handled.
- For certain products, it may be essential to work out in advance, the impact of carrying over the balances and contracts to the Oracle FLEXCUBE system and plan for any special action to be taken.
- The financial entries must be made in small batches. This simplifies the investigation and verification process.

8.3.2 When to do

- Static data set-up is complete and sign-off obtained.
- Best done over year-end, quarter-end or month-end, when application of interest for a majority of the accounts will be done. However, this is not an essential pre-requisite, if the existing system is capable of generating mid-term accruals.
- The activity could be done over a week-end so that branch operations are not affected and staff is available for conversion work.

8.3.3 Methodology

Conversion of financial data can be by automated means or manual. The decision regarding this should be taken well in advance since the activities will have to be planned accordingly. In case of automatic conversion the following will have to be decided in advance: -

- Scope of auto-conversion
- Hand-off file layouts
- Table set-up for code mapping or translation
- Tools required for conversion
- Responsibility for hand-off Spread sheet, text files etc
- Resources required for upload program development, if any
- Checking and validating procedures (either matching data automatically through programs or producing reports in formats that facilitate cross-checking by the branch staff)
- In case of manual conversion, regular Oracle FLEXCUBE input screens will be used

8.3.4 Conversion Sequence

The sequence of implementation of Oracle FLEXCUBE should be decided in consultation with the bank officials. In case of a multi branch scenario, the sequence of implementation at the various branches is to be decided, alternately, all branches may be converted at the same time, if this is estimated to be manageable. The set-up, whether centralized, distributed or decentralized, will also play a major role in deciding the sequence of conversion.

Secondly, the sequence of implementation of various Oracle FLEXCUBE modules in a branch, should be decided in consultation with the bank officials depending on their priority. In many situations, some of the modules will be taken up for implementation only after the bank goes live on critical products.

In case any of the products are to be converted in a later phase, the balances relating to those products should be kept in a separate General Account (with direct entry option) to be opened for the purpose, preferably product/ module wise. When the conversion of the products is taken up, these accounts will be the take-down account, and the balance in the accounts will become zero.

After the financial data have been entered, FX revaluation should be done on both the systems - existing and Oracle FLEXCUBE.

8.3.5 Pre-conversion Checklist

Before getting to the stage where financial entries are passed into the Oracle FLEXCUBE, the implementation team should check whether the following have been adequately taken care of:

- Static database set-up for all the products and modules should be completed and sign-off obtained.
- Estimate resources requirement. The following resources should be planned for :
  - Staff required for data input and correction
  - Staff required for data checking
  - Hardware resources
  - Consumables like stationery, printer ribbons, magnetic tapes/cartridge tapes, floppy diskettes
- Set up a team responsible for conversion related activities
- Decide the responsibilities of the team members
- Ensure that the team members are trained in the relevant areas of their operation
- Ensure proper back up arrangement for team members to meet last-minute contingencies
- Ensure the appointment of one officer of the branch as the Conversion Controller, who will verify and approve all the entries passed before authorization
- Ensure that the team members are given access to the relevant Oracle FLEXCUBE function/ screens for the duration of the conversion. Before going parallel the user profiles must be reviewed and necessary changes must be effected.
- Lay down checking and correction procedures. This could be a combination of reports and on-line checking.
- Establish the different types of data to be input product-wise and currency-wise.
- Ensure that conversion accounts for all relevant currencies and products have been opened. Allot a transaction code for conversion activity if required.
- Prepare a detailed action plan for the duration of the conversion activity; monitor the activities as per plan.
- Prepare a procedure to verify the correctness of conversion and for sign-off of the database. The procedure should define the acceptable limit of conversion errors before going parallel.

8.3.6 Standard Instructions for Conversion

Some of the precautions that have to be taken during the conversion activities are as follows:

- Exchange rates will not be input, the standard rates will be taken as default and the local currency equivalent calculated automatically.
- Initially, the conversion accounts will be set up as the standard settlement accounts. Hence all entries will be offset against the conversion account and no other account will be used. Standard settlement account for all customers will also be conversion account (which will be the takedown account). After conversion, the standard settlement accounts should be modified with the actual accounts, in the settlement instructions.
- Decide the value date to be used for all non-contract input. Only this date should be used.
- No authorization should be allowed until the Oracle FLEXCUBE conversion controller has seen the inputs, verified the balances and signed off on the financial conversion schedule.
- Each department must provide items for conversion as of a particular date for their products; and must prepare a report of the data as of the agreed date for verification. Contracts maturing before the date of conversion need not be converted to Oracle FLEXCUBE.
- In case more than one department is using a product, allocate user reference number range to each department. Within a department also, if more than one person is going to do the contracts entry, allocate a sub-range to each of them.
- Provide adequate time for frequent backing-up of the database.

8.4 Conversion Procedure

The conversion of financial data to Oracle FLEXCUBE is performed by passing offsetting entries to the conversion accounts or customer settlement accounts defaulted as conversion account, setup specifically for this purpose.

The conversion in the simplest form implies that the various account balances (forming a part of the Trial Balance) be transferred to the Oracle FLEXCUBE accounts through Journal Entry as debit or credit entries as the case may be. At the end of this exercise, the balances would have been transferred and the total debits and credits would match, provided they matched in the existing system.

However, such a simplistic situation is not likely to occur in an installation. The primary reasons for this are:

- Entries cannot be passed to GL s having only indirect entry option.
- While taking on the outstanding contracts the front- end module will pass accounting entries affecting the takedown accounts even though the current balance in that account has been arrived at after this event.
- The system will pass entries to accrual and interest paid/received accounts during entry of outstanding contracts, which may have already been passed resulting in double counting.
- Similarly, the accrual and interest application on current and savings accounts may result in differences between the new and existing systems.

In order to circumvent these problems, all offsetting entries to existing balances are posted to a Conversion Account. All contracts are entered with Customer settlement accounts (take-down accounts) as the conversion account so that they do not affect the customer account balances.

Similarly, the interest/provision accounts balances are entered by accruing in the Oracle FLEXCUBE system after entry of balances in all the accounts and passing adjustment entries to these accounts and the corresponding offset entries to the conversion account.

By following this principle, at the end of the conversion exercise, the conversion account(s) would have a zero balance. In case this is not so (i.e., the balance is not zero), it will serve as an indication that some of the account balances have not been transferred correctly. By examining the entries posted and checking the balances of all other accounts the error can then be traced and rectified. This rectification process should continue till the balance in the conversion accounts becomes zero or is brought down to an acceptable limit so that the branch can go parallel.

A generic description of the conversion process has been given here and the actual conversion process could have other items / aspects which would need to be considered on a case-by-case basis.

8.5 Sample Conversion Accounting Entries

This section aims to explain the conversion procedure outlined in the previous section by giving an example of the accounting entries passed in a conversion exercise.

For the purpose of this exercise, we will consider the following accounts and contracts that are outstanding at the time of conversion. All accounts have been assumed to be in local currency. For simplicity sake, only a few accounts have been considered.

Account	**Amount**
Cash	100,000 DR
Current account of Mr.	1,000 CR
Savings account of Mr.	500 CR
Accrual account (deposits)	3,000 CR
Accrual account (loans)	2,000 DR
Interest Paid	3,500 DR
Interest Received	2,500 CR

Outstanding Contracts Details:

Contract	**Amount**
Deposit contract account	150,000 CR
Loan contract account	51,500.DR

The entries generated during the conversion activity are shown below. Note that the figures in parentheses refer to the running balance of the conversion account and after all the entries are completed, the balance becomes zero.

Deposit contract entry will generate the following entries: -

Accounting Entries		
DR Conversion account*	150,000	150,000 DR

CR Deposit account	150,000	
DR Interest Paid	3,000	
CR Accrual account (dep.)	3,000	

Loan contract entry will generate the following entries: -

Accounting Entries		
DR Loan account	51,500	
CR Conversion account*	51,500	(98,500 DR)
DR Accrual account (loan)	2,000	
CR Interest received	2,000	

Through Data Entry transfer the following balances will result in the entries shown below: -

Accounting Entries		
DR Conversion account	500	(99,000 DR)
CR Savings account	500	
DR Conversion account	1,000	(100,000 DR)
CR Current account	1,000	
DR Cash account	100,000	(Nil Balance)
CR Conversion account	100,000	

The entries also result in correct balances in all the accounts other than the accrual and interest paid/received accounts. These balances will be finally adjusted as follows: -

Since the balances in the two accrual accounts generated by the contracts match the accrual account balances in the existing system, no adjustments will be required.

However, the balances in the interest accounts do not match. This could be due to the reasons outlined in section 9.4.1, and the following entries will be made through Data Entry to adjust the balances.

Reverse the balance generated by the contracts entry:

Accounting Entries

DR Interest received account	2,000	
CR Conversion account	2,000	(2,000 CR)
DR Conversion account	3,000	(1,000 DR)
CR Interest Paid account	3,000	

The above entries will make the balances in the respective accrual accounts zero. After this, input the existing system balances into Oracle FLEXCUBE accounts as follows:

Accounting Entries		
DR. Conversion account	2,500	(3,500 DR)
CR. Interest Received	2,500	
DR. Interest Paid account	3,500	
CR. Conversion account	3,500	(Nil)

After this set of entries, the conversion account is restored to zero balance and the interest accounts have the correct balances as per the existing system. At this stage, the transfer financial data to Oracle FLEXCUBE is complete and correct and the system is ready for parallel run.

Conversion Account will be maintained as the takedown account, during the product set-up.

9. Parallel Run

Parallel Run is the stage where the existing systems of the bank run concurrently with the new Oracle FLEXCUBE system. The basic objective of this activity is to ensure stability of the new system, enable the users to become comfortable with the new processes and to develop confidence leading to complete switch over. However, the parallel stage places tremendous pressures on resources, time constraints and co-operation by bank personnel. Therefore, careful considerations must be made to all activities, to ensure that all tasks and resources are evenly distributed. It should be ensured that the users understand their responsibilities, and differences in the operation procedures, on the two systems. Remember the users have to use two systems simultaneously, and this alone is enough to cause confusion if not properly planned. In fact, even the movement of paper - tickets, contracts, etc. must be planned.

As in the case of conversion, the day to day verification of account balances, contracts, static maintenance and transactions must be diligently performed. This must be done by a team independent of the persons doing the input. The verification of financial equality of the two systems is the main point behind the parallel run, and any laxity in this area, might lead to indefinite extensions of the parallel run. For the same reason, if there are any differences, they must be resolved immediately**.**

Ideally at least one End of Month should be included in the parallel run. Details on how and when to conduct call backs, accruals/liquidation, error reporting and correction, as well as training on dummy conversions are described in this chapter.

The Senior Operations Manager from the bank and the Project Manager from Oracle Financial Services will co-ordinate and plan the parallel run procedure in line with job functions and bank staff usage of the system.

Note

The rule should be postings to Oracle FLEXCUBE should precede other systems.

Each department will call back its entries prior to leaving at the end of the day. This callback should catch the majority of posting errors.

Accounting Journal should be compared with the equivalent reports from the existing system by each department and a report should be submitted to the Reconcilement Controller at the end of each day. Data Center should commence End of Day operation only when all departmental reconcilement are correct.

9.1 Callbacks

The information on the current records on the existing system must be compared to that on Oracle FLEXCUBE through detailed callbacks. Callbacks should be done by a central callback team and various user departments. Wherever possible, use of spreadsheets or automated tools should be made to ease the manual workload.

Reports are classified as Core and Module specific. Core reports are those which contain key financial information across bank/branch. Module specific reports are key reports relating to the front-end modules. In addition to the reports, advices and messages generated should also be checked and compared.

Some of the critical reports to be checked are:

Core Reports

- Accounting Journal
- Trial Balance
- General Ledger
- Maintenance log report
- Revaluation Report
- Limits utilization/ exposure reports

Module Specific Reports

- Activity Journal
- Exception Report
- Accrual Control Reports
- Customer A/c Statements

Error Recording and Correction

The timely correction of errors is essential for a controlled parallel. Errors should be recorded in a Parallel Log. The log should contain the following for each day of the parallel run:

- Reconcilement sign-off for each report
- Departmental Reconcilement
- Error Reports and corrective action

It should be the responsibility of the Parallel Controller to maintain this record. The Senior Branch Operations Manager should review the Parallel Log on a daily basis and initial it.

9.1.1 Training

A series of training sessions should be conducted to explain method for performing call-backs, completing documentation and error correction before the financial conversion.

9.1.2 Dummy Conversion/Parallel

A Dummy Conversion and Parallel should be conducted for one week prior to the live conversion to confirm that all participants understand the process.

9.1.3 Summary

The conversion and parallel involves a significant additional workload on the bank. The bank should plan to minimize the additional workload on the operations during this period.

10. Contingency Plan

The managers should determine the operational risks and develop a procedure to ensure that the business is not disrupted in an emergency situation.

The people responsible for developing a contingency plan for the bank are:

- The Contingency Planning Officer-for the overall branch plan
- The Data center manager-for technology contingency, including communications, hardware, system software and third party software
- The Senior Operations Manager of the bank, who is responsible for Oracle FLEXCUBE
- The members of the Internal Control department

The Contingency plan should address the following issues:

- Operation Risk assessment
- Contingency planning
- Software errors outside of normal working hours
- Contingency plan distribution list
- Persons who can authorize the emergency procedure
- Contact points in the event of hardware and software problems
- Potential exposure and containment measures
- Emergency back-up plan

10.1 Operation Risk Assessment

Oracle FLEXCUBE runs on Client Server Architecture, with ORACLE FORMS on the client side and ORACLE 7.3 (with or without distribution option) on the Server (UNIX). The Database can either be centralized in a single server or distributed in more than one server connected through telecommunication network.

There are some risks involved in the implementation of a new system and the maintenance of an existing one. Some risks are controllable while others are not. But the degree of non-controllable risks, such as natural disasters, can be minimized. This chapter deals with risks and their corresponding protective measures. The risk analysis is geared toward the security of hardware and software. Tight security and back-up systems are the most important elements. Adequate training for the personnel who will be dealing with the computer is also very important. The basic contents of the risk assessment are as follows:

- Brief Description of Location and Operations.
- Major Causes of the Operational Risks.

This section contains the following topics

- Section 10.1.1, "Brief Description of Location and Operations"
- Section 10.1.2, "Major Causes of the Operational Risks"

10.1.1 Brief Description of Location and Operations

A brief description of the location and the operations of the bank should be indicated in the assessment.

10.1.2 Major Causes of the Operational Risks

The following type of critical factors, which present operational risks, are to be considered:

- Political or Civil Unrest
  - Political or Civil disturbances
  - Strikes and Riots
  - Insurrection etc
- People Related Risks (Internal)
  - Illness or Injury
  - Non-adherence to established procedures
  - Shortage of training in established procedures
  - Unpleasant working conditions
  - Deliberate or Negligent acts

The risk involved can be loss of customers, fraud, processing errors, delays which include information modification, loss of information, data omission, damages to hardware, etc.

- People Related Risks (External)
  - Intrusion
  - Kidnapping or extortion
  - Theft of equipment, etc
- Utility Related Risk
  - Electricity
  - Communication
  - Voltage stabilizer
  - Air Conditioning etc

Power loss causes processing errors and delays, and a total memory loss in computers. Irregular or faulty power lines can alter the data being processed and/or cause permanent damage to the computer.

- Neighbourhood Hazards
  - Proximity to chemical or explosive operations
  - Nearby building or floor that constitutes a fire hazard to the operation.
  - Potential risk of leakage or burst in the water pipes on the premises.
  - High crime areas.

10.2 Contingency Planning

The Data Center is a supporting unit that provides the Data Processing services for the contingency planning process. These services are in the area of the Data Center

This is considered to be a medium risk area and its disruption implies that the bank, Customer Service, Trade and Treasury are rendered inoperable with a resultant loss of the bank s reputation and customers. Potential threats to the Data Center (and consequently to the other units of Operations) include:

- People related risk, e.g. illness, strike, sabotage
- Natural disasters, e.g. fire, power failure, etc. rendering the premises and facilities unavailable

- Equipment failure, e.g. failure of Main or Back-up Hardware, peripherals, workstations, printers, etc.
- Software Failure, e.g. abnormal termination of a program due to a database corruption or program bug
- Support Line failure, e.g. failure of the link between the Oracle Financial Services Support team and the bank

The above risk factors should be analyzed and preventive measures should be described in detail. Some of the recommended preventive measures are:

- Employees should be cross-trained at different jobs so that they can act as a back-up for each other in case of absence due to illness, etc.
- Regular medical check-ups should be arranged for the employees
- Fire detection and suppression equipment, e.g. smoke detectors, fire extinguishers, Halon, etc. should be placed at all vulnerable locations
- Main and Back-up Hardware systems, printers and workstations should be serviced and maintained regularly
- Service contract - The bank should evaluate the need for a maintenance contract and document for hardware and software
- A private, leased data-line should exist between Oracle Financial Services (formerly i-flex) and the bank. A dial-up facility should also exist as a back-up to access Oracle Financial Services (formerly i-flex)

The contingency plan should be drawn to cover those functions critical to the business of the bank. The contingency plan should contain personnel lists (organization chart, distribution list, authorizers of emergency measures, succession list and alternate account managers), action plans, contact names and addresses and contingency planning documentation.

10.3 Software Errors Outside Normal working Hours

In case of a problem arising outside normal working hours, e.g. during the End of Day, month-end, year- end runs, etc., the following is the recommended emergency procedure:

- The Systems Manager or the back-up person should be summoned if not already available on the premises. No action should be taken until the Systems Manager or the back-up person arrives.
- The Senior Operations Manager of the bank should be informed about the matter.
- If the problem has occurred earlier and if the method of resolution is known, it should be applied (all occurrences of problems and their resolution should be entered in the Data Center software logbook). The Systems Manager should ensure that the program overlay and the statement number are exactly the same as in the logbook.
- The Senior Operations Manager of the Bank and the Internal Control Head may be asked to come to the bank to allow the Systems Manager to enter in the SUPERVISOR mode and correct the problem.
- If the Senior Operations Manager of the bank and the Internal Control Head are not available, the Systems Manager should contact the respective back-ups to gain access to the supervisor mode. Secret passwords to the supervisor mode are lodged in the main vault and may be withdrawn and opened if the regular and alternate custodians are unavailable.
- If the error happens for the first time and the bank has a technical person for Oracle FLEXCUBE maintenance, the Systems Manager should consult the person, identify the bug and fix it as per procedure. If this is not possible, Oracle Financial Services should be contacted for instructions. When the bug is fixed, recovery programs 100 and 101 should be run.

- If the error happens for the first time and the bank has a maintenance and support agreement with Oracle Financial Services the Systems Manager should report/handle the problem as per the support procedure in the support Manual. The bank should take action as per the instructions of Oracle Financial Services
- In all cases, details of the events (error description, communications with Oracle Financial Services etc. should be carefully noted in the Logbook of the Data Center and reviewed by the Internal Control Unit.

This section contains the following topics

- Section 10.3.1, "Contingency Plan Distribution List"
- Section 10.3.2, "People who can Authorize Emergency Measures"
- Section 10.3.3, "Contact Points in Case of Hardware and Software Problems"

10.3.1 Contingency Plan Distribution List

The recommended contingency plan distribution list is as follows.

- The Senior Management of the branch
- The Manager of the Data Center and the Systems Manager of the bank
- The Audit Division of the bank
- The Senior Operations Manager of the bank
- The System Administrative Manager
- The Control Head of the bank
- The head of the Liability Management Group
- The Manager of the Off-site Back-up location

The contingency plan distribution list should be finalized by the senior management of the bank.

10.3.2 People who can Authorize Emergency Measures

A list should be prepared, giving the following information about the officers who can authorize emergency measures:

- Name and function of the officer
- Telephone extension number in the office
- Direct telephone number (if available) in the office
- Residential telephone number

10.3.3 Contact Points in Case of Hardware and Software Problems

The following information for contact points in the event of Hardware and Software Problems should be listed:

- Name address of the Organization to be contacted
- Contact person, office telephone number and residential telephone numbers
- AX/Telex numbers of the Branch or Organization
- Port Numbers of the Oracle Financial Services Support division
- Dialing codes for the country

10.4 Potential for Exposure and Containment Measures

The Contingency Plan should clearly describe the Safety, Preventive and Containment measures. It should include guidelines and the procedures to be followed in case of an emergency related to Oracle FLEXCUBE.

This section contains the following topics

- Section 10.4.1, "Hardware Failure"
- Section 10.4.2, "Containment Measures"
- Section 10.4.3, "Disk Drive Failure"
- Section 10.4.4, "Remote Branch Communications/Modem Failure"
- Section 10.4.5, "Software Failure"
- Section 10.4.6, "Utilities Failure"

10.4.1 Hardware Failure

Hardware failure can be caused by the following situations:

- Failure of the Main machine
- Failure of the Back-up machine
- Failure of the Main and Back-up machines
- Failure of the Disk Drive
- Failure of a Terminal
- Failure of the Remote Branch terminal
- Failure of the Remote Branch communication or Modem
- Failure of the Printer

10.4.2 Containment Measures

Main machine failure

When failure of the main machine has an immediate effect on the processing, the following steps should be taken:

- The Manager of the Data Center should inform the user departments about the situation and the time required to switch on the back-up system.
- The matter should be reported to the Senior Operations Manager of the bank.
- The Manager of the Data Center should establish the cause of the problem before switching on the Back-up system.
- The Manager of the Data Center should connect all the workstations and peripherals to the back-up system and inform all the departments.
- Contact the local dealers for immediate repair.
- Record all information about the problem in the Trouble Report Log, The details to be included are nature of the problem, time of occurrence and name of the person reporting the problem. The time of contacting the Customer Engineer and the arrival of the Customer Engineer should also be recorded.
- After consultation with Customer Engineer determine the time required to get the main system running. If the repairs are expected to extend beyond 24 hours and the off-site back-up facility exists, inform the off-site back-up location of a possible need for use of their system.

- The following reports should be generated at the end of each day, to provide for an emergency. The reports will be useful if the Back-up machine fails before the Main machine is repaired.
  - Accounting Journal
  - Trial Balance
  - General Ledger
  - Currency Position
  - Limits Reports
  - Accrual reports
  - End of Day Account/GL Balances

Produce the accrual reports to avoid manual calculations. This program should only be run against a copy of data.

Back-up machine failure

If the Back-up machine is inoperative, the situation does not affect the normal operations, but it requires immediate repair to avoid a complete breakdown. The following steps should be carried out:

- The Senior Operations Manager of the bank should be apprised of the situation. Since the failure of the back-up machine does not disrupt the normal operations, it is not necessary to inform the user departments.
- Contact the local dealers for immediate repair.
- Enter all relevant information about the problem in the Trouble Report Log. The details should include the nature of the problem, the time of occurrence and the name of the person who reported the problem. The time of contacting the Customer Engineer and the arrival of the Customer Engineer should also be recorded.
- After consultation with the Customer Engineer determine the time required to get the back-up system running. If the repairs are expected to extend beyond 24 hours and if an off-site back-up facility exists, inform the off-site location of a possible need to use their system.
- If repairs are expected to take more than one day, the key reports (as outlined above, under Main Machine Failure), should be generated. The reports will be useful if the Main Machine fails before the back-up machine is repaired.

Failure of Main and Back-up Machines

The failure of both the Main and the Back-up machines is considered an unlikely event. The stationery required for manual operations, should be stored off-site. In such a situation the following steps should be taken:

- The Manager of the Data Center should inform all the user departments of the situation.
- Report to the Senior Operations Manager of the bank.
- Contact the local dealers for immediate repair.
- Record all relevant information in the Trouble Report Log. The details should include the nature of the problem, the time of occurrence and the name of the person who reported it. The time of contacting the Customer Engineer and the arrival of the Customer Engineer should also be recorded.
- After consultation with the Customer Engineer, determine the time required to get at least one machine running. If the repairs are expected to extend beyond 8 hours and the off-site back-up facility exists then inform the off-site back-up location, of a need to use their system. The necessary equipment should be made available.
- If the Senior Operations Manager of the bank decides to go off-site to continue processing, the following steps are recommended:

- The Data Center Manager should ensure that all the required material on the checklist is ready to be taken to the back-up site.
- The heads of all the departments should arrange to collect the input media, Database maintenance forms and tickets from the users and advise the systems department of completion.
- The Data Center Manager should approve of the material checklist before the materials can be transported to the off-site back-up facility under proper custody. The Data Center Manager should monitor the whole process and if any problems are encountered they should be reported to the Senior Branch Operations Manager.

At the back-up site, Oracle FLEXCUBE Database should be restored from the latest back-up tapes from the on site library (ideally, the backup of post end of previous day). All the daily transactions should be input if necessary and EOD should be run. Extra copies of reports should be prepared where necessary. The bank should use the latest daily central liability printouts (stored off-site) to pay checks over the counter and maintain manual ledger to record all movements.

In case both the machines break down in the middle of business hours, earlier payments should be taken into account from daily printouts (last business day central liability report) before further payments are made.

The Senior Branch Operations Manager should use discretion in determining the specific operation needs. The process detailed below provides a guideline for manual processing. This can be followed if the time to get at least one system up is likely to exceed 2 working days.

- The Processing priorities should be as follows:
  - Clearing Operations
  - Teller transactions
  - Trading Exchange/Transactions
  - Import/Export Operations
  - Funds Transfers
  - Deposits
  - Credit/Financial Control processing
- The following reports printed and kept off-site will assist in manual operations.
  - Limit Reports
  - Account Balances Report
- Balance controlling should be centralized with the Referral Clerk or person designated by the Senior Branch Operations Manager.
- Adequate stationery for departmental proofs, tickets, ledgers and manifolds, should be maintained to facilitate manual processing.
- Current Account balances should be updated manually.
- For all accounts having movements, a run-up of old balances, debits, credits and new balances should be taken.
- Accounting entry should be done through departmental proofs and tickets. For this purpose the trial balance and the Currency Position of the previous day should be used. Ledgers should be maintained, showing balance B/F, debits and credits movements and new balance.
- The Control department should comprehensively recheck all movements through source documents and tickets. Control should ensure that all source documents and tickets are microfilmed.

10.4.3 Disk Drive Failure

Main Machine Disk Drive Failure

This does not constitute a critical issue. If the disk fails the processing should be switched on to the back-up machine as per the recommended procedure described above in Main machine failure. The main machine equipment should be repaired/replaced immediately.

Back-up Machine Disk Drive failure

Although there is no impact on the operation when the disk drive fails on the back-up machine, urgent repairs/replacements must be ensured in order to bring the probability of general system failure back to the desired level.

Both Main and Back-up machines Disk Drive failure

Failure of both Main and Back-up machines Disk Drives constitutes a critical situation and is considered an unlikely event. Should the situation arise the branch should follow the recommended procedure described above in situation where both main and back-up machine failure occurs simultaneously.

Note

If the disk drive on the main machine is physically scratched or damaged by any means, the latest back-up tape should be loaded on the back-up machine and re-input or re- processing has to be done.

Terminal Failure

Any malfunctioning terminal can be replaced by the Data Center staff or Hardware Engineer with an available terminal. The failure of one or more is not critical to Branch operations. The recommended steps to be followed in case of terminal failure are given below:

- Any malfunction of a terminal should be notified to the Data Center Manager who should perform first level of trouble shooting.
- The terminal should be repaired or replaced by the local vendors as soon as possible.

Remote Branch Terminal Failure

Any malfunctioning remote branch terminal should be repaired or replaced by the Hardware Engineer with the available terminal at the branch. The failure of one or more terminals is not critical to remote Branch operations if some remote terminals are in working order. The recommended steps to be followed in case of failure of all the remote terminals, are given below:

- Any malfunction of terminal should be notified to the Hardware Engineer.
- The terminal should be repaired or replaced by the local vendors as soon as possible.
- The transactions should be transmitted to the main branch by telex/phone or FAX. The main branch should be responsible for the day s posting after receipt of transactions.

10.4.4 Remote Branch Communications/Modem Failure

Central Server

If the communications or modem between the main system and remote branch fails, it automatically cut off the hardware in use in the branch, except in case of a distributed setup, where there is a server in the remote branch. The recommended steps to be followed, where the remote branch connects to the main system, in case of communications/modem failure are given below:

- Contact the local communications expert to check communication line and for modem check.

- If not fixed, the senior officer in the remote branch should decide to telephone the main branch depending on the expected down time and the main branch should arrange to process these inputs.
- For modem failures, back-up modem may be arranged from local vendors.

In case of a distributed set-up, the remote node can still function.

Printer Failure

Any malfunctioning printer can be replaced by Data Center staff/Hardware Engineer with available printer. The failure of one or more printers is not critical to Branch operations. The printers can be used as back-ups for each other without any adverse effects. The recommended steps to be followed in case of printer failure are as follows:

- Any malfunction of printer should be notified to the Data Center Manager who should perform first level of trouble shooting.
- The printer should be repaired or replaced by the local vendors as soon as possible.

10.4.5 Software Failure

Software failure can be caused by the following situations:

- Database/Files Damage
- Oracle FLEXCUBE Software Damage
- Oracle FLEXCUBE Software Bug

The recommended steps to be followed in the above cases are:

- The Data Center Manager should inform all the user departments of the situation and the expected time for correction.
- Report to the Senior Branch Operations Manager.
- The Data Center Manager should inform the Systems Manager.
- If the Branch has a maintenance and support agreement with Oracle Financial Services then the Systems Manager should report/handle the problem as per the support procedure in the Support Manual. The bank should take action as per Oracle Financial Services s instructions.
- On the Trouble Report Log, a record should be made of the time the problem occurred, problem description, for further investigation and action taken.

10.4.6 Utilities Failure

Utilities failures can be caused by the following situations: power supply failure and variation in Power supply/Temperature/Humidity.

Power Supply Failure

The recommended steps to be followed in case of a power supply failure are as follows:

- If advanced warning of power failure is announced Data Center Manager should make alternative arrangements.
- The Data Center Manager should contact technicians
- Power off all the machines
- Report to Senior Branch Operations Manager
- If power remains off and back-up site arrangement exists then back-up site should be contacted for possible use of their system.
- If power remains off for more than 8 hours prepare to move to back-up site.

Variation of Power Supply/Temperature/Humidity

The recommended steps to be followed in case of a variation in Power Supply/Temperature/ Humidity are as follows:

The Data Center Manager should contact technicians and ensure:

- Power off all the machines.
- Report to Senior Branch Operations Manager.
- If variation in power/temperature/humidity lasts over 2 hours and back-up site arrangement exists then back-up site should be contacted for possible use of their system.
- If variation in power/temperature/humidity lasts over 8 hours, prepare to move to back-up site.

11. Post Implementation Review

Business entities who have implemented the Oracle FLEXCUBE and have gone live are recommended to conduct a post implementation review along with Oracle Financial Services Quality Assurance Group (QAG) team, to ensure that all the components in implementing the new system have been followed. The review process aims to provide bank management and Oracle Financial Services a framework to improve future implementation.

This chapter contains the following sections

- Section 11.1, "Overview"
- Section 11.2, "Post Implementation Review Guidelines"

11.1 Overview

The post implementation review section describes the guidelines and criteria to be used in a post implementation review, which will be conducted by a team of bank personnel along with the QAG team from Oracle Financial Services . The thrust of this review is to ensure that the implementation process, as defined in the Implementation Manual has been followed, audit/ control issues have been adhered to, and how the next implementation can be improved. Relevant feedback from this review will be incorporated into the Implementation Manual.

The review will focus on the methodology used in implementing Oracle FLEXCUBE, mapping actual facts against planned activities and potential risks such as:

- Security and Control
- Database Integrity
- Training
- Conversion
- Parallel Run
- Live Operations

The review process should be conducted by the following personnel from the bank and the QAG team from Oracle Financial Services (formerly i-flex) :

- Senior Branch Operations Manager
- Processing Department Heads
- Internal Control Unit staff
- Financial Control Staff
- Data Center Supervisor or Data Center Manager
- Credit Department Staff
- QAG team from Oracle Financial Services (formerly i-flex)

11.2 Post Implementation Review Guidelines

Deviations

For any deviations identified, ensure that the deviations been:

- Approved by the business unit head
- Concurred with the Audit division

This section contains the following topics

- Section 11.2.1, "System Environment"
- Section 11.2.2, "System Administration Issues"

11.2.1 System Environment

Main and Back-up systems

- Are both systems in sync?
- Do both systems have proper access controls on all directories?
- Is any system found with Software without licenses?
- Is Anti PC Virus kit installed on both systems?
- Is the branch satisfied with system performance?
- Is there a need for H/W Enhancement to improve system performance?

Project Management

During the implementation, have the following activities taken place:

- Regular Status reporting
- Minutes of management review meeting documented
- Approval and acceptance by business unit head for deliverables

Controls

The following need to be completed and implemented:

- Contingency Plan. Staff at the bank should be aware of contingency procedures, reports to be used in system is not available for more than a day due to Hardware or Software problems.
- Data Center Flow charts for daily, monthly and surprise basis verification of controls.
- Input and authorization of database changes and items verified by Internal Control Unit regularly
- Procedures on Statement Mailing have been finalized and are being followed
- Various Oracle FLEXCUBE Reports are checked regularly and are fully understood by the users
- Control checks on advices are done regularly
- Software Release Control procedures have been finalized
- Internal Control Unit s knowledge on controls on implementing new releases and controls needed is good
- Release Controls procedures have been implemented
- Support procedures have been finalized
- Support trial run has been conducted.
- Support trial run has been signed-off.
- Is Oracle Financial Services able to provide support to branch in case of emergency via remote access?
- Is branch able to contact Oracle Financial Services via telephone, FAX or modem, to provide support in case of emergency?
- Authorizer for each area for each product has been identified?
- Control check on Password file is done regularly.
- File retention periods have been finalized and documented.
- People are well trained on PC viruses and prevention, and containment procedures are in place.

Is Internal Control Unit department aware of maintaining separation of duties on system and Oracle FLEXCUBE SMS:

- Assigning passwords on the system
- System Ids.
- Review of Protocol list.
- Review of System Security Audit Trail.
- Review of reasons and procedure to go on supervisor mode.
- Getting the checksums of software release and independent review of program on system.

Database Set-up

During the branch static database set-up check, that the following procedures have been followed:

- Database Design signed off
- Data Conversion/ input strategy or plan approved and signed off
- Database set-up is done in the proper controlled Environment
- Database set-up sign-off is obtained

Oracle FLEXCUBE Software

During the implementation if the software has been modified either due to a bug or changed requirements, check that the following procedures have been followed:

- Test Incident logs and Software Fault Reports are maintained.
- Software modification is done in separate development area.
- The proper software modification procedures have been followed.
- The modification sign-off has been obtained from users.
- Any software modification or enhancement is required due to changed requirement yet to be completed by Oracle Financial Services (formerly i-flex)
- Follow-up action has been suggested.

System Trial Run

- The branch users need to do the system trial run before actual financial conversion.
- System Trial run plan is to be prepared.
- System Trial run results are to be documented.
- System Trial run sign-off has been obtained.

Stationery

- Tickets, Advices, Drafts, Reports, and Manager Checks have been printed.
- People who are familiar with concerned procedures to use above stationery.

Workflow

- The users are to be aware of operational procedures.
- The users are to be aware of parameter set-up and maintenance.
- Work flow relating to Oracle FLEXCUBE operations is in place.

Audit Issues

- The System Documentation is to be provided to the branch.
- The Project documentation has to be filed.
- The formal Oracle FLEXCUBE System handover note has to be given to the branch management.

- The formal Oracle FLEXCUBE delivery document has to be given to the branch management.
- The support procedures are clearly defined.
- Oracle FLEXCUBE system and implementation sign-off has to be obtained from the branch.

Check that Training has been completed for the following:

- Operations users
- Data Center Operators
- System Administrator
- Control Department users

11.2.2 System Administration Issues

Oracle FLEXCUBE Environment

- The administrator must be familiar with the complete system hardware structure
- The administrator must know how to move the equipment from one place to another.
- The administrator must be familiar with basic environment settings REGEDIT etc.

System Environment

- The administrator must be familiar with defining system users assigning trustee rights.
- The administrator must understand completely the volume separation and contents of each of them.
- The administrator must be familiar with the concepts of tablespaces, volumes, instances.
- The administrator must be familiar with the concepts of directories, sub-directories and file attributes.

Support Environment

- The support procedures are to be clearly defined.
- The administrator must know whom to contact in case of trouble (phone numbers, names, chat numbers).
- In case the administrator receives an urgent program modification, he must know how to apply it and what rules to follow.

Releases

- Are all the release procedures well defined and understood by the administrator?
- Does the administrator know the procedure to install the new software release on the production machine

12. Implementation Sign-Off

12.1 The Sign-Off Procedure

After the Oracle FLEXCUBE system starts functioning smoothly in the branch and all outstanding issues have been addressed to the satisfaction of the branch staff, the system is ready to go live. At this stage, it is the responsibility of the Oracle Financial Services implementation team to prepare a DELIVERY DOCUMENT which addresses various topics that the Data Center Manager, Internal Control Unit Head and the Senior Branch Operations Officer of the branch must be aware of, in order to run the system smoothly thereafter.

The Oracle FLEXCUBE Delivery Document is the definitive specification of the complete Oracle FLEXCUBE system at the specific installation site.

This document will be the reference document that details the initial set-up of the branch Oracle FLEXCUBE and will be used by the Internal Control Head and the auditors of the branch to check the integrity of the system at any later date and check whether the system is being operated as per procedures laid down.

This document will be updated whenever any changes are made to the system. These changes include all program changes, upgradation to a new version of Oracle FLEXCUBE, any changes in basic parameters, products, product level parameters and procedure.

The Internal Control department following the instructions in the Control Manual can verify the system integrity using this document and subsequent release documents.

The contents of Delivery Document cover the entire software area of Oracle FLEXCUBE, Operating System and Third Party products.

This document contains the following:

A cover sheet specifying the branch at which installation has been carried out, date of installation and the names of all Oracle Financial Services implementation team members.

The specific hardware and software environments at the time of implementation sign-off giving details of the version of operating system, third-party software, Oracle FLEXCUBE software. Mention should also be made of the versions to which the branch can upgrade without having to cross-check with Oracle Financial Services (formerly i-flex).

A list of all volumes set up on the hard-disk, including their size and a full list of all directories and sub-directories created on the volumes.

A description of each sub-directory contents, including a statement of whether it contains programs, data files or a combination of both, which users have access rights to it, the types of accesses they have to the directories and their contents who is responsible for maintaining its contents, and who is responsible for checking software integrity.

For each sub-directory that contains Oracle FLEXCUBE programs, a complete list of all programs, together with their checksums. This report should give the checksums' values at the time of software installation, as well as at the time of going live and highlight the changes that have been carried out.

For each sub-directory that contains data files, a list of files on the sub-directory, where this is possible, or else the naming convention of the files is to be given. The contents of the test /trial database should also be included.

The listings of Configfile log in scripts, REGEDIT. The user profiles under Oracle FLEXCUBE, as at the time of going live should also be included.

For workstations with hard disks, a list of software on the hard disk that is needed to run the Oracle FLEXCUBE system (e.g. Anti-virus software) should be listed.

The document must clearly spell out all the static set-up, basic parameter set-up, product level set-ups done during initial database design and input.

Special operational work-flow, procedures, work-around methodology, if any suggested, should be documented.

The document must also state all the contractual obligations that have been met like customization, training, documentation supplied and any other issues like meeting specific performance criteria etc. If any issues are pending, these must be mentioned along with probable dates of completion.

Details of Oracle Financial Services maintenance support details including the contact persons, telephone, telex, GTN and Fax details should be listed. The contact details for third-party software should also be given so that the branch can contact them directly, if required.

This document must be signed-off by the concerned branch officer (Data Center Manager / Internal Control Head / Senior Branch Operations Officer) and approved by the audit team of the branch. Copies of the document must be sent to Oracle Financial Services (formerly i-flex) office in Bangalore.